Приложение 5.3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ГОСТ 1139-80.** **ОСНОВНЫЕ НОРМЫ ВЗАИМОЗАМЕНЯЕМОСТИ****СОЕДИНЕНИЯ ШЛИЦЕВЫЕ. ПРЯМОБОЧНЫЕ.****МЕЖГОСУДАРСТВЕННЫЙ СТАНДАРТ**

|  |  |
| --- | --- |
| **Основные нормы взаимозаменяемости****СОЕДИНЕНИЯ ШЛИЦЕВЫЕ ПРЯМОБОЧНЫЕ****Размеры и допуски**Basic norms of interchangeability. Straight-sided splined joints.Dimensions and tolerances | **ГОСТ1139-80** |

**Дата введения 01.01.82**Настоящий стандарт распространяется на шлицевые соединения общего назначения с прямобочным профилем зубьев, расположенных параллельно оси соединения и с боковыми сторонами профиля, параллельными оси симметрии шлица вне окружности диаметра *d,*и устанавливает число зубьев, номинальные размеры соединений легкой, средней и тяжелой серий, а также допуски для соединений с центрированием по внутреннему диаметру, по наружному диаметру и по боковым сторонам зубьев.Стандарт не распространяется на специальные шлицевые соединения, которые отличаются от регламентируемых настоящим стандартом номинальными размерами и видом центрирования.Стандарт не распространяется на изделия, спроектированные до 1980 г.Стандарт полностью соответствует стандарту СТ СЭВ 6844-89.**(Измененная редакция, Изм. № 2).****1. РАЗМЕРЫ**1.1.Основные размеры и числа зубьев шлицевых соединений должны соответствовать указанным на чертеже и в табл. [1](http://gostrf.com/normadata/1/4294839/4294839619.htm#i98664) - [3](http://gostrf.com/normadata/1/4294839/4294839619.htm#i135570).http://gostrf.com/normadata/1/4294839/4294839619.files/x001.jpgТаблица 1**Размеры легкой серии, мм**

| *z × d × D* | Число зубьев *z* | *d* | *D* | *b* | *d*1*,*не менее | *а,*не менее | *с* | *r*, не более |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Номин. | Пред. откл. |
| 6 × 23 × 26 | 6 | 23 | 26 | 6 | 22,1 | 3,54 | 0,3 | +0,2 | 0,2 |
| 6 × 26 × 30 | 6 | 26 | 30 | 6 | 24,6 | 3,85 | 0,3 | +0,2 | 0,2 |
| 6 × 28 × 32 | 6 | 28 | 32 | 7 | 26,7 | 4,03 | 0,3 | +0,2 | 0,2 |
| 8 × 32 × 36 | 8 | 32 | 36 | 6 | 30,4 | 2,71 | 0,4 | +0,2 | 0,3 |
| 8 × 36 × 40 | 8 | 36 | 40 | 7 | 34,5 | 3,46 | 0,4 | +0,2 | 0,3 |
| 8 × 42 × 46 | 8 | 42 | 46 | 8 | 40,4 | 5,03 | 0,4 | +0,2 | 0,3 |
| 8 × 46 × 50 | 8 | 46 | 50 | 9 | 44,6 | 5,75 | 0,4 | +0,2 | 0,3 |
| 8 × 52 × 58 | 8 | 52 | 58 | 10 | 49,7 | 4,89 | 0,5 | +0,3 | 0,5 |
| 8 × 56 × 62 | 8 | 56 | 62 | 10 | 53,6 | 6,38 | 0,5 | +0,3 | 0,5 |
| 8 × 62 × 68 | 8 | 62 | 68 | 12 | 59,8 | 7,31 | 0,5 | +0,3 | 0,5 |
| 10 × 72 × 78 | 10 | 72 | 78 | 12 | 69,6 | 5,45 | 0,5 | +0,3 | 0,5 |
| 10 × 82 × 88 | 10 | 82 | 88 | 12 | 79,3 | 8,62 | 0,5 | +0,3 | 0,5 |
| 10 × 92 × 98 | 10 | 92 | 98 | 14 | 89,4 | 10,08 | 0,5 | +0,3 | 0,5 |
| 10 × 102 × 108 | 10 | 102 | 108 | 16 | 99,9 | 11,49 | 0,5 | +0,3 | 0,5 |
| 10 × 112 × 120 | 10 | 112 | 120 | 18 | 108,8 | 10,72 | 0,5 | +0,3 | 0,5 |

Таблица 2**Размеры средней серии, мм**

| *z × d × D* | Число зубьев *z* | *d* | *D* | *b* | *d*1*,*не менее | *а,*не менее | *с* | *r*, не более |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Номин. | Пред. откл. |
| 6 × 11 × 14 | 6 | 11 | 14 | 3,0 | 9,9 | - | 0,3 | +0,2 | 0,2 |
| 6× 13× 16 | 6 | 13 | 16 | 3,5 | 12,0 | - | 0,3 | +0,2 | 0,2 |
| 6 × 16×20 | 6 | 16 | 20 | 4,0 | 14,5 | - | 0,3 | +0,2 | 0,2 |
| 6 × 18×22 | 6 | 18 | 22 | 5,0 | 16,7 | - | 0,3 | +0,2 | 0,2 |
| 6 × 21 × 25 | 6 | 21 | 25 | 5,0 | 19,5 | 1,95 | 0,3 | +0,2 | 0,2 |
| 6 × 23 × 28 | 6 | 23 | 28 | 6,0 | 21,3 | 1,34 | 0,3 | +0,2 | 0,2 |
| 6 × 26 × 32 | 6 | 26 | 32 | 6,0 | 23,4 | 1,65 | 0,4 | +0,2 | 0,3 |
| 6 × 28 × 34 | 6 | 28 | 34 | 7,0 | 25,9 | 1,70 | 0,4 | +0,2 | 0,3 |
| 8 × 32 × 38 | 8 | 32 | 38 | 6,0 | 29,4 | - | 0,4 | +0,2 | 0,3 |
| 8 × 36 × 42 | 8 | 36 | 42 | 7,0 | 33,5 | 1,02 | 0,4 | +0,2 | 0,3 |
| 8 × 42 × 48 | 8 | 42 | 48 | 8,0 | 39,5 | 2,57 | 0,4 | +0,2 | 0,3 |
| 8 × 46 × 54 | 8 | 46 | 54 | 9,0 | 42,7 | - | 0,5 | +0,3 | 0,5 |
| 8 × 52 × 60 | 8 | 52 | 60 | 10,0 | 48,7 | 2,44 | 0,5 | +0,3 | 0,5 |
| 8 × 56 × 65 | 8 | 56 | 65 | 10,0 | 52,2 | 2,50 | 0,5 | +0,3 | 0,5 |
| 8 × 62 × 72 | 8 | 62 | 72 | 12,0 | 57,8 | 2,40 | 0,5 | +0,3 | 0,5 |
| 10 × 72 × 82 | 10 | 72 | 82 | 12,0 | 67,4 | - | 0,5 | +0,3 | 0,5 |
| 10 × 82 × 92 | 10 | 82 | 92 | 12,0 | 77,1 | 3,00 | 0,5 | +0,3 | 0,5 |
| 10 × 92 × 102 | 10 | 92 | 102 | 14,0 | 87,3 | 4,50 | 0,5 | +0,3 | 0,5 |
| 10 × 102× 112 | 10 | 102 | 112 | 16,0 | 97,7 | 6,30 | 0,5 | +0,3 | 0,5 |
| 10 × 112 × 125 | 10 | 112 | 125 | 18,0 | 106,3 | 4,40 | 0,5 | +0,3 | 0,5 |

Таблица 3**Размеры тяжелой серии, мм**

| *z × d × D* | Число зубьев *z* | *d* | *D* | *b* | *d*1*,*не менее | *с* | *r*, не более |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Номин. | Пред. откл. |
| 10 × 16 × 20 | 10 | 16 | 20 | 2,5 | 14,1 | 0,3 | +0,2 | 0,2 |
| 10 × 18 × 23 | 10 | 18 | 23 | 3,0 | 15,6 | 0,3 | +0,2 | 0,2 |
| 10 × 21 × 26 | 10 | 21 | 26 | 3,0 | 18,5 | 0,3 | +0,2 | 0,2 |
| 10 × 23 × 29 | 10 | 23 | 29 | 4,0 | 20,3 | 0,3 | +0,2 | 0,2 |
| 10 × 26 × 32 | 10 | 26 | 32 | 4,0 | 23,0 | 0,4 | +0,2 | 0,3 |
| 10 × 28 × 35 | 10 | 28 | 35 | 4,0 | 24,4 | 0,4 | +0,2 | 0,3 |
| 10 × 32 × 40 | 10 | 32 | 40 | 5,0 | 28,0 | 0,4 | +0,2 | 0,3 |
| 10 × 36 × 45 | 10 | 36 | 45 | 5,0 | 31,3 | 0,4 | +0,2 | 0,3 |
| 10 × 42 × 52 | 10 | 42 | 52 | 6,0 | 36,9 | 0,4 | +0,2 | 0,3 |
| 10 × 46 × 56 | 10 | 46 | 56 | 7,0 | 40,9 | 0,5 | +0,3 | 0,5 |
| 16 × 52 × 60 | 16 | 52 | 60 | 5,0 | 47,0 | 0,5 | +0,3 | 0,5 |
| 16 × 56 × 65 | 16 | 56 | 65 | 5,0 | 50,6 | 0,5 | +0,3 | 0,5 |
| 16 × 62 × 72 | 16 | 62 | 72 | 6,0 | 56,1 | 0,5 | +0,3 | 0,5 |
| 16 × 72 × 82 | 16 | 72 | 82 | 7,0 | 65,9 | 0,5 | +0,3 | 0,5 |
| 20 × 82 × 92 | 20 | 82 | 92 | 6,0 | 75,6 | 0,5 | +0,3 | 0,5 |
| 20 × 92 × 102 | 20 | 92 | 102 | 7,0 | 85,5 | 0,5 | +0,3 | 0,5 |
| 20 × 102 × 115 | 20 | 102 | 115 | 8,0 | 94,0 | 0,5 | +0,3 | 0,5 |
| 20 × 112 × 125 | 20 | 112 | 125 | 9,0 | 104,0 | 0,5 | +0,3 | 0,5 |

Примечания:1. Исполнение 1 дано для изготовления валов соединений легкой и средней серий методом обкатывания. Валы соединений тяжелой серии методом обкатывания не изготовляются.2. Шлицевые валы исполнений 1 и 3 изготовляются при центрировании по внутреннему диаметру, исполнения 2 - при центрировании по наружному диаметру и боковым сторонам зубьев.**(Измененная редакция, Изм. № 2).**1.2. **(Исключен, Изм. № 2).**1.3. Фаска у пазов отверстия втулки может быть заменена закруглением с радиусом, равным величине фаски *с.***2. ДОПУСКИ**2.1.Общие положения, допуски и основные отклонения размеров *d, D, b*шлицевого соединения - по [ГОСТ 25346](http://gostrf.com/normadata/1/4294850/4294850962.htm).2.2. Поля допусков шлицевых валов и втулок для образования посадок при различных видах центрирования должны соответствовать указанным в табл. [4](http://gostrf.com/normadata/1/4294839/4294839619.htm#i304992); [5](http://gostrf.com/normadata/1/4294839/4294839619.htm#i361085); [5а](http://gostrf.com/normadata/1/4294839/4294839619.htm#i422084).Поля допусков, заключенные в квадратные скобки, являются рекомендуемыми, а поля допусков, отмеченные звездочками - предпочтительными из числа рекомендуемых (поля допусков, применяемые в ИСО).Таблица 4**Поля допусков шлицевых валов и втулок для образования посадок при центрировании по внутреннему диаметру**

| Вид соединения | Подвижное | Неподвижное |
| --- | --- | --- |
| Поля допуска | *d* | Втулка | Н8 | [Н7]\* | [H7]\* |
| Вал | е8 | [f7]\* | [g6] [g7]\* | h7 | [h7]\* | [js6] js7 | n6 |
| *b* | Втулка | [D9]D10[F10] | [D9][F10] |  |  | [H9]\*[Н11]\* | D9F10 |  | [H9]\*[Н11]\* | D9F10 | H8H9\*Н11\* | F8F10 |  |  | F8F10 |  |
| D9 | F8 | F8 | D9 | H8 | H8 |
|  |  |  |  |  |  |
| Вал | d9 | е8 | f7 |  | f7 |  | f8 | f7 | [d10]\* | f8 | h6 | [h7] | h7 | [js7] |  | h7 |  |
|  |  |  | f8 | [d10]\* |  |  |  |  |  |  |  |  |  |  |
| е8 |  | f8 | h9 | h7 | [f9]\* | h8 |  |  |  |  | [js7] | [K7] | [js7] |  | js7 |
| [е9] | е9 | [f9] |  | h9 |  | h9 | [h7] | [f9]\* | [h9] | h8 | [h10]\* | [K7] |  |  | [js7] |  |

Примечания:1. Поля допусков F10 и НИ применяются только для закаленных нешлифованных втулок.2. Поле допуска h9 применяется при чистовом фрезеровании незакаленных шлицевых валов.Таблица 5**Поля допусков шлицевых валов и втулок для образования посадок при центрировании по наружному диаметру**

| Вид соединения | Подвижное | Неподвижное |
| --- | --- | --- |
| Поля допусков | *I)* | Втулка | Н8Н10Н11 | [Н7] | [H7] |
| Вал | d8е8h7 | [f7] | [g6] | [h7] | [js6] | n6 |
| *b* | Втулка | D9F8Н11 | [D9]F8[F10] | [F8] |  | D9 |  | D9 | D9 | D9 |
|  | D9 |  | F8 |  |  |  |
| [F10] |  | [F8] |  | F8 | [F8] | F8 |
| Вал | d8е8d10 | [d9]е8[h9] | [f7][f8]h8 | f7h8h9 | f7 | h8 | f7 | h8 | h8 |
| h9 |  |  |  |  |
|  |  |  | [js7] | js7 |

Примечания:1. Поля допусков H10 и H11 применяются только для закаленных втулок, не подлежащих дополнительной обработке.2. Поле допуска h9 применяется при чистовом фрезеровании незакаленных шлицевых валов.Таблица 5а**Поля допусков шлицевых валов и втулок для образования посадок при центрировании по боковым сторонам шлицев**

| Вид соединения | Подвижное | Неподвижное |
| --- | --- | --- |
| Поля допусков размера | Втулка | [D9] | F8 | [F10] | D9 | [F8] | F10 |
| Вал | d9 | [e8] | e9 | [f8] | [js7] | k7 |
| f9 | h8 | h9 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

Примечание. Рекомендуется применять поле допуска е9 для незакаленных валов.**(Измененная редакция, Изм. №** **2).**2.3. Рекомендуемые посадки валов и втулок приведены в приложении [1](http://gostrf.com/normadata/1/4294839/4294839619.htm#i726752).2.4. Поля допусков нецентрирующих диаметров должны соответствовать указанным в табл. [6](http://gostrf.com/normadata/1/4294839/4294839619.htm#i488905).Таблица 6

| Нецентрирующий диаметр | Вид центрирования | Поле допуска |
| --- | --- | --- |
| Вал\* | Втулка |
| Подвижное соединение | Неподвижное соединение |
| *d* | По *D*или *b* | - | - | Н11 |
| *D* | По *d*или *b* | [a11]\*d10 f9 | [a11]\*f9, H10 | [Н10]\*, Н11Н12 |

\* Диаметр *d*не менее диаметра *d*1*.***(Измененная редакция, Изм. №** **2).**2.4.1. Допуски симметричности боковых сторон шлицев в диаметральном выражении по отношению к оси симметрии центрирующего элемента должны соответствовать указанным в табл. [7](http://gostrf.com/normadata/1/4294839/4294839619.htm#i522208).Таблица 7

| *b* | 2,5; 3 | 3,5; 4; 5; 6 | 7; 8; 9; 10 | 12; 14; 16; 18 |
| --- | --- | --- | --- | --- |
| IТ7 | 0,010 | 0,012 | 0,015 | 0,018 |

**(Введен****дополнительно, Изм. №2).**2.5. При длине шлицевого вала или втулки, превышающей длину комплексного калибра, предельные отклонения от параллельности сторон зубьев вала и пазов втулки относительно оси центрирующей поверхности не должны превышать на длине 100 мм:0,03 мм - в соединениях повышенной точности с допусками на размер *b*от IT6 до IT8;0,05 мм - в соединениях нормальной точности с допусками на размер *b*от IT9 до IT10.2.6. Рекомендации по контролю шлицевых соединений приведены в приложении [2](http://gostrf.com/normadata/1/4294839/4294839619.htm#i923890).2.7. Пример условного обозначения соединения с числом зубьев *z =*8, внутренним диаметром *d*= 36 мм, наружным диаметром *D*= 40 мм, шириной зуба *b =*7мм, с центрированием по внутреннему диаметру, с посадкой по диаметру центрирования http://gostrf.com/normadata/1/4294839/4294839619.files/x002.png по нецентрирующему диаметру http://gostrf.com/normadata/1/4294839/4294839619.files/x003.png и по размеру *b* http://gostrf.com/normadata/1/4294839/4294839619.files/x004.png:9 - 8 × 36 http://gostrf.com/normadata/1/4294839/4294839619.files/x002.png × http://gostrf.com/normadata/1/4294839/4294839619.files/x003.png × 7 http://gostrf.com/normadata/1/4294839/4294839619.files/x004.pngТо же, при центрировании по наружному диаметру с посадкой по диаметру центрирования http://gostrf.com/normadata/1/4294839/4294839619.files/x005.png и по размеру *b* http://gostrf.com/normadata/1/4294839/4294839619.files/x006.png:http://gostrf.com/normadata/1/4294839/4294839619.files/x007.png**(**[**Поправка**](http://gostrf.com/normadata/0/4294819/4294819722.htm)**).**То же, при центрировании по боковым сторонам:*b -*8 × 36 × 40 http://gostrf.com/normadata/1/4294839/4294839619.files/x003.png × 7 http://gostrf.com/normadata/1/4294839/4294839619.files/x008.pngПример условного обозначения втулки того же соединения при центрировании по внутреннему диаметру:*d -*8 × 36*Н7*× 40*Н12 × 7 Н9*То же, вала:*d -*8*×*36 *f*7*×*40*a*11*×* 7 f9*.***(Измененная редакция, Изм. № 2).**2.8. Допускается при необходимости обеспечения взаимозаменяемости в изделиях, спроектированных до 1 января 1980 г., выполнять шлицевые элементы деталей по [ГОСТ 1139](http://gostrf.com/normadata/1/4294839/4294839622.pdf).**(Введен****дополнительно, Изм. № 1).***ПРИЛОЖЕНИЕ 1Рекомендуемое***РЕКОМЕНДУЕМЫЕ ПОСАДКИ ВАЛОВ И ВТУЛОК**Допуски и посадки, приведенные в настоящем стандарте, не распространяются на шлицевые прямобочные соединения неответственных деталей изделий (например, деталей, не передающих крутящий момент, зубчатые шайбы и т.п.).В табл. [1](http://gostrf.com/normadata/1/4294839/4294839619.htm#i794938) - [3](http://gostrf.com/normadata/1/4294839/4294839619.htm#i885070) приведены поля допусков шлицевых валов и втулок для образования посадок при различных видах центрирования.**1. Центрирование по внутреннему диаметру**Таблица 1**Посадки центрирующего диаметра**

| Поле допуска втулки | Основное отклонение вала |
| --- | --- |
| е | f | g | h | js | n |
| Н7; Н8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x009.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x010.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x011.png http://gostrf.com/normadata/1/4294839/4294839619.files/x012.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x013.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x014.png http://gostrf.com/normadata/1/4294839/4294839619.files/x015.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x016.png |

Таблица 1a**Посадки по боковым сторонам шлицев**

| Поле допуска втулки | Основное отклонение вала |
| --- | --- |
| d | e | f | h | js | k |
| D9 | D9d9 | D9e8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x017.png | D9f7 | D9f8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x018.png | D9h8 | D9h9 | http://gostrf.com/normadata/1/4294839/4294839619.files/x019.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x020.png |
| D10 | D10d9 | D10e9 | - | - | - | - |
| F8 | - | - | F8f7 | F8f8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x021.png | F8h9 | http://gostrf.com/normadata/1/4294839/4294839619.files/x022.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x023.png |
| F10 | F10d9 | F10e8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x024.png | F10f7 | F10f8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x025.png | F10h7 | F10h8 | F10h9 | http://gostrf.com/normadata/1/4294839/4294839619.files/x026.png | F10k7 |
| Н8 | - | - | - | H8h7 | H8h8 | H8js7 | - |
| Н9 | http://gostrf.com/normadata/1/4294839/4294839619.files/x027.png | - | http://gostrf.com/normadata/1/4294839/4294839619.files/x028.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x029.png | H9h8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x030.png | - | - |
| Н11 | http://gostrf.com/normadata/1/4294839/4294839619.files/x031.png | - | http://gostrf.com/normadata/1/4294839/4294839619.files/x032.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x033.png | H11h8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x034.png | - | - |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Центрирование по наружному диаметру**Таблица 2**Посадки центрирующего диаметра**

| Поле допуска втулки | Поле допуска вала |
| --- | --- |
| d | е | f | g | h | js | n |
| Н7 | - | - | http://gostrf.com/normadata/1/4294839/4294839619.files/x035.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x036.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x037.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x038.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x039.png |
| Н8 | Н8d8 | Н8е8 | - | - | Н8h7 | - | - |
| Н10 | Н10d8 | Н10е8 | - | - | - | - | - |

Таблица 2а**Посадки по боковым сторонам шлицев *b***

| Поле допуска втулки | Поле допуска вала |
| --- | --- |
| d | e | f | h | js |
| D9 | http://gostrf.com/normadata/1/4294839/4294839619.files/x040.png | D9e8 | D9f7 | D9h8 | D9h9 | D9js7 |
| F8 | - | F8e8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x041.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x042.png | F8h8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x022.png |
| F10 | F10d9 | F10e8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x043.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x044.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x038.png | - |
|  |  |  |  |  |  |  |  |

**Центрирование по боковым сторонам шлицев**Таблица 3**Посадка по боковым сторонам шлицев**

| Поле допуска втулки | Поле допуска вала |
| --- | --- |
| d | e | f | h | js | k |
| D9 | D9d9 | http://gostrf.com/normadata/1/4294839/4294839619.files/x045.png | http://gostrf.com/normadata/1/4294839/4294839619.files/x046.png | D9f9 | D9h8 | D9h9 | D9js7 | D9k7 |
| F8 | - | F8e8 | F8f8 | - | http://gostrf.com/normadata/1/4294839/4294839619.files/x022.png | - |
| F10 | http://gostrf.com/normadata/1/4294839/4294839619.files/x047.png | F10e8 | http://gostrf.com/normadata/1/4294839/4294839619.files/x048.png | F10F9 | F10h8 | F10h9 | F10js7 | F10k7 |

Примечание. В табл. [1](http://gostrf.com/normadata/1/4294839/4294839619.htm%22%20%5Cl%20%22i794938%22%20%5Co%20%22%D0%A2%D0%B0%D0%B1%D0%BB%D0%B8%D1%86%D0%B0%201), [1а](http://gostrf.com/normadata/1/4294839/4294839619.htm#i812274), [2](http://gostrf.com/normadata/1/4294839/4294839619.htm#i835072), [2а](http://gostrf.com/normadata/1/4294839/4294839619.htm#i865842), [3](http://gostrf.com/normadata/1/4294839/4294839619.htm#i885070) посадки, заключенные в квадратные рамки, являются предпочтительными.*ПРИЛОЖЕНИЕ [1](http://gostrf.com/normadata/1/4294839/4294839619.htm%22%20%5Cl%20%22i726752%22%20%5Co%20%22%D0%9F%D1%80%D0%B8%D0%BB%D0%BE%D0%B6%D0%B5%D0%BD%D0%B8%D0%B5%201).***(Измененная редакция, Изм. № 2).****СОДЕРЖАНИЕ**

|  |
| --- |
| [1. Размеры](http://gostrf.com/normadata/1/4294839/4294839619.htm#i38721)[2. Допуски](http://gostrf.com/normadata/1/4294839/4294839619.htm#i231245)[Приложение 1 Рекомендуемые посадки валов и втулок](http://gostrf.com/normadata/1/4294839/4294839619.htm#i751430)[Приложение 2 Рекомендации по контролю шлицевых соединений](http://gostrf.com/normadata/1/4294839/4294839619.htm#i956620) |

   |   |