

Instruction and Lubrication Manual for S-Series Grid Couplings

These instructions must be read thoroughly before installing or operating this product.

INSTALLATION:

STEP 1: PRE-ASSEMBLY INSPECTION

All parts should be examined for any damage during the shipping and handling process. Measurement should be taken to ensure parts meet application requirements, such as hub and shaft fits, shaft separation, etc. All parts must be clean and free of any foreign material before attempting assembly.

STEP 2: INSTALLATION OF KEYS

Install keys in respective shafts. Keys should fit keyseat with a tight fit on the sides and slight clearance over the key. Use plastic oil sealing compound around keys to prevent loss of lubricant.

STEP 3: MOUNTING HUBS

Set cover halves with seals on the shaft prior to mounting shaft hubs. Remove lube plugs from each cover half and insert the seals into the cover half. Place cover halves as far back on respective shafts with flanges facing each other. Place gasket on shaft and move as far back on shaft as possible.

Shrink Fit: Straight bore hubs require the hub be expanded prior to mounting. Degrease all contact surfaces insure all plugs are removed. Heat the hub in an oil bath or oven until bore is larger than shaft diameter (approx. 250°C (482°F) in an ambient temperature of 20°C (68°F)). Use extreme caution if heating bore with an open flame: To avoid distortion, it is essential that hub be heated evenly. When placing the hub onto the shaft, ensure that the seal is protected from the heat of the hub. Once the hub is cooled secure seals.

NOTE: Interference fit limitation for keyed hub is a maximum of .00075" interference pre inch of shaft diameter.

STEP 4: ALIGNMENT

ANGULAR ALIGNMENT

NOTE: Proper alignment yields the longest service life.

WARNING: Because of the possible danger to person(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed: Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Baldor Electric Company nor are the responsibility of Baldor Electric Company. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a holding device must be an integral part of the driven equipment beyond the speed reducer output shaft.

A. Instrument Method of checking alignment is recommended since it is most accurate. Rigidly attach dial base to one of the hubs and indicator needle against a face of the other hub. Rotate both hubs 360°. Take indicator reading at four points, 90° apart. Adjust alignment until all four readings are within angular misalignment limits given in Table 1. To check alignment, relocate the dial base to the opposite hub and repeat the procedure.

B. Caliper / Feeler Gauge Method may be used if dial indicator is not available or shaft gap is too small; however, it is not the recommended method of checking alignment. Check with calipers or feeler gauge at four points, 90° apart. Adjust alignment until all four readings are within angular misalignment limits as shown in Table 1.

PARALLEL ALIGNMENT

A. Instrument Method is again recommended since it is most accurate. Rigidly attach dial base to one hub and set dial indicator button in contact with an outside diameter of opposite hub. Rotate both hubs 360°. Take indicator reading at four points 90° apart. Adjust alignment until all four readings are within parallel misalignment limits given in Table 1. To check alignment, relocate dial base on opposite hub and repeat the procedure. Recheck angular alignment.

B. A Straight Edge and Feeler Gauge may be used if a dial indicator is not available; however, it is not recommended as the most accurate method of checking alignment. Adjust alignment until straight edge appears to be resting squarely on both outside tooth diameters. Repeat procedure at 3 additional points, 90° apart. Refer to Table 1 for limits of parallel misalignment. Recheck angular alignment.

Table 1 - Alignment Limits

Size	150	220 - 380	480
Parallel Misalignment (mm)	0.51	0.51	0.51
Angular Misalignment (mm)	0.51	0.51	0.51
Gap (mm)	2-6	2-7	3-8

STEP 5: POSITIONING OF THE GRIDS

Couplings up to size 480 will include two identical spring grids which will sit on top of one another within the teeth. It is recommended that a staggered arrangement be used when positioning the spring grid segments. Refer to table 2 for the total number of grid segments.

Table 2 - Total Number of Grid Segments

Size	150	220	300	380	480
Number of Grid Segments	10	12	14	16	14

Table 3 - Weight of Grease
Running Limit Temperature T° = -20°C - +110°C (-4°F - +230°F)

Grease Weight Per Coupling					
Size	150	220	300	380	480
Kg	12	22	27	30	45
Lbs.	26.46	48.50	59.52	66.14	99.21



STEP 6: ASSEMBLING

Before inserting the grids, hand pack hub teeth with lubricant. (Refer to Tables 3 and 4 for recommendations on type and quantity of lubricant.) Fit grid over hubs and starting at one end work coils of grid between the teeth. Seat with a soft mallet. Be sure to use a staggered pattern when installing multiple layers of the grids. Hand pack more lubricant around the grid and between the spaces of the grid after it is installed.

Bring together the vertical cover halves and align all bolt holes. Lube holes should be 180° apart. All bolts are grade 8.8 in accordance with ISO. All sizes use hex head cap screws. On Sizes 150 to 480, one half of the covers is secured on the driving hub by screws and spring dowels. Tighten bolts to tightening torque given in Table 5.

STEP 7: LUBRICATION

Remove both lube plugs in cover and insert lube fitting. Pump in appropriate lubricant and amount of lubricant (per Tables 3 and 4) until it is forced out of the opposite lube hole, then install lube plugs in holes.

NOTE: All lube plugs must be installed before operating coupling.

NOTE: Proper lubrication of all types of GRID-LIGN couplings is necessary for their efficient operation and long service life.

Table 4 lists lubricants from several manufacturers, which will perform satisfactorily under average industrial conditions as long as the ambient temperature is within the limits of 0°F to 150°F (-18°C to +66°C). This table does not constitute a complete listing of acceptable lubricants, and is not meant to prohibit the use of lubricants with equivalent properties. Lubricants required for severe operating conditions should be referred to CO Engineering (864-284-5700) or a lubrication manufacturer's representative for recommendations. Under average industrial conditions it is recommended that GRID-LIGN coupling lubricants meet the specifications listed in Table 2.

**Table 4 -- Suggested Lubricants
(Ambient Temperature 0°F to 150°F)**

Manufacturer	Name of Lubricant
Amoco	Amolith #2
Citgo	Citgo HEP-2
Conoco	EP Conolith #2
Exxon	Ronex MP
Mobil	Moilux EP-1 and EP-2
Shell	Alvania Grease #2
Sun Oil	Prestige 42

S-Series Grid Lubricant Recommendations:

- Ambient Temperature Range: 0°F to 150°F (-18°C to +66°C)
- NLGI Rating: 1 through 3 per ASTM D-217
- Minimum Base Oil Viscosity: 750 SSU @ 100°F per ASTM D-445
- Minimum Dropping Point: 220°F (105°C) per ASTM D-556 or D-2265
- Maximum Thickener Content: 8% Oxidation Resistance,
- Maximum Pressure Drop: 20 psi@ 100 hours per ASTM D-942
- Recommended Properties: anti-oxidation, anti-rust, extreme pressure.

Step 8: Maintenance

Maintenance is recommended every 6 months to ensure long life. Disassemble coupling, remove old lubricant and clean. Visually inspect all parts. Replace any worn parts. Hand pack coupling with lubricant and repeat Step 6.

Step 9: Grid Removal

When it is necessary to disassemble coupling, remove cover halves. Beginning at a cut end of grid, carefully insert a screwdriver into loop. Using the teeth for lever-age, gradually pry the grid up, alternating sides while working around the coupling.

Table 5 - Bolt Torque Values

Size	Half Cover Fixing Bolts				Cover Flange Bolts			
	Quantity	Size x Length	Bolt Torque (Ft-Lbs)	Bolt Torque (N-m)	Quantity	Size x Length	Bolt Torque (Ft-Lbs)	Bolt Torque (N-m)
150	6	M20 x 70mm	310	420	6	M18 x 60mm	300	406
220	6	M20 x 70mm	310	420	8	M18 x 60mm	300	406
300	10	M20 x 70mm	310	420	16	M20 x 60mm	310	420
380	12	M20 x 70mm	310	420	18	M20 x 60mm	310	420
480	12	M20 x 70mm	310	420	18	M20 x 60mm	310	420



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