

The SLS Lubrication system drive box transmits power from the input shaft to pumps, which deliver fluid at specific rates against pressure. Each drive box is designed to hold a varying number of pumps with a cam to drive each pump piston. Due to the wide variety of drive sources, there are a large number of box configurations with various gear ratios and quantity of pumps. The gears inside the box reduce the speed of the input and increase the torque available at the cam shaft. Drive boxes are filled with oil to lubricate the moving parts and dissipate any heat generated by the gear train.



## Specifications

**Maximum speed:** 1800 RPM (Input shafts)  
60 RPM (Cam shafts, after gearing)

**Environmental:** -15°F – 140°F (-26°C - 60°C)

**Wetted Materials:** Carbon Steel, Stainless Steel, Fluoropolymer Elastomers (PTFE, Viton), Nitrile Elastomers (Buna), Polyester based powder coating, Aluminum, Neoprene/cork gasket.

## Product Classification:

Part Number	Description	Classification
SLS-(2-40)(A,B,C,D,G,M,P,Q)-XX	Ratchet, Direct, or Spur Gear drive	CE $\epsilon$ x ck IIC T5 Ga
SLS-(2-40)(E,F,J,K,N,V,W)-XX	Worm Gear drive	CE $\epsilon$ x ck IIC T4 Gc

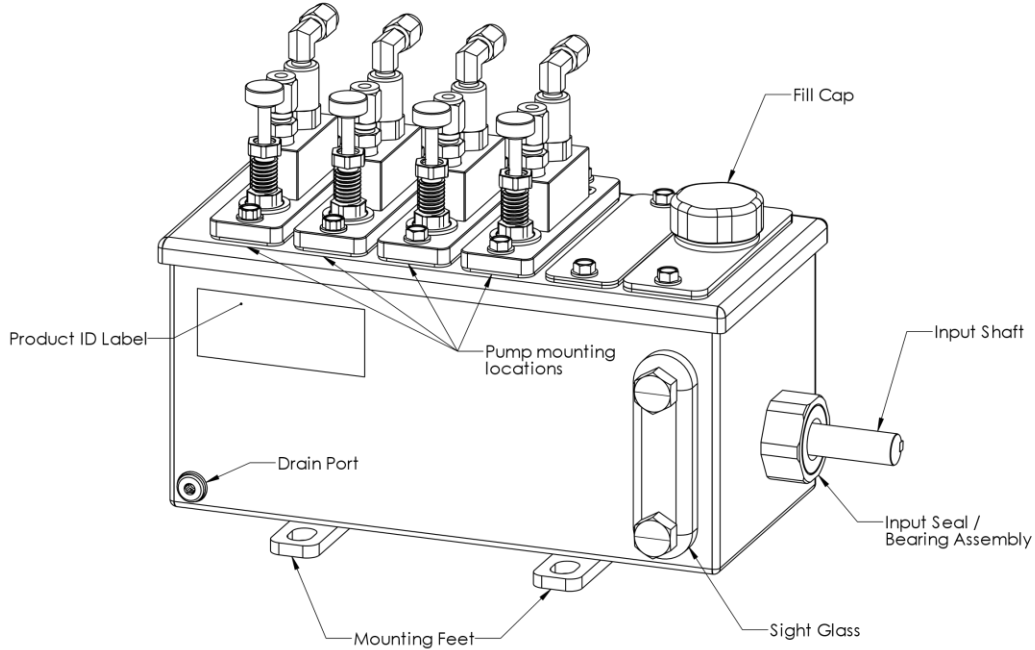
## For technical support, contact:

Sloan Lubrication Systems  
168 Armstrong Drive  
Freeport, PA 16229  
+1 412-828-2420

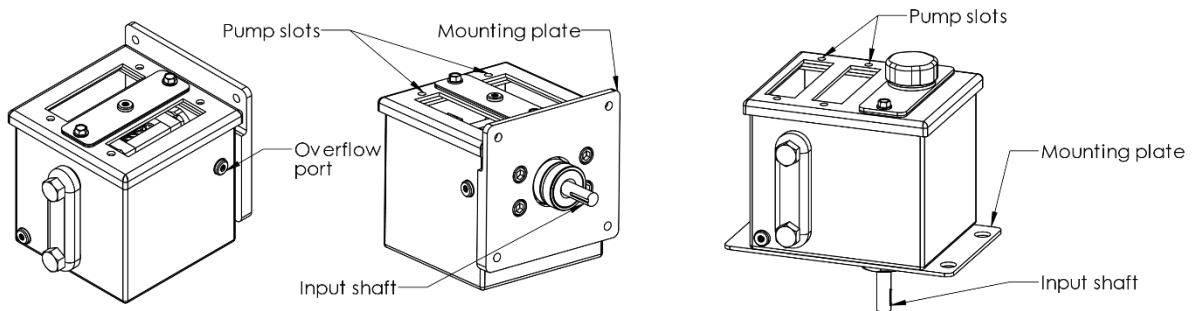
**Use this product only for its intended purpose. Improper use or failure to follow these instructions may compromise protection provided by this equipment.**

## Identification

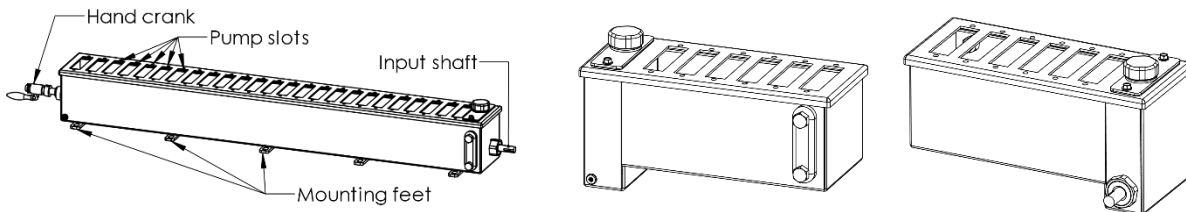
There are a wide variety of available lubricator drive boxes in the SLS product line. It would be beyond the scope of this document to describe them all in detail so common features will be identified here.



## Additional configuration examples






OEM style drive boxes

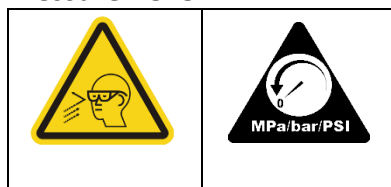


Large and special configuration drive boxes

## Warnings

	<p><b>Moving Parts Hazard</b> Reciprocating, rotating, and transverse moving parts can pinch, cut, trap fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Stay clear of moving parts. Refer to Identification photos for potential pinch points.</li> <li>• Do not operate equipment with covers, protective guards, shrouds removed.</li> <li>• Always disconnect all power sources and to follow the <b>Pressure Relief</b> protocol before servicing, inspecting, and cleaning moving parts.</li> </ul>
	<p><b>Fire and Explosion Hazard</b> An explosive atmosphere is a mixture of a dangerous substance or substances (gas, mist, dust or vapor) with the air, which has the potential to catch fire or explode. When not properly controlled, these substances can cause harm as a result of a fire, explosion, or similar incident.</p> <p>Risk mitigation measures:</p> <ul style="list-style-type: none"> <li>• Avoid potential ignition sources of the dangerous substances such as cigarettes, open containers of solvents, solvent soaked rags, electrical heaters.</li> <li>• Avoid or minimize release of dangerous substances</li> <li>• Control releases of dangerous substances at source</li> <li>• Avoid adverse conditions (such as exceeding pressure/temperature limits) that could lead to danger</li> <li>• Ground all equipment in the work area. <b>If static electricity is identified, immediately turn off equipment and verify grounding by using a digital volt meter.</b></li> <li>• Ensure surfaces of all equipment are kept clean of excess fluid or dirt</li> </ul>
	<p><b>Protective Equipment</b> The hazards addressed by protective equipment are physical, chemical, and airborne particulate matter. Wearing the appropriate personal protective equipment (PPE) in the work area will help prevent eye injury, hearing loss, and inhalation of airborne particulate matter. Personal Protective Equipment includes but not limited to:</p> <ul style="list-style-type: none"> <li>• Protective eyewear and hearing protection while servicing, inspecting, or cleaning equipment.</li> <li>• Respirators, gloves, and protective clothing when working directly with fluids and solvents.</li> </ul>

## Pressure Relief

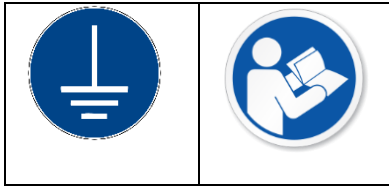


Before servicing this equipment always ensure that the pressure relief procedure for any installed pumps is followed.



**NOTE:** Always ensure that a pressure relief device is installed downstream of any installed pumps to prevent accumulation of excess pressure and damage to the pump or lubricator box.

## Installation



**CAUTION:** Prior to installation, setup, or use, these instructions should be thoroughly reviewed and understood by both maintenance technicians and operators.



**NOTE:** The lubricator must be installed in a location that is readily accessible to personnel during normal operation. The lubricator should be securely mounted to a base or piece of equipment to ensure proper operation.

To install a lubricator box, it must be securely mounted to a base, bracket, or other surface. For OEM style boxes, this may be the frame of a piece of equipment. Ensure proper alignment of the input shaft with any mating shaft and ensure couplings are installed according to their instructions. Guard according to local standards.



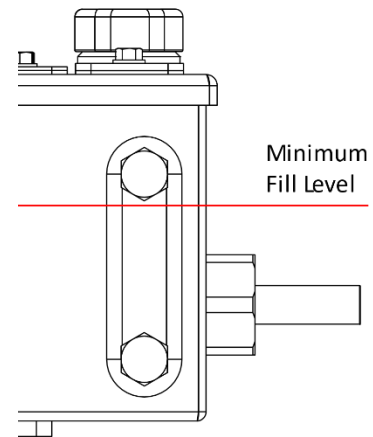
**CAUTION:** Not securely mounting the lubricator box may increase the risk of static sparking. Proper torque on the bolts creates a ground between the lubricator box and mounting surface.

When the input shaft is driven by a chain or belt, ensure that the pulley or chain sprocket is aligned and properly tensioned. Too much tension on a belt or chain may pull the input shaft out of alignment, causing premature bearing and gear wear.

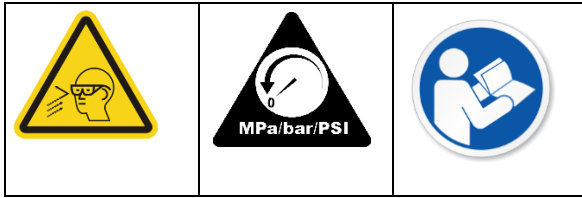
Once mounted, install pumps according to their instructions and fill lubricator box to the minimum lubricant level. Sloan recommends Mobil SHC 634 or equivalent synthetic ISO 480 or 680 gear oil for maximum drive train life.

If not using Sloan manufactured SLS pumps, ensure that lubricant inside the lubricator box is compatible with the fluid being pumped as some bypass into the box may occur.

If the application requires the use of vacuum pumps, always ensure the minimum lubricant level in the box is met. For unattended applications, employ a low level shutdown device to ensure sufficient lubricant level.



## Operation



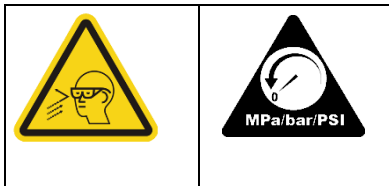
While in operation, regularly check the lubricant level to ensure it remains at minimum lubricant level. Periodically check fasteners for the lubricator box mounting as well as the pump fasteners and drive components.



**CAUTION:** Always ensure that oil level does not drop below minimum fill level for **worm gear drive boxes** to prevent overheating of drive components.

Always follow operational instructions for any installed pumps or other accessories in the drive box.

## Maintenance



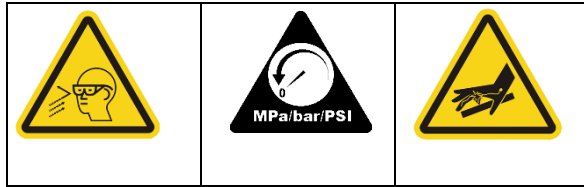
### Initial 250 hours:

- Change oil, flushing any debris or contamination accumulating at bottom of box.
- Torque drain plug to 96-108 in lbs. (8-9 ft lbs.)
- Check fasteners such as the box mounting and pump bolts.
- Check connections to driving equipment for loosening due to vibration.

### Annual inspection (or 8,000 operating hours)

- Lock and tag out driving equipment.
- Depressurize system according to pump instructions.
- Change oil, flushing any debris or contamination accumulating at bottom of box.
- Torque drain plug to 96-108 in lbs. (8-9 ft lbs.)
- Remove pumps, inspect drive components, cams, and pump rollers.
- Check fasteners such as the box mounting and pump bolts.
- Check connections to driving equipment for loosening due to vibration.

**Troubleshooting**



Symptom	Possible Cause	Action
Pumps are not pumping	Input shaft is not being turned	Check driving equipment, couplings, belts, etc. to ensure proper operation.
	Drive component worn or damaged	Inspect lubricator box gears for damage; replace lubricator box or have it repaired if not functional.
	Pumps not functioning	Troubleshoot pumps, refer to pump instructions.
	Pumps installed backwards	Check proper pump installation.
Pumps do not deliver at desired flow rate	Drive component worn or damaged	Check gears, cams, shafts; replace if required.
	Input shaft speed insufficient	Check gear ratio for application.
	Wrong pumps installed	Check pump size for application.
	Pumps worn or damaged	Check pumps for excessive wear or damage.
Flow rate dropping over time	Drive component worn or damaged	Check gears, cams, shafts; replace if required.
Pumps are pumping but not delivering fluid	Pumps not functioning	Troubleshoot pumps, refer to pump instructions.
	Lubricator level low in vacuum pump application	Check lubricator fluid level, fill.
Leaking from drain plug	O-Ring on plug damaged	Check and replace O-Ring on drain plug.
Leaking around input shaft	Input shaft seal worn or loose	Check for proper shaft alignment. Replace shaft seal.
	Input seal housing is loose	Check for proper shaft alignment. Re-tighten seal housing.
Lubricator box overfull	Operator overfilled box	Follow proper filling procedures, fill slowly and in stages.
	A pump is leaking into box	Check and troubleshoot pumps.
Excessive noise / vibration	Drive component worn or damaged	Check gears, cams, shafts; replace if required.
	Input shaft is misaligned	Check shaft alignment, check drive components for damage or wear.
	Lubricator not properly secured	Check mounting fasteners, that base is sufficient, and shaft alignment.
Lubricator overheating	Oil level too low	Check oil level; fill to above minimum level.

## Dimensions

As there are a large number of products in this category, refer to the drawing that corresponds to each product part number for dimensional drawings.

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## REVISION CONTROL

Rev. #	Date	Description of Revision	Approval(s)
0	02/28/17	Initial Release	Ryan LeFevre, Mike Bechtold, C.J. Sloan