

MOUNTING INSTRUCTION

Precision ball screws

1. Unpacking & storing

- The nut should never be separated from the screw shaft without using a sleeve. If you receive a nut on sleeve, **don't cut the plastic fixation** before final assembly (↳ **fig1**).
- The location must be chosen so that the components will not be exposed to dirt, shocks, humidity, important temperature variation and other detrimental actions.
- The screw assemblies should be stacked horizontally, placed on 2 V-blocks made of hard plastic or light metal alloy on the screw thread or, when the assembly is short, the bearing seats should rest in the Vs. Do not allow the screw assembly to be supported on a shelf solely by the nut body (↳ **fig2**).
- Before shipping, the screw is coated with a corrosion preventive oil that forms a film once dry. This is not a lubricant. Depending on the selected lubricant, it is necessary to remove this film before applying the lubricant (there may be a risk of incompatibility). If this operation is performed in a potentially polluting atmosphere, it is highly recommended to proceed with a thorough cleaning of the assembly.

2. Preparing screw for mounting

2.1 Nut mounted on the shaft.

As far as possible, don't remove the nut, especially for pre-loaded nuts. If you need to remove it, i.e. for end machining, check the nut orientation before dismounting and use a sleeve.

2.2 Nut on a sleeve, screw shaft ends already machined.

- Clean the nut and the screw shaft with a solvent.
- Install the wipers on the nut (↳ **4.2, 4.3**).
- Install the nut on the screw shaft (take care of the nut orientation) (↳ **4.4; in case of a long lead SL** ↳ **4.5**).

2.3 Nut on sleeve – screw shafts with ends not yet machined.

- Machine the shaft ends: standard screw shafts are made of steel which is surface hardened (56 to 60 Hrc). It may be useful to anneal the shaft to do this operation.
- Continue as indicated in **2.2**.

Fig. 1



Fig. 2



3. Lubrication

Good lubrication is essential for the proper functioning of the screw and for its long term reliability. Don't hesitate to ask for advice to be sure to use our products in the best possible conditions.

4. Mounting the screw assembly on the machine

- Check that the end bearings and the guidance devices are aligned with the shaft.
- Check stroke and limit switches: the screw assembly should be driven back and forth a couple of times under low speed (< 50 rpm) and light load (not to exceed 5% of the dynamic rating).

4.1 Clean the nut

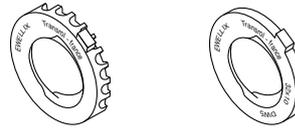
Ewellix ball nuts are coated with Quakers protective oil after manufacture; we recommend to remove it before mounting the nut on the screw shaft.

Therefore, plunge the nut and sleeve into the solvent; shake and turn it so that solvent penetrates into the nut to dissolve the protective film.

Remove the nut from the solvent and **allow to drain**.

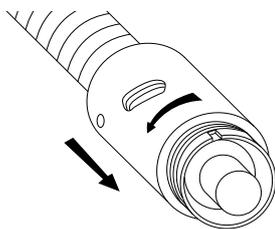
4.2 Moulded wipers with spigot

These instructions only concern moulded wipers with spigot. Check that this is the wiper you received.

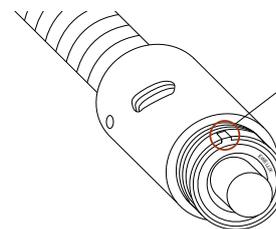


1

2

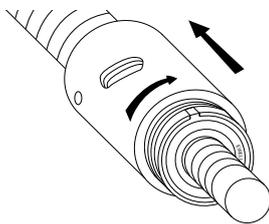


Taking care not to lose balls, screw the nut to the end of the thread so that it goes some mm beyond only.



Engage the wiper in the housing made in the nut. Align the wiper spigot with the female hole of the nut (1). The part of the wiper marked Ewellix should be fitted externally.

3



Screw the wiper and nut back onto the shaft.

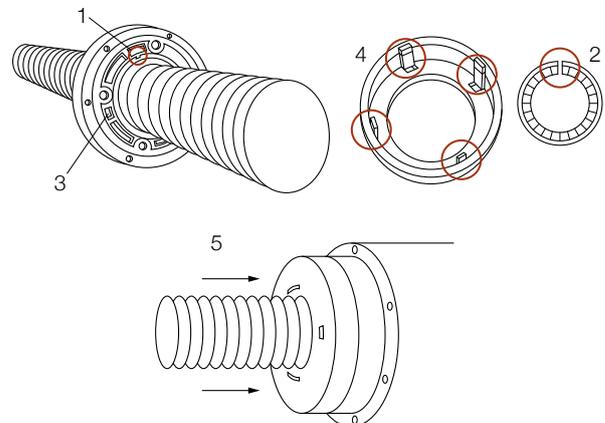
4.3 Brush wipers

Once fitted, the end cap cannot be removed!

Brush wipers and end caps are the same on each side.

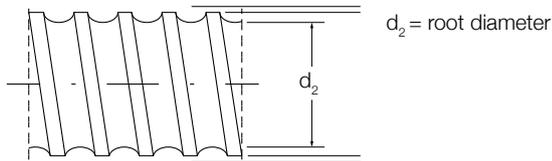
- Identify the lug (1) inside the wiper recess of the nut.
- Place the cut out on the brush wiper (2) over the lug.
- Identify the 4 rectangular cut outs on the end flange (3) and place the 4 mounting clips (4) on the end cap in line with them.
- Push the end cap firmly “home” until it is clipped (5) in position. Repeat the above procedure for the second wiper and cap on the other end of the nut.
- It is important that the nut is retained on the screw shaft using “cable ties” or a similar device to prevent accidental dismounting: no adhesive tape nor any other retaining system!

for SL/TL only

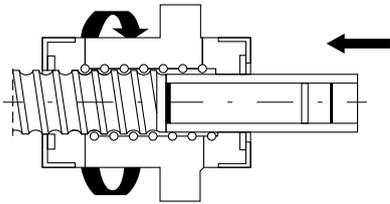


4.4 Mounting the nut on the screw shaft

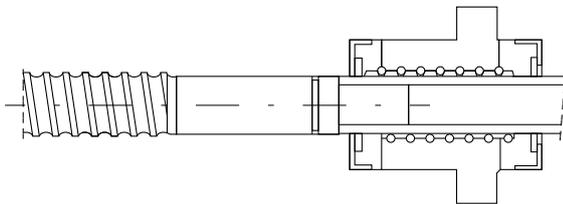
1. Take the screw shaft, cut to length, or with machined ends (see instructions for machining), check for damage or corrosion, discard if unsatisfactory.
2. It is recommended that the nut is fitted at the root diameter - if any.



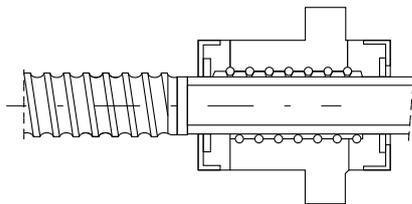
3. Check the assembly drawing to establish the nut orientation.
4. Remove the "cable tie" from the nut and sleeve.



Bring the sleeve up to the end of the screw shaft and smoothly engage the nut with the screw without forcing; run it on about 300 mm.



If the sleeve does not go over the diameter next to the ball track, adhesive tape can be used.



or the sleeve held against the unmachined end.

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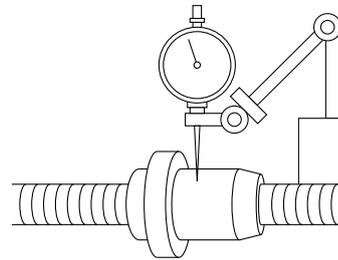
If the nut has been mounted by mistake the wrong way around, put it back on the sleeve and remount (the nut can be simply removed from a screw shaft using this method with a sleeve for reorientation or cleaning).

4.5 Method for checking mounting for an SL/TL/BL screw

Play can be checked with a dial gauge (0,01) fitted with a magnetic foot.

Clamp the base of the gauge onto the screw; bring the plunger into contact with the ground body diameter of the nut; raise the nut equally by lifting at each end to move the plunger.

Note: To assure the user of a good assembly, the play should be checked in at least 3 points along the length of the screw shaft (end, middle, end).



If no play is measured and play is required - "SL"

Run the nut back off the screw onto its sleeve; turn the nut through 90 ° and screw it back onto the screw shaft without forcing; check play - target value is between 0,01 mm and 0,08 mm.

On a "TL screw assembly", nut has been removed for end machining or cleaning. Play is measured and play elimination is required -"TL"

Run the nut back off the screw onto its sleeve, turn the nut through 90 ° and screw it back onto the shaft and check to confirm there is no "play".

On a "BL screw assembly", nut has been removed for end machining or cleaning, Play elimination is found whatever the nut position.

The play measurement is not useful in this case. Place the nut on the screw and feel the preload torque Run the nut back off the screw onto its sleeve, turn the nut through 90 °, screw it back onto the shaft and feel the preload torque once again.

The BL position is the one with the lowest preload torque.