

## **SPIRACON™**

### **INSTALLATION AND MAINTENANCE**



**POWER JACKS LTD  
MACONOCHE ROAD  
FRASERBURGH  
ABERDEENSHIRE  
AB43 8TE**  
**TEL +44 (0)1346 513131 FAX +44 (0)1346 516827**  
**email: sales@powerjacks.co.uk <http://www.powerjacks.com>**

## 1.0 SCOPE.

This specification covers the unpacking, handling, operation and maintenance for SPIRACON™ Roller Screws manufactured by Precision Actuation Systems.

## 2.0 SAFETY

The Precision Actuation Systems Spiracon roller screw and nut serves for the positioning, transporting, feeding, thrusting, lifting, unloading, clamping, gripping and compressing of loads, tooling and work pieces. Since it can be used in so many different ways, it is the user who must be responsible for the safety of the application concerned.

The user must ensure that the mounting of the Spiracon roller screw will not incur a hazard or injury to persons and/or damage to materials. If it is required to install a Spiracon roller screw in a region that is accessible to persons, then it must be installed and guarded so that no person can be endangered while it is in operation.

The Spiracon roller screw must be operated within the defined stroke and must not be driven into end stops. Limit switches should be fitted to the application to prevent this from happening.

## 3.0 UNPACKING.

Remove the banding from around the container. Remove and discard in a safe place any desiccant and plastic bags within the container. Lift the screws with soft slings around the Spiracon roller screw using a spreader bar to reduce the screw deflection while lifting.

**WARNING** - The Spiracon nut has a high efficiency and will travel along the screw under its own weight if the Spiracon roller screw - nut combination is tilted off the horizontal.

If the Spiracon roller screw is to be lifted into the vertical position then remove the Spiracon roller nut or attach a collar to the screw to prevent the Spiracon roller nut travelling down the screw under its own weight.

## 4.0 INSTALLATION.

The Spiracon nut can be removed from the screw for installation or maintenance purposes.

It is recommended that the Spiracon roller screw be protected from contamination and debris when installed by fitting covers or expanding bellows.

When installing the Spiracon roller screw into the position use soft slings as required wrapped around the screw, ref above.

**WARNING** – Do not use wire ropes or chains to handle Spiracon roller screw.

When installing the Spiracon roller screw ensure that the alignment of the screw in its support bearings is within 0.1/1000.

Once the Spiracon roller screw is installed clean the screw thoroughly and lightly coat with grease applied with a paintbrush. Note that the screw will be supplied either lightly coated with grease or if supplied un-greased, coated with Shell ENSIS Fluid. The Shell ENSIS Fluid can be removed with Shell Cleanforce or other hydrocarbon solvent.

If travel limit switches are fitted to the installation, set the travel switches to operate at the required travel to ensure that the Spiracon roller nut cannot be driven into a solid stop.

It is recommended that initial setting of proximity switches is carried out by manually rotating the Spiracon roller screw to position the switch activators correctly.

**WARNING** - Do not operate the installed Spiracon roller screw until all travel limit switches are commissioned.

Check that the grease nipple in the Spiracon roller nut is visible when the screw - nut is installed.

## 5.0 MAINTENANCE

The Spiracon roller screw should not require maintenance during its normal life other than;

- 5.1 The periodic injection of grease into the Spiracon roller nut through the grease access hole provided, recommended six (6) monthly intervals minimum.

Spiracon Roller Nut & Screw	Rocol MTS 1000 Castrol Spheerol BM2 Shell Calithia HDX Mobil Grease HP222
-----------------------------	--

- 5.3 Periodic cleaning of the Spiracon roller screw and the re-application of a light coating of grease applied with a paintbrush.

- 5.3 Should a repair to a Spiracon roller nut be required then remove the faulty Spiracon roller nut, and return the unit to Precision Actuation Systems for repair.

## 6.0 WIPERS

There are two different types of wipers fitted to Spiracon nuts, a brush type and a plastic type. The wiper, fitted to each end of the nut, retains the majority of the grease, allowing a film of grease to remain on the screw thread, and prevents the ingress of debris into the nut that may cause damage.

### 6.1 Brush Type Wiper

The brush type wiper is retained in a recess at each end of the nut and is removed by releasing the retaining circlip, with standard circlip pliers, and removing / replacing the brush wiper. There is no specific orientation of the brush wiper.

## 6.2 Plastic Type Wiper

The plastic type wiper is retained in a recess at each end of the nut by a dowel pin. The plastic type wiper has a thread form to match the screw and they are not interchangeable between positions or between nuts. Before removal of the nut from the Spiracon screw identify the wiper position relative to the nut. When assembling the nut onto the screw ensure that the wipers are flush with the face of the nut, i.e. that there is a gap between the bottom of the recess and the inside face of the wiper, or as defined on the Precision Actuation Systems drawing. This ensures that the wiper is free on the Spiracon screw thread and not cross-threaded relative to the nut.

**WARNING** - Incorrect mounting of the wipers will result in incorrect operation of the nut.

### 6.2.1 Replacing Plastic Wiper

If required pack the space between the rollers of the nut with grease before assemble to the screw.

To fit replacement wipers to an existing nut first remove the wiper location dowel pin from the wiper recess in the nut.

Wind the Spiracon nut onto the screw.

Wind the wiper along the screw and into the recess in the nut against the recess face. Unwind the wiper creating a gap of 1 to 2mm between wiper and bottom of recess and mark position of location dowel on wiper.

Drill hole suitable for location dowel in the wiper.

Position wiper on screw in nut recess, ensuring the 1 to 2mm gap is present and fit the location dowel through the wiper into the nut.

## 7.0 TOOLING.

Only standard tools are required for installation and normal maintenance.

## 8.0 SPARES LISTING.

Spares are available from Precision Actuation Systems by quoting the part number required, ref Precision Actuation Systems general arrangement drawing supplied, and quoting the serial number identification on the Precision Actuation Systems label on the Spiracon roller nut outer case.