



thompson
COUPLINGS Limited

TCAE-S



Product Installation Guide

General Information

Thompson Couplings Limited is proud of its products and employs the latest manufacturing techniques to ensure that a premium product is delivered to its customers. Thompson Couplings Limited believes in a high level of quality control to provide only the best products, advice and service.

The fundamental function of a coupling is to transmit power from drive to driven device in a regular action. The TCAE product range is designed to operate at angles, sending torque through the shaft inside the coupling whilst ensuring operation is smooth and efficient.

Owner Responsibility

It is the responsibility of the purchaser to ensure that the product is kept clean, inspected regularly and maintenance is performed as advised.

Customer Relations

For any enquiries or assistance please contact:

Thompson Couplings Limited

info@thompsoncouplings.com

Phone: (+61) 7 3040 8066

Contents

Product Certificate	Page 1
General Information	Page 1
Owners Responsibility	Page 1
Customer Relations	Page 1
Safety Precautions	Page 2
Installation of TCAE coupling	Page 3

Safety Precautions

To prevent injury to yourself and /or damage to the equipment:

- *Read carefully all owners' manuals, service manuals, and/or other instructions.*
- *Always follow proper procedures and use proper tools and safety equipment.*
- *Be sure to receive proper training, installation and maintenance work should be performed by qualified personnel.*
- *Never work alone while under a vehicle or while repairing or maintaining equipment.*
- *Always use proper components in applications for which they are approved.*
- *Be sure to assemble components properly.*
- *Never use worn-out or damaged components.*
- *Always store and handle coupling safely.*
- *Use blocks or adequate racking to prevent coupling moving or rolling away and ensure points are not adversely loaded during storage.*



- *Rotating auxiliary coupling is dangerous. You can snag clothes, skin, hair, hands, etc. This can cause serious injury or death.*
- *Do not work on or around the coupling when the engine/motor is running.*
- *Keep hands away from the joint as danger of crushing may occur.*
- *Do not work on or near an exposed coupling when engine/motor is running.*
- *Exposed rotating coupling must be guarded.*



WARNING: THIS SYMBOL WARNS OF POSSIBLE PERSONAL INJURY



WARNING: ROTATING DEVICE

Recommended Installation of TCAE coupling Models S-1 to S-5

1. Unpacking & inspection, Lifting & Installation

- Minimum **2 persons** lift for couplings heavier than 16kg.

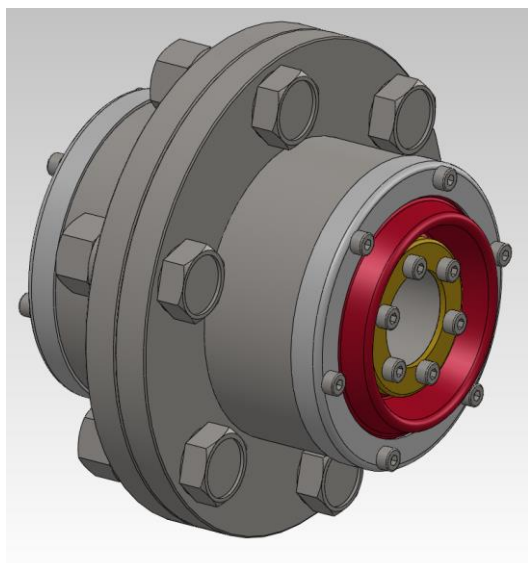


- Ensure no visual external damage has occurred to the shipping box. If it has, please contact shipper and Thompson Couplings Limited for details.



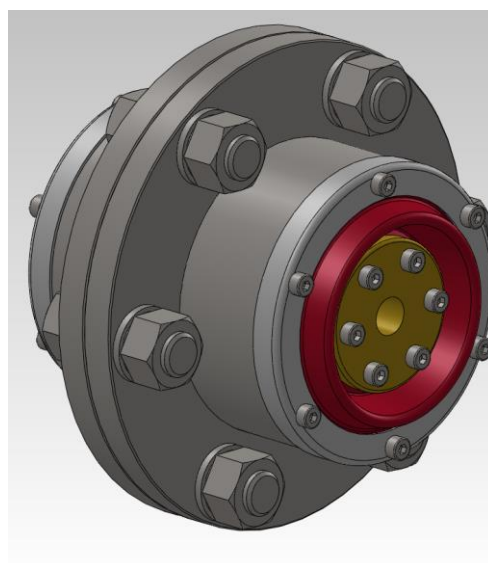
- Ensure all components have been supplied in the packaging:
 - (x1) TCAE-S Coupling
 - (2x) pilot-bored bushes
 - Seal Clamps
 - (x1) Keysteel
 - Fasteners

2. Installation



Plain Bore Configuration

See Section 1



Pilot Bore Configuration

See Section 2

The TCAE-S series coupling is produced to allow fitment to a range of shaft sizes using either the plain bore configuration, or with the pilot bore configuration.

The following procedure details both methods as follows:

SECTION 1 – Fitment for the plain bore where the shaft size **EQUALS** the coupling bore size.

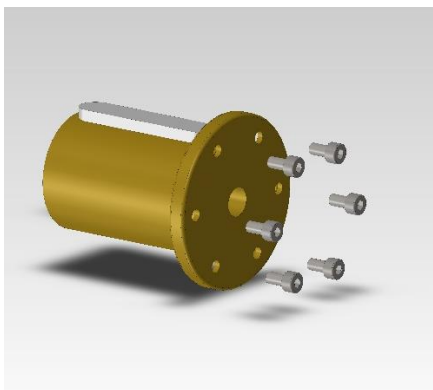
SECTION 2 – Fitment for the pilot bore where the shaft size **IS LESS THAN** the coupling bore size.

The following table demonstrates the prefinished coupling bore sizes for each series model:

TCAE-S Model	Maximum Shaft Diameter (Plain Bore)
S-1	30 mm
S-2	40 mm
S-3	50 mm
S-4	55 mm
S-5	60 mm

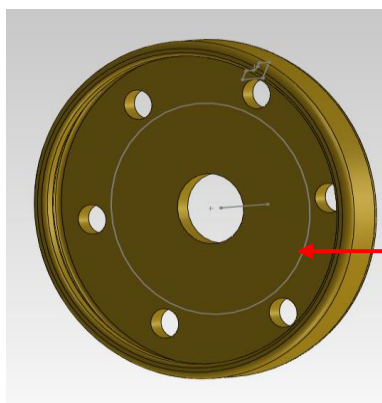
SECTION 1 – Fitment for Plain Bore where the Shaft Size EQUALS the Coupling Bore Size

1. Check for any damage to the outer box. Report issues to Thompson Couplings Ltd accordingly.
2. Carefully remove the outer plastic wrap from the coupling and keep aside.
3. Remove the 2x pilot bored seal bosses with fasteners and keystone from the coupling by removing 6 x screws as shown below. These are pre-fitted hand tight from the factory for easy removal.



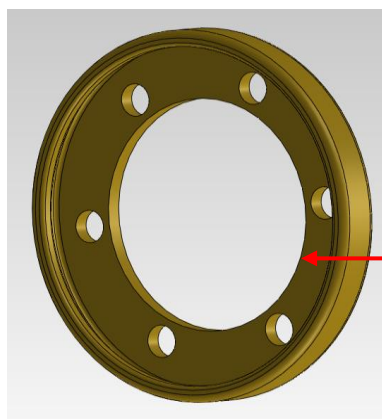
Cover the coupling again with the plastic wrap to ensure cleanliness while working on the pilot bored bushes.

4. Machine the Pilot Bored Seal Boss to remove the round bush section only as shown below



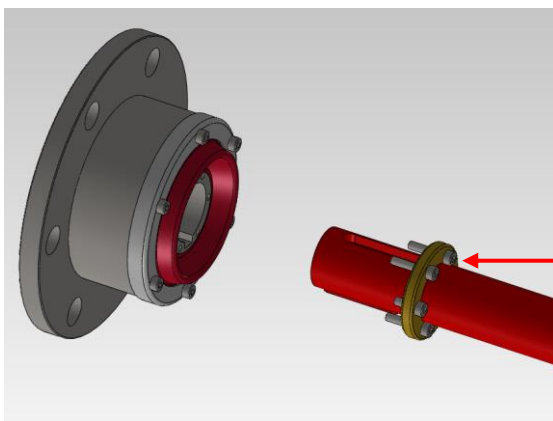
Machine the round bush section away to leave the Seal Boss as shown here

5. Then machine the inner bore to the required shaft diameter with an appropriate Interference Fit such as P7/h6 as shown below:



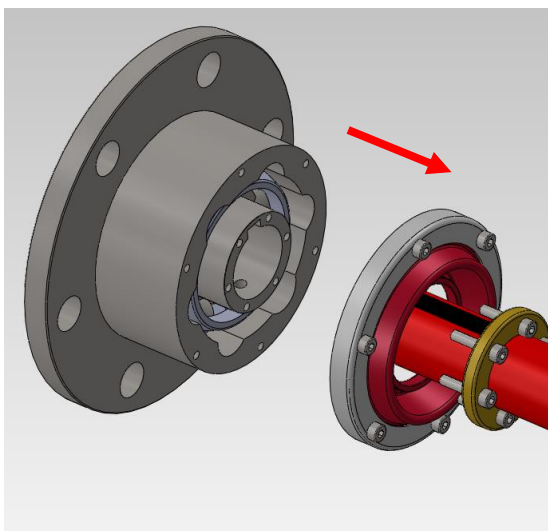
Machine the Inner Bore with an **INTERFERENCE fit P7/h6** to form a Locking Ring on the shaft

6. Press the machined Seal Boss (or Locking Ring) onto the shaft using an appropriate tool.

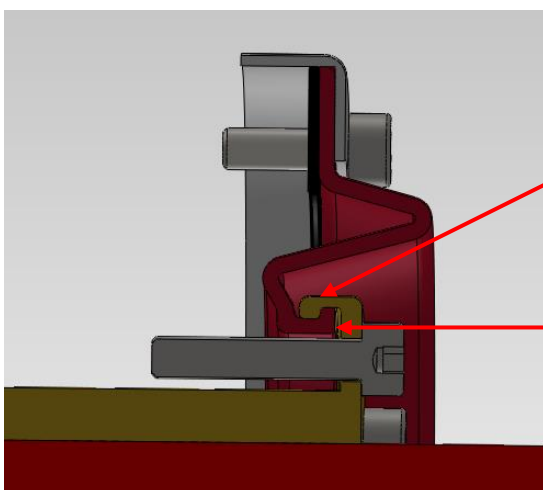


Press Seal boss (Locking Ring) onto shaft

7. Take one half coupling assembly and remove the protective film.
 8. Undo the 6x outer seal screws and slide the rubber seal, clamp plate and backing plate forward



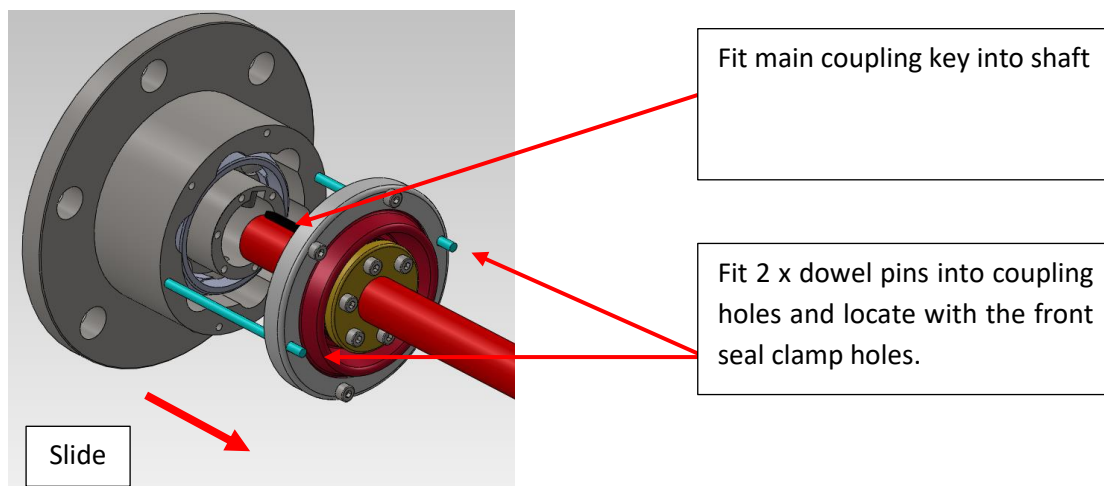
9. Apply a smear of grease around the rubber lip and then ensure to clip the inner lip under the seal boss (Locking Ring)



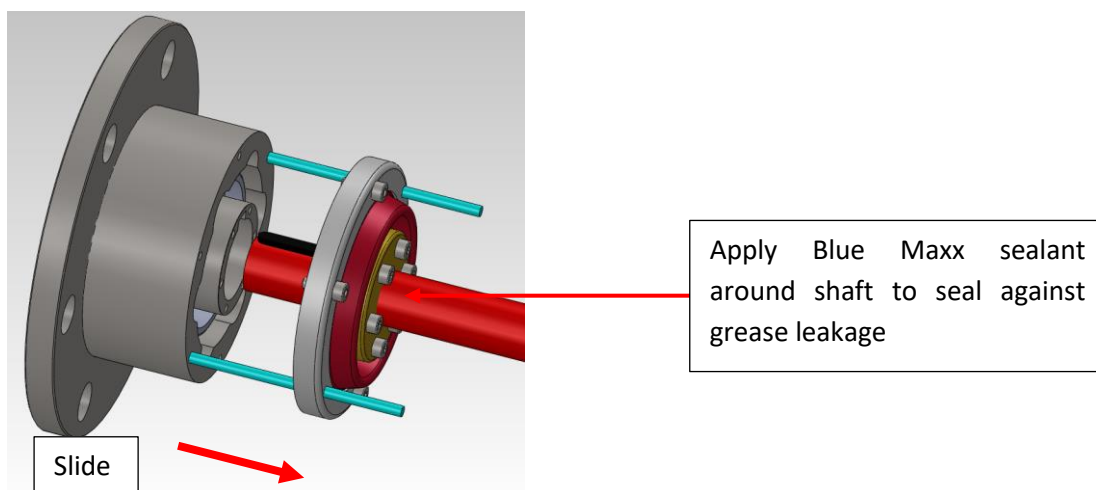
Apply a smear of grease around the rubber seal lip to allow it to slide easily

Ensure inner lip of the rubber seal is secured under the seal boss (locking ring) as shown

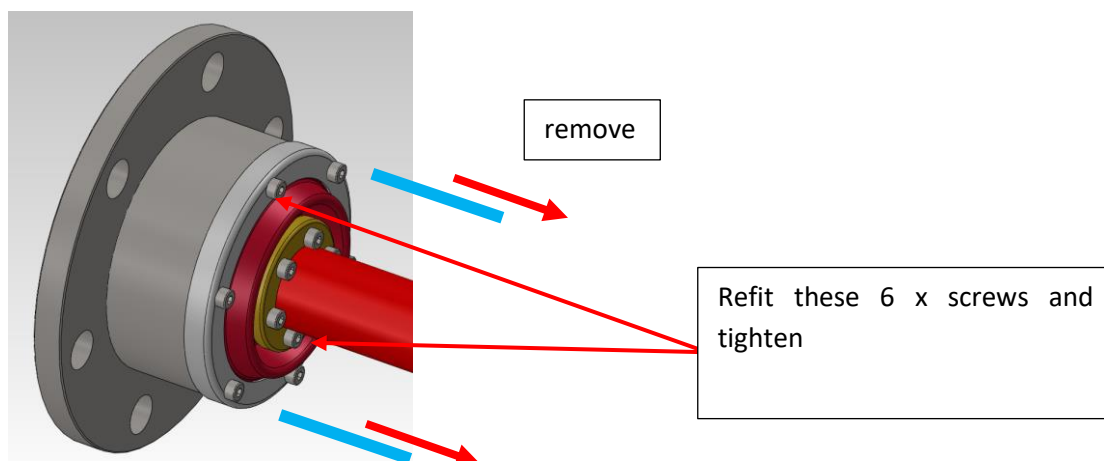
10. Fit the main coupling key into the shaft and slide the coupling half on, lining up the key with the keyway. Also fit 2x dowel pins or similar into 2 of the holes in the coupling outer ring and line up with the holes in the front seal clamp assembly



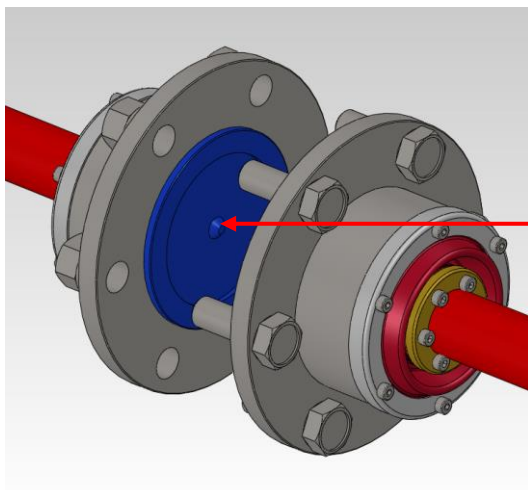
11. Also apply a smear of BLUE MAXX sealant around the shaft here to seal against grease leakage



12. Finally remove the 2 x dowel pins and refit the 6x outer seal screws and 6x inner screws to the bush and tighten to the torques shown below



13. Fit the rear locating ring to the respective grooves in the coupling half ensuring its fitting neatly and squarely.



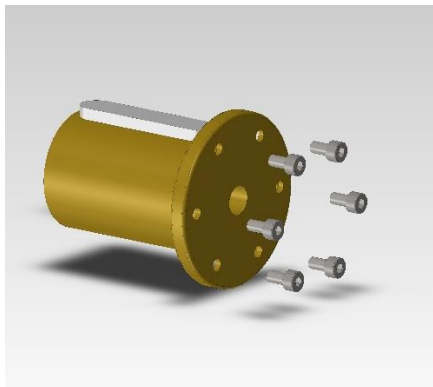
Fit rear locating ring into groove and ensure it seats squarely and neatly

14. Slide the 2 coupling halves together again resecure with the hex bolts, washers, and nuts.
15. Torque all screws & bolts to the specified rating for the coupling as listed below:

MODEL TCAE-S -*	Hex Bolt Size	Torque Nm (lb.ft)	Inner and Outer Seal Screws	Torque Nm (lb.ft)
1	6 x M14 grade 8.8	120 (90)	INNER – 6 x M4 SHCS OUTER –6 x M4 SHCS	3 (2)
2	6 x M14 grade 8.8	120 (90)	INNER – 6 x M4 SHCS OUTER –6 x M4 SHCS	3 (2)
3	6 x M16 grade 8.8	190 (140)	INNER – 6 x M4 SHCS OUTER –6 x M6 SHCS	3 (2) 6 (4)
4	6 x M16 grade 8.8	190 (140)	INNER – 6 x M4 SHCS OUTER –6 x M6 SHCS	3 (2) 6 (4)
5	6 x M20 grade 8.8	370 (270)	INNER – 6 x M4 SHCS OUTER –6 x M6 SHCS	3 (2) 6 (4)

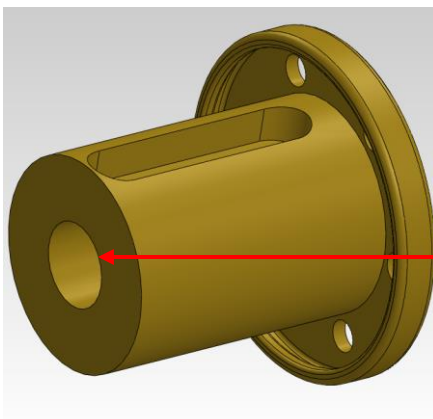
SECTION 2 – Fitment for Pilot Bore where the Shaft Size Equals the Coupling Bore Size

1. Check for any damage to the outer box. Report issues to Thompson Couplings Ltd accordingly.
2. Carefully remove the outer plastic wrap from the coupling and keep aside.
3. REMOVE the 2x pilot bored seal bosses with fasteners and keystone from the coupling by removing 6 x screws as shown below. These are prefitted hand tight from the factory for easy removal.



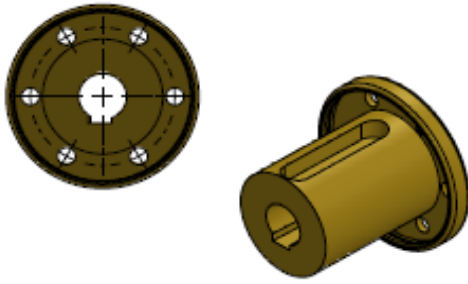
Cover the coupling again with the plastic wrap to ensure cleanliness while working on the pilot bored bushes.

4. Measure the mating shaft diameter and machine the pilot bored nose seal boss with appropriate surface finish and tolerance. **The recommended tolerance of the pilot nose seal bore is a slight interference fit with the shaft such as P7/h6.**
5. Broach internal keyway as required to fit key.

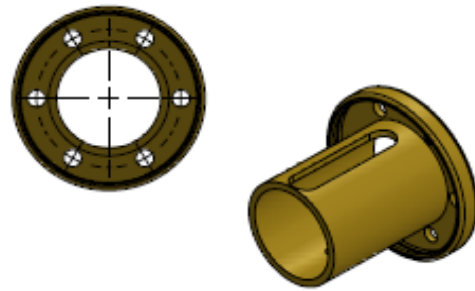


Machine the bore of the Pilot Nose Boss with an appropriate INTERFERENCE Fit such as

Note: when the shaft diameter is **close** to the external diameter of the Pilot Nose boss it is necessary to just use the same key as supplied. When necessary, keys can be machined to fit using stock key sizes.

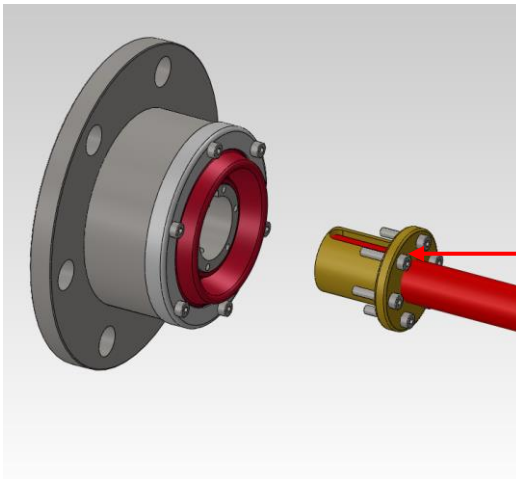


Pilot bore nose seal boss bored and keyed as required where shaft diameter is **significantly smaller than the** external diameter.
Uses a separate key as well.



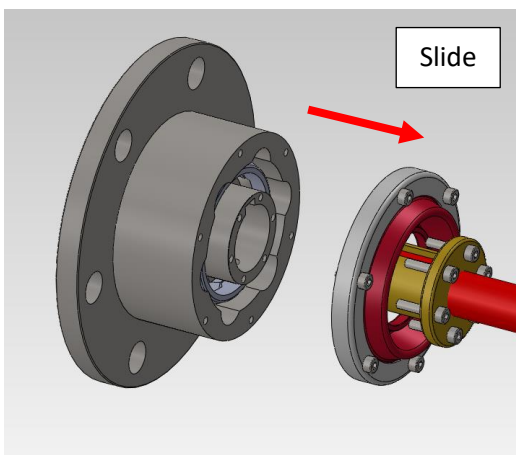
Pilot bore nose seal boss bored and keyed as required where shaft diameter is **close to** the external diameter.
Uses the same key as supplied.

6. Press the machined Pilot Nose Seal Boss onto the shaft using an appropriate tool with additional key as required.

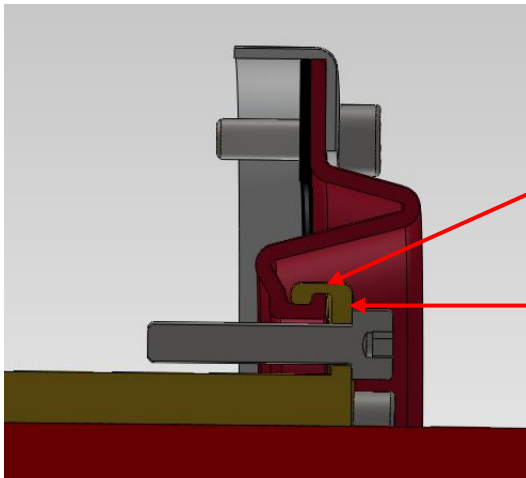


Press Pilot Nose seal boss onto shaft

7. Take one half coupling assembly and remove the protective film.
8. Undo the 6x outer seal screws and slide the rubber seal, clamp plate and backing plate Forward.



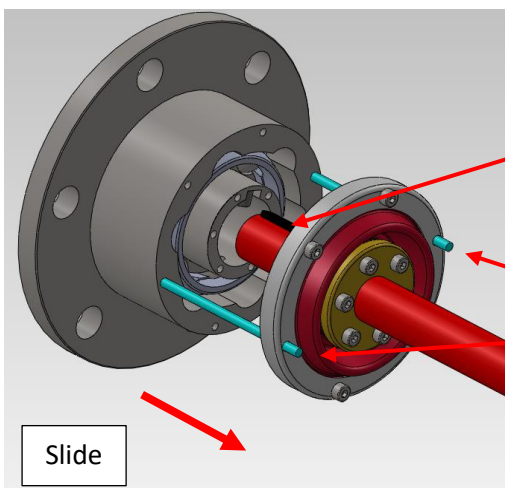
9. Apply a smear of grease around the rubber lip and then ensure to clip the inner lip under the seal boss (Locking Ring).



Apply a smear of grease around the rubber seal lip to allow it to slide easily

Ensure inner lip of the rubber seal is secured under the seal boss (locking ring) as shown

10. Fit the main coupling key into the shaft and slide the coupling half on, lining up the key with the keyway. Also fit 2x dowel pins or similar into 2 of the holes in the coupling outer ring and line up with the holes in the front seal clamp assembly

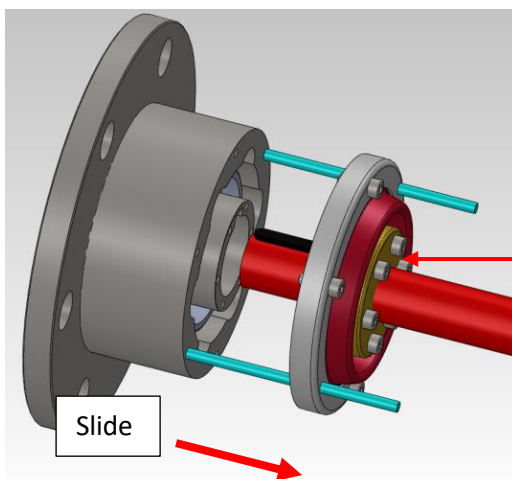


Fit main coupling key into shaft

Fit 2 x dowel pins into coupling holes and locate with the front seal clamp holes.

Slide

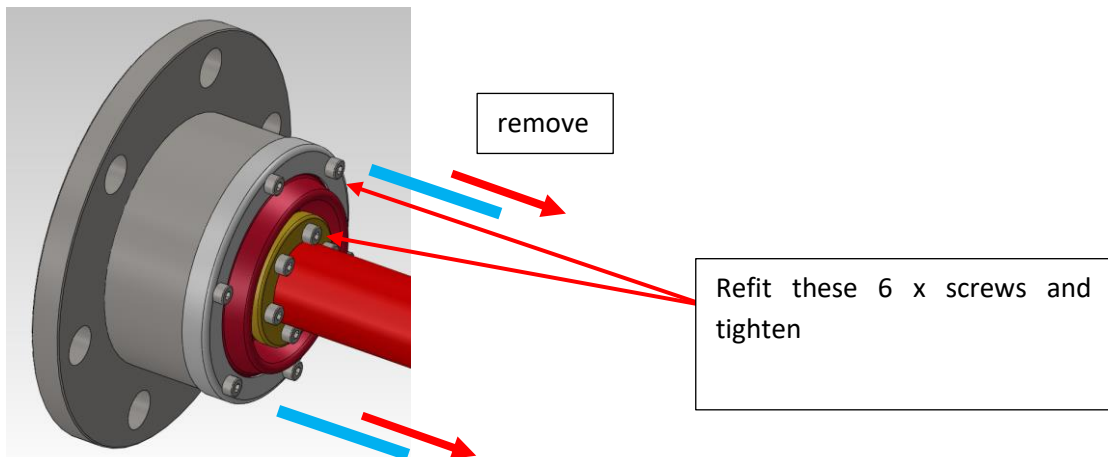
11. Also apply a smear of BLUE MAXX sealant around the shaft here to seal against grease leakage



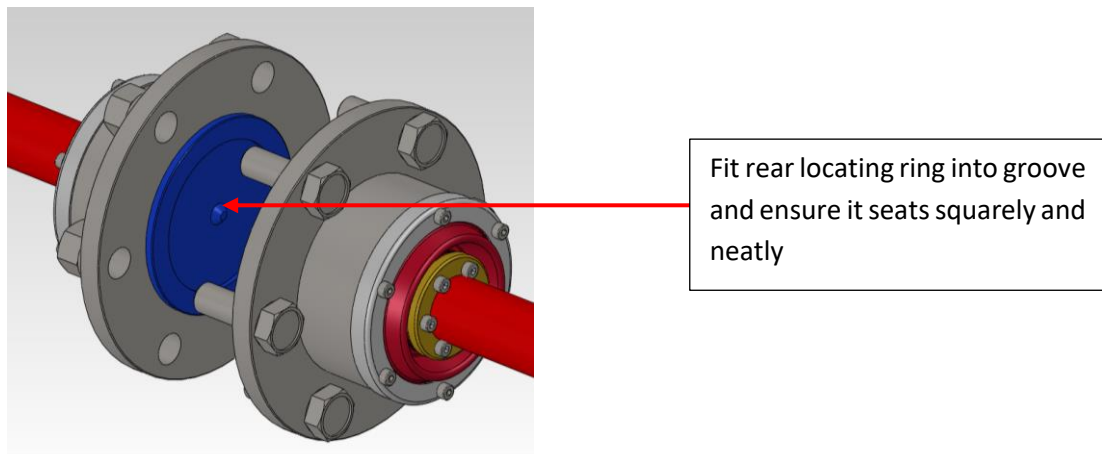
Apply Blue Maxx sealant around shaft to seal against grease leakage

Slide

12. Finally remove the 2 x dowel pins and refit the 6x outer seal screws and 6x inner screws to the bush and tighten to the torques shown below



13. Fit the rear locating ring to the respective grooves in the coupling half ensuring its fitting neatly and squarely.



14. Slide the 2 coupling halves together again resecure with the hex bolts, washers, and nuts.
15. Torque all screws & bolts to the specified rating for the coupling as listed below:

MODEL TCAE-S -*	Hex Bolt Size	Torque Nm (lb.ft)	Inner and Outer Seal Screws	Torque Nm (lb.ft)
1	6 x M14 grade 8.8	120 (90)	INNER – 6 x M4 SHCS OUTER – 6 x M4 SHCS	3 (2)
2	6 x M14 grade 8.8	120 (90)	INNER – 6 x M4 SHCS OUTER – 6 x M4 SHCS	3 (2)
3	6 x M16 grade 8.8	190 (140)	INNER – 6 x M4 SHCS OUTER – 6 x M6 SHCS	3 (2) 6 (4)
4	6 x M16 grade 8.8	190 (140)	INNER – 6 x M4 SHCS OUTER – 6 x M6 SHCS	3 (2) 6 (4)
5	6 x M20 grade 8.8	370 (270)	INNER – 6 x M4 SHCS OUTER – 6 x M6 SHCS	3 (2) 6 (4)

Start-up Inspection

- Prior to powering up the new coupling setup, ensure all safety precautions have been observed.
- Ensure all the flange mounting fasteners have been installed and are pre-tensioned to the value specified.
- Make sure the angular or parallel misalignment is not exceeded as per the TCAE product specification sheet.
- Prior to motor start up, ensure the shaft rotates by hand without any jerky sound, noise or friction and all tools have been removed.
- Energise the motor drive (if possible, at jog or low speed) and observe the rotation of the coupling components to ensure all faces are running concentric and true.
- Increase the motor speed to observe any noticeable vibrations or alignment issues. Correct if needed.
- Refit safety cover guards and operate in production mode as required.