

Series M Gearboxes : Installation and Maintenance

INSTALLATION

Freedom from vibration and correct alignment are the two main points to be considered when installing Gearmotors. Attention to these points will prolong the life and efficiency of the entire drive.

The shafts of the prime mover, unit and driven equipment, should be in as perfect alignment as possible. Misaligned shafts impose abnormal stress on bearings and couplings, leading to excessive wear and possibly early failure.

Vibration accelerates bearing and gear wear, resulting in noisy operation. Alignment can be maintained and vibration eliminated, by mounting the drive on rigid foundations of adequate proportions and dowelling the units in position. Fenaflex couplings are recommended when the shaft alignment cannot be assured and also when protection from peak and vibratory torques is desirable. After installation, regular inspection should be carried out to check the tightness of the fixing bolts and also the accuracy of alignment.

LUBRICANT TYPE TEMPERATURE RANGE

| ISO Viscosity | Ambient Temperature °C | | | |
|-----------------|------------------------|---------------|-------------|--------------|
| | -5°C to 20°C | -30°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 = Polyalphaolein based. Synthetic Oil 2 = Polyglycol based
The recommended lubricants for Series M are EP mineral oil or synthetic oil type 1.

LUBRICANT QUANTITIES (LITRES)

| ISO Viscosity | 860 | | 801 | | 861 | | 802 | | 862 | | 803 | | 863 | | 864 | | 865 | | 866 | | 867 | | 868 | |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple | Double | Triple |
| B3/B5 | 0.5 | 0.6 | 0.8 | 0.8 | 0.8 | 0.8 | 1.5 | 1.6 | 1.5 | 1.6 | 2.0 | 2.1 | 2.6 | 2.7 | 4.2 | 4.4 | 10.5 | 11.5 | 14 | 15 | 17 | 18 | 24 | 24.5 |
| B7 | 0.8 | 0.9 | 1.2 | 1.3 | 1.2 | 1.3 | 1.8 | 1.9 | 1.8 | 1.9 | 2.0 | 2.1 | 2.9 | 3.0 | 6.3 | 6.5 | 12.0 | 12.0 | 22 | 24 | 31 | 33 | 49 | 50 |
| B6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 1.6 | 1.7 | 1.6 | 1.7 | 1.9 | 2.0 | 2.7 | 2.8 | 5.4 | 5.6 | 12.0 | 12.0 | 22 | 24 | 31 | 33 | 49 | 50 |
| B8 | 0.8 | 0.9 | 1.2 | 1.2 | 1.2 | 1.2 | 1.8 | 1.9 | 1.8 | 1.9 | 1.7 | 1.8 | 3.0 | 3.1 | 7.3 | 7.5 | 12.0 | 12.0 | 19 | 21 | 28 | 30 | 41 | 43 |
| V1/V5 | 0.7 | 0.7 | 1.1 | 1.1 | 1.1 | 1.1 | 2.0 | 2.1 | 2.0 | 2.1 | 2.2 | 2.3 | 3.2 | 3.3 | 6.8 | 6.8 | 16.8 | 16.8 | 32 | 32 | 47 | 47 | 72 | 72 |
| V3/V6 | 1.0 | 1.1 | 1.4 | 1.6 | 1.4 | 1.6 | 2.6 | 2.7 | 2.6 | 2.7 | 2.8 | 2.9 | 4.7 | 4.8 | 9.3 | 9.7 | 16.4 | 16.5 | 26 | 28 | 38 | 40 | 65 | 67 |
| Plug Size | M10 | | M10 | | M10 | | M10 | | M10 | | M10 | | M14 | | M16 | | M16 | | M16 | | M22 | | M22 | |

* For quadruple and quintuple reduction fill quantities please consult your local Authorised Distributor

MOUNTING POSITIONS

Mounting B3

Mounting B8

Mounting V5 †

Mounting V6 †*

Mounting V3 †*

Mounting B6

Mounting B7

Mounting B5

Mounting V1

○ Ventilator/Filling Position ● Level Position ● Drain Position

† Gear units for use in mounting positions V1, V3, V5 and V6 should only be selected with overall ratios greater than or equal to those shown in the table below.
* Mounting positions V3 & V6 are not recommended for geared motors. Please consult your local authorised distributor.

| Unit Size | Input Speed (rpm) | | | |
|-----------|-------------------|------|-------|--------------------------------|
| | 1000 | 1500 | 1800 | >1800 |
| 860-864 | All | All | All | Consult your local distributor |
| 865 | 2:1 | 4:1 | 4.5:1 | |
| 866 | 4:1 | 8:1 | 9:1 | |
| 867 | 6.3:1 | 11:1 | 14:1 | |
| 868 | 12:1 | 18:1 | 22:1 | |

LUBRICATION

Germotors and Reducers

Sizes 860 to 863

Sizes 860 to 863 are supplied ready filled with the required amount and type of lubricant for the mounting position identified in the original order.

Note: If the unit is to be mounted in a different position to that originally intended then the amount of lubricant in the unit will require amending - see table below for required quantities.

Sizes 864 to 868

Sizes 864 to 868 are despatched without oil and should be filled prior to installation. The different mounting positions are indicated below and the tables show the appropriate oil levels. The units have several oil fill and drain plug locations to cater for all mounting positions.

LUBRICANT RENEWAL INTERVALS

| Unit Op 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 |

Oil Changes

Sizes 860 to 863 units are lubricated for life with EP 320 mineral oil. Units that are required to work in an ATEX environment require draining and relubricating in accordance with a separate ATEX installation leaflet.

Sizes 864 to 868 require an oil change after the first 1000 hours operation. Subsequent oil changes should be carried out in line with the table below, depending on your operating temperature.

Do not mix mineral and synthetic lubricants. Do not overfill the unit as this can result in leaking and high running temperatures.

All plugs should be fitted in the correct position and should be torque tightened in accordance with the table below.

BREATHERS/MOUNTING POSITIONS

Sizes 860,801 and 861 are supplied for operation without breathers.

Sizes 802 to 863 are supplied for operation with breathers. To prevent leakage during transit these units are 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 864 to 868 are supplied for operation fitted with a breather but are despatched without oil.