

Installation

Gearbox Installation

Satisfactory performance depends on proper installation, lubrication and maintenance. Therefore it is important that the instructions in the Installation and Maintenance leaflet, supplied with each gearbox, are followed carefully. Some of the important aspects of belt and torque-arm installation are listed below.

Install pulley on gearbox input shaft as close to the reducer as

possible. See Fig 1. Failure to do this will cause excess loads in the input shaft bearings and could cause their premature failure.

Install motor and belt drive with the belt pull at approximately 90° to the center line between driven and input shafts. See Fig 2. This will permit tensioning of the belt drive with the torque arm, which should preferably be in tension. If output hubs runs counter-

clockwise, torque arm should be positioned to the right. See Fig 3. Install torque-arm on a rigid support so that the torque arm will be at approximately right angles to the center line through the driven shaft and the torque-arm case bolt. See Fig 4. Make sure there is sufficient take-up in the turn-buckle for belt tension adjustment.

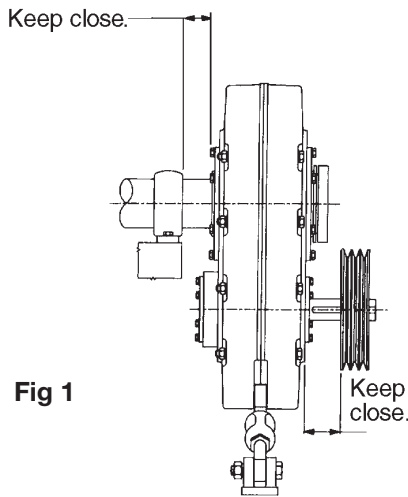


Fig 1

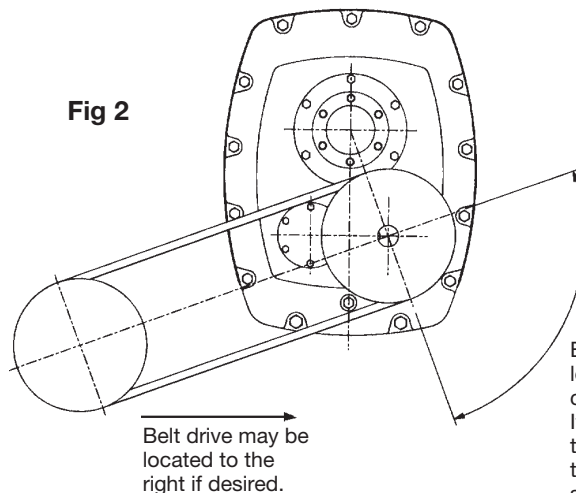


Fig 2

Belt drive may be located in any convenient position. If the Torque arm is to be used to tighten the belts, the drive should be at about 90° to line between the Input and Output Shafts.

If output hub rotates clockwise, position Belt drive and Torque arm in opposite direction to that shown in the illustration.

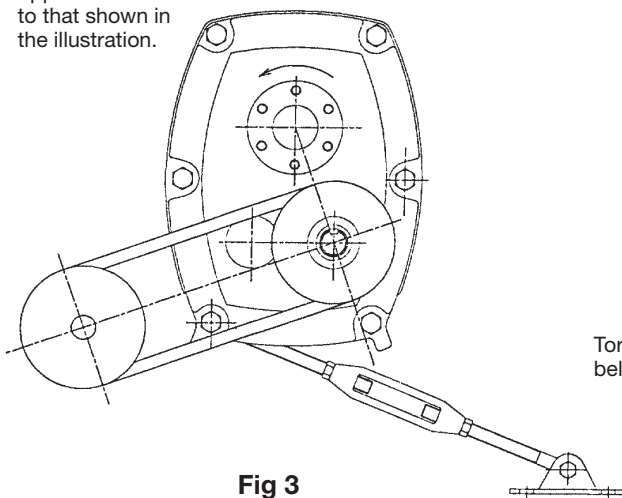
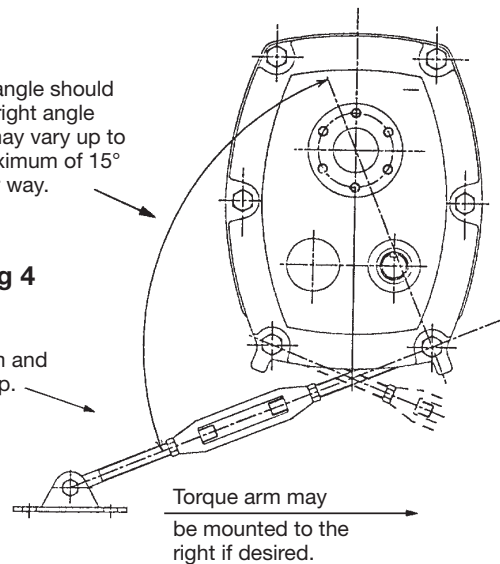


Fig 3

This angle should be a right angle but may vary up to a maximum of 15° either way.

Torque arm and belt take up.

Fig 4



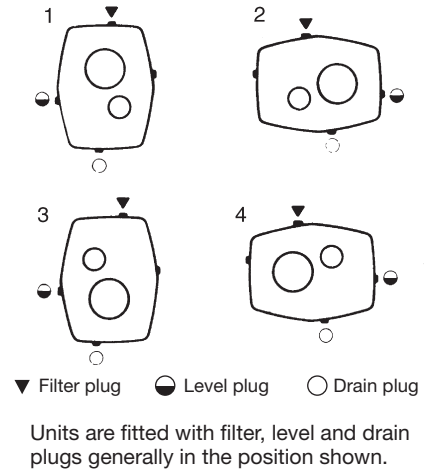
Torque arm may be mounted to the right if desired.

HSM Shaft Mount Speed Reducers are shipped **without oil**. Before running they should be filled with an appropriate amount of the correct lubricant as shown in the tables.

Lubrication

Table 4. Approximate Oil Quantity (gallons) Required for Mounting Positions

Unit Size	Approximate Capacity (gallons)							
	Ratio = 5:1				Ratio = 14:1, 20:1 and 25:1			
	Mounting Position				Mounting Position			
	1	2	3	4	1	2	3	4
107C	0.13	0.13	0.13	0.16	0.11	0.16	0.13	0.16
115D	0.21	0.24	0.21	0.26	0.18	0.24	0.21	0.24
203E	0.32	0.45	0.37	0.48	0.26	0.48	0.37	0.42
207F	0.66	0.69	0.63	0.66	0.61	0.69	0.63	0.58
215G	0.87	0.85	0.85	0.87	0.79	0.85	0.85	0.85
307H	1.08	1.40	1.08	1.53	1.00	1.45	1.11	1.35
315J	1.51	2.27	1.56	2.27	1.43	2.25	1.56	2.19
407S	2.88	4.86	3.59	4.86	2.40	4.33	3.33	4.07
415K	4.02	5.73	6.66	5.47	3.36	5.73	4.15	5.07
507L	-	-	-	-	5.94	9.11	13.7	7.13
608M	-	-	-	-	9.51	13.2	20.9	11.9



Recommended Lubricants

Table 5. Mineral Oil

I.S.O. Viscosity Grade	Ambient Temp. °F	5:1 RATIO REDUCERS				14, 20 & 25:1 RATIO REDUCERS						
		0-100 RPM	101-200 RPM	201-400 RPM		0-20 RPM	21-50 RPM	51-120 RPM		0-50 RPM	51-80 RPM	
		107C-407S	107C-407S	107C	115D-407S	107C-407S	107C-115D	203E-407S	107C-115D	203E-407S	415K-608M	
14 to 40		100	100	100	68	150	150	150	100	100	100	100
41 to 80		460	320	320	220	680	680	460	460	320	320	220
81 to 105		800	680	680	460	800	800	800	680	460	460	320

Table 6. Manufacturers and Types

BP ENERGOL GR-XP	CASTROL ALPHAZN ORSP	MOBIL MOBILGEAR & SHC	SHELL OMALA	TEXACO MEROPA	EXXON SPARTAN
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Note: Do not use E.P. mineral oils other than those recommended when using a backstop.

Taper-Grip Bushing®

Table 1. Taper-Grip® Bushing Screw Torques

SM-Shaft Mount Size	Original Taper-Grip® Bushing Screw Torque		New STEEL Taper-Grip® Bushing Screw Torque	
	Nm	lb. ft.	Nm	lb. ft.
107C	31	23	50	37
115D	31	23	55	41
203E	51	37.5	75	56
207F	51	37.5	140	104
215G	128	94	250	185
307H	245	180	250	185
315J	245	180	250	185
407S	245	180	250	185
415K	245	180	300	223
507L	245	180	300	223
608M	245	180	330	223

Table 2. Shaft Tolerances

Shaft Dia.	Tolerance
3/4 - 1 1/8	+0 -.005"
1 3/16 - 2	+0 -.006"
2 1/16 - 3 1/8	+0 -.007"
3 3/16 - 4 3/4	+0 -.008"
4 13/16 - 6 1/2	+0 -.009"

