



ГОСУДАРСТВЕННЫЕ СТАНДАРТЫ  
СОЮЗА ССР

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**ПРОТЯЖКИ С НАВЕРТНЫМ ХВОСТОВИКОМ  
ДЛЯ ШЛИЦЕВЫХ ОТВЕРСТИЙ С ЭВОЛЬВЕНТНЫМ  
ПРОФИЛЕМ С ЦЕНТРИРОВАНИЕМ  
ПО НАРУЖНОМУ ДИАМЕТРУ**

**КОНСТРУКЦИЯ**

**ГОСТ 28048-89—ГОСТ 28051-89**

**Издание официальное**

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**ГОСУДАРСТВЕННЫЙ КОМИТЕТ СССР ПО СТАНДАРТАМ**  
**Москва**

**ПРОТЯЖКИ С НАВЕРТНЫМ ХВОСТОВИКОМ  
ДЛЯ ШЛИЦЕВЫХ ОТВЕРСТИЙ С ЭВОЛЬВЕНТНЫМ  
ПРОФИЛЕМ ДИАМЕТРОМ ОТ 50 ДО 120 ММ  
МОДУЛЕМ ОТ 1,5 ДО 2,5 ММ С ЦЕНТРИРОВАНИЕМ  
ПО НАРУЖНОМУ ДИАМЕТРУ**

**ГОСТ  
28048—89**

**Конструкция**

Broaches with diameter from 50 to 120 mm for slitting holes  
with involute profile with wind round tail and centring at outside diameter  
with modul from 1,5 to 2,5 mm.

Construction

ОКП 39 2340

Дата введения 01.07.90

Несоблюдение стандарта преследуется по закону

Настоящий стандарт распространяется на однопроходные протяжки универсального назначения с навертным хвостовиком диаметром  $D$  от 50 до 120 мм модулем  $m$  от 1,5 до 2,5 мм, предназначенные для обработки шлицевых втулок с эвольвентным профилем по ГОСТ 6033 с центрированием по наружному диаметру.

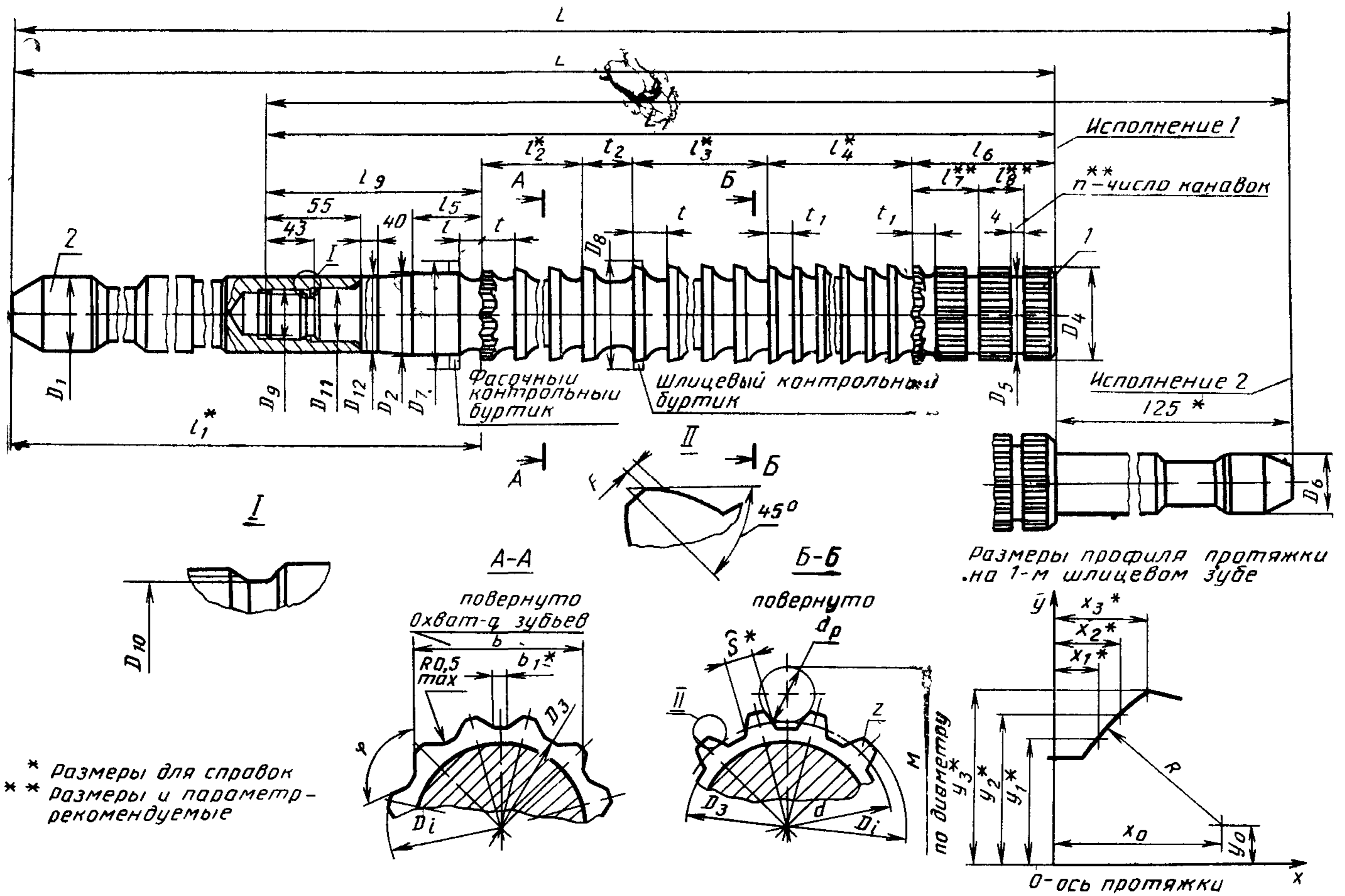
1. Конструкция и размеры протяжек должны соответствовать указанным на черт. 1 и в табл. 1, 3, 4, размеры навертного хвостовика на черт. 2 и в табл. 5.

Изготовление навертного хвостовика к протяжке производят по взаимной договоренности заказчика с потребителем.

Допускается по требованию заказчика корректировать размеры  $M$  (табл. 3) и диаметры чистовых и калибрующих зубьев (табл. 4).

2. Обозначение деталей протяжек должно соответствовать табл. 2.

3. Размеры протягиваемого отверстия и усилие протягивания должны соответствовать указанным на черт. 3 и в табл. 6.



Черт. 1



Таблица 1

## Размеры, мм

| Обозначение<br>протяжки | Применение<br>Мосты | Обозначение<br>протяжки | Применение<br>Мосты | $D \times m$ | z  | Сочетание<br>полей<br>допусков<br>D и e | S     | $D_1$ | $D_2$ | $D_3$ , не<br>более | $D_4$<br>(пред.<br>откл.<br>-0,2) | $D_5$ | $D_6$ | $D_7$ | $D_8$ | $D_9$ | $D_{10}$ | $D_{11}, D_{12}$ | L для испол-<br>нения |      | $L_1$ испол-<br>нения |     | l    |      |
|-------------------------|---------------------|-------------------------|---------------------|--------------|----|-----------------------------------------|-------|-------|-------|---------------------|-----------------------------------|-------|-------|-------|-------|-------|----------|------------------|-----------------------|------|-----------------------|-----|------|------|
|                         |                     |                         |                     |              |    |                                         |       |       |       |                     |                                   |       |       |       |       |       |          |                  | 1                     | 2    | 1                     | 2   |      |      |
| 2403-2201               |                     | 2403-2202               |                     |              |    | H7-9H                                   | 2,621 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       | 875  | 1000                  | 700 | 825  | 8,0  |
| 2403-2203               |                     | 2403-2204               |                     | 50 × 1,5     | 32 | H8-11H                                  | 2,683 | 47    | 46,6  | 49,6                | 45                                | 48    | 50,2  |       |       |       |          |                  |                       | 1075 | 1200                  | 875 | 1000 | 11,0 |
| 2403-2205               |                     | 2403-2206               |                     |              |    | H7-9H                                   | 2,621 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2207               |                     | 2403-2208               |                     |              |    | H8-11H                                  | 2,683 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2209               |                     | 2403-2211               |                     |              |    | H7-9H                                   | 2,910 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2212               |                     | 2403-2213               |                     |              |    | H8-11H                                  | 2,972 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2214               |                     | 2403-2215               |                     | 52 × 1,5     | 33 | H7-9H                                   | 2,910 | 49    | 48,6  | 51,6                | 47                                | 50    | 52,0  |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2216               |                     | 2403-2217               |                     |              |    | H8-11H                                  | 2,972 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2218               |                     | 2403-2219               |                     |              |    | H7-9H                                   | 2,918 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2221               |                     | 2403-2222               |                     | 55 × 1,5     | 35 | H8-11H                                  | 2,987 | 52    | 51,6  | 54,6                | 50                                | 53    | 55,0  |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2223               |                     | 2403-2224               |                     |              |    | H7-9H                                   | 2,918 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2225               |                     | 2403-2226               |                     |              |    | H8-11H                                  | 2,987 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2227               |                     | 2403-2228               |                     |              |    | H7-9H                                   | 3,207 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2229               |                     | 2403-2231               |                     | 60 × 1,5     | 38 | H8-11H                                  | 3,276 | 57    | 56,6  | 59,6                | 55                                | 58    | 60,0  |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2232               |                     | 2403-2233               |                     |              |    | H7-9H                                   | 3,207 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2234               |                     | 2403-2235               |                     |              |    | H8-11H                                  | 3,276 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2236               |                     | 2403-2237               |                     |              |    | H7-9H                                   | 2,629 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2238               |                     | 2403-2239               |                     | 65 × 1,5     | 42 | H8-11H                                  | 2,698 | 62    | 61,6  | 64,6                | 60                                | 63    | 65,2  |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2241               |                     | 2403-2242               |                     |              |    | H7-9H                                   | 2,629 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2243               |                     | 2403-2244               |                     |              |    | H8-11H                                  | 2,698 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2245               |                     | 2403-2246               |                     |              |    | H7-9H                                   | 2,918 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2247               |                     | 2403-2248               |                     | 70 × 1,5     | 45 | H8-11H                                  | 2,987 | 67    | 66,6  | 69,6                | 65                                | 68    | 70,2  |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2249               |                     | 2403-2251               |                     |              |    | H7-9H                                   | 2,918 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2252               |                     | 2403-2253               |                     |              |    | H8-11H                                  | 2,987 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2254               |                     | 2403-2255               |                     |              |    | H7-9H                                   | 3,207 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2256               |                     | 2403-2257               |                     | 75 × 1,5     | 48 | H8-11H                                  | 3,276 | 72    | 71,6  | 74,6                | 70                                | 73    | 75,0  |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2258               |                     | 2403-2259               |                     |              |    | H7-9H                                   | 3,207 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |
| 2403-2261               |                     | 2403-2262               |                     |              |    | H8-11H                                  | 3,276 |       |       |                     |                                   |       |       |       |       |       |          |                  |                       |      |                       |     |      |      |





Продолжение табл. 1

## Размеры, мм

| Обозначение<br>протяжки | Применяемость | Обозначение<br>протяжки | Исполнение 2 | Применяемость | $D \times m$ | z  | Сочетание<br>полей<br>допусков<br>D и e | S     | $D_1$ | $D_2$ | $D_3$ , не<br>более | $D_4$<br>(пред.<br>откл.<br>-0,2) | $D_5$ | $D_6$ | $D_7$ | $D_8$ | $D_9$<br>(поле<br>допуска<br>8g) | $D_{10}$ | $D_{11}$ | $D_{12}$ | L<br>для испол-<br>нения |      | $L_1$<br>для испол-<br>нения |      |      |
|-------------------------|---------------|-------------------------|--------------|---------------|--------------|----|-----------------------------------------|-------|-------|-------|---------------------|-----------------------------------|-------|-------|-------|-------|----------------------------------|----------|----------|----------|--------------------------|------|------------------------------|------|------|
|                         |               |                         |              |               |              |    |                                         |       |       |       |                     |                                   |       |       |       |       |                                  |          |          |          | 1                        | 2    | 1                            | 2    |      |
| 2403-2263               |               | 2403-2264               |              |               |              |    | H7-9H                                   | 2,629 | 63    | 77    | 76,6                | 79,6                              | 75    | 50    | 78    | 80,3  |                                  |          |          |          |                          | 940  | 1065                         | 700  | 825  |
| 2403-2265               |               | 2403-2266               |              |               | 80×1,5       | 52 | H8-11H                                  | 2,698 |       |       |                     |                                   |       |       |       |       |                                  | M48×3    | 43,6     | 50       | 70                       | 1115 | 1240                         | 875  | 1000 |
| 2403-2267               |               | 2403-2268               |              |               |              |    | H7-9H                                   | 2,629 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2269               |               | 2403-2271               |              |               |              |    | H8-11H                                  | 2,698 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2272               |               | 2403-2273               |              |               |              |    | H7-9H                                   | 3,097 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2274               |               | 2403-2275               |              |               | 50×2         |    | H8-11H                                  | 3,166 |       | 46    | 45,5                | 49,5                              | 44    |       |       |       | 50,0                             |          |          |          |                          | 950  | 1075                         | 775  | 900  |
| 2403-2276               |               | 2403-2277               |              |               |              |    | H7-9H                                   | 3,097 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2278               |               | 2403-2279               |              |               |              | 24 | H8-11H                                  | 3,166 | 45    |       |                     |                                   |       | 36    |       |       |                                  | M30×2    | 27,0     | 32       | 45                       | 1100 | 1225                         | 900  | 1025 |
| 2403-2281               |               | 2403-2282               |              |               |              |    | H7-9H                                   | 4,252 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2283               |               | 2403-2284               |              |               | 52×2         |    | H8-11H                                  | 4,321 |       | 48    | 47,5                | 51,5                              | 46    |       |       |       | 52,0                             |          |          |          |                          | 950  | 1075                         | 775  | 900  |
| 2403-2285               |               | 2403-2286               |              |               |              |    | H7-9H                                   | 4,252 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2287               |               | 2403-2288               |              |               |              |    | H8-11H                                  | 4,321 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2289               |               | 2403-2291               |              |               |              |    | H7-9H                                   | 3,683 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2292               |               | 2403-2293               |              |               | 55×2         | 26 | H8-11H                                  | 3,763 |       | 51    | 50,5                | 54,5                              | 49    |       |       |       | 55,0                             |          |          |          |                          | 950  | 1075                         | 775  | 900  |
| 2403-2294               |               | 2403-2295               |              |               |              |    | H7-9H                                   | 3,683 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2296               |               | 2403-2297               |              |               |              |    | H8-11H                                  | 3,763 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2298               |               | 2403-2299               |              |               |              |    | H7-9H                                   | 4,261 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2301               |               | 2403-2302               |              |               | 60×2         | 28 | H8-11H                                  | 4,341 | 50    | 56    | 55,5                | 59,5                              | 54    |       |       |       | 60,0                             |          |          |          |                          | 950  | 1075                         | 775  | 900  |
| 2403-2303               |               | 2403-2304               |              |               |              |    | H7-9H                                   | 4,261 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2305               |               | 2403-2306               |              |               |              |    | H8-11H                                  | 4,341 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2307               |               | 2403-2308               |              |               |              |    | H7-9H                                   | 3,683 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2309               |               | 2403-2311               |              |               | 65×2         | 31 | H8-11H                                  | 3,763 |       | 61    | 60,5                | 64,5                              | 59    |       |       |       | 65,2                             |          |          |          |                          | 1250 | 1375                         | 1050 | 1175 |
| 2403-2312               |               | 2403-2313               |              |               |              |    | H7-9H                                   | 3,683 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2314               |               | 2403-2315               |              |               |              |    | H8-11H                                  | 3,763 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2316               |               | 2403-2317               |              |               |              |    | H7-9H                                   | 3,106 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |
| 2403-2318               |               | 2403-2319               |              |               | 70×2         | 34 | H8-11H                                  | 3,186 | 63    | 66    | 65,5                | 69,5                              | 64    |       |       |       | 70,0                             |          |          |          |                          | 1015 | 1140                         | 800  | 925  |
| 2403-2321               |               | 2403-2322               |              |               |              |    | H7-9H                                   | 3,106 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          | 1215 | 1340                         | 1000 | 1125 |
| 2403-2323               |               | 2403-2324               |              |               |              |    | H8-11H                                  | 3,186 |       |       |                     |                                   |       |       |       |       |                                  |          |          |          |                          |      |                              |      |      |

Продолжение табл. 1

Размеры, мм

| Обозначение<br>протяжки | Исполнение 1 | Применяемость | Обозначение<br>протяжки | Исполнение 2 | Применяемость | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | l <sub>5</sub> | l <sub>6</sub> | l <sub>7</sub> | l <sub>8</sub> | l <sub>9</sub> | Зубья черновые и<br>переходные |               |               |    | Зубья чисто<br>вые и калиб-<br>рующие (число<br>зубьев — 10) |                | φ<br>(пред.<br>откл.<br>±1°) | q  | F, не более | C<br>для<br>исполнения |       | n |   |
|-------------------------|--------------|---------------|-------------------------|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------------|---------------|---------------|----|--------------------------------------------------------------|----------------|------------------------------|----|-------------|------------------------|-------|---|---|
|                         |              |               |                         |              |               |                |                |                |                |                |                |                |                |                | Число зубьев                   | фасоч-<br>ных | шли-<br>цевых | t  | Номер<br>профи-<br>ля                                        | t <sub>1</sub> |                              |    |             | Номер<br>про-<br>филя  | 1     |   | 2 |
| 2403-2263               |              |               | 2403-2264               |              |               | 445            | 84             | 238            | 90             | 70             | 65             | 21             | 12             | 205            | 7                              | 17            | 14            | 10 | 6                                                            | 18             | 56,870,65                    | 14 | 0,12        | 0,175                  | 0,206 | 4 |   |
| 2403-2265               |              |               | 2403-2266               |              |               | 485            | 108            | 306            | 117            | 110            | 79             | 24             | 245            | 18             | 12                             | 18            | 12            | 8  | 20                                                           | 20             |                              |    |             | 0,219                  | 0,250 | 5 |   |
| 2403-2267               |              |               | 2403-2268               |              |               | 380            | 84             | 336            | 72             | 70             | 61             | 20             | 205            | 12             | 8                              | 28            | 12            | 9  | 17                                                           | 17             |                              |    |             | 0,194                  | 0,225 | 4 |   |
| 2403-2269               |              |               | 2403-2271               |              |               | 415            | 96             | 384            | 99             | 80             | 88             | 24             | 215            | 16             | 7                              | 24            | 16            | 11 | 18                                                           | 18             |                              |    |             | 0,225                  | 0,256 | 6 |   |
| 2403-2272               |              |               | 2403-2273               |              |               | 380            | 84             | 336            | 72             | 70             | 61             | 20             | 205            | 12             | 8                              | 28            | 12            | 9  | 17                                                           | 17             |                              |    |             | 0,194                  | 0,225 | 4 |   |
| 2403-2274               |              |               | 2403-2275               |              |               | 415            | 96             | 384            | 99             | 80             | 88             | 24             | 215            | 16             | 7                              | 24            | 16            | 11 | 18                                                           | 18             |                              |    |             | 0,225                  | 0,256 | 6 |   |
| 2403-2276               |              |               | 2403-2277               |              |               | 380            | 84             | 336            | 72             | 70             | 61             | 20             | 205            | 12             | 8                              | 28            | 12            | 9  | 17                                                           | 17             |                              |    |             | 0,194                  | 0,225 | 4 |   |
| 2403-2278               |              |               | 2403-2279               |              |               | 415            | 112            | 416            | 99             | 80             | 90             | 23             | 215            | 16             | 8                              | 26            | 16            | 11 | 18                                                           | 18             |                              |    |             | 0,238                  | 0,269 | 6 |   |
| 2403-2281               |              |               | 2403-2282               |              |               | 380            | 84             | 336            | 72             | 70             | 61             | 20             | 205            | 12             | 8                              | 28            | 12            | 9  | 17                                                           | 17             |                              |    |             | 0,194                  | 0,225 | 4 |   |
| 2403-2283               |              |               | 2403-2284               |              |               | 415            | 112            | 416            | 99             | 80             | 90             | 23             | 215            | 16             | 8                              | 26            | 16            | 11 | 18                                                           | 18             |                              |    |             | 0,238                  | 0,269 | 6 |   |
| 2403-2285               |              |               | 2403-2286               |              |               | 380            | 84             | 336            | 72             | 70             | 61             | 20             | 205            | 12             | 8                              | 28            | 12            | 9  | 17                                                           | 17             |                              |    |             | 0,194                  | 0,225 | 4 |   |
| 2403-2287               |              |               | 2403-2288               |              |               | 415            | 112            | 416            | 99             | 80             | 90             | 23             | 215            | 16             | 8                              | 26            | 16            | 11 | 18                                                           | 18             |                              |    |             | 0,238                  | 0,269 | 6 |   |
| 2403-2289               |              |               | 2403-2291               |              |               | 380            | 84             | 322            | 90             | 70             | 56             | 22             | 205            | 14             | 10                             | 10            | 10            | 6  | 18                                                           | 18             |                              |    |             | 0,194                  | 0,225 | 3 |   |
| 2403-2292               |              |               | 2403-2293               |              |               | 425            | 108            | 414            | 117            | 90             | 91             | 25             | 225            | 18             | 7                              | 23            | 18            | 12 | 20                                                           | 20             |                              |    |             | 0,244                  | 0,275 | 6 |   |
| 2403-2294               |              |               | 2403-2295               |              |               | 380            | 84             | 322            | 90             | 70             | 56             | 22             | 205            | 14             | 10                             | 10            | 10            | 6  | 18                                                           | 18             |                              |    |             | 0,194                  | 0,225 | 3 |   |
| 2403-2296               |              |               | 2403-2297               |              |               | 425            | 144            | 450            | 117            | 90             | 94             | 26             | 225            | 18             | 9                              | 25            | 18            | 11 | 20                                                           | 20             |                              |    |             | 0,263                  | 0,294 | 6 |   |
| 2403-2298               |              |               | 2403-2299               |              |               | 380            | 84             | 322            | 90             | 70             | 56             | 22             | 205            | 14             | 10                             | 10            | 10            | 6  | 18                                                           | 18             |                              |    |             | 0,194                  | 0,225 | 3 |   |
| 2403-2301               |              |               | 2403-2302               |              |               | 425            | 144            | 450            | 117            | 90             | 94             | 26             | 225            | 18             | 9                              | 25            | 18            | 11 | 20                                                           | 20             |                              |    |             | 0,263                  | 0,294 | 6 |   |
| 2403-2303               |              |               | 2403-2304               |              |               | 380            | 84             | 322            | 90             | 70             | 56             | 22             | 205            | 14             | 10                             | 10            | 10            | 6  | 18                                                           | 18             |                              |    |             | 0,194                  | 0,225 | 3 |   |
| 2403-2305               |              |               | 2403-2306               |              |               | 425            | 144            | 450            | 117            | 90             | 94             | 26             | 225            | 18             | 9                              | 25            | 18            | 11 | 20                                                           | 20             |                              |    |             | 0,263                  | 0,294 | 6 |   |
| 2403-2307               |              |               | 2403-2308               |              |               | 380            | 84             | 322            | 90             | 70             | 56             | 22             | 205            | 14             | 10                             | 10            | 10            | 6  | 18                                                           | 18             |                              |    |             | 0,194                  | 0,225 | 3 |   |
| 2403-2309               |              |               | 2403-2311               |              |               | 425            | 162            | 468            | 117            | 90             | 83             | 25             | 225            | 18             | 10                             | 26            | 18            | 11 | 20                                                           | 20             |                              |    |             | 0,269                  | 0,300 | 5 |   |
| 2403-2312               |              |               | 2403-2313               |              |               | 425            | 162            | 468            | 117            | 90             | 83             | 25             | 225            | 18             | 10                             | 26            | 18            | 11 | 20                                                           | 20             |                              |    |             | 0,269                  | 0,300 | 5 |   |
| 2403-2314               |              |               | 2403-2315               |              |               | 420            | 98             | 322            | 90             | 70             | 67             | 23             | 205            | 14             | 8                              | 23            | 14            | 10 | 18                                                           | 18             |                              |    |             | 0,200                  | 0,231 | 4 |   |
| 2403-2316               |              |               | 2403-2317               |              |               | 460            | 126            | 414            | 117            | 110            | 78             | 24             | 245            | 18             | 8                              | 23            | 18            | 12 | 20                                                           | 20             |                              |    |             | 0,250                  | 0,281 | 5 |   |
| 2403-2318               |              |               | 2403-2319               |              |               | 460            | 126            | 414            | 117            | 110            | 78             | 24             | 245            | 18             | 8                              | 23            | 18            | 12 | 20                                                           | 20             |                              |    |             | 0,250                  | 0,281 | 5 |   |
| 2403-2321               |              |               | 2403-2322               |              |               |                |                |                |                |                |                |                |                |                |                                |               |               |    |                                                              |                |                              |    |             |                        |       |   |   |
| 2403-2323               |              |               | 2403-2324               |              |               |                |                |                |                |                |                |                |                |                |                                |               |               |    |                                                              |                |                              |    |             |                        |       |   |   |



Размеры, мм

| Обозначение<br>протяжки | Исполнение 1 | Применяемость | Обозначение<br>протяжки | Исполнение 2 | Применяемость | $D \times m$ | z  | Сочетание<br>полей<br>допусков<br>D и e | S     | D <sub>1</sub> | D <sub>2</sub> | D <sub>3</sub> не более | D <sub>4</sub><br>(пред.<br>откл.<br>-0,2) | D <sub>5</sub> | D <sub>6</sub> | D <sub>7</sub> | D <sub>8</sub> | D <sub>p</sub><br>(поле<br>допуска<br>8g) | D <sub>10</sub> | D <sub>11</sub> | D <sub>12</sub> | L для<br>исполнения |      | L <sub>1</sub><br>для<br>исполнения | t    |      |      |
|-------------------------|--------------|---------------|-------------------------|--------------|---------------|--------------|----|-----------------------------------------|-------|----------------|----------------|-------------------------|--------------------------------------------|----------------|----------------|----------------|----------------|-------------------------------------------|-----------------|-----------------|-----------------|---------------------|------|-------------------------------------|------|------|------|
|                         |              |               |                         |              |               |              |    |                                         |       |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 | 1                   | 2    |                                     |      |      |      |
| 2403-2325               |              |               | 2403-2326               |              |               | 75×2         | 36 | H7-9H                                   | 3,683 | 63             | 71             | 70,5                    | 74,5                                       | 69             |                |                | 75,0           |                                           |                 |                 |                 | 1015                | 1140 | 800                                 | 925  | 9,5  |      |
| 2403-2327               |              |               | 2403-2328               |              |               |              |    | H8-11H                                  | 3,763 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 | 63              | 1265                | 1390 | 1050                                | 1175 | 12,0 |      |
| 2403-2329               |              |               | 2403-2331               |              |               |              |    | H7-9H                                   | 3,683 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 | 1040                | 1165 | 800                                 | 925  | 9,5  |      |
| 2403-2332               |              |               | 2403-2333               |              |               |              |    | H8-11H                                  | 3,763 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2334               |              |               | 2403-2335               |              |               |              |    | H7-9H                                   | 4,261 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2336               |              |               | 2403-2337               |              |               | 80×2         | 38 | H8-11H                                  | 4,341 |                | 76             | 75,5                    | 79,5                                       | 74             |                |                | 80,2           |                                           |                 |                 |                 |                     | 1040 | 1165                                | 800  | 925  | 9,5  |
| 2403-2338               |              |               | 2403-2339               |              |               |              |    | H7-9H                                   | 4,261 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2341               |              |               | 2403-2342               |              |               |              |    | H8-11H                                  | 4,341 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     | 1215 | 1340                                | 975  | 1100 | 12,0 |
| 2403-2343               |              |               | 2403-2344               |              |               |              |    | H7-9H                                   | 3,683 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2345               |              |               | 2403-2346               |              |               |              |    | H8-11H                                  | 3,763 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2347               |              |               | 2403-2348               |              |               | 85×2         | 41 | H7-9H                                   | 3,683 | 63             | 81             | 80,5                    | 84,5                                       | 79             |                | 50             | 85,0           |                                           |                 |                 |                 |                     | 1240 | 1365                                | 1000 | 1125 | 12,0 |
| 2403-2349               |              |               | 2403-2351               |              |               |              |    | H8-11H                                  | 3,763 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2352               |              |               | 2403-2353               |              |               |              |    | H7-9H                                   | 3,106 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2354               |              |               | 2403-2355               |              |               | 90×2         | 44 | H8-11H                                  | 3,186 |                | 86             | 85,5                    | 89,5                                       | 84             |                |                | 90,2           |                                           |                 |                 |                 |                     | 1040 | 1165                                | 800  | 925  | 9,5  |
| 2403-2356               |              |               | 2403-2357               |              |               |              |    | H7-9H                                   | 3,106 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2358               |              |               | 2403-2359               |              |               |              |    | H8-11H                                  | 3,186 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2361               |              |               | 2403-2362               |              |               |              |    | H7-9H                                   | 3,683 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2363               |              |               | 2403-2364               |              |               | 95×2         | 46 | H8-11H                                  | 3,763 |                | 91             | 90,5                    | 94,5                                       | 89             |                |                | 95,0           |                                           |                 |                 |                 |                     | 1040 | 1165                                | 800  | 925  | 9,5  |
| 2403-2365               |              |               | 2403-2366               |              |               |              |    | H7-9H                                   | 3,683 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2367               |              |               | 2403-2368               |              |               |              |    | H8-11H                                  | 3,763 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2369               |              |               | 2403-2371               |              |               |              |    | H7-9H                                   | 4,261 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2372               |              |               | 2403-2373               |              |               | 100×2        | 48 | H8-11H                                  | 4,341 |                | 96             | 95,5                    | 99,5                                       | 94             |                |                | 100,0          |                                           |                 |                 |                 |                     | 1090 | 1215                                | 850  | 975  | 9,5  |
| 2403-2374               |              |               | 2403-2375               |              |               |              |    | H7-9H                                   | 4,261 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2376               |              |               | 2403-2377               |              |               |              |    | H8-11H                                  | 4,341 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2378               |              |               | 2403-2379               |              |               |              |    | H7-9H                                   | 5,008 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2381               |              |               | 2403-2382               |              |               | 52×2,5       | 19 | H8-11H                                  | 5,077 | 45             | 47             | 46,5                    | 51,4                                       | 45             |                | 36             | 51,8           |                                           |                 |                 |                 |                     | 1050 | 1175                                | 875  | 1000 | 8,0  |
| 2403-2383               |              |               | 2403-2384               |              |               |              |    | H7-9H                                   | 5,008 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     |      |                                     |      |      |      |
| 2403-2385               |              |               | 2403-2386               |              |               |              |    | H8-11H                                  | 5,077 |                |                |                         |                                            |                |                |                |                |                                           |                 |                 |                 |                     | 1200 | 1325                                | 1000 | 1125 | 11,0 |



Продолжение табл. 1

Размеры, мм

| Обозначение<br>протяжки | Исполнение 1 | Исполнение 2 | Применяемость | Обозначение<br>протяжки | Исполнение 2 | Применяемость | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | l <sub>5</sub> | l <sub>6</sub> | l <sub>7</sub> | l <sub>8</sub> | l <sub>9</sub> | Зубья черновые и<br>переходные |               |   |                      | Зубья чистые и калиб-<br>руемые (число<br>зубьев — 10) |                      | Ф не более | φ<br>(пред.<br>откл.<br>±1°) | q     | С<br>для<br>исполнения |   | n |
|-------------------------|--------------|--------------|---------------|-------------------------|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------------|---------------|---|----------------------|--------------------------------------------------------|----------------------|------------|------------------------------|-------|------------------------|---|---|
|                         |              |              |               |                         |              |               |                |                |                |                |                |                |                |                |                | Число зубьев<br>фасоч-<br>ных  | шлице-<br>вых | t | Номер<br>про-<br>фля | t <sub>1</sub>                                         | Номер<br>про-<br>фля |            |                              |       | 1                      | 2 |   |
| 2403-2325               |              | 2403-2326    |               | 420                     | 84           | 336           | 90             | 70             | 67             | 23             | 12             | 205            | 7              | 24             | 14             | 10                             | 10            | 6 | 18                   | 53,30                                                  | 0,95                 | 100°00'    |                              | 0,200 | 0,231                  | 4 |   |
| 2403-2327               |              | 2403-2328    |               | 460                     | 126          | 468           | 117            | 110            | 74             | 24             | 11             | 245            |                | 26             | 18             | 13                             | 13            | 8 | 20                   |                                                        |                      |            |                              | 0,263 | 0,294                  | 5 |   |
| 2403-2329               |              | 2403-2331    |               | 445                     | 98           | 322           | 90             | 70             | 67             | 23             | 12             | 205            |                | 23             | 14             | 10                             | 10            | 6 | 18                   | 54,76                                                  | 1,03                 | 94°44'     |                              | 0,200 | 0,231                  |   |   |
| 2403-2332               |              | 2403-2333    |               | 485                     | 126          | 396           | 117            | 110            | 71             | 24             | 13             | 245            | 8              | 22             | 18             | 12                             | 12            | 8 | 20                   |                                                        |                      |            |                              | 0,244 | 0,275                  | 4 |   |
| 2403-2334               |              | 2403-2335    |               | 445                     | 98           | 322           | 90             | 70             | 67             | 23             |                | 205            |                | 23             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2336               |              | 2403-2337    |               | 485                     | 126          | 414           | 117            | 110            | 78             | 24             | 12             | 245            |                | 23             | 18             | 12                             | 12            | 8 | 20                   | 59,36                                                  | 0,97                 | 96°36'     | 0,16                         | 0,250 | 0,281                  | 5 |   |
| 2403-2338               |              | 2403-2339    |               | 445                     | 84           | 336           | 90             | 70             | 67             | 23             |                | 205            |                | 24             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2341               |              | 2403-2342    |               | 485                     | 126          | 414           | 117            | 110            | 78             | 24             | 12             | 245            |                | 23             | 18             | 12                             | 12            | 8 | 20                   |                                                        |                      |            |                              | 0,250 | 0,281                  | 5 |   |
| 2403-2343               |              | 2403-2344    |               | 445                     | 98           | 322           | 90             | 70             | 67             | 23             |                | 205            |                | 24             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2345               |              | 2403-2346    |               | 485                     | 126          | 414           | 117            | 110            | 78             | 24             | 12             | 245            |                | 23             | 18             | 12                             | 12            | 8 | 20                   |                                                        |                      |            |                              | 0,250 | 0,281                  | 5 |   |
| 2403-2347               |              | 2403-2348    |               | 445                     | 84           | 336           | 90             | 70             | 67             | 23             |                | 205            |                | 24             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2349               |              | 2403-2351    |               | 485                     | 126          | 414           | 117            | 110            | 78             | 24             | 12             | 245            |                | 23             | 18             | 12                             | 12            | 8 | 20                   |                                                        |                      |            |                              | 0,250 | 0,281                  | 5 |   |
| 2403-2352               |              | 2403-2353    |               | 445                     | 84           | 336           | 90             | 70             | 67             | 23             |                | 205            |                | 24             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2354               |              | 2403-2355    |               | 485                     | 126          | 414           | 117            | 110            | 78             | 24             | 12             | 245            |                | 23             | 18             | 12                             | 12            | 8 | 20                   |                                                        |                      |            |                              | 0,250 | 0,281                  | 5 |   |
| 2403-2356               |              | 2403-2357    |               | 445                     | 84           | 336           | 90             | 70             | 67             | 23             |                | 205            |                | 24             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2358               |              | 2403-2359    |               | 485                     | 126          | 414           | 117            | 110            | 78             | 24             | 12             | 245            |                | 23             | 18             | 12                             | 12            | 8 | 20                   |                                                        |                      |            |                              | 0,250 | 0,281                  | 5 |   |
| 2403-2361               |              | 2403-2362    |               | 445                     | 98           | 322           | 90             | 70             | 67             | 23             | 12             | 205            |                | 23             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2363               |              | 2403-2364    |               | 485                     | 126          | 414           | 117            | 110            | 78             | 24             | 12             | 245            |                | 23             | 18             | 12                             | 12            | 8 | 20                   |                                                        |                      |            |                              | 0,250 | 0,281                  | 5 |   |
| 2403-2365               |              | 2403-2366    |               | 445                     | 98           | 322           | 90             | 70             | 67             | 23             | 11             | 205            |                | 23             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,200 | 0,231                  |   |   |
| 2403-2367               |              | 2403-2368    |               | 485                     | 162          | 468           | 117            | 110            | 88             | 25             |                | 245            |                | 26             | 18             | 11                             | 13            | 8 | 20                   |                                                        |                      |            |                              | 0,275 | 0,306                  | 6 |   |
| 2403-2369               |              | 2403-2371    |               | 445                     | 98           | 364           | 90             | 70             | 75             | 23             | 11             | 205            |                | 26             | 14             | 10                             | 10            | 6 | 18                   |                                                        |                      |            |                              | 0,213 | 0,244                  | 5 |   |
| 2403-2372               |              | 2403-2373    |               | 485                     | 144          | 486           | 117            | 110            | 88             | 25             |                | 245            |                | 27             | 18             | 11                             | 13            | 8 | 20                   |                                                        |                      |            |                              | 0,275 | 0,306                  | 6 |   |
| 2403-2374               |              | 2403-2375    |               | 380                     | 96           | 420           | 72             | 70             | 65             | 20             |                | 205            |                | 35             | 12             | 9                              | 8             | 5 | 17                   |                                                        |                      |            |                              | 0,219 | 0,250                  | 4 |   |
| 2403-2376               |              | 2403-2377    |               | 415                     | 112          | 480           | 99             | 80             | 76             | 22             | 12             | 215            |                | 30             | 16             | 11                             | 11            | 7 | 18                   |                                                        |                      |            |                              | 0,250 | 0,281                  | 5 |   |
| 2403-2378               |              | 2403-2379    |               |                         |              |               |                |                |                |                |                |                |                |                |                |                                |               |   |                      |                                                        |                      |            |                              |       |                        |   |   |
| 2403-2381               |              | 2403-2382    |               |                         |              |               |                |                |                |                |                |                |                |                |                |                                |               |   |                      |                                                        |                      |            |                              |       |                        |   |   |
| 2403-2383               |              | 2403-2384    |               |                         |              |               |                |                |                |                |                |                |                |                |                |                                |               |   |                      |                                                        |                      |            |                              |       |                        |   |   |
| 2403-2385               |              | 2403-2386    |               |                         |              |               |                |                |                |                |                |                |                |                |                |                                |               |   |                      |                                                        |                      |            |                              |       |                        |   |   |

Продолжение табл. 1

## Размеры, мм

| Обозначение<br>протяжки | Исполнение 1 | Применяемость | Обозначение<br>протяжки | Исполнение 2 | Применяемость | $D \times m$ | $z$ | Сочетание<br>полей<br>допусков<br>$D$ и $e$ | $S$   | $D_1$ | $D_2$ | $D_3$<br>не более<br>(пред.<br>откл.<br>-0,2) | $D_4$ | $D_5$ | $D_6$ | $D_7$ | $D_8$ | $D_9$<br>(поле<br>допуска<br>8g) | $D_{10}$ | $D_{11}$ | $D_{12}$ | $L$<br>для<br>исполнения |      | $L_1$<br>для<br>исполнения |      | $l$ |  |  |  |  |  |
|-------------------------|--------------|---------------|-------------------------|--------------|---------------|--------------|-----|---------------------------------------------|-------|-------|-------|-----------------------------------------------|-------|-------|-------|-------|-------|----------------------------------|----------|----------|----------|--------------------------|------|----------------------------|------|-----|--|--|--|--|--|
|                         |              |               |                         |              |               |              |     |                                             |       |       |       |                                               |       |       |       |       |       |                                  |          |          |          | 1                        | 2    | 1                          | 2    |     |  |  |  |  |  |
| 2403-2387               |              |               | 2403-2388               |              |               |              |     | H7-9H                                       | 5,297 | 45    | 50    | 49,5                                          | 54,4  | 48    | 36    |       | 54,7  | M30×2                            | 27,0     | 32       | 45       | 1050                     | 1175 | 875                        | 1000 | 9,5 |  |  |  |  |  |
| 2403-2389               |              |               | 2403-2391               |              |               | 55×2,5       | 20  | H8-11H                                      | 5,366 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2392               |              |               | 2403-2393               |              |               |              |     | H7-9H                                       | 5,297 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2394               |              |               | 2403-2395               |              |               |              |     | H8-11H                                      | 5,366 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2396               |              |               | 2403-2397               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2398               |              |               | 2403-2399               |              |               | 60×2,5       | 22  | H8-11H                                      | 5,386 |       | 55    | 54,5                                          | 59,4  | 53    |       |       | 59,8  |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2401               |              |               | 2403-2402               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2403               |              |               | 2403-2404               |              |               |              |     | H8-11H                                      | 5,386 | 50    |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2405               |              |               | 2403-2406               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2407               |              |               | 2403-2408               |              |               | 65×2,5       | 24  | H8-11H                                      | 5,386 |       | 60    | 59,5                                          | 64,4  | 58    |       |       | 65,0  |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2409               |              |               | 2403-2411               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2412               |              |               | 2403-2413               |              |               |              |     | H8-11H                                      | 5,386 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2414               |              |               | 2403-2415               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2416               |              |               | 2403-2417               |              |               | 70×2,5       | 26  | H8-11H                                      | 5,386 |       | 65    | 64,5                                          | 69,4  | 63    |       |       | 70,0  |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2418               |              |               | 2403-2419               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2421               |              |               | 2403-2422               |              |               |              |     | H8-11H                                      | 5,386 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2423               |              |               | 2403-2424               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2425               |              |               | 2403-2426               |              |               | 75×2,5       | 28  | H8-11H                                      | 5,386 |       | 70    | 69,5                                          | 74,4  | 68    |       |       | 75,2  |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2427               |              |               | 2403-2428               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2429               |              |               | 2403-2431               |              |               |              |     | H8-11H                                      | 3,386 | 63    |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2432               |              |               | 2403-2433               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2434               |              |               | 2403-2435               |              |               | 80×2,5       | 30  | H8-11H                                      | 5,386 |       | 75    | 74,5                                          | 79,4  | 73    |       |       | 80,2  |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2436               |              |               | 2403-2437               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2438               |              |               | 2403-2439               |              |               |              |     | H8-11H                                      | 5,386 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2441               |              |               | 2403-2442               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2443               |              |               | 2403-2444               |              |               | 85×2,5       | 32  | H8-11H                                      | 5,386 |       | 80    | 79,5                                          | 84,4  | 78    |       |       | 85,3  |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2445               |              |               | 2403-2446               |              |               |              |     | H7-9H                                       | 5,306 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |
| 2403-2447               |              |               | 2403-2448               |              |               |              |     | H8-11H                                      | 5,386 |       |       |                                               |       |       |       |       |       |                                  |          |          |          |                          |      |                            |      |     |  |  |  |  |  |



Продолжение табл. 1

Размеры, мм

| Обозначение<br>протяжки | Исполнение 1 | Исполнение 2 | Применяемость | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | l <sub>5</sub> | l <sub>6</sub> | l <sub>7</sub> | l <sub>8</sub> | l <sub>9</sub> | Зубья черновые и<br>переходные |               |    | Зубья чистые<br>и калиб-<br>руемые (число<br>зубьев — 10) |                | φ<br>(пред.<br>откл.<br>±1°) | q    | r, не более          |      | n     |       |   |
|-------------------------|--------------|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------------|---------------|----|-----------------------------------------------------------|----------------|------------------------------|------|----------------------|------|-------|-------|---|
|                         |              |              |               |                |                |                |                |                |                |                |                |                | Число зубьев<br>фасоч-<br>ных  | шпи-<br>цевых | t  | Номер<br>про-<br>фля                                      | t <sub>1</sub> |                              |      | Номер<br>про-<br>фля | 1    |       | 2     |   |
| 2403-2387               |              | 2403-2388    |               | 380            | 84             | 406            | 90             | 70             | 72             |                | 13             | 205            | 7                              | 29            | 14 | 10                                                        | 6              | 39,16                        | 1,33 | 108°00'              |      | 0,219 | 0,250 | 4 |
| 2403-2389               |              | 2403-2391    |               | 415            | 128            | 560            | 99             | 80             | 80             | 24             | 12             | 215            | 9                              | 35            | 16 | 11                                                        | 7              |                              |      |                      |      | 0,275 | 0,306 | 5 |
| 2403-2392               |              | 2403-2393    |               | 380            | 98             | 392            | 90             | 70             |                |                |                | 205            | 8                              | 28            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,219 | 0,250 |   |
| 2403-2394               |              | 2403-2395    |               | 425            | 144            | 522            | 117            | 90             | 72             | 25             | 13             | 225            | 7                              | 29            | 18 | 11                                                        | 8              | 40,12                        | 1,47 | 98°10'               |      | 0,275 | 0,306 | 4 |
| 2403-2396               |              | 2403-2397    |               | 380            | 84             | 406            | 90             | 70             |                | 24             |                | 205            | 7                              |               | 14 | 10                                                        | 6              |                              |      |                      |      | 0,219 | 0,250 |   |
| 2403-2398               |              | 2403-2399    |               | 425            | 144            | 522            | 117            | 90             | 72             | 25             | 13             | 225            | 7                              |               | 18 | 11                                                        | 8              |                              |      |                      |      | 0,275 | 0,306 | 4 |
| 2403-2401               |              | 2403-2402    |               | 380            | 84             | 406            | 90             | 70             |                | 24             |                | 205            | 7                              |               | 14 | 10                                                        | 6              |                              |      |                      |      | 0,219 | 0,250 |   |
| 2403-2403               |              | 2403-2404    |               | 425            | 162            | 612            | 117            | 90             | 89             | 25             | 11             | 225            | 10                             | 34            | 18 | 11                                                        | 8              | 46,29                        | 1,33 | 105°00'              |      | 0,306 | 0,338 | 6 |
| 2403-2405               |              | 2403-2406    |               | 420            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2407               |              | 2403-2408    |               | 460            | 126            | 504            | 117            | 110            | 88             | 25             | 11             | 245            | 8                              | 28            | 18 | 12                                                        | 8              | 49,19                        | 1,49 | 96°56'               | 0,20 | 0,275 | 0,306 | 6 |
| 2403-2409               |              | 2403-2411    |               | 420            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2412               |              | 2403-2413    |               | 460            | 126            | 504            | 117            | 110            | 88             | 25             | 11             | 245            | 8                              | 28            | 18 | 12                                                        | 8              |                              |      |                      |      | 0,275 | 0,306 | 6 |
| 2403-2414               |              | 2403-2415    |               | 420            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2416               |              | 2403-2417    |               | 460            | 126            | 504            | 117            | 110            | 88             | 25             | 11             | 245            | 8                              | 28            | 18 | 12                                                        | 8              | 53,38                        | 1,37 | 102°52'              |      | 0,275 | 0,306 | 6 |
| 2403-2418               |              | 2403-2419    |               | 420            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2421               |              | 2403-2422    |               | 460            | 144            | 576            | 117            | 110            | 98             | 25             | 13             | 245            | 9                              | 32            | 18 | 12                                                        | 8              |                              |      |                      |      | 0,300 | 0,331 | 6 |
| 2403-2423               |              | 2403-2424    |               | 445            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2425               |              | 2403-2426    |               | 460            | 144            | 576            | 117            | 110            | 98             | 25             | 13             | 245            | 9                              | 32            | 18 | 12                                                        | 8              | 54,26                        | 1,51 | 96°00'               |      | 0,300 | 0,331 | 6 |
| 2403-2427               |              | 2403-2428    |               | 445            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2429               |              | 2403-2431    |               | 485            | 152            | 513            | 126            | 110            | 93             | 25             | 12             | 245            | 9                              | 27            | 19 | 12                                                        | 9              |                              |      |                      |      | 0,288 | 0,319 | 6 |
| 2403-2432               |              | 2403-2433    |               | 445            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2434               |              | 2403-2435    |               | 485            | 152            | 513            | 126            | 110            | 93             | 25             | 12             | 245            | 9                              | 27            | 19 | 12                                                        | 9              | 60,47                        | 1,40 | 101°16'              |      | 0,225 | 0,256 | 4 |
| 2403-2436               |              | 2403-2437    |               | 445            | 98             | 420            | 90             | 70             |                | 23             |                | 205            |                                | 30            | 14 | 10                                                        | 6              |                              |      |                      |      | 0,225 | 0,256 | 4 |
| 2403-2438               |              | 2403-2439    |               | 485            | 133            | 570            | 126            | 110            | 80             | 26             |                | 245            | 8                              | 30            | 19 | 12                                                        | 9              |                              |      |                      |      | 0,294 | 0,325 | 5 |
| 2403-2441               |              | 2403-2442    |               | 485            | 133            | 570            | 126            | 110            | 80             | 26             |                | 245            | 8                              | 30            | 19 | 12                                                        | 9              |                              |      |                      |      | 0,294 | 0,325 | 5 |
| 2403-2443               |              | 2403-2444    |               | 485            | 133            | 570            | 126            | 110            | 80             | 26             |                | 245            | 8                              | 30            | 19 | 12                                                        | 9              |                              |      |                      |      | 0,294 | 0,325 | 5 |
| 2403-2445               |              | 2403-2446    |               | 485            | 133            | 570            | 126            | 110            | 80             | 26             |                | 245            | 8                              | 30            | 19 | 12                                                        | 9              |                              |      |                      |      | 0,294 | 0,325 | 5 |
| 2403-2447               |              | 2403-2448    |               | 485            | 133            | 570            | 126            | 110            | 80             | 26             |                | 245            | 8                              | 30            | 19 | 12                                                        | 9              |                              |      |                      |      | 0,294 | 0,325 | 5 |

Продолжение табл. 1

## Размеры, мм

| Обозначение<br>протяжки | Исполнение 1 | Исполнение 2 | Применяемость | Обозначение<br>протяжки | Исполнение 2 | Применяемость | $D \times m$ | $z$ | Сочетание<br>полей<br>допусков<br>$D$ и $e$ | $S$   | $D_1$ | $D_2$ | $D_3$ не более | $D_4$<br>(пред.<br>откл.<br>-0,2) | $D_5$ | $D_6$ | $D_7$ | $D_8$ | $D_9$<br>(поле<br>допуска<br>8g) | $D_{10}$ | $D_{11}$ | $D_{12}$ | $L$<br>для<br>исполнения |      | $L_1$<br>для<br>исполнения |      | $l$  |
|-------------------------|--------------|--------------|---------------|-------------------------|--------------|---------------|--------------|-----|---------------------------------------------|-------|-------|-------|----------------|-----------------------------------|-------|-------|-------|-------|----------------------------------|----------|----------|----------|--------------------------|------|----------------------------|------|------|
|                         |              |              |               |                         |              |               |              |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          | 1                        | 2    | 1                          | 2    |      |
| 2403-2449               |              | 2403-2451    |               | 90 × 2,5                | 34           | H7-9H         | 5,306        | 85  | 84,5                                        | 89,4  | 83    | 90,0  |                |                                   |       |       |       |       |                                  |          |          |          | 1315                     | 1440 | 1075                       | 1200 | 11,0 |
| 2403-2452               |              | 2403-2453    |               |                         |              | H8-11H        | 5,386        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2454               |              | 2403-2455    |               |                         |              | H7-9H         | 5,306        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2456               |              | 2403-2457    |               | 95 × 2,5                | 36           | H8-11H        | 5,386        | 90  | 89,5                                        | 94,4  | 88    | 95,0  |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2458               |              | —            |               |                         |              | H7-9H         | 5,306        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2459               |              | —            |               |                         |              | H8-11H        | 5,386        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2461               |              | 2403-2462    |               |                         |              | H7-9H         | 5,306        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2463               |              | 2403-2464    |               | 100 × 2,5               | 38           | H8-11H        | 5,386        | 95  | 94,5                                        | 99,4  | 93    | 100,0 |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2465               |              | —            |               |                         |              | H7-9H         | 5,306        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2466               |              | —            |               |                         |              | H8-11H        | 5,386        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2467               |              | 2403-2468    |               | 105 × 2,5               | 40           | H7-9H         | 5,306        | 100 | 99,5                                        | 104,6 | 98    | 105,0 |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2469               |              | 2403-2471    |               |                         |              | H8-11H        | 5,386        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2472               |              | 2403-2473    |               | 110 × 2,5               | 42           | H7-9H         | 5,316        | 105 | 104,5                                       | 109,6 | 103   | 110,2 |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2474               |              | 2403-2475    |               |                         |              | H8-11H        | 5,406        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2476               |              | 2403-2477    |               | 120 × 2,5               | 46           | H7-9H         | 5,316        | 115 | 114,5                                       | 119,6 | 113   | 120,2 |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |
| 2403-2478               |              | 2403-2479    |               |                         |              | H8-11H        | 5,406        |     |                                             |       |       |       |                |                                   |       |       |       |       |                                  |          |          |          |                          |      |                            |      |      |





Таблица 2

| Обозначение<br>протяжки<br>исполнения |           | $D \times m$ | Сочетание<br>полей<br>допусков<br><i>D и e</i> | Поз 1               |             | Поз 2       |
|---------------------------------------|-----------|--------------|------------------------------------------------|---------------------|-------------|-------------|
|                                       |           |              |                                                | Протяжка исполнения |             | Хвостовик   |
|                                       |           |              |                                                | 1                   | 2           |             |
|                                       |           |              |                                                | Количество          |             |             |
|                                       |           |              |                                                | 1                   |             | 1           |
|                                       |           |              |                                                | Обозначение         |             |             |
| 1                                     | 2         |              |                                                |                     |             |             |
| 2403-2201                             | 2403-2202 | 50×1,5       | H7—9H                                          | 2403-2201/1         | 2403-2202/1 | 2403-2201/2 |
| 2403-2203                             | 2403-2204 |              | H8—11H                                         | 2403-2203/1         | 2403-2204/1 |             |
| 2403-2205                             | 2403-2206 |              | H7—9H                                          | 2403-2205/1         | 2403-2206/1 |             |
| 2403-2207                             | 2403-2208 |              | H8—11H                                         | 2403-2207/1         | 2403-2208/1 |             |
| 2403-2209                             | 2403-2211 | 52×1,5       | H7—9H                                          | 2403-2209/1         | 2403-2211/1 | 2403-2201/2 |
| 2403-2212                             | 2403-2213 |              | H8—11H                                         | 2403-2212/1         | 2403-2213/1 |             |
| 2403-2214                             | 2403-2215 |              | H7—9H                                          | 2403-2214/1         | 2403-2215/1 |             |
| 2403-2216                             | 2403-2217 |              | H8—11H                                         | 2403-2216/1         | 2403-2217/1 |             |
| 2403-2218                             | 2403-2219 | 55×1,5       | H7—9H                                          | 2403-2218/1         | 2403-2219/1 | 2403-2218/2 |
| 2403-2221                             | 2403-2222 |              | H8—11H                                         | 2403-2221/1         | 2403-2222/1 |             |
| 2403-2223                             | 2403-2224 |              | H7—9H                                          | 2403-2223/1         | 2403-2224/1 |             |
| 2403-2225                             | 2403-2226 |              | H8—11H                                         | 2403-2225/1         | 2403-2226/1 |             |
| 2403-2227                             | 2403-2228 | 60×1,5       | H7—9H                                          | 2403-2227/1         | 2403-2228/1 | 2403-2218/2 |
| 2403-2229                             | 2403-2231 |              | H8—11H                                         | 2403-2229/1         | 2403-2231/1 |             |
| 2403-2232                             | 2403-2233 |              | H7—9H                                          | 2403-2232/1         | 2403-2233/1 |             |
| 2403-2234                             | 2403-2235 |              | H8—11H                                         | 2403-2234/1         | 2403-2235/1 |             |
| 2403-2236                             | 2403-2237 | 65×1,5       | H7—9H                                          | 2403-2236/1         | 2403-2237/1 | 2403-2218/2 |
| 2403-2238                             | 2403-2239 |              | H8—11H                                         | 2403-2238/1         | 2403-2239/1 |             |
| 2403-2241                             | 2403-2242 |              | H7—9H                                          | 2403-2241/1         | 2403-2242/1 |             |
| 2403-2243                             | 2403-2244 |              | H8—11H                                         | 2403-2243/1         | 2403-2244/1 |             |
| 2403-2245                             | 2403-2246 | 70×1,5       | H7—9H                                          | 2403-2245/1         | 2403-2246/1 | 2403-2223/2 |
| 2403-2247                             | 2403-2248 |              | H8—11H                                         | 2403-2247/1         | 2403-2248/1 |             |
| 2403-2249                             | 2403-2251 |              | H7—9H                                          | 2403-2249/1         | 2403-2251/1 |             |
| 2403-2252                             | 2403-2253 |              | H8—11H                                         | 2403-2252/1         | 2403-2253/1 |             |
| 2403-2254                             | 2403-2255 | 75×1,5       | H7—9H                                          | 2403-2254/1         | 2403-2255/1 | 2403-2245/2 |
| 2403-2256                             | 2403-2257 |              | H8—11H                                         | 2403-2256/1         | 2403-2257/1 |             |
| 2403-2258                             | 2403-2259 |              | H7—9H                                          | 2403-2258/1         | 2403-2259/1 |             |
| 2403-2261                             | 2403-2262 |              | H8—11H                                         | 2403-2261/1         | 2403-2262/1 |             |
| 2403-2263                             | 2403-2264 | 80×1,5       | H7—9H                                          | 2403-2263/1         | 2403-2264/1 | 2403-2263/2 |
| 2403-2265                             | 2403-2266 |              | H8—11H                                         | 2403-2265/1         | 2403-2266/1 |             |
| 2403-2267                             | 2403-2268 |              | H7—9H                                          | 2403-2267/1         | 2403-2268/1 |             |
| 2403-2269                             | 2403-2271 |              | H8—11H                                         | 2403-2269/1         | 2403-2271/1 |             |
| 2403-2272                             | 2403-2273 | 50×2         | H7—9H                                          | 2403-2272/1         | 2403-2273/1 | 2403-2201/2 |
| 2403-2274                             | 2403-2275 |              | H8—11H                                         | 2403-2274/1         | 2403-2275/1 |             |
| 2403-2276                             | 2403-2277 |              | H7—9H                                          | 2403-2276/1         | 2403-2277/1 |             |
| 2403-2278                             | 2403-2279 |              | H8—11H                                         | 2403-2278/1         | 2403-2279/1 |             |



| Обозначение<br>протяжки<br>исполнения |           | D×m  | Сочетание<br>полей<br>допусков<br>D и e | Поз. 1              |             | Поз. 2      |
|---------------------------------------|-----------|------|-----------------------------------------|---------------------|-------------|-------------|
|                                       |           |      |                                         | Протяжка исполнения |             | Хвостовик   |
|                                       |           |      |                                         | 1                   | 2           |             |
|                                       |           |      |                                         | Количество          |             |             |
|                                       |           |      |                                         | 1                   | 1           |             |
|                                       |           |      |                                         | Обозначение         |             |             |
| 2403-2281                             | 2403-2282 | 52×2 | H7—9H                                   | 2403-2281/1         | 2403-2282/1 | 2403-2201/2 |
| 2403-2283                             | 2403-2284 |      | H8—11H                                  | 2403-2283/1         | 2403-2284/1 |             |
| 2403-2285                             | 2403-2286 |      | H7—9H                                   | 2403-2285/1         | 2403-2286/1 | 2403-2205/2 |
| 2403-2287                             | 2403-2288 |      | H8—11H                                  | 2403-2287/1         | 2403-2288/1 |             |
| 2403-2289                             | 2403-2291 | 55×2 | H7—9H                                   | 2403-2289/1         | 2403-2291/1 | 2403-2218/2 |
| 2403-2292                             | 2403-2293 |      | H8—11H                                  | 2403-2292/1         | 2403-2293/1 |             |
| 2403-2294                             | 2403-2295 |      | H7—9H                                   | 2403-2294/1         | 2403-2295/1 | 2403-2223/2 |
| 2403-2296                             | 2403-2297 |      | H8—11H                                  | 2403-2296/1         | 2403-2297/1 |             |
| 2403-2298                             | 2403-2299 | 60×2 | H7—9H                                   | 2403-2298/1         | 2403-2299/1 | 2403-2218/2 |
| 2403-2301                             | 2403-2302 |      | H8—11H                                  | 2403-2301/1         | 2403-2302/1 |             |
| 2403-2303                             | 2403-2304 |      | H7—9H                                   | 2403-2303/1         | 2403-2304/1 | 2403-2223/2 |
| 2403-2305                             | 2403-2306 |      | H8—11H                                  | 2403-2305/1         | 2403-2306/1 |             |
| 2403-2307                             | 2403-2308 | 65×2 | H7—9H                                   | 2403-2307/1         | 2403-2308/1 | 2403-2218/2 |
| 2403-2309                             | 2403-2311 |      | H8—11H                                  | 2403-2309/1         | 2403-2311/1 |             |
| 2403-2312                             | 2403-2313 |      | H7—9H                                   | 2403-2312/1         | 2403-2313/1 | 2403-2223/2 |
| 2403-2314                             | 2403-2315 |      | H8—11H                                  | 2403-2314/1         | 2403-2315/1 |             |
| 2403-2316                             | 2403-2317 | 70×2 | H7—9H                                   | 2403-2316/1         | 2403-2317/1 | 2403-2245/2 |
| 2403-2318                             | 2403-2319 |      | H8—11H                                  | 2403-2318/1         | 2403-2319/1 |             |
| 2403-2321                             | 2403-2322 |      | H7—9H                                   | 2403-2321/1         | 2403-2322/1 |             |
| 2403-2323                             | 2403-2324 |      | H8—11H                                  | 2403-2323/1         | 2403-2324/1 |             |
| 2403-2325                             | 2403-2326 | 75×2 | H7—9H                                   | 2403-2325/1         | 2403-2326/1 |             |
| 2403-2327                             | 2403-2328 |      | H8—11H                                  | 2403-2327/1         | 2403-2328/1 |             |
| 2403-2329                             | 2403-2331 |      | H7—9H                                   | 2403-2329/1         | 2403-2331/1 |             |
| 2403-2332                             | 2403-2333 |      | H8—11H                                  | 2403-2332/1         | 2403-2333/1 |             |
| 2403-2334                             | 2403-2335 | 80×2 | H7—9H                                   | 2403-2334/1         | 2403-2335/1 |             |
| 2403-2336                             | 2403-2337 |      | H8—11H                                  | 2403-2336/1         | 2403-2337/1 |             |
| 2403-2338                             | 2403-2339 |      | H7—9H                                   | 2403-2338/1         | 2403-2339/1 |             |
| 2403-2341                             | 2403-2342 |      | H8—11H                                  | 2403-2341/1         | 2403-2342/1 |             |
| 2403-2343                             | 2403-2344 | 85×2 | H7—9H                                   | 2403-2343/1         | 2403-2344/1 | 2403-2263/2 |
| 2403-2345                             | 2403-2346 |      | H8—11H                                  | 2403-2345/1         | 2403-2346/1 |             |
| 2403-2347                             | 2403-2348 |      | H7—9H                                   | 2403-2347/1         | 2403-2348/1 |             |
| 2403-2349                             | 2403-2351 |      | H8—11H                                  | 2403-2349/1         | 2403-2351/1 |             |
| 2403-2352                             | 2403-2353 | 90×2 | H7—9H                                   | 2403-2352/1         | 2403-2353/1 |             |
| 2403-2354                             | 2403-2355 |      | H8—11H                                  | 2403-2354/1         | 2403-2355/1 |             |
| 2403-2356                             | 2403-2357 |      | H7—9H                                   | 2403-2356/1         | 2403-2357/1 |             |
| 2403-2358                             | 2403-2359 |      | H8—11H                                  | 2403-2358/1         | 2403-2359/1 |             |

Продолжение табл. 2

| Обозначение<br>протяжки<br>исполнения |           | $D \times m$ | Сочетание<br>полей<br>допусков<br><i>D и e</i> | Поз. 1              |             | Поз. 2      |
|---------------------------------------|-----------|--------------|------------------------------------------------|---------------------|-------------|-------------|
|                                       |           |              |                                                | Протяжка исполнения |             | Хвостовик   |
| 1                                     | 2         |              |                                                | 1                   | 2           |             |
|                                       |           |              |                                                | Количество          |             |             |
|                                       |           |              |                                                | 1                   | 1           |             |
|                                       |           |              |                                                | Обозначение         |             |             |
| 2403-2361                             | 2403-2362 | 95×2         | H7—9H                                          | 2403-2361/1         | 2403-2362/1 | 2403-2263/2 |
| 2403-2363                             | 2403-2364 |              | H8—11H                                         | 2403-2363/1         | 2403-2364/1 |             |
| 2403-2365                             | 2403-2366 |              | H7—9H                                          | 2403-2365/1         | 2403-2366/1 |             |
| 2403-2367                             | 2403-2368 |              | H8—11H                                         | 2403-2367/1         | 2403-2368/1 |             |
| 2403-2369                             | 2403-2371 | 100×2        | H7—9H                                          | 2403-2369/1         | 2403-2371/1 |             |
| 2403-2372                             | 2403-2373 |              | H8—11H                                         | 2403-2372/1         | 2403-2373/1 |             |
| 2403-2374                             | 2403-2375 |              | H7—9H                                          | 2403-2374/1         | 2403-2375/1 |             |
| 2403-2376                             | 2403-2377 |              | H8—11H                                         | 2403-2376/1         | 2403-2377/1 |             |
| 2403-2378                             | 2403-2379 | 52×2,5       | H7—9H                                          | 2403-2378/1         | 2403-2379/1 | 2403-2201/2 |
| 2403-2381                             | 2403-2382 |              | H8—11H                                         | 2403-2381/1         | 2403-2382/1 |             |
| 2403-2383                             | 2403-2384 |              | H7—9H                                          | 2403-2383/1         | 2403-2384/1 | 2403-2205/2 |
| 2403-2385                             | 2403-2386 |              | H8—11H                                         | 2403-2385/1         | 2403-2386/1 |             |
| 2403-2387                             | 2403-2388 | 55×2,5       | H7—9H                                          | 2403-2387/1         | 2403-2388/1 | 2403-2201/2 |
| 2403-2389                             | 2403-2391 |              | H8—11H                                         | 2403-2389/1         | 2403-2391/1 |             |
| 2403-2392                             | 2403-2393 |              | H7—9H                                          | 2403-2392/1         | 2403-2393/1 | 2403-2205/2 |
| 2403-2394                             | 2403-2395 |              | H8—11H                                         | 2403-2394/1         | 2403-2395/1 |             |
| 2403-2396                             | 2403-2397 | 60×2,5       | H7—9H                                          | 2403-2396/1         | 2403-2397/1 | 2403-2218/2 |
| 2403-2398                             | 2403-2399 |              | H8—11H                                         | 2403-2398/1         | 2403-2399/1 |             |
| 2403-2401                             | 2403-2402 |              | H7—9H                                          | 2403-2401/1         | 2403-2402/1 | 2403-2223/2 |
| 2403-2403                             | 2403-2404 |              | H8—11H                                         | 2403-2403/1         | 2403-2404/1 |             |
| 2403-2405                             | 2403-2406 | 65×2,5       | H7—9H                                          | 2403-2405/1         | 2403-2406/1 | 2403-2218/2 |
| 2403-2407                             | 2403-2408 |              | H8—11H                                         | 2403-2407/1         | 2403-2408/1 |             |
| 2403-2409                             | 2403-2411 |              | H7—9H                                          | 2403-2409/1         | 2403-2411/1 | 2403-2223/2 |
| 2403-2412                             | 2403-2413 |              | H8—11H                                         | 2403-2412/1         | 2403-2413/1 |             |
| 2403-2414                             | 2403-2415 | 70×2,5       | H7—9H                                          | 2403-2414/1         | 2403-2415/1 | 2403-2245/2 |
| 2403-2416                             | 2403-2417 |              | H8—11H                                         | 2403-2416/1         | 2403-2417/1 |             |
| 2403-2418                             | 2403-2419 |              | H7—9H                                          | 2403-2418/1         | 2403-2419/1 |             |
| 2403-2421                             | 2403-2422 |              | H8—11H                                         | 2403-2421/1         | 2403-2422/1 |             |
| 2403-2423                             | 2403-2424 | 75×2,5       | H7—9H                                          | 2403-2423/1         | 2403-2424/1 |             |
| 2403-2425                             | 2403-2426 |              | H8—11H                                         | 2403-2425/1         | 2403-2426/1 |             |
| 2403-2467                             | 2403-2428 |              | H7—9H                                          | 2403-2427/1         | 2403-2428/1 |             |
| 2403-2429                             | 2403-2431 |              | H8—11H                                         | 2403-2429/1         | 2403-2431/1 |             |
| 2403-2432                             | 2403-2433 | 80×2,5       | H7—9H                                          | 2403-2432/1         | 2403-2433/1 | 2403-2263/2 |
| 2403-2434                             | 2403-2435 |              | H8—11H                                         | 2403-2434/1         | 2403-2435/1 |             |
| 2403-2436                             | 2403-2437 |              | H7—9H                                          | 2403-2436/1         | 2403-2437/1 |             |
| 2403-2438                             | 2403-2439 |              | H8—11H                                         | 2403-2438/1         | 2403-2439/1 |             |



Продолжение табл. 2

| Обозначение<br>протяжки<br>исполнения |           | $D \times m$ | Сочетание<br>полей<br>допусков<br>$D$ и $e$ | Поз. 1              |             | Поз. 2      |
|---------------------------------------|-----------|--------------|---------------------------------------------|---------------------|-------------|-------------|
|                                       |           |              |                                             | Протяжка исполнения |             | Хвостовик   |
|                                       |           |              |                                             | 1                   | 2           |             |
|                                       |           |              |                                             | Количество          |             |             |
|                                       |           |              |                                             | 1                   |             | 1           |
|                                       |           |              |                                             | Обозначение         |             |             |
| 2403-2441                             | 2403-2442 | 85×2,5       | H7—9H                                       | 2403-2441/1         | 2403-2442/1 | 2403-2263/2 |
| 2403-2443                             | 2403-2444 |              | H8—11H                                      | 2403-2443/1         | 2403-2444/1 |             |
| 2403-2445                             | 2403-2446 |              | H7—9H                                       | 2403-2445/1         | 2403-2446/1 |             |
| 2403-2447                             | 2403-2448 |              | H8—11H                                      | 2403-2447/1         | 2403-2448/1 |             |
| 2403-2449                             | 2403-2451 | 90×2,5       | H7—9H                                       | 2403-2449/1         | 2403-2451/1 |             |
| 2403-2452                             | 2403-2453 |              | H8—11H                                      | 2403-2452/1         | 2403-2453/1 |             |
| 2403-2454                             | 2403-2455 | 95×2,5       | H7—9H                                       | 2403-2454/1         | 2403-2455/1 |             |
| 2403-2456                             | 2403-2457 |              | H8—11H                                      | 2403-2456/1         | 2403-2457/1 |             |
| 2403-2458                             | —         |              | H7—9H                                       | 2403-2458/1         | —           |             |
| 2403-2459                             | —         |              | H8—11H                                      | 2403-2459/1         | —           |             |
| 2403-2461                             | 2403-2462 | 100×2,5      | H7—9H                                       | 2403-2461/1         | 2403-2462/1 |             |
| 2403-2463                             | 2403-2464 |              | H8—11H                                      | 2403-2463/1         | 2403-2464/1 |             |
| 2403-2465                             | —         |              | H7—9H                                       | 2403-2465/1         | —           |             |
| 2403-2466                             | —         |              | H8—11H                                      | 2403-2466/1         | —           |             |
| 2403-2467                             | 2403-2468 | 105×2,5      | H7—9H                                       | 2403-2467/1         | 2403-2468/1 |             |
| 2403-2469                             | 2403-2471 |              | H8—11H                                      | 2403-2469/1         | 2403-2471/1 |             |
| 2403-2472                             | 2403-2473 | 110×2,5      | H7—9H                                       | 2403-2472/1         | 2403-2473/1 |             |
| 2403-2474                             | 2403-2475 |              | H8—11H                                      | 2403-2474/1         | 2403-2475/1 |             |
| 2403-2476                             | 2403-2477 | 120×2,5      | H7—9H                                       | 2403-2476/1         | 2403-2477/1 |             |
| 2403-2478                             | 2403-2479 |              | H8—11H                                      | 2403-2478/1         | 2403-2479/1 |             |

2403-2476/2

Таблица 3

Размеры, мм

| Обозначение<br>протяжки | D×L    | Соединение<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | W  | M                                     |                          |                                     |
|-------------------------|--------|------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|--------------------------|-------------------------------------|
|                         |        |                                          |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2201               |        | H7—9H                                    | 0,933          | 1,280          | 1,662          |                | 24,361         | 24,920         | 12,643         | 16,989         | 13,546 | 2,887          | 21 | 52,967                                | 52,889                   | 52,793                              |
| 2403-2202               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 54,022                                | —                        | 53,848                              |
| 2403-2203               | 50×1,5 | H8—11H                                   | 0,901          | 1,248          | 1,631          |                | 23,797         |                | 12,612         |                |        | 2,887          | 21 | 53,066                                | 52,988                   | 52,892                              |
| 2403-2204               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 54,116                                | —                        | 53,942                              |
| 2403-2205               |        | H7—9H                                    | 0,933          | 1,280          | 1,662          |                | 24,371         | 24,940         | 12,952         | 16,930         | 13,842 | 2,887          | 21 | 52,984                                | 52,880                   | 52,750                              |
| 2403-2206               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 54,046                                | —                        | 53,812                              |
| 2403-2207               |        | H8—11H                                   | 0,901          | 1,248          | 1,631          |                |                |                | 12,921         |                |        | 3,666          | —  | 55,186                                | —                        | 54,953                              |
| 2403-2208               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 54,142                                | —                        | 53,708                              |
| 2403-2209               |        | H7—9H                                    | 0,954          | 1,314          | 1,707          |                | 25,384         | 25,945         | 13,436         | 17,293         | 14,575 | 2,887          | 23 | 54,855                                | 54,771                   | 54,675                              |
| 2403-2211               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 55,908                                | —                        | 55,729                              |
| 2403-2212               |        | H8—11H                                   | 0,922          | 1,282          | 1,675          |                | 24,817         |                | 13,404         |                |        | 3,666          | —  | 57,026                                | —                        | 56,846                              |
| 2403-2213               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 54,953                                | —                        | 54,773                              |
| 2403-2214               |        | H7—9H                                    | 0,954          | 1,314          | 1,707          |                | 25,395         | 25,967         | 13,793         | 17,225         | 14,916 | 2,887          | 23 | 54,872                                | 54,760                   | 54,690                              |
| 2403-2215               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 55,925                                | —                        | 55,684                              |
| 2403-2216               |        | H8—11H                                   | 0,922          | 1,282          | 1,675          |                |                |                | 13,761         |                |        | 3,666          | —  | 57,059                                | —                        | 56,817                              |
| 2403-2217               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 54,972                                | —                        | 54,731                              |
| 2403-2218               |        | H7—9H                                    | 1,012          | 1,358          | 1,678          |                |                |                | 13,983         |                |        | 2,887          | 16 | 57,861                                | 57,805                   | 57,704                              |
| 2403-2219               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 58,905                                | —                        | 58,748                              |
| 2403-2221               | 55×1,5 | H8—11H                                   | 0,977          | 1,323          | 1,642          | 26,416         | 26,950         | 23,404         | 13,947         | 18,397         | 15,250 | 2,887          | 16 | 60,028                                | 57,913                   | 57,812                              |
| 2403-2222               |        |                                          |                |                |                |                |                |                |                |                |        |                |    | 59,009                                | —                        | 58,852                              |
|                         |        |                                          |                |                |                |                |                |                |                |                |        | 3,666          | —  | 60,129                                | —                        | 59,972                              |



Продолжение табл. 3

| Обозначение<br>проточки | D × m    | Сочетание<br>долей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | Z  | M                                     |                          |                                     |
|-------------------------|----------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|--------------------------|-------------------------------------|
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2223<br>2403-2224  | 55 × 1,5 | H7—9H                                   | 1,012          | 1,358          | 1,678          | 26,416         | 26,957         | 27,417         | 14,232         | 18,348         | 15,488 | 2,887          | 16 | 57,869                                | 57,797                   | 57,667                              |
| 2403-2225<br>2403-2226  |          | H8—11H                                  | 0,977          | 1,323          | 1,642          |                |                |                | 14,197         |                |        | 3,259          |    | 58,918                                |                          | 58,716                              |
| 2403-2227<br>2403-2228  |          | H7—9H                                   | 1,025          | 1,378          | 1,701          | 28,917         | 29,452         | 29,907         | 15,312         | 19,880         | 16,905 | 3,666          |    | 60,048                                | 57,906                   | 59,845                              |
| 2403-2229<br>2403-2231  | 60 × 1,5 | H8—11H                                  | 0,989          | 1,342          | 1,666          |                |                |                | 15,277         |                |        | 2,887          | 16 | 57,978                                | 62,812                   | 62,711                              |
| 2403-2232<br>2403-2233  |          | H7—9H                                   | 1,028          | 1,378          | 1,705          |                |                |                | 15,791         |                |        | 3,259          |    | 59,024                                |                          | 63,751                              |
| 2403-2234<br>2403-2235  |          | H8—11H                                  | 0,992          | 1,342          | 1,669          | 28,922         | 29,463         | 29,934         | 15,755         | 19,779         | 17,365 | 3,666          |    | 60,149                                |                          | 64,872                              |
| 2403-2236<br>2403-2237  | 65 × 1,5 | H7—9H                                   | 0,957          | 1,283          | 1,633          |                |                |                | 16,047         |                |        | 2,887          | 18 | 62,868                                | 62,799                   | 62,660                              |
| 2403-2238<br>2403-2239  |          | H8—11H                                  | 0,922          | 1,248          | 1,599          |                |                |                | 16,012         |                |        | 3,259          |    | 63,908                                |                          | 63,855                              |
| 2403-2241<br>2403-2242  |          | H7—9H                                   | 1,020          | 1,322          | 1,644          | 31,345         | 31,884         | 32,418         | 16,782         | 22,571         | 17,456 | 3,666          |    | 65,029                                |                          | 64,973                              |
| 2403-2243<br>2403-2244  | 65 × 1,5 | H8—11H                                  | 0,985          | 1,287          | 1,609          |                |                |                | 16,747         |                |        | 2,887          | 18 | 62,990                                | 62,910                   | 62,770                              |
|                         |          | H7—9H                                   | 1,020          | 1,322          | 1,644          |                |                |                | 16,012         |                |        | 3,259          |    | 64,035                                |                          | 63,815                              |
|                         |          | H8—11H                                  | 0,957          | 1,283          | 1,633          | 31,345         | 31,884         | 32,418         | 16,012         | 22,571         | 17,456 | 3,666          |    | 65,163                                |                          | 64,942                              |
|                         |          | H7—9H                                   | 1,020          | 1,322          | 1,644          |                |                |                | 16,782         |                |        | 2,887          | 16 | 67,996                                | 67,933                   | 67,832                              |
|                         |          | H8—11H                                  | 0,922          | 1,248          | 1,599          |                |                |                | 16,012         |                |        | 3,259          |    | 69,064                                |                          | 68,900                              |
|                         |          | H7—9H                                   | 1,020          | 1,322          | 1,644          | 31,345         | 31,884         | 32,418         | 16,782         | 22,571         | 17,456 | 3,666          |    | 70,213                                |                          | 70,049                              |
|                         |          | H8—11H                                  | 0,922          | 1,248          | 1,599          |                |                |                | 16,012         |                |        | 2,887          | 16 | 68,110                                | 68,047                   | 67,946                              |
|                         |          | H7—9H                                   | 1,020          | 1,322          | 1,644          |                |                |                | 16,782         |                |        | 3,259          |    | 69,173                                |                          | 69,010                              |
|                         |          | H8—11H                                  | 0,922          | 1,248          | 1,599          |                |                |                | 16,012         |                |        | 3,666          |    | 70,320                                |                          | 70,156                              |
|                         |          | H7—9H                                   | 1,020          | 1,322          | 1,644          | 31,345         | 31,884         | 32,418         | 16,782         | 22,571         | 17,456 | 2,887          | 20 | 68,005                                | 67,915                   | 67,785                              |
|                         |          | H8—11H                                  | 0,922          | 1,248          | 1,599          |                |                |                | 16,012         |                |        | 3,259          |    | 69,085                                |                          | 68,865                              |
|                         |          | H7—9H                                   | 1,020          | 1,322          | 1,644          | 31,345         | 31,884         | 32,418         | 16,782         | 22,571         | 17,456 | 3,666          |    | 70,248                                |                          | 70,028                              |
|                         |          | H8—11H                                  | 0,922          | 1,248          | 1,599          |                |                |                | 16,012         |                |        | 2,887          | 20 | 68,120                                | 68,030                   | 67,899                              |
|                         |          | H7—9H                                   | 1,020          | 1,322          | 1,644          | 31,345         | 31,884         | 32,418         | 16,782         | 22,571         | 17,456 | 3,259          |    | 68,976                                |                          | 68,976                              |
|                         |          | H8—11H                                  | 0,922          | 1,248          | 1,599          |                |                |                | 16,012         |                |        | 3,666          |    | 70,355                                |                          | 70,135                              |

Продолжение табл. 3

## Размеры, мм

| Обозначение<br>протяжки | D × t    | Сочетание<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | X <sub>4</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | W  | M                                     |                          |                                     |
|-------------------------|----------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|--------------------------|-------------------------------------|
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>кальбрующем<br>зубе |
| 2403-2245<br>2403-2246  |          | H7-9H                                   | 0,992          | 1,304          | 1,636          |                |                | 34,395         | 34,896         | 17,522         | 24,001         | 19,263 | 2,887          | 17 | 72,912                                | 72,849                   | 72,784                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 73,974                                | —                        | 73,810                              |
| 2403-2247<br>2403-2248  | 70 × 1,5 | H8-11H                                  | 0,957          | 1,269          | 1,601          |                | 33,890         |                |                | 17,487         |                |        | 2,887          | 17 | 73,023                                | 72,960                   | 72,860                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 74,082                                | —                        | 73,918                              |
| 2403-2249<br>2403-2251  | 70 × 1,5 | H7-9H                                   | 0,992          | 1,304          | 1,636          |                |                |                |                | 17,868         |                |        | 2,887          | 17 | 72,923                                | 72,842                   | 72,711                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 73,991                                | —                        | 73,780                              |
| 2403-2252<br>2403-2253  | 70 × 1,5 | H8-11H                                  | 0,957          | 1,269          | 1,601          |                |                | 34,402         | 34,910         | 17,833         | 23,932         | 19,595 | 3,666          | —  | 75,143                                | —                        | 74,932                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 73,035                                | 72,954                   | 72,824                              |
| 2403-2254<br>2403-2255  | 70 × 1,5 | H7-9H                                   | 0,958          | 1,320          | 1,656          |                | 36,322         |                | 37,401         | 18,787         |                |        | 2,887          | 17 | 77,920                                | 77,850                   | 77,749                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 78,977                                | —                        | 78,806                              |
| 2403-2256<br>2403-2257  | 75 × 1,5 | H8-11H                                  | 0,922          | 1,284          | 1,621          |                |                | 36,899         | 37,401         | 18,751         | 25,538         | 20,837 | 3,666          | —  | 80,118                                | —                        | 79,947                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 78,030                                | 77,960                   | 77,859                              |
| 2403-2258<br>2403-2259  | 75 × 1,5 | H7-9H                                   | 1,001          | 1,353          | 1,684          |                |                |                |                | 19,538         |                |        | 2,887          | 19 | 77,930                                | 77,840                   | 77,700                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 78,998                                | —                        | 78,768                              |
| 2403-2261<br>2403-2262  | 75 × 1,5 | H8-11H                                  | 0,966          | 1,318          | 1,649          |                | 36,391         | 36,961         | 37,464         | 19,502         | 25,339         | 21,581 | 3,666          | —  | 80,151                                | —                        | 79,922                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 78,043                                | 77,953                   | 77,814                              |
| 2403-2263<br>2403-2264  | 75 × 1,5 | H7-9H                                   | 0,985          | 1,286          | 1,605          |                |                |                |                | 19,674         |                |        | 2,887          | 18 | 83,012                                | 82,942                   | 82,848                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 84,093                                | —                        | 83,929                              |
| 2403-2265<br>2403-2266  | 80 × 1,5 | H8-11H                                  | 0,950          | 1,251          | 1,570          |                | 38,893         | 39,399         | 39,902         | 19,639         | 28,106         | 21,579 | 2,887          | 18 | 83,127                                | 83,057                   | 82,963                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 84,204                                | —                        | 84,040                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |                |        |                |    | 85,367                                | —                        | 85,203                              |



Продолжение табл. 3

| Обозначение<br>протяжки | D×m    | Сочетание<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | W  | M                                     |                          |                                             |
|-------------------------|--------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|--------------------------|---------------------------------------------|
|                         |        |                                         |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>зубе<br>калнбрующем<br>зубе |
| 2403-2267<br>2403-2268  | 80×1,5 | H7—9H                                   | 0,985          | 1,286          | 1,605          | 38,893         | 39,406         | 39,916         | 20,070         | 28,028         | 21,961 | 2,887          | 18 | 83,024                                | 82,934                   | 82,813                                      |
| 2403-2269<br>2403-2271  |        | H8—11H                                  | 0,950          | 1,251          | 1,570          |                |                |                |                |                |        | 3,259          |    | 84 111                                |                          | 83 900                                      |
| 2403-2272<br>2403-2273  |        | H7—9H                                   | 1,231          | 1,713          | 2,221          |                |                |                | 12,619         |                |        | 4,141          | 23 | 53,443                                | 53,359                   | 53,239                                      |
| 2403-2274<br>2403-2275  | 50×2   | H8—11H                                  | 1,196          | 1,678          | 2,186          | 23,373         |                | 24,881         | 12,584         | 16,977         | 13,061 | 3,666          | 23 | 53,553                                | 53,469                   | 53,349                                      |
| 2403-2276<br>2403-2277  |        | H7—9H                                   | 1,231          | 1,706          | 2,199          |                |                |                |                |                |        | 4,141          |    | 54,899                                |                          | 54,695                                      |
| 2403-2278<br>2403-2279  |        | H8—11H                                  | 1,197          | 1,672          | 2,164          |                |                | 24,861         | 12,718         | 16,968         | 13,151 | 4,773          |    | 56,661                                |                          | 56,440                                      |
| 2403-2281<br>2403-2282  | 52×2   | H7—9H                                   | 1,276          | 1,831          | 2,403          |                |                |                | 13,755         |                |        | 3,666          | 20 | 53,561                                | 53,465                   | 53,320                                      |
| 2403-2283<br>2403-2284  |        | H8—11H                                  | 1,240          | 1,794          | 2,367          | 24,372         |                | 25,868         | 13,718         | 16,149         | 14,944 | 4,141          |    | 54,911                                |                          | 54,670                                      |
| 2403-2285<br>2403-2286  |        | H7—9H                                   | 1,299          | 1,808          | 2,374          |                |                |                |                |                |        | 4,773          |    | 56,661                                |                          | 56,419                                      |
| 2403-2287<br>2403-2288  |        | H8—11H                                  | 1,263          | 1,772          | 2,337          | 24,405         |                | 25,849         | 13,937         | 16,120         | 15,112 | 4,773          | 22 | 58,158                                | 56,251                   | 56,131                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,455          |    | 59,943                                |                          | 59,739                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,091          | 23 | 56,335                                | 56,351                   | 56,231                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,773          |    | 58,158                                |                          | 57,954                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,455          |    | 59,943                                |                          | 59,739                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,091          | 22 | 56,435                                | 56,351                   | 56,231                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,773          |    | 58,252                                |                          | 58,048                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,455          |    | 60,033                                |                          | 59,829                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,091          | 22 | 56,344                                | 56,240                   | 56,087                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,773          |    | 58,174                                |                          | 57,917                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,455          |    | 59,966                                |                          | 59,708                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,091          | 22 | 56,444                                | 56,340                   | 56,187                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,773          |    | 58,269                                |                          | 58,011                                      |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,455          |    | 60,056                                |                          | 59,798                                      |

## Размеры, мм

| Обозначение<br>протяжки | D × t  | Сочетание<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | Ш  | M                                     |                          |                                     |
|-------------------------|--------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|--------------------------|-------------------------------------|
|                         |        |                                         |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>Ш | На последнем<br>калибрующем<br>зубе |
| 2403-2289<br>2403-2291  |        | H7—9H                                   | 1,259          | 1,754          | 2,251          |                | 26,662         | 27,334         | 14,092         | 18,060         | 15,041 | 3,666<br>4,406 | 19 | 58,348                                | 58,271                   | 58,142                              |
| 2403-2292<br>2403-2293  |        | H8—11H                                  | 1,218          | 1,714          | 2,210          |                |                |                | 14,051         |                |        | 5,176          | —  | 62,479                                | —                        | 62,273                              |
| 2403-2294<br>2403-2295  | 55 × 2 | H7—9H                                   | 1,259          | 1,754          | 2,251          | 25,904         |                |                | 14,336         |                |        | 3,666<br>4,406 | 19 | 58,471                                | 58,394                   | 58,265                              |
| 2403-2296<br>2403-2297  |        | H8—11H                                  | 1,218          | 1,713          | 2,210          |                | 26,672         | 27,353         | 14,295         | 18,015         | 15,272 | 5,176          | —  | 62,511                                | —                        | 62,245                              |
| 2403-2998<br>2403-2999  |        | H7—9H                                   | 1,287          | 1,808          | 2,322          |                |                |                | 15,584         |                |        | 4,091          | 20 | 64,397                                | 64,313                   | 64,191                              |
| 2403-2301<br>2403-2302  | 60 × 2 | H8—11H                                  | 1,246          | 1,766          | 2,281          | 28,406         | 29,164         | 29,836         | 15,543         | 19,148         | 17,033 | 5,176          | —  | 65,936                                | —                        | 65,730                              |
| 2403-2303<br>2403-2304  |        | H7—9H                                   | 1,333          | 1,833          | 2,330          |                |                |                | 16,079         |                |        | 4,091<br>4,659 | 23 | 64,413                                | 64,296                   | 64,129                              |
| 2403-2305<br>2403-2306  |        | H8—11H                                  | 1,292          | 1,792          | 2,289          | 28,474         | 29,212         | 29,873         | 16,037         | 19,027         | 17,512 | 5,176          | —  | 65,964                                | —                        | 65,581                              |
| 2403-2307<br>2403-2308  |        | H7—9H                                   | 1,260          | 1,745          | 2,225          |                |                |                | 16,435         |                |        | 4,091<br>4,659 | 23 | 64,533                                | 64,416                   | 64,249                              |
| 2403-2309<br>2403-2311  | 65 × 2 | H8—11H                                  | 1,219          | 1,704          | 2,184          | 30,909         | 31,672         | 32,350         | 16,394         | 21,787         | 17,706 | 5,176          | —  | 66,079                                | —                        | 65,796                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 3,666<br>4,406 | 18 | 67,422                                | 68,222                   | 68,086                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,176          | —  | 70,369                                | —                        | 70,163                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 3,666          | 18 | 72,475                                | —                        | 72,269                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 4,406          | —  | 68,418                                | 68,348                   | 68,212                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,176          | —  | 70,488                                | —                        | 70,282                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |        | 5,176          | —  | 72,587                                | —                        | 72,381                              |



Продолжение табл. 3

Размеры, мм

| Обозначение<br>протяжки | D × l  | Сочетание<br>полей<br>допусков<br>D и d | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | X <sub>4</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R     | d <sub>p</sub> | W      | M                                     |                          |                                     |
|-------------------------|--------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------|----------------|--------|---------------------------------------|--------------------------|-------------------------------------|
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2312<br>2403-2313  | 65 × 2 | H7-9H                                   | 1,315          | 1,786          | 2,258          | 30,997         | 31,749         | 32,430         | 17,151         | 21,601         | 18,413         | 3,666 | 23             | 68,304 | 68,196                                | 68,012                   |                                     |
| 2403-2314<br>2403-2315  |        | H8-11H                                  | 1,274          | 1,745          | 2,217          |                |                |                |                |                |                |       |                |        |                                       |                          | 70,112                              |
| 2403-2316<br>2403-2317  | 70 × 2 | H7-9H                                   | 1,272          | 1,698          | 2,165          | 33,451         | 34,168         | 34,878         | 17,328         | 24,397         | 18,432         | 3,666 | 21             | 73,477 | 73,393                                | 73,271                   |                                     |
| 2403-2318<br>2403-2319  |        | H8-11H                                  | 1,232          | 1,658          | 2,125          |                |                |                |                |                |                |       |                |        |                                       |                          | 74,854                              |
| 2403-2321<br>2403-2322  | 75 × 2 | H7-9H                                   | 1,272          | 1,698          | 2,165          | 35,884         | 34,178         | 34,898         | 17,666         | 24,334         | 18,758         | 3,666 | 21             | 73,491 | 73,383                                | 73,225                   |                                     |
| 2403-2323<br>2403-2324  |        | H8-11H                                  | 1,232          | 1,658          | 2,125          |                |                |                |                |                |                |       |                |        |                                       |                          | 74,611                              |
| 2403-2325<br>2403-2326  | 75 × 2 | H7-9H                                   | 1,242          | 1,732          | 2,217          | 35,918         | 36,673         | 37,383         | 18,832         | 25,514         | 20,419         | 3,666 | 20             | 78,401 | 78,317                                | 78,188                   |                                     |
| 2403-2327<br>2403-2328  |        | H8-11H                                  | 1,201          | 1,691          | 2,176          |                |                |                |                |                |                |       |                |        |                                       |                          | 79,543                              |
| 2403-2329<br>2403-2331  | 75 × 2 | H7-9H                                   | 1,263          | 1,718          | 2,213          | 36,664         | 37,403         | 19,341         | 18,791         | 25,407         | 20,912         | 3,666 | 21             | 78,416 | 78,308                                | 78,123                   |                                     |
| 2403-2332<br>2403-2333  |        | H8-11H                                  | 1,223          | 1,678          | 2,172          |                |                |                |                |                |                |       |                |        |                                       |                          | 79,668                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 81,393                              |

## Размеры, мм

| Обозначение<br>протяжки | D × l  | Сочетание<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | X <sub>4</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R     | d <sub>p</sub> | W      | M                                     |                          |                                     |
|-------------------------|--------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------|----------------|--------|---------------------------------------|--------------------------|-------------------------------------|
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2334<br>2403-2335  |        | H7-9H                                   | 1,306          | 1,772          | 2,272          | 38,453         | 39,170         | 39,880         | 20,417         | 26,558         | 22,510         | 3,666 | 19             | 83,295 | 83,225                                | 83,089                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 85,371                              |
| 2403-2336<br>2403-2337  | 80 × 2 | H8-11H                                  | 1,265          | 1,731          | 2,231          |                |                |                | 20,375         |                |                | 3,666 | 19             | 83,421 | 83,351                                | 83,215                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 85,491                              |
| 2403-2338<br>2403-2339  |        | H7-9H                                   | 1,327          | 1,779          | 2,261          | 38,487         | 39,185         | 39,877         | 20,696         | 26,496         | 22,779         | 3,666 | 18             | 83,298 | 83,217                                | 83,042                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 85,382                              |
| 2403-2341<br>2403-2342  |        | H8-11H                                  | 1,287          | 1,737          | 2,220          |                |                |                | 20,655         |                |                | 3,666 | 18             | 88,426 | 83,345                                | 83,169                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 85,503                              |
| 2403-2343<br>2403-2344  |        | H7-9H                                   | 1,285          | 1,727          | 2,202          |                | 41,674         | 42,388         | 21,234         | 29,195         | 23,158         | 3,666 | 20             | 88,348 | 88,271                                | 88,142                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 89,713                              |
| 2403-2345<br>2403-2346  | 85 × 2 | H8-11H                                  | 1,244          | 1,686          | 2,161          | 40,955         |                |                | 21,193         |                |                | 3,666 | 20             | 89,839 | 88,402                                | 88,273                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 89,633                              |
| 2403-2347<br>2403-2348  |        | H7-9H                                   | 1,285          | 1,727          | 2,202          |                | 41,684         | 42,408         | 21,650         | 29,114         | 23,557         | 3,666 | 21             | 88,361 | 88,262                                | 88,096                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 89,734                              |
| 2403-2349<br>2403-2351  |        | H8-11H                                  | 1,244          | 1,686          | 2,161          |                |                |                | 21,609         |                |                | 3,666 | 21             | 88,493 | 88,394                                | 88,228                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 89,861                              |
| 2403-2352<br>2403-2353  |        | H7-9H                                   | 1,235          | 1,697          | 2,149          |                | 44,181         | 44,897         | 21,965         | 31,865         | 23,717         | 3,666 | 22             | 93,499 | 93,408                                | 93,286                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 94,892                              |
| 2403-2354<br>2403-2355  | 90 × 2 | H8-11H                                  | 1,195          | 1,656          | 2,109          | 43,387         | 44,181         | 44,897         | 21,924         |                |                | 3,666 | 22             | 93,633 | 93,542                                | 93,420                   |                                     |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          | 95,022                              |
|                         |        |                                         |                |                |                |                |                |                |                |                |                |       |                |        |                                       |                          |                                     |



Продолжение табл. 3

Размеры, мм

| Обозначение<br>протяжки | D × m   | Сочетание<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | X <sub>4</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub>          | W  | M                                      |                          |                                     |
|-------------------------|---------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|-------------------------|----|----------------------------------------|--------------------------|-------------------------------------|
|                         |         |                                         |                |                |                |                |                |                |                |                |                |        |                         |    | На плунцеров<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2356<br>2403-2357  | 90 × 2  | H7—9H                                   | 1,255          | 1,684          | 2,146          |                | 43,422         | 44,172         | 44,918         | 22,597         | 31,726         | 24,336 | 3,666<br>4,141<br>4,773 | 22 | 93,516<br>94,921<br>96,755             | 93,399                   | 93,224<br>94,628<br>96,463          |
| 2403-2358<br>2403-2359  |         | H8—11H                                  | 1,215          | 1,644          | 2,106          |                |                |                |                | 22,556         |                |        | 3,666<br>4,141<br>4,773 | 22 | 93,653<br>95,053                       | 93,536                   | 93,361<br>94,761                    |
| 2403-2361<br>2403-2362  | 95 × 2  | H7—9H                                   | 1,285          | 1,723          | 2,190          |                | 45,957         | 46,678         | 47,394         | 23,593         | 32,906         | 25,846 | 3,666<br>4,141<br>4,773 | 20 | 98,424<br>99,797                       | 98,347                   | 98,218<br>99,591                    |
| 2403-2363<br>2403-2364  |         | H8—11H                                  | 1,244          | 1,682          | 2,150          |                |                |                |                | 23,553         |                |        | 3,666<br>4,141<br>4,773 | 20 | 98,555<br>99,925                       | 98,478                   | 98,349<br>99,719                    |
| 2403-2365<br>2403-2366  | 95 × 2  | H7—9H                                   | 1,315          | 1,768          | 2,211          |                | 46,006         | 46,766         | 47,457         | 24,496         | 32,691         | 26,733 | 3,666<br>4,141<br>4,773 | 23 | 98,439<br>99,827                       | 98,331                   | 98,146<br>99,534                    |
| 2403-2367<br>2403-2368  |         | H8—11H                                  | 1,275          | 1,728          | 2,171          |                |                |                |                | 24,455         |                |        | 3,666<br>4,141<br>4,773 | 23 | 98,574<br>99,958                       | 98,466                   | 98,281<br>99,665                    |
| 2403-2369<br>2403-2371  | 100 × 2 | H7—9H                                   | 1,280          | 1,741          | 2,232          |                | 48,432         | 49,163         | 49,897         | 25,260         | 33,973         | 27,997 | 3,666<br>4,141<br>4,773 | 20 | 103,347<br>104,479                     | 103,270                  | 103,120<br>104,479                  |
| 2403-2372<br>2403-2373  |         | H8—11H                                  | 1,239          | 1,701          | 2,191          |                |                |                |                | 25,219         |                |        | 3,666<br>4,141<br>4,773 | 20 | 103,477<br>104,833                     | 103,400                  | 103,250<br>104,606                  |
| 2403-2374<br>2403-2375  | 100 × 2 | H7—9H                                   | 1,296          | 1,761          | 2,257          |                | 48,448         | 49,207         | 49,962         | 26,003         | 33,822         | 28,711 | 3,666<br>4,141<br>4,773 | 22 | 103,362<br>104,431                     | 103,254                  | 103,060<br>104,431                  |
| 2403-2376<br>2403-2377  |         | H8—11H                                  | 1,255          | 1,721          | 2,217          |                |                |                |                | 25,962         |                |        | 3,666<br>4,141<br>4,773 | 22 | 103,494<br>104,862                     | 103,386                  | 103,193<br>104,560                  |
|                         |         |                                         |                |                |                |                |                |                |                |                |                |        |                         |    |                                        |                          | 106,656<br>106,354                  |

## Размеры, мм

| Обозначение<br>протяжки | $D \times m$ | Сочетание<br>полей<br>допусков<br>$D$ и $e$ | $X_1$ | $X_2$ | $X_3$ | $Y_1$  | $Y_2$  | $Y_3$  | $X_0$  | $Y_0$  | $R$    | $d_p$                   | $W$ | М                                     |                            |                                     |
|-------------------------|--------------|---------------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------------------------|-----|---------------------------------------|----------------------------|-------------------------------------|
|                         |              |                                             |       |       |       |        |        |        |        |        |        |                         |     | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>$W$ | На последнем<br>калибрующем<br>зубе |
| 2403-2378<br>2403-2379  |              | H7—9H                                       | 1,558 | 2,293 | 3,090 | 23,909 | 24,926 | 25,854 | 13,953 | 15,722 | 14,854 | 5,176<br>6,212<br>7,000 | 28  | 57,375<br>60,090<br>62,105            | 57,267<br>—<br>—           | 57,130<br>59,844<br>61,860          |
| 2403-2381<br>2403-2382  |              | H8—11H                                      | 1,522 | 2,257 | 3,054 |        |        |        | 13,917 |        |        | 5,176<br>6,212<br>7,000 | 28  | 57,471<br>60,178<br>62,189            | 57,363<br>—<br>—           | 57,226<br>59,933<br>61,944          |
| 2403-2383<br>2403-2384  | 52×2,5       | H7—9H                                       | 1,565 | 2,270 | 3,082 |        |        |        | 14,061 |        |        | 5,176<br>6,212<br>7,000 | 24  | 57,384<br>60,105<br>62,125            | 57,265<br>—<br>—           | 57,096<br>59,817<br>61,836          |
| 2403-2385<br>2403-2386  |              | H8—11H                                      | 1,529 | 2,234 | 3,046 | 23,919 | 24,903 | 25,858 | 14,025 | 15,710 | 14,951 | 5,176<br>6,212<br>7,000 | 24  | 57,481<br>60,194<br>62,209            | 57,361<br>—<br>—           | 57,192<br>59,906<br>61,921          |
| 2403-2387<br>2403-2388  |              | H7—9H                                       | 1,558 | 2,269 | 3,081 |        |        |        | 14,669 |        |        | 5,176<br>6,212<br>7,000 | 22  | 60,474<br>63,186<br>65,202            | 60,376<br>—<br>—           | 60,226<br>62,938<br>64,954          |
| 2403-2389<br>2403-2391  |              | H8—11H                                      | 1,522 | 2,233 | 3,044 | 25,382 | 26,353 | 27,297 | 14,632 | 16,522 | 15,823 | 5,176<br>6,212<br>7,000 | 22  | 60,570<br>63,274<br>65,286            | 60,472<br>—<br>—           | 60,322<br>63,026<br>65,038          |
| 2403-2392<br>2403-2393  | 55×2,5       | H7—9H                                       | 1,579 | 2,328 | 3,134 |        |        |        | 15,104 |        |        | 5,176<br>6,212<br>7,000 | 27  | 60,499<br>63,228<br>65,256            | 60,363<br>—<br>—           | 60,169<br>62,898<br>64,927          |
| 2403-2394<br>2403-2395  |              | H8—11H                                      | 1,542 | 2,292 | 3,097 | 25,411 | 26,445 | 27,392 | 15,068 | 16,397 | 16,254 | 5,176<br>6,212<br>7,000 | 27  | 60,596<br>63,318<br>65,343            | 60,460<br>—<br>—           | 60,266<br>62,989<br>65,013          |
| 2403-2396<br>2403-2397  |              | H7—9H                                       | 1,601 | 2,306 | 3,038 |        |        |        | 15,931 |        |        | 5,176<br>6,212<br>7,000 | 22  | 65,528<br>68,262<br>70,296            | 65,437<br>—<br>—           | 65,287<br>68,021<br>70,055          |
| 2403-2398<br>2403-2399  | 60×2,5       | H8—11H                                      | 1,559 | 2,264 | 2,996 | 27,959 | 28,934 | 29,813 | 15,889 | 18,332 | 17,263 | 5,176<br>6,212<br>7,000 | 22  | 65,640<br>68,367<br>70,396            | 65,549<br>—<br>—           | 65,399<br>68,126<br>70,155          |



Продолжение табл. 3

| Обозначение<br>протяжки | D × m    | Сочетание<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | W      | M                                     |                          |                                     |
|-------------------------|----------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|--------|---------------------------------------|--------------------------|-------------------------------------|
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |        | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2401<br>2403-2402  | 60 × 2,5 | H7—9H                                   | 1,625          | 2,337          | 3,081          | 27,993         | 28,989         | 29,892         | 16,329         | 18,229         | 17,650 | 5,176          | 24     | 65,547                                | 65,421                   | 65,228                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |        |                                       |                          |                                     |
| 2403-2403<br>2403-2404  |          | H8—11H                                  | 1,583          | 2,295          | 3,039          |                |                |                |                |                |        | 5,176          | 24     | 65,662                                | 65,536                   | 65,342                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                | 6,212  |                                       | 68,404                   |                                     |
| 2403-2405<br>2403-2406  |          | H7—9H                                   | 1,549          | 2,236          | 3,007          |                |                |                |                |                |        | 7,000          |        | 70,445                                |                          | 70,126                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                | 5,176  | 23                                    | 70,579                   | 70,474                              |
| 2403-2407<br>2403-2408  | 65 × 2,5 | H8—11H                                  | 1,507          | 2,194          | 2,965          | 30,391         | 31,371         | 32,331         | 17,004         | 20,262         | 18,514 | 7,000          |        | 75,385                                |                          | 75,137                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |        |                                       |                          |                                     |
| 2403-2409<br>2403-2411  |          | H7—9H                                   | 1,608          | 2,292          | 3,057          |                |                |                |                |                |        | 7,000          |        | 75,487                                |                          | 75,239                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                | 5,176  | 29                                    | 70,608                   | 70,446                              |
| 2403-2412<br>2403-2413  |          | H8—11H                                  | 1,567          | 2,250          | 3,015          | 30,478         | 31,468         | 32,440         | 17,769         | 20,060         | 19,228 | 7,000          |        | 75,460                                |                          | 75,096                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |        |                                       |                          |                                     |
| 2403-2414<br>2403-2415  |          | H7—9H                                   | 1,573          | 2,258          | 3,021          |                |                |                |                |                |        | 7,000          |        | 75,565                                |                          | 75,201                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                | 5,176  | 25                                    | 75,615                   | 75,503                              |
| 2403-2416<br>2403-2417  | 70 × 2,5 | H8—11H                                  | 1,531          | 2,216          | 2,980          | 32,932         | 33,924         | 34,897         | 18,379         | 22,059         | 20,017 | 7,000          |        | 80,461                                |                          | 80,206                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |        |                                       |                          |                                     |
| 2403-2418<br>2403-2419  |          | H7—9H                                   | 1,596          | 2,280          | 2,980          |                |                |                |                |                |        | 7,000          |        | 80,565                                |                          | 80,310                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                | 5,176  | 24                                    | 75,626                   | 75,491                              |
| 2403-2421<br>2403-2422  |          | H8—11H                                  | 1,554          | 2,238          | 2,939          | 32,966         | 33,962         | 34,865         | 18,618         | 22,007         | 20,245 | 7,000          |        | 80,489                                |                          | 80,178                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |        |                                       |                          |                                     |
|                         |          |                                         |                |                |                |                |                |                |                |                | 7,000  |                | 80,524 |                                       | 80,284                   |                                     |

## Размеры, мм

| Обозначение<br>протяжки | D × m    | Сочетание<br>полей<br>допусков<br>D в e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | W  | M                                     |                          |                                     |
|-------------------------|----------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|--------------------------|-------------------------------------|
|                         |          |                                         |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На<br>зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2423<br>2403-2424  | 75 × 2,5 | H7—9H                                   | 1,571          | 2,247          | 2,998          | 35,435         | 36,430         | 37,408         | 19,581         | 23,913         | 21,380 | 5,176          | 25 | 80,648                                | 80,536                   | 80,393                              |
| 2403-2425<br>2403-2426  |          | H8—11H                                  | 1,529          | 2,206          | 2,956          |                |                |                |                |                |        | 6,212          | —  | 83,443                                | —                        | 83,188                              |
|                         |          | H7—9H                                   | 1,591          | 2,266          | 2,961          |                |                |                |                |                |        | 7,000          | —  | 85,526                                | —                        | 85,271                              |
| 2403-2427<br>2403-2428  | 80 × 2,5 | H7—9H                                   | 1,549          | 2,224          | 2,920          | 35,464         | 36,472         | 37,398         | 20,055         | 23,826         | 21,826 | 5,176          | 27 | 80,674                                | 80,521                   | 80,328                              |
| 2403-2429<br>2403-2431  |          | H8—11H                                  | 1,591          | 2,266          | 2,961          |                |                |                |                |                |        | 6,212          | —  | 83,489                                | —                        | 83,143                              |
|                         |          | H7—9H                                   | 1,549          | 2,224          | 2,920          |                |                |                |                |                |        | 7,000          | —  | 85,585                                | —                        | 85,239                              |
| 2403-2432<br>2403-2433  | 80 × 2,5 | H7—9H                                   | 1,569          | 2,238          | 2,977          | 37,938         | 38,935         | 39,917         | 20,013         | 25,780         | 22,719 | 5,176          | 25 | 85,677                                | 85,565                   | 85,422                              |
| 2403-2434<br>2403-2435  |          | H8—11H                                  | 1,528          | 2,197          | 2,935          |                |                |                |                |                |        | 6,212          | —  | 88,489                                | —                        | 88,234                              |
|                         |          | H7—9H                                   | 1,569          | 2,238          | 2,977          |                |                |                |                |                |        | 7,000          | —  | 90,584                                | —                        | 90,329                              |
| 2403-2436<br>2403-2437  | 85 × 2,5 | H7—9H                                   | 1,641          | 2,260          | 2,937          | 38,045         | 38,971         | 39,886         | 20,720         | 25,678         | 23,108 | 5,176          | 24 | 85,685                                | 85,552                   | 85,366                              |
| 2403-2438<br>2403-2439  |          | H8—11H                                  | 1,599          | 2,219          | 2,896          |                |                |                |                |                |        | 6,212          | —  | 88,511                                | —                        | 88,191                              |
|                         |          | H7—9H                                   | 1,641          | 2,260          | 2,937          |                |                |                |                |                |        | 7,000          | —  | 90,616                                | —                        | 90,296                              |
| 2403-2441<br>2403-2442  | 85 × 2,5 | H8—11H                                  | 1,568          | 2,231          | 2,959          | 40,440         | 41,439         | 42,425         | 21,928         | 27,655         | 24,042 | 5,176          | 26 | 85,805                                | 85,672                   | 85,486                              |
| 2403-2443<br>2403-2444  |          | H7—9H                                   | 1,568          | 2,231          | 2,959          |                |                |                |                |                |        | 6,212          | —  | 88,624                                | —                        | 88,304                              |
|                         |          | H8—11H                                  | 1,526          | 2,189          | 2,917          |                |                |                |                |                |        | 7,000          | —  | 90,724                                | —                        | 90,405                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        | 5,176          | 26 | 90,704                                | 90,585                   | 90,449                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        | 6,212          | —  | 93,531                                | —                        | 93,276                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        | 7,000          | —  | 95,638                                | —                        | 95,383                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        | 5,176          | 26 | 90,824                                | 90,705                   | 90,569                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        | 6,212          | —  | 93,644                                | —                        | 93,389                              |
|                         |          |                                         |                |                |                |                |                |                |                |                |        | 7,000          | —  | 95,746                                | —                        | 95,491                              |



Продолжение табл. 3

| Обозначение<br>протяжки | D × m     | Сочетание<br>полей<br>допусков<br>D и e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | W  | M                                     |                       |                                     |
|-------------------------|-----------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|-----------------------|-------------------------------------|
|                         |           |                                         |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2445<br>2403-2446  | 85 × 2,5  | H7—9H                                   | 1,568          | 2,231          | 2,959          | 40,440         | 41,456         | 42,460         | 22,443         | 27,557         | 24,530 | 5,176          | 26 | 90,734                                | 90,573                | 90,386                              |
| 2403-2447<br>2403-2448  |           | H8—11H                                  | 1,526          | 2,189          | 2,917          |                |                |                | 22,401         |                |        | 6,212          | —  | 93,580                                | —                     | 93,282                              |
| 2403-2449<br>2403-2451  |           | H7—9H                                   | 1,586          | 2,241          | 2,908          |                |                |                | 23,488         |                |        | 7,000          | —  | 95,700                                | —                     | 95,352                              |
| 2403-2452<br>2403-2453  | 90 × 2,5  | H8—11H                                  | 1,544          | 2,200          | 2,867          |                |                |                | 23,446         |                |        | 5,176          | 26 | 90,856                                | 90,694                | 90,508                              |
| 2403-2454<br>2403-2455  |           | H7—9H                                   | 1,565          | 2,218          | 2,928          |                |                |                | 23,488         |                |        | 6,212          | —  | 93,694                                | —                     | 93,346                              |
| 2403-2456<br>2403-2457  | 95 × 2,5  | H8—11H                                  | 1,524          | 2,176          | 2,887          |                |                |                | 23,488         |                |        | 7,000          | —  | 95,810                                | —                     | 95,462                              |
| 2403-2458               |           | H7—9H                                   | 1,597          | 2,197          | 2,846          |                |                |                | 23,488         |                |        | 4,773          | 25 | 94,615                                | 94,495                | 94,310                              |
| 2403-2459               |           | H8—11H                                  | 1,556          | 2,156          | 2,804          |                |                |                | 23,488         |                |        | 5,455          | —  | 96,519                                | —                     | 96,214                              |
| 2403-2461<br>2403-2462  | 100 × 2,5 | H7—9H                                   | 1,564          | 2,212          | 2,915          |                |                |                | 25,482         |                |        | 6,518          | —  | 99,427                                | —                     | 99,121                              |
| 2403-2463<br>2403-2464  |           | H8—11H                                  | 1,523          | 2,171          | 2,874          |                |                |                | 25,441         |                |        | 4,773          | 25 | 94,740                                | 94,620                | 94,435                              |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 5,455          | —  | 96,639                                | —                     | 96,334                              |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 6,518          | —  | 99,541                                | —                     | 99,235                              |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 99,622                                | 99,524                | 99,367                              |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 5,455          | —  | 101,525                               | —                     | 101,270                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 6,518          | —  | 104,434                               | —                     | 104,179                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 99,746                                | 99,648                | 99,491                              |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 5,455          | —  | 101,645                               | —                     | 101,390                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 6,518          | —  | 104,547                               | —                     | 104,292                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 99,633                                | 99,519                | 99,304                              |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 5,455          | —  | 101,546                               | —                     | 101,217                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 6,518          | —  | 104,469                               | —                     | 104,140                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 99,759                                | 99,645                | 99,430                              |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 5,455          | —  | 101,668                               | —                     | 101,339                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 6,518          | —  | 104,584                               | —                     | 104,255                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 104,638                               | 104,540               | 104,383                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 5,455          | —  | 106,548                               | —                     | 106,293                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 6,518          | —  | 109,469                               | —                     | 109,214                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 104,763                               | 104,665               | 104,508                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 5,455          | —  | 106,669                               | —                     | 106,414                             |
|                         |           |                                         |                |                |                |                |                |                |                |                |        | 6,518          | —  | 109,584                               | —                     | 109,329                             |

Размеры, мм

| Обозначение<br>протяжки | D       | Сочетание<br>полей<br>допусков<br>D <sub>1</sub> e | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | Y <sub>1</sub> | Y <sub>2</sub> | Y <sub>3</sub> | X <sub>0</sub> | Y <sub>0</sub> | R      | d <sub>p</sub> | W  | M                                     |                       |                                     |
|-------------------------|---------|----------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------|----------------|----|---------------------------------------|-----------------------|-------------------------------------|
|                         |         |                                                    |                |                |                |                |                |                |                |                |        |                |    | На шлицевом<br>контрольном<br>буртике | На зубе<br>номер<br>W | На последнем<br>калибрующем<br>зубе |
| 2403-2465               | 100×2,5 | H7—9H                                              | 1,602          | 2,254          | 2,908          | 48,003         | 49,025         | 49,963         | 26,153         | 33,069         | 28,736 | 4,773          | 26 | 104,653                               | 104,520               | 104,305                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        |                |    |                                       |                       |                                     |
| 2403-2466               |         | H8—11H                                             | 1,561          | 2,212          | 2,867          |                |                |                | 26,112         |                |        | 4,773          | 26 | 104,781                               | 104,648               | 104,433                             |
| 2403-2467<br>2403-2468  |         | H7—9H                                              | 1,563          | 2,207          | 2,904          |                |                |                |                |                |        | 5,455          | —  | 106,700                               | —                     | 106,352                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 6,518          | —  | 109,635                               | —                     | 109,287                             |
| 2403-2469<br>2403-2471  | 105×2,5 |                                                    |                |                |                | 50,446         | 51,452         | 52,448         |                | 35,083         | 29,438 | 4,773          | 23 | 109,652                               | 109,554               | 109,397                             |
|                         |         | H8—11H                                             | 1,522          | 2,166          | 2,862          |                |                |                | 26,675         |                |        | 5,455          | —  | 111,569                               | —                     | 111,314                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 6,518          | —  | 114,501                               | —                     | 114,247                             |
| 2403-2472<br>2403-2473  |         |                                                    |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 109,778                               | 109,680               | 109,523                             |
|                         |         | H7—9H                                              | 1,558          | 2,198          | 2,888          |                |                |                | 28,156         |                |        | 5,455          | —  | 111,691                               | —                     | 111,436                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 6,518          | —  | 114,618                               | —                     | 114,363                             |
| 2403-2474<br>2403-2475  | 110×2,5 |                                                    |                |                |                | 52,947         | 53,954         | 54,952         |                | 36,751         | 31,141 | 4,773          | 23 | 114,682                               | 114,584               | 144,427                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 5,455          | —  | 116,605                               | —                     | 116,350                             |
|                         |         | H8—11H                                             | 1,511          | 2,151          | 2,842          |                |                |                | 28,110         |                |        | 6,518          | —  | 119,549                               | —                     | 119,294                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 4,773          | 23 | 114,824                               | 114,726               | 114,569                             |
| 2403-2476<br>2403-2477  |         | H7—9H                                              | 1,556          | 2,190          | 2,869          |                |                |                | 30,215         |                |        | 5,455          | —  | 116,743                               | —                     | 116,488                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 6,518          | —  | 119,680                               | —                     | 119,425                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 4,773          | 24 | 124,706                               | 124,601               | 124,451                             |
| 2403-2478<br>2403-2479  | 120×2,5 | H8—11H                                             | 1,510          | 2,144          | 2,823          |                |                |                | 30,169         |                |        | 5,455          | —  | 126,641                               | —                     | 126,386                             |
|                         |         |                                                    |                |                |                | 57,949         | 58,958         | 59,959         |                | 40,658         | 33,471 | 6,518          | —  | 129,603                               | —                     | 129,348                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 4,773          | 24 | 124,850                               | 124,745               | 124,595                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 5,455          | —  | 126,780                               | —                     | 126,525                             |
|                         |         |                                                    |                |                |                |                |                |                |                |                |        | 6,518          | —  | 129,736                               | —                     | 129,481                             |

Примечания.

1. С (см табл. 1) — величина подъема заднего центра на длине  $L_1$  при шлифовании фасонным кругом боковых поверхностей фасонных и шлицевых зубьев

2. Полный размер фаски  $F$  — на калибрующих зубьях.

3. Размеры профиля (глубина и радиусы) зубьев с шагом  $t_2$  одинаковы с шагом  $t$  одинаковы с шагом  $t_2$  одинаковы с шагом  $t$  одинаковы с шагом  $t$

4. Диаметры проволочек и роликов  $d_p$  (см. табл. 3 и 6) для контроля профиля соответствуют ГОСТ 2475

5. После контроля профиля зубьев протяжки контрольные буртики шлифовать фасочный — до диаметра  $D_2$  (см табл. 1), шлицевый — до диаметра первого шлицевого зуба. При этом допускается увеличение ширины задней поверхности этого зуба.

6. Размеры  $M$  (см. табл. 3) относятся к протяжкам с профилем зубьев, выполненным по заменяющей дуге окружности



## Размеры, мм

С. 30 ГОСТ 28048—89

| Обозначение<br>прокладки                        | 50×1,5 |        | 52×1,5 |        | 55×1,5 |        | 60×1,5 |        | 65×1,5 |        |
|-------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                                 | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н |
| Сочетание полей<br>допусков<br>D <sub>н</sub> e | 50×1,5 |        | 52×1,5 |        | 55×1,5 |        | 60×1,5 |        | 65×1,5 |        |
|                                                 | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н |
| D×m                                             | 50×1,5 |        | 52×1,5 |        | 55×1,5 |        | 60×1,5 |        | 65×1,5 |        |
| 1                                               | 47,000 | 47,000 | 49,000 | 49,000 | 52,000 | 52,000 | 57,000 | 57,000 | 57,000 | 62,000 |
| 2                                               | 47,110 | 47,110 | 49,100 | 49,100 | 52,150 | 52,150 | 57,150 | 57,130 | 57,130 | 62,150 |
| 3                                               | 47,220 | 47,220 | 49,200 | 49,200 | 52,300 | 52,300 | 57,300 | 57,260 | 57,260 | 62,300 |
| 4                                               | 47,330 | 47,330 | 49,300 | 49,300 | 52,450 | 52,450 | 57,450 | 57,390 | 57,390 | 62,450 |
| 5                                               | 47,440 | 47,440 | 49,400 | 49,400 | 52,600 | 52,600 | 57,600 | 57,520 | 57,520 | 62,600 |
| 6                                               | 47,550 | 47,550 | 49,500 | 49,500 | 52,750 | 52,750 | 57,750 | 57,650 | 57,650 | 62,750 |
| 7                                               | 47,660 | 47,660 | 49,600 | 49,600 | 52,900 | 52,900 | 57,900 | 57,780 | 57,780 | 62,720 |
| 8                                               | 47,630 | 47,630 | 49,700 | 49,700 | 52,870 | 52,870 | 57,870 | 57,910 | 57,910 | 62,870 |
| 9                                               | 47,740 | 47,740 | 49,670 | 49,670 | 53,020 | 53,020 | 58,020 | 57,880 | 57,880 | 63,020 |
| 10                                              | 47,850 | 47,850 | 49,770 | 49,770 | 53,170 | 53,170 | 58,170 | 58,010 | 58,010 | 63,170 |
| 11                                              | 47,960 | 47,960 | 49,870 | 49,870 | 53,320 | 53,320 | 58,320 | 58,140 | 58,140 | 63,320 |
| 12                                              | 48,070 | 48,070 | 49,970 | 49,970 | 53,470 | 53,470 | 58,470 | 58,270 | 58,270 | 63,470 |
| 13                                              | 48,180 | 48,180 | 50,070 | 50,070 | 53,620 | 53,620 | 58,620 | 58,400 | 58,400 | 63,620 |
| 14                                              | 48,290 | 48,290 | 50,170 | 50,170 | 53,770 | 53,770 | 58,770 | 58,530 | 58,530 | 63,770 |
| 15                                              | 48,400 | 48,400 | 50,270 | 50,270 | 53,920 | 53,920 | 58,920 | 58,660 | 58,660 | 63,920 |
| 16                                              | 48,510 | 48,510 | 50,370 | 50,370 | 54,070 | 54,070 | 59,070 | 58,790 | 58,790 | 64,070 |
| 17                                              | 48,620 | 48,620 | 50,470 | 50,470 | 54,220 | 54,220 | 59,220 | 58,920 | 58,920 | 64,220 |
| 18                                              | 48,730 | 48,730 | 50,570 | 50,570 | 54,370 | 54,370 | 59,370 | 59,050 | 59,050 | 64,370 |
| 19                                              | 48,840 | 48,840 | 50,670 | 50,670 | 54,520 | 54,520 | 59,520 | 59,180 | 59,180 | 64,520 |
| 20                                              | 48,950 | 48,950 | 50,770 | 50,770 | 54,670 | 54,670 | 59,670 | 59,310 | 59,310 | 64,670 |
| 21                                              | 49,060 | 49,060 | 50,870 | 50,870 | 54,820 | 54,820 | 59,820 | 59,440 | 59,440 | 64,820 |
| 22                                              | 49,170 | 49,170 | 50,970 | 50,970 | 54,900 | 54,900 | 59,900 | 59,570 | 59,570 | 64,900 |
| 23                                              | 49,280 | 49,280 | 51,070 | 51,070 | 54,940 | 54,940 | 59,940 | 59,700 | 59,700 | 64,940 |
| Шлицевых                                        |        |        |        |        |        |        |        |        |        |        |
| Фасочных                                        |        |        |        |        |        |        |        |        |        |        |
| Черновых и переходных                           |        |        |        |        |        |        |        |        |        |        |

Номера и диаметры D<sub>н</sub> зубьев

| Обозначение<br>протяжки           | 2403-2201<br>2403-2202<br>2403-2205<br>2403-2206 |        | 2403-2203<br>2403-2204<br>2403-2207<br>2403-2208 |        | 2403-2209<br>2403-2211<br>2403-2214<br>2403-2215 |        | 2403-2212<br>2403-2213<br>2403-2216<br>2403-2217 |        | 2403-2218<br>2403-2219<br>2403-2223<br>2403-2224 |        | 2403-2221<br>2403-2222<br>2403-2225<br>2403-2226 |        | 2403-2227<br>2403-2228 |        | 2403-2229<br>2403-2231 |        | 2403-2232<br>2403-2233 |        | 2403-2234<br>2403-2235 |        | 2403-2236<br>2403-2237 |        | 2403-2238<br>2403-2239 |        |     |
|-----------------------------------|--------------------------------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|-----|
|                                   | H7—9H                                            |        | H8—11H                                           |        | H7—9H                                            |        | H8—11H                                           |        | H7—9H                                            |        | H8—11H                                           |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H7—11H                 |        |     |
| Сочетание полей<br>допусков D и e | 50×1,5                                           |        | 50×1,5                                           |        | 52×1,5                                           |        | 52×1,5                                           |        | 55×1,5                                           |        | 55×1,5                                           |        | 60×1,5                 |        | 60×1,5                 |        | 60×1,5                 |        | 65×1,5                 |        | 65×1,5                 |        | 65×1,5                 |        |     |
|                                   | D×m                                              |        | D×m                                              |        | D×m                                              |        | D×m                                              |        | D×m                                              |        | D×m                                              |        | D×m                    |        | D×m                    |        | D×m                    |        | D×m                    |        | D×m                    |        | D×m                    |        | D×m |
| 24                                | 49,390                                           | 49,390 | 49,390                                           | 49,390 | 51,170                                           | 51,170 | 51,170                                           | 51,170 | 54,970                                           | 54,970 | 54,970                                           | 54,970 | 59,970                 | 59,970 | 59,970                 | 59,970 | 59,830                 | 59,830 | 59,830                 | 59,830 | 64,970                 | 64,970 | 64,970                 | 64,970 |     |
| 25                                | 49,500                                           | 49,500 | 49,500                                           | 49,500 | 51,270                                           | 51,270 | 51,270                                           | 51,270 | 54,990                                           | 54,990 | 54,990                                           | 54,990 | 59,990                 | 59,990 | 59,990                 | 59,990 | 59,900                 | 59,900 | 59,900                 | 59,900 | 64,990                 | 64,990 | 64,990                 | 64,990 |     |
| 26                                | 49,610                                           | 49,610 | 49,610                                           | 49,610 | 51,370                                           | 51,370 | 51,370                                           | 51,370 | 55,010                                           | 55,010 | 55,010                                           | 55,010 | 60,010                 | 60,010 | 60,010                 | 60,010 | 59,940                 | 59,940 | 59,940                 | 59,940 | 65,010                 | 65,010 | 65,010                 | 65,010 |     |
| 27                                | 49,720                                           | 49,720 | 49,720                                           | 49,720 | 51,470                                           | 51,470 | 51,470                                           | 51,470 | 55,030                                           | 55,030 | 55,030                                           | 55,030 | 60,030                 | 60,030 | 60,030                 | 60,030 | 59,970                 | 59,970 | 59,970                 | 59,970 | 65,030                 | 65,030 | 65,030                 | 65,030 |     |
| 28                                | 49,830                                           | 49,830 | 49,830                                           | 49,830 | 51,570                                           | 51,570 | 51,570                                           | 51,570 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 59,990                 | 59,990 | 59,990                 | 59,990 | 60,000                 | 60,000 | 60,000                 | 60,000 |     |
| 29                                | 49,900                                           | 49,900 | 49,900                                           | 49,900 | 51,670                                           | 51,670 | 51,670                                           | 51,670 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,010                 | 60,010 | 60,010                 | 60,010 | 60,025                 | 60,025 | 60,025                 | 60,025 |     |
| 30                                | 49,940                                           | 49,940 | 49,940                                           | 49,940 | 51,770                                           | 51,770 | 51,770                                           | 51,770 | 55,030                                           | 55,030 | 55,030                                           | 55,030 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,030                 | 60,046 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 31                                | 49,970                                           | 49,970 | 49,970                                           | 49,970 | 51,870                                           | 51,870 | 51,870                                           | 51,870 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 32                                | 49,990                                           | 49,990 | 50,000                                           | 50,000 | 51,940                                           | 51,940 | 51,940                                           | 51,940 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 33                                | 50,010                                           | 50,010 | 50,020                                           | 50,020 | 51,970                                           | 51,970 | 51,970                                           | 51,970 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 34                                | 50,025                                           | 50,025 | 50,039                                           | 50,039 | 51,990                                           | 51,990 | 52,000                                           | 52,000 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 35                                |                                                  |        |                                                  |        | 52,010                                           | 52,010 | 52,025                                           | 52,025 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 36                                |                                                  |        |                                                  |        | 52,030                                           | 52,030 | 52,046                                           | 52,046 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 37                                | 50,025                                           | 50,025 | 50,039                                           | 50,039 | 52,030                                           | 52,030 | 52,046                                           | 52,046 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 38                                |                                                  |        |                                                  |        |                                                  |        |                                                  |        | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 39                                |                                                  |        |                                                  |        |                                                  |        |                                                  |        | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 40                                |                                                  |        |                                                  |        | 52,030                                           | 52,030 | 52,046                                           | 52,046 | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 41                                |                                                  |        |                                                  |        |                                                  |        |                                                  |        | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |
| 42                                |                                                  |        |                                                  |        |                                                  |        |                                                  |        | 55,046                                           | 55,046 | 55,046                                           | 55,046 | 60,046                 | 60,046 | 60,046                 | 60,046 | 60,030                 | 60,030 | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,046                 | 60,046 |     |

Номера и диаметры D<sub>1</sub> зубьев

шлицевых

черновых и переходных

чистовых

калибрующих



## Размеры, мм

С. 32 ГОСТ 28048—89

| Обозначение<br>прокладки | 2403-2241<br>2403-2242 |         | 2403-2243<br>2403-2244 |         | 2403-2245<br>2403-2246<br>2403-2249<br>2403-2251 |         | 2403-2247<br>2403-2248<br>2403-2252<br>2403-2253 |         | 2403-2254<br>2403-2255 |         | 2403-2256<br>2403-2257 |         | 2403-2258<br>2403-2259 |         | 2403-2261<br>2403-2262 |         | 2403-2263<br>2403-2264<br>2403-2267<br>2403-2268 |         | 2403-2265<br>2403-2266<br>2403-2269<br>2403-2271 |         | 2403-2274<br>2403-2275 |         |         |
|--------------------------|------------------------|---------|------------------------|---------|--------------------------------------------------|---------|--------------------------------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|--------------------------------------------------|---------|--------------------------------------------------|---------|------------------------|---------|---------|
|                          | H7—9H                  |         | H8—11H                 |         | H7—9H                                            |         | H8—11H                                           |         | H7—9H                  |         | H8—11H                 |         | H7—9H                  |         | H8—11H                 |         | H7—9H                                            |         | H8—11H                                           |         | H7—9H                  |         | H8—11H  |
| D × m                    | 65 × 1,5               |         |                        |         | 70 × 1,5                                         |         |                                                  |         | 75 × 1,5               |         |                        |         | 80 × 1,5               |         |                        |         | 50 × 2                                           |         |                                                  |         |                        |         |         |
|                          | 1                      | 2       | 3                      | 4       | 5                                                | 6       | 7                                                | 8       | 9                      | 10      | 11                     | 12      | 13                     | 14      | 15                     | 16      | 17                                               | 18      | 19                                               | 20      | 21                     | 22      | 23      |
| Фасочных                 | 62,000                 | 62,120  | 62,240                 | 62,360  | 62,480                                           | 62,600  | 62,720                                           | 62,840  | 62,960                 | 62,930  | 63,050                 | 63,170  | 63,290                 | 63,410  | 63,530                 | 63,650  | 63,770                                           | 63,890  | 64,010                                           | 64,130  | 64,250                 | 64,370  | 64,490  |
| Шлифовых                 | 62,000                 | 62,140  | 62,280                 | 62,420  | 62,560                                           | 62,700  | 62,840                                           | 62,980  | 63,120                 | 63,260  | 63,400                 | 63,540  | 63,680                 | 63,820  | 63,960                 | 64,100  | 64,240                                           | 64,380  | 64,520                                           | 64,660  | 64,800                 | 64,940  | 65,080  |
| Черновых и переходных    | 67,000                 | 67,140  | 67,280                 | 67,420  | 67,560                                           | 67,700  | 67,840                                           | 67,980  | 68,120                 | 68,260  | 68,400                 | 68,540  | 68,680                 | 68,820  | 68,960                 | 69,100  | 69,240                                           | 69,380  | 69,520                                           | 69,660  | 69,800                 | 69,940  | 70,080  |
|                          | 72,000                 | 72,140  | 72,280                 | 72,420  | 72,560                                           | 72,700  | 72,840                                           | 72,980  | 73,120                 | 73,260  | 73,400                 | 73,540  | 73,680                 | 73,820  | 73,960                 | 74,100  | 74,240                                           | 74,380  | 74,520                                           | 74,660  | 74,800                 | 74,940  | 75,080  |
|                          | 77,000                 | 77,140  | 77,280                 | 77,420  | 77,560                                           | 77,700  | 77,840                                           | 77,980  | 78,120                 | 78,260  | 78,400                 | 78,540  | 78,680                 | 78,820  | 78,960                 | 79,100  | 79,240                                           | 79,380  | 79,520                                           | 79,660  | 79,800                 | 79,940  | 80,080  |
|                          | 86,000                 | 86,140  | 86,280                 | 86,420  | 86,560                                           | 86,700  | 86,840                                           | 86,980  | 87,120                 | 87,260  | 87,400                 | 87,540  | 87,680                 | 87,820  | 87,960                 | 88,100  | 88,240                                           | 88,380  | 88,520                                           | 88,660  | 88,800                 | 88,940  | 89,080  |
|                          | 91,000                 | 91,140  | 91,280                 | 91,420  | 91,560                                           | 91,700  | 91,840                                           | 91,980  | 92,120                 | 92,260  | 92,400                 | 92,540  | 92,680                 | 92,820  | 92,960                 | 93,100  | 93,240                                           | 93,380  | 93,520                                           | 93,660  | 93,800                 | 93,940  | 94,080  |
|                          | 96,000                 | 96,140  | 96,280                 | 96,420  | 96,560                                           | 96,700  | 96,840                                           | 96,980  | 97,120                 | 97,260  | 97,400                 | 97,540  | 97,680                 | 97,820  | 97,960                 | 98,100  | 98,240                                           | 98,380  | 98,520                                           | 98,660  | 98,800                 | 98,940  | 99,080  |
|                          | 101,000                | 101,140 | 101,280                | 101,420 | 101,560                                          | 101,700 | 101,840                                          | 101,980 | 102,120                | 102,260 | 102,400                | 102,540 | 102,680                | 102,820 | 102,960                | 103,100 | 103,240                                          | 103,380 | 103,520                                          | 103,660 | 103,800                | 103,940 | 104,080 |
|                          | 106,000                | 106,140 | 106,280                | 106,420 | 106,560                                          | 106,700 | 106,840                                          | 106,980 | 107,120                | 107,260 | 107,400                | 107,540 | 107,680                | 107,820 | 107,960                | 108,100 | 108,240                                          | 108,380 | 108,520                                          | 108,660 | 108,800                | 108,940 | 109,080 |
|                          | 111,000                | 111,140 | 111,280                | 111,420 | 111,560                                          | 111,700 | 111,840                                          | 111,980 | 112,120                | 112,260 | 112,400                | 112,540 | 112,680                | 112,820 | 112,960                | 113,100 | 113,240                                          | 113,380 | 113,520                                          | 113,660 | 113,800                | 113,940 | 114,080 |
|                          | 116,000                | 116,140 | 116,280                | 116,420 | 116,560                                          | 116,700 | 116,840                                          | 116,980 | 117,120                | 117,260 | 117,400                | 117,540 | 117,680                | 117,820 | 117,960                | 118,100 | 118,240                                          | 118,380 | 118,520                                          | 118,660 | 118,800                | 118,940 | 119,080 |
|                          | 121,000                | 121,140 | 121,280                | 121,420 | 121,560                                          | 121,700 | 121,840                                          | 121,980 | 122,120                | 122,260 | 122,400                | 122,540 | 122,680                | 122,820 | 122,960                | 123,100 | 123,240                                          | 123,380 | 123,520                                          | 123,660 | 123,800                | 123,940 | 124,080 |
|                          | 126,000                | 126,140 | 126,280                | 126,420 | 126,560                                          | 126,700 | 126,840                                          | 126,980 | 127,120                | 127,260 | 127,400                | 127,540 | 127,680                | 127,820 | 127,960                | 128,100 | 128,240                                          | 128,380 | 128,520                                          | 128,660 | 128,800                | 128,940 | 129,080 |
|                          | 131,000                | 131,140 | 131,280                | 131,420 | 131,560                                          | 131,700 | 131,840                                          | 131,980 | 132,120                | 132,260 | 132,400                | 132,540 | 132,680                | 132,820 | 132,960                | 133,100 | 133,240                                          | 133,380 | 133,520                                          | 133,660 | 133,800                | 133,940 | 134,080 |
|                          | 136,000                | 136,140 | 136,280                | 136,420 | 136,560                                          | 136,700 | 136,840                                          | 136,980 | 137,120                | 137,260 | 137,400                | 137,540 | 137,680                | 137,820 | 137,960                | 138,100 | 138,240                                          | 138,380 | 138,520                                          | 138,660 | 138,800                | 138,940 | 139,080 |
|                          | 141,000                | 141,140 | 141,280                | 141,420 | 141,560                                          | 141,700 | 141,840                                          | 141,980 | 142,120                | 142,260 | 142,400                | 142,540 | 142,680                | 142,820 | 142,960                | 143,100 | 143,240                                          | 143,380 | 143,520                                          | 143,660 | 143,800                | 143,940 | 144,080 |
|                          | 146,000                | 146,140 | 146,280                | 146,420 | 146,560                                          | 146,700 | 146,840                                          | 146,980 | 147,120                | 147,260 | 147,400                | 147,540 | 147,680                | 147,820 | 147,960                | 148,100 | 148,240                                          | 148,380 | 148,520                                          | 148,660 | 148,800                | 148,940 | 149,080 |
|                          | 151,000                | 151,140 | 151,280                | 151,420 | 151,560                                          | 151,700 | 151,840                                          | 151,980 | 152,120                | 152,260 | 152,400                | 152,540 | 152,680                | 152,820 | 152,960                | 153,100 | 153,240                                          | 153,380 | 153,520                                          | 153,660 | 153,800                | 153,940 | 154,080 |
|                          | 156,000                | 156,140 | 156,280                | 156,420 | 156,560                                          | 156,700 | 156,840                                          | 156,980 | 157,120                | 157,260 | 157,400                | 157,540 | 157,680                | 157,820 | 157,960                | 158,100 | 158,240                                          | 158,380 | 158,520                                          | 158,660 | 158,800                | 158,940 | 159,080 |
|                          | 161,000                | 161,140 | 161,280                | 161,420 | 161,560                                          | 161,700 | 161,840                                          | 161,980 | 162,120                | 162,260 | 162,400                | 162,540 | 162,680                | 162,820 | 162,960                | 163,100 | 163,240                                          | 163,380 | 163,520                                          | 163,660 | 163,800                | 163,940 | 164,080 |
|                          | 166,000                | 166,140 | 166,280                | 166,420 | 166,560                                          | 166,700 | 166,840                                          | 166,980 | 167,120                | 167,260 | 167,400                | 167,540 | 167,680                | 167,820 | 167,960                | 168,100 | 168,240                                          | 168,380 | 168,520                                          | 168,660 | 168,800                | 168,940 | 169,080 |
|                          | 171,000                | 171,140 | 171,280                | 171,420 | 171,560                                          | 171,700 | 171,840                                          | 171,980 | 172,120                | 172,260 | 172,400                | 172,540 | 172,680                | 172,820 | 172,960                | 173,100 | 173,240                                          | 173,380 | 173,520                                          | 173,660 | 173,800                | 173,940 | 174,080 |
|                          | 176,000                | 176,140 | 176,280                | 176,420 | 176,560                                          | 176,700 | 176,840                                          | 176,980 | 177,120                | 177,260 | 177,400                | 177,540 | 177,680                | 177,820 | 177,960                | 178,100 | 178,240                                          | 178,380 | 178,520                                          | 178,660 | 178,800                | 178,940 | 179,080 |
|                          | 181,000                | 181,140 | 181,280                | 181,420 | 181,560                                          | 181,700 | 181,840                                          | 181,980 | 182,120                | 182,260 | 182,400                | 182,540 | 182,680                | 182,820 | 182,960                | 183,100 | 183,240                                          | 183,380 | 183,520                                          | 183,660 | 183,800                | 183,940 | 184,080 |
|                          | 186,000                | 186,140 | 186,280                | 186,420 | 186,560                                          | 186,700 | 186,840                                          | 186,980 | 187,120                | 187,260 | 187,400                | 187,540 | 187,680                | 187,820 | 187,960                | 188,100 | 188,240                                          | 188,380 | 188,520                                          | 188,660 | 188,800                | 188,940 | 189,080 |
|                          | 191,000                | 191,140 | 191,280                | 191,420 | 191,560                                          | 191,700 | 191,840                                          | 191,980 | 192,120                | 192,260 | 192,400                | 192,540 | 192,680                | 192,820 | 192,960                | 193,100 | 193,240                                          | 193,380 | 193,520                                          | 193,660 | 193,800                | 193,940 | 194,080 |
|                          | 196,000                | 196,140 | 196,280                | 196,420 | 196,560                                          | 196,700 | 196,840                                          | 196,980 | 197,120                | 197,260 | 197,400                | 197,540 | 197,680                | 197,820 | 197,960                | 198,100 | 198,240                                          | 198,380 | 198,520                                          | 198,660 | 198,800                | 198,940 | 199,080 |
|                          | 201,000                | 201,140 | 201,280                | 201,420 | 201,560                                          | 201,700 | 201,840                                          | 201,980 | 202,120                | 202,260 | 202,400                | 202,540 | 202,680                | 202,820 | 202,960                | 203,100 | 203,240                                          | 203,380 | 203,520                                          | 203,660 | 203,800                | 203,940 | 204,080 |
|                          | 206,000                | 206,140 | 206,280                | 206,420 | 206,560                                          | 206,700 | 206,840                                          | 206,980 | 207,120                | 207,260 | 207,400                | 207,540 | 207,680                | 207,820 | 207,960                | 208,100 | 208,240                                          | 208,380 | 208,520                                          | 208,660 | 208,800                | 208,940 | 209,080 |
|                          | 211,000                | 211,140 | 211,280                | 211,420 | 211,560                                          | 211,700 | 211,840                                          | 211,980 | 212,120                | 212,260 | 212,400                | 212,540 | 212,680                | 212,820 | 212,960                | 213,100 | 213,240                                          | 213,380 | 213,520                                          | 213,660 | 213,800                | 213,940 | 214,080 |
|                          | 216,000                | 216,140 | 216,280                | 216,420 | 216,560                                          | 216,700 | 216,840                                          | 216,980 | 217,120                | 217,260 | 217,400                | 217,540 | 217,680                | 217,820 | 217,960                | 218,100 | 218,240                                          | 218,380 | 218,520                                          | 218,660 | 218,800                | 218,940 | 219,080 |
|                          | 221,000                | 221,140 | 221,280                | 221,420 | 221,560                                          | 221,700 | 221,840                                          | 221,980 | 222,120                | 222,260 | 222,400                | 222,540 | 222,680                | 222,820 | 222,960                | 223,100 | 223,240                                          | 223,380 | 223,520                                          | 223,660 | 223,800                | 223,940 | 224,080 |
|                          | 226,000                | 226,140 | 226,280                | 226,420 | 226,560                                          | 226,700 | 226,840                                          | 226,980 | 227,120                | 227,260 | 227,400                | 227,540 | 227,680                | 227,820 | 227,960                | 228,100 | 228,240                                          | 228,380 | 228,520                                          | 228,660 | 228,800                | 228,940 | 229,080 |
|                          | 231,000                | 231,140 | 231,280                | 231,420 | 231,560                                          | 231,700 | 231,840                                          | 231,980 | 232,120                | 232,260 | 232,400                | 232,540 | 232,680                | 232,820 | 232,960                | 233,100 | 233,240                                          | 233,380 | 233,520                                          | 233,660 | 233,800                | 233,940 | 234,080 |
|                          | 236,000                | 236,140 | 236,280                | 236,420 | 236,560                                          | 236,700 | 236,840                                          | 236,980 | 237,120                | 237,260 | 237,400                | 237,540 | 237,680                | 237,820 | 237,960                | 238,100 | 238,240                                          | 238,380 | 238,520                                          | 238,660 | 238,800                | 238,940 | 239,080 |
|                          | 241,000                | 241,140 | 241,280                | 241,420 | 241,560                                          | 241,700 | 241,840                                          | 241,980 | 242,120                | 242,260 | 242,400                | 242,540 | 242,680                | 242,820 | 242,960                | 243,100 | 243,240                                          | 243,380 | 243,520                                          | 243,660 | 243,800                | 243,940 | 244,080 |
|                          | 246,000                | 246,140 | 246,280                | 246,420 | 246,560                                          | 246,700 | 246,840                                          | 246,980 | 247,120                | 247,260 | 247,400                | 247,540 | 247,680                | 247,820 | 247,960                | 248,100 | 248,240                                          | 248,380 | 248,520                                          | 248,660 | 248,800                | 248,940 | 249,080 |
|                          | 251,000                | 251,140 | 251,280                | 251,420 | 251,560                                          | 251,700 | 251,840                                          | 251,980 | 252,120                | 252,260 | 252,400                | 252,540 | 252,680                | 252,820 | 252,960                | 253,100 | 253,240                                          | 253,380 | 253,520                                          | 253,660 | 253,800                | 253,940 | 254,080 |
|                          | 256,000                |         |                        |         |                                                  |         |                                                  |         |                        |         |                        |         |                        |         |                        |         |                                                  |         |                                                  |         |                        |         |         |

Продолжение табл. 4

Размеры, мм

| Обозначение пружин | 2403-2241<br>2403-2242 |        | 2403-2243<br>2403-2244 |        | 2403-2245<br>2403-2246<br>2403-2249<br>2403-2251 |        | 2403-2247<br>2403-2248<br>2403-2252<br>2403-2253 |        | 2403-2254<br>2403-2255 |        | 2403-2256<br>2403-2257 |        | 2403-2258<br>2403-2259 |        | 2403-2261<br>2403-2262 |        | 2403-2263<br>2403-2264<br>2403-2267<br>2403-2268 |        | 2403-2265<br>2403-2266<br>2403-2269<br>2403-2271 |        | 2403-2272<br>2403-2273 |        | 2403-2274<br>2403-2275 |        |
|--------------------|------------------------|--------|------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|------------------------|--------|------------------------|--------|
|                    | Н7—9Н                  |        | Н8—11Н                 |        | Н7—9Н                                            |        | Н8—11Н                                           |        | Н7—9Н                  |        | Н8—11Н                 |        | Н7—9Н                  |        | Н8—11Н                 |        | Н7—9Н                                            |        | Н8—11Н                                           |        | Н7—9Н                  |        | Н8—11Н                 |        |
| D × l              | 65 × 1,5               |        |                        |        | 70 × 1,5                                         |        |                                                  |        | 75 × 1,5               |        |                        |        | 80 × 1,5               |        |                        |        | 50 × 2                                           |        |                                                  |        |                        |        |                        |        |
|                    | 24                     | 64,610 | 64,610                 | 64,610 | 64,610                                           | 69,940 | 69,940                                           | 69,940 | 69,940                 | 74,940 | 74,940                 | 74,610 | 74,610                 | 74,610 | 74,610                 | 74,610 | 74,610                                           | 79,940 | 79,940                                           | 79,940 | 79,940                 | 48,610 | 48,610                 | 48,610 |
| 25                 | 64,730                 | 64,730 | 64,730                 | 64,730 | 69,970                                           | 69,970 | 69,970                                           | 69,970 | 74,970                 | 74,970 | 74,730                 | 74,730 | 74,730                 | 74,730 | 74,730                 | 74,730 | 79,970                                           | 79,970 | 79,970                                           | 79,970 | 48,730                 | 48,730 | 48,730                 | 48,730 |
| 26                 | 64,850                 | 64,850 | 64,850                 | 64,850 | 69,990                                           | 69,990 | 70,000                                           | 70,000 | 74,990                 | 74,990 | 74,850                 | 74,850 | 74,850                 | 74,850 | 74,850                 | 74,850 | 79,990                                           | 79,990 | 80,000                                           | 80,000 | 48,850                 | 48,850 | 48,850                 | 48,850 |
| 27                 | 64,930                 | 64,930 | 64,930                 | 64,930 | 70,010                                           | 70,010 | 70,025                                           | 70,025 | 75,010                 | 75,010 | 74,930                 | 74,930 | 74,930                 | 74,930 | 74,930                 | 74,930 | 80,010                                           | 80,010 | 80,025                                           | 80,025 | 48,970                 | 48,970 | 48,970                 | 48,970 |
| 28                 | 64,970                 | 64,970 | 64,970                 | 64,970 | 70,030                                           | 70,030 | 70,046                                           | 70,046 | 75,030                 | 75,030 | 74,970                 | 74,970 | 74,970                 | 74,970 | 74,970                 | 74,970 | 80,030                                           | 80,030 | 80,046                                           | 80,046 | 49,090                 | 49,090 | 49,090                 | 49,090 |
| 29                 | 64,990                 | 64,990 | 65,000                 | 65,000 |                                                  |        |                                                  |        |                        |        | 74,990                 | 74,990 | 74,990                 | 74,990 | 75,000                 | 75,000 |                                                  |        |                                                  |        | 49,210                 | 49,210 | 49,210                 | 49,210 |
| 30                 | 65,010                 | 65,010 | 65,025                 | 65,025 |                                                  |        |                                                  |        |                        |        | 75,010                 | 75,010 | 75,010                 | 75,010 | 75,025                 | 75,025 |                                                  |        |                                                  |        | 49,330                 | 49,330 | 49,330                 | 49,330 |
| 31                 | 65,030                 | 65,030 | 65,046                 | 65,046 | 70,030                                           | 70,030 | 70,046                                           | 70,046 | 75,030                 | 75,030 | 75,030                 | 75,030 | 75,030                 | 75,030 | 75,046                 | 75,046 | 80,030                                           | 80,030 | 80,046                                           | 80,046 | 49,450                 | 49,450 | 49,450                 | 49,450 |
| 32                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 49,570                 | 49,570 | 49,570                 | 49,570 |
| 33                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 49,690                 | 49,690 | 49,690                 | 49,690 |
| 34                 |                        | 65,030 | 65,046                 | 65,046 |                                                  |        |                                                  |        |                        |        | 75,030                 | 75,030 | 75,030                 | 75,030 | 75,046                 | 75,046 |                                                  |        |                                                  |        | 49,810                 | 49,810 | 49,810                 | 49,810 |
| 35                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 49,890                 | 49,890 | 49,890                 | 49,890 |
| 36                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 49,940                 | 49,940 | 49,940                 | 49,940 |
| 37                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 49,970                 | 49,970 | 49,970                 | 49,970 |
| 38                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 50,000                 | 50,000 | 50,000                 | 50,000 |
| 39                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 50,010                 | 50,010 | 50,010                 | 50,010 |
| 40                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        | 50,025                 | 50,025 | 50,025                 | 50,025 |
| 41                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |
| 42                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |
| 43                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |
| 44                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |
| 45                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |
| 46                 |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |

Номера и диаметры D<sub>1</sub> зубьев



Продолжение табл. 4

Размеры, мм

| Обозначение<br>протяжки           | 50×2                   |                        | 52×2                   |                        | 55×2                   |                        | 60×2                                             |                                                  |                        |                        |                        |                        |
|-----------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--------------------------------------------------|--------------------------------------------------|------------------------|------------------------|------------------------|------------------------|
|                                   | 2403-2276<br>2403-2277 | 2403-2278<br>2403-2279 | 2403-2281<br>2403-2282 | 2403-2283<br>2403-2284 | 2403-2285<br>2403-2286 | 2403-2287<br>2403-2288 | 2403-2289<br>2403-2291<br>2403-2294<br>2403-2295 | 2403-2292<br>2403-2293<br>2403-2296<br>2403-2297 | 2403-2298<br>2403-2299 | 2403-2301<br>2403-2302 | 2403-2303<br>2403-2304 | 2403-2305<br>2403-2306 |
| Сочетание полей<br>допусков D и e | H7—9H                  |                        | H8—11H                 |                        | H7—9H                  |                        | H8—11H                                           |                                                  | H7—9H                  |                        | H8—11H                 |                        |
| D×m                               | 50×2                   |                        | 52×2                   |                        | 55×2                   |                        | 60×2                                             |                                                  | H7—9H                  |                        | H8—11H                 |                        |
| 1                                 | 46,000                 | 46,000                 | 48,000                 | 48,000                 | 48,000                 | 48,000                 | 51,000                                           | 51,000                                           | 56,000                 | 56,000                 | 56,000                 | 56,000                 |
| 2                                 | 46,140                 | 46,140                 | 48,120                 | 48,120                 | 48,130                 | 48,130                 | 51,150                                           | 51,150                                           | 56,150                 | 56,150                 | 56,130                 | 56,130                 |
| 3                                 | 46,280                 | 46,280                 | 48,240                 | 48,240                 | 48,260                 | 48,260                 | 51,300                                           | 51,300                                           | 56,300                 | 56,300                 | 56,260                 | 56,260                 |
| 4                                 | 46,420                 | 46,420                 | 48,360                 | 48,360                 | 48,390                 | 48,390                 | 51,450                                           | 51,450                                           | 56,450                 | 56,450                 | 56,390                 | 56,390                 |
| 5                                 | 46,560                 | 46,560                 | 48,480                 | 48,480                 | 48,520                 | 48,520                 | 51,600                                           | 51,600                                           | 56,600                 | 56,600                 | 56,520                 | 56,520                 |
| 6                                 | 46,700                 | 46,700                 | 48,600                 | 48,600                 | 48,650                 | 48,650                 | 51,750                                           | 51,750                                           | 56,750                 | 56,750                 | 56,650                 | 56,650                 |
| 7                                 | 46,840                 | 46,840                 | 48,720                 | 48,720                 | 48,780                 | 48,780                 | 51,900                                           | 51,900                                           | 56,900                 | 56,900                 | 56,780                 | 56,780                 |
| 8                                 | 46,810                 | 46,810                 | 48,840                 | 48,840                 | 48,910                 | 48,910                 | 51,870                                           | 51,870                                           | 56,870                 | 56,870                 | 56,910                 | 56,910                 |
| 9                                 | 46,950                 | 46,950                 | 48,810                 | 48,810                 | 48,880                 | 48,880                 | 52,020                                           | 52,020                                           | 57,020                 | 57,020                 | 57,040                 | 57,040                 |
| 10                                | 47,090                 | 47,090                 | 48,930                 | 48,930                 | 49,010                 | 49,010                 | 52,170                                           | 52,170                                           | 57,170                 | 57,170                 | 57,010                 | 57,010                 |
| 11                                | 47,230                 | 47,230                 | 49,050                 | 49,050                 | 49,140                 | 49,140                 | 52,320                                           | 52,320                                           | 57,320                 | 57,320                 | 57,140                 | 57,140                 |
| 12                                | 47,370                 | 47,370                 | 49,170                 | 49,170                 | 49,270                 | 49,270                 | 52,470                                           | 52,470                                           | 57,470                 | 57,470                 | 57,270                 | 57,270                 |
| 13                                | 47,510                 | 47,510                 | 49,290                 | 49,290                 | 49,400                 | 49,400                 | 52,620                                           | 52,620                                           | 57,620                 | 57,620                 | 57,400                 | 57,400                 |
| 14                                | 47,650                 | 47,650                 | 49,410                 | 49,410                 | 49,530                 | 49,530                 | 52,770                                           | 52,770                                           | 57,770                 | 57,770                 | 57,530                 | 57,530                 |
| 15                                | 47,790                 | 47,790                 | 49,530                 | 49,530                 | 49,660                 | 49,660                 | 52,920                                           | 52,920                                           | 57,920                 | 57,920                 | 57,660                 | 57,660                 |
| 16                                | 47,930                 | 47,930                 | 49,650                 | 49,650                 | 49,790                 | 49,790                 | 53,070                                           | 53,070                                           | 58,070                 | 58,070                 | 57,790                 | 57,790                 |
| 17                                | 48,070                 | 48,070                 | 49,770                 | 49,770                 | 49,920                 | 49,920                 | 53,220                                           | 53,220                                           | 58,220                 | 58,220                 | 57,920                 | 57,920                 |
| 18                                | 48,210                 | 48,210                 | 49,890                 | 49,890                 | 50,050                 | 50,050                 | 53,370                                           | 53,370                                           | 58,370                 | 58,370                 | 58,050                 | 58,050                 |
| 19                                | 48,350                 | 48,350                 | 50,010                 | 50,010                 | 50,180                 | 50,180                 | 53,520                                           | 53,520                                           | 58,520                 | 58,520                 | 58,180                 | 58,180                 |
| 20                                | 48,490                 | 48,490                 | 50,130                 | 50,130                 | 50,310                 | 50,310                 | 53,670                                           | 53,670                                           | 58,670                 | 58,670                 | 58,310                 | 58,310                 |
| 21                                | 48,630                 | 48,630                 | 50,250                 | 50,250                 | 50,440                 | 50,440                 | 53,820                                           | 53,820                                           | 58,820                 | 58,820                 | 58,440                 | 58,440                 |
| 22                                | 48,770                 | 48,770                 | 50,370                 | 50,370                 | 50,570                 | 50,570                 | 53,970                                           | 53,970                                           | 58,970                 | 58,970                 | 58,570                 | 58,570                 |
| 23                                | 48,910                 | 48,910                 | 50,490                 | 50,490                 | 50,700                 | 50,700                 | 54,120                                           | 54,120                                           | 59,120                 | 59,120                 | 58,700                 | 58,700                 |

Фасочных

Шлифовых

Номера и диаметры D<sub>зубьев</sub>

Продолжение табл. 4

Размеры, мм

| Обозначение проточки | 50×2                   |       | 52×2                   |        | 55×2                   |        | 60×2                   |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |
|----------------------|------------------------|-------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|--------|--|
|                      | 2403-2276<br>2403-2277 | Н7—9Н | 2403-2278<br>2403-2279 | Н8—11Н | 2403-2281<br>2403-2282 | Н7—9Н  | 2403-2283<br>2403-2284 | Н8—11Н | 2403-2285<br>2403-2286 | Н7—9Н  | 2403-2287<br>2403-2288 | Н8—11Н | 2403-2289<br>2403-2291<br>2403-2294<br>2403-2295 | Н7—9Н  | 2403-2292<br>2403-2293<br>2403-2296<br>2403-2297 | Н8—11Н | 2403-2298<br>2403-2299 | Н7—9Н  | 2403-2301<br>2403-2302 | Н8—11Н | 2403-2303<br>2403-2304 | Н7—9Н  | 2403-2305<br>2403-2306 | Н8—11Н |        |  |
| 24                   | 49,050                 |       | 49,050                 |        | 50,610                 | 50,610 | 50,610                 |        | 50,830                 | 50,830 | 50,830                 |        | 54,270                                           | 54,270 | 54,270                                           |        | 59,270                 | 59,270 | 59,270                 |        | 58,830                 | 58,830 |                        | 58,830 | 58,830 |  |
| 25                   | 49,190                 |       | 49,190                 |        | 50,730                 | 50,730 | 50,730                 |        | 50,960                 | 50,960 | 50,960                 |        | 54,420                                           | 54,420 | 54,420                                           |        | 59,420                 | 59,420 | 59,420                 |        | 58,960                 | 58,960 |                        | 58,960 | 58,960 |  |
| 26                   | 49,330                 |       | 49,330                 |        | 50,850                 | 50,850 | 50,850                 |        | 51,090                 | 51,090 | 51,090                 |        | 54,570                                           | 54,570 | 54,570                                           |        | 59,570                 | 59,570 | 59,570                 |        | 59,090                 | 59,090 |                        | 59,090 | 59,090 |  |
| 27                   | 49,470                 |       | 49,470                 |        | 50,970                 | 50,970 | 50,970                 |        | 51,220                 | 51,220 | 51,220                 |        | 54,720                                           | 54,720 | 54,720                                           |        | 59,720                 | 59,720 | 59,720                 |        | 59,220                 | 59,220 |                        | 59,220 | 59,220 |  |
| 28                   | 49,610                 |       | 49,610                 |        | 51,090                 | 51,090 | 51,090                 |        | 51,350                 | 51,350 | 51,350                 |        | 54,840                                           | 54,840 | 54,840                                           |        | 59,840                 | 59,840 | 59,840                 |        | 59,350                 | 59,350 |                        | 59,350 | 59,350 |  |
| 29                   | 49,750                 |       | 49,750                 |        | 51,210                 | 51,210 | 51,210                 |        | 51,480                 | 51,480 | 51,480                 |        | 54,900                                           | 54,900 | 54,900                                           |        | 59,900                 | 59,900 | 59,900                 |        | 59,480                 | 59,480 |                        | 59,480 | 59,480 |  |
| 30                   | 49,870                 |       | 49,870                 |        | 51,330                 | 51,330 | 51,330                 |        | 51,610                 | 51,610 | 51,610                 |        | 54,940                                           | 54,940 | 54,940                                           |        | 59,940                 | 59,940 | 59,940                 |        | 59,610                 | 59,610 |                        | 59,610 | 59,610 |  |
| 31                   | 49,930                 |       | 49,930                 |        | 51,450                 | 51,450 | 51,450                 |        | 51,740                 | 51,740 | 51,740                 |        | 54,970                                           | 54,970 | 54,970                                           |        | 59,970                 | 59,970 | 59,970                 |        | 59,740                 | 59,740 |                        | 59,740 | 59,740 |  |
| 32                   | 49,970                 |       | 49,970                 |        | 51,570                 | 51,570 | 51,570                 |        | 51,840                 | 51,840 | 51,840                 |        | 55,000                                           | 55,000 | 55,000                                           |        | 60,000                 | 60,000 | 60,000                 |        | 59,840                 | 59,840 |                        | 59,840 | 59,840 |  |
| 33                   | 49,990                 |       | 50,000                 |        | 51,690                 | 51,690 | 51,690                 |        | 51,900                 | 51,900 | 51,900                 |        | 55,025                                           | 55,025 | 55,025                                           |        | 60,025                 | 60,025 | 60,025                 |        | 59,900                 | 59,900 |                        | 59,900 | 59,900 |  |
| 34                   | 50,010                 |       | 50,020                 |        | 51,810                 | 51,810 | 51,810                 |        | 51,940                 | 51,940 | 51,940                 |        | 55,030                                           | 55,030 | 55,030                                           |        | 60,030                 | 60,030 | 60,030                 |        | 59,940                 | 59,940 |                        | 59,940 | 59,940 |  |
| 35                   | 50,030                 |       | 50,039                 |        | 51,890                 | 51,890 | 51,890                 |        | 51,970                 | 51,970 | 51,970                 |        | 55,046                                           | 55,046 | 55,046                                           |        | 60,046                 | 60,046 | 60,046                 |        | 59,970                 | 59,970 |                        | 59,970 | 59,970 |  |
| 36                   |                        |       |                        |        | 51,940                 | 51,940 | 51,940                 |        | 51,990                 | 51,990 | 52,000                 |        |                                                  |        |                                                  |        |                        |        |                        |        | 59,990                 | 59,990 |                        | 60,000 | 60,000 |  |
| 37                   |                        |       |                        |        | 51,970                 | 51,970 | 51,970                 |        | 52,010                 | 52,010 | 52,025                 |        | 55,030                                           | 55,030 | 55,046                                           |        | 60,030                 | 60,030 | 60,046                 |        | 60,010                 | 60,010 |                        | 60,025 | 60,025 |  |
| 38                   |                        |       | 50,039                 |        | 51,990                 | 51,990 | 52,000                 |        | 52,030                 | 52,030 | 52,046                 |        |                                                  |        |                                                  |        |                        |        |                        |        | 60,030                 | 60,030 |                        | 60,046 | 60,046 |  |
| 39                   |                        |       |                        |        | 52,010                 | 52,010 | 52,025                 |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |
| 40                   |                        |       |                        |        | 52,030                 | 52,030 | 52,046                 |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |
| 41                   |                        |       |                        |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |
| 42                   |                        |       |                        |        | 52,030                 | 52,030 | 52,046                 |        | 52,030                 | 52,030 | 52,046                 |        |                                                  |        |                                                  |        |                        |        |                        |        | 60,030                 | 60,030 |                        | 60,046 | 60,046 |  |
| 43                   |                        |       |                        |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |
| 44                   |                        |       |                        |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |
| 45                   |                        |       |                        |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |
| 46                   |                        |       |                        |        |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |        |  |

Шлицевых

Номера и диаметры D, зубьев







Продолжение табл. 4

## Размеры, мм

| Обозначение<br>протяжки           | 2403-2307<br>2403-2308 |        | 2403-2309<br>2403-2311 |        | 2403-2312<br>2403-2313 |        | 2403-2314<br>2403-2315 |        | 2403-2316<br>2403-2317<br>2403-2321<br>2403-2322 |        | 2403-2318<br>2403-2319<br>2403-2323<br>2403-2324 |        | 2403-2325<br>2403-2326 |        | 2403-2327<br>2403-2328 |        | 2403-2329<br>2403-2331 |        | 2403-2332<br>2403-2333 |        | 2403-2334<br>2403-2335 |        | 2403-2336<br>2403-2337 |        |        |  |        |  |  |  |        |  |  |  |
|-----------------------------------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|--------|--|--------|--|--|--|--------|--|--|--|
|                                   | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                                            |        | H8—11H                                           |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        |        |  |        |  |  |  |        |  |  |  |
| Сочетание полей<br>допусков D и e | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                                            |        | H8—11H                                           |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        |        |  |        |  |  |  |        |  |  |  |
|                                   | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                                            |        | H8—11H                                           |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        |        |  |        |  |  |  |        |  |  |  |
| D × n                             | 65 × 2                 |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        | 70 × 2                 |        |        |  | 75 × 2 |  |  |  | 80 × 2 |  |  |  |
|                                   | 24                     | 64,270 | 64,270                 | 64,270 | 64,270                 | 63,610 | 63,610                 | 63,610 | 63,610                                           | 69,050 | 69,050                                           | 69,050 | 69,050                 | 74,050 | 74,050                 | 74,050 | 74,050                 | 73,830 | 73,830                 | 73,830 | 73,830                 | 79,050 | 79,050                 | 79,050 | 79,050 |  |        |  |  |  |        |  |  |  |
| 25                                | 64,420                 | 64,420 | 64,420                 | 64,420 | 63,730                 | 63,730 | 63,730                 | 63,730 | 69,190                                           | 69,190 | 69,190                                           | 69,190 | 74,190                 | 74,190 | 74,190                 | 74,190 | 73,960                 | 73,960 | 73,960                 | 73,960 | 79,190                 | 79,190 | 79,190                 | 79,190 |        |  |        |  |  |  |        |  |  |  |
| 26                                | 64,570                 | 64,570 | 64,570                 | 64,570 | 63,850                 | 63,850 | 63,850                 | 63,850 | 69,330                                           | 69,330 | 69,330                                           | 69,330 | 74,330                 | 74,330 | 74,330                 | 74,330 | 74,090                 | 74,090 | 74,090                 | 74,090 | 79,330                 | 79,330 | 79,330                 | 79,330 |        |  |        |  |  |  |        |  |  |  |
| 27                                | 64,720                 | 64,720 | 64,720                 | 64,720 | 63,970                 | 63,970 | 63,970                 | 63,970 | 69,470                                           | 69,470 | 69,470                                           | 69,470 | 74,470                 | 74,470 | 74,470                 | 74,470 | 74,220                 | 74,220 | 74,220                 | 74,220 | 79,470                 | 79,470 | 79,470                 | 79,470 |        |  |        |  |  |  |        |  |  |  |
| 28                                | 64,840                 | 64,840 | 64,840                 | 64,840 | 64,090                 | 64,090 | 64,090                 | 64,090 | 69,610                                           | 69,610 | 69,610                                           | 69,610 | 74,610                 | 74,610 | 74,610                 | 74,610 | 74,350                 | 74,350 | 74,350                 | 74,350 | 79,610                 | 79,610 | 79,610                 | 79,610 |        |  |        |  |  |  |        |  |  |  |
| 29                                | 64,900                 | 64,900 | 64,900                 | 64,900 | 64,210                 | 64,210 | 64,210                 | 64,210 | 69,750                                           | 69,750 | 69,750                                           | 69,750 | 74,750                 | 74,750 | 74,750                 | 74,750 | 74,480                 | 74,480 | 74,480                 | 74,480 | 79,750                 | 79,750 | 79,750                 | 79,750 |        |  |        |  |  |  |        |  |  |  |
| 30                                | 64,940                 | 64,940 | 64,940                 | 64,940 | 64,330                 | 64,330 | 64,330                 | 64,330 | 69,870                                           | 69,870 | 69,870                                           | 69,870 | 74,870                 | 74,870 | 74,870                 | 74,870 | 74,610                 | 74,610 | 74,610                 | 74,610 | 79,870                 | 79,870 | 79,870                 | 79,870 |        |  |        |  |  |  |        |  |  |  |
| 31                                | 64,970                 | 64,970 | 64,970                 | 64,970 | 64,450                 | 64,450 | 64,450                 | 64,450 | 69,930                                           | 69,930 | 69,930                                           | 69,930 | 74,930                 | 74,930 | 74,930                 | 74,930 | 74,740                 | 74,740 | 74,740                 | 74,740 | 79,930                 | 79,930 | 79,930                 | 79,930 |        |  |        |  |  |  |        |  |  |  |
| 32                                | 64,990                 | 64,990 | 64,990                 | 64,990 | 64,570                 | 64,570 | 64,570                 | 64,570 | 69,970                                           | 69,970 | 69,970                                           | 69,970 | 74,970                 | 74,970 | 74,970                 | 74,970 | 74,840                 | 74,840 | 74,840                 | 74,840 | 79,970                 | 79,970 | 79,970                 | 79,970 |        |  |        |  |  |  |        |  |  |  |
| 33                                | 65,010                 | 65,010 | 65,025                 | 65,025 | 64,690                 | 64,690 | 64,690                 | 64,690 | 69,990                                           | 69,990 | 70,000                                           | 70,000 | 74,990                 | 75,000 | 75,000                 | 75,000 | 74,900                 | 74,900 | 74,900                 | 74,900 | 79,990                 | 79,990 | 80,000                 | 80,000 |        |  |        |  |  |  |        |  |  |  |
| 34                                | 65,030                 | 65,030 | 65,046                 | 65,046 | 64,810                 | 64,810 | 64,810                 | 64,810 | 70,010                                           | 70,010 | 70,025                                           | 70,025 | 75,010                 | 75,025 | 75,025                 | 75,025 | 74,940                 | 74,940 | 74,940                 | 74,940 | 80,010                 | 80,010 | 80,025                 | 80,025 |        |  |        |  |  |  |        |  |  |  |
| 35                                |                        |        |                        |        | 64,900                 | 64,900 | 64,900                 | 64,900 | 70,030                                           | 70,030 | 70,046                                           | 70,046 | 75,030                 | 75,046 | 75,046                 | 75,046 | 74,970                 | 74,970 | 74,970                 | 74,970 | 80,030                 | 80,030 | 80,046                 | 80,046 |        |  |        |  |  |  |        |  |  |  |
| 36                                |                        |        |                        |        | 64,940                 | 64,940 | 64,940                 | 64,940 |                                                  |        |                                                  |        |                        |        |                        |        | 74,990                 | 74,990 | 74,990                 | 74,990 |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 37                                |                        |        |                        |        | 64,970                 | 64,970 | 64,970                 | 64,970 |                                                  |        |                                                  |        |                        |        |                        |        | 75,010                 | 75,010 | 75,010                 | 75,010 |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 38                                |                        |        |                        |        | 64,990                 | 64,990 | 64,990                 | 64,990 |                                                  |        |                                                  |        |                        |        |                        |        | 75,030                 | 75,030 | 75,030                 | 75,030 |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 39                                |                        |        |                        |        | 65,010                 | 65,010 | 65,010                 | 65,010 |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 40                                |                        |        |                        |        | 65,030                 | 65,030 | 65,030                 | 65,030 |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 41                                |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 42                                |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 43                                |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 44                                |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 45                                |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |
| 46                                |                        |        |                        |        |                        |        |                        |        |                                                  |        |                                                  |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |  |        |  |  |  |        |  |  |  |

Номера и диаметры D<sub>1</sub> зубьев







Продолжение табл. 4

Размеры, мм

| Обозначение проточки           | 80×2  |        | 85×2   |        | 90×2   |        | 95×2   |        | 2403-2361<br>2403-2362 | 2403-2363<br>2403-2364 | 2403-2365<br>2403-2366 | 2403-2367<br>2403-2368 |
|--------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|------------------------|------------------------|------------------------|------------------------|
|                                | Н7—9Н | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н | Н7—9Н  | Н8—11Н |                        |                        |                        |                        |
| Сочетание полей допусков D и e | Н7—9Н |        | Н8—11Н |        | Н7—9Н  |        | Н8—11Н |        | Н7—9Н                  |                        | Н8—11Н                 |                        |
|                                | Н7—9Н |        | Н8—11Н |        | Н7—9Н  |        | Н8—11Н |        | Н7—9Н                  |                        | Н8—11Н                 |                        |
| D × m                          | 80×2  |        | 85×2   |        | 90×2   |        | 95×2   |        | 95×2                   |                        | 95×2                   |                        |
|                                | 80×2  |        | 85×2   |        | 90×2   |        | 95×2   |        | 95×2                   |                        | 95×2                   |                        |
| Шлицевых                       | 24    | 79,270 | 79,270 | 84,050 | 84,050 | 89,050 | 89,050 | 88,830 | 94,050                 | 94,050                 | 93,610                 | 93,610                 |
|                                | 25    | 79,420 | 79,420 | 84,190 | 84,190 | 89,190 | 89,190 | 88,960 | 94,190                 | 94,190                 | 93,730                 | 93,730                 |
|                                | 26    | 79,570 | 79,570 | 84,330 | 84,330 | 89,330 | 89,330 | 89,090 | 94,330                 | 94,330                 | 93,850                 | 93,850                 |
|                                | 27    | 79,720 | 79,720 | 84,470 | 84,470 | 89,470 | 89,470 | 89,220 | 94,470                 | 94,470                 | 93,970                 | 93,970                 |
| Черновых и переходных          | 28    | 79,840 | 79,840 | 84,610 | 84,610 | 89,610 | 89,610 | 89,350 | 94,610                 | 94,610                 | 94,090                 | 94,090                 |
|                                | 29    | 79,900 | 79,900 | 84,750 | 84,750 | 89,750 | 89,750 | 89,480 | 94,750                 | 94,750                 | 94,210                 | 94,210                 |
| Чистовых                       | 30    | 79,940 | 79,940 | 84,870 | 84,870 | 89,870 | 89,870 | 89,610 | 94,870                 | 94,870                 | 94,330                 | 94,330                 |
|                                | 31    | 79,970 | 79,970 | 84,940 | 84,940 | 89,940 | 89,940 | 89,740 | 94,940                 | 94,940                 | 94,450                 | 94,450                 |
| Калибрующих                    | 32    | 79,990 | 80,000 | 84,980 | 84,980 | 89,980 | 89,980 | 89,840 | 94,980                 | 94,980                 | 94,570                 | 94,570                 |
|                                | 33    | 80,010 | 80,025 | 85,010 | 85,010 | 90,000 | 90,010 | 89,910 | 95,000                 | 95,010                 | 94,690                 | 94,690                 |
|                                | 34    | 80,030 | 80,046 | 85,020 | 85,035 | 90,020 | 90,035 | 89,950 | 95,020                 | 95,035                 | 94,810                 | 94,810                 |
|                                | 35    |        |        | 85,035 | 85,054 | 90,035 | 90,054 | 89,980 | 95,035                 | 95,054                 | 94,900                 | 94,900                 |
| Шлицевых                       | 36    |        |        |        |        |        |        | 90,000 |                        |                        | 94,950                 | 94,950                 |
|                                | 37    | 80,030 | 80,046 |        |        |        |        | 90,020 |                        |                        | 94,980                 | 94,980                 |
| Шлицевых                       | 38    |        |        | 85,035 | 85,054 | 90,035 | 90,054 | 90,035 | 95,035                 | 95,054                 | 95,000                 | 95,010                 |
|                                | 39    |        |        |        |        |        |        | 90,035 |                        |                        | 95,020                 | 95,035                 |
| Шлицевых                       | 40    |        |        |        |        |        |        | 90,035 |                        |                        | 95,350                 | 95,054                 |
|                                | 41    |        |        |        |        |        |        | 90,035 |                        |                        |                        |                        |
| Шлицевых                       | 42    |        |        |        |        |        |        | 90,035 |                        |                        |                        |                        |
|                                | 43    |        |        |        |        |        |        | 90,035 |                        |                        |                        |                        |
| Шлицевых                       | 44    |        |        |        |        |        |        | 90,035 |                        |                        | 95,350                 | 95,054                 |
|                                | 45    |        |        |        |        |        |        | 90,035 |                        |                        |                        |                        |
| Шлицевых                       | 46    |        |        |        |        |        |        | 90,035 |                        |                        |                        |                        |
|                                | 46    |        |        |        |        |        |        | 90,035 |                        |                        |                        |                        |

Номера и диаметры D<sub>1</sub> зубьев







Размеры, мм

| Обозначение проточки           | 2403-2369<br>2403-2371 |         | 2403-2372<br>2403-2373 |         | 2403-2374<br>2403-2375 |         | 2403-2376<br>2403-2377 |         | 2403-2378<br>2403-2379 |        | 2403-2381<br>2403-2382 |        | 2403-2383<br>2403-2384 |        | 2403-2385<br>2403-2386 |        | 2403-2387<br>2403-2388 |        | 2403-2389<br>2403-2391 |        | 2403-2392<br>2403-2393 |        | 2403-2394<br>2403-2395 |        |
|--------------------------------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|
|                                | H7-9H                  |         | H8-11H                 |         | H7-9H                  |         | H8-11H                 |         | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        |
| Сочетание полей допусков D и e | H7-9H                  |         | H8-11H                 |         | H7-9H                  |         | H8-11H                 |         | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        |
|                                | H7-9H                  |         | H8-11H                 |         | H7-9H                  |         | H8-11H                 |         | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        |
| D × m                          | 100 × 2                |         | 100 × 2                |         | 100 × 2                |         | 100 × 2                |         | 52 × 2,5               |        | 52 × 2,5               |        | 52 × 2,5               |        | 52 × 2,5               |        | 55 × 2,5               |        | 55 × 2,5               |        | 55 × 2,5               |        | 55 × 2,5               |        |
|                                | 28                     | 99,350  | 99,350                 | 99,350  | 99,350                 | 99,090  | 99,090                 | 99,090  | 99,090                 | 50,080 | 50,080                 | 50,080 | 50,080                 | 50,600 | 50,600                 | 50,600 | 50,600                 | 53,860 | 53,860                 | 53,860 | 53,860                 | 53,080 | 53,080                 | 53,080 |
| 29                             | 99,480                 | 99,480  | 99,480                 | 99,480  | 99,210                 | 99,210  | 99,210                 | 99,210  | 50,200                 | 50,200 | 50,200                 | 50,200 | 50,740                 | 50,740 | 50,740                 | 50,740 | 54,010                 | 54,010 | 54,010                 | 54,010 | 53,200                 | 53,200 | 53,200                 | 53,200 |
| 30                             | 99,610                 | 99,610  | 99,610                 | 99,610  | 99,330                 | 99,330  | 99,330                 | 99,330  | 50,320                 | 50,320 | 50,320                 | 50,320 | 50,880                 | 50,880 | 50,880                 | 50,880 | 54,160                 | 54,160 | 54,160                 | 54,160 | 53,320                 | 53,320 | 53,320                 | 53,320 |
| 31                             | 99,740                 | 99,740  | 99,740                 | 99,740  | 99,450                 | 99,450  | 99,450                 | 99,450  | 50,440                 | 50,440 | 50,440                 | 50,440 | 51,020                 | 51,020 | 51,020                 | 51,020 | 54,310                 | 54,310 | 54,310                 | 54,310 | 53,440                 | 53,440 | 53,440                 | 53,440 |
| 32                             | 99,840                 | 99,840  | 99,840                 | 99,840  | 99,570                 | 99,570  | 99,570                 | 99,570  | 50,560                 | 50,560 | 50,560                 | 50,560 | 51,160                 | 51,160 | 51,160                 | 51,160 | 54,460                 | 54,460 | 54,460                 | 54,460 | 53,560                 | 53,560 | 53,560                 | 53,560 |
| 33                             | 99,910                 | 99,910  | 99,910                 | 99,910  | 99,690                 | 99,690  | 99,690                 | 99,690  | 50,680                 | 50,680 | 50,680                 | 50,680 | 51,300                 | 51,300 | 51,300                 | 51,300 | 54,610                 | 54,610 | 54,610                 | 54,610 | 53,680                 | 53,680 | 53,680                 | 53,680 |
| 34                             | 99,950                 | 99,950  | 99,950                 | 99,950  | 99,810                 | 99,810  | 99,810                 | 99,810  | 50,800                 | 50,800 | 50,800                 | 50,800 | 51,440                 | 51,440 | 51,440                 | 51,440 | 54,760                 | 54,760 | 54,760                 | 54,760 | 53,800                 | 53,800 | 53,800                 | 53,800 |
| 35                             | 99,980                 | 99,980  | 99,980                 | 99,980  | 99,900                 | 99,900  | 99,900                 | 99,900  | 50,920                 | 50,920 | 50,920                 | 50,920 | 51,580                 | 51,580 | 51,580                 | 51,580 | 54,880                 | 54,880 | 54,880                 | 54,880 | 53,920                 | 53,920 | 53,920                 | 53,920 |
| 36                             | 100,000                | 100,000 | 100,000                | 100,000 | 99,950                 | 99,950  | 99,950                 | 99,950  | 51,040                 | 51,040 | 51,040                 | 51,040 | 51,720                 | 51,720 | 51,720                 | 51,720 | 54,940                 | 54,940 | 54,940                 | 54,940 | 54,040                 | 54,040 | 54,040                 | 54,040 |
| 37                             | 100,020                | 100,020 | 100,020                | 100,020 | 99,980                 | 99,980  | 99,980                 | 99,980  | 51,160                 | 51,160 | 51,160                 | 51,160 | 51,860                 | 51,860 | 51,860                 | 51,860 | 54,970                 | 54,970 | 54,970                 | 54,970 | 54,160                 | 54,160 | 54,160                 | 54,160 |
| 38                             | 100,035                | 100,035 | 100,035                | 100,035 | 100,000                | 100,000 | 100,000                | 100,000 | 51,280                 | 51,280 | 51,280                 | 51,280 | 51,930                 | 51,930 | 51,930                 | 51,930 | 54,990                 | 54,990 | 54,990                 | 54,990 | 54,280                 | 54,280 | 54,280                 | 54,280 |
| 39                             |                        |         |                        |         | 100,020                | 100,020 | 100,020                | 100,020 | 51,400                 | 51,400 | 51,400                 | 51,400 | 51,970                 | 51,970 | 51,970                 | 51,970 | 55,010                 | 55,010 | 55,010                 | 55,010 | 54,400                 | 54,400 | 54,400                 | 54,400 |
| 40                             |                        |         |                        |         | 100,035                | 100,035 | 100,035                | 100,035 | 51,520                 | 51,520 | 51,520                 | 51,520 | 51,990                 | 51,990 | 51,990                 | 51,990 | 55,030                 | 55,030 | 55,030                 | 55,030 | 54,520                 | 54,520 | 54,520                 | 54,520 |
| 41                             |                        |         |                        |         |                        |         |                        |         | 51,640                 | 51,640 | 51,640                 | 51,640 | 52,020                 | 52,020 | 52,020                 | 52,020 |                        |        |                        |        | 54,640                 | 54,640 | 54,640                 | 54,640 |
| 42                             |                        |         |                        |         |                        |         |                        |         | 51,760                 | 51,760 | 51,760                 | 51,760 | 52,030                 | 52,030 | 52,030                 | 52,030 |                        |        |                        |        | 54,760                 | 54,760 | 54,760                 | 54,760 |
| 43                             |                        |         |                        |         |                        |         |                        |         | 51,880                 | 51,880 | 51,880                 | 51,880 |                        |        |                        |        | 55,030                 | 55,030 | 55,030                 | 55,030 | 54,880                 | 54,880 | 54,880                 | 54,880 |
| 44                             |                        |         |                        |         |                        |         |                        |         | 51,940                 | 51,940 | 51,940                 | 51,940 |                        |        |                        |        |                        |        |                        |        | 54,940                 | 54,940 | 54,940                 | 54,940 |
| 45                             |                        |         |                        |         |                        |         |                        |         | 51,970                 | 51,970 | 51,970                 | 51,970 |                        |        |                        |        |                        |        |                        |        | 54,970                 | 54,970 | 54,970                 | 54,970 |
| 46                             |                        |         |                        |         |                        |         |                        |         | 51,990                 | 51,990 | 51,990                 | 51,990 |                        |        |                        |        |                        |        |                        |        | 54,990                 | 54,990 | 54,990                 | 54,990 |
| 47                             |                        |         |                        |         |                        |         |                        |         | 52,010                 | 52,010 | 52,010                 | 52,010 |                        |        |                        |        |                        |        |                        |        | 55,010                 | 55,010 | 55,010                 | 55,010 |
| 48                             |                        |         |                        |         |                        |         |                        |         | 52,030                 | 52,030 | 52,030                 | 52,030 |                        |        |                        |        |                        |        |                        |        | 55,030                 | 55,030 | 55,030                 | 55,030 |
| 49                             |                        |         |                        |         |                        |         |                        |         |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |
| 50                             |                        |         |                        |         |                        |         |                        |         |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |
| 51                             |                        |         |                        |         |                        |         |                        |         |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |
| 52                             |                        |         |                        |         |                        |         |                        |         |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |
| 53                             |                        |         |                        |         |                        |         |                        |         |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |
| 54                             |                        |         |                        |         |                        |         |                        |         |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |

Номера и диаметры D<sub>1</sub> зубьев

шлицевых

калнбрующихся

чистовых

черновых и переходных



## Размеры, мм

С. 42 ГОСТ 28048-89

| Обозначение<br>протяжки | 2403-2396<br>2403-2397 |        | 2403-2398<br>2403-2399 |        | 2403-2401<br>2403-2402 |        | 2403-2403<br>2403-2404 |        | 2403-2405<br>2403-2406 |        | 2403-2407<br>2403-2408 |        | 2403-2409<br>2403-2411 |        | 2403-2412<br>2403-2413 |        | 2403-2414<br>2403-2415 |        | 2403-2416<br>2403-2417 |        | 2403-2418<br>2403-2419 |        | 2403-2421<br>2403-2422 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                         | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| D × m                   | 60 × 2,5               |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        | 65 × 2,5               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 70 × 2,5              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                         | Фасочных               |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        | Шлицевых               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Черновых и переходных |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1                       | 55,000                 | 55,000 | 55,000                 | 55,000 | 55,000                 | 55,000 | 55,000                 | 55,000 | 60,000                 | 60,000 | 60,000                 | 60,000 | 60,000                 | 60,000 | 60,000                 | 60,000 | 60,000                 | 65,000 | 65,000                 | 65,000 | 65,000                 | 65,000 | 65,000                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2                       | 55,150                 | 55,150 | 55,150                 | 55,140 | 55,140                 | 55,140 | 55,140                 | 55,140 | 60,150                 | 60,150 | 60,150                 | 60,150 | 60,120                 | 60,120 | 60,120                 | 60,120 | 60,120                 | 65,140 | 65,140                 | 65,140 | 65,140                 | 65,140 | 65,140                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3                       | 55,300                 | 55,300 | 55,300                 | 55,280 | 55,280                 | 55,280 | 55,280                 | 55,280 | 60,300                 | 60,300 | 60,300                 | 60,300 | 60,240                 | 60,240 | 60,240                 | 60,240 | 60,240                 | 65,280 | 65,280                 | 65,280 | 65,280                 | 65,280 | 65,280                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4                       | 55,450                 | 55,450 | 55,450                 | 55,420 | 55,420                 | 55,420 | 55,420                 | 55,420 | 60,450                 | 60,450 | 60,450                 | 60,450 | 60,360                 | 60,360 | 60,360                 | 60,360 | 60,360                 | 65,420 | 65,420                 | 65,420 | 65,420                 | 65,420 | 65,420                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5                       | 55,600                 | 55,600 | 55,600                 | 55,560 | 55,560                 | 55,560 | 55,560                 | 55,560 | 60,600                 | 60,600 | 60,600                 | 60,600 | 60,480                 | 60,480 | 60,480                 | 60,480 | 60,480                 | 65,560 | 65,560                 | 65,560 | 65,560                 | 65,560 | 65,560                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6                       | 55,750                 | 55,750 | 55,750                 | 55,700 | 55,700                 | 55,700 | 55,700                 | 55,700 | 60,750                 | 60,750 | 60,750                 | 60,750 | 60,600                 | 60,600 | 60,600                 | 60,600 | 60,600                 | 65,700 | 65,700                 | 65,700 | 65,700                 | 65,700 | 65,700                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7                       | 55,900                 | 55,900 | 55,900                 | 55,840 | 55,840                 | 55,840 | 55,840                 | 55,840 | 60,900                 | 60,900 | 60,900                 | 60,900 | 60,720                 | 60,720 | 60,720                 | 60,720 | 60,720                 | 65,840 | 65,840                 | 65,840 | 65,840                 | 65,840 | 65,840                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8                       | 56,050                 | 56,050 | 56,050                 | 55,980 | 55,980                 | 55,980 | 55,980                 | 55,980 | 60,860                 | 60,860 | 60,860                 | 60,860 | 60,840                 | 60,840 | 60,840                 | 60,840 | 60,840                 | 65,980 | 65,980                 | 65,980 | 65,980                 | 65,980 | 65,980                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9                       | 56,010                 | 56,010 | 56,010                 | 56,120 | 56,120                 | 56,120 | 56,120                 | 56,120 | 61,010                 | 61,010 | 61,010                 | 61,010 | 60,960                 | 60,960 | 60,960                 | 60,960 | 60,960                 | 65,940 | 65,940                 | 65,940 | 65,940                 | 65,940 | 65,940                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10                      | 56,160                 | 56,160 | 56,160                 | 56,080 | 56,080                 | 56,080 | 56,080                 | 56,080 | 61,160                 | 61,160 | 61,160                 | 61,160 | 61,080                 | 61,080 | 61,080                 | 61,080 | 61,080                 | 66,080 | 66,080                 | 66,080 | 66,080                 | 66,080 | 66,080                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11                      | 56,310                 | 56,310 | 56,310                 | 56,220 | 56,220                 | 56,220 | 56,220                 | 56,220 | 61,310                 | 61,310 | 61,310                 | 61,310 | 61,040                 | 61,040 | 61,040                 | 61,040 | 61,040                 | 66,220 | 66,220                 | 66,220 | 66,220                 | 66,220 | 66,220                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12                      | 56,460                 | 56,460 | 56,460                 | 56,360 | 56,360                 | 56,360 | 56,360                 | 56,360 | 61,460                 | 61,460 | 61,460                 | 61,460 | 61,160                 | 61,160 | 61,160                 | 61,160 | 61,160                 | 66,360 | 66,360                 | 66,360 | 66,360                 | 66,360 | 66,360                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13                      | 56,610                 | 56,610 | 56,610                 | 56,500 | 56,500                 | 56,500 | 56,500                 | 56,500 | 61,610                 | 61,610 | 61,610                 | 61,610 | 61,280                 | 61,280 | 61,280                 | 61,280 | 61,280                 | 66,500 | 66,500                 | 66,500 | 66,500                 | 66,500 | 66,500                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14                      | 56,760                 | 56,760 | 56,760                 | 56,640 | 56,640                 | 56,640 | 56,640                 | 56,640 | 61,760                 | 61,760 | 61,760                 | 61,760 | 61,400                 | 61,400 | 61,400                 | 61,400 | 61,400                 | 66,640 | 66,640                 | 66,640 | 66,640                 | 66,640 | 66,640                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 15                      | 56,910                 | 56,910 | 56,910                 | 56,780 | 56,780                 | 56,780 | 56,780                 | 56,780 | 61,910                 | 61,910 | 61,910                 | 61,910 | 61,520                 | 61,520 | 61,520                 | 61,520 | 61,520                 | 66,780 | 66,780                 | 66,780 | 66,780                 | 66,780 | 66,780                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16                      | 57,060                 | 57,060 | 57,060                 | 56,920 | 56,920                 | 56,920 | 56,920                 | 56,920 | 62,060                 | 62,060 | 62,060                 | 62,060 | 61,640                 | 61,640 | 61,640                 | 61,640 | 61,640                 | 66,920 | 66,920                 | 66,920 | 66,920                 | 66,920 | 66,920                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17                      | 57,210                 | 57,210 | 57,210                 | 57,060 | 57,060                 | 57,060 | 57,060                 | 57,060 | 62,210                 | 62,210 | 62,210                 | 62,210 | 61,760                 | 61,760 | 61,760                 | 61,760 | 61,760                 | 67,060 | 67,060                 | 67,060 | 67,060                 | 67,060 | 67,060                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18                      | 57,360                 | 57,360 | 57,360                 | 57,200 | 57,200                 | 57,200 | 57,200                 | 57,200 | 62,360                 | 62,360 | 62,360                 | 62,360 | 61,880                 | 61,880 | 61,880                 | 61,880 | 61,880                 | 67,200 | 67,200                 | 67,200 | 67,200                 | 67,200 | 67,200                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19                      | 57,510                 | 57,510 | 57,510                 | 57,340 | 57,340                 | 57,340 | 57,340                 | 57,340 | 62,510                 | 62,510 | 62,510                 | 62,510 | 62,000                 | 62,000 | 62,000                 | 62,000 | 62,000                 | 67,340 | 67,340                 | 67,340 | 67,340                 | 67,340 | 67,340                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20                      | 57,660                 | 57,660 | 57,660                 | 57,480 | 57,480                 | 57,480 | 57,480                 | 57,480 | 62,660                 | 62,660 | 62,660                 | 62,660 | 62,120                 | 62,120 | 62,120                 | 62,120 | 62,120                 | 67,480 | 67,480                 | 67,480 | 67,480                 | 67,480 | 67,480                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21                      | 57,810                 | 57,810 | 57,810                 | 57,620 | 57,620                 | 57,620 | 57,620                 | 57,620 | 62,810                 | 62,810 | 62,810                 | 62,810 | 62,240                 | 62,240 | 62,240                 | 62,240 | 62,240                 | 67,620 | 67,620                 | 67,620 | 67,620                 | 67,620 | 67,620                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22                      | 57,960                 | 57,960 | 57,960                 | 57,760 | 57,760                 | 57,760 | 57,760                 | 57,760 | 62,960                 | 62,960 | 62,960                 | 62,960 | 62,360                 | 62,360 | 62,360                 | 62,360 | 62,360                 | 67,760 | 67,760                 | 67,760 | 67,760                 | 67,760 | 67,760                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23                      | 58,110                 | 58,110 | 58,110                 | 57,900 | 57,900                 | 57,900 | 57,900                 | 57,900 | 63,110                 | 63,110 | 63,110                 | 63,110 | 62,480                 | 62,480 | 62,480                 | 62,480 | 62,480                 | 67,900 | 67,900                 | 67,900 | 67,900                 | 67,900 | 67,900                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24                      | 58,260                 | 58,260 | 58,260                 | 58,040 | 58,040                 | 58,040 | 58,040                 | 58,040 | 63,260                 | 63,260 | 63,260                 | 63,260 | 62,600                 | 62,600 | 62,600                 | 62,600 | 62,600                 | 68,040 | 68,040                 | 68,040 | 68,040                 | 68,040 | 68,040                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25                      | 58,410                 | 58,410 | 58,410                 | 58,180 | 58,180                 | 58,180 | 58,180                 | 58,180 | 63,410                 | 63,410 | 63,410                 | 63,410 | 62,720                 | 62,720 | 62,720                 | 62,720 | 62,720                 | 68,180 | 68,180                 | 68,180 | 68,180                 | 68,180 | 68,180                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26                      | 58,560                 | 58,560 | 58,560                 | 58,320 | 58,320                 | 58,320 | 58,320                 | 58,320 | 63,560                 | 63,560 | 63,560                 | 63,560 | 62,840                 | 62,840 | 62,840                 | 62,840 | 62,840                 | 68,320 | 68,320                 | 68,320 | 68,320                 | 68,320 | 68,320                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 27                      | 58,710                 | 58,710 | 58,710                 | 58,460 | 58,460                 | 58,460 | 58,460                 | 58,460 | 63,710                 | 63,710 | 63,710                 | 63,710 | 62,960                 | 62,960 | 62,960                 | 62,960 | 62,960                 | 68,460 | 68,460                 | 68,460 | 68,460                 | 68,460 | 68,460                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Номера и диаметры D<sub>1</sub> зубьев



Продолжение табл. 4

## Размеры, мм

| Обозначение<br>протяжки | 2403-2396<br>2403-2397 |        | 2403-2398<br>2403-2399 |        | 2403-2401<br>2403-2402 |        | 2403-2403<br>2403-2404 |        | 2403-2405<br>2403-2406 |        | 2403-2407<br>2403-2408 |          | 2403-2409<br>2403-2411 |        | 2403-2412<br>2403-2413 |        | 2403-2414<br>2403-2415 |        | 2403-2416<br>2403-2417 |        | 2403-2418<br>2403-2419 |        | 2403-2421<br>2403-2422 |        |        |        |  |  |  |  |  |  |  |
|-------------------------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|----------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|--------|--------|--|--|--|--|--|--|--|
|                         | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |          | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        | H7—9H                  |        | H8—11H                 |        |        |        |  |  |  |  |  |  |  |
| D × m                   | 60 × 2,5               |        |                        |        |                        |        |                        |        |                        |        |                        | 65 × 2,5 |                        |        |                        |        |                        |        |                        |        |                        |        | 70 × 2,5               |        |        |        |  |  |  |  |  |  |  |
|                         | 28                     | 58,860 | 58,860                 | 58,860 | 58,860                 | 58,600 | 58,600                 | 58,600 | 58,600                 | 63,860 | 63,860                 | 63,860   | 63,860                 | 63,080 | 63,080                 | 63,080 | 63,080                 | 63,080 | 68,600                 | 68,600 | 68,600                 | 68,600 | 68,600                 | 68,600 | 68,860 | 68,860 |  |  |  |  |  |  |  |
| 29                      | 59,010                 | 59,010 | 59,010                 | 59,010 | 58,740                 | 58,740 | 58,740                 | 58,740 | 64,010                 | 64,010 | 64,010                 | 64,010   | 63,200                 | 63,200 | 63,200                 | 63,200 | 63,200                 | 68,740 | 68,740                 | 68,740 | 68,740                 | 68,740 | 68,740                 | 69,010 | 69,010 |        |  |  |  |  |  |  |  |
| 30                      | 59,160                 | 59,160 | 59,160                 | 59,160 | 58,880                 | 58,880 | 58,880                 | 58,880 | 64,160                 | 64,160 | 64,160                 | 64,160   | 63,320                 | 63,320 | 63,320                 | 63,320 | 63,320                 | 68,880 | 68,880                 | 68,880 | 68,880                 | 68,880 | 68,880                 | 69,160 | 69,160 |        |  |  |  |  |  |  |  |
| 31                      | 59,310                 | 59,310 | 59,310                 | 59,310 | 59,020                 | 59,020 | 59,020                 | 59,020 | 64,310                 | 64,310 | 64,310                 | 64,310   | 63,440                 | 63,440 | 63,440                 | 63,440 | 63,440                 | 69,020 | 69,020                 | 69,020 | 69,020                 | 69,020 | 69,020                 | 69,310 | 69,310 |        |  |  |  |  |  |  |  |
| 32                      | 59,460                 | 59,460 | 59,460                 | 59,460 | 59,160                 | 59,160 | 59,160                 | 59,160 | 64,460                 | 64,460 | 64,460                 | 64,460   | 63,560                 | 63,560 | 63,560                 | 63,560 | 63,560                 | 69,160 | 69,160                 | 69,160 | 69,160                 | 69,160 | 69,160                 | 69,460 | 69,460 |        |  |  |  |  |  |  |  |
| 33                      | 59,610                 | 59,610 | 59,610                 | 59,610 | 59,300                 | 59,300 | 59,300                 | 59,300 | 64,610                 | 64,610 | 64,610                 | 64,610   | 63,680                 | 63,680 | 63,680                 | 63,680 | 63,680                 | 69,300 | 69,300                 | 69,300 | 69,300                 | 69,300 | 69,300                 | 69,610 | 69,610 |        |  |  |  |  |  |  |  |
| 34                      | 59,760                 | 59,760 | 59,760                 | 59,760 | 59,440                 | 59,440 | 59,440                 | 59,440 | 64,760                 | 64,760 | 64,760                 | 64,760   | 63,800                 | 63,800 | 63,800                 | 63,800 | 63,800                 | 69,440 | 69,440                 | 69,440 | 69,440                 | 69,440 | 69,440                 | 69,760 | 69,760 |        |  |  |  |  |  |  |  |
| 35                      | 59,880                 | 59,880 | 59,880                 | 59,880 | 59,580                 | 59,580 | 59,580                 | 59,580 | 64,880                 | 64,880 | 64,880                 | 64,880   | 63,920                 | 63,920 | 63,920                 | 63,920 | 63,920                 | 69,580 | 69,580                 | 69,580 | 69,580                 | 69,580 | 69,580                 | 69,880 | 69,880 |        |  |  |  |  |  |  |  |
| 36                      | 59,940                 | 59,940 | 59,940                 | 59,940 | 59,720                 | 59,720 | 59,720                 | 59,720 | 64,940                 | 64,940 | 64,940                 | 64,940   | 64,040                 | 64,040 | 64,040                 | 64,040 | 64,040                 | 69,720 | 69,720                 | 69,720 | 69,720                 | 69,720 | 69,720                 | 69,940 | 69,940 |        |  |  |  |  |  |  |  |
| 37                      | 59,970                 | 59,970 | 59,970                 | 59,970 | 59,860                 | 59,860 | 59,860                 | 59,860 | 64,970                 | 64,970 | 64,970                 | 64,970   | 64,160                 | 64,160 | 64,160                 | 64,160 | 64,160                 | 69,860 | 69,860                 | 69,860 | 69,860                 | 69,860 | 69,860                 | 69,970 | 69,970 |        |  |  |  |  |  |  |  |
| 38                      | 59,990                 | 59,990 | 60,000                 | 60,000 | 59,930                 | 59,930 | 59,930                 | 59,930 | 64,990                 | 64,990 | 64,990                 | 65,000   | 64,280                 | 64,280 | 64,280                 | 64,280 | 64,280                 | 69,930 | 69,930                 | 69,930 | 69,930                 | 69,930 | 69,930                 | 70,000 | 70,000 |        |  |  |  |  |  |  |  |
| 39                      | 60,010                 | 60,010 | 60,025                 | 60,025 | 59,970                 | 59,970 | 59,970                 | 59,970 | 65,010                 | 65,010 | 65,010                 | 65,025   | 64,400                 | 64,400 | 64,400                 | 64,400 | 64,400                 | 69,970 | 69,970                 | 69,970 | 69,970                 | 69,970 | 69,970                 | 70,010 | 70,010 |        |  |  |  |  |  |  |  |
| 40                      | 60,030                 | 60,030 | 60,046                 | 60,046 | 60,000                 | 60,000 | 60,000                 | 60,000 | 65,030                 | 65,030 | 65,030                 | 65,046   | 64,520                 | 64,520 | 64,520                 | 64,520 | 64,520                 | 70,000 | 70,000                 | 70,000 | 70,000                 | 70,000 | 70,000                 | 70,030 | 70,030 |        |  |  |  |  |  |  |  |
| 41                      |                        |        |                        |        | 60,010                 | 60,010 | 60,010                 | 60,010 |                        |        |                        |          | 64,640                 | 64,640 | 64,640                 | 64,640 | 64,640                 | 70,010 | 70,010                 | 70,010 | 70,010                 | 70,010 | 70,010                 |        |        |        |  |  |  |  |  |  |  |
| 42                      |                        |        |                        |        | 60,030                 | 60,030 | 60,030                 | 60,030 |                        |        |                        |          | 64,760                 | 64,760 | 64,760                 | 64,760 | 64,760                 | 70,030 | 70,030                 | 70,030 | 70,030                 | 70,030 | 70,030                 |        |        |        |  |  |  |  |  |  |  |
| 43                      |                        |        | 60,046                 | 60,046 |                        |        |                        |        | 65,030                 | 65,030 | 65,030                 | 65,046   |                        |        |                        |        |                        |        |                        |        |                        |        |                        | 70,030 | 70,046 |        |  |  |  |  |  |  |  |
| 44                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          | 64,940                 | 64,940 | 64,940                 | 64,940 | 64,940                 |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 45                      |                        |        |                        |        | 60,030                 | 60,030 | 60,030                 | 60,030 |                        |        |                        |          | 64,970                 | 64,970 | 64,970                 | 64,970 | 64,970                 | 70,030 | 70,030                 | 70,030 | 70,030                 | 70,030 | 70,030                 |        |        |        |  |  |  |  |  |  |  |
| 46                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          | 64,990                 | 64,990 | 64,990                 | 64,990 | 64,990                 |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 47                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          | 65,010                 | 65,010 | 65,010                 | 65,010 | 65,010                 |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 48                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          | 65,030                 | 65,030 | 65,030                 | 65,030 | 65,030                 |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 49                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 50                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 51                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          | 65,046                 | 65,046 | 65,046                 | 65,046 | 65,046                 |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 52                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 53                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |
| 54                      |                        |        |                        |        |                        |        |                        |        |                        |        |                        |          |                        |        |                        |        |                        |        |                        |        |                        |        |                        |        |        |        |  |  |  |  |  |  |  |

Номера и диаметры D<sub>г</sub> зубьев



| Обозначение<br>прокладки          | 2403-2423<br>2403-2424 |        | 2403-2425<br>2403-2426 |        | 2403-2427<br>2403-2428 |        | 2403-2429<br>2403-2431 |        | 2403-2432<br>2403-2433 |        | 2403-2434<br>2403-2435 |        | 2403-2436<br>2403-2437 |        | 2403-2438<br>2403-2439 |        | 2403-2441<br>2403-2442<br>2403-2445<br>2403-2446 |        | 2403-2443<br>2403-2444<br>2403-2447<br>2403-2448 |        |        |        |       |
|-----------------------------------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|--------------------------------------------------|--------|--------------------------------------------------|--------|--------|--------|-------|
|                                   | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9H                                            |        | H8-11H                                           |        |        |        |       |
| Сочетание полей допусков<br>D и e | 75×2,5                 |        | 75×2,5                 |        | 75×2,5                 |        | 75×2,5                 |        | 75×2,5                 |        | 75×2,5                 |        | 75×2,5                 |        | 75×2,5                 |        | 75×2,5                                           |        | 75×2,5                                           |        | 85×2,5 |        |       |
|                                   | D × d                  |        | D × d                  |        | D × d                  |        | D × d                  |        | D × d                  |        | D × d                  |        | D × d                  |        | D × d                  |        | D × d                                            |        | D × d                                            |        | D × d  |        | D × d |
| Фасонных                          | 1                      | 70,000 | 70,000                 | 70,000 | 70,000                 | 70,000 | 70,000                 | 70,000 | 75,000                 | 75,000 | 75,000                 | 75,000 | 75,000                 | 75,000 | 75,000                 | 75,000 | 80,000                                           | 80,000 | 80,000                                           | 80,000 | 80,000 | 80,000 |       |
|                                   | 2                      | 70,140 | 70,140                 | 70,140 | 70,130                 | 70,130 | 70,130                 | 70,130 | 75,140                 | 75,140 | 75,140                 | 75,140 | 75,140                 | 75,140 | 75,140                 | 75,140 | 80,140                                           | 80,140 | 80,140                                           | 80,140 | 80,140 | 80,140 |       |
|                                   | 3                      | 70,280 | 70,280                 | 70,280 | 70,260                 | 70,260 | 70,260                 | 70,260 | 75,280                 | 75,280 | 75,280                 | 75,280 | 75,280                 | 75,280 | 75,280                 | 75,280 | 80,280                                           | 80,280 | 80,280                                           | 80,280 | 80,280 | 80,280 |       |
|                                   | 4                      | 70,420 | 70,420                 | 70,420 | 70,390                 | 70,390 | 70,390                 | 70,390 | 75,420                 | 75,420 | 75,420                 | 75,420 | 75,420                 | 75,420 | 75,420                 | 75,420 | 80,420                                           | 80,420 | 80,420                                           | 80,420 | 80,420 | 80,420 |       |
|                                   | 5                      | 70,560 | 70,560                 | 70,560 | 70,520                 | 70,520 | 70,520                 | 70,520 | 75,560                 | 75,560 | 75,560                 | 75,560 | 75,560                 | 75,560 | 75,560                 | 75,560 | 80,560                                           | 80,560 | 80,560                                           | 80,560 | 80,560 | 80,560 |       |
|                                   | 6                      | 70,700 | 70,700                 | 70,700 | 70,650                 | 70,650 | 70,650                 | 70,650 | 75,700                 | 75,700 | 75,700                 | 75,700 | 75,700                 | 75,700 | 75,700                 | 75,700 | 80,700                                           | 80,700 | 80,700                                           | 80,700 | 80,700 | 80,700 |       |
|                                   | 7                      | 70,840 | 70,840                 | 70,840 | 70,780                 | 70,780 | 70,780                 | 70,780 | 75,840                 | 75,840 | 75,840                 | 75,840 | 75,840                 | 75,840 | 75,840                 | 75,840 | 80,840                                           | 80,840 | 80,840                                           | 80,840 | 80,840 | 80,840 |       |
|                                   | 8                      | 70,980 | 70,980                 | 70,980 | 70,910                 | 70,910 | 70,910                 | 70,910 | 75,980                 | 75,980 | 75,980                 | 75,980 | 75,980                 | 75,980 | 75,980                 | 75,980 | 80,980                                           | 80,980 | 80,980                                           | 80,980 | 80,980 | 80,980 |       |
| Шлицевых                          | 9                      | 70,940 | 70,940                 | 70,940 | 71,040                 | 71,040 | 71,040                 | 71,040 | 75,940                 | 75,940 | 75,940                 | 75,940 | 75,940                 | 75,940 | 75,940                 | 75,940 | 80,940                                           | 80,940 | 80,940                                           | 80,940 | 80,940 | 80,940 |       |
|                                   | 10                     | 71,080 | 71,080                 | 71,080 | 71,000                 | 71,000 | 71,000                 | 71,000 | 76,080                 | 76,080 | 76,080                 | 76,080 | 76,080                 | 76,080 | 76,080                 | 76,080 | 81,080                                           | 81,080 | 81,080                                           | 81,080 | 81,080 | 81,080 |       |
|                                   | 11                     | 71,220 | 71,220                 | 71,220 | 71,130                 | 71,130 | 71,130                 | 71,130 | 76,220                 | 76,220 | 76,220                 | 76,220 | 76,220                 | 76,220 | 76,220                 | 76,220 | 81,220                                           | 81,220 | 81,220                                           | 81,220 | 81,220 | 81,220 |       |
|                                   | 12                     | 71,360 | 71,360                 | 71,360 | 71,260                 | 71,260 | 71,260                 | 71,260 | 76,360                 | 76,360 | 76,360                 | 76,360 | 76,360                 | 76,360 | 76,360                 | 76,360 | 81,360                                           | 81,360 | 81,360                                           | 81,360 | 81,360 | 81,360 |       |
|                                   | 13                     | 71,500 | 71,500                 | 71,500 | 71,390                 | 71,390 | 71,390                 | 71,390 | 76,500                 | 76,500 | 76,500                 | 76,500 | 76,500                 | 76,500 | 76,500                 | 76,500 | 81,500                                           | 81,500 | 81,500                                           | 81,500 | 81,500 | 81,500 |       |
|                                   | 14                     | 71,640 | 71,640                 | 71,640 | 71,520                 | 71,520 | 71,520                 | 71,520 | 76,640                 | 76,640 | 76,640                 | 76,640 | 76,640                 | 76,640 | 76,640                 | 76,640 | 81,640                                           | 81,640 | 81,640                                           | 81,640 | 81,640 | 81,640 |       |
|                                   | 15                     | 71,780 | 71,780                 | 71,780 | 71,650                 | 71,650 | 71,650                 | 71,650 | 76,780                 | 76,780 | 76,780                 | 76,780 | 76,780                 | 76,780 | 76,780                 | 76,780 | 81,780                                           | 81,780 | 81,780                                           | 81,780 | 81,780 | 81,780 |       |
|                                   | 16                     | 71,920 | 71,920                 | 71,920 | 71,780                 | 71,780 | 71,780                 | 71,780 | 76,920                 | 76,920 | 76,920                 | 76,920 | 76,920                 | 76,920 | 76,920                 | 76,920 | 81,920                                           | 81,920 | 81,920                                           | 81,920 | 81,920 | 81,920 |       |
|                                   | 17                     | 72,060 | 72,060                 | 72,060 | 71,910                 | 71,910 | 71,910                 | 71,910 | 77,060                 | 77,060 | 77,060                 | 77,060 | 77,060                 | 77,060 | 77,060                 | 77,060 | 82,060                                           | 82,060 | 82,060                                           | 82,060 | 82,060 | 82,060 |       |
|                                   | 18                     | 72,200 | 72,200                 | 72,200 | 72,040                 | 72,040 | 72,040                 | 72,040 | 77,200                 | 77,200 | 77,200                 | 77,200 | 77,200                 | 77,200 | 77,200                 | 77,200 | 82,200                                           | 82,200 | 82,200                                           | 82,200 | 82,200 | 82,200 |       |
|                                   | 19                     | 72,340 | 72,340                 | 72,340 | 72,170                 | 72,170 | 72,170                 | 72,170 | 77,340                 | 77,340 | 77,340                 | 77,340 | 77,340                 | 77,340 | 77,340                 | 77,340 | 82,340                                           | 82,340 | 82,340                                           | 82,340 | 82,340 | 82,340 |       |
|                                   | 20                     | 72,480 | 72,480                 | 72,480 | 72,300                 | 72,300 | 72,300                 | 72,300 | 77,480                 | 77,480 | 77,480                 | 77,480 | 77,480                 | 77,480 | 77,480                 | 77,480 | 82,480                                           | 82,480 | 82,480                                           | 82,480 | 82,480 | 82,480 |       |
|                                   | 21                     | 72,620 | 72,620                 | 72,620 | 72,430                 | 72,430 | 72,430                 | 72,430 | 77,620                 | 77,620 | 77,620                 | 77,620 | 77,620                 | 77,620 | 77,620                 | 77,620 | 82,620                                           | 82,620 | 82,620                                           | 82,620 | 82,620 | 82,620 |       |
|                                   | 22                     | 72,760 | 72,760                 | 72,760 | 72,560                 | 72,560 | 72,560                 | 72,560 | 77,760                 | 77,760 | 77,760                 | 77,760 | 77,760                 | 77,760 | 77,760                 | 77,760 | 82,760                                           | 82,760 | 82,760                                           | 82,760 | 82,760 | 82,760 |       |
|                                   | 23                     | 72,900 | 72,900                 | 72,900 | 72,690                 | 72,690 | 72,690                 | 72,690 | 77,900                 | 77,900 | 77,900                 | 77,900 | 77,900                 | 77,900 | 77,900                 | 77,900 | 82,900                                           | 82,900 | 82,900                                           | 82,900 | 82,900 | 82,900 |       |
|                                   | 24                     | 73,040 | 73,040                 | 73,040 | 72,820                 | 72,820 | 72,820                 | 72,820 | 78,040                 | 78,040 | 78,040                 | 78,040 | 78,040                 | 78,040 | 78,040                 | 78,040 | 83,040                                           | 83,040 | 83,040                                           | 83,040 | 83,040 | 83,040 |       |
|                                   | 25                     | 73,180 | 73,180                 | 73,180 | 72,950                 | 72,950 | 72,950                 | 72,950 | 78,180                 | 78,180 | 78,180                 | 78,180 | 78,180                 | 78,180 | 78,180                 | 78,180 | 83,180                                           | 83,180 | 83,180                                           | 83,180 | 83,180 | 83,180 |       |
|                                   | 26                     | 73,320 | 73,320                 | 73,320 | 73,080                 | 73,080 | 73,080                 | 73,080 | 78,320                 | 78,320 | 78,320                 | 78,320 | 78,320                 | 78,320 | 78,320                 | 78,320 | 83,320                                           | 83,320 | 83,320                                           | 83,320 | 83,320 | 83,320 |       |
|                                   | 27                     | 73,460 | 73,460                 | 73,460 | 73,210                 | 73,210 | 73,210                 | 73,210 | 78,460                 | 78,460 | 78,460                 | 78,460 | 78,460                 | 78,460 | 78,460                 | 78,460 | 83,460                                           | 83,460 | 83,460                                           | 83,460 | 83,460 | 83,460 |       |

Номера и диаметры D<sub>1</sub> зубьев

Черновых и переходных

Фасонных

D × d

75×2,5

80×2,5

85×2,5

Продолжение табл. 4

Размеры, мм

| Обозначение<br>протяжки           | 75×2,5                 |                        | 80×2,5                 |                        | 85×2,5                 |                        |                        |                        |                                                  |                                                  |        |
|-----------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|--------------------------------------------------|--------------------------------------------------|--------|
|                                   | 2403-2423<br>2403-2424 | 2403-2425<br>2403-2426 | 2403-2427<br>2403-2428 | 2403-2429<br>2403-2431 | 2403-2432<br>2403-2433 | 2403-2434<br>2403-2435 | 2403-2436<br>2403-2437 | 2403-2438<br>2403-2439 | 2403-2441<br>2403-2442<br>2403-2445<br>2403-2446 | 2403-2443<br>2403-2444<br>2403-2447<br>2403-2448 |        |
| Сочетание полей допусков<br>D в e | H7—9H                  | H8—11 f                | H7—9H                  | H8—11H                 | H7—9H                  | H8—11H                 | H7—9H                  | H8—11H                 | H7—9H                                            | H8—11 f                                          |        |
| D×m                               | 75×2,5                 |                        | 80×2,5                 |                        | 80×2,5                 |                        | 80×2,5                 |                        | 85×2,5                                           |                                                  |        |
| Шлицевых                          | черновых и переходных  | 28                     | 73,600                 | 73,600                 | 73,340                 | 73,340                 | 78,600                 | 78,860                 | 78,860                                           | 83,600                                           | 83,600 |
|                                   |                        | 29                     | 73,740                 | 73,740                 | 73,470                 | 73,470                 | 78,740                 | 79,010                 | 79,010                                           | 83,740                                           | 83,740 |
|                                   |                        | 30                     | 73,880                 | 73,880                 | 73,600                 | 73,600                 | 78,880                 | 79,160                 | 79,160                                           | 83,880                                           | 83,880 |
|                                   |                        | 31                     | 74,020                 | 74,020                 | 73,730                 | 73,730                 | 79,020                 | 79,310                 | 79,310                                           | 84,020                                           | 84,020 |
|                                   |                        | 32                     | 74,160                 | 74,160                 | 73,860                 | 73,860                 | 79,160                 | 79,460                 | 79,460                                           | 84,160                                           | 84,160 |
|                                   |                        | 33                     | 74,300                 | 74,300                 | 73,990                 | 73,990                 | 79,300                 | 79,610                 | 79,610                                           | 84,300                                           | 84,300 |
|                                   |                        | 34                     | 74,440                 | 74,440                 | 74,120                 | 74,120                 | 79,440                 | 79,760                 | 79,760                                           | 84,440                                           | 84,440 |
|                                   |                        | 35                     | 74,580                 | 74,580                 | 74,250                 | 74,250                 | 79,580                 | 79,880                 | 79,880                                           | 84,580                                           | 84,580 |
|                                   |                        | 36                     | 74,720                 | 74,720                 | 74,380                 | 74,380                 | 79,720                 | 79,940                 | 79,940                                           | 84,720                                           | 84,720 |
|                                   |                        | 37                     | 74,860                 | 74,860                 | 74,510                 | 74,510                 | 79,860                 | 79,970                 | 79,970                                           | 84,860                                           | 84,860 |
| 38                                | 74,930                 | 74,930                 | 74,640                 | 74,640                 | 79,930                 | 79,990                 | 79,990                 | 84,940                 | 84,940                                           |                                                  |        |
| Шлицевых                          | чистовых               | 39                     | 74,970                 | 74,970                 | 74,770                 | 74,770                 | 79,970                 | 80,010                 | 80,025                                           | 84,980                                           | 84,980 |
|                                   |                        | 40                     | 74,990                 | 75,000                 | 74,870                 | 74,870                 | 79,990                 | 80,000                 | 80,046                                           | 85,010                                           | 85,010 |
|                                   |                        | 41                     | 75,010                 | 75,025                 | 74,930                 | 74,930                 | 80,010                 | 80,025                 | 80,046                                           | 85,020                                           | 85,035 |
|                                   |                        | 42                     | 75,030                 | 75,046                 | 74,970                 | 74,970                 | 80,030                 | 80,046                 | 80,046                                           | 85,035                                           | 85,054 |
| Калибрующихся                     |                        | 43                     |                        |                        | 74,990                 | 75,000                 | 80,030                 | 80,030                 | 80,046                                           | 85,035                                           | 85,054 |
|                                   |                        | 44                     |                        |                        | 75,010                 | 75,025                 | 80,030                 | 80,030                 | 80,046                                           | 85,035                                           | 85,054 |
|                                   |                        | 45                     |                        | 75,046                 | 75,030                 | 75,046                 | 80,030                 | 80,046                 | 80,046                                           | 85,035                                           | 85,054 |
|                                   |                        | 46                     |                        |                        | 75,030                 | 75,046                 | 80,030                 | 80,046                 | 80,046                                           | 85,035                                           | 85,054 |
|                                   |                        | 47                     |                        |                        | 75,030                 | 75,046                 | 80,030                 | 80,046                 | 80,046                                           | 85,035                                           | 85,054 |
| 48                                |                        |                        | 75,030                 | 75,046                 | 80,030                 | 80,046                 | 80,046                 | 85,035                 | 85,054                                           |                                                  |        |
| 49                                |                        |                        | 75,030                 | 75,046                 | 80,030                 | 80,046                 | 80,046                 | 85,035                 | 85,054                                           |                                                  |        |
| 50                                |                        |                        | 75,030                 | 75,046                 | 80,030                 | 80,046                 | 80,046                 | 85,035                 | 85,054                                           |                                                  |        |
| 51                                |                        |                        | 75,030                 | 75,046                 | 80,030                 | 80,046                 | 80,046                 | 85,035                 | 85,054                                           |                                                  |        |

Номера и диаметры D<sub>1</sub> зубьев



Продолжение табл. 4

Размеры, мм

| Обозначение<br>протяжки           | 2403-2449<br>2403-2451 |        | 2403-2452<br>2403-2453 |        | 2403-2454<br>2403-2455 |        | 2403-2456<br>2403-2457 |        | 2403-2458 |        | 2403-2459 |        | 2403-2461<br>2403-2462 |        | 2403-2463<br>2403-2464 |        |
|-----------------------------------|------------------------|--------|------------------------|--------|------------------------|--------|------------------------|--------|-----------|--------|-----------|--------|------------------------|--------|------------------------|--------|
|                                   | H7-9f                  |        | H8-11H                 |        | H7-9H                  |        | H8-11H                 |        | H7-9f     |        | H8-11H    |        | H7-9H                  |        | H8-11H                 |        |
| Сочетание полей допусков<br>D и e | 90x2,5                 |        |                        |        |                        |        |                        |        |           |        |           |        |                        |        |                        |        |
|                                   | 95x2,5                 |        |                        |        |                        |        |                        |        |           |        |           |        |                        |        |                        |        |
| D x m                             | 100x2,5                |        |                        |        |                        |        |                        |        |           |        |           |        |                        |        |                        |        |
|                                   | черновых и переходных  |        |                        |        |                        |        |                        |        |           |        |           |        |                        |        |                        |        |
| фасонных<br>шлицевых              | 1                      | 85,000 | 85,000                 | 85,000 | 90,000                 | 90,000 | 90,000                 | 90,000 | 90,000    | 90,000 | 90,000    | 90,000 | 95,000                 | 95,000 | 95,000                 | 95,000 |
|                                   | 2                      | 85,130 | 85,130                 | 85,130 | 90,140                 | 90,140 | 90,140                 | 90,140 | 90,120    | 90,120 | 90,120    | 90,120 | 95,140                 | 95,140 | 95,140                 | 95,140 |
|                                   | 3                      | 85,260 | 85,260                 | 85,260 | 90,280                 | 90,280 | 90,280                 | 90,280 | 90,240    | 90,240 | 90,240    | 90,240 | 95,280                 | 95,280 | 95,280                 | 95,280 |
|                                   | 4                      | 85,390 | 85,390                 | 85,390 | 90,420                 | 90,420 | 90,420                 | 90,420 | 90,360    | 90,360 | 90,360    | 90,360 | 95,420                 | 95,420 | 95,420                 | 95,420 |
|                                   | 5                      | 85,520 | 85,520                 | 85,520 | 90,560                 | 90,560 | 90,560                 | 90,560 | 90,480    | 90,480 | 90,480    | 90,480 | 95,560                 | 95,560 | 95,560                 | 95,560 |
|                                   | 6                      | 85,650 | 85,650                 | 85,650 | 90,700                 | 90,700 | 90,700                 | 90,700 | 90,600    | 90,600 | 90,600    | 90,600 | 95,700                 | 95,700 | 95,700                 | 95,700 |
|                                   | 7                      | 85,780 | 85,780                 | 85,780 | 90,840                 | 90,840 | 90,840                 | 90,840 | 90,720    | 90,720 | 90,720    | 90,720 | 95,840                 | 95,840 | 95,840                 | 95,840 |
|                                   | 8                      | 85,910 | 85,910                 | 85,910 | 90,980                 | 90,980 | 90,980                 | 90,980 | 90,840    | 90,840 | 90,840    | 90,840 | 95,980                 | 95,980 | 95,980                 | 95,980 |
|                                   | 9                      | 86,040 | 86,040                 | 86,040 | 90,940                 | 90,940 | 90,940                 | 90,940 | 90,960    | 90,960 | 90,960    | 90,960 | 95,940                 | 95,940 | 95,940                 | 95,940 |
|                                   | 10                     | 86,000 | 86,000                 | 86,000 | 91,080                 | 91,080 | 91,080                 | 91,080 | 91,080    | 91,080 | 91,080    | 91,080 | 96,080                 | 96,080 | 96,080                 | 96,080 |
|                                   | 11                     | 86,130 | 86,130                 | 86,130 | 91,220                 | 91,220 | 91,220                 | 91,220 | 91,040    | 91,040 | 91,040    | 91,040 | 96,220                 | 96,220 | 96,220                 | 96,220 |
|                                   | 12                     | 86,260 | 86,260                 | 86,260 | 91,360                 | 91,360 | 91,360                 | 91,360 | 91,190    | 91,190 | 91,190    | 91,190 | 96,360                 | 96,360 | 96,360                 | 96,360 |
|                                   | 13                     | 86,390 | 86,390                 | 86,390 | 91,500                 | 91,500 | 91,500                 | 91,500 | 91,340    | 91,340 | 91,340    | 91,340 | 96,500                 | 96,500 | 96,500                 | 96,500 |
|                                   | 14                     | 86,520 | 86,520                 | 86,520 | 91,640                 | 91,640 | 91,640                 | 91,640 | 91,490    | 91,490 | 91,490    | 91,490 | 96,640                 | 96,640 | 96,640                 | 96,640 |
|                                   | 15                     | 86,650 | 86,650                 | 86,650 | 91,780                 | 91,780 | 91,780                 | 91,780 | 91,640    | 91,640 | 91,640    | 91,640 | 96,780                 | 96,780 | 96,780                 | 96,780 |
|                                   | 16                     | 86,780 | 86,780                 | 86,780 | 91,920                 | 91,920 | 91,920                 | 91,920 | 91,790    | 91,790 | 91,790    | 91,790 | 96,920                 | 96,920 | 96,920                 | 96,920 |
|                                   | 17                     | 86,910 | 86,910                 | 86,910 | 92,060                 | 92,060 | 92,060                 | 92,060 | 91,940    | 91,940 | 91,940    | 91,940 | 97,060                 | 97,060 | 97,060                 | 97,060 |
|                                   | 18                     | 87,040 | 87,040                 | 87,040 | 92,200                 | 92,200 | 92,200                 | 92,200 | 92,090    | 92,090 | 92,090    | 92,090 | 97,200                 | 97,200 | 97,200                 | 97,200 |
|                                   | 19                     | 87,170 | 87,170                 | 87,170 | 92,340                 | 92,340 | 92,340                 | 92,340 | 92,240    | 92,240 | 92,240    | 92,240 | 97,340                 | 97,340 | 97,340                 | 97,340 |
|                                   | 20                     | 87,300 | 87,300                 | 87,300 | 92,480                 | 92,480 | 92,480                 | 92,480 | 92,390    | 92,390 | 92,390    | 92,390 | 97,480                 | 97,480 | 97,480                 | 97,480 |
|                                   | 21                     | 87,430 | 87,430                 | 87,430 | 92,620                 | 92,620 | 92,620                 | 92,620 | 92,540    | 92,540 | 92,540    | 92,540 | 97,620                 | 97,620 | 97,620                 | 97,620 |
|                                   | 22                     | 87,560 | 87,560                 | 87,560 | 92,760                 | 92,760 | 92,760                 | 92,760 | 92,690    | 92,690 | 92,690    | 92,690 | 97,760                 | 97,760 | 97,760                 | 97,760 |
|                                   | 23                     | 87,690 | 87,690                 | 87,690 | 92,900                 | 92,900 | 92,900                 | 92,900 | 92,840    | 92,840 | 92,840    | 92,840 | 97,900                 | 97,900 | 97,900                 | 97,900 |
|                                   | 24                     | 87,820 | 87,820                 | 87,820 | 93,040                 | 93,040 | 93,040                 | 93,040 | 92,990    | 92,990 | 92,990    | 92,990 | 98,040                 | 98,040 | 98,040                 | 98,040 |
|                                   | 25                     | 87,950 | 87,950                 | 87,950 | 93,180                 | 93,180 | 93,180                 | 93,180 | 93,140    | 93,140 | 93,140    | 93,140 | 98,180                 | 98,180 | 98,180                 | 98,180 |
|                                   | 26                     | 88,080 | 88,080                 | 88,080 | 93,320                 | 93,320 | 93,320                 | 93,320 | 93,290    | 93,290 | 93,290    | 93,290 | 98,320                 | 98,320 | 98,320                 | 98,320 |
|                                   | 27                     | 88,210 | 88,210                 | 88,210 | 93,460                 | 93,460 | 93,460                 | 93,460 | 93,440    | 93,440 | 93,440    | 93,440 | 98,460                 | 98,460 | 98,460                 | 98,460 |

Номера и диаметры D, зубьев

Продолжение табл. 4

| Обозначение<br>протяжки           | Размеры, мм |        |        |        |        |        | 2403-2449<br>2403-2451 | 2403-2452<br>2403-2453 | 2403-2454<br>2403-2455 | 2403-2456<br>2403-2457 | 2403-2458 | 2403-2459 | 2403-2461<br>2403-2462 | 2403-2463<br>2403-2464 |        |
|-----------------------------------|-------------|--------|--------|--------|--------|--------|------------------------|------------------------|------------------------|------------------------|-----------|-----------|------------------------|------------------------|--------|
|                                   | Н7—9H       |        | Н8—11H |        | Н7—9H  |        |                        |                        |                        |                        |           |           |                        |                        | Н8—11H |
| Сочетание полей допусков<br>D и e | 90×2,5      |        |        |        |        |        | 95×2,5                 |                        |                        |                        |           |           | 100×2,5                |                        |        |
|                                   | H7—9H       |        | H8—11H |        | H7—9H  |        | H8—11H                 |                        | H7—9H                  |                        | H8—11H    |           | H7—9H                  |                        | H8—11H |
| D × π                             | 90×2,5      |        |        |        |        |        | 95×2,5                 |                        |                        |                        |           |           | 100×2,5                |                        |        |
| черновых и переходных             | 28          | 88,340 | 88,340 | 88,340 | 93,600 | 93,600 | 93,600                 | 93,590                 | 93,590                 | 93,590                 | 93,590    | 98,600    | 98,600                 | 98,600                 |        |
|                                   | 29          | 88,470 | 88,470 | 88,470 | 93,740 | 93,740 | 93,740                 | 93,740                 | 93,740                 | 93,740                 | 93,740    | 98,740    | 98,740                 | 98,740                 |        |
|                                   | 30          | 88,600 | 88,600 | 88,600 | 93,880 | 93,880 | 93,880                 | 93,880                 | 93,880                 | 93,880                 | 93,880    | 98,880    | 98,880                 | 98,880                 |        |
|                                   | 31          | 88,730 | 88,730 | 88,730 | 94,020 | 94,020 | 94,020                 | 94,040                 | 94,040                 | 94,040                 | 94,040    | 99,020    | 99,020                 | 99,020                 |        |
|                                   | 32          | 88,860 | 88,860 | 88,860 | 94,160 | 94,160 | 94,160                 | 94,190                 | 94,190                 | 94,190                 | 94,190    | 99,160    | 99,160                 | 99,160                 |        |
|                                   | 33          | 88,990 | 88,990 | 88,990 | 94,300 | 94,300 | 94,300                 | 94,340                 | 94,340                 | 94,340                 | 94,340    | 99,300    | 99,300                 | 99,300                 |        |
|                                   | 34          | 89,120 | 89,120 | 89,120 | 94,440 | 94,440 | 94,440                 | 94,490                 | 94,490                 | 94,490                 | 94,490    | 99,440    | 99,440                 | 99,440                 |        |
|                                   | 35          | 89,250 | 89,250 | 89,250 | 94,580 | 94,580 | 94,580                 | 94,640                 | 94,640                 | 94,640                 | 94,640    | 99,580    | 99,580                 | 99,580                 |        |
|                                   | 36          | 89,380 | 89,380 | 89,380 | 94,720 | 94,720 | 94,720                 | 94,790                 | 94,790                 | 94,790                 | 94,790    | 99,720    | 99,720                 | 99,720                 |        |
|                                   | 37          | 89,510 | 89,510 | 89,510 | 94,860 | 94,860 | 94,860                 | 94,890                 | 94,890                 | 94,890                 | 94,890    | 99,860    | 99,860                 | 99,860                 |        |
|                                   | 38          | 89,640 | 89,640 | 89,640 | 94,940 | 94,940 | 94,940                 | 94,950                 | 94,950                 | 94,950                 | 94,950    | 99,940    | 99,940                 | 99,940                 |        |
| чистовых                          | 39          | 89,770 | 89,770 | 89,770 | 94,980 | 94,980 | 94,980                 | 94,980                 | 94,980                 | 94,980                 | 94,980    | 99,980    | 99,980                 | 99,980                 |        |
|                                   | 40          | 89,870 | 89,870 | 89,870 | 95,000 | 95,000 | 95,010                 | 95,010                 | 95,010                 | 95,010                 | 100,000   | 100,010   | 100,010                | 100,010                |        |
|                                   | 41          | 89,940 | 89,940 | 89,940 | 95,020 | 95,020 | 95,035                 | 95,020                 | 95,020                 | 95,035                 | 95,035    | 100,020   | 100,020                | 100,035                |        |
|                                   | 42          | 89,980 | 89,980 | 89,980 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,054                 | 95,054    | 100,035   | 100,035                | 100,054                |        |
|                                   | 43          | 90,000 | 90,000 | 90,010 | 95,054 | 95,054 | 95,054                 | 95,054                 | 95,054                 | 95,054                 | 95,054    | 100,035   | 100,035                | 100,054                |        |
| калибрующих                       | 44          | 90,020 | 90,020 | 90,035 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |
|                                   | 45          | 90,035 | 90,035 | 90,054 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |
|                                   | 46          |        |        | 90,054 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |
|                                   | 47          |        |        | 90,054 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |
|                                   | 48          |        |        | 90,054 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |
|                                   | 49          |        |        | 90,054 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |
|                                   | 50          |        |        | 90,054 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |
|                                   | 51          |        |        | 90,054 | 95,035 | 95,035 | 95,054                 | 95,035                 | 95,035                 | 95,035                 | 95,035    | 100,035   | 100,035                | 100,054                |        |

шлицевых

Номера и диаметры D<sub>1</sub> зубьев



Продолжение табл. 4

Размеры, мм

| Обозначение<br>протяжки                                                                             | 2403-2465 | 2403-2466 | 2403-2467<br>2403-2468 | 2403-2469<br>2403-2471 | 2403-2472<br>2403-2473 | 2403-2474<br>2403-2475 | 2403-2476<br>2403-2477 | 2403-2478<br>2403-2479 |
|-----------------------------------------------------------------------------------------------------|-----------|-----------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                                                                                                     | Н7—9Н     | Н8—11Н    | Н7—9Н                  | Н8—11Н                 | Н7—9Н                  | Н8—11Н                 | Н7—9Н                  | Н8—11Н                 |
| Сочетание полей допусков<br>D и e                                                                   | 100×2,5   |           | 105×2,5                |                        | 110×2,5                |                        | 120×2,5                |                        |
|                                                                                                     | D × m     |           | D × m                  |                        | D × m                  |                        | D × m                  |                        |
| Фасочных<br><br>Шлифовых<br><br>Нормы и диаметры D <sub>н</sub> зубьев<br><br>Черновых и переходных | 1         | 95,000    | 95,000                 | 100,000                | 105,000                | 105,000                | 115,000                | 115,000                |
|                                                                                                     | 2         | 95,110    | 95,110                 | 100,140                | 100,140                | 105,140                | 105,140                | 115,140                |
|                                                                                                     | 3         | 95,220    | 95,220                 | 100,280                | 100,280                | 105,280                | 105,280                | 115,280                |
|                                                                                                     | 4         | 95,330    | 95,330                 | 100,420                | 100,420                | 105,420                | 105,420                | 115,420                |
|                                                                                                     | 5         | 95,440    | 95,440                 | 100,560                | 100,560                | 105,560                | 105,560                | 115,560                |
|                                                                                                     | 6         | 95,550    | 95,550                 | 100,700                | 100,700                | 105,700                | 105,700                | 115,700                |
|                                                                                                     | 7         | 95,660    | 95,660                 | 100,840                | 100,840                | 105,840                | 105,840                | 115,840                |
|                                                                                                     | 8         | 95,770    | 95,770                 | 100,980                | 100,980                | 105,980                | 105,980                | 115,980                |
|                                                                                                     | 9         | 95,880    | 95,880                 | 100,940                | 100,940                | 105,940                | 105,940                | 115,940                |
|                                                                                                     | 10        | 95,990    | 95,990                 | 101,080                | 101,080                | 106,080                | 106,080                | 116,080                |
|                                                                                                     | 11        | 96,100    | 96,100                 | 101,220                | 101,220                | 106,220                | 106,220                | 116,220                |
|                                                                                                     | 12        | 96,060    | 96,060                 | 101,360                | 101,360                | 106,360                | 106,360                | 116,360                |
|                                                                                                     | 13        | 96,200    | 96,200                 | 101,500                | 101,500                | 106,500                | 106,500                | 116,500                |
|                                                                                                     | 14        | 96,340    | 96,340                 | 101,640                | 101,640                | 106,640                | 106,640                | 116,640                |
|                                                                                                     | 15        | 96,480    | 96,480                 | 101,780                | 101,780                | 106,780                | 106,780                | 116,780                |
|                                                                                                     | 16        | 96,620    | 96,620                 | 101,920                | 101,920                | 106,920                | 106,920                | 116,920                |
|                                                                                                     | 17        | 96,760    | 96,760                 | 102,060                | 102,060                | 107,060                | 107,060                | 117,060                |
|                                                                                                     | 18        | 96,900    | 96,900                 | 102,200                | 102,200                | 107,200                | 107,200                | 117,200                |
|                                                                                                     | 19        | 97,040    | 97,040                 | 102,340                | 102,340                | 107,340                | 107,340                | 117,340                |
|                                                                                                     | 20        | 97,180    | 97,180                 | 102,480                | 102,480                | 107,480                | 107,480                | 117,480                |
|                                                                                                     | 21        | 97,320    | 97,320                 | 102,620                | 102,620                | 107,620                | 107,620                | 117,620                |
|                                                                                                     | 22        | 97,460    | 97,460                 | 102,760                | 102,760                | 107,760                | 107,760                | 117,760                |
|                                                                                                     | 23        | 97,600    | 97,600                 | 102,900                | 102,900                | 107,900                | 107,900                | 117,900                |
|                                                                                                     | 24        | 97,740    | 97,740                 | 103,040                | 103,040                | 108,040                | 108,040                | 118,040                |
|                                                                                                     | 25        | 97,880    | 97,880                 | 103,180                | 103,180                | 108,180                | 108,180                | 118,180                |
|                                                                                                     | 26        | 98,020    | 98,020                 | 103,320                | 103,320                | 108,320                | 108,320                | 118,320                |
|                                                                                                     | 27        | 98,160    | 98,160                 | 103,460                | 103,460                | 108,460                | 108,460                | 118,460                |



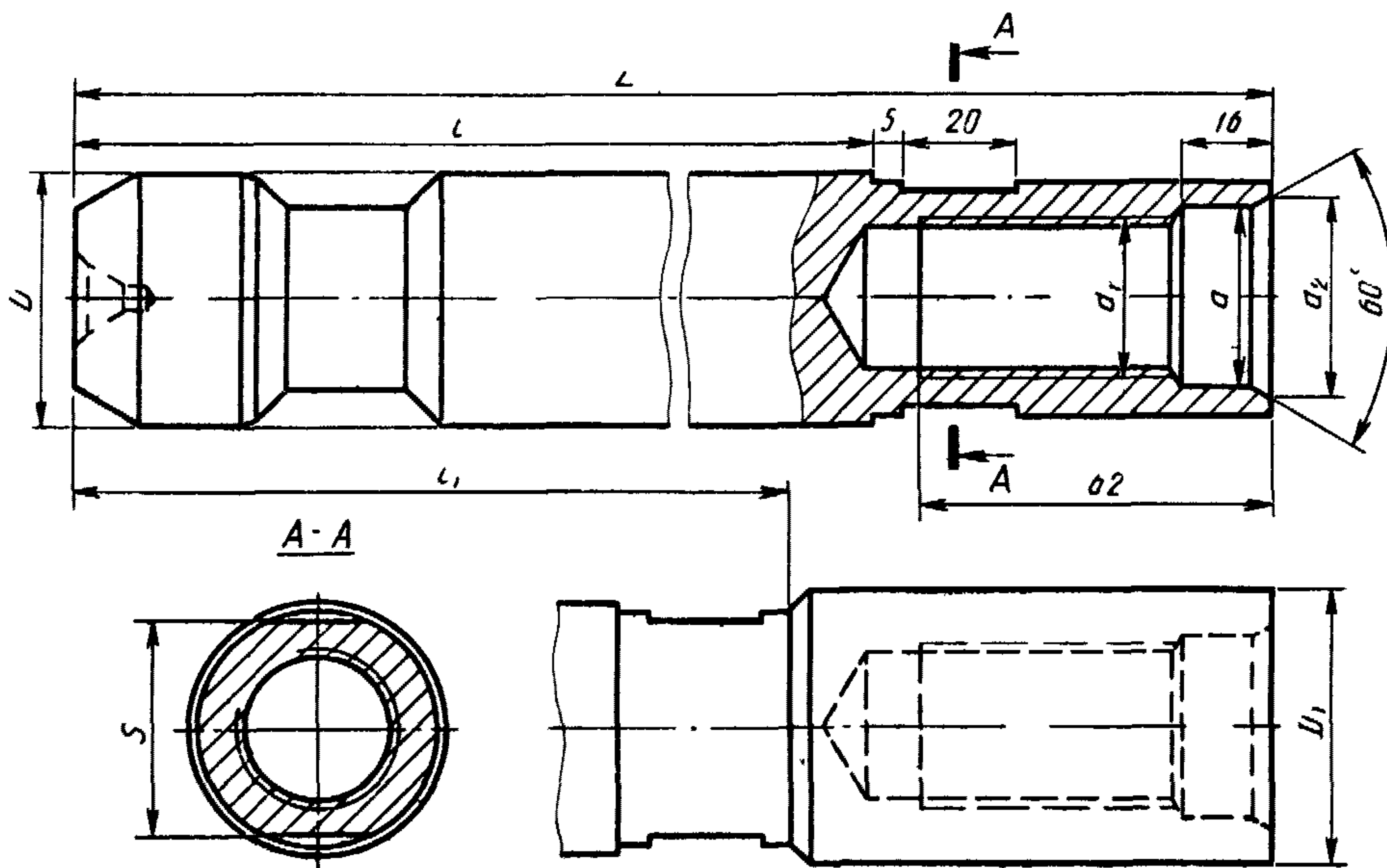
Продолжение табл. 4

Размеры, мм

| Обозначение<br>протяжки           | 2403-2465             |         | 2403-2466 |         | 2403-2467<br>2403-2468 |         | 2403-2469<br>2403-2471 |         | 2403-2472<br>2403-2473 |         | 2403-2474<br>2403-2475 |         | 2403-2476<br>2403-2477 |         | 2403-2478<br>2403-2479 |         |         |         |
|-----------------------------------|-----------------------|---------|-----------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|---------|---------|
|                                   | Н7—9Н                 | Н8—11Н  | Н7—9Н     | Н8—11Н  | Н7—9Н                  | Н8—11Н  | Н7—9Н                  | Н8—11Н  | Н7—9Н                  | Н8—11Н  | Н7—9Н                  | Н8—11Н  | Н7—9Н                  | Н8—11Н  | Н7—9Н                  | Н8—11Н  |         |         |
| Сочетание полей допусков<br>D и e | 100×2,5               |         | 100×2,5   |         | 105×2,5                |         | 105×2,5                |         | 110×2,5                |         | 110×2,5                |         | 120×2,5                |         | 120×2,5                |         |         |         |
|                                   | D                     | e       | D         | e       | D                      | e       | D                      | e       | D                      | e       | D                      | e       | D                      | e       | D                      | e       |         |         |
| шлицевых                          | черновых и переходных | 28      | 98,300    | 98,300  | 103,600                | 103,600 | 103,600                | 103,600 | 108,600                | 108,600 | 108,600                | 108,600 | 118,600                | 118,600 | 118,600                | 118,600 | 118,600 |         |
|                                   |                       | 29      | 98,440    | 98,440  | 103,740                | 103,740 | 103,740                | 103,740 | 103,740                | 108,740 | 108,740                | 108,740 | 108,740                | 118,740 | 118,740                | 118,740 | 118,740 | 118,740 |
|                                   |                       | 30      | 98,580    | 98,580  | 103,880                | 103,880 | 103,880                | 103,880 | 103,880                | 108,880 | 108,880                | 108,880 | 108,880                | 118,880 | 118,880                | 118,880 | 118,880 | 118,880 |
|                                   |                       | 31      | 98,720    | 98,720  | 104,020                | 104,020 | 104,020                | 104,020 | 104,020                | 109,020 | 109,020                | 109,020 | 109,020                | 119,020 | 119,020                | 119,020 | 119,020 | 119,020 |
|                                   |                       | 32      | 98,860    | 98,860  | 104,160                | 104,160 | 104,160                | 104,160 | 104,160                | 109,160 | 109,160                | 109,160 | 109,160                | 119,160 | 119,160                | 119,160 | 119,160 | 119,160 |
|                                   |                       | 33      | 99,000    | 99,000  | 104,300                | 104,300 | 104,300                | 104,300 | 104,300                | 109,300 | 109,300                | 109,300 | 109,300                | 119,300 | 119,300                | 119,300 | 119,300 | 119,300 |
|                                   |                       | 34      | 99,140    | 99,140  | 104,440                | 104,440 | 104,440                | 104,440 | 104,440                | 109,440 | 109,440                | 109,440 | 109,440                | 119,440 | 119,440                | 119,440 | 119,440 | 119,440 |
|                                   |                       | 35      | 99,280    | 99,280  | 104,580                | 104,580 | 104,580                | 104,580 | 104,580                | 109,580 | 109,580                | 109,580 | 109,580                | 119,580 | 119,580                | 119,580 | 119,580 | 119,580 |
|                                   |                       | 36      | 99,420    | 99,420  | 104,720                | 104,720 | 104,720                | 104,720 | 104,720                | 109,720 | 109,720                | 109,720 | 109,720                | 119,720 | 119,720                | 119,720 | 119,720 | 119,720 |
|                                   |                       | 37      | 99,560    | 99,560  | 104,860                | 104,860 | 104,860                | 104,860 | 104,860                | 109,860 | 109,860                | 109,860 | 109,860                | 119,860 | 119,860                | 119,860 | 119,860 | 119,860 |
|                                   |                       | 38      | 99,700    | 99,700  | 104,940                | 104,940 | 104,940                | 104,940 | 104,940                | 109,940 | 109,940                | 109,940 | 109,940                | 119,940 | 119,940                | 119,940 | 119,940 | 119,940 |
| чистовых                          | чистовых              | 39      | 99,840    | 99,840  | 104,980                | 104,980 | 104,980                | 104,980 | 109,980                | 109,980 | 109,980                | 109,980 | 119,980                | 119,980 | 119,980                | 119,980 | 119,980 |         |
|                                   |                       | 40      | 99,920    | 99,910  | 105,000                | 105,010 | 105,000                | 105,010 | 105,010                | 110,000 | 110,000                | 110,010 | 110,010                | 120,000 | 120,000                | 120,010 | 120,010 |         |
|                                   |                       | 41      | 99,960    | 99,950  | 105,020                | 105,035 | 105,020                | 105,035 | 105,035                | 110,020 | 110,020                | 110,035 | 110,035                | 120,020 | 120,020                | 120,035 | 120,035 |         |
|                                   |                       | 42      | 99,980    | 99,980  | 105,035                | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054 |         |
|                                   |                       | 43      | 100,000   | 100,010 | 105,035                | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054 |         |
| калибрующих                       | калибрующих           | 44      | 100,020   | 100,035 | 105,035                | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054 |         |
|                                   |                       | 45      | 100,035   | 100,054 | 105,035                | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054 |         |
|                                   |                       | 46      | 100,035   | 100,054 | 105,035                | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054 |         |
|                                   |                       | 47      | 100,035   | 100,054 | 105,035                | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054 |         |
| 48                                | 100,035               | 100,054 | 105,035   | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054                | 120,054 |         |         |
| 49                                | 100,035               | 100,054 | 105,035   | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054                | 120,054 |         |         |
| 50                                | 100,035               | 100,054 | 105,035   | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054                | 120,054 |         |         |
| 51                                | 100,035               | 100,054 | 105,035   | 105,054 | 105,035                | 105,054 | 105,054                | 110,035 | 110,035                | 110,054 | 110,054                | 120,035 | 120,035                | 120,054 | 120,054                | 120,054 |         |         |

Номера и диаметры D<sub>1</sub> зубьев





Форма 1

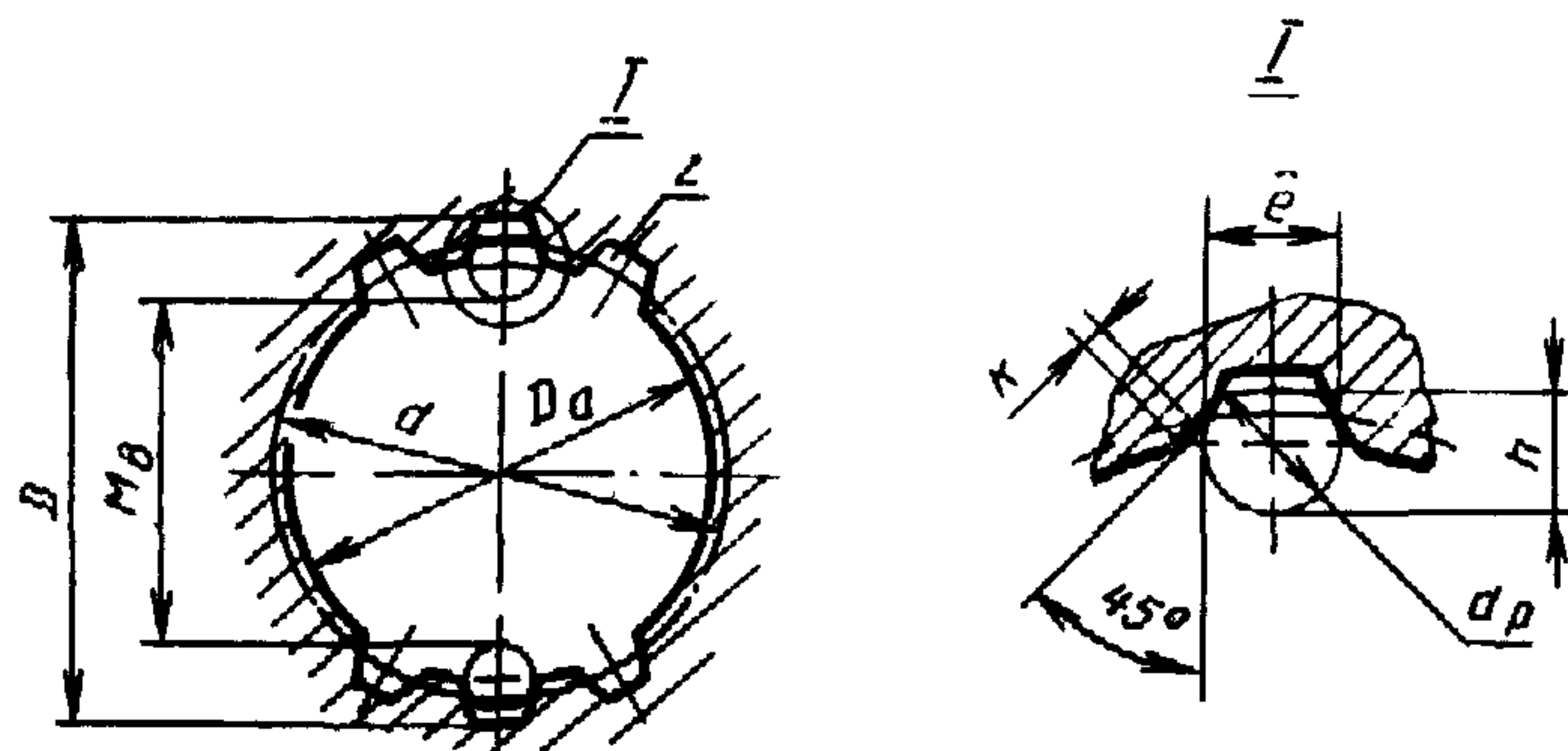
Форма 2

Черт. 2

Размеры, мм

Таблица 5

| Обозначение хвостовика | Форма | $D$ | $D_1$ | $d$ | $d_1$<br>(поле допуска 7H) | $d_2$ | $L$ | $l$ | $l_1$<br>(пред. откл. +2) | $S$<br>(пред. откл. -1) |
|------------------------|-------|-----|-------|-----|----------------------------|-------|-----|-----|---------------------------|-------------------------|
| 2403-2201/2            | 1     | 45  | —     | 32  | M30×2                      | 36    | 230 | 160 | —                         | 41                      |
| 2403-2205/2            |       |     |       |     |                            |       | 255 |     | —                         |                         |
| 2403-2218/2            |       | 50  | —     | 38  | M36×3                      | 42    | 230 |     | —                         | 46                      |
| 2403-2223/2            |       |     |       |     |                            |       | 255 |     | —                         |                         |
| 2403-2245/2            | 2     | 63  | —     | 50  | M48×3                      | 54    | 270 | 190 | —                         | 55                      |
| 2403-2263/2            |       |     |       |     |                            |       | 70  | 180 | 210                       |                         |
| 2403-2476/2            |       | 1   | 70    | —   | —                          | —     | —   | 295 | 190                       | —                       |



Черт. 3

Таблица 6

Размеры, мм

| Обозначение протяжки | D × l    | z      | Сочетание полей допусков D и e | d    | e     | D <sub>a</sub> (поле допусков H11) | k    | d <sub>p</sub> | h   | M <sub>B</sub> |              | Длина прогибания            |                       |                   | Усилие прогибания P, Н (кгс), при переднем угле |                   |  |
|----------------------|----------|--------|--------------------------------|------|-------|------------------------------------|------|----------------|-----|----------------|--------------|-----------------------------|-----------------------|-------------------|-------------------------------------------------|-------------------|--|
|                      |          |        |                                |      |       |                                    |      |                |     | Наим.          | Верхн. откл. | Сталь и алюминий-вые сплавы | Чугун, бронза, латунь | 20°               | 15°                                             | 10°               |  |
|                      |          |        |                                |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |
| 2403-2201; 2403-2202 | 50 × 1,5 | 32     | H7-9H                          | 48,0 | 2,558 | 47                                 |      |                |     | 43,748         | +0,076       | 30-76                       | 30-90                 | 135950<br>(13860) | 148700<br>(15160)                               | 159900<br>(16300) |  |
| 2403-2203; 2403-2204 |          |        | H8-11H                         |      |       |                                    |      |                |     | 43,790         | +0,151       | 40-108                      | 40-130                | 136550<br>(13920) | 149400<br>(15230)                               | 160600<br>(16370) |  |
| 2403-2205; 2403-2206 |          |        | H7-9H                          |      |       |                                    |      |                |     | 43,748         | +0,076       | 49,5                        | 49                    |                   |                                                 |                   |  |
| 2403-2207; 2403-2208 | H8-11H   | 43,790 | +0,151                         |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |
| 2403-2209; 2403-2211 | 52 × 1,5 | 33     | H7-9H                          | 49,5 | 2,847 |                                    |      |                |     | 45,733         | +0,073       | 30-76                       | 30-90                 | 131250<br>(13380) | 143600<br>(14640)                               | 154400<br>(15740) |  |
| 2403-2212; 2403-2213 |          |        | H8-11H                         |      |       |                                    |      |                |     | 45,774         | +0,145       | 40-108                      | 40-130                | 131900<br>(13450) | 144300<br>(14710)                               | 155150<br>(15810) |  |
| 2403-2214; 2403-2215 |          |        | H7-9H                          |      |       |                                    |      |                |     | 45,733         | +0,073       | 52,5                        | 52                    |                   |                                                 |                   |  |
| 2403-2216; 2403-2217 | H8-11H   | 45,774 | +0,145                         |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |
| 2403-2218; 2403-2219 | 55 × 1,5 | 35     | H7-9H                          | 52,5 |       |                                    |      |                |     | 48,743         | +0,082       | 35-82                       | 35-100                | 163750<br>(16690) | 179150<br>(18260)                               | 192550<br>(19630) |  |
| 2403-2221; 2403-2222 |          |        | H8-11H                         |      |       |                                    |      |                |     | 48,787         | +0,162       | 45-120                      | 45-145                | 191700<br>(19540) | 209750<br>(21380)                               | 225500<br>(22980) |  |
| 2403-2223; 2403-2224 |          |        | H7-9H                          |      |       |                                    |      |                |     | 48,743         | +0,082       | 57,0                        | 57                    |                   |                                                 |                   |  |
| 2403-2225; 2403-2226 | H8-11H   | 48,787 | +0,162                         |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |
| 2403-2227; 2403-2228 | 60 × 1,5 | 38     | H7-9H                          | 57,0 | 3,136 |                                    | 0,22 | 2,887          | 2,6 | 53,813         | +0,079       | 35-82                       | 35-100                | 179950<br>(18340) | 196900<br>(20070)                               | 211650<br>(21580) |  |
| 2403-2229; 2403-2231 |          |        | H8-11H                         |      |       |                                    |      |                |     | 53,855         | +0,158       | 45-120                      | 45-145                | 189100<br>(19280) | 206900<br>(21090)                               | 222400<br>(22670) |  |
| 2403-2232; 2403-2233 |          |        | H7-9H                          |      |       |                                    |      |                |     | 53,813         | +0,079       | 63,0                        | 62                    |                   |                                                 |                   |  |
| 2403-2234; 2403-2235 | H8-11H   | 53,855 | +0,158                         |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |
| 2403-2236; 2403-2237 | 65 × 1,5 | 42     | H7-9H                          | 63,0 | 2,558 |                                    |      |                |     | 58,770         | +0,083       | 35-82                       | 35-110                | 173750<br>(17710) | 190100<br>(19380)                               | 204400<br>(20840) |  |
| 2403-2238; 2403-2239 |          |        | H8-11H                         |      |       |                                    |      |                |     | 58,814         | +0,166       | 45-120                      | 45-145                | 191950<br>(19570) | 210050<br>(21410)                               | 225800<br>(23020) |  |
| 2403-2241; 2403-2242 |          |        | H7-9H                          |      |       |                                    |      |                |     | 58,770         | +0,083       | 67,5                        | 67                    |                   |                                                 |                   |  |
| 2403-2243; 2403-2244 | H8-11H   | 58,814 | +0,166                         |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |
| 2403-2245; 2403-2246 | 70 × 1,5 | 45     | H7-9H                          | 67,5 | 2,847 |                                    |      |                |     | 63,776         | +0,064       | 35-96                       | 35-110                | 233750<br>(23830) | 255750<br>(26070)                               | 274950<br>(28030) |  |
| 2403-2247; 2403-2248 |          |        | H8-11H                         |      |       |                                    |      |                |     | 63,803         | +0,160       | 45-140                      | 45-170                | 268100<br>(27330) | 293300<br>(29900)                               | 315350<br>(32140) |  |
| 2403-2249; 2403-2251 |          |        | H7-9H                          |      |       |                                    |      |                |     | 63,776         | +0,064       | 72,0                        | 72                    |                   |                                                 |                   |  |
| 2403-2252; 2403-2253 | H8-11H   | 63,803 | +0,160                         |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |
| 2403-2254; 2403-2255 | 75 × 1,5 | 48     | H7-9H                          | 72,0 | 3,136 |                                    |      |                |     | 68,814         | +0,079       | 35-96                       | 32-110                | 251750<br>(25670) | 275450<br>(28080)                               | 296150<br>(30190) |  |
| 2403-2256; 2403-2257 |          |        | H8-11H                         |      |       |                                    |      |                |     | 68,856         | +0,157       | 45-140                      | 45-170                | 286100<br>(29120) | 311300<br>(31640)                               | 332450<br>(33750) |  |
| 2403-2258; 2403-2259 |          |        | H7-9H                          |      |       |                                    |      |                |     | 68,814         | +0,079       | 68,856                      | 68,856                |                   |                                                 |                   |  |
| 2403-2261; 2403-2262 | H8-11H   | 68,856 | +0,157                         |      |       |                                    |      |                |     |                |              |                             |                       |                   |                                                 |                   |  |



| Обозначение прокатки | D × m    | z  | Сочетание полей допусков D и e | d    | e     | D <sub>а</sub> (поле Допуск H11) | k    | d <sub>p</sub> | h   | M <sub>B</sub> |              | Длина протягивания         |                       | Усилие протягивания P, Н (кгс), при переднем угле |                |                |
|----------------------|----------|----|--------------------------------|------|-------|----------------------------------|------|----------------|-----|----------------|--------------|----------------------------|-----------------------|---------------------------------------------------|----------------|----------------|
|                      |          |    |                                |      |       |                                  |      |                |     | Наим.          | Верхн. откл. | Сталь и алюминиевые сплавы | Чугун, бронза, латунь | 20°                                               | 15°            | 10°            |
|                      |          |    |                                |      |       |                                  |      |                |     |                |              |                            |                       |                                                   |                |                |
| 2403-2263; 2403-2264 | 80 × 1,5 | 52 | H7—9H                          | 78,0 | 2,558 | 77                               | 0,22 | 2,887          | 2,6 | 73,779         | +0,082       | 35—96                      | 35—110                | 269450 (27470)                                    | 294800 (30050) | 316900 (32310) |
| 2403-2265; 2403-2266 |          |    | H8—11H                         |      |       |                                  |      |                |     | 73,823         | +0,164       | 45—140                     | 45—170                | 309050 (31510)                                    | 338150 (34470) | 363500 (37060) |
| 2403-2267; 2403-2268 | 50 × 2   | 24 | H7—9H                          | 48,0 | 3,026 | 46                               | 0,30 | 3,666          | 3,4 | 42,119         | +0,092       | 30—76                      | 30—90                 | 140300 (14300)                                    | 153550 (15650) | 165050 (16830) |
| 2403-2269; 2403-2271 |          |    | H8—11H                         |      |       |                                  |      |                |     | 42,168         | +0,183       | 40—108                     | 40—130                | 158800 (16190)                                    | 173750 (17710) | 186750 (19040) |
| 2403-2272; 2403-2273 | 52 × 2   | 26 | H7—9H                          | 52,0 | 3,603 | 51                               | 0,30 | 3,666          | 3,4 | 44,289         | +0,078       | 30—76                      | 30—90                 | 146700 (14950)                                    | 160500 (16360) | 172550 (17590) |
| 2403-2274; 2403-2275 |          |    | H8—11H                         |      |       |                                  |      |                |     | 44,330         | +0,156       | 40—108                     | 40—130                | 157000 (16010)                                    | 171750 (17510) | 184650 (18820) |
| 2403-2276; 2403-2277 | 55 × 2   | 26 | H7—9H                          | 52,0 | 3,603 | 51                               | 0,30 | 3,666          | 3,4 | 44,330         | +0,156       | 35—82                      | 35—100                | 159350 (16240)                                    | 174300 (17770) | 187400 (19100) |
| 2403-2278; 2403-2279 |          |    | H8—11H                         |      |       |                                  |      |                |     | 47,260         | +0,092       | 45—120                     | 45—145                | 185500 (19010)                                    | 204050 (20800) | 219350 (22360) |
| 2403-2281; 2403-2282 | 60 × 2   | 28 | H7—9H                          | 56,0 | 4,181 | 56                               | 0,30 | 3,666          | 3,4 | 47,315         | +0,184       | 35—82                      | 35—100                | 175850 (17920)                                    | 192350 (19610) | 206800 (21080) |
| 2403-2283; 2403-2284 |          |    | H8—11H                         |      |       |                                  |      |                |     | 47,315         | +0,184       | 45—120                     | 45—145                | 184600 (18820)                                    | 202000 (20590) | 217150 (22140) |
| 2403-2285; 2403-2286 | 65 × 2   | 31 | H7—9H                          | 62,0 | 3,603 | 61                               | 0,30 | 3,666          | 3,4 | 52,296         | +0,086       | 35—82                      | 35—100                | 189450 (19310)                                    | 207300 (21130) | 222850 (22720) |
| 2403-2287; 2403-2288 |          |    | H8—11H                         |      |       |                                  |      |                |     | 52,347         | +0,173       | 45—120                     | 45—145                | 199450 (20310)                                    | 220200 (22410) | 238500 (24280) |
| 2403-2289; 2403-2291 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 57,188         | +0,091       | 35—96                      | 35—110                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2292; 2403-2293 |          |    | H8—11H                         |      |       |                                  |      |                |     | 57,242         | +0,182       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |
| 2403-2294; 2403-2295 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 57,188         | +0,091       | 45—120                     | 45—145                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2296; 2403-2297 |          |    | H8—11H                         |      |       |                                  |      |                |     | 57,242         | +0,182       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |
| 2403-2298; 2403-2299 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 62,186         | +0,097       | 45—120                     | 45—145                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2301; 2403-2302 |          |    | H8—11H                         |      |       |                                  |      |                |     | 62,244         | +0,192       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |
| 2403-2303; 2403-2304 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 62,186         | +0,097       | 45—120                     | 45—145                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2305; 2403-2306 |          |    | H8—11H                         |      |       |                                  |      |                |     | 62,244         | +0,192       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |
| 2403-2307; 2403-2308 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 62,186         | +0,097       | 45—120                     | 45—145                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2309; 2403-2311 |          |    | H8—11H                         |      |       |                                  |      |                |     | 62,244         | +0,192       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |
| 2403-2312; 2403-2313 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 62,186         | +0,097       | 45—120                     | 45—145                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2314; 2403-2315 |          |    | H8—11H                         |      |       |                                  |      |                |     | 62,244         | +0,192       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |
| 2403-2316; 2403-2317 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 62,186         | +0,097       | 45—120                     | 45—145                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2318; 2403-2319 |          |    | H8—11H                         |      |       |                                  |      |                |     | 62,244         | +0,192       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |
| 2403-2321; 2403-2322 | 70 × 2   | 34 | H7—9H                          | 68,0 | 3,026 | 66                               | 0,30 | 3,666          | 3,4 | 62,186         | +0,097       | 45—120                     | 45—145                | 226950 (23130)                                    | 248300 (25310) | 266900 (27210) |
| 2403-2323; 2403-2324 |          |    | H8—11H                         |      |       |                                  |      |                |     | 62,244         | +0,192       | 45—140                     | 45—170                | 260200 (26530)                                    | 284700 (29020) | 306050 (31200) |

Продолжение табл. 6

Размеры, мм



Продолжение табл. 6

Размеры, мм

| Обозначение прокатки | D × m    | z  | Сочетание полей допусков D и e | d    | e     | D <sub>a</sub> (поле допусков H11) | k    | d <sub>p</sub> | h   | M <sub>B</sub> |              | Длина протягивания           |                       |                   | Усилие протягивания P, Н (кгс), при переднем угле |                   |       |
|----------------------|----------|----|--------------------------------|------|-------|------------------------------------|------|----------------|-----|----------------|--------------|------------------------------|-----------------------|-------------------|---------------------------------------------------|-------------------|-------|
|                      |          |    |                                |      |       |                                    |      |                |     | Наим.          | Верхн. откл. | Сталь и алюминий, вые сплавы | Чугун, бронза, латунь | 20°               | 15°                                               | 10°               |       |
|                      |          |    |                                |      |       |                                    |      |                |     |                |              |                              |                       |                   |                                                   |                   | Наим. |
| 2403-2325; 2403-2326 | 75 × 2   | 36 | H7-9H                          | 72,0 | 3,603 | 71                                 |      |                |     | 67,270         | +0,091       | 35-96                        | 35-110                | 244050<br>(24880) | 267050<br>(27220)                                 | 287050<br>(29260) |       |
| 2403-2327; 2403-2328 |          |    | 67,325                         |      |       |                                    |      |                |     | +0,180         | 45-140       | 45-170                       | 264700<br>(26980)     | 289600<br>(29520) | 311300<br>(31740)                                 |                   |       |
| 2403-2329; 2403-2331 | 80 × 2   | 38 | H7-9H                          | 76,0 | 4,181 | 76                                 |      |                |     | 67,270         | +0,091       | 35-96                        | 35-110                | 261450<br>(26650) | 286050<br>(29160)                                 | 307500<br>(31350) |       |
| 2403-2332; 2403-2333 |          |    | 67,325                         |      |       |                                    |      |                |     | +0,180         | 45-140       | 45-170                       | 264700<br>(26980)     | 289600<br>(29520) | 311300<br>(31740)                                 |                   |       |
| 2403-2334; 2403-2335 | 80 × 2   | 38 | H7-9H                          | 76,0 | 4,181 | 76                                 |      |                |     | 72,296         | +0,086       | 35-96                        | 35-110                | 261450<br>(26650) | 286050<br>(29160)                                 | 307500<br>(31350) |       |
| 2403-2336; 2403-2337 |          |    | 72,348                         |      |       |                                    |      |                |     | +0,172         | 45-140       | 45-170                       | 315950<br>(32210)     | 345700<br>(35240) | 371650<br>(37880)                                 |                   |       |
| 2403-2338; 2403-2339 | 85 × 2   | 41 | H7-9H                          | 82,0 | 3,603 | 81                                 |      |                |     | 72,296         | +0,086       | 35-96                        | 35-110                | 315950<br>(32210) | 345700<br>(35240)                                 | 371650<br>(37880) |       |
| 2403-2341; 2403-2342 |          |    | 72,348                         |      |       |                                    |      |                |     | +0,172         | 45-140       | 45-170                       | 280100<br>(28550)     | 306450<br>(31240) | 329450<br>(33580)                                 |                   |       |
| 2403-2343; 2403-2344 | 85 × 2   | 41 | H7-9H                          | 82,0 | 3,603 | 81                                 |      |                |     | 77,214         | +0,090       | 35-96                        | 35-110                | 280100<br>(28550) | 306450<br>(31240)                                 | 329450<br>(33580) |       |
| 2403-2345; 2403-2346 |          |    | 77,268                         |      |       |                                    |      |                |     | +0,179         | 45-140       | 45-170                       | 321150<br>(32740)     | 351400<br>(35820) | 377750<br>(38510)                                 |                   |       |
| 2403-2347; 2403-2348 | 90 × 2   | 44 | H7-9H                          | 88,0 | 3,026 | 86                                 |      |                |     | 77,214         | +0,090       | 35-96                        | 35-110                | 321150<br>(32740) | 351400<br>(35820)                                 | 377750<br>(38510) |       |
| 2403-2349; 2403-2351 |          |    | 77,268                         |      |       |                                    |      |                |     | +0,179         | 45-140       | 45-170                       | 297700<br>(30350)     | 325700<br>(33200) | 350150<br>(35690)                                 |                   |       |
| 2403-2352; 2403-2353 | 90 × 2   | 44 | H7-9H                          | 88,0 | 3,026 | 86                                 | 0,30 | 3,666          | 3,4 | 82,215         | +0,093       | 35-96                        | 35-110                | 297700<br>(30350) | 325700<br>(33200)                                 | 350150<br>(35690) |       |
| 2403-2354; 2403-2355 |          |    | 82,271                         |      |       |                                    |      |                |     | +0,186         | 45-140       | 45-170                       | 322900<br>(32910)     | 353250<br>(36010) | 379750<br>(38710)                                 |                   |       |
| 2403-2356; 2403-2357 | 95 × 2   | 46 | H7-9H                          | 92,0 | 3,603 | 91                                 |      |                |     | 82,215         | +0,093       | 35-96                        | 35-110                | 313200<br>(31930) | 342650<br>(34930)                                 | 368350<br>(37550) |       |
| 2403-2358; 2403-2359 |          |    | 82,271                         |      |       |                                    |      |                |     | +0,186         | 45-140       | 45-170                       | 318550<br>(32480)     | 348550<br>(35530) | 374700<br>(38200)                                 |                   |       |
| 2403-2361; 2403-2362 | 100 × 2  | 48 | H7-9H                          | 96,0 | 4,181 | 96                                 |      |                |     | 87,276         | +0,089       | 35-96                        | 35-110                | 313200<br>(31930) | 342650<br>(34930)                                 | 368350<br>(37550) |       |
| 2403-2363; 2403-2364 |          |    | 87,330                         |      |       |                                    |      |                |     | +0,178         | 45-140       | 45-170                       | 318550<br>(32480)     | 348550<br>(35530) | 374700<br>(38200)                                 |                   |       |
| 2403-2365; 2403-2366 | 100 × 2  | 48 | H7-9H                          | 96,0 | 4,181 | 96                                 |      |                |     | 87,276         | +0,089       | 35-96                        | 35-110                | 318550<br>(32480) | 348550<br>(35530)                                 | 374700<br>(38200) |       |
| 2403-2367; 2403-2368 |          |    | 87,330                         |      |       |                                    |      |                |     | +0,178         | 45-140       | 45-170                       | 314100<br>(32020)     | 343650<br>(35030) | 369450<br>(37660)                                 |                   |       |
| 2403-2369; 2403-2371 | 52 × 2,5 | 19 | H7-9H                          | 47,5 | 4,937 | 47                                 | 0,38 | 4,406          | 4,0 | 92,296         | +0,086       | 35-96                        | 35-110                | 314100<br>(32020) | 343650<br>(35030)                                 | 369450<br>(37660) |       |
| 2403-2372; 2403-2373 |          |    | 92,348                         |      |       |                                    |      |                |     | +0,172         | 45-140       | 45-170                       | 307900<br>(31390)     | 336900<br>(34340) | 362150<br>(36920)                                 |                   |       |
| 2403-2374; 2403-2375 | 52 × 2,5 | 19 | H7-9H                          | 47,5 | 4,937 | 47                                 | 0,38 | 4,406          | 4,0 | 92,296         | +0,086       | 35-96                        | 35-110                | 307900<br>(31390) | 336900<br>(34340)                                 | 362150<br>(36920) |       |
| 2403-2376; 2403-2377 |          |    | 92,348                         |      |       |                                    |      |                |     | +0,172         | 30-76        | 30-90                        | 139950<br>(14270)     | 153150<br>(15610) | 164600<br>(16780)                                 |                   |       |
| 2403-2378; 2403-2379 | 52 × 2,5 | 19 | H7-9H                          | 47,5 | 4,937 | 47                                 | 0,38 | 4,406          | 4,0 | 42,715         | +0,079       | 40-108                       | 40-130                | 153150<br>(15610) | 164600<br>(16780)                                 | 186250<br>(18990) |       |
| 2403-2381; 2403-2382 |          |    | 42,757                         |      |       |                                    |      |                |     | +0,156         | 40-108       | 40-130                       | 158350<br>(16140)     | 173250<br>(17660) | 186250<br>(18990)                                 |                   |       |
| 2403-2383; 2403-2384 | 52 × 2,5 | 19 | H7-9H                          | 47,5 | 4,937 | 47                                 | 0,38 | 4,406          | 4,0 | 42,715         | +0,079       | 40-108                       | 40-130                | 158350<br>(16140) | 173250<br>(17660)                                 | 186250<br>(18990) |       |
| 2403-2385; 2403-2386 |          |    | 42,757                         |      |       |                                    |      |                |     | +0,156         | 40-108       | 40-130                       | 158350<br>(16140)     | 173250<br>(17660) | 186250<br>(18990)                                 |                   |       |



Продолжение табл. 6

Размеры, мм

| Обозначение прокатки | D × t                | z                    | Сочетание полей допусков D и e | d    | e  | D <sub>н</sub> (поле допусков H11) | k    | d <sub>p</sub> | h   | M <sub>B</sub> |              | Длина протягивания           |                       | Усилие протягивания P, H (кгс), при переднем угле |                   |                   |
|----------------------|----------------------|----------------------|--------------------------------|------|----|------------------------------------|------|----------------|-----|----------------|--------------|------------------------------|-----------------------|---------------------------------------------------|-------------------|-------------------|
|                      |                      |                      |                                |      |    |                                    |      |                |     | Наим.          | Верхн. откл. | Сталь и алюминий, все сплавы | Чугун, бронза, латунь | 20°                                               | 15°               | 10°               |
|                      |                      |                      |                                |      |    |                                    |      |                |     |                |              |                              |                       |                                                   |                   |                   |
| 2403-2387; 2403-2388 | 55 × 2,5             | 20                   | H7-9H                          | 50,0 | 50 | 50                                 |      |                |     | 45,876         | +0,077       | 35-82                        | 35-100                | 154750<br>(15780)                                 | 169300<br>(17260) | 182000<br>(18560) |
| 2403-2389; 2403-2391 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 45,917         | +0,152       | 45-110                       | 45-130                | 152050<br>(15500)                                 | 166400<br>(16960) | 178850<br>(18230) |
| 2403-2392; 2403-2393 | 60 × 2,5             | 22                   | H7-9H                          | 55,0 | 55 | 55                                 |      |                |     | 50,883         | +0,085       | 35-82                        | 35-100                | 169350<br>(17270)                                 | 185300<br>(18890) | 199200<br>(20310) |
| 2403-2394; 2403-2395 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 50,934         | +0,170       | 45-120                       | 45-145                | 187950<br>(19160)                                 | 205600<br>(20966) | 221050<br>(22530) |
| 2403-2396; 2403-2397 | 65 × 2,5             | 24                   | H7-9H                          | 60,0 | 60 | 60                                 |      |                |     | 55,883         | +0,086       | 35-82                        | 35-100                | 186400<br>(19000)                                 | 203950<br>(20790) | 219250<br>(22350) |
| 2403-2398; 2403-2399 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 55,935         | +0,169       | 45-120                       | 45-145                | 183450<br>(18700)                                 | 200700<br>(20460) | 215750<br>(22000) |
| 2403-2401; 2403-2402 | 70 × 2,5             | 26                   | H7-9H                          | 65,0 | 65 | 65                                 | 0,38 | 4,406          | 4,0 | 60,884         | +0,085       | 35-96                        | 35-110                | 221000<br>(22530)                                 | 241800<br>(24650) | 259950<br>(26500) |
| 2403-2403; 2403-2404 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 60,935         | +0,170       | 45-140                       | 45-170                | 267100<br>(27230)                                 | 292250<br>(29790) | 314150<br>(32030) |
| 2403-2405; 2403-2406 | 75 × 2,5             | 28                   | H7-9H                          | 70,0 | 70 | 70                                 |      |                |     | 65,884         | +0,085       | 35-96                        | 35-110                | 240050<br>(24470)                                 | 262600<br>(26770) | 282300<br>(28780) |
| 2403-2407; 2403-2408 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 65,935         | +0,170       | 45-140                       | 45-170                | 260200<br>(26530)                                 | 284700<br>(29020) | 306050<br>(31200) |
| 2403-2409; 2403-2411 | 80 × 2,5             | 30                   | H7-9H                          | 75,0 | 75 | 75                                 |      |                |     | 70,884         | +0,085       | 35-96                        | 35-110                | 254650<br>(25960)                                 | 278600<br>(28400) | 299500<br>(30530) |
| 2403-2412; 2403-2413 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 70,935         | +0,171       | 45-150                       | 45-180                | 307900<br>(31390)                                 | 336900<br>(34340) | 362150<br>(36920) |
| 2403-2414; 2403-2415 | 85 × 2,5             | 32                   | H7-9H                          | 80,0 | 80 | 80                                 |      |                |     | 75,884         | +0,086       | 35-96                        | 35-110                | 273900<br>(27920)                                 | 299700<br>(30550) | 322200<br>(32840) |
| 2403-2416; 2403-2417 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 75,935         | +0,171       | 45-150                       | 45-180                | 314100<br>(32020)                                 | 343650<br>(35030) | 369450<br>(37660) |
| 2403-2418; 2403-2419 | 2403-2421; 2403-2422 | 2403-2423; 2403-2424 | H7-9H                          | 80,0 | 80 | 80                                 |      |                |     | 75,884         | +0,086       | 35-96                        | 35-110                | 273900<br>(27920)                                 | 299700<br>(30550) | 322200<br>(32840) |
| 2403-2420; 2403-2421 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 75,935         | +0,171       | 45-150                       | 45-180                | 314100<br>(32020)                                 | 343650<br>(35030) | 369450<br>(37660) |
| 2403-2425; 2403-2426 | 2403-2427; 2403-2428 | 2403-2429; 2403-2431 | H7-9H                          | 80,0 | 80 | 80                                 |      |                |     | 75,884         | +0,086       | 35-96                        | 35-110                | 273900<br>(27920)                                 | 299700<br>(30550) | 322200<br>(32840) |
| 2403-2427; 2403-2428 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 75,935         | +0,171       | 45-150                       | 45-180                | 314100<br>(32020)                                 | 343650<br>(35030) | 369450<br>(37660) |
| 2403-2432; 2403-2433 | 2403-2434; 2403-2435 | 2403-2436; 2403-2437 | H7-9H                          | 80,0 | 80 | 80                                 |      |                |     | 75,884         | +0,086       | 35-96                        | 35-110                | 273900<br>(27920)                                 | 299700<br>(30550) | 322200<br>(32840) |
| 2403-2434; 2403-2435 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 75,935         | +0,171       | 45-150                       | 45-180                | 314100<br>(32020)                                 | 343650<br>(35030) | 369450<br>(37660) |
| 2403-2436; 2403-2437 | 2403-2438; 2403-2439 | 2403-2441; 2403-2442 | H7-9H                          | 80,0 | 80 | 80                                 |      |                |     | 75,884         | +0,086       | 35-96                        | 35-110                | 273900<br>(27920)                                 | 299700<br>(30550) | 322200<br>(32840) |
| 2403-2438; 2403-2439 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 75,935         | +0,171       | 45-150                       | 45-180                | 314100<br>(32020)                                 | 343650<br>(35030) | 369450<br>(37660) |
| 2403-2441; 2403-2442 | 2403-2443; 2403-2444 | 2403-2445; 2403-2446 | H7-9H                          | 80,0 | 80 | 80                                 |      |                |     | 75,884         | +0,086       | 35-96                        | 35-110                | 273900<br>(27920)                                 | 299700<br>(30550) | 322200<br>(32840) |
| 2403-2443; 2403-2444 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 75,935         | +0,171       | 45-150                       | 45-180                | 314100<br>(32020)                                 | 343650<br>(35030) | 369450<br>(37660) |
| 2403-2445; 2403-2446 | 2403-2447; 2403-2448 | 2403-2449; 2403-2450 | H7-9H                          | 80,0 | 80 | 80                                 |      |                |     | 75,884         | +0,086       | 35-96                        | 35-110                | 273900<br>(27920)                                 | 299700<br>(30550) | 322200<br>(32840) |
| 2403-2447; 2403-2448 |                      |                      | H8-11H                         |      |    |                                    |      |                |     | 75,935         | +0,171       | 45-150                       | 45-180                | 314100<br>(32020)                                 | 343650<br>(35030) | 369450<br>(37660) |

Продолжение табл. 6

| Обозначение прокатки | D × m     | z  | Сочетание полей допусков D и e | d     | e   | D <sub>a</sub> (поле допусков H11) | k     | d <sub>p</sub> | h | M <sub>B</sub>    |              | Длина протягивания         |                       | Усилие протягивания P, H (кгс), при переднем угле |                |     |
|----------------------|-----------|----|--------------------------------|-------|-----|------------------------------------|-------|----------------|---|-------------------|--------------|----------------------------|-----------------------|---------------------------------------------------|----------------|-----|
|                      |           |    |                                |       |     |                                    |       |                |   | Наим.             | Верхн. откл. | Сталь и алюминий-высильеры | Чугун, бронза, латунь | 20°                                               | 15°            | 10° |
|                      |           |    |                                |       |     |                                    |       |                |   |                   |              |                            |                       |                                                   |                |     |
| 2403-2449; 2403-2451 | 90 × 2,5  | 34 | H7—9H<br>H8—11H                | 85,0  | 85  |                                    |       |                |   | 80,884<br>+0,086  | 36—125       | 36—150                     | 313300 (31940)        | 342750 (34940)                                    | 368500 (37560) |     |
| 2403-2452; 2403-2453 |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 80,935<br>+0,171  |              |                            |                       |                                                   |                |     |
| 2403-2454; 2403-2455 |           |    | H7—9H<br>H8—11H                | 90,0  | 90  |                                    |       |                |   | 85,884<br>+0,086  | 35—96        | 35—110                     | 308250 (31420)        | 337250 (34380)                                    | 362550 (36960) |     |
| 2403-2456; 2403-2457 | 95 × 2,5  | 36 | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 85,936<br>+0,170  | 45—150       | 45—180                     | 322150 (32840)        | 352450 (35930)                                    | 378900 (38630) |     |
| 2403-2458            |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 85,884<br>+0,086  |              |                            |                       |                                                   |                |     |
| 2403-2459            |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 90,884<br>+0,086  | 35—96        | 35—110                     | 322250 (32850)        | 352550 (35940)                                    | 379000 (38640) |     |
| 2403-2461; 2403-2462 |           |    | H7—9H<br>H8—11H                | 95,0  | 95  | 0,38                               | 4,406 | 4,0            |   | 90,936<br>+0,171  | 45—150       | 45—180                     | 321100 (32730)        | 351300 (35810)                                    | 377650 (38500) |     |
| 2403-2463; 2403-2464 | 100 × 2,5 | 38 | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 90,884<br>+0,086  |              |                            |                       |                                                   |                |     |
| 2403-2465            |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 90,936<br>+0,171  |              |                            |                       |                                                   |                |     |
| 2403-2466            |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 95,884<br>+0,086  |              |                            |                       |                                                   |                |     |
| 2403-2467; 2403-2468 | 105 × 2,5 | 40 | H7—9H<br>H8—11H                | 100,0 | 100 |                                    |       |                |   | 95,936<br>+0,171  |              |                            | 342150 (34880)        | 374350 (38160)                                    | 402450 (41020) |     |
| 2403-2469; 2403-2471 |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 100,891<br>+0,096 | 35—96        | 35—110                     | 357500 (36440)        | 391100 (39870)                                    | 420450 (42860) |     |
| 2403-2472; 2403-2473 | 110 × 2,5 | 42 | H7—9H<br>H8—11H                | 105,0 | 105 |                                    |       |                |   | 100,950<br>+0,191 |              |                            |                       |                                                   |                |     |
| 2403-2474; 2403-2475 |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   | 110,891<br>+0,096 |              |                            |                       |                                                   |                |     |
| 2403-2476; 2403-2477 | 120 × 2,5 | 46 | H7—9H<br>H8—11H                | 115,0 | 115 |                                    |       |                |   | 110,950<br>+0,191 |              |                            | 391550 (39920)        | 428400 (43670)                                    | 460550 (46950) |     |
| 2403-2478; 2403-2479 |           |    | H7—9H<br>H8—11H                |       |     |                                    |       |                |   |                   |              |                            |                       |                                                   |                |     |



4. Наибольшие расчетные усилия протягивания  $\bar{P}$  указаны для обработки деталей из сталей I—IV групп обрабатываемости по ГОСТ 20365.

Для определения усилия протягивания для закаленных сталей и других материалов следует величину  $\bar{P}$  умножить на коэффициент  $K$ , указанных в табл. 7.

Таблица 7

| Обозначение материала                                                 | Твердость HB | $K$ |
|-----------------------------------------------------------------------|--------------|-----|
| Стали I—IV групп обрабатываемости в закаленном состоянии              | < 285        | 1,2 |
|                                                                       | 285 ... 335  | 1,3 |
|                                                                       | 336 ... 375  | 1,4 |
| Инструментальные легированные, быстрорежущие стали и сталь марки ШХ15 | 204 ... 229  | 1,4 |
| Чугуны VI и VII групп обрабатываемости                                | < 229        | 0,5 |
|                                                                       | $\geq 229$   | 0,7 |
| Бронзы, латуни VIII и IX групп обрабатываемости                       | < 110        | 0,4 |
| Алюминиевые сплавы X группы обрабатываемости                          | $\leq 100$   |     |

5. Центровые отверстия — формы  $B$ ,  $T$  или  $R$  по ГОСТ 14034.

6. Хвостовики — типа 2, исполнения 1 по ГОСТ 4044.

Изготовление протяжек с хвостовиком типа 2 исполнений 2, 3 или 4 — по заказу потребителя.

Продольные лыски на хвостовиках исполнений 2 и 4 должны располагаться перпендикулярно оси впадины профиля протяжки.

Допуск перпендикулярности на 10 мм ширины лыски не должен превышать 0,015 мм.

Длина лыски на заднем хвостовике указывается потребителем при заказе.

7. Неуказанные предельные отклонения размеров:  $H16, h16,$

$$\pm \frac{IT16}{2}.$$

8. Допуск симметричности боковых поверхностей фасочных зубьев относительно боковых поверхностей шлицевых зубьев не должен превышать  $T 0,1$  мм.

9. Форма и размеры профиля зубьев протяжек, группы заточки, форма передней грани зубьев протяжек — по ГОСТ 20365.

10. Задний угол зубьев протяжек должен быть:

|                       |           |    |
|-----------------------|-----------|----|
| черновых и переходных | · · · · · | 3° |
| чистовых              | · · · · · | 2° |
| калибрующих           | · · · · · | 1° |

11. Пределы длины протягивания заготовок из чугуна, бронзы и латуни — справочные. Для протягивания заготовок из этих материалов с длиной протягивания, превышающей верхний предел длины протягивания по стали, следует применять навертной хвостовик увеличенной длины.

12. Предельные отклонения диаметров сопрягаемых центрирующих поверхностей:

протяжки (рабочей части) — по  $f7,$

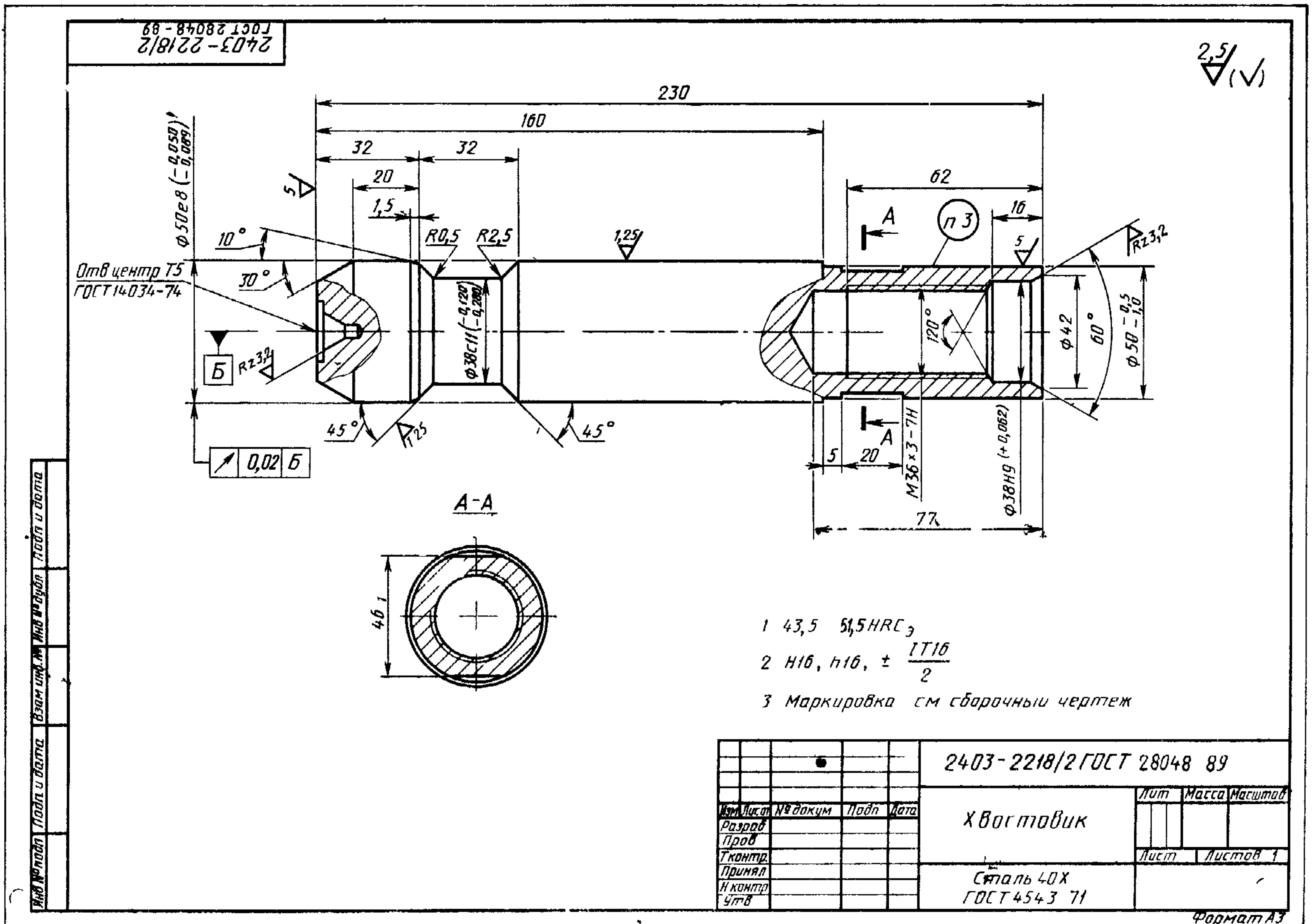
навертного хвостовика — по  $H9.$

13. Типовой чертеж протяжки указан в приложении.

14. Технические требования — по ГОСТ 6767.







**ИНФОРМАЦИОННЫЕ ДАННЫЕ**

**1. РАЗРАБОТАН И ВНЕСЕН** Министерством станкостроительной и инструментальной промышленности СССР

**ИСПОЛНИТЕЛИ**

Л. В. Барон, А. И. Либерман, А. И. Прохорова, Ф. И. Фельдман

**2. УТВЕРЖДЕН И ВВЕДЕН В ДЕЙСТВИЕ** Постановлением Государственного комитета СССР по стандартам от 16.03.89 № 517

**3. ВВЕДЕН ВПЕРВЫЕ**

**4. ССЫЛОЧНЫЕ НОРМАТИВНО-ТЕХНИЧЕСКИЕ ДОКУМЕНТЫ**

| Обозначение НТД, на который дана ссылка                                                                         | Номер пункта, приложения                                                                                |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| ГОСТ 2475—88<br>ГОСТ 4044—70<br>ГОСТ 6033—80<br>ГОСТ 6767—79<br>ГОСТ 14034—74<br>ГОСТ 19265—73<br>ГОСТ 20365—74 | 1 (Примечание к табл. 3)<br>6<br>Вводная часть<br>14, приложение<br>5, приложение<br>Приложение<br>4, 9 |