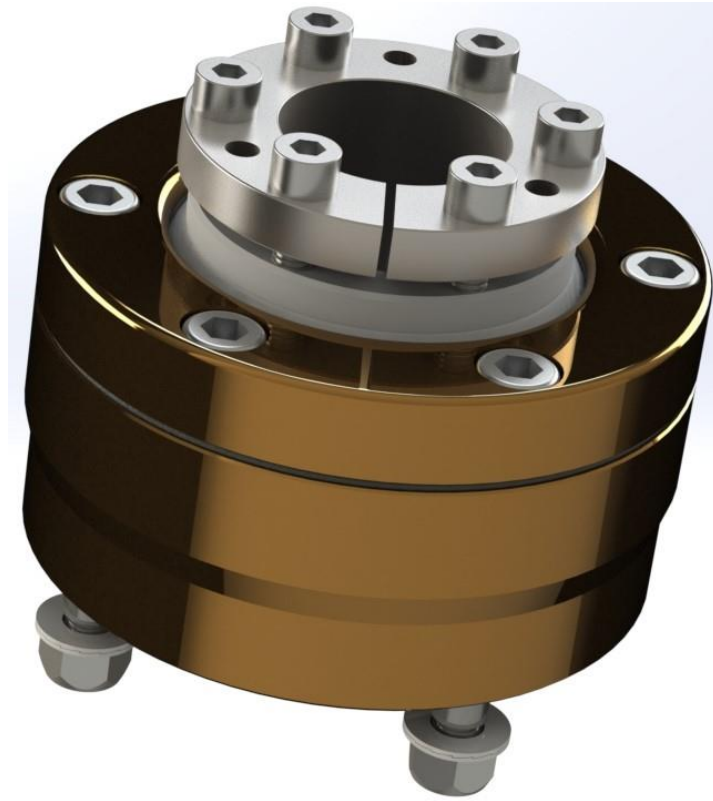




INSTRUCTION MANUAL



SD150

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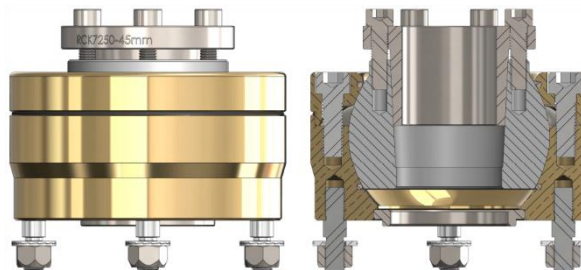
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Make sure you have thoroughly read and understood the installation instructions prior to fitting your SigmaDrive.

WHAT SIGMADRIVE IS?

SigmaDrive is a constant velocity joint that is able to resist the propeller thrust without the need for thrust bearings. Fitted in the same place as a standard shaft coupling, it reduces noise and vibration that the engine transmits to the propeller shaft. It corrects misalignment between the engine and propeller shaft up to a working angle of 3 degrees.



INSTALLATION

- Carefully clean the gearbox output flange and shaft contact surfaces.
- Insert the M10 high tensile studs (11) into the corresponding tapped holes to match the gearbox output flange. Lock the studs using the two narrow M10 lock nuts (14) and the loctite **638** supplied.
- Place the SigmaDrive onto the gearbox flange. Then fit the Nordlock washers (12) and the M10 Nyloc nuts (13) to the M10 high tensile studs (11) and tighten firmly to a torque of **61Nm** in a crossed sequence.
- Please apply a light oil film on the surface of the taper lock making sure that the surface between the taper and central sphere (3) is well lubricated. Use WD-40 or hydraulic oil, this will aid removal. Please do not use oil with molybdenum disulfide, high pressure additives or graphite grease on either the shaft or taper lock. These substances notably reduce the friction coefficient for the clamp unit.**
- Carefully slide the clamping unit (7) onto the propeller shaft to the minimum depth indicated in table 2 (See Fig 1 for diagram). Maximum shaft insertion depth is 60mm. Insert the clamping unit into the central sphere and tighten the M8 taper locking bolts (7) gently using an allen key in a crossed sequence (see fig 1).
- Tighten the M8 taper locking bolts (7) in the sequence indicated in fig 2 at least 5 times by hand using an allen key.
- Tighten the M8 taper locking bolts (7) in the sequence indicated in fig 2 with a torque wrench to 25Nm, then 30Nm and finally 38Nm. Do not exceed 38Nm of torque, this could make it difficult to remove if it is overtightened.
- Note that the shaft will be drawn up into the clamp by as much as 3mm to 4 mm. Proceed with normal alignment and fixing methods with propeller shaft and gearbox, taking care not to exceed the maximum working angle when centering Sigmadrive to gearbox output flange. It is preferable to make sure that the shaft is aligned to start with as the maximum installation angle should not exceed 3 degrees. We recommend using a standard half coupling to align the shaft particularly for a new running stern gear. For retrofitting, it is generally acceptable to replace the standard coupling with Sigmadrive, provided that the shaft is correctly aligned to begin with.

Adapter pieces are available for larger gearbox flanges.

WARNING

Before starting the engine, rotate the shaft manually by hand and check that it rotates easily in both directions. Check and if necessary reduce working angle. It is preferable to make sure that the shaft is aligned to start with as the maximum installation angle should not exceed 3 degrees. The smaller the angle the longer the lifespan of the SigmaDrive will be. The angle can be measured using a bevel gauge and should not exceed our recommendation. After initial sea trials the engine can be adjusted to reach the perfect working angle of alignment, this will be necessary especially if there is any irregular movement on the coupling, when in operation.

The SigmaDrive unit is packed with special high temperature grease. During initial operation it is very likely for the component to expel grease. The operating temperature, in some cases, can make the coupling run a little hot making the grease more fluid. We recommend cleaning the excess grease from the coupling, from time to time, using a cloth. Ensure the vessel is stationary and the engine is switched off, preferably at the dock, when following this procedure. Please also check the temperature of the couplings as they may still be near to running temperature after initial motoring trials, this can be as much as 90 degrees.

Run installation to bring engine up to working temperature and re-check torque settings on the gearbox flange nuts and also the shaft taperlock.

MAINTENANCE

The Sigmadrive is extremely low maintenance and does not require regreasing when working at specified angles. Once installed correctly it will last as long as a conventional half couple. Periodically check mounting bolts and nuts for tightness and overall condition.

REMOVAL AND DISASSEMBLY

Loosen the M8 high tensile clamping screws using an allen key. Insert the screws into the dismantling thread and tighten gradually and regularly in crossed sequence until the back cone is released. If the taper lock component is to be reused re-lubricate both screws and threads.

TECHNICAL DATA

MODEL	SD150	THRUST MAX.	2500 KG
SERIAL NUMBER		TEMP. MAX.	60°C
MAXIMUM TORQUE	1500Nm	LUBRICATION	GREASE
MISALIGNMENT MAX.	3° EACH COUPLING	GREASE TYPE	SKF LGWA 2/0.4
RPM MAX.	3000 RPM		

Table 1. SigmaDrive technical data

SD150			
Shaft Diameter	B	Shaft Diameter	B
45mm	50mm	1.75"	50mm
50mm	55mm	2"	55mm

Table 2. Shaft insertion depth

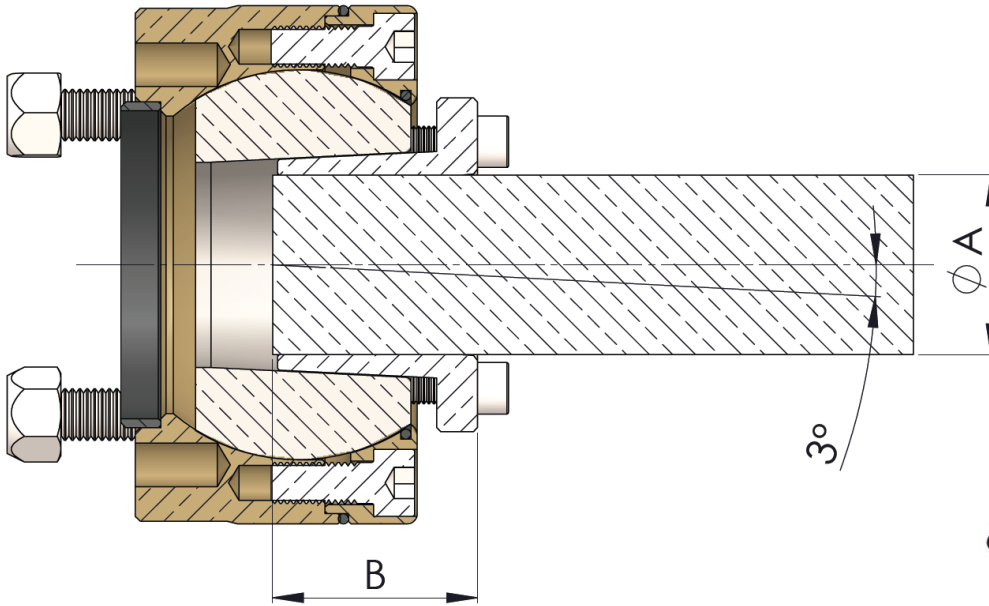


Fig 1. SigmaDrive angle drawing

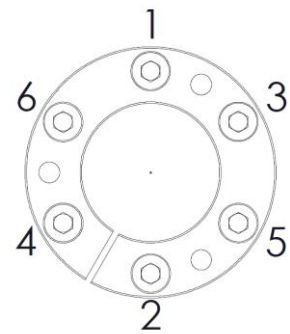
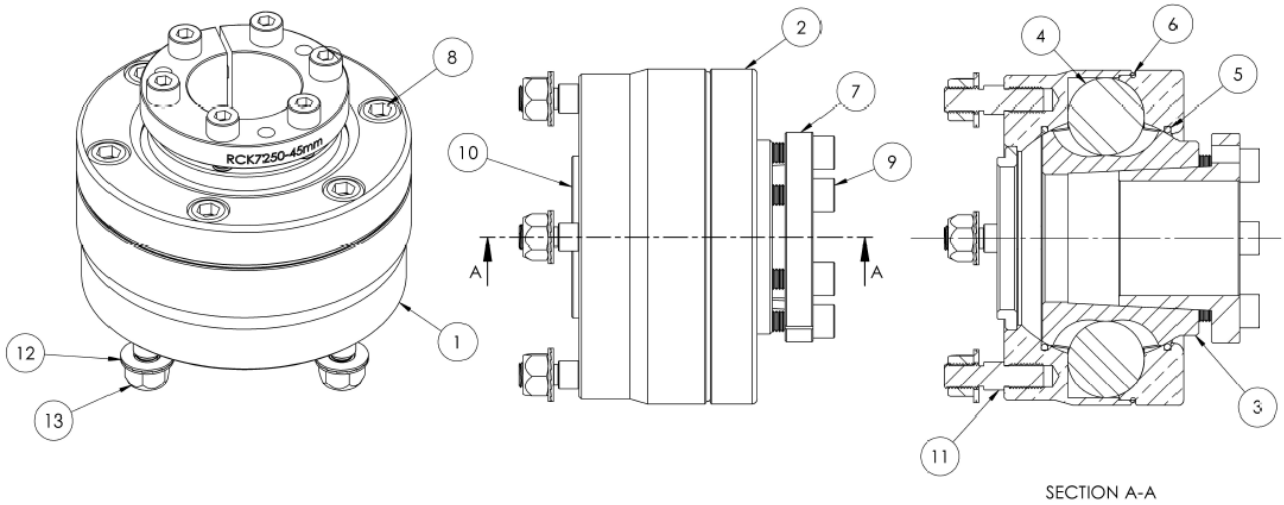


Fig 2. Tightening Sequence



SECTION A-A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SD15001	SD150 MAIN BODY	1
2	SD15002	SD150 COVER - NOT TO BE REMOVED	1
3	SD15003	SD150 CENTRAL SPHERE	1
4	SDBB30	BALL BEARING	6
5	M82.22X02.62'O'RING	INNER O-RING	1
6	M120.37X01.78'O'RING	OUTER O-RING	1
7	RCK7250	SD150 CLAMP UNIT	1
8	M10X30SKHDCPTS12.9	M10 SOCKET HEAD CAP SCREWS - NOT TO BE REMOVED	6
9	M8X30SKHDCPTS12.9ZP	M8 SOCKET HEAD CAP SCREWS	6
10	REGISTER	OUTPUT FLANGE REGISTER	1
11	M10X39STUDEN19T	M10 x 39mm STUD	4
12	NL10SPSS-254	M10 NORDLOCK WASHER	4
13	M10NYLOCTS10ZP	M10NYLOC NUT, 10.9 GRADE ZINC PLATED	4
14	M10LN	M10 LOCK NUT	2