

ALL
BRITISH
COMPANY

ASSEMBLY AND MAINTENANCE INSTRUCTIONS FOR CLUTCHES

MAINTENANCE
SHEET
SIZES
S600
S800

The S type clutch is designed for use where a support already exists for the coil assembly, i.e. where a shaft emerges from the side frame of a machine or casting. This face is ideally machined and equipped with a spigot to suit either the internal or external registers provided on the coil assembly; or use may be made of fitting collar machined on the id to fit the shaft, and on the od the bore of the spool.

Concentric Mounting of Field Spool

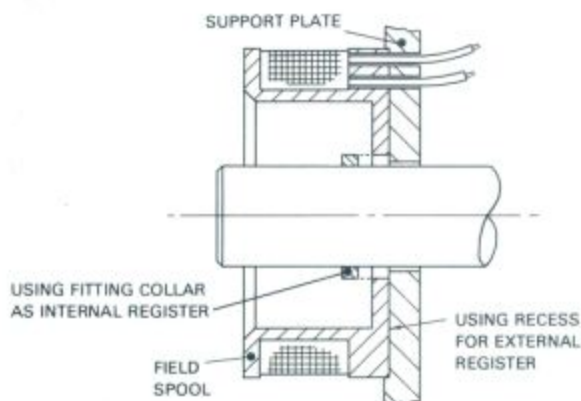
	Size	Dia.
External Register	S600	103.60 103.75
	S800	134.94 134.86
Internal Register	S600	38.15 38.10
	S800	44.50 44.45

Fitting Collar Dimension

(If made from oil impregnated material it may be left in position).

S600 od 38.00 id running fit to shaft × 4.8 thick

S800 od 44.30 id running fit to shaft × 6.5 thick



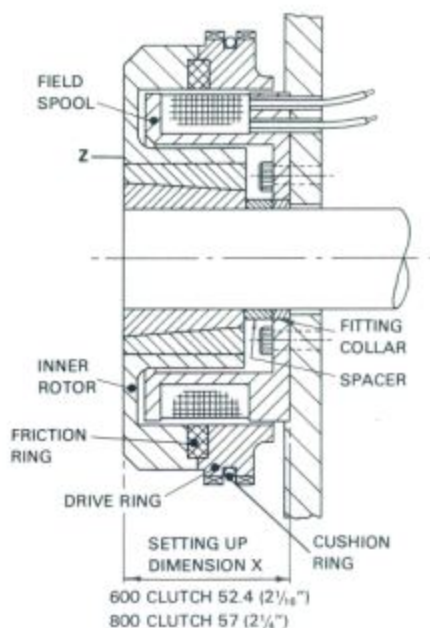
Place collar over the shaft and hold coil centred over the collar while the coil fixing holes are marked for drilling on the support frame.

Drill coil exit leads. See S600 and S800 data sheets for details.

Assembly of Inner Rotor, Drive Ring and Friction Ring

- Fix field spool to support plate.
- Place drive ring and friction ring over spool.
- Thoroughly clean off protective coating from taper adaptor and taperbush. Insert these into the inner rotor and offer the inner rotor on to the shaft.
- Set the inner rotor on the shaft so that dimension 'X' is correct and tighten taperbush. Check that the bush does not creep from this setting as it is tightened. Ensure taperbush assembly is flush with end of inner rotor face 'Z'.

Correct axial positioning of the inner rotor is assisted by the use of a spacer between end of inner rotor and coil fitting collar where one produced from oil impregnated material is fitted. If collar is not used carry spacer through support frame up to the shaft support bearing. Note Taperlocks may not always be fitted to inner rotor so spacer is necessary for axial positioning in this case.



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Assembly of Outer Member

Fit the taperbush assembly into the outer member. Usually it is most convenient for the screws to be at the outside as shown but if necessary the taperbush may be reversed. Assemble the outer member over the shaft to be coupled and bring the shaft into position so that the teeth in the outer member engage with the mating teeth on the drive ring. Set the shaft and outer member to give correct dimension 'Y'.

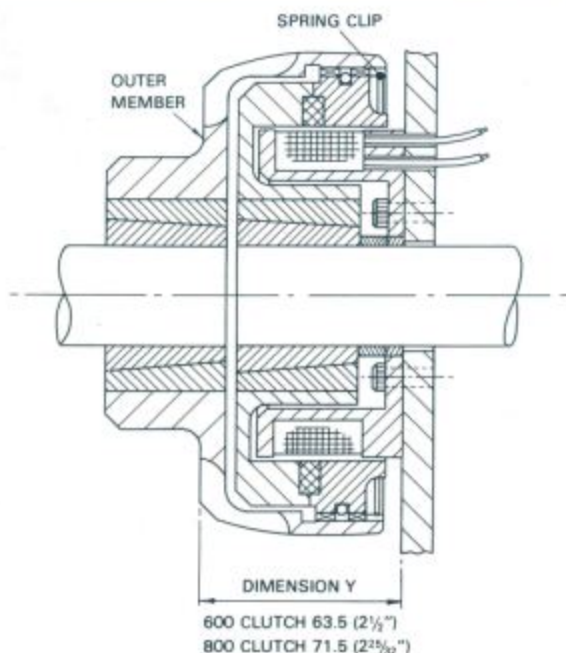
Finally push the drive ring as far as possible into the outer member. Apply voltage to the coil to pull the drive ring home and fit the spring clip into the groove behind it.

Alignment

Reasonable alignment is necessary to ensure that the running air gaps within the assembly are maintained.

These clutches would normally be used as a coupling between in-line shafts. If one shaft emerges from a machine frame, the other shaft must be rigidly supported to align within specified limits.

Required shaft alignment accuracy	Size	Total Indicated Reading
Shaft parallel alignment to be within :	600 Clutch	.254 (.010")
	800 Clutch	.254 (.010")
Shaft angular alignment and squareness of field support plate to shaft to be within :	600 Clutch	.762 (.030") measured at 76 radius
	800 Clutch	.889 (.035") measured at 101 radius



Where these requirements for rigidity and alignment cannot be met, use should be made of the EH type clutch and a flexible coupling. See S600EH Data Sheet.

General

The sketches and notes above and overleaf indicate the method of assembly. Concentric mounting of the Field Spool with respect to the shaft should be strictly observed.

It is important to ensure that no oil or grease is allowed to come into contact with the friction surfaces or to enter the flutes in the Clutch Outer Member. The spline teeth on the Drive Ring and Outer Member should be left dry.

Pole Faces and Friction Ring

When the unit is new, the pole faces touch without clamping the Friction Ring. **ON NO ACCOUNT SHOULD THE POLE FACES BE MACHINED.** In use the Pole Faces wear down and torque is transmitted across the pole faces and Friction Ring simultaneously; thereafter the hard wearing Friction Ring governs the rate of wear. After some use these surfaces will exhibit a carbon dust coating. This is not detrimental and should be left undisturbed.

Bedding In

Where it is known that the Clutch and Brake are to be used on low speed applications, the unit may be supplied bedded-in in order that full torque will be available after a few operations.

On fast speed applications, the units will develop full torque after a few operations.

Automatic Wear Compensation

In normal use the unit does not require any maintenance and no adjustment is necessary since compensation for Friction Ring wear is taken up automatically.

When replacement of worn parts becomes necessary it is essential to replace all wearing components. A spares kit is available and should be fitted as a set. New parts must not be mixed with worn parts.

Clutch spares kit comprises : Inner Rotor (State bore size if not fitted with Taperbush) friction ring, drive ring, cushion ring.

Electrical Note :

If not using a Clark Power Unit, always connect a 0.22 mfd 1000v. capacitor permanently across the clutch or brake coil to protect the control switch contacts.

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