

General

These operating instructions are intended to help you install and operate the drive. For trouble free service, proper installation and operation are essential. Additionally, these instructions contain important recommendations on maintenance.

Before shipment every SEW-Eurodrive gear unit is thoroughly tested, checked, and properly packed. However, please check the drive immediately upon arrival for shortage or transit damage. Note the damage or shortage on the freight bill of lading and file a claim with the carrier. Additionally, notify SEW-Eurodrive of the shortage or damage.

Installation

VARIMOT® units may be foot mounted, flange mounted or attached to a gear unit. The drive installation site should be selected to ensure:

- Ambient temperature below 40°C (104°F).
- Unimpeded flow of air to the motor and variable speed unit.
- Accessibility to the drain, level and breather plugs.
- Adequate space for removal of brakemotor fanguard for brake adjustment and maintenance.

The drive unit should be mounted on a flat, vibration damping, and torsionally rigid structure. Careful alignment is critical. Mounting to an uneven surface will cause housing distortion. The flatness tolerance of the supporting surface should not exceed 0.004 inch.

Installation of Couplings, Sprockets, Sheaves, Etc.

Do not hammer on the shafts. Hammering can cause brinelling of the bearings and a reduction in bearing life.

We recommend heating the components to approximately 175°F and sliding them on. This will reduce possible damage to the bearings.

The VARIMOT® shaft diameters have tolerance of +.0000" - .0005". Tolerance for metric shafts are listed in SEW-Eurodrive catalogs.

Shaft couplings should be properly aligned to prevent vibration, coupling wear and premature failure of the shaft bearings.

Maximum Parallel Offset	0.003 inch
Maximum Angular Offset	0.030°

To prevent the output shaft and bearings from being subjected to excessive loads, the maximum overhung load, as shown in SEW-Eurodrive catalogs, should not be exceeded. Please consult our engineering department if the load may exceed the recommended

figure given or where there are combined radial and axial loads. In such cases, the exact operating conditions must be stated including speed, direction of rotation, position, magnitude, and direction of the external radial and axial loads being applied.

Severe Duty Units

Severe Duty units include drain holes in the traction housing at the lowest points allowing condensation to drain out of the variable speed housings.

CAUTION!

The drain holes are installed for the mounting position listed on the nameplate. Installing a unit in a mounting position other than what is shown on the nameplate will reposition the condensation drain holes. As a result, the drain holes may not be located at the lowest point and may not allow water to drain. This can cause premature drive failure.

Operation

VARIMOT®'s are shipped with the speed setting adjusted for minimum output rpm. For manually controlled units, the speed is increased by turning the handwheel (sprocket, spindle, etc.) counter-clockwise. The VARIMOT® is supplied with permanent stops at minimum and maximum speeds. Relative speed may be determined by referring to the speed scale on the side of the unit.

For Electric Remote Control units, see electrical connections and speed stop setting on pages 3 and 4.

Please refer also to the motors' operating instructions.

Maintenance and Lubrication

CAUTION! Always ensure equipment is secure and electrical power is off before removing or performing maintenance on the drive assembly. VARIMOT® variable speed units are largely maintenance-free. The VARIMOT® drive case itself does not require oil since it is a dry traction drive. However, for units which are flange mounted to a gear reducer, there is an oil plug located in the VARIMOT® flange. Depending on the drive mounting position, this plug may be used as a breather or oil level plug for the reducer. This plug does not connect to the VARIMOT® housing. Refer to the Operating Instructions for Gear Reducers for proper gearcase oil level.

The traction ring wear can be checked by the torsional play on the output shaft. If the torsional play is approximately 45°, the traction ring needs to be replaced. In the case of gear reducer fitted with variable speed drive, the torsional play can be checked at the motor fan. For this purpose the drive unit should be set at 80% speed (the pointer on the scale should be at 80). If there is torsional play of 45° on the fan, the traction ring needs to be replaced.



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To replace the traction ring:

- Remove four (4) hex head screws - [2].
- Split the traction housings.
- Mark the traction ring/hollowshaft assembly so the cam lobes at the end of the shaft assembly can later be engaged at the same place.
- Remove the complete hollowshaft [9] from the housing [8].
- Carefully pry out the friction ring from the hollowshaft.
- Place new friction ring on a clean, even surface.
- Center the hollowshaft over the friction ring shoulder.
- Press the hollowshaft and friction ring together.
- Before assembling the housing, clean the driving cone surface [6] so it is completely free from oil and grease.

When the traction ring is checked or replaced, perform the following regreasing of the bearings and cam lobes:

- Remove the hollowshaft assembly [9] if it is still in the housing [8].
- Regrease the needle roller bearings [7] with Molilux EP2 or equivalent. When regreasing, do not overfill cavity. Too much grease generates an excessive amount of heat.
- Grease the cam lobes [11] with Lubriplate grease GR-132 or bearing grease.

If the cam lobes are worn excessively (approximately 0.04in/1mm) and cannot function properly by sliding over each other, replace both the hollowshaft, output shaft and cam washer.

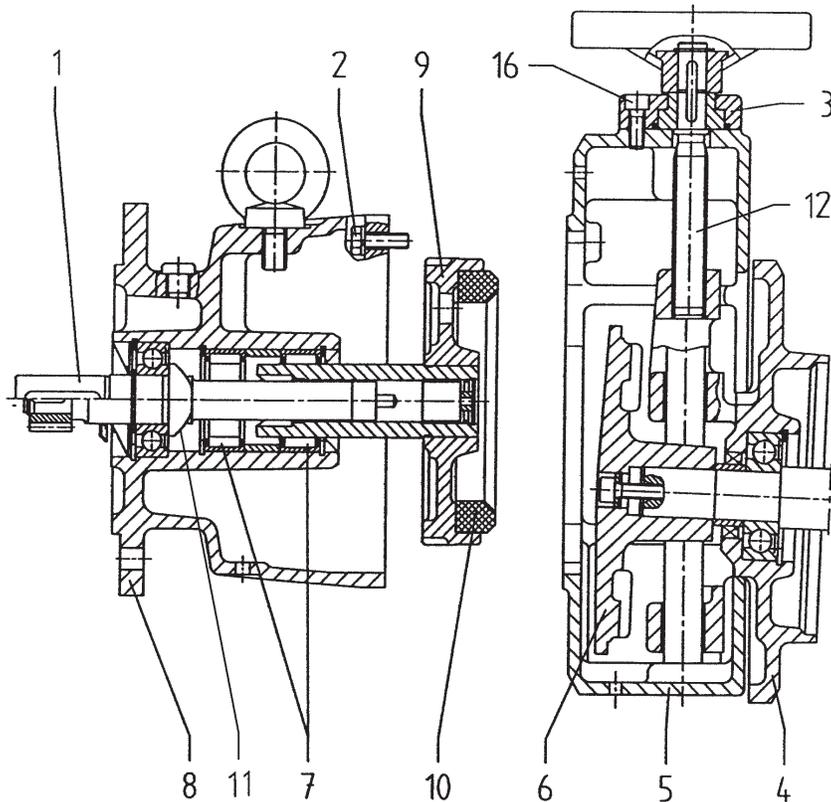
Periodically, the threaded speed adjusting spindle [12] should be relubricated with a suitable grease such as Never-Seez®.

Grease-packed bearings should be cleaned and regreased every 10,000 hours with Mobilux EP2 or equivalent. Care must be taken that only 1/3 of the free volume of the bearing space is filled with grease in order to avoid overheating of the bearing.

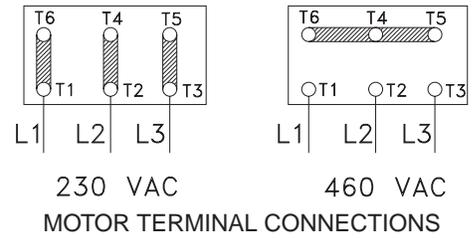
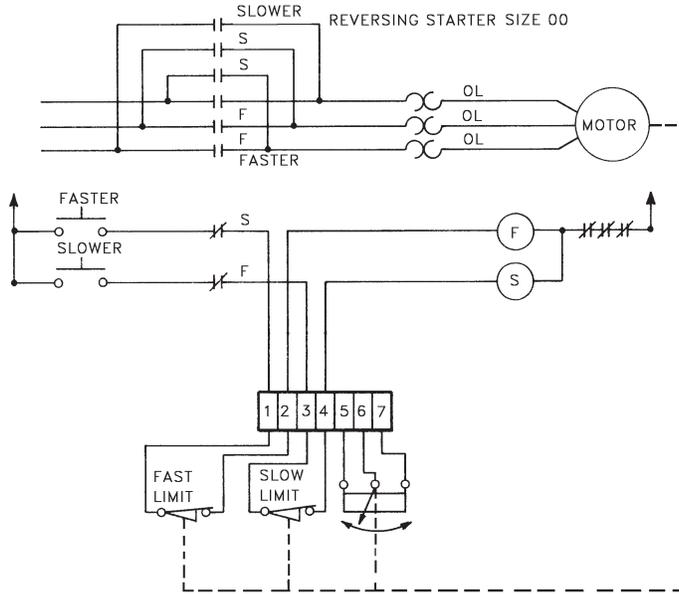
Check coupling alignment, chain or belt tension and mounting bolt torque periodically.

To ensure adequate cooling, deposits of dirt and dust on the surfaces of the units must be removed at frequent intervals. Particular attention should be paid to the motor by removing all deposits from between the motor cooling fins and also from the air intake on the fan guard.

- 1 Input shaft
- 2 Hex head screw
- 3 Plate
- 4 Motor mounting plate
- 5 Mounting plate
- 6 Driving cone
- 7 Needle roller bearing
- 8 Housing
- 9 Hollow shaft
- 10 Friction ring
- 11 Cam lobe
- 12 Speed adjusting spindle
- 16 Socket head screw



Wiring Diagram for 3 Phase Remote Speed Control Motors - Option EF



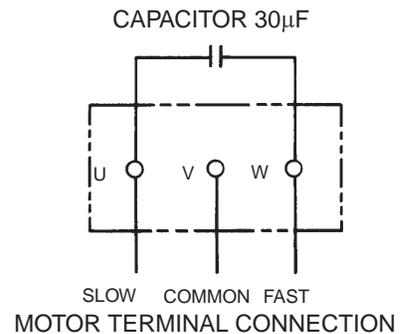
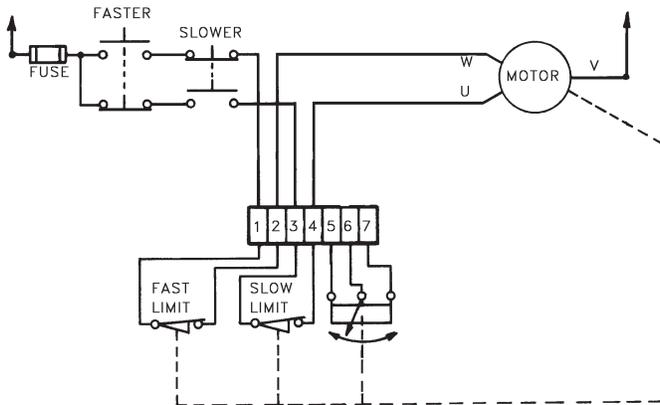
EF Motor Current for VARIMOT® Sizes:
D/DF 16 - 26 @ 230V/460V: 0.4A/0.2A
D/DF36 - 46 @ 230V/460V: 0.55A/0.32A

The speed control motor is rated for 15% ED (cyclic duration factor) and a maximum starting frequency of 20 per hour.

NOTE:

Pushbutton and motor starter are not supplied by SEW-Eurodrive. See page 4 for adjusting the limit switches.

Wiring Diagram for Single Phase Remote Speed Control Motors - Option EF

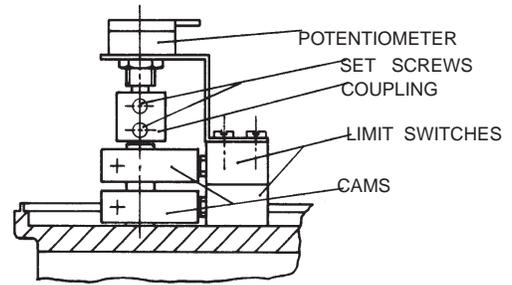
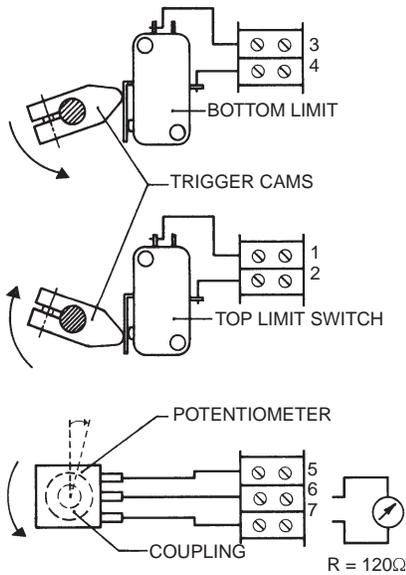


Motor Current for all VARIMOT® Sizes @ 115V: 2.1 Amps

NOTE:

Fuse and pushbuttons are not supplied by SEW-Eurodrive. See page 4 for adjusting the limit switches

Setting of the Speed Range Limits - Option EF



The Limit Switches and Potentiometers are factory preset for maximum speed range. To modify the speed range, the limit switches may be field adjusted. The switches and potentiometers are located under the cover of the speed control motor.

Limit Switch Adjusting Instructions:

1. Remove cover.
2. Run the Speed Control Motor to obtain the maximum drive output speed.
3. Rotate the CAM for the Top Limit Switch clockwise until it trips the Limit Switch. Tighten the locking screw.
4. Run the Speed Control Motor to obtain the minimum drive output speed.
5. Rotate the CAM for the Bottom Limit Switch counter-clockwise until it trips the Limit Switch. Tighten the locking screw.

Potentiometer Adjusting Instructions (used for closed loop system control):

1. Turn the potentiometer counter-clockwise until it runs against the stop (Variable Speed Unit must be at minimum speed). Turn the potentiometer approximately 15° clockwise. Between terminals 6 & 7 there must be a resistance of 120 ohms.
2. Tighten the coupling set screws.