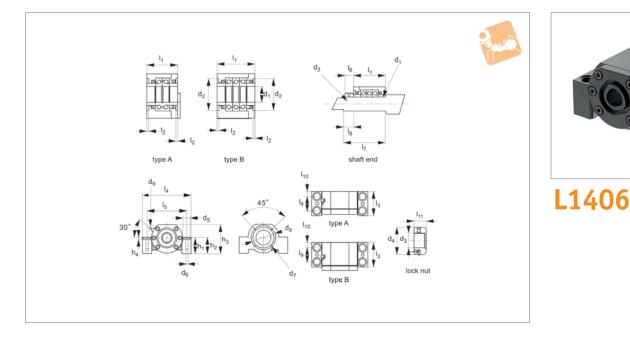


Heavy Load Support Units (SBK) for ball & lead screws





Material

Steel with black oxide finish.

Technical Notes

These supports come with a pair of duplex

angular contact bearings (type A), three angular bearings (type B), for a true fixed support. For dimensions to machine the ends of the screw to see technical pages.

| Order No. | d_1 | d ₂ | | d ₃ | d ₄ | d ₅ | d ₆ | d ₇ | d ₈ | d ₉ | h_1 | h ₂ | h ₃ | h ₄ | I ₁ I ₁₀ |
|-----------------------------------------------------------------------------------|----------------------------------|-----------------------|----------------------------------|---------------------------------|---------------------------------|----------------------------|------------------------------|----------------------------|----------------------------------|---------------------------------------------|--------------|---------------------------------------------|----------------------------------------|-------------------------------------------|-------------------------------------------------------------------------|
| L1406.SBK25-A | 25 | 57 | M25 | 5 x 1,5 | 45 | 26 | 18 | M6 | 70 | M6 | 51 | 53 | 89 | 2 | 66 15.5 |
| L1406.SBK25-B | 25 | 57 | M25 | 5 x 1,5 | 45 | 26 | 18 | M6 | 70 | M6 | 51 | 53 | 89 | 2 | 81 15.5 |
| L1406.SBK30-A | 30 | 57 | M30 |) x 1,5 | 50 | 26 | 18 | M6 | 70 | M6 | 51 | 53 | 89 | 2 | 66 15.5 |
| L1406.SBK30-B | 30 | 57 | M30 |) x 1,5 | 50 | 26 | 18 | M6 | 70 | M6 | 51 | 53 | 89 | 2 | 81 15.5 |
| L1406.SBK35-A | 35 | 69 | M35 | 5 x 1,5 | 55 | 26 | 18 | M6 | 80 | M6 | 52 | 54 | 96 | 2 | 66 15.5 |
| L1406.SBK35-B | 35 | 69 | M35 | 5 x 1,5 | 55 | 26 | 18 | M6 | 80 | M6 | 52 | 54 | 96 | 2 | 81 15.5 |
| L1406.SBK40-A | 40 | 69 | M40 |) x 1,5 | 60 | 26 | 18 | M6 | 80 | M6 | 52 | 54 | 96 | 2 | 66 15.5 |
| L1406.SBK40-B | 40 | 69 | M40 |) x 1,5 | 60 | 26 | 18 | M6 | 80 | M6 | 52 | 54 | 96 | 2 | 31 15.5 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Order No. | l | | | L. | l. | l. | I_ | | | Dynamic lo | bad / | Axial load | Preload | Rigidity | |
| Order No. | I_{11} | I ₂ | I ₃ | I ₄ | I_5 | I ₆ | I ₇ | I ₈ | ا اع | Dynamic lo kgf | bad i | Axial load kgf | Preload kgf | Rigidity kgf/cm | |
| Order No. L1406.SBK25-A | Ι ₁₁ 20 | ا ₂ 4 | ا ₃ 71 | ا ₄ 160 | ا ₅ 130 | ا ₆ 18 | ۱ ₇ 89 | І ₈ 26 | | | bad <i>i</i> | | | 0, | |
| | | _ | Ŭ | - | Ŭ | Ŭ | · · · | - | 1 ₉ | kgf | bad <i>i</i> | kgf | kgf | kgf/cm | kgf/cm |
| L1406.SBK25-A | 20 | 4 | 71 | 160 | 130 | 18 | 89 | 26 | ۱ ₉ 40 | kgf 2910 | bad / | <mark>kgf</mark> 4150 | kgf 320 | kgf/cm | kgf/cm 1,6 - 2,9 |
| L1406.SBK25-A L1406.SBK25-B | 20 20 | 4 | 71 71 | 160 160 | 130 130 | 18 18 | 89 104 | 26 26 | 40 40 | kgf 2910 4700 | bad <i>i</i> | kgf 4150 8300 | kgf 320 440 | kgf/cm 100 150 | kgf/cm 1,6 - 2,9 2,2 - 4,0 |
| L1406.SBK25-A L1406.SBK25-B L1406.SBK30-A | 20 20 20 | 4 4 4 | 71 71 71 71 | 160 160 160 | 130 130 130 | 18 18 18 | 89 104 89 | 26 26 26 | 40 40 40 40 | kgf 2910 4700 2980 | bad / | kgf 4150 8300 4400 | kgf 320 440 340 | kgf/cm 100 150 105 | kgf/cm 1,6 - 2,9 2,2 - 4,0 1,7 - 3,0 2,2 - 4,0 1,9 - 3,9 |
| L1406.SBK25-A L1406.SBK25-B L1406.SBK30-A L1406.SBK30-B | 20 20 20 20 | 4 4 4 4 | 71 71 71 71 71 | 160 160 160 160 | 130 130 130 130 | 18 18 18 18 | 89 104 89 104 | 26 26 26 26 | 40 40 40 40 40 | kgf 2910 4700 2980 4850 | bad / | kgf 4150 8300 4400 8800 | kgf 320 440 340 460 | kgf/cm 100 150 105 155 | kgf/cm 1,6 - 2,9 2,2 - 4,0 1,7 - 3,0 2,2 - 4,0 |
| L1406.SBK25-A L1406.SBK25-B L1406.SBK30-A L1406.SBK30-B L1406.SBK35-A | 20 20 20 20 20 22 | 4 4 4 4 4 | 71 71 71 71 71 71 | 160 160 160 160 160 | 130 130 130 130 130 | 18 18 18 18 18 | 89 104 89 104 92 | 26 26 26 26 30 | 40 40 40 40 40 40 | kgf 2910 4700 2980 4850 3150 | bad / | kgf 4150 8300 4400 8800 5100 | kgf 320 440 340 460 390 | kgf/cm 100 150 105 155 120 | kgf/cm 1,6 - 2,9 2,2 - 4,0 1,7 - 3,0 2,2 - 4,0 1,9 - 3,9 |





1. Install the fixed side support unit to the screw shaft.

the hexagonal socket head set screw.

Bearing supports mounting prosedure

and then install the assembly to the housing on the supported side.



Notes

When inserting the screw shaft to the support unit, take care not to let the oil seal lip turn upward.

When securing the set piece with a 3. Attach the support side bearing to the screw shaft and secure the bearing using the snap ring, hexagonal socket head set screw, apply an adhesive to the hexagonal socket head set screw before tightening it in order to

prevent the screw from loosening. If planning to use the product in a harsh environment, it is also necessary to take measures to prevent other components/parts from loosening. Contact our Technical Department for details.

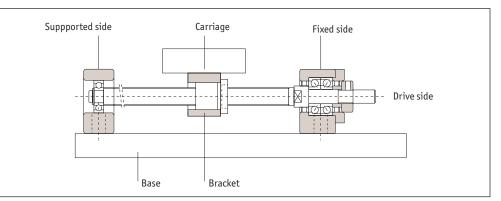
Snap Ring Set Screw Bearing Support side Fixed side

2. After inserting the fixed side support unit, secure the lock nut using the fastening set piece and

Installation onto the table and the base

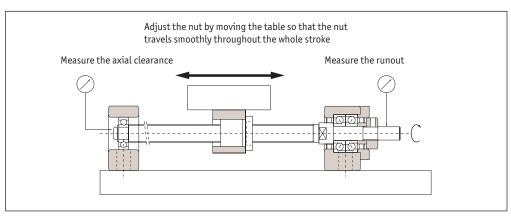
Installing the support unit

- 1. If using a bracket when mounting the ball screw nut to the carriage, insert the nut into the bracket and temporarily fasten it.
- Temporarily fasten the fixed side support unit to the base. In doing so, press the table toward the fixed side support unit to align the axial centre, and adjust the carriage so that it can travel freely.
- 3. Press the carriage toward the fixed side support unit to align the axial centre. Make the adjustment by reciprocating the table several times so that the nut travels slowly over the whole stroke, and temporarily secure the support unit to the base.



Checking the accuracy and fully fastening the support unit

1. While checking the runout of the ball screw shaft end and the axial clearance using a dial gauge, fully fasten the ball screw nut, the nut bracket, the fixed side support unit and the support side unit, in this order.



Notes

If using the fixed side support unit as the reference point, secure a clearance 2. between the ball screw nut and the table or inside the bracket when making adjustment.

If using the table as a reference point, make the adjustment either by using the shim (for a square type support unit), or securing the clearance between the outer surface of the nut and the inner surface of the mounting section (for a round type support unit).

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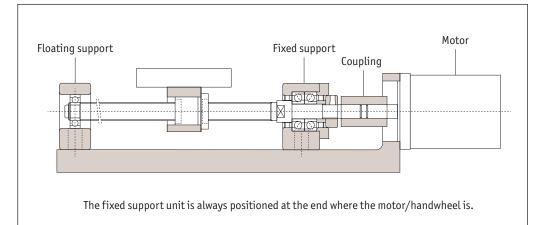


Bearing supports units assembly



Connection with motor

- 1. Mount motor bracket to the base.
- 2. Connect the motor and the ball screw using a coupling (make sure the mounting accuracy is maintained).
- 3. Mount motor bracket to the base.





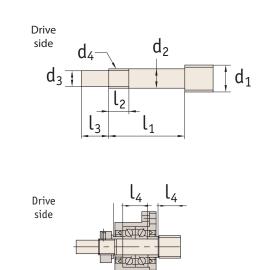




Fixed side for unit types; FK, EK, AK, FKA and LK







Type L1390.FK (Option 1) L1400.FKA

| Drive side | |
|---------------|-----------------|
| | All Other Types |
| Drive side | |

 $l_4 \quad l_4$



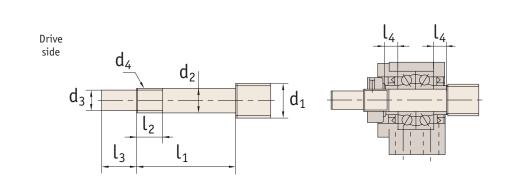
| Part no. | | | | | Thread ø | Shaft support ø | | | | | For thr | ead | |
|------------|------------|------------|-------------|------------|----------|--------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FK | EK | AK | FKA | LK | d1 | d ₂ | | h ₇ | l ₁ | l ₃ | d ₄ | l ₂ | l ₄ |
| L1390.FK05 | L1394.EK05 | - | - | - | 8 | 5 | -0,008 -0,015 | 4 | 23 | 6 | M5x0,5 | 7 | 3,5 |
| L1390.FK06 | L1394.EK06 | - | - | - | 8 | 6 | -0,008 -0,015 | 4 | 28 | 8 | M6x0,75 | 8 | 5,0 |
| L1390.FK08 | L1394.EK08 | - | L1400.FKA08 | L1402.LK08 | 10/12 | 8 | -0,008 -0,015 | 6 | 32 | 9 | M8x1,0 | 10 | 5,5 |
| L1390.FK10 | L1394.EK10 | L1388.AK10 | L1400.FKA10 | L1402.LK08 | 12/14/15 | 10 | -0,008 -0,015 | 8 | 35 | 15 | M10x1,0 | 12 | 5,5 |
| L1390.FK12 | L1394.EK12 | L1388.AK12 | L1400.FKA12 | L1402.LK08 | 14/15/16 | 12 | -0,008 -0,015 | 10 | 35 | 15 | M12x1,0 | 12 | 5,5 |
| L1390.FK15 | L1394.EK15 | L1388.AK15 | L1400.FKA15 | L1402.LK08 | 18/20 | 15 | -0,008 -0,017 | 12 | 48 | 20 | M15x1,0 | 13 | 10,0 |
| L1390.FK17 | - | - | - | - | 20/25 | 17 | -0,008 -0,017 | 15 | 59 | 23 | M17x1,0 | 17 | 10,0 |
| L1390.FK20 | L1394.EK20 | L1388.AK20 | L1400.FKA20 | - | 25/28/30 | 20 | -0,008 -0,017 | 17 | 63 | 25 | M20x1,0 | 15 | 11,0 |
| L1390.FK25 | - | - | - | - | 30/32/36 | 25 | -0,008 -0,017 | 20 | 76 | 30 | M25x1,5 | 20 | 14,0 |
| L1390.FK30 | - | - | - | - | 36/40 | 30 | -0,008 -0,018 | 25 | 73 | 38 | M30x1,5 | 25 | 9,0 |





Fixed side for unit type L1392.BK





| Part sno. | Thread ø | Shaft support ø | | | | | Threa | | |
|------------|----------|--------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| ВК | d_1 | d ₂ | | d ₃ | l ₁ | l ₃ | d ₄ | l ₂ | l ₄ |
| L1392.BK10 | 12/14/15 | 10 | -0,008 -0,015 | 8 | 36 | 15 | M10x1,0 | 12 | 5,5 |
| L1392.BK12 | 14/15/16 | 12 | -0,008 -0,015 | 10 | 36 | 15 | M12x1,0 | 12 | 5,5 |
| L1392.BK15 | 18/20 | 15 | -0,008 -0,017 | 12 | 40 | 20 | M15x1,0 | 12 | 6,0 |
| L1392.BK17 | 20/25 | 17 | -0,008 -0,017 | 15 | 53 | 23 | M17x1,0 | 17 | 7,0 |
| L1392.BK20 | 25/28 | 20 | -0,008 -0,017 | 17 | 53 | 25 | M20x1,0 | 15 | 8,0 |
| L1392.BK25 | 32/36 | 25 | -0,008 -0,017 | 20 | 66 | 30 | M25x1,5 | 20 | 9,0 |
| L1392.BK30 | 36/40 | 30 | -0,008 -0,018 | 25 | 73 | 38 | M30x1,5 | 25 | 9,0 |
| L1392.BK35 | 45 | 35 | -0,008 -0,018 | 30 | 82 | 45 | M35x1,5 | 26 | 12,0 |
| L1392.BK40 | 50 | 40 | -0,008 -0,018 | 35 | 94 | 50 | M40x1,5 | 30 | 15,0 |

