

## SIT Taper bushing SER-SIT®

### Description

SER-SIT® taper lock bush is designed to give the following:

- perfect assembly
- rapid dismounting of the pulley and other transmission equipment
- no special tools requirement except hexagonal key.

The large range of available finished bores ensures that an immediate assembly can be made thus avoiding costly factory downtime. Fastening by SER-SIT® bushes allows the removal of any clearance between hub and bore so that fretting corrosion is positively eliminated. SER-SIT® bushes are interchangeable with all similar types sold throughout the world.



### Keyway

| UNI 6604-69 / DIN 6885    |        |                     |
|---------------------------|--------|---------------------|
| Diameter of the bore [mm] | b [mm] | t <sub>2</sub> [mm] |
| 9 ÷ 10                    | 3      | 1,4                 |
| 11 ÷ 12                   | 4      | 1,8                 |
| 13 ÷ 17                   | 5      | 2,3                 |
| 18 ÷ 22                   | 6      | 2,8                 |
| 23 ÷ 30                   | 8      | 3,3                 |
| 31 ÷ 38                   | 10     | 3,3                 |
| 39 ÷ 44                   | 12     | 3,3                 |
| 45 ÷ 50                   | 14     | 3,8                 |
| 51 ÷ 58                   | 16     | 4,3                 |
| 59 ÷ 65                   | 18     | 4,4                 |
| 66 ÷ 75                   | 20     | 4,9                 |
| 76 ÷ 85                   | 22     | 5,4                 |
| 86 ÷ 95                   | 25     | 5,4                 |
| 96 ÷ 110                  | 28     | 6,4                 |
| 111 ÷ 130                 | 32     | 7,4                 |

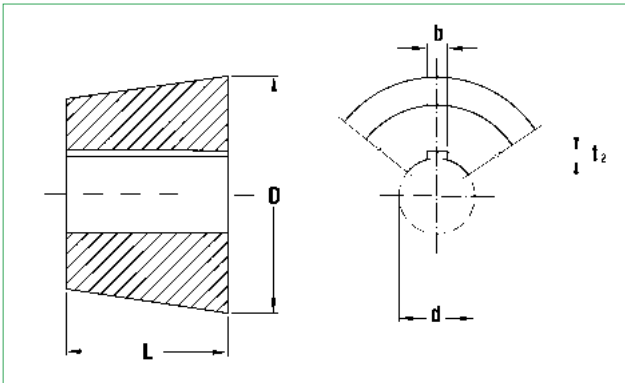
| Diameter of the bore [inch] | b [inch] | t <sub>2</sub> [inch] |
|-----------------------------|----------|-----------------------|
| 3/8 - 1/2                   | 1/8      | 1/16                  |
| 9/16 - 3/4                  | 3/16     | 3/32                  |
| 13/16 - 1                   | 1/4      | 1/8                   |
| 1-1/16 - 1-1/4              | 5/16     | 1/8                   |
| 1-5/16                      | 3/8      | 1/8                   |
| 1-5/8 - 1-3/4               | 7/16     | 5/32                  |
| 1-7/8 - 2                   | 1/2      | 5/32                  |
| 2-1/8 - 2-1/2               | 5/8      | 7/32                  |
| 2-5/8 - 3                   | 3/4      | 1/4                   |
| 3-1/8 - 3-1/2               | 7/8      | 5/16                  |
| 3-3/4 - 4                   | 1        | 3/8                   |
| 4-1/4 ÷ 5                   | 1-1/4    | 7/16                  |

Reduced keyway to be considered only for cases shown in the below table.

| Diameter of the bore [mm]   | Taper Bushing SER-SIT® type | b [mm]   | t <sub>2</sub> [mm]   |
|-----------------------------|-----------------------------|----------|-----------------------|
| 24 - 25                     | 1008                        | 8        | 1,3                   |
| 28                          | 1108                        | 8        | 1,3                   |
| 35                          | 1310                        | 10       | 1,3                   |
| 42                          | 1615                        | 12       | 2,2                   |
| 65                          | 2517                        | 18       | 3,3                   |
| Diameter of the bore [inch] | Taper Bushing SER-SIT® type | b [inch] | t <sub>2</sub> [inch] |
| 1                           | 1008                        | 1/4      | 1/16                  |
| 1-1/8                       | 1108                        | 5/16     | 5/64                  |
| 1-5/8 - 1-3/4               | 1615                        | 7/16     | 1/8                   |
| 3-1/2                       | 3535                        | 7/8      | 1/4                   |
| 3-3/4 - 4                   | 4040                        | 1        | 1/4                   |

TAPER BUSHING

# Technical features of taper bushings SER-SIT®



Part Number **BC 4025 F20**

Taper bushing SER-SIT®

Size

Bore diameter [mm]

| Taper Bushing SER-SIT® size | Diameter of the bore d |   | L [mm] | D [mm] | screws |           |             |          | M <sub>S</sub> [Nm] |
|-----------------------------|------------------------|---|--------|--------|--------|-----------|-------------|----------|---------------------|
|                             |                        |   |        |        | N°     | Withworth | Length [mm] | Key [mm] |                     |
| <b>1008</b> (25.20)         | mm<br>inches           | 11 12 14 15 16 18 19 20 22 <b>24*</b> <b>25*</b><br>3/8 1/2 5/8 3/4 7/8 <b>1*</b>   | 22,3   | 35     | 2      | 1/4       | 13          | 3        | 5,5                 |
| <b>1108</b> (28.20)         | mm<br>inches           | 11 12 14 15 16 17 18 19 20 22 24 25 <b>26</b> <b>27</b> <b>28*</b><br>3/8 1/2 5/8 3/4 7/8 <b>1 11/8*</b>  | 22,3   | 38     | 2      | 1/4       | 13          | 3        | 5,5                 |
| <b>1210</b> (30.25)         | mm<br>inches           | 11 12 14 15 16 18 19 20 22 24 25 26 28 <b>30</b> <b>32</b><br>1/2 5/8 3/4 7/8 1 1 1/8 <b>11/4</b>   | 25,4   | 47     | 2      | 3/8       | 16          | 5        | 20                  |
| <b>1215</b> (30.40)         | mm<br>inches           | 12 14 15 16 18 19 20 22 24 25 26 28 <b>30</b> <b>32</b><br>1/2 5/8 3/4 7/8 1 1 1/8 <b>11/4</b>  | 38,1   | 47     | 2      | 3/8       | 16          | 5        | 20                  |
| <b>1310</b> (35.25)         | mm<br>inches           | 14 16 18 19 20 22 24 25 28 30 32 <b>35*</b><br>1/2 5/8 3/4 7/8 1 1 1/8 1 1/4 <b>1 3/8</b>   | 25,4   | 52     | 2      | 3/8       | 16          | 5        | 20                  |
| <b>1610</b> (40.25)         | mm<br>inches           | 12 14 15 16 18 19 20 22 24 25 26 28 30 32 35 38 <b>40</b> <b>42</b><br>3/8 1/2 5/8 3/4 7/8 1 1 1/8 1 1/4 1 3/8 1 1/2 <b>1 5/8</b>                               | 25,4   | 57     | 2      | 3/8       | 16          | 5        | 20                  |
| <b>1615</b> (40.40)         | mm<br>inches           | 12 14 15 16 18 19 20 22 24 25 26 28 30 32 35 38 <b>40</b> <b>42*</b><br>1/2 5/8 3/4 7/8 1 1 1/8 1 1/4 1 3/8 1 1/2 <b>1 5/8*</b> <b>1 3/4*</b>                   | 38,1   | 57     | 2      | 3/8       | 16          | 5        | 20                  |
| <b>2012</b> (50.30)         | mm<br>inches           | 14 15 16 18 19 20 22 24 25 26 28 30 32 35 38 40 42 45 48 <b>50</b><br>5/8 3/4 7/8 1 1 1/8 1 1/4 1 3/8 1 1/2 1 5/8 1 3/4 1 7/8 <b>2</b>                          | 31,8   | 70     | 2      | 7/16      | 22          | 5        | 30                  |
| <b>2517</b> (65.45)         | mm<br>inches           | <b>18</b> 19 20 22 24 25 28 30 32 35 38 40 42 45 48 50 55 60 <b>65*</b><br>3/4 7/8 1 1 1/8 1 1/4 1 3/8 1 1/2 1 5/8 1 3/4 1 7/8 2 2 1/8 2 1/4 2 3/8 2 1/2        | 44,5   | 85     | 2      | 1/2       | 25          | 6        | 50                  |
| <b>3020</b> (75.50)         | mm<br>inches           | 22 25 28 30 32 35 38 40 42 45 48 50 55 57 60 65 70 <b>75</b><br>1 1/4 1 3/8 1 1/2 1 5/8 1 3/4 1 7/8 2 2 1/8 2 1/4 2 3/8 2 1/2 2 5/8 2 3/4 <b>2 7/8</b> <b>3</b> | 50,8   | 108    | 2      | 5/8       | 32          | 8        | 90                  |
| <b>3030</b> (75.75)         | mm<br>inches           | 25 28 30 32 35 38 40 42 45 47 48 50 55 60 65 70 <b>75</b><br>1 1/4 1 3/8 1 1/2 1 5/8 1 3/4 1 7/8 2 2 1/8 2 1/4 2 3/8 2 1/2 2 5/8 2 3/4 <b>2 7/8</b> <b>3</b>    | 76,2   | 108    | 2      | 5/8       | 32          | 8        | 90                  |
| <b>3535</b> (90.90)         | mm<br>inches           | 25 35 38 40 42 45 48 50 55 60 65 70 75 80 85 90<br>1 1/2 1 5/8 1 3/4 1 7/8 2 2 1/8 2 1/4 2 3/8 2 1/2 2 5/8 2 3/4 2 7/8 3 3 1/8 3 1/4 3 3/8 3 1/2*               | 88,9   | 127    | 3      | 1/2       | 38          | 10       | 115                 |
| <b>4040</b> (100.100)       | mm<br>inches           | 40 42 45 50 55 60 65 70 75 80 85 90 95 100<br>1 3/4 2 2 3/4 3 1/2 3 3/4* 4*   | 101,6  | 146    | 3      | 5/8       | 44          | 14       | 170                 |
| <b>4545</b> (115.115)       | mm<br>inches           | 55 60 65 70 75 80 85 90 95 100 105 110<br>3 3 1/2 4   | 114,3  | 162    | 3      | 3/4       | 51          | 14       | 195                 |
| <b>5050</b> (125.125)       | mm<br>inches           | 50 60 65 70 75 80 85 90 95 100 110 115 120 125<br>3 1/2 4   | 127,0  | 178    | 3      | 7/8       | 57          | 17       | 275                 |
| <b>6050**</b> (150.125)     | mm<br>inches           | 80-85-90-95-100-105-110-115-120-125-130-135-140-145-150   | 127,0  | 235    | 3      | 1-1/4     | 107         | 48       | 650                 |

Taper bushing having bore diameters in **bold** type are made in steel instead of cast iron

M<sub>S</sub> = screw tightening torque  
 \* = reduced keyway  
 \*\* = hexagonal head screw

## Assembly and disassembling of SER-SIT® conical bushing

- Before fitting the bushing into the pulley, carefully clean the bore and the conical parts.
- Fit the bushing into the pulley taking care that the threaded half holes of the pulley are in coincidence of the unthreaded holes of the bushing.
- Hand tighten the screws.
- Fit the pulley to the shaft after having carefully cleaned it. Position it and tighten the screws alternately.

- Disassembly: remove screws and put a new one in the jacking hole tightening it until the hub is released.

### Note

Ensure that the top of the keyway doesn't get in contact with the bottom of the seat. It is recommended to keep a certain clearance.

In applications characterized by strong vibrations, we strongly recommend checking the tightening of the set screws after a few hours of operation under load and, subsequently, at regular time intervals. SIT Spa cannot be held responsible for any consequences deriving from accidental unscrewing of the set screws during use.

## SER-SIT® conical bushing: slip torques and allowable axial load

The slip torques have been calculated considering the nominal tightening torque for the screws (Ms), a friction coefficient value  $\eta = 0,14$  and in case of assembly without keyway.

| Taper Bushing<br>SER-SIT®  | Bore<br>diameter<br>d<br>[mm] | Slip<br>torque<br>[Nm] | Allowable<br>axial load<br>[N] |
|----------------------------|-------------------------------|------------------------|--------------------------------|
| <b>1008</b>                | 12                            | 29                     | 3990                           |
|                            | 19                            | 51                     | 4940                           |
|                            | 24                            | 66                     | 5490                           |
| <b>1108</b>                | 12                            | 28                     | -                              |
|                            | 19                            | 49                     | 4630                           |
|                            | 24                            | 64                     | 5220                           |
|                            | 28                            | 79                     | 5720                           |
| <b>1210<br/>+<br/>1215</b> | 16                            | 82                     | 8840                           |
|                            | 19                            | 105                    | 9800                           |
|                            | 24                            | 142                    | 10900                          |
|                            | 32                            | 210                    | 12300                          |
| <b>1610<br/>+<br/>1615</b> | 19                            | 98                     | -                              |
|                            | 24                            | 135                    | 9570                           |
|                            | 38                            | 240                    | 11900                          |
|                            | 42                            | 265                    | 12700                          |
| <b>2012</b>                | 24                            | 165                    | 11500                          |
|                            | 38                            | 310                    | 14400                          |
|                            | 42                            | 340                    | 15700                          |
|                            | 48                            | 400                    | -                              |
|                            | 50                            | 420                    | 16700                          |
| <b>2517</b>                | 24                            | 220                    | -                              |
|                            | 38                            | 380                    | 17000                          |
|                            | 42                            | 430                    | 18500                          |
|                            | 48                            | 510                    | -                              |
|                            | 55                            | 600                    | 21000                          |
|                            | 60                            | 670                    | 22300                          |
| <b>3020<br/>+<br/>3030</b> | 38                            | 520                    | 23900                          |
|                            | 48                            | 730                    | 26100                          |
|                            | 55                            | 890                    | 29900                          |
|                            | 60                            | 970                    | 31500                          |
|                            | 75                            | 1300                   | 34500                          |
| <b>3535</b>                | 42                            | 1000                   | 41000                          |
|                            | 60                            | 1580                   | 49800                          |
|                            | 75                            | 2150                   | 54800                          |
|                            | 90                            | 2600                   | 59000                          |
| <b>4040</b>                | 48                            | 1700                   | -                              |
|                            | 60                            | 2300                   | 70200                          |
|                            | 75                            | 3150                   | 77200                          |
|                            | 100                           | 4400                   | 89400                          |
| <b>4545</b>                | 55                            | 2500                   | 79600                          |
|                            | 75                            | 3900                   | 93000                          |
|                            | 100                           | 5500                   | 107700                         |
|                            | 110                           | 6300                   | -                              |
| <b>5050</b>                | 75                            | 3950                   | 91800                          |
|                            | 100                           | 5650                   | 106600                         |
|                            | 125                           | 7370                   | 119500                         |