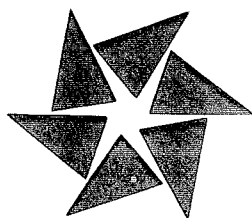
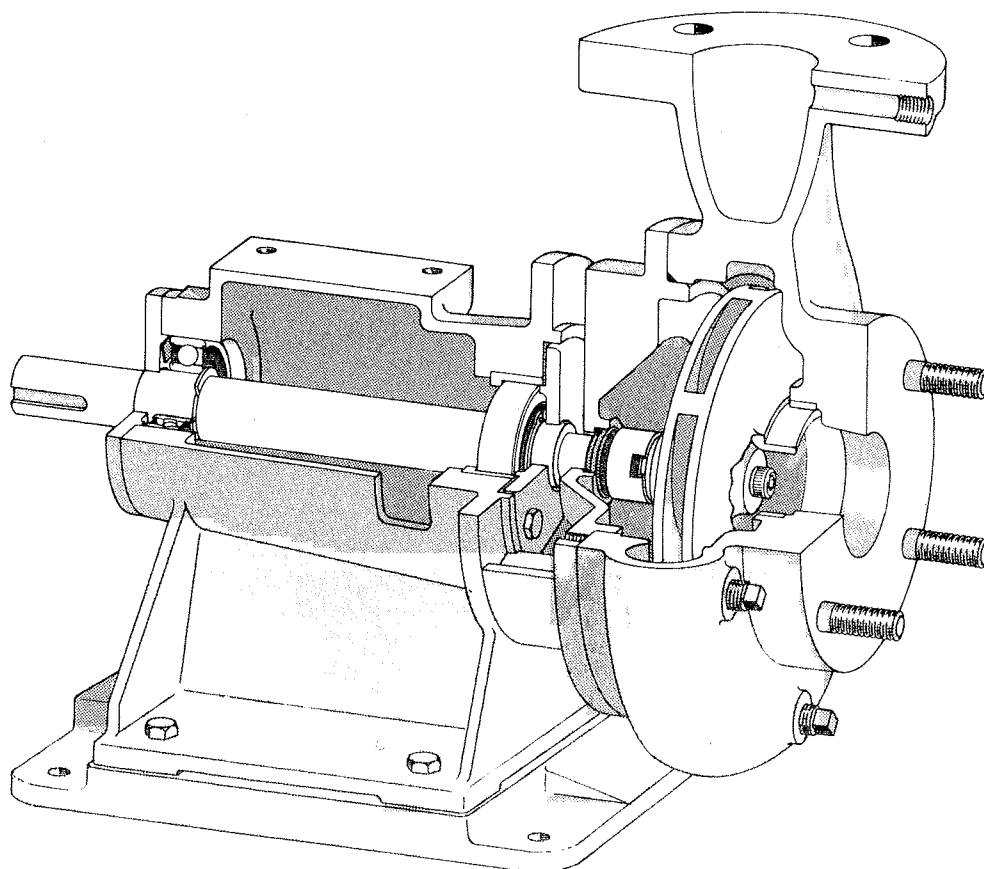
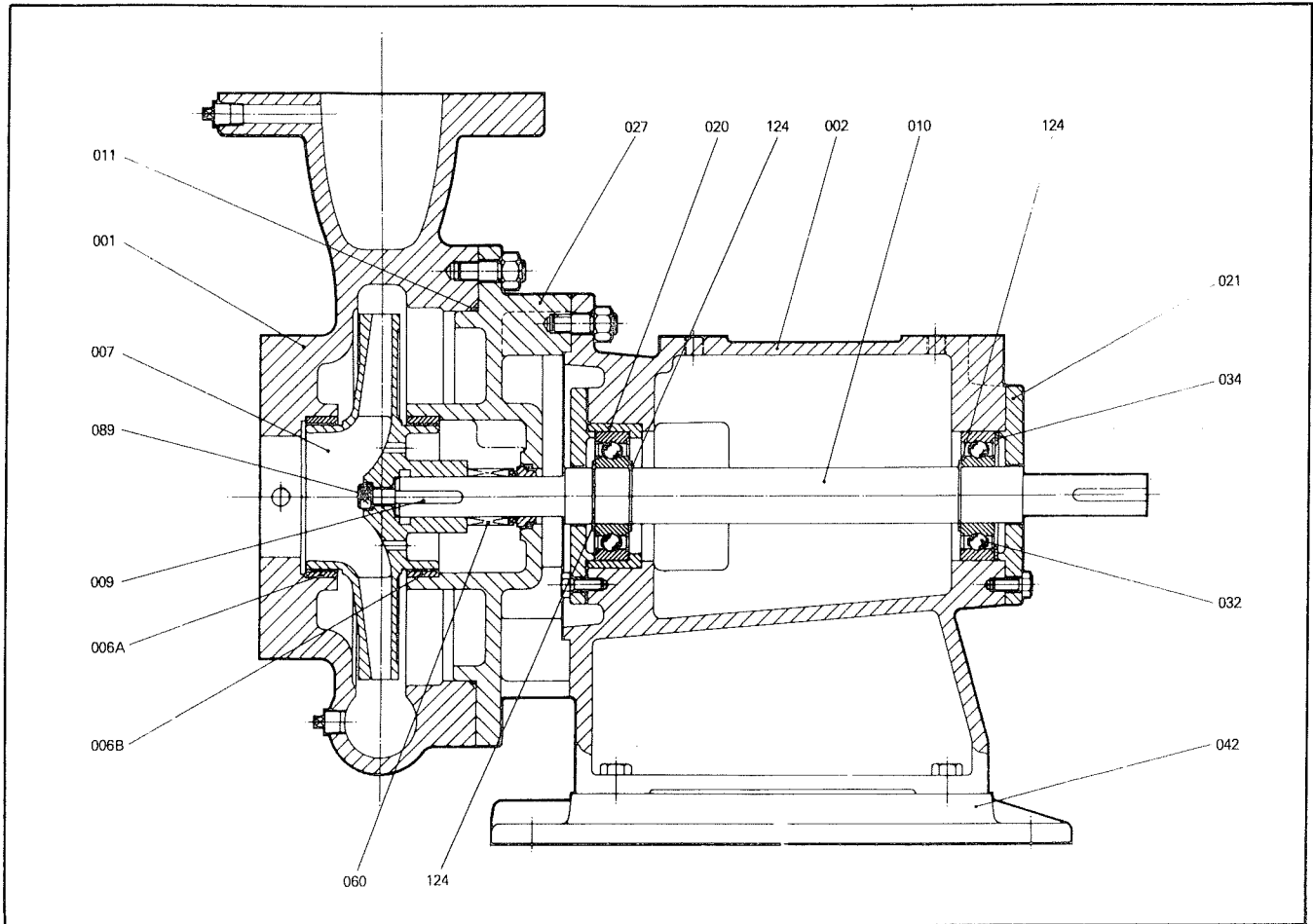


Puller

Installation, Maintenance and Spares for Centripul 'C' Pumps





Part Code	Part Description
001	Casing
002	Pedestal
006A	Casing Wear Ring
006B	Backcover Wear Ring
007	Impeller
009	Impeller Key
010	Shaft
011	'O' Ring Casing Joint
020	Bearing Housing

Part Code	Part Description
021	Bearing End Cover
027	Backcover
032	Ball Bearing
034	Bearing Pre-Load Washer
042	Subframe
060	Mechanical Seal
089	Impeller Screw
124	Circlip

To Change a Pulley for Alternative Duty

Before commencing switch off the starter and remove fuses to ensure that the pump cannot be operated. Remove the belt guard.

Slacken the tensioning-screw locknut beneath the motor plate, and lower the plate by turning the tensioning screw.

Remove the V-Belts.

For Pulleys manufactured 'A' and 'B' section pulleys

Remove the socket head screws which secure the pulleys onto the bush.

Ease the pulley from the bush tapping around the edge of the pulley if necessary. For large pumps it may be necessary to use a set of pulley drawers.

Fit the new pulley to the bush, ensuring that the front faces of the pulleys are in alignment.

Replace the socket head screws.

For 'C' section pulleys

Remove and oil the socket set screws which secure the pulley on the bush.

Locate the screws into the half-threaded holes (threaded on the bush) and tighten until the assembly becomes loose.

Remove assembly from shaft.

To refit, place the bush into the bore of the new pulley and ensure that the holes are in alignment. Oil the socket set screws and screw them loosely into the half-threaded holes (threaded on the pulley). Position the pulley on the shaft and tighten the screws alternately to their limit, allowing for the slight movement of the pulley up the bush taper.

Refit the belts and adjust the tension as described under 'BELT TENSION'.

A new drive should be tensioned near to the higher value given in the table, to allow for the normal drop in tension occurring during the running-in period.

After the drive has been running for a few days, the V-Belts will have seated into the grooves, and the drive tension should be re-checked.

Installation

Location

Pumps should be located as near the source of supply as possible.

In boiler houses it is advisable to keep electrically driven pumps and their starters away from the vicinity of the boiler.

Set the pump unit on a solid foundation, preferably of concrete. Level the set carefully and grout in the sub-frame or baseplate.

Check that the pump and motor are in alignment and that the shaft turns freely by hand after the holding down bolts have been tightened.

Valves and Pipework

The suction and discharge pipes should be sized to pass the required quantity without excessive frictional loss.

The pump branches do not necessarily indicate the size of the pipe required and if there is any doubt we are always willing to advise the best size for a particular duty.

The pipework must be supported as close to the pump as possible and should line up correctly with the inlet and outlet flanges to prevent any pipe strain being imposed on the pump casing.

It is advisable to fit isolating valves in the suction and discharge pipework so that the pump can be inspected without draining down the system.

To prevent freezing and consequent damage to an exposed pump in cold weather the pump casing must be drained during shut off periods.

Electrical Equipment

The motor and starter must be wired in accordance with the diagrams supplied with the equipment. Flexible conduit should be run to the motor to allow free movement for stripping and inspection.

Starting

The casing and suction pipe must always be fully primed before starting.

Check that there are no obstructions in the suction pipework which could cause the pump to be starved of water.

It is advisable to turn the pump shaft once or twice by hand to release any air trapped between the impeller vanes.

SERIOUS DAMAGE CAN BE CAUSED BY RUNNING THE PUMPS DRY.

Before starting, ensure that the isolating valves in the suction and discharge pipework are fully open. After the pump has been started, check that the motor is running in the correct rotation as indicated on the pump casing and guard.

Rotation is **CLOCKWISE** looking on the drive end of the motor.

Maintenance

A regular inspection of the pump and motor should be made to check the items listed below.

Recommended Lubricants

GREASE: Shell Alvania RA, Duckhams LB10, Castrol Spheerol AP3 or any equivalent good quality grease.

Motor Bearings (Ball)

Motors without grease nipples are fitted with pre-packed shielded bearings and require no attention. Motors with grease nipples require two strokes with a grease gun every six months.

Pump Bearings

These bearings are sealed-for-life and require no attention.

Mechanical Seals

These seals are self adjusting and require no attention.

Belt Tension

Belts should be kept sufficiently tensioned to prevent slip, yet not enough to cause undue pull on the pump and motor shafts.

The correct tension may be checked by measuring the force required to deflect one belt 16mm per metre of span between pump and motor shafts. This force should fall within the figures given in the table below.

V-Belt Section	Force required to deflect V-belt 16mm per metre of span (Kilogramforce (kgf))
A	1.0 to 1.5
B	2.0 to 3.1
C	4.1 to 6.1

Spares

Please give as much information as possible when ordering spares. In particular please quote the job number and part code or part description. The job number is stamped on the brass duty plate attached to the pump.

For spares or information required for the electric motor or starter, give the job number together with the name-plate particulars attached to the motor or starter.

Stripping

Before stripping the pump, ensure that the electrical supply to the motor is isolated and that the fuses are withdrawn.

Isolate the pump and drain the casing of water.

Remove the hexagon screws which secure the pedestal to the subframe.

Remove the nuts which secure the backcover to the casing and withdraw the pedestal together with the backcover and impeller, leaving the casing in the pipeline.

Use the jacking screws provided.

To renew mechanical seal:

Remove the impeller screw, impeller and impeller key.

Slide the rotary portion of the mechanical seal off the shaft (a smear of soft soap or vegetable oil onto the shaft will facilitate this).

Unfasten the nuts which secure the backcover to the pedestal and remove the backcover. The stationary seat of the seal can now be removed from the backcover.

To renew pump bearings:

Proceed as above and continue by removing the guard, belts and pump pulley.

Unfasten the hexagon screws which secure the two bearing end-covers.

NOTE: There is a bearing pre-load washer located between the drive-end bearing and the end-cover.

The shaft, complete with bearings and bearing housing, can now be withdrawn through the non-drive end of the pedestal.

A pre-built sub-assembly comprising shaft, circlips, bearings and bearing housing, will considerably reduce the down-time of the pump; if this is not available, remove the outer circlip from the non-drive end bearing.

The bearings, complete with the bearing housing around the non-drive end bearing, can now be withdrawn from the shaft.

Remove the non-drive end bearing from its housing by placing it under a hand press or by tapping it out with the aid of a suitable drift, to break the grip of the 'Loctite Bearing Fit'.

Rebuilding

To rebuild the pump, proceed in the reverse order to stripping, observing the following points:

If the bearings have been renewed, mount the bearing housing onto the non-drive end bearing, using three drops of 'Loctite Bearing Fit'. Press the bearings onto the shaft using a suitably sized tube. Locate this on the inner race such that the force employed is not transmitted through the bearing balls.

Fit a new bearing pre-load washer between the drive-end bearing and the bearing end cover.

It is advisable to fit a new mechanical seal if the bearings have been renewed.

If the mechanical seal has been renewed, fit a half-depth key into the non-drive end keyway to protect the elastomer of the mechanical seal, and lubricate the shaft with soft soap or vegetable oil.

DO NOT USE MINERAL OIL OR GREASE

Push the mechanical seal along the shaft using a suitably sized tube, taking care that the carbon face in the rotary portion remains in the correct position during assembly.

Immediately after fitting the mechanical seal, remove the half-depth key and fit the impeller key and impeller onto the shaft. This prevents the mechanical seal from setting itself onto the shaft in the wrong position.

Examine the casing 'O' ring joint for damage and replace if necessary.

Note

Any component giving unsatisfactory performance should be returned to Pullen Pumps Service Department for examination together with full details of the working conditions.

We reserve the right to alter design and specification without prior notice



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