GENERAL DESCRIPTION

The TSC coupling is a precision built 6-link coupling comprising two flexible disc assemblies connected by a torque tube. The flexing discs are stainless steel, the bolts high tensile steel and the other components forged and machined carbon steel. Alternate materials are available and, if supplied, are listed on the assembly drawing.

HANDLING AND STORAGE

1. The coupling is normally dispatched with standard commercial packing. The packing case should contain a copy of the appropriate assembly drawing (if requested), the Installation and Maintenance Instructions and a Balancing Certificate (if Dynamic Balancing required).

2. During transport, handling and storage, the gagging sleeves (painted red for identification) should be in position.

   NOTE: Gagging sleeves are supplied only when required for the application, NOT with every coupling.

3. The coupling should be stored horizontally and should not be kept on end for long periods.

4. Avoid shocks during handling and protect against corrosion if stored for long periods.

5. On receipt and immediately before assembly, check that items are undamaged and that pilots and recesses are free from burrs. If a balanced unit is supplied note the location and orientation of any match marks.

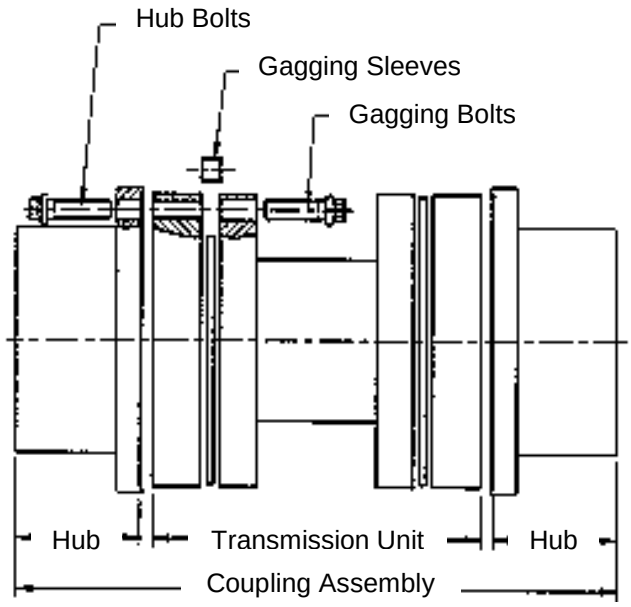

Figure 1

INSTALLATION PROCEDURE

1. Reference the assembly drawing(s) for all dimensions.
2. Inspect the coupling to insure that it is undamaged and note any match marks that must be aligned when the coupling is installed.
3. Disassemble the coupling by removing the hub bolts on each end. Fit the appropriate hubs (and/or adapters) to the driver and driven shafts in the usual manner insuring that the shaft ends are flush with the faces of the hubs (Figure 2). For 'interference fits' we recommend heating the hubs in oil or oven and quickly positioning on shafts (do not use spot heat or exceed 350^{O} F as this may cause flange distortion).

   If hubs are to be hydraulically fitted, refer to CI-01 for recommended procedure.

   NOTE: If axial setting adjustments are necessary (see Step 5) corrections can be made on straight cylindrical shafts by overhanging the hub. Hub overhang must not exceed 0.13 inch and shaft must never extend beyond the hub face. Axial adjustment of hubs is not recommended for tapered shafts.

4. Check that the hub pilots and flange diameters are concentric to the center of rotation to within 0.004 inch total indicator runout (T.I.R.) and that the hub face is square to the center of rotation to within 0.004 T.I.R. (Figure 2). Refer to any specific requirements or standards for maximum allowable value.

5. Check the distance between shaft ends (DBSE) taking into account, where applicable, any axial movement that may occur in operation (i.e., thermal expansion, magnetic center location, etc.). The final operating distance must equal that shown on the assembly drawing.

   NOTE: When equipment can not be moved to obtain the correct DBSE, axial adjustments are possible by overhanging hubs on cylindrical straight shafts (see Step 3). If hub adjustments are made, the mating face to face dimension (taking into account any axial movement that may occur in operation) must equal the overall free length of the transmission unit (Figure 3).

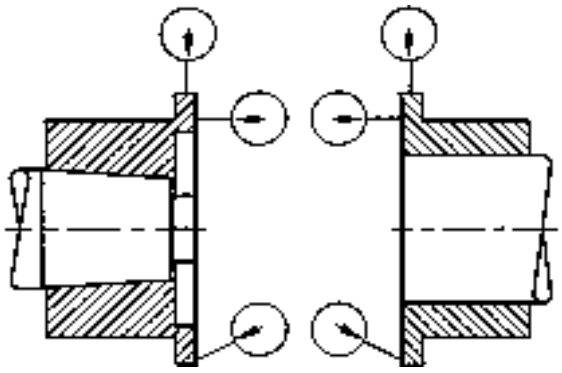

Figure 2

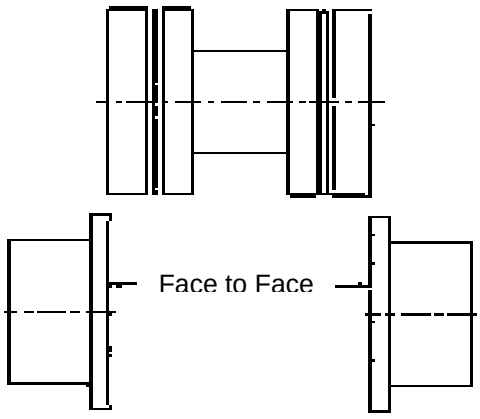

Figure 3

ALIGNMENT

GOOD ALIGNMENT IS THE KEY TO TROUBLE FREE RUNNING AND CARE AT THE INSTALLATION STAGE WILL BE AMPLY REPAID.

Normal fitting practice will usually produce alignments well within what is required but any specific requirements on the assembly drawing must be observed.

The instructions in CA-300, “Coupling Alignment – Graphical Method” are recommended as a standard alignment procedure. Your local John Crane Flexibox representative can offer the alignment equipment packages and any additional worksheets upon request.

Generally, shaft alignment should be within 0.001 inch/inch of flange diameter for angular readings and 0.001 inch/inch of shaft separation for parallel offset readings.

Equipment should be doweled after alignment.

NOTE: If actual shaft separation is greater than anticipated and equipment can not be moved to align correctly, it may be possible to correct the error when installing hubs (See page 2).

INSTALLING TRANSMISSION UNIT

1. Identify the driving and driven end of the transmission unit (if suitably marked) while removing the gagging screws and gagging sleeves (painted red for identification). Reinstall the gagging screws and compress (by tightening screws) each disc unit assembly by equal amounts until the overall length of the transmission unit is less than the hub flange separation, thus enabling the transmission unit to be inserted between hubs.

   Compress both ends equally, do not over-compress.

   NOTE: Short shaft separations do not permit the use of gagging screws on some sizes. For these applications, compression of the transmission unit is possible by hand for all small sizes and using clamps or similar tools for large units. Screwdriver slots are provided for prying the unit during installation.

2. Check that all pilots and recesses are free of burrs. Bring the compressed transmission unit into position between the hubs, making sure to align any match marks. Loosely install one hub bolt at each end to help align bolt holes later.

3. Gradually remove gagging screws insuring that pilots and recesses are engaged parallel and square to the flange faces. Insert hub bolts and tighten to the torque values given on page 4. In many cases, hub bolts are also used as gagging screws and must be reinserted as hub bolts.

   Do not tighten hub bolts with gagging screws installed.

4. With the coupling bolted in position, check that the ‘as fitted’ concentricities correspond with those achieved during alignment.

TIGHTENING TORQUES

The bolts are supplied pre-lubricated and no further lubricant should be applied. The table below gives figures for normal use. Occasionally, for particular duties the figure may vary and in such cases the required torque values will be quoted on the assembly drawing(s) supplied with the coupling.

Coupling Size	Torque (Ft. Lbs.)	Coupling Size	Torque (Ft. Lbs.)
0013	10	0350	35
0033	20	0500	75
0075	20	0740	75
0135	35	0930	150
0230	75	1400	150

REMOVAL OF TRANSMISSION UNIT

1. Remove hub bolts from each end of coupling. Using the gagging screws (or hub bolts) install and compress (by tightening screws) each disc unit assembly by equal amounts until the transmission can be removed from between the hubs. If necessary, 'crack' the pilot fits using a screwdriver installed in the slots located in each hub.

MAINTENANCE AND INSPECTION

1. Under normal operating conditions no servicing or maintenance should be necessary. Periodically the bolts should be checked for tightness and the discs checked for any visible signs of distress. If the hubs or shafts have been disturbed for any reason alignment must be checked.

   Any dismantling or remedial work on the disc units will invalidate the dynamic balance.

2. In the event of failure it is essential that the true cause of failure is found and corrected before a new unit is put into service.

   The most likely faults will be excessive misalignment, extreme overload, or a combination of both.

3. It is recommended that all self-locking fasteners be replaced after 10 usages.

WARNING

All rotating power transmission products are potentially dangerous. They should be used according to the manufacturer's recommendations and appropriate safety standards. It is the responsibility of the user to comply with any such standards.