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Operation in Extreme Ambient Temperatures

Gearmotors and gear reducers operated under conditions which diverge from the normal ambient temperature range of -15°C to +40°C (5°F to 104°F) are adapted to the respective temperature range by the following measure:

Motor

Affected Parts	Ambient Temperature Range °C	
	-45° to -15°	+40° to +60°
Power Rating	Per catalog	Reduction per catalog
Insulation Class	F	F
Space Heater	Recommended	Not necessary
Fan	Metal	Standard
Brake	With space heating by means of BGH brake rectifier unit with BM brake	BGE brake rectifier unit with BM brake
Brake Rectifier	Located in control cabinet at normal (-15°C to +40°) ambient temperature.	Located in control cabinet at normal (-15°C to +40°C) ambient temperature.
Bearings	Per Parts Lists C3 clearance	Per Parts Lists C3 clearance
Bearing Grease	Synthetic Mobiltemp SHC 32	Synthetic Mobiltemp SHC 32
Oil Seals	Standard	Standard
V-Rings	Standard	Standard
Paint and Motor Treatment	Severe Duty	Standard

Gear Reducer:

Affected Parts	Ambient Temperature Range °C	
	-45° to -15°	+40° to +60°
Oil:		
Helical, Helical-Bevel	Mobil Synthetic SHC 629 (-30°C to -15°C)* Mobil Synthetic SHC 626 (-45°C to -30°C)	Mobil Synthetic SHC 630
Helical-Worm	Mobil Synthetic SHC 629 (-30°C to -15°C)* Mobil Synthetic SHC 626 (-45°C to -30°C)	Mobil Synthetic SHC 634
Oil Seals	Standard	Standard
Bearings	Per Parts Lists	Per Parts Lists
Bearing Grease	Synthetic Mobiltemp SHC 32	Synthetic Mobiltemp SHC 32
Paint	Severe Duty	Standard

* The Mobil Synthetic oil SHC 629 is suitable for temperatures up to 0°C (32°F). For temperatures from 0°C to 40°C, the Mobil Synthetic Oil SHC 630 for Helical and Helical-Bevel gear reducers and the Mobil Synthetic Oil SHC 634 for Helical-Worm gear reducers would be recommended as an alternate to the standard lubricants as indicated on the lubrication schedule in the catalog.

Freezer Applications

In conjunction with the protective measures as shown in the above tables for low temperature applications, gearmotors and gear reducers operated in freezers require additional precautionary measures.

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Typically the freezers are thawed-out once or twice a week for cleaning. When the thaw-out occurs, it literally "rains" inside the freezer due to the moisture in the air condensing. Also, after thaw-out, the inside of the freezer is thoroughly washed down.

Under these conditions the drives must have additional protection to prevent water from penetrating the motor which can cause motor insulation breakdown and corrosion of the bearings.

The following measures are recommended for drives installed in a freezer:

- **Severe Duty Motor Option** - The drain holes will prevent accumulation of water in the motor and the additional coat of lacquer on the windings will prevent attack of moisture on the winding insulation.

- **Motor Bearings** - Double contact seal, 2RS type. The contact seal excludes water from entering the bearing.

- **Bearing Grease** - Mobiltemp SHC 32 which has excellent resistance against corrosion and excellent resistance to water washout.

- **Canopy** - Required on motors in a V1 mounting position with fan end up to shield the motor against the "rain" during thaw-outs.

- **V-Ring** - Standard on B-side endshield at the rotor shaft for motor frame sizes through DV132S and recommended for additional sealing against moisture on frames sizes larger than DV132S. For motor frame sizes larger than the DV132S, the V-ring would be used in conjunction with the normal seal provided on these motors.

- **Gear Reducer Lubrication** - Mobil SHC 626 which must be checked and maintained on a regular basis due to the possibility of water accumulating in the oil through condensation inside of the gearcase.