GENERAL INFORMATION

The following instructions will help you achieve a satisfactory installation of your Series B unit, ensuring the best possible conditions for a long and trouble free operation.

All units are tested and checked prior to shipment; a great deal of care is taken in packing and shipping arrangements to ensure that the unit arrives at the customer in the approved condition.

Optimum performance is best achieved by a process of gradual load increments, up to the full value, over the first 50 hours or so of their working life. During these early stages of running, sensible precautions should be taken to avoid overloads.

The gear unit operating temperature may be higher during this period of run-in. A progressive reduction in temperature may occur over many hours until the unit has reached its highest efficiency.

Mounting of Component to Input or Output Shaft

Reference shaft dimensions and tolerances in Series B Catalog

A. Components such as gears, sprockets, couplings, etc. should not be hammered onto shafts since it may damage the shaft support bearings.

B. The component should be pushed onto the shaft using hydraulic or hand press with the shaft supported at the opposite end.

Weather Protection of Unit

All Series B units are provided with protection against normal weather conditions. Where units are to operate in extreme conditions, or where they are to stand for long periods without running, e.g. during plant construction, Cone Drive should be notified during time of order so arrangements can be made to provide adequate protection.

Installation

Motorized and Reducers

- All sizes are factory filled with a high quality synthetic lubricant. They are “Lubricated for Life” and require no routine maintenance in service.

Lubrication

Series B units are factory filled with a high quality synthetic lubricant. They are “Lubricated for Life” and require no routine maintenance in service.

If oil is added or replaced, refer to Table 1 for a list of approved lubricants. Lubricant quantities are given in Tables 2 & 3.

TABLE 1: TYPE H POLYALPHAOLEFIN BASED SYNTHETIC LUBRICANTS

Supplier	Lubricant Range	Oil Suppliers’ Corresponding Designations
Chevron-Texaco	Clarity Synthetic PMO	460 (-23)
Exxon Mobil Corporation	SHC 600 Series	634 (-34)

These lubricants are suitable for ambient temperatures of 32°F to 104°F (0°C to 40°C); outside of the ambient range, please contact Cone Drive Application Engineers

DANGER Numbers in brackets indicate recommended minimum operating temperature in °F. The unit must not run below listed temperature.

TABLE 2: LUBRICANT QUANTITIES FOR ALL MOUNTING POSITIONS

Motorized or Reducer	GEARBOX SIZE									
	UNITS	B02	B03	B04	B05	B06	B08	B09	B10	B11
Oil Capacity	QUARTS	0.14	0.26	0.34	0.45	0.58	0.96	1.48	2.00	1.70
	LITERS	0.13	0.25	0.33	0.43	0.55	0.91	1.40	1.89	1.61

TABLE 3: DOUBLE REDUCTION LUBRICANT QUANTITIES

UNITS	GEARBOX SIZE											
	B0521		B0621		B0821		B0921		B1021		B1121	
	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
QUARTS	0.14	0.6	0.14	0.8	0.34	1.25	0.34	1.8	0.45	2.60	0.45	2.21
LITERS	0.13	0.57	0.13	0.76	0.33	1.18	0.33	1.7	0.43	2.46	0.43	2.09

IMPORTANT

General - The following information is important in ensuring safety. It **must** be brought to the attention of personnel involved in the selection of 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.

Our 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 vapor 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 (over 570 °F (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 state and federal regulations 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 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 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, we 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 our 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 backstop facility, ensure that back-up systems are provided if failure of the backstop 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 catalog 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 contacting our Application Engineers.