

ADS(b) Shaft Maintenance

Because of the nature of their employment, ADS shafts will require weekly (every 60 hours running time) attention. Each segment requires vacuum removal of accumulated dust which will restrict movement, and clog bearings. The "Crevice Nozzle" of an industrial vacuum cleaner which has been modified to seat on a 40mm radius, is used.



After vacuuming, all segments, spacers and pressure strips should be removed and cleaned of old lubricant with white spirit. White spirit is also used to remove old lubricant residue from the shaft. When all items have dried, shafts are wiped with a film of light silicone machine oil and the segments replaced as described below.

ASSEMBLY OF SHAFTS

Notes on Assembly, Dis-assembly and Bladder changing sequences are given on the following pages. 3" (76mm) and 6" (152mm) shafts are essentially similar in construction.

To reassemble the shaft, the first plastic spacer and segment is placed on the shaft, slipped down over the bladder section to lightly abutt the drive end cover. Three "Shoe" sections are then fitted into the bladder slots and pressed home until they too abutt the end cover. Spacers and segments are then slipped over the remaining lengths of "Shoe". New "Shoe" lengths are added and the procedure repeated. Each is **lightly** drawn up to the previous segment so that the two may move independantly.

Assembly proceeds until a space less than a full segment width remains between the segments and the square end of the Bladder clips. The last Shoe Sections will have been trimmed during manufacture to suit the specific shaft length fitted to the machine. A terminating plastic spacer is fitted, and the black end cap secured by its three socket grub screws.

IMPORTANT!
THE ENTIRE LENGTH OF EACH BLADDER MUST BE
RESTRAINED BY SHOES
ANY FREE SPACE WILL CAUSE A RUPTURE.



Pressure Shoes

Note that shoes will wear in response to the ammount of use of each segment. A witness step will be left between segments. When this step reaches 0.5mm the shoe should be replaced.



Bladder Clamps in place.



Removal/replacement of end cover.



Cap Removed

Bladder Replacement

The rewind shaft is held within the drive assembly by an expansion collar retained by 6 socket head capscrews. Release these screws half a turn at a time, in the reverse order of their numbered sequence. Remove the air connection and slide the shaft forward 100mm or so.



Release the drive end cover lock screws and slip the cover back, away from the slip rings, to expose the bladder clamps in the three slots. Remove the outer end cover as shown in the previous section.

Withdraw all segments and dividing spacers from the shaft taking care to collect the pressure shoes as they are released. Check these for wear (steps greater than 0.5 mm) and request replacements as required.

Remove the Outer (shorter) Bladder Clamps from each of the three channels. Remove the Inner (Drive End) Clamps. As the old bladder is removed, withdraw the Air Inlet gland from its hole inside the tube.

New Bladder tubes may now be fitted.

First, a 3mm hole is punched 14mm from the end of the tube. the Air inlet gland is fitted from the inside of the tube and the length wiped with a silicone based oil.

The bladder is then laid in its groove with the gland entered in the air supply hole. The outer end is then trimmed so that it is level with the inboard diameter of the threaded outer fixing hole. The Inner, and then Outer Clamps are refitted and the screws **hand tightened with an allen key**.

Reassemble segments and spacers as detailed on the previous page.

Before replacing end covers it is advisable to return the shaft far enough into the drive unit to re-engage the air feed tube, apply pressure and check for leaks.

On returning the rewind shaft into the drive unit, ensure that the bearing on the outboard end securely engages with the shaft support mechanism, before tightening the six locking screws on the clamp collar. These screws are tightened half a turn at a time in the order shown on the unit, to a final torque of 8 N/M

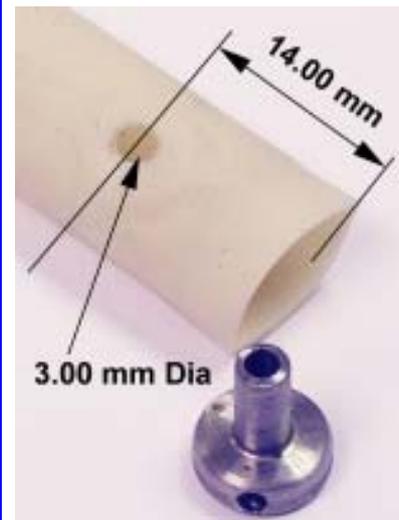
Bladder Fittings



Inner (Drive End) Clamp and Screw



Outer (Non Drive End) Clamp and Screw



Bladder Tube and Air Gland,
(Note 3mm hole placed 14mm from tube end)



Assembled Shaft