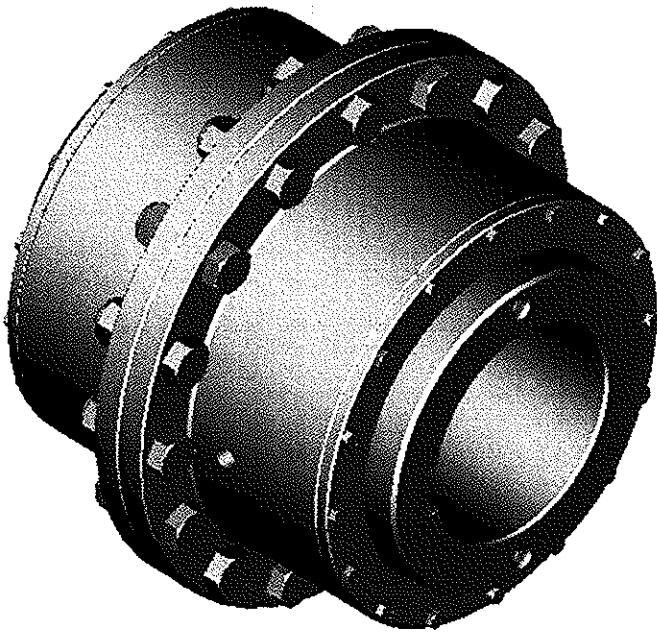


620 Series

Gear Type Flexible Couplings



Installation and Maintenance
Manual

620 Series Gear Type Flexible Couplings

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 Gear Industries(Pty) 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.

1. Fire/Explosion
 - a. Oil mists and vapour are generated within gear units. It is therefore dangerous to use naked light 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 defenses should be provided in these circumstances.
4. Lifting- Where provided, only the lifting points or eyebolts should be used for lifting operations (see Maintenance and Installation manuals or general arrangement drawings for lifting 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 the raised equipment.**
5. Lubricants and Lubrication
 - a. Prolonged contact with lubricants can be detrimental to the skin. The manufacturer's instruction must be followed when handling lubricants.
 - b. The lubrication status of the equipment must be checked before commissioning. Read and carry out all instruction 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.
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 the equipment is to be held in storage, for a period exceeding six (6) months, prior to installation or commissioning, David Brown Gear Industries (Pty) Limited must be consulted regarding special preservative requirements. Unless otherwise agreed, equipment must be stored in a building protected from extremes of temperature and humidity to prevent deterioration.
 - 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.
 - 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 Gear Industries (Pty) Limited approved spares 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 system 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 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 any 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:

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620 Series Gear Type Flexible Couplings

FLANGE TYPE – 621, 623 and 629 (Full Rigid)

Installation

1. Ensure all parts are clean and free from grit before assembly.
2. Lightly grease 'O' rings and insert into grooves of each sleeve over shaft ends.
3. Check that keys fit and coat each key and keyway with grease-resistant sealing compound to prevent leakage. Install hub on shafts with long bosses flush with shaft ends. For press fits, apply tallow to hub bores and shafts, ensure hubs are square with shafts and keyways are in line before pressing on.
4. Align shafts and check hub gap with a taper or feeler gauge at four points 90° apart. Peripheral and facial alignment to be correct within $\pm 0.05\text{mm}$.
5. Completely fill hub and sleeve teeth with lubricant and slide sleeves into position on hubs, taking care when engaging teeth. Insert locating ring into recess of a sleeve, place gasket between sleeves and align bolt holes.
6. Bolt sleeves together, taking care to tighten bolts uniformly, according to the table below.

Maximum Bolt Torque Tightening Values.

621/3	Max Torque [kg.m]
02	5,760
03	9,216
04	23,042
05	23,042
06	46,084
07	46,084
08	46,084
09	80,648
10	80,648

7. Remove lubrication plugs and fill with correct grade of lubricant. Fit plugs and seat correctly. A grease which is stable and not centrifuge is normally used with 620 Series couplings. See the table below for lubricant quantities.

Lubricant Masses and capacities.

621 size	Mass [kg]	Volume [l]	623 size	Mass [kg]	Volume [l]
02	0.082	0.096	02	0.041	0.048
03	0.154	0.176	03	0.077	0.088
04	0.209	0.240	04	0.105	0.120
05	0.363	0.410	05	0.182	0.205
06	0.453	0.530	06	0.227	0.265
07	0.770	0.910	07	0.385	0.455
08	0.950	1.080	08	0.475	0.540
09	1.680	1.870	09	0.840	0.935
10	2.260	2.610	10	1.130	1.305

The above procedure is applicable to double engagement type (621) couplings. For single engagement type (623) couplings flexible half should be assembled as above and the rigid half simply pressed or slipped onto the shaft. Rigid type (629) couplings only require pressing onto shaft.

620 Series Gear Type Flexible Couplings

Installation

To Dismantle. Remove flange fasteners, separate sleeves and slide them over hubs, clean out old lubricant and inspect seals and gear teeth, refill with new grease. Re-assemble coupling, starting with point 4 under installation instructions.

If shafts are in correct alignment, or it is impractical to dismantle the coupling, remove lubrication plug when in the horizontal position and add grease to the point of overflow. Rigid halves or full rigid couplings require no maintenance other than alignment checks.

Recommended Lubricants

The following list is not intended to be complete or necessarily current due to continuous research by suppliers, but is given as a general recommendation only.

Lubricant Supplier	General	High Torque	65°-150°C Temp
Esso Petroleum Co.Ltd	Esso Beacon E.P.2	Esso pen-o-Led E.P. 350	Esso Beacon E.P.2
Gulf Oil (Gt. Britain) Ltd.	Gulf Supreme Grease E.P. No 2	Gulfcrown Grease E.P. No 2	Gulfcrown Grease E.P. No 2
Mobil Oil Co. Ltd.	Mobil Grease No. 234	Mobile Grease No. 234	Mobil Grease Larital No.2
Regent Oil Co. Ltd. & Caltex Companies	Marfak 1	Marfak H.D.E.P. 2	Marfak 3
The Shell Group of Companies	Alvania Grease E.P.1 or 2	Alvania Grease E.P. 1 or 2	Alvania Grease E.P. 1 or 2

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CONTINUOUS SLEEVE TYPE – 622 and 624

Installation

1. Ensure all parts are clean and free from grit before assembly.
2. Lightly grease 'O' rings and insert into grooves of each sealing ring housing.
3. Place gasket over spigot of each housing then pass sleeve and housing over shaft ends ensuring male spigot of each housing is toward shaft end.
4. Check that keys fit and coat each key and keyway with grease-resistant sealing compound to prevent leakage. Install hub on shafts with short bosses flush with shaft ends. For press fits, apply tallow to hub bores and shafts, ensure hubs are square with shafts and keyways are in line before pressing on.
5. Align shafts and check hub gap with a taper or feeler gauge at four points 90° apart. Peripheral and facial alignment to be correct within $\pm 0.05\text{mm}$.
6. Completely fill hub and sleeve teeth with lubricant and slide sleeves into position on hubs, taking care when engaging teeth.
7. Align housings, gaskets and sleeve screw holes and secure together at each side of sleeve, taking care to tight screws uniformly, according to the table below.

Maximum Screw Torque Tightening Values.

622/4	Max Torque [kg.m]
02	1.25
03	1.25
04	2.60
05	2.60
06	5.76
07	5.76
08	5.76
09	5.76
10	5.76

8. Remove lubrication plugs and fill with correct grade of lubricant. Fit plugs and seat correctly. A grease which is stable and not centrifuge is normally used with 620 Series couplings. See the table below for lubricant quantities.

Lubricant Masses and capacities.

622 size	Mass [kg]	Volume [l]	624 size	Mass [kg]	Volume [l]
02	0.041	0.045	02	0.021	0.023
03	0.086	0.096	03	0.043	0.048
04	0.140	0.160	04	0.070	0.080
05	0.210	0.240	05	0.105	0.120
06	0.260	0.290	06	0.130	0.145
07	0.500	0.570	07	0.250	0.285
08	0.540	0.620	08	0.270	0.310
09	0.860	0.960	09	0.430	0.480
10	1.040	1.190	10	0.520	0.595

The above procedure is applicable to double engagement type (622) couplings. For single engagement type (624) couplings ensure that the sleeve is positioned on the shaft carrying the flexible half at 3 o'clock.

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Installation

To Dismantle. Remove housing and rigid half screws (single engagement type) and separate housings from sleeve. Slide sleeve over hubs, clean out old lubricant and inspect seals and gear teeth, refill with grease. Re-assemble coupling, starting with point 5 under installation instructions.

If shafts are in correct alignment, or it is impractical to dismantle the coupling, remove lubrication plug when in the horizontal position and add grease to the point of overflow.

620 Series Gear Type Flexible Couplings

NOTES

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