

BCMA Backstop Automatic Grease Lubrication System

Service & Installation Instructions

P-1346-19-MC



⚠ WARNING Failure to follow these instructions may result in product damage and/or equipment damage.

General

This automatic grease lubrication system is designed to automate the lubrication maintenance of the grease labyrinth section of Marland BCMA backstop models. It is beneficial to replace the grease in the labyrinth section regularly to protect seals and other internal components from airborne contaminants. This kit automates the lubrication process and provides the highest level of protection from external contamination.

Installation Instructions

1. Drill holes in torque arm

This automatic lubrication kit is designed to be attached to the backstop torque arm. Drill two 9/16" (.5625") holes in the torque arm at the location specified in Table 1. A template of the bracket used to attach the grease pump to the torque arm is provided with this manual.

Bracket Location

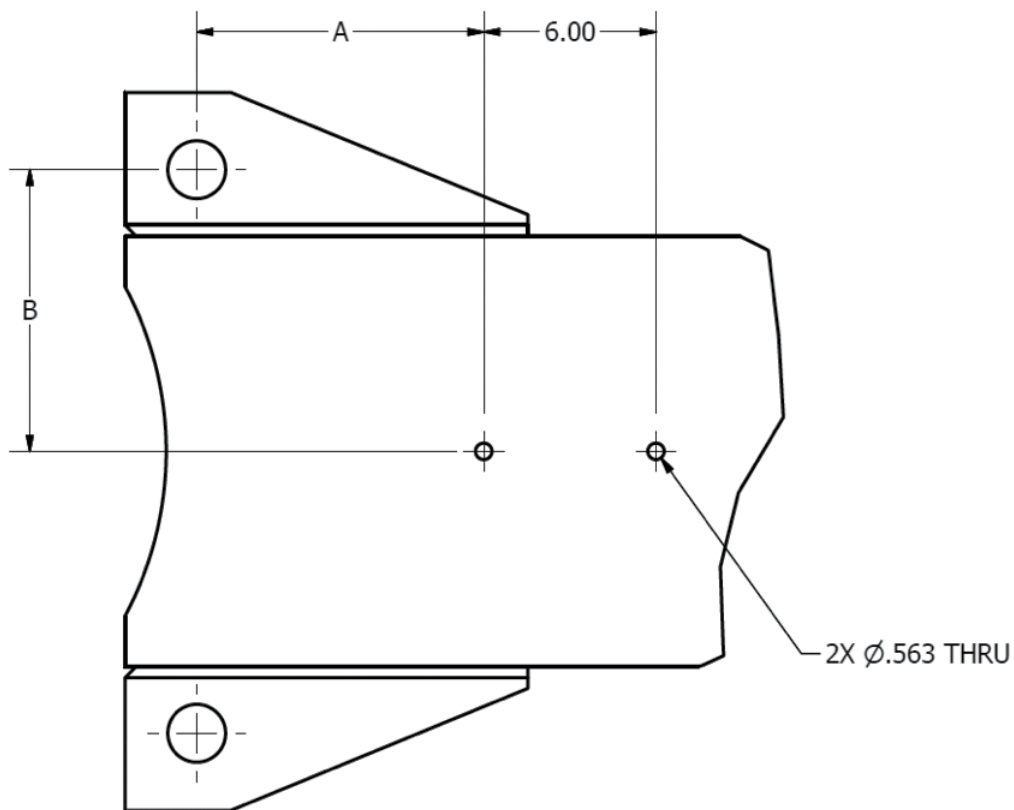
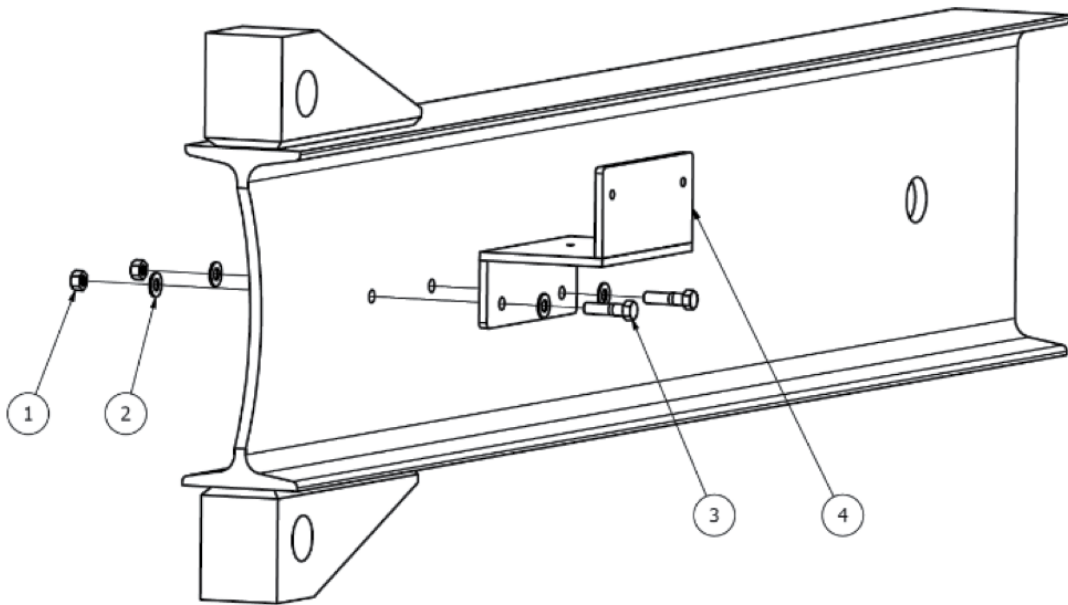


Table 1: Torque Arm Hole Locations

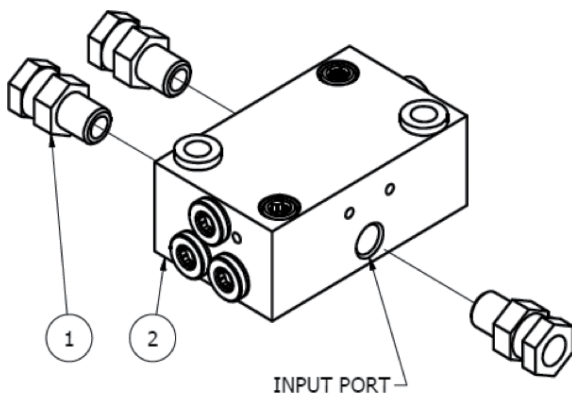
BCMA Model	A (Inches)	B (Inches)
BC-63MA	10	7.5
BC-90MA	10	8.5
BC-135MA	10	10
BC-180MA	10	12
BC-240MA & BC-300MA	14	13.5
BC-375MA	14	16
BC-540MA & BC-720MA	20	19
BC-940MA & BC-1200MA	22	21

2. Use ½” fasteners (supplied) to secure bracket to torque arm as shown.

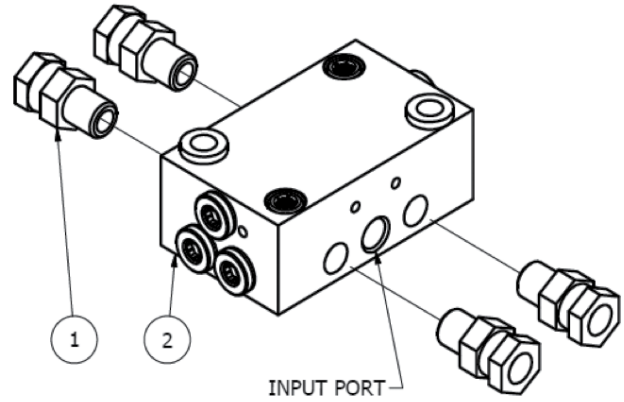


ITEM	QUANTITY	DESCRIPTION
1	2	NUT, 1/2"
2	4	WASHER, 1/2"
3	2	BOLT, 1/2"
4	1	BRACKET

3. Install fittings & hose to divider valve



2 OUTPUT PORT
DIVIDER VALVE



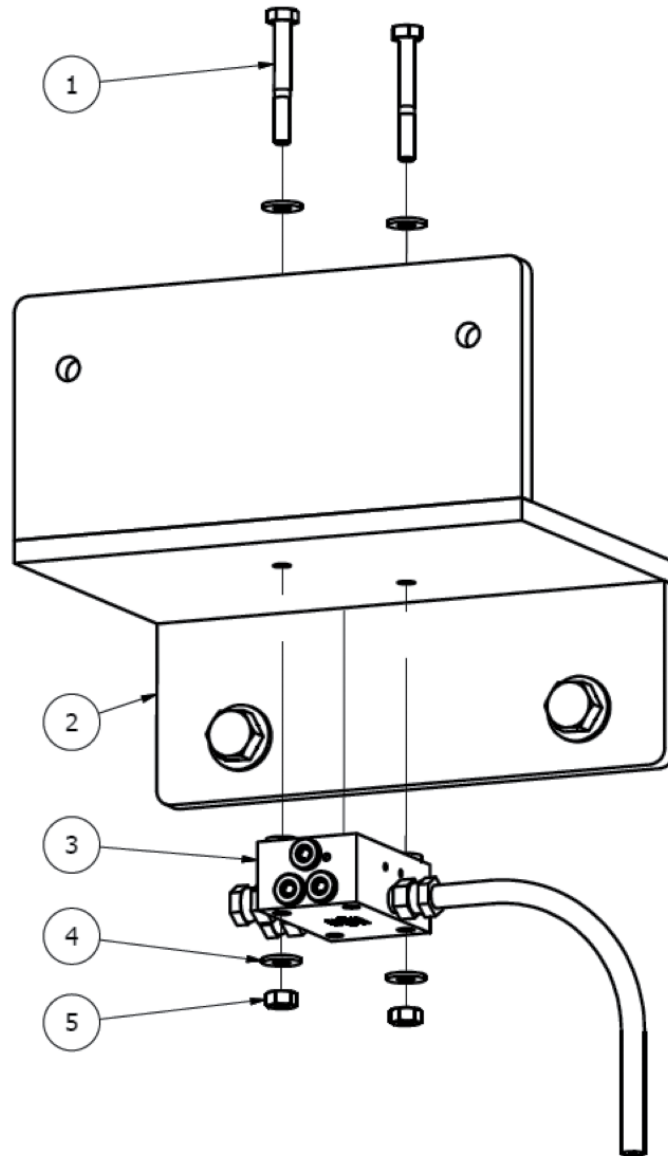
4 OUTPUT PORT
DIVIDER VALVE

ITEM	DESCRIPTION
1	STRAIGHT ADAPTER, 1/8 NPTF X 1/8 NPSM SWIVEL
2	DIVIDER VALVE

- o 2 Output Port Divider Valve (BC-90MA and smaller model sizes)
 - Assemble (3) straight adapters into divider valve.
 - Tighten adapter fittings 1.5 -3 turns past finger tight.
 - Attach 2.5 ft. hose to input port adapter fitting.
 - Attach remaining hoses to output port adapter fittings.
- o 4 Output Port Divider Valve (BC-135MA and larger model sizes)
 - Attach 2 ft. hose to input port.
 - Assemble (4) straight adapters into remaining ports.
 - Tighten adapter fittings 1.5 -3 turns past finger tight.
 - Attach remaining hoses to output port adapter fittings.

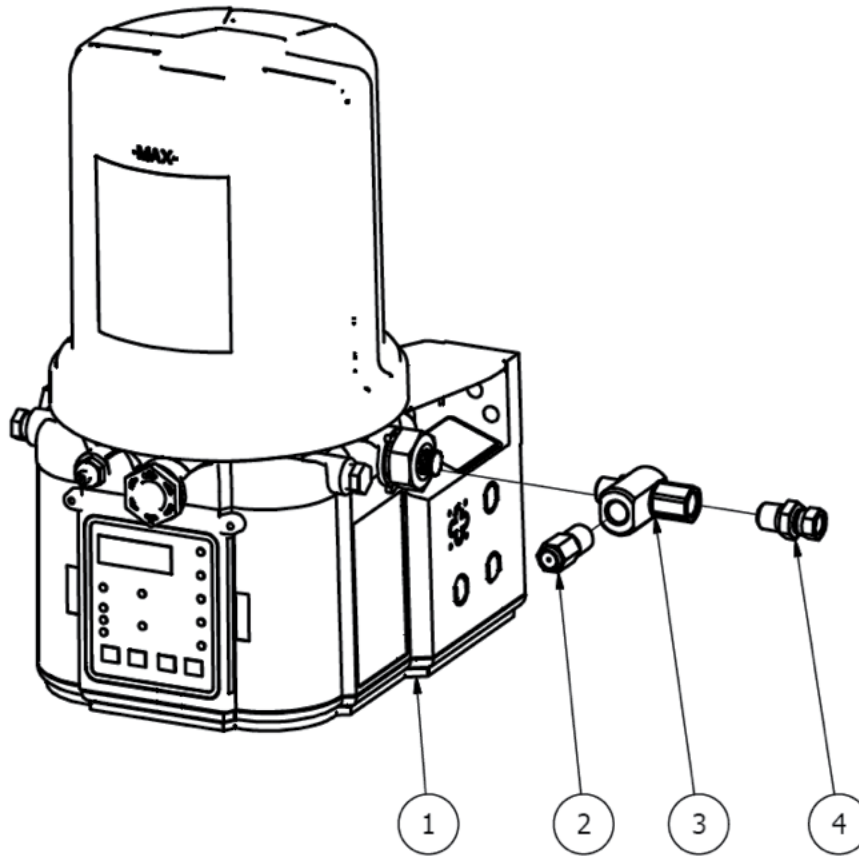
NOTE: Wrap fitting/hose threads with Teflon tape (provided) to prevent leaks.

4. Use ¼" fasteners (included) to secure divider valve to bracket.
 - o To ensure supplied hoses will reach between components, install divider valve with the orientation listed below.
 - 2 Output Port Divider Valve (BC-90MA and smaller model sizes)
 - Orient divider block with output ports facing backstop clutch head.
 - 4 Output Port Divider Valve (BC-135MA and larger model sizes)
 - Orient divider block with input port on right side.



ITEM	QUANTITY	DESCRIPTION
1	2	BOLT, ¼"
2	1	BRACKET
3	1	DIVIDER VALVE ASSEMBLY
4	2	WASHER, ¼"
5	2	NUT, ¼"

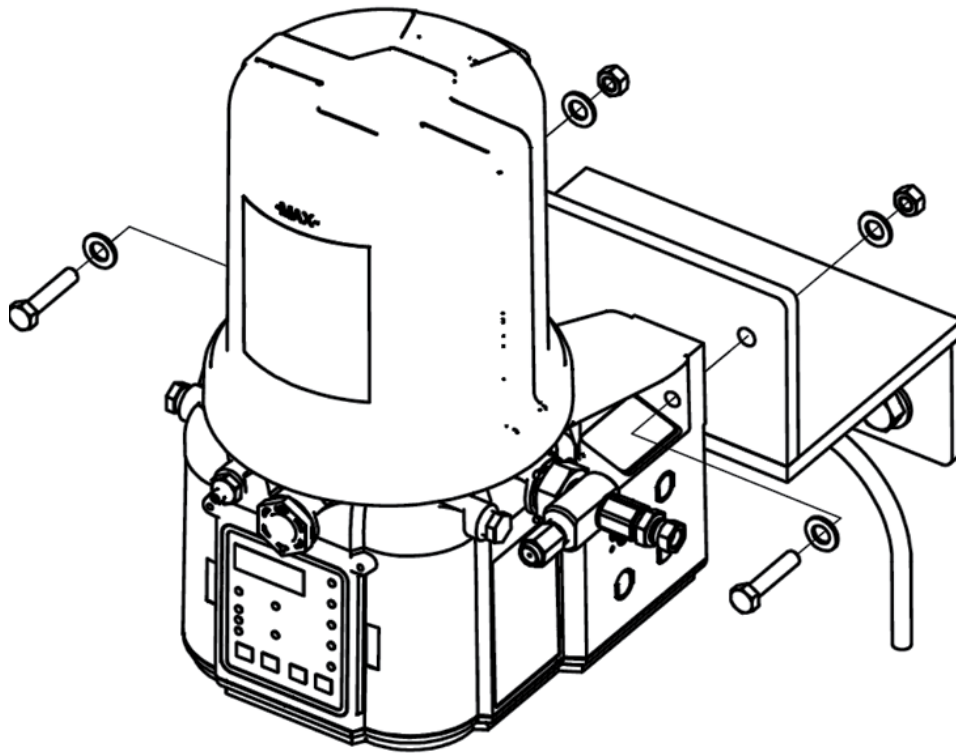
5. Install fittings onto grease pump



ITEM	QUANTITY	DESCRIPTION
1	1	GREASE PUMP
2	1	PRESSURE RELIEF FITTING
3	1	PRESSURE RELIEF ADAPTER
4	1	REDUCER FITTING, 1/4 NPTF X 1/8 NPSM SWIVEL

- o Wrap threads of fittings with Teflon tape (provided) to prevent leaks.
- o Always use two wrenches working in opposite directions when connecting pressure relief adapter fitting to pump element.
- o Torque pressure relief adapter to 50 lb.-in. max.
- o Refer to grease pump manual for additional details.

6. Use fasteners (supplied with grease pump) to attach grease pump to bracket as shown.
 - o Refer to grease pump manual (332317G) for additional details.



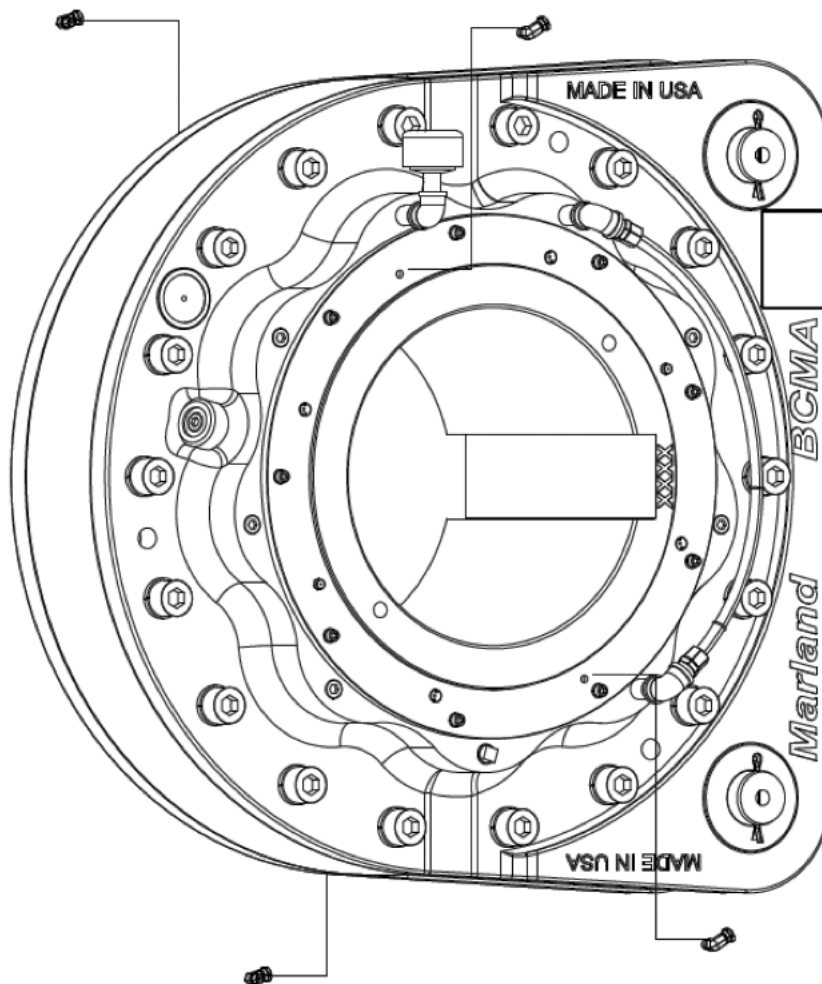
7. Attach free end of hose (hose attached to divider valve input port in step 3) to reducer swivel fitting on grease pump (installed in step 5).
8. Install power cable onto grease pump.
 - o Grease pump is compatible with 90-240 VAC power only.
 - o Refer to grease pump manual for wiring and electrical installation details.
 - o **NOTE:** Power cable is supplied with bare leads. If power will be supplied to grease pump via an electrical outlet, an attachment plug (customer supplied) must be connected to power cable.
 - o Follow all local codes and ordinances.
9. Fill grease pump reservoir
 - o Automatic lubrication kits are shipped without lubricant.
 - o Fill grease pump reservoir with acceptable grease lubricant via hand pump and grease fitting on grease pump. Recommended grease lubricants are listed below in the Lubricants section of this manual.
 - o Additional information on filling the grease pump reservoir can be found in the grease pump manual.

10. Install elbow swivel fittings onto backstop outer labyrinth/greaseplate.

- o Backstop models BC-90MA & smaller
 - Remove (1) grease fitting from the outer labyrinth plate on both sides of backstop and install 90° elbow swivel fittings.
- o Backstop models BC-135MA and larger
 - Remove (2) grease fittings from the outer labyrinth plate/greaseplate on both sides of backstop and install 90° elbow swivel fittings.
 - NOTE: Fittings installed on the same side should be approximately 180° degrees apart.
- o Tighten 90° elbow swivel fittings 1.5 – 3 turns past finger tight.

NOTE: Wrap fitting threads with Teflon tape (provided) to prevent leaks.

NOTE: If the backstop is equipped with grease relief fittings, those fittings should remain installed. Only grease gun fittings should be replaced with the 90° elbow swivel fittings.

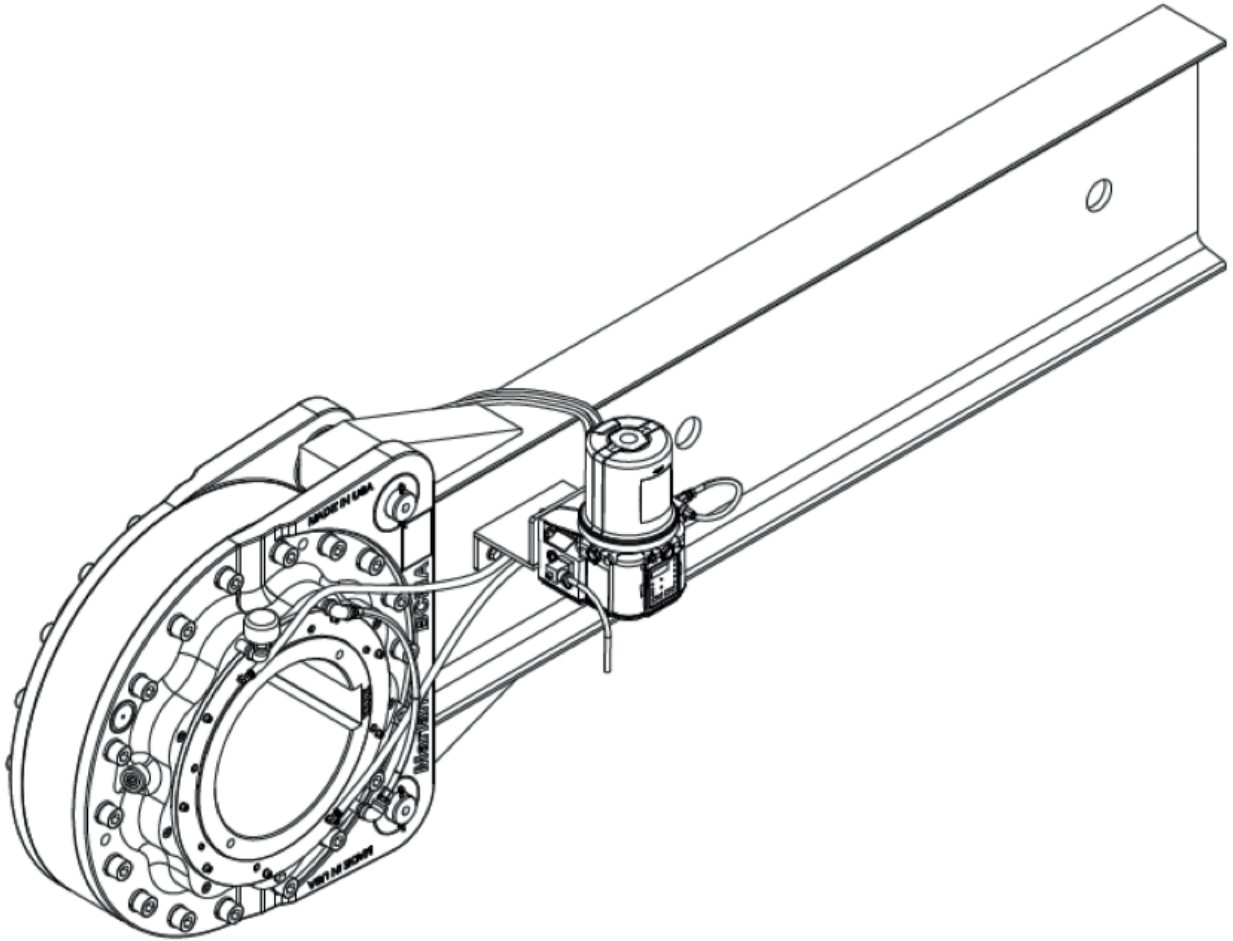


11. Attach hoses between divider valve and backstop

- o Operate grease pump to prime/fill divider block and hoses with grease.

NOTE: This process will take several minutes. Information on this process can be found in the Pump Operation section of this manual.

- o After the grease lines have been primed and grease is visually present at grease ends, connect free hose ends to elbow swivel fittings on backstop.



Lubricants

Lubricants not containing EP additives are preferred to be used in the grease labyrinth areas of Marland BCMA backstops. Only use lubricants that are NLGI grade 1, 1-1/2, or 2.

Recommended lubricants include:

Castrol Spheerol AP 2	Chevron SRI Grease 2
Lubriplate Aero	Mobil Unirex N 2
Lubriplate Low-Temp	Mobil Mobilith SHC 100
Shell Aeroshell #22	Petro-Canada Precision Synthetic EMB
Shell Aeroshell #7	Petro-Canada Precision XL EMB

Pump Operation

The grease pump includes a controller which can be programmed for different run and rest time cycles. Refer to the grease pump manual for information on operation of the grease pump and instructions for programming the pump controller.

Initial Prime

- To prime and initially fill hoses and the divider valve with grease, program the grease pump controller to run for the maximum time interval (30-minutes).
- Start the pump run cycle and continue pump operation until grease is present at the loose hose ends.

NOTE: More than one 30-minute interval may be required to prime the entire kit.

Main Operation

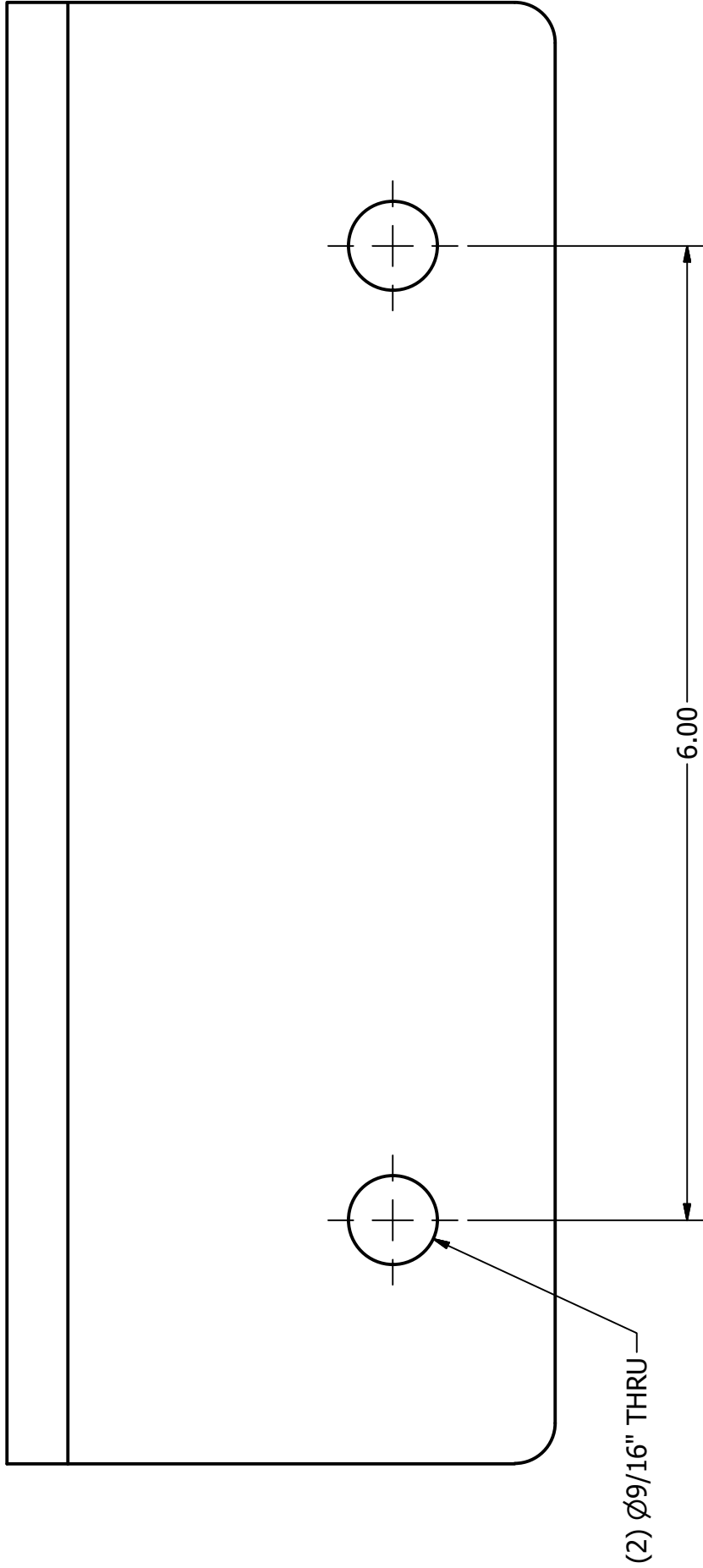
Different run/rest cycles are recommended for each backstop model size, due to varying grease volume requirements. The following time intervals are recommended for each model size. Please refer to the grease pump manual for instructions on programming operation cycles.

Recommended Run/Rest Cycle Parameters

BCMA Model Size	Run Cycle Duration (Minutes)	Rest Cycle Duration (Hours)
BC-63MA	1	16
BC-90MA	1	17
BC-135MA	1	15
BC-180MA	2	18
BC-240MA	2	17
BC-300MA	2	17
BC-375MA	4	18
BC-540MA	3	15
BC-720MA	3	15
BC-940MA	6	17
BC-1200MA	6	17



Automatic Lubrication System Bracket Template



⚠ WARNING Printer settings can vary. Please select "Actual Size" for printing options before printing this template. Then double check the circle center marks are exactly 6 inches apart before using this template.

USE THIS TEMPLATE TO LOCATE POSITION OF HOLES TO BE DRILLED IN CLUTCH TORQUE ARM

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Warranty

Marland Clutch warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of three (3) years from date of shipment. This warranty extends only to the original purchaser and is not transferable or assignable without Marland Clutch's prior consent.

This warranty covers normal use and does not cover damage or defect which results from alteration, accident, neglect, or improper installation, operation, or maintenance.

Marland Clutch's obligation under this warranty is limited to the repair or replacement of the defective product and in no event shall Marland Clutch be liable for consequential, indirect or incidental damages of any kind incurred by reasons of manufacture, sale or use of any defective product. Marland Clutch either assumes nor authorizes any other person to give any other warranty or to assume any other obligation or liability on its behalf.



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