

# Series K Gearboxes : Installation and Maintenance

Satisfactory performance depends on proper installation, lubrication and maintenance. All instructions given in the installation leaflet must be followed carefully.

### SHAFT MOUNTING

Ensure that the shaft on to which the gear unit is to be mounted and the gear unit bore are clean and free from burrs.

Liberal smear the shaft and bore with a suitable lubricant to aid assembly and prevent fretting corrosion. Slide the unit on to the driven shaft. Fit side fitting key. **DO NOT USE TAPER OR TOP FITTING KEY.**

### FOOT MOUNTING

Mount the unit securely to a rigid structure. Fit the output extension shaft as required. Use flexible couplings such as Fenaflex for shaft to shaft connections and ensure that shaft misalignment is within the coupling's capacity. When a pulley or sprocket is fitted to either shaft, mount it as close as possible to the gearcase.

When fitting or removing drive components do not hammer on shaft as this will damage the bearings, Fenner Taper Lock bushes permit easy fixing and dismantling without undue force.

### LUBRICATION

Sizes 890 to 893 will be supplied with a quantity of EP mineral oil (VG 320 grade) for mounting position B3. Other mountings must be specified on order. However if, the unit is supplied without lubricant then the oil quantity can be

obtained from Tables 1 & 2 on page 310. Sizes 894 to 898 are supplied without oil. Before running they should be filled with an appropriate amount of the correct lubricant shown in tables 1 & 2 page 310, dependent on the mounting position, see below.

**WARNING** Do not overfill as excess lubricant may cause overheating and leakage.

### OIL CHANGES

Sizes 890, 891 and 892 are lubricated for life except when the units are required to work in an explosive atmosphere. (94/9/EC Atex 100a Group II category 2 zones 1 & 21 & category 3 zones 2 & 22). See separate leaflet for recommendations. All other sizes will require an oil change depending on the unit operating temperature. Initial fill of oil should be changed in a new gear unit after 1000 hours operation or one year or half the life in the table below whichever is the soonest.

Operating Temp °C	Renewal Period (Hours)	
	Mineral Oil	Synthetic Oil
75 or less	17000 or 3 yrs	26000 or 3 yrs
80	12000 or 3 yrs	26000 or 3 yrs
85	8500 or 3 yrs	21000 or 3 yrs
90	6000 or 2 yrs	15000 or 3 yrs
95	4200 or 17 mths	10500 or 3 yrs
100	3000 or 12 mths	7500 or 2.5 yrs
105	2100 or 8 mths	6200 or 2 yrs
110	1500 or 6 mths	2100 or 18 mths

### TEMPERATURE LIMITATIONS

The standard lubricant is suitable for operation in ambient temperatures of 0 to 35°C, outside of this consult your local Authorised Distributor.

### BREATHERS/MOUNTING POSITIONS

Sizes 890, 891 & 892 are supplied for operation without breathers.

Size 893 is supplied for operation with a breather but to prevent leakage during transit this unit is fitted with blanking plugs. It is essential that when the unit is in its operating position the relevant blanking plug is removed and replaced by the breather plug (supplied) in the position indicated on the installation leaflet.

Sizes 894 to 898 are supplied for operation with a breather but are despatched without oil.

It is essential that when the unit is in its operating position the relevant blanking plug is removed and replaced by the breather plug (supplied) in the position indicated on the installation leaflet.

### STARTING UP

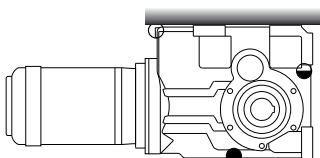
Prior to starting up the following procedure should be followed:

- 1: Ensure Ventilator is fitted (size 893 and above)
- 2: Check Oil level (893 and above) top up if necessary
- 3: Ensure all safety devices are in place (i.e. guards fitted)
- 4: Remove any devices fitted to prevent machine rotation

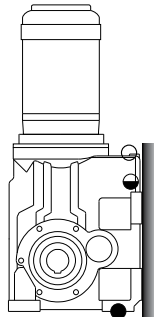
Starting up should be performed or supervised by suitably qualified personnel.

### MOUNTING POSITIONS

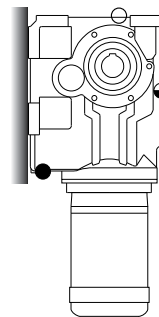
Ceiling Mounted (B8)



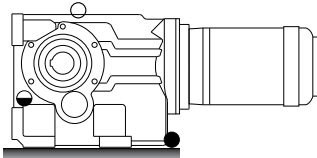
Right Hand Wall Mounting (B7)†



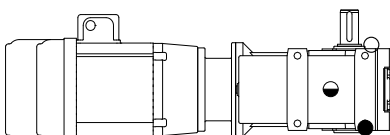
Left Hand Wall Mounting (B6)†\*



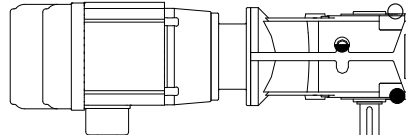
Flange Mounting Shaft Up (V3)



Vertical Mounting Shaft Up (V6)  
Standard Floor Mounting (B3)



Wall Mounting Shaft Down (V5)  
Shaft Down Flange Mounting (V1)



† Gear units for use in mounting positions B6 & B7 should only be selected with overall ratios greater than or equal to those shown in the table below.

\* Mounting position B6 is not recommended for geared motors. Consult your local authorised distributor.

Unit Size	Input Speed (rpm)			
	1000	1500	1800	>1800
890-895	All	All	All	Consult your local distributor
896	All	11:1	14:1	
897	11:1	20:1	25:1	
898	16:1	32:1	36:1	

Plug positions apply for sizes 893 and larger.

- Ventilator/Filling Position
- Level Position
- Drain Position

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### LUBRICATION QUANTITY (LITRES)

Lubricant quantities are intended as a guide only.  
Fill gearbox until oil escapes from level plug.

**TABLE 1: TRIPLE REDUCTION**

Unit Size	Mounting Position					
	B3	V6/V3	V5/V1	B8	B7	B6
890	0.5	0.8	0.7	1.0	1.2	0.9
891	0.7	1.1	0.9	1.3	1.7	1.2
892	1.1	1.7	1.5	1.9	2.5	2.0
893	1.5	2.8	1.8	2.7	3.6	2.6
894	2.7	4.0	3.6	4.5	5.7	4.5
895	4.4	7.6	3.7	7.5	9.6	7.6
896	9.3	18.0	8.3	17.0	21.0	16.0
897	15.0	28.0	15.0	30.0	34.0	25.0
898	23.0	33.0	27.0	39.0	50.0	35.0

**TABLE 2: LUBRICATION QUANTITY (LITRES) QUINTUPLE REDUCTION**

ISO Viscosity	Mounting Position											
	B3		V5/V1		V6/V3		B8		B7		B6	
	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
890	0.5	0.5	0.5	0.8	0.5	0.7	0.5	1.0	0.7	1.2	1.0	0.9
891	0.5	0.7	0.5	1.1	0.5	0.9	0.5	1.3	0.7	1.7	1.0	1.2
892	0.8	1.1	0.8	1.7	0.8	1.5	0.8	1.9	1.1	2.5	1.4	2.0
893	0.8	1.5	0.8	2.8	0.8	1.8	0.8	2.7	1.1	3.6	1.4	2.6
894	0.8	2.7	0.8	2.7	0.8	2.7	0.8	2.7	1.1	5.7	1.4	4.5
895	1.5	4.4	1.5	7.6	1.5	3.7	1.5	7.5	2.0	9.6	2.6	7.6
896	1.5	9.3	1.5	18	1.5	8.3	1.5	17.0	2.0	21.0	2.6	16.0
897	2.6	15.0	2.6	28	2.6	15	2.6	30.0	3.2	34.0	4.7	25.0
898	2.6	23.0	2.6	33	2.6	27	2.6	39.0	3.2	50.0	4.7	35.0

### LUBRICANT TYPE

ISO Viscosity	Ambient Temperature °C			
	-30°C to 20°C	-5°C to 20°C	0°C to 35°C	20°C to 50°C
EP Mineral Oil	-	220	320	460
Synthetic Oil 1	220	-	220	320
Synthetic Oil 2	220	-	320	460

Synthetic Oil 1 = Polyalphaolefin based.

Synthetic Oil 2 = Polyglycol based

### RECOMMENDED OIL GRADES

Supplier	Mineral Oils Containing EP Additives	Synthetic Lubricants Polyglycol Based	Synthetic Lubricants Polyalphaolefin based
BP	Energol GR-XP or XF	Energyn SG-XP	Energyn EPX
Castrol	Alpha Max or SP	Alphasyn PG	Alphasyn EP or T
Esso	Spartan EP	Glycolube	Spartan Synthetic EP
Fuchs	Renogear V or WE	Renolin PG	Renogear SG
Mobil	Mobilgear 600	Glygoyle	Mobilgear SHC
Shell	Omala or Omala F	Tivela or Tivela S	Omala HD
Texaco	Meropa or Meropa WM	Synlube CLP	Pinnacle EP
Total	Carter EP	Carter SY	Carter EP/HT
Rocol	Sapphire Hi-Torque	-	-