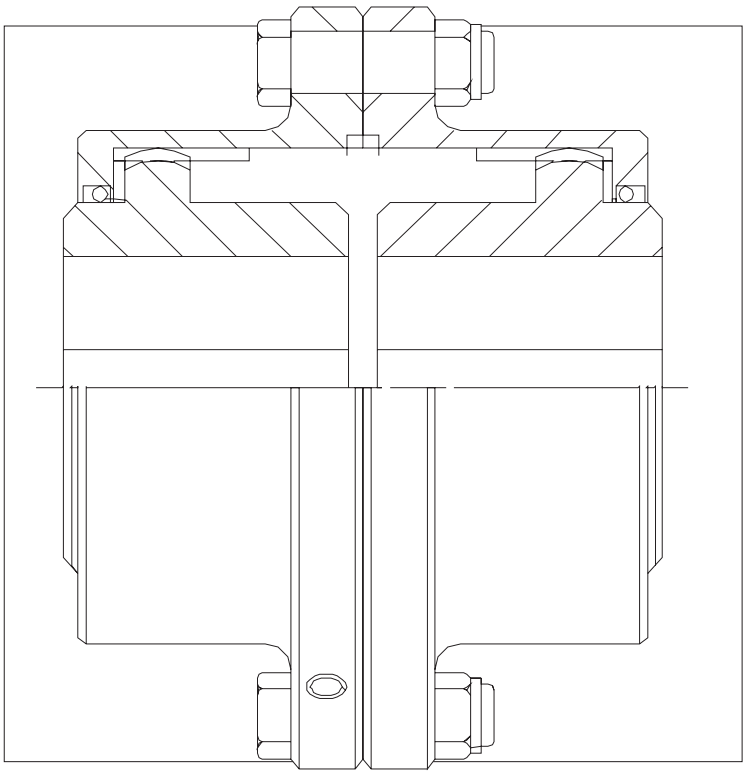

INSTALLATION & MAINTENANCE

SERIES X

DAVID BROWN
RADICON

GEAR TYPE COUPLING
(STANDARD & SPACER TYPES)

RMB Engineering Services Ltd
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Tel +44 (0) 121 500 1910 Fax +44 (0) 121 500 1911
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IMPORTANT

Product Safety Information

General - The following information is important in ensuring safety. It **must** be brought to the attention of personnel involved in the selection of David Brown Radicon Limited power transmission equipment, those responsible for the design of the machinery in which it is to be incorporated and those involved in its installation, use and maintenance.

David Brown power transmission equipment will operate safely provided it is selected, installed, used and maintained properly. As with any power transmission equipment **proper precautions must** be taken as indicated in the following paragraphs, to ensure safety.

Potential Hazards - these are **not** necessarily listed in any order of severity as the degree of danger varies in individual circumstances. It is important therefore that the list is studied in its entirety:-

1) Fire/Explosion
   (a) Oil mists and vapour are generated within gear units. It is therefore dangerous to use naked lights in the proximity of gearbox openings, due to the risk of fire or explosion.

   (b) In the event of fire or serious overheating (over 300 °C), certain materials (rubber, plastics, etc.) may decompose and produce fumes. Care should be taken to avoid exposure to the fumes, and the remains of burned or overheated plastic/rubber materials should be handled with rubber gloves.

2) Guards - Rotating shafts and couplings must be guarded to eliminate the possibility of physical contact or entanglement of clothing. It should be of rigid construction and firmly secured.

3) Noise - High speed gearboxes and gearbox driven machinery may produce noise levels which are damaging to the hearing with prolonged exposure. Ear defenders should be provided for personnel in these circumstances. Reference should be made to the Department of Employment Code of Practice for reducing exposure of employed persons to noise.

4) Lifting - Where provided (on larger units) only the lifting points or eyebolts must be used for lifting operations (see maintenance manual or general arrangement drawing for lifting point positions). Failure to use the lifting points provided may result in personal injury and/or damage to the product or surrounding equipment. Keep clear of raised equipment.

5) Lubricants and Lubrication
   (a) Prolonged contact with lubricants can be detrimental to the skin. The manufactures instruction must be followed when handling lubricants.

   (b) The lubrication status of the equipment must be checked before commissioning. Read and carry out all instructions on the lubricant plate and in the installation and maintenance literature. Heed all warning tags. Failure to do so could result in mechanical damage and in extreme cases risk of injury to personnel.

6) Electrical Equipment - Observe hazard warnings on electrical equipment and isolate power before working on the gearbox or associated equipment, in order to prevent the machinery being started.

7) Installation, Maintenance and Storage
   (a) In the event that equipment is to be held in storage, for a period exceeding 6 months, prior to installation or commissioning, David Brown Radicon Limited must be consulted regarding special preservation requirements. Unless otherwise agreed, equipment must be stored in a building protected from extremes of temperature and humidity to prevent deterioration.

   The rotating components (gears and shafts) must be turned a few revolutions once a month (to prevent bearings brinelling).

   (b) External gearbox components may be supplied with preservative materials applied, in the form of a "waxed" tape overwrap or wax film preservative. Gloves should be worn when removing these materials. The former can be removed manually, the latter using white spirit as a solvent.

   Preservatives applied to the internal parts of the gear units do not require removal prior to operation.

   (c) Installation must be performed in accordance with the manufacturer's instructions and be undertaken by suitably qualified personnel.

   (d) Before working on a gearbox or associated equipment, ensure that the load has been removed from the system to eliminate the possibility of any movement of the machinery and isolate power supply. Where necessary, provide mechanical means to ensure the machinery cannot move or rotate. Ensure removal of such devices after work is complete.

   (e) Ensure the proper maintenance of gearboxes in operation. Use only the correct tools and David Brown Radicon Limited approved spare parts for repair and maintenance. Consult the Maintenance Manual before dismantling or performing maintenance work.

8) Hot Surfaces and Lubricants
   (a) During operation, gear units may become sufficiently hot to cause skin burns. Care must be taken to avoid accidental contact.

   (b) After extended running the lubricant in gear units and lubrication systems may reach temperatures sufficient to cause burns. Allow equipment to cool before servicing or performing adjustments.

9) Selection and Design
   (a) Where gear units provide a holdback facility, ensure that back-up systems are provided if failure of the holdback device would endanger personnel or result in damage.

   (b) The driving and driven equipment must be correctly selected to ensure that the complete machinery installation will perform satisfactorily, avoiding system critical speeds, system torsional vibration, etc.

   (c) The equipment must not be operated in an environment or at speeds, powers, torques or with external loads beyond those for which it was designed.

   (d) As improvements in design are being made continually the contents of this catalogue are not to be regarded as binding in detail, and drawings and capacities are subject to alterations without notice.

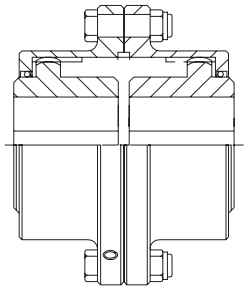
The above guidance is based on the current state of knowledge and our best assessment of the potential hazards in the operation of the gear units.

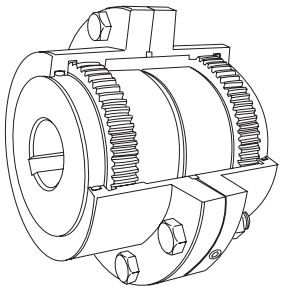
Any further information or clarification required may be obtained by telephoning or writing to:

X621 FLANGED

This type of coupling compensates for normal angular and parallel misalignment of shafts and permits axial movement without imposing axial loads on adjacent bearings. The split sleeve design allows access for shaft alignment with minimum distance between adjacent housings, and all bolts are fitted with self locking nuts. Puller holes can be provided if required.

Spacers or tubular cardan shafts can be supplied between the two coupling halves, and couplings suitable for vertical shafts can also be supplied.

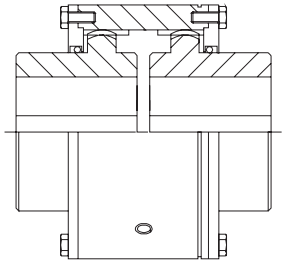


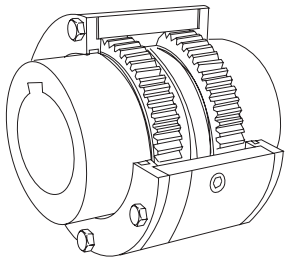


X622 CONTINUOUS

This type of coupling compensates for normal angular and parallel misalignment of shafts and permits axial movement without imposing axial loads on adjacent bearings. They are more compact and lighter than the 621 type, allowing higher maximum speeds with reduced WR^2. Puller holes can be provided if required.

Couplings suitable for vertical shafts can also be supplied.

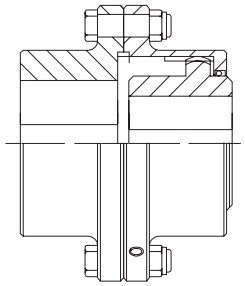


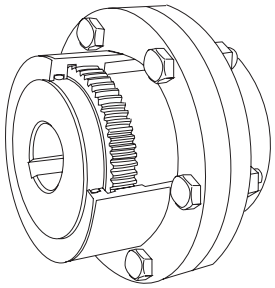


X623 FLANGED SINGLE ENGAGEMENT

This type of coupling comprises one standard flexible half coupling and one rigid half coupling, and compensates for normal angular misalignment only. It is therefore often used in tandem pairs connected by an intermediate floating shaft (cardan shaft) or as a single unit in conjunction with a driving or driven shaft supported in a self aligning bearing. All bolts are fitted with self-locking nuts and puller holes can be provided if required.

Couplings suitable for vertical shafts can also be supplied.



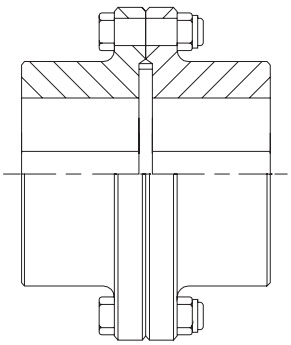


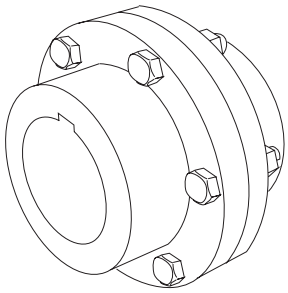
X629 FULL RIGID

This type of coupling meets the requirement of rigid drives where no compensation for misalignment is required. All bolts are fitted with self-locking nuts and puller holes can be provided if required. Couplings suitable for vertical shafts can also be supplied.

Rigid couplings are usually subjected to a combination of both torsional and bending loads, hence the selection of the coupling size should be made by David Brown Radicon.

For couplings subjected to torsional loads only, type 629 couplings will transmit at least as much as type 623 couplings. However, their limiting capacities are such that they will transmit the maximum torque to which the shaft, if made in mild steel, may safely be subjected. Therefore, in practice these couplings are sized according to their bore capacity rather than their torque capacity.





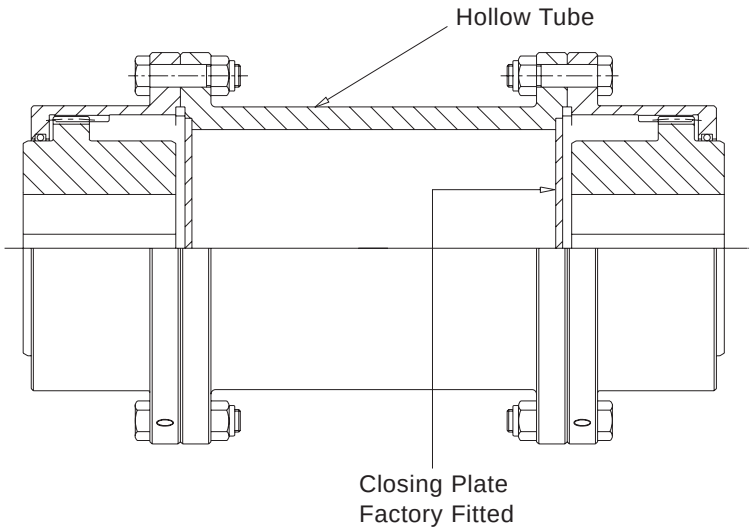
SPACER COUPLING TYPE X621

Spacer couplings are available for sizes 02 - 10

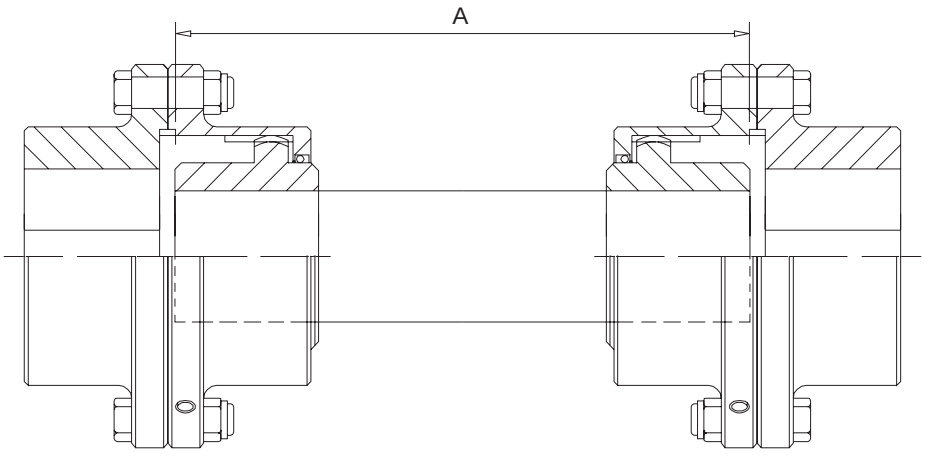
Distance between shaft ends, dimension A

150 mm
200 mm
250 mm

for lengths above 250 mm refer to David Brown Radicon for details



CARDAN SHAFTS TYPES X623 AND X629



1.0 INSTALLATION PROCEDURE

1.1 HUB INSTALLATION

a) Ensure all parts are clean and free from grit before assembly.

b) Lightly grease 'O' rings and insert into groove of each sleeve, place sleeves over the shaft ends for the flange type X621 and X623.

On the continuous type X622, insert lightly greased 'O' rings into the groove in the sealing ring housings. Place gasket over spigot of each housing and then pass sleeve and housings over shaft ends ensuring male spigot of each housing is towards shaft end, before mounting hubs.

c) Check that the keys fit and coat each key with grease resisting sealing compound to prevent leakage (eg Loctite 518, Marston Hylogrip multi gasket grade 4000 or any general silicone rubber sealant).

d) Install hubs on shafts, for

i) Types X621 and types X623 with the long boss flush with end of the shaft

ii) Type X622 with the short boss flush with the end of the shaft.

iii) Rigid flange hubs are simply pressed or slipped onto the shaft.

For press fits apply Tallow to the hub bores and shafts, ensure hubs are square with the shafts and keyways are in line before pressing on.

e) Fit units to bedplate and check distance between shaft ends / coupling halves (see table 1, page 4 for setting gap).

f) Check shaft alignment (section 1.2)

1.2 SHAFT ALIGNMENT

a) Check shaft alignment as follows:-

Errors of alignment fall into categories of angularity (see figure 1) and eccentricity (see figure 2), or a combination of both.

Errors of angularity should be checked for and corrected before errors of eccentricity

b) ERRORS OF ANGULARITY

If the faces are perfectly true, the angularity can be checked by keeping both shafts stationary and taking measurements with a block gauge and feelers at the four points 1, 2, 3 and 4 as shown in figure 3. The difference between the readings 1 and 3 will give the error of alignment in the vertical plane over the length of the shaft equal to the diameter of the coupling flanges, and from this the difference in the relative heights of the feet of the motor or other connected machine can be found by proportion. Similarly the difference between the readings 2 and 4 gives the amount of sideways adjustment necessary to correct any errors of alignment in the horizontal plane.

Generally, however , the coupling faces will not be absolutely true and whilst any errors so found could be allowed for in checking angularity by the stationary method an easier method presents itself. This consists in marking the points 1 on both "A" and "B" and rotating both half couplings, keeping the marked points together. By taking measurements each quarter-revolution the errors in the vertical and horizontal planes are again found.

The allowable gap for 5 minutes angular misalignment is given in table 1, page 4.

c) ERRORS OF ECCENTRICITY

The procedure for measuring eccentricity is precisely analogous to that used for angularity. In this case, however the measurements are taken in a radial direction and the most convenient and accurate means of doing this utilises a dial indicator suitably clamped to one half coupling, and bearing on the hub or flange of the other, as shown in figure 4 (4a for standard couplings 4b for spacer type couplings).

Care must, however, be taken to ensure the support for the dial indicator is sufficiently rigid to prevent the weight of the indicator from causing deflection and, in consequence, inaccurate readings. Extra care should be taken where taper roller bearings are fitted to ensure that alignment is checked with shafts in mid-point position and a final check made with the unit at operating temperature.

The allowable gap for a parallel offset equivalent to 5 minutes angular misalignment at the mesh is given in table 1 page 4.

Figure 1

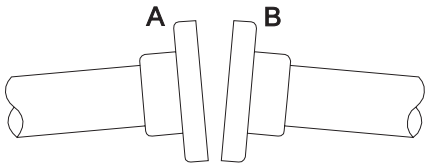


Figure 2

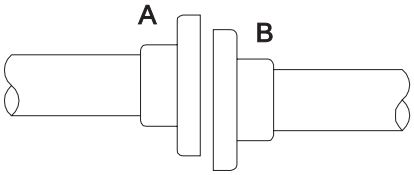
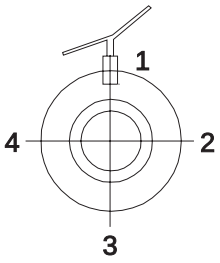


Figure 3



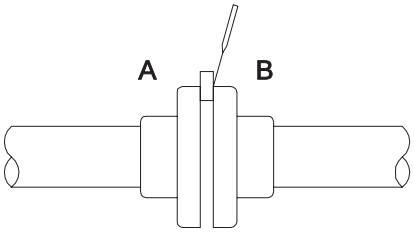


Figure 4

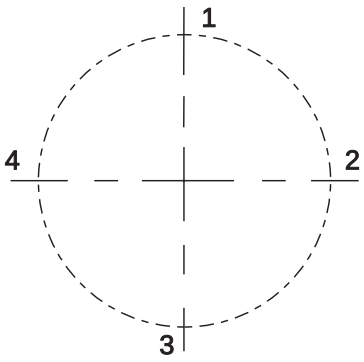


Figure 4a) standard coupling

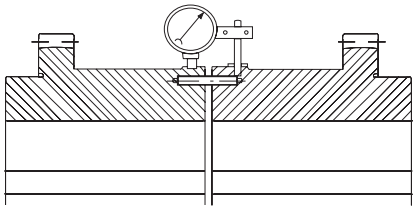
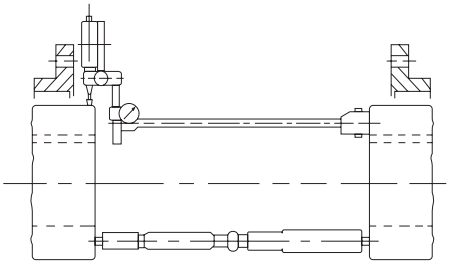


Figure 4b) spacer coupling



1.3 SLEEVE CONNECTION

For types X621, X622 and X623 which are going to be grease lubricated, the hub and sleeve teeth should be packed with an approved grease see lubrication section page 6.

i) Type X621 bring both sleeves together taking care when engaging the coupling teeth. Insert locating ring in the recess of a sleeve and place flange gasket between sleeves and align bolt holes (illustration page 11).

Bolt sleeves together, taking care to tighten bolts uniformly to the tightening torque given in table 2, page 4.

ii) Type X622 slide sleeve into position on the hubs taking care when engaging the coupling teeth align housings, gaskets and sleeve screw holes at each side of the sleeve (illustration page 11). Tighten screws uniformly to the tightening torque given in table 2, page 4.

iii) Type X623, The flexible half should be assembled as X621 and the rigid half simply pressed or slipped onto the shaft.

Insert flange bolts and tighten to the torque given in table 2, page 4.

iv) Type X629, Insert flange bolts and tighten to the torque given in table 2, page 4.

1.4 FOUNDATIONS

When securing the driving and driven machines onto the foundations it is important that the locating pads under the feet are seated correctly, as possible distortion when tightening the bolts may cause errors of alignment, even worse breakage. Hole clearance in feet provide a degree of flexibility so that the unit may then be lined up accurately and final bolt adjustment made.

1.5 LUBRICATION

a) APPROVED LUBRICANTS

The oscillating motion that occurs at the pitch line is best lubricated by an oil. However the X620 coupling up to and including size 10 can be adequately lubricated by a grease.

Approved oils and greases are given in tables 3 & 4 pages 5 and 6 (If however a grease which is not in the recommended list is required to be used the supplier should be consulted to ensure it is suitable for use in couplings).

b) LUBRICANT GRADE SELECTION

The selection of the required grade grease or oil is based on the following

i) The transmitted power (kW) times the mechanical service factor (Fm).

ii) The coupling speed (rev/min)

and iii) The ambient temperature
From the graph page 7 the lubrication area within which the coupling operates can be determined and from table 5 page 8 the lubricant grade obtained. Tables 3 and 4 pages 5 and 6 give approved lubricants available in the required grade.

c) The amount of lubricant required is given in table 6 page 8. This is added to the coupling by removal of the lubrication plugs.

Finally re-fit lubrication plugs and ensure they are seated correctly.

TABLE 1 - SETTING GAP AND ALLOWABLE GAP FOR BOTH PARALLEL OFFSET AND ANGULAR MISALIGNMENT

COUPLING SIZE	TYPES X621 AND X622				X623	
	SETTING GAP mm	ANGULAR (1)	PARALLEL (2)		SETTING GAP mm	ANGULAR (1)
		GAP mm (INCHES)	GAP mm (INCHES)			GAP mm (INCHES)
			X621	X622		
02	3	0.21 (0.008)	0.093 (0.0037)	0.058 (0.0023)	5	0.11 (0.004)
03	3	0.27 (0.010)	0.121 (0.0048)	0.068 (0.0027)	5	0.13 (0.005)
04	4	0.31 (0.012)	0.160 (0.0063)	0.076 (0.0030)	5	0.16 (0.006)
05	5	0.38 (0.015)	0.182 (0.0072)	0.097 (0.0038)	6	0.19 (0.007)
06	6	0.44 (0.017)	0.220 (0.0086)	0.106 (0.0042)	6	0.22 (0.009)
07	7	0.52 (0.020)	0.244 (0.0096)	0.125 (0.0049)	7	0.26 (0.010)
08	8	0.55 (0.022)	0.281 (0.0111)	0.135 (0.0053)	8	0.28 (0.011)
09	8	0.63 (0.025)	0.329 (0.0129)	0.140 (0.0055)	8	0.31 (0.012)
10	8	0.70 (0.028)	0.362 (0.0142)	0.151 (0.0060)	8	0.35 (0.014)

NOTES:

1) The gap given is that equivalent to 5 minutes angular misalignment at each mesh of the coupling or 8.3% of the allowable misalignment.

2) The gap given allows a parallel offset equivalent to 5 minutes angular misalignment at the coupling mesh again 8.3% of the allowable misalignment.

3) Notes 1 and 2 above if both of these are at the maximum then 16.7% of the allowable misalignment has been used leaving 83.3% for to account.

   i) For the difference in thermal growth between the driving and the driven machine.

   or ii) Misalignment due to distortion of the connected elements and/or the foundations under load.

TABLE 2 - FLANGE BOLT AND SLEEVE HOUSING SCREW TIGHTENING TORQUE

COUPLING SIZE	TIGHTENING TORQUES (Nm)								
	02	03	04	05	06	07	08	09	10
FLANGE BOLTS	M10	M12	M16	M16	M20	M20	M20	M24	M24
	56	90	226	226	450	450	450	790	790
SLEEVE HOUSING SCREWS	M6	M6	M8	M8	M10	M10	M10	M10	M10
	12.5	12.5	25.5	25.5	56	56	56	56	56

TABLE 3 APPROVED OILS

MINERAL OILS

LUBRICANT SUPPLIER	LUBRICANT RANGE NAME	ISO VISCOSITY / DBR GRADE NO.				
		150 / 4E	220 / 5E	320 / 6E	460 / 7E	680 / 8E
Ampol Limited	Gearlube SP	SP150	SP220	SP320	SP460	SP680
Batoyle Freedom Group	Remus	150	220	320	460	680
Boxer Services Limited	Indus	150	220	320	460	680
BP Oil International Limited	Energol GR-XF	150	220	320	460	680
	Energol GR-XP	150	220	320	460	680
Caltex	Meropa	150	220	320	460	680
	RPM Borate EP Lubricant	150	220	320	460	
Carl Bechem GmbH	Berugear GS BM	150	220	320	460	
	Staroil G	150	220	320	460	680
Castrol International	Alpha Max	150	220	320	460	
	Alpha SP	150	220	320	460	680
Chevron Lubricants	Gear Compound EP (USA ver)	150	220	320	460	680
	Gear Compound EP (Eastern ver) 150	220	320	460	680	
	Ultra Gear	150	220	320	460	680
Eko-Elda (Greece)	Gearlub	150	220	320	460	
Engen Petroleum Limited	Gengear	150	220	320	460	680
Esso	Spartan EP	150	220	320	460	680
Esso/Exxon	Spartan EP	150	220	320	460	680
Fina	Giran	150	220	320	460	680
Fuchs Lubricants (UK) Plc	Powergear			P/Gear	M460	H680
	Renogear V	150EP	220EP	320EP	460EP	680EP
	Renogear WE		220	320	400	
Fuchs Mineraloelwerke GmbH	Renolin CLPF Super	5	6	8	10	12
Klüber Lubrication	Klüberoil GEM1	150	220	320	460	680
Kuwait Petroleum International	Q8 Goya	150	220	320	460	680
Lubrication Engineers Inc	Almasol Vari-Purpose Gear	604	607	605	608	609
Mobil Oil Company Limited	Mobil gear 600 Series	629	630	632	634	636
	Mobil gear XMP	150	220	320	460	680
Omega Manufacturing Division	Omega 690	80w/90		85w/140		
Optimol Ölwerke GmbH	Optigear BM	150	220	320	460	680
	Optigear	150	220	320	460	680
Pertamina (Indonesia)	Masri	150	220	320	460	680
Petro-Canada	Ultima EP	150	220	320	460	680
	Ultima EP	68/220				
Petromin Lubricating Oil Co.	Gear Lube EP	EP150	EP220	EP320	EP460	
Rocol	Sapphire Hi-Torque		220	320	460	680
Sasol Oil (Pty) Limited	Cobalt	150	220	320	460	680
	Hemat	150	220	320	460	680
Shell Oils	Omala	150	220	320	460	680
	Omala F	150	220	320	460	680
Texaco Limited	Meropa	150	220	320	460	680
Total	Carter EP	150	220	320	460	
Tribol GmbH	Molub-Alloy Gear Oil	814	90	690	140	190
	Tribol 1100	150	220	320	460	680

SYNTHETIC OILS

LUBRICANT SUPPLIER	LUBRICANT RANGE NAME	ISO VISCOSITY / DBR GRADE NO.					
		100 / 3H	150 / 4H	220 / 5H	320 / 6H	460 / 7H	680 / 8H
Batoyle Freedom Group	Titan	100	150	220	320		
Boxer Services Limited	Silkgear	100	150	220	320	460	680
BP Oil International Limited	Enersyn EPX				320		
Caltex	Pinnacle EP	100	150	220	320	460	
Carl Bechem GmbH	Berusynth GP		150	220	320	460	
Castrol International	Alphasyn EP		150	220	320	460	
	Alphasyn T	100	150	220	320	460	680
Chevron Lubricants	Tegra		150	220	320	460	680
Esso/Exxon	Spartan Synthetic EP	100	150	220	320	460	
Fina	Giran P		150	220	320	460	
Fuchs Lubricants (UK) Plc	Renogear SG		150	220	320		
Fuchs Mineraloelwerke GmbH	Renolin Unisyn CLP	100	150	220	320	460	680
Klüber Lubrication	Klübersynth GEM 4	100	150	220	320	460	680
Kuwait Petroleum International	Q8 Schumann	100					
	Q8 EL Greco		150	220	320	460	
Lubrication Engineers Inc	Synolec Gear Lubricant			9920			
Mobil Oil Company Limited	Mobilgear SHC			220	320	460	680
	Mobilgear SHC XMP		150	220	320	460	680
Optimol Ölwerke GmbH	Optigear Synthetic A	100		220	320		
Petro-Canada	Super Gear Fluid		150	220	320	460	
Shell Oils	Omala HD	100	150	220	320	460	680
Texaco Limited	Pinnacle EP	100	150	220	320	460	
Total	Carter EP/HT		150	220	320	460	
Tribol GmbH	Tribol 1510	100	150	220	320	460	680

TABLE 4 APPROVED GREASES

MINERAL GREASES

		NLGI GRADE NUMBER				
		2	1	0	00	000
LUBRICANT SUPPLIER	LUBRICANT RANGE NAME	GRADES AVAILABLE				
BP Oil International Limited	Energrease LS-EP		✓	✓ (1)	✓	
Caltex	Coupling Grease		✓	✓ (1)		
Carl Bechem GmbH	Berulit GA 800				✓	
Castrol International	CLS Grease				✓	
	LMX Grease					
	Spheerol AP	✓				
	Spheerol EPL	✓	✓	✓		
Klüber Lubrication	Klüberplex GE 11-680			✓		
Mobil Oil Company Limited	Mobilux EP 111		✓	✓ (1)		
Omega Manufacturing Division	Omega 85	✓		✓		
Optimol Ölwerke GmbH	Longtime PD	✓	✓	✓	✓	
	Optitemp OG			✓		
Shell Oils	Albida RL	✓	✓	✓ (1)		
	Alvania EP B	✓				
	Alvania EP LF	✓	✓	✓	✓	
	Alvania WR2	✓				
	Coupling Grease		✓	✓ (1)		
	Semi Fluid EP				✓	
Texaco Limited	Coupling Grease		✓	✓ (1)		

SYNTHETIC GREASES

		NLGI GRADE NUMBER				
		2	1	0	00	000
LUBRICANT SUPPLIER	LUBRICANT RANGE NAME	GRADES AVAILABLE				
Mobil Oil Company Limited	Mobilith SHC	✓	✓	✓ (1)	✓	
Shell Oils	Nerita HV	✓				
	Tivela Compound A				✓	
	Tivela Compound GL				✓	

NOTE (1) This grease has an NLGI grade of 1 but is approved for use where NLGI grade 0 is required.

X620 COUPLING LUBRICATION

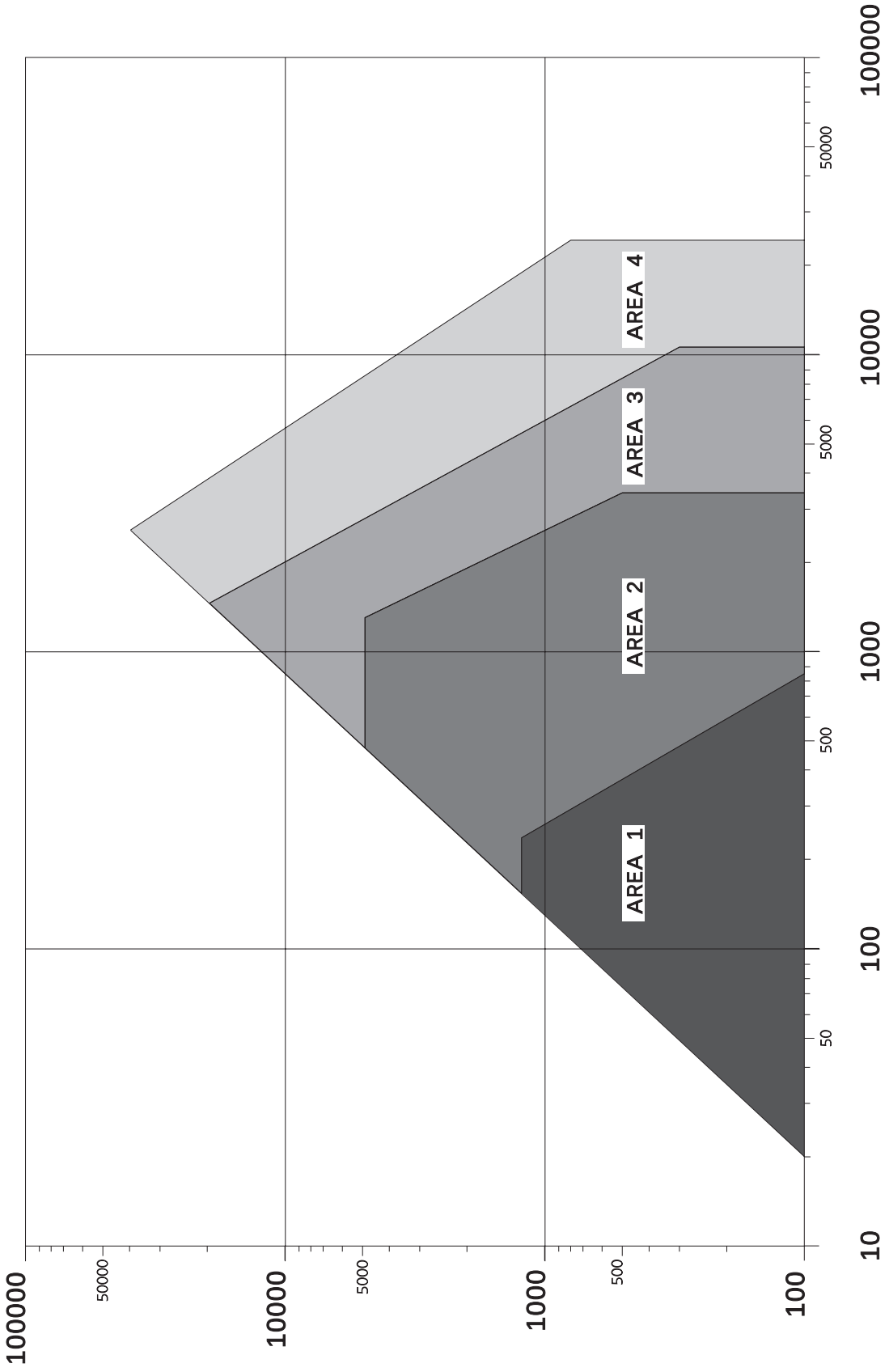


TABLE 5 GREASE OR OIL GRADE

MINERAL OIL OR GREASE

AMBIENT TEMPERATURE RANGE °C	GREASE or OIL	LUBRICATION AREA			
		1	2	3	4
0 to 30	GREASE NLGI No	0	0 or 1	1 or 2	00
	OIL ISO VG	150 (4E)	150 (4E)	220 (5E)	220 (5E)
10 to 50	GREASE NLGI No	0	0 or 1	1 or 2	00
	OIL ISO VG	220 (5E)	320 (6E)	320 (6E)	460 (7E)
40 to 80	GREASE NLGI No	0	1	1 or 2	00
	OIL ISO VG	460 (7E)	460 (7E)	680 (8E)	680 (8E)

SYNTHETIC OIL OR GREASE

AMBIENT TEMPERATURE RANGE °C	GREASE or OIL	LUBRICATION AREA			
		1	2	3	4
-30 to 10	GREASE NLGI No	0	0	0 or 1	00
	OIL ISO VG	100 (3H)	150 (4H)	220 (5H)	220 (5H)
-10 to 30	GREASE NLGI No	0	0 or 1	0 or 1	00
	OIL ISO VG	220 (5H	220 (5H)	320 (6H)	320 (6H)
20 to 50	GREASE NLGI No	0	0 or 1	1	00
	OIL ISO VG	220 (5H)	320 (6H)	320 (6H)	460 (7H)
40 to 80	GREASE NLGI No	0	1	1 or 2	00
	OIL ISO VG	320 (6H)	460 (7H)	460 (7H)	680 (8H)

Figures in brackets refer to the David Brown Radicon designation

TABLE 6 GREASE AND OIL QUANTITIES

COUPLING SIZE	COUPLING TYPE					
	X621		X622		X623	
	GREASE (Kg)	OIL (LITRES)	GREASE (Kg)	OIL (LITRES)	GREASE (Kg)	OIL (LITRES)
02	0.082	0.096	0.041	0.045	0.041	0.048
03	0.154	0.176	0.086	0.096	0.077	0.088
04	0.209	0.240	0.140	0.160	0.105	0.120
05	0.363	0.410	0.210	0.240	0.182	0.205
06	0.453	0.530	0.260	0.290	0.228	0.265
07	0.770	0.910	0.500	0.570	0.385	0.455
08	0.950	1.080	0.540	0.620	0.475	0.540
09	1.680	1.870	0.860	0.960	0.840	0.935
10	2.260	2.610	1.040	1.190	1.130	1.305

2.0 MAINTENANCE

2.1 LUBRICANT CHANGE INTERNALS

The initial fill of lubricant requires changing after 1000 operating hours or one year or half the subsequent operating hours see table 7 page 10. Table 7 gives the allowable coupling operating hours for various ambient temperature ranges and coupling operating regime.

2.2 DISMANTLING

a) Oil filled couplings are drained using the filler plug.

b) Dismantling

i) Type X621 and X623

Remove flange fasteners, separate sleeves or sleeve from the flange in thecase of the X623 coupling and slide over the hub.

If grease filled, clean out old lubricant and inspect seals and gear teeth. Refill with grease and then reassemble coupling starting at Section 1.2 shaft alignment.

Oil lubricated couplings, after seal and gear teeth inspection, re-assemble starting at section 1.2 shaft alignment.

ii) Type X622

Remove housing fasteners and separate housing from sleeve. Slide sleeve over hubs and clean out old lubricant.

Inspect seals and gear teeth and refill with grease if grease lubricated, re-assemble coupling starting at section 1.2 shaft alignment.

iii) Type X629

This coupling requires no maintenance.

TABLE 7 LUBRICANT CHANGE INTERVALS

MINERAL OIL BASED GREASES

AMBIENT TEMPERATURE RANGE °C		COUPLING OPERATING HOURS (1)			
		LUBRICANT NUMBER (2)			
ABOVE	TO	ABOVE 0 TO 1	ABOVE 1 TO 2	ABOVE 2 TO 4	ABOVE 4 TO 8
0	30	12000 (3 YEARS)	9000 (3 YEARS)	6000 (2 YEARS)	3500 (14 MONTHS)
10	50	4200 (17 MONTHS)	3200 (13 MONTHS)	2900 (12 MONTHS)	1250 (5 MONTHS)
40	80	520 (2 MONTHS)	400 (1.5 MONTHS)	260 (1 MONTH)	160 (0.5 MONTHS)

SYNTHETIC OIL BASED GREASES

AMBIENT TEMPERATURE RANGE °C		COUPLING OPERATING HOURS (1)			
		LUBRICANT NUMBER (2)			
ABOVE	TO	ABOVE 0 TO 1	ABOVE 1 TO 2	ABOVE 2 TO 4	ABOVE 4 TO 8
-30	10	22500 (3 YEARS)	22500 (3 YEARS)	22500 (3 YEARS)	22500 (3 YEARS)
-10	30	22500 (3 YEARS)	22500 (3 YEARS)	22500 (3 YEARS)	19000 (3 YEARS)
20	50	17500 (3 YEARS)	9000 (3 YEARS)	6700 (2.25 YEARS)	4400 (1.5 YEARS)
40	80	2150 (9 MONTHS)	1600 (6 MONTHS)	1200 (5 MONTHS)	800 (3 MONTHS)

MINERAL OIL

AMBIENT TEMPERATURE RANGE °C		COUPLING OPERATING HOURS (1)			
		LUBRICANT NUMBER (2)			
ABOVE	TO	ABOVE 0 TO 1	ABOVE 1 TO 2	ABOVE 2 TO 4	ABOVE 4 TO 8
0	30	18000 (3 YEARS)	18000 (3 YEARS)	18000 (3 YEARS)	18000 (3 YEARS)
10	50	18000 (3 YEARS)	18000 (3 YEARS)	18000 (3 YEARS)	18000 (3 YEARS)
40	80	18000 (3 YEARS)	18000 (3 YEARS)	9000 (3 YEARS)	3000 (1 YEAR)

SYNTHETIC OIL

AMBIENT TEMPERATURE RANGE °C		COUPLING OPERATING HOURS (1)			
		LUBRICANT NUMBER (2)			
ABOVE	TO	ABOVE 0 TO 1	ABOVE 1 TO 2	ABOVE 2 TO 4	ABOVE 4 TO 8
-30	10	26000 (3 YEARS)	26000 (3 YEARS)	26000 (3 YEARS)	26000 (3 YEARS)
-10	30	26000 (3 YEARS)	26000 (3 YEARS)	26000 (3 YEARS)	26000 (3 YEARS)
20	50	26000 (3 YEARS)	26000 (3 YEARS)	26000 (3 YEARS)	26000 (3 YEARS)
40	80	26000 (3 YEARS)	26000 (3 YEARS)	15000 (3 YEARS)	7500 (2.5 YEARS)

NB Initial fill of grease or oil in a new coupling should be changed after 1000 operating hours or one year or half the above life which ever is the soonest

NOTES 1) The grease or oil is to be renewed after this number of coupling operating hours or the time interval given in brackets

2) Lubricant number $= \left[\frac{N}{6000}\right]^2 (2.5S + 3)$ where N = coupling rotation speed (rev/min)
S = coupling size

GENERIC COUPLING (SHOWING HIDDEN DETAIL)