



## 7 Hoist Gearbox

LM10 hoists utilize a compact planetary gear train. The planetary gear train is totally enclosed and lubricated with semi-fluid grease. The planetary gears are sintered, made with extremely accurate teeth. On the other hand, LM1, LM05 Series II, LM16, LM20 and LM25 hoists utilize a multistage helical gear train. The multistage gear train is totally enclosed. The multistage gears are fabricated of heat-treated steel with machine cut teeth.

Hoist	Gear Type	Gear Ratio	Lubricant	Quantity
LM1	Multistage	134.2:1	Mobilgear SHC 220	0.02 liter
LM05	Planetary	134.2:1 or 106:1	Mobilith SHC 007	50 grams
LM05 Series II	Multistage	43.19:1		0.05 liter
LM05 Stepless	Multistage	43.19:1	Shell Transaxle Oil 75W-90	0.6 liter
LM10	Planetary	160.3:1 or 104.7:1	Mobilith SHC 007	50 grams
LM16	Multistage	113:1	Mobilgear SHC 220	1.6 liters
LM20	Multistage	113:1	Mobilgear SHC 220	1.6 liters
LM25	Multistage	145:1	Mobilgear SHC 220	1.6 liters

Mobilith SHC 007 semi-fluid grease is a synthetic type and it is capable of operating in extreme ambient conditions where the ambient temperature is less than minus 13°F or hotter than 130°F.

Mobilgear SHC 220 is a synthetic, heavy-duty industrial gear lubricant, intended for enclosed gear sets operating under severe temperature range and load.

For food grade service, a food grade lubricant is available for all electric chain hoist models.

## 8 Hoist Brake and Torque Limiting Device

The friction materials for the brake and the torque-limiting device are asbestos free.

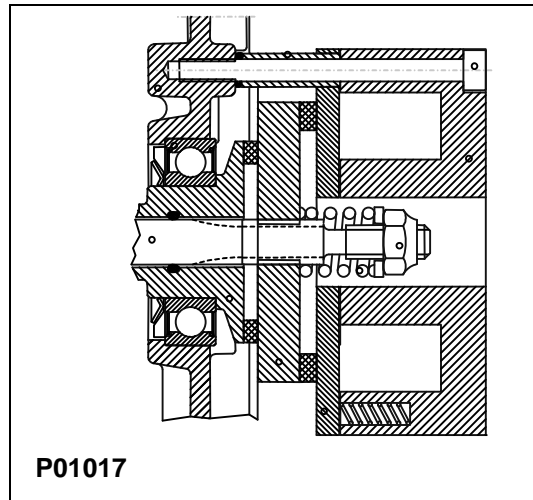
The hoist motor is equipped with a D.C. electromagnetic disc brake to bring the load to a smooth and quick stop and to hold the load when the hoist motor is not energized. An energized coil releases the hoist brake. Since the hoist brake is always engaged when the brake coil is not energized, the brake is a fail-safe system.

The hoist brake on LM1, LM05, and LM10 chain hoists is located in a sealed housing to provide a degree of protection against dirt or water penetration. The heat generated from the brake is absorbed by the hoist body and then dissipated through the fins on the body. The hoist brake on LM16, LM20 and LM25 chain hoists is located in a vented housing and a motor fan provides additional cooling.

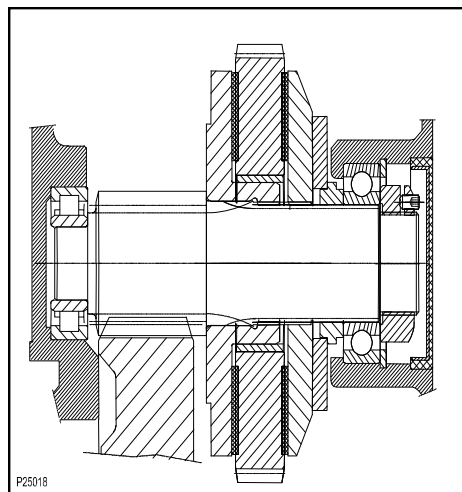
A built-in torque-limiting device prevents the lifting of excessive loads, which could damage the hoist and/or the supporting structural members. The torque-limiting device is set to slip at 125% of rated capacity.

The torque-limiting device on LM1, LM05 and LM10 chain hoists is a slip clutch that is integrated into the design of the hoist motor brake. Even if the clutch slips, once power is removed the brake will engage and hold the load.

The torque-limiting device on LM16, LM20 and LM25 chain hoists is integrated into the design of the hoist gear train.



Torque-limiter and electromagnetic brake device concept ([LM1](#), [LM05](#), [LM10](#))



Torque-limiting device in the gear train ([LM16](#), [LM20](#), [LM25](#))

## 9 Load Sprocket and Chain Guide

The load sprocket (or chain wheel) has five precision-formed or machined pockets, six pockets on the [LM16](#). The chain guide is included and helps guide and hold the load chain in the pockets of the load wheel for safe operation and to prevent jamming.