

SERVICE INSTRUCTIONS FOR MODEL CL 90 ROTARY BLOWERS AND VACUUM PUMPS

INSTALLATION

The machine should be sited in a cool, clean, well ventilated position. If these conditions are not available the intake must be piped from a more suitable location. Ample room should be left for inspection.

If the machine is not required for immediate use the inlet and outlet must be kept covered otherwise entry of foreign matter through the ports could cause serious damage.

On vacuum pumps the connecting pipework on the intake side must be thoroughly cleaned to remove internal rust and scale. Use PTFE tape for making joints since surplus from jointing compounds will damage the blades if drawn into the machine. This also applies to the outlet joint, and pipework on the inlet of blowers.

CHECKS BEFORE USE

Before running the machine for the first time after installation or maintenance, make the following checks :-

Fill the lubricator with **SHELL RIMULA X 15W/40 OR EQUIVALENT**

Check that the machine is free by turning the shaft through a few revolutions.

Check that the direction of rotation is anti-clockwise when viewed from the drive shaft.

The pump speed must not normally exceed **1800** rpm.

The oil drip rate is 11 - 13 D.P.M. for each sight glass.

OPERATING INSTRUCTIONS

Regularly inspect any filters fitted to the pipeline. Failure to carry out this maintenance will result in loss of performance and overheating.

Check blades for wear every **5000** running hours and renew it the rubbing tips have worn so as to reduce the depth to 2".

TO INSPECT AND CHANGE THE BLADES

For inspection of blades firstly remove the eyebolt (not shown) exposing a hole leading to the cylinder bore. Insert a measuring rod, rotate the shaft by hand so that the cone end is resting on the rotor diameter, scribe a mark on the rod at the level of the machine face. Turn the rotor until the point of the rod drops into the slot and rests on the blades tip, scribe a second mark, measure the difference between the marks. The blades must be changed if this dimension is greater than 1/8" (3mm). Replace the eyebolt.

To change the blades dismantle rear end by undoing two screws (23) and removing the oil pump (13) and oil pipes (32 & 33) and unscrew the lubricator extension (10). Remove fancowl by undoing three set screws (27), the fan can be released by removing the screws (24). After removing six set screws (21) the coverplate (3) can be withdrawn with endcap (5) and outer race of roller bearing (15). **AT THIS STAGE MEASURE AND NOTE THE THICKNESS OF THE GASKETS FITTED BETWEEN THE CYLINDER AND COVERPLATE.** The blades can now be changed. When renewing blades make sure they slide freely in their slots and if necessary remove any high spots with emery cloth. Slightly smear all surfaces of the blades with oil before re-assembly.

TO CHANGE BEARINGS AND SHAFT SEAL

Proceed as above for changing blades, and then using a two-leg pulley drawer remove the inner race of the roller bearing from the shaft. The seal sleeve can now be removed.

To dismantle the drive end undo six coverplate screws (21) and withdraw coverplate and rotor/shaft assembly.

AGAIN NOTE THE THICKNESS OF THE GASKETS AT THIS END. Take off drive endcap (4) and carefully note the position of the bellville washers (26) and shim (25), remove the circlip (34) and bearing retaining washer (9).

Using a two leg pulley drawer remove the angular contact bearings (14), noting the position of the bearings before their removal. When both seal sleeves (6) are removed care must be taken not to interchange them as this will affect the clearances.

TO RE-ASSEMBLE

It is essential that all parts are perfectly clean before re-assembly. Ensure that the oilways in the coverplates are clear.

Lightly smear the shaft with grease to assist assembly.

Re-build with gaskets having exactly the same thickness as the originals.

The correct clearances are :-

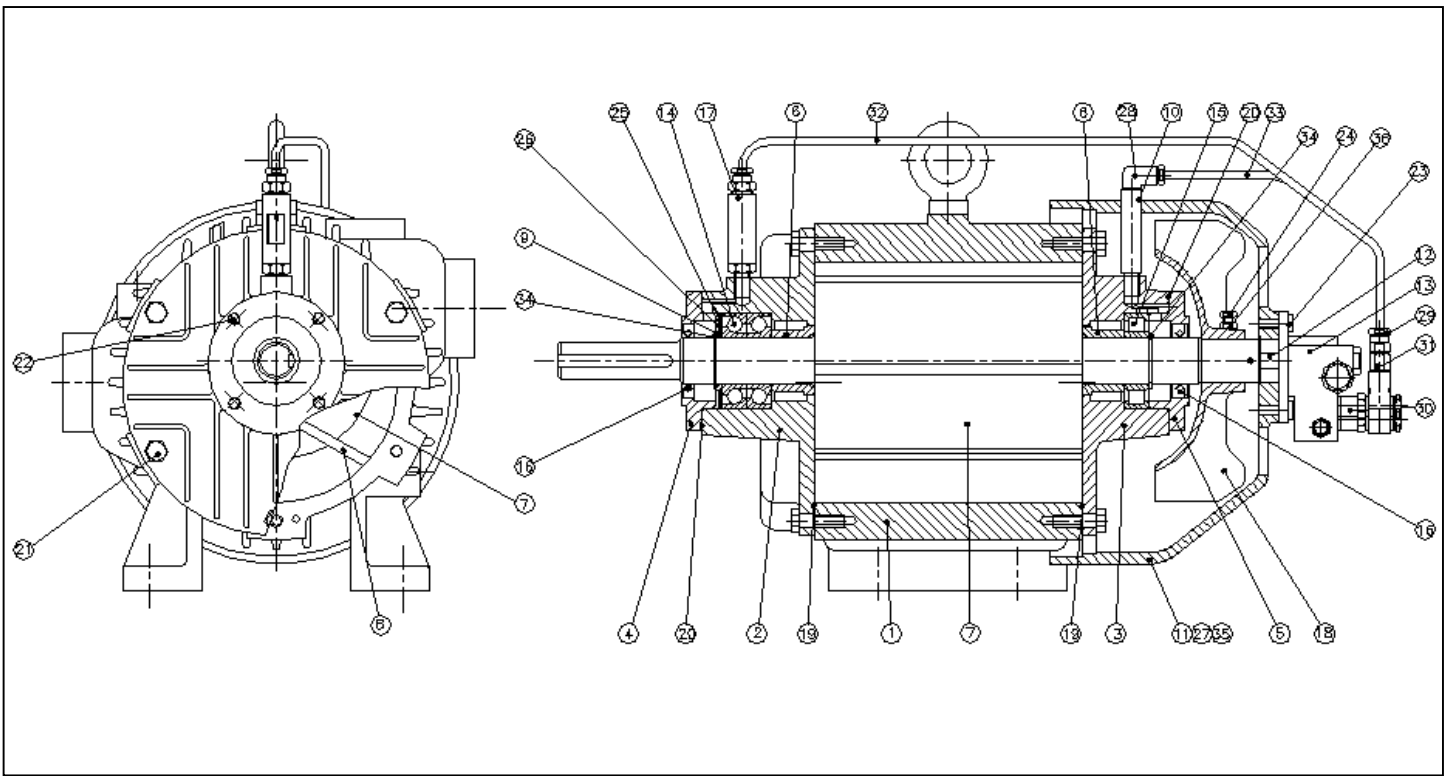
Between rotor and rear end coverplate : .009"/.010" (.23mm/.25mm)

Between rotor and drive end coverplate : .004"/.005" (.10mm/.13mm)

Between rotor and cylinder bore : .004"/.005" (.10mm/.13mm)

Failure to follow the above instructions can cause seizure or loss of performance.

WHEN ORDERING SPARE PARTS ALWAYS QUOTE THE MACHINE SERIAL NUMBER.



| ITEM | DESCRIPTION | PART No. | QTY |
|------|-------------------------------|-----------|-----|
| 1 | CYLINDER | S 8484 | 1 |
| 2 | COVERPLATE - DRIVE END | S 8482 | 1 |
| 3 | COVERPLATE - REAR END | S 10013 | 1 |
| 4 | END CAP - DRIVE END | S 8491/2 | 1 |
| 5 | END CAP - REAR END | S 8491/1 | 1 |
| 6 | SEAL SLEEVE | S 8490 | 2 |
| 7 | ROTOR & SHAFT ASSEMBLY | S 10025 | 1 |
| 8 | BLADE | S 10024 | 6 |
| 9 | BEARING RETAINING WASHER | S 8190 | 1 |
| 10 | LUBRICATOR EXTENSION | S 10000 | 1 |
| 11 | FANCOWL | S 10011 | 1 |
| 12 | OIL PUMP DRIVE EXTENSION | S 8854 | 1 |
| 13 | OIL PUMP | T 1014 | 1 |
| 14 | ANGULAR CONTACT BEARING | H 1026 | 2 |
| 15 | ROLLER BEARING | H 1036 | 1 |
| 16 | SHAFT SEAL | F 1073 | 2 |
| 17 | OIL DRIP INDICATOR | S 9193 | 1 |
| 18 | FAN | S 10030/1 | 1 |
| 19 | GASKET - COVERPLATE | K 1119 | 2 |
| 20 | GASKET - END CAP | K 1120 | 2 |
| 21 | HEX HEAD SCREW | G 1083 | 12 |
| 22 | HEX HEAD SCREW | G 1068 | 8 |
| 23 | SOCKET HEAD CAP SCREW | G 1121 | 2 |
| 24 | HEX HEAD SCREW | G 1094 | 1 |
| 25 | SHIM | K 1123 | 1 |
| 26 | BELLVILLE WASHER | B 1127 | 2 |
| 27 | HEX HEAD SCREW | G 1063 | 3 |
| 28 | ELBOW | R 1061 | 1 |
| 29 | TUBING NUT | R 1040 | 3 |
| 30 | STEM ADAPTOR | S 8912/1 | 2 |
| 31 | NON RETURN VALVE | S 8956 | 2 |
| 32 | OIL DELIVERY PIPE - DRIVE END | X 1111 | 1 |
| 33 | OIL DELIVERY PIPE - REAR END | X 1112 | 1 |
| 34 | CIRCLIP | B 1012 | 2 |
| 35 | PLAIN WASHER | U 1026 | 3 |
| 36 | NUT | B 1049 | 1 |