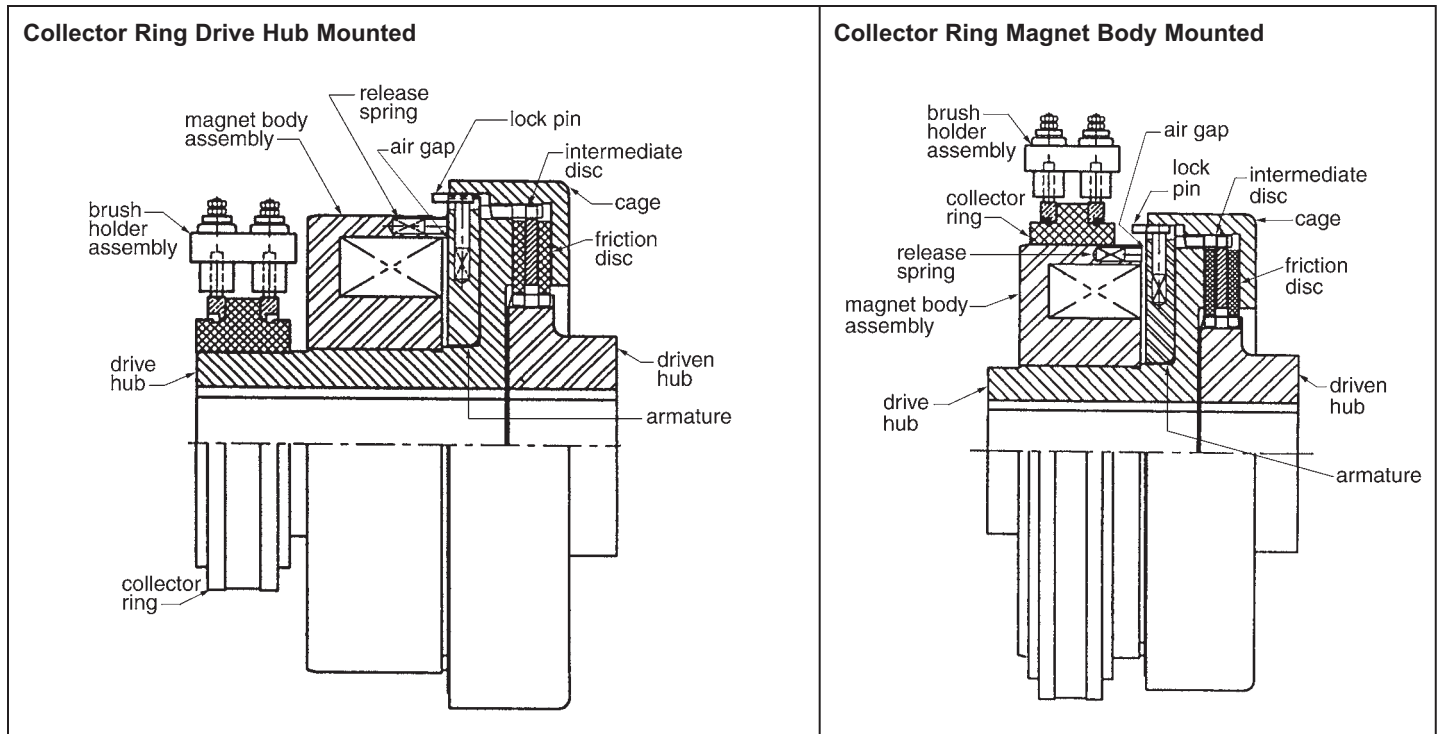


Installation and Maintenance Instructions for Style E Power Engaged Clutch



IMPORTANT

Please read these instructions carefully before installing, operating, or servicing your Stearns brake. Failure to comply with these instructions could cause injury to personnel and/or damage to property if the brake is installed or operated incorrectly. For definition of limited warranty/liability, contact Rexnord industries, Stearns Division, 5150 S. International Dr., Cudahy, Wisconsin 53110, (414) 272-1100.

OEM's and subsystem suppliers, please forward these instructions with your components to the final user.

CAUTION!

1. Servicing shall be in compliance with applicable local safety codes including Occupational Safety and Health Act (OSHA). All wiring and electrical connections must comply with the National Electric Code (NEC) and local electric codes in effect.
2. To prevent an electrical hazard, disconnect power source before working on the clutch. If power disconnect point is out of sight, lock disconnect in the *off* position and tag to prevent accidental application of power system.

Serial numbers are required for future factory support or replacement parts. The serial number appears on the nameplate and is stamped into the magnet body. Record the serial number in the maintenance log or other permanent record for future use.

Stearns clutches are dry running. Do not lubricate the friction material. Protect the collector rings during storage, installation or maintenance to keep the rings free of knicks. Prevent crushing or tearing of leadwires during handling.

Style E Clutch Installation:

1. The collector ring, drive hub, and armature are an assembly. The drive hub is pressed into the magnet body, then pinned.

2. Place the provided spanner wrench into the matching holes in the armature face. Depress and restrain the lock pin in the cage while using the spanner wrench to rotate the armature. Thread the armature out of the cage. Once the cage is free, move the cage and disc pack away from the magnet and drive hub assembly. If space is available, move the cage and disc pack in order onto shaft "B", the driven shaft. If space is not available, remove the cage and disc pack. Keep the pack in order.
3. Mount the driven hub to shaft "B", the driven shaft.
4. Alignment is critical, Stearns recommends laser alignment. The drive shaft "A" is leveled and aligned while the driven hub is mounted on the driven shaft "B" for a first alignment check.
5. Install the magnet body and drive hub assembly on shaft "A" with the driven hub on shaft "B". The pressure plate-drive hub assembly and driven hub are separated a minimum of 1/16". Confirm hub separation dimension against the Stearns clutch assembly drawing. Shaft end play greater than 1/16" will need to be considered as excess end play may restrict armature movement and clutch dis-engagement.

Alignment Procedure

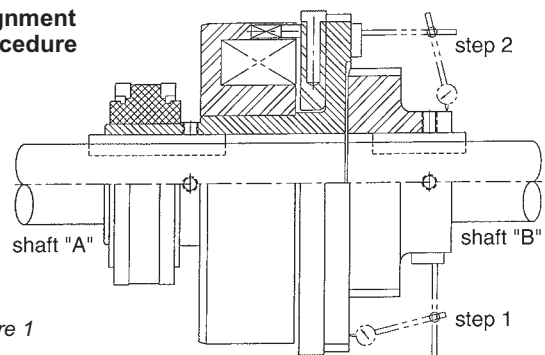


Figure 1

Step one: Check for angular mis-alignment. Mount an indicator on driven shaft "B" or the clutch hub and indicate the drive hub pressure plate assembly face by turning the shafts "A" and "B" simultaneously. Place the indicator at as great a radius as possible. The reading must be within .001" full indicator movement per inch measuring radius. As an example: A 6" radial position must not exceed .006" full indicator movement (FIM).

Step two: Check for parallel misalignment. Mount the indicator on the pressure plate-drive hub face and rotate shafts "A" and "B" simultaneously. Parallel misalignment should not exceed .005 full indicator movement (FIM).

Do step one before step two as any angular misalignment which exists can cause errors in parallel misalignment readings. Repeat steps one and two as necessary.

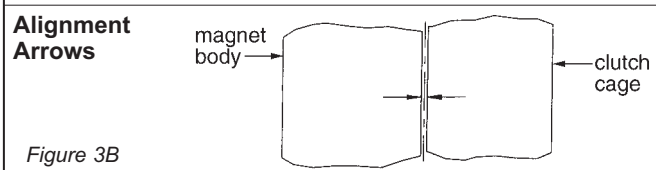
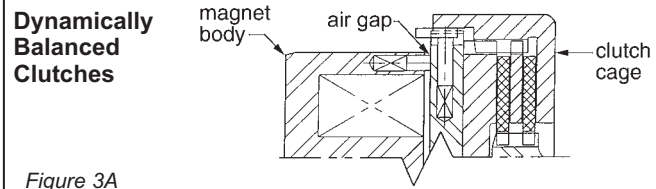
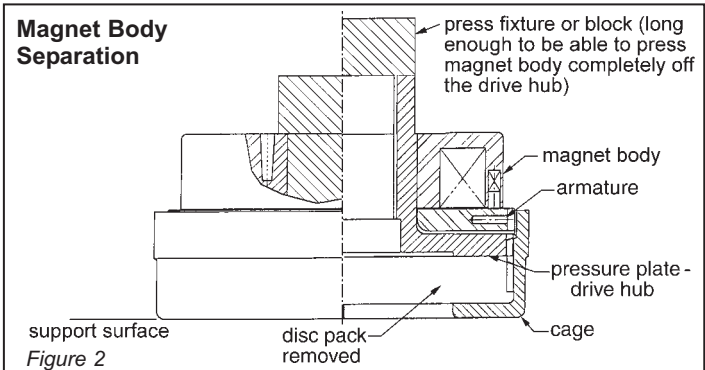
6. If necessary, move the shafts to insert the disc pack and cage, measure and mark the installation.
7. The driven hub is secured to the shaft by key and set screws. Set screws must be torqued sufficiently to upset the shaft surface.
8. The disc pack locates on the splined driven hub. Size 1402 clutches and larger use carrier style friction discs with an inside diameter edge. The carrier inside diameter edge faces the driven side. Depress and restrain the lock pin while threading the armature into the cage.
9. Balanced clutches have alignment arrows on the magnet body and cage that **must** be carefully matched anytime the cage is removed and re-installed.
10. Check the air gap by energizing the magnet and inserting the feeler gage between the magnet body and the armature. To adjust the air gap, depress the lock pin, and turn the armature clockwise into the cage. Repeat adjustment until the gap is correct. Turn the armature until the lock pin snaps and locks into the nearest slot.
11. Re-check air gap after a few test engagements. Eventually, with use and lining wear, the air gap will require re-adjustment. An excessive air gap will affect clutch engagement or result in excessive slip. Minimum air gap is necessary and approximate.
12. Power is delivered to the magnet body through carbon brushes held in a brush holder assembly and applied by carbon brush to the collector rings. The brushes must center on the collector rings. The collector rings must be round and free of knicks and burrs.

Operation Specifications

Clutch Size	Coil 230 Vdc		Coil 115 Vdc		Open Air Gap	Closed Air Gap
	Ohms	Amps	Ohms	Amps		
5	2249	.102	572	.20	.06	.031
6	1291	.18	336	.34	.09	.031
8	666	.35	170	.68	.13	.031
10	509	.45	127	.91	.13	.031
12	342	.67	86	1.34	.13	.031
14	259	.89	67	1.72	.15	.040
16	364	.63	94	1.23	.19	.040
20	200	1.15	52	2.23	.19	.040

Dynamically Balanced Clutches

Clutches balanced for a specified rpm are factory marked as part of assembly. An arrow is stamped into the cage and magnet body. The arrows must match to maintain balance as failure to do so may introduce vibration. See Figure 3.



Replacement of Friction Material

The lock pin is depressed and the spanner wrench is used to thread the armature out of the cage. The cage is moved over the splined driven hub. It may be necessary to loosen and move the splined driven hub to create sufficient space for the disc pack components to be lifted out. Use caution to avoid cross threading or thread damage. Replace the worn components and friction material, keep the disc pack components in order and correct orientation. Reposition the splined driven hub and place the friction material on to the splined driven hub. Make sure the lock pin in the armature is depressed and repeat steps 8-11 to install the cage.

Removal of Magnet Body from Drive Hub (Unit not mounted)

1. Depress the lock pin and unthread armature from the cage.
2. Remove the lock pin spring. Remove the disc pack, maintain pack orientation when setting aside.
3. Remove the collector rings if mounted on the drive hub. Magnet body mounted collector rings may remain in position. Protect the machined ring surface from damage.
4. Mark the drive hub and magnet body to assist re-assembly in the same orientation.
5. Support the cage and draw the magnet body assembly from the drive shaft. See Figure 2.
6. Thread the armature into the magnet body until even with the edge of the cage. Remove shear pin(s) or set screws at the magnet body to drive hub interface diameter.
7. The clutch is set on the cage with the drive hub facing up.
8. Locate a spacer on the drive hub.
9. Press on the spacer applying pressure to the drive hub and forcing the drive hub pressure plate assembly into the cage.
10. At re-assembly, locate and drill a new staking hole if required.

Also available through Stearns Division, Heavy Duty Clutch Troubleshooting Guide, Sheet 8-078-884-01. Repair Parts List SB-416 (varies by Assembly & Serial Number. Provide Serial Number with request).