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WALKING FLOOR® TRAILERS

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Presents a USER'S Guide and PARTS MANUAL for;

KEITH® Clean Sweep System®

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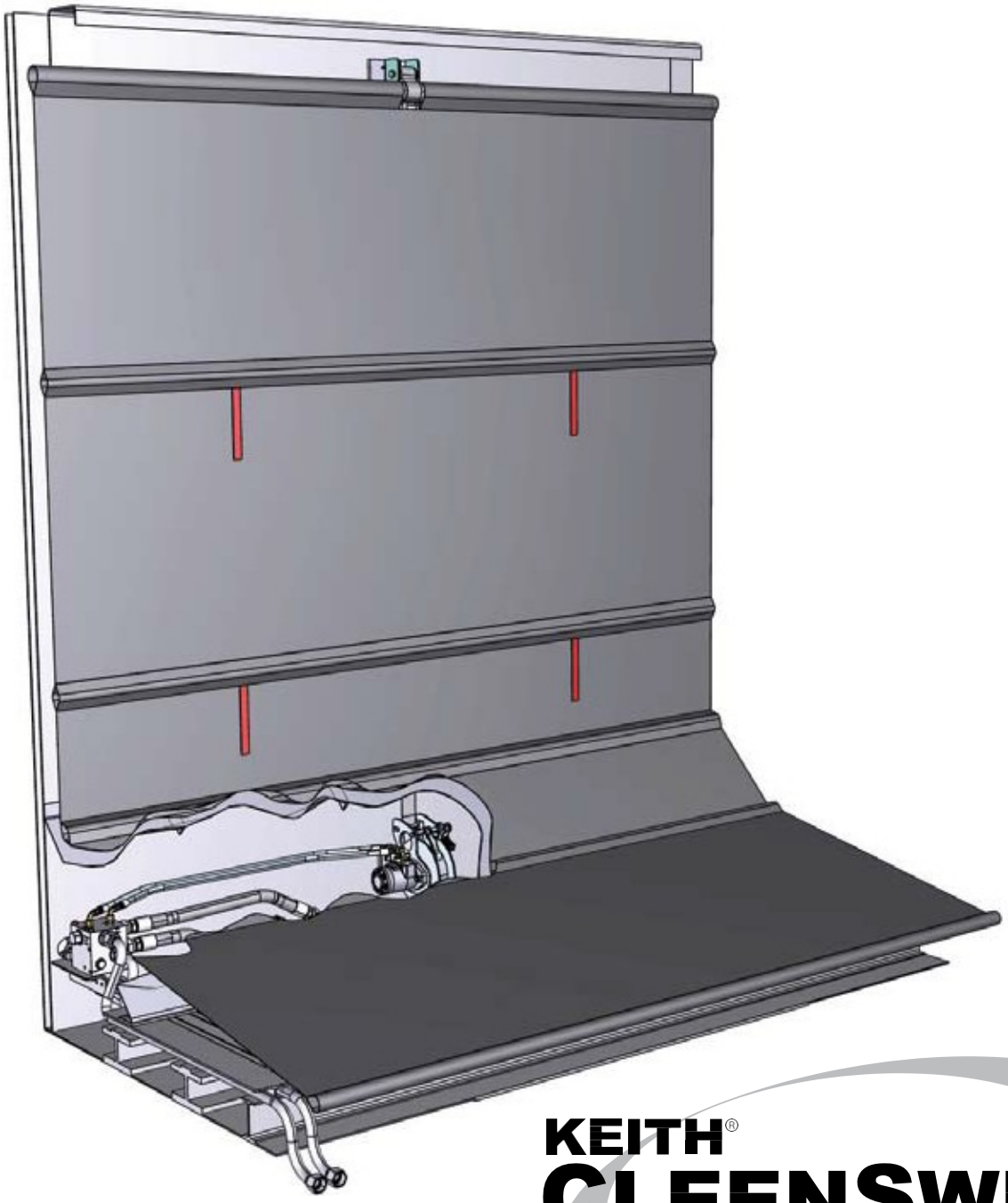
KEITH® Hydraulic CleenSweep® Tarp System

INSTALLATION & OPERATION MANUAL



KEITH®
CLEENSWEEP®
TARP SYSTEM

DOC03668 REV. F Release Date: 9/24/08

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1.0 INTRODUCTION

This manual explains procedures for installing and operating the KEITH® Hydraulic CleenSweep® Tarp System. Many variables affect the installation, but the general process remains constant. Details of the installation vary, according to trailer features and installer preferences.

An efficient installation requires appropriate tools and accessible materials. A list of tools is found in Appendix A. This kit does not include any hoses - Appendix B lists required materials not supplied. Appendix C contains a list of parts supplied with this kit.

It is strongly recommended that the installers and operators read this entire manual before beginning the installation or operating of the system.

Please direct any questions to KEITH Mfg. Co. or one of our international offices listed on the last page of this manual.

WARNING: Always disconnect hydraulic power to the trailer before entering the trailer or working on the CleenSweep Tarp System components. Failure to do so may result in serious injury or death due to the large forces involved with the CleenSweep Tarp System.

IMPORTANT: Installing the CleenSweep Tarp System requires some alterations to your trailer. Changes made without the approval of the trailer manufacturer may void the trailer's warranty.

2.0 INSTALLATION

WARNING: Always disconnect hydraulic power to the trailer before entering the trailer or working on the CleenSweep Tarp System components. Failure to do so may result in serious injury or death due to the large forces involved with the CleenSweep Tarp System.

2.1 Tools

Gather tools listed in Appendix A.

2.2 Materials

Refer to the part list in Appendix C and verify that all KEITH®-supplied parts are present. A list of parts and materials not supplied by KEITH is found in Appendix B.
Hose lengths and tubing bends and lengths will vary depending on the manifold and winch mounting locations and therefore should not be produced until the winch and manifold are mounted and measurements can be taken. Additional fittings (elbows, reducers, adapters, etc…) may be required depending on the particular installation.

2.3 Winch Installation

Option 1: Winch mounted below front shield (low-mount)

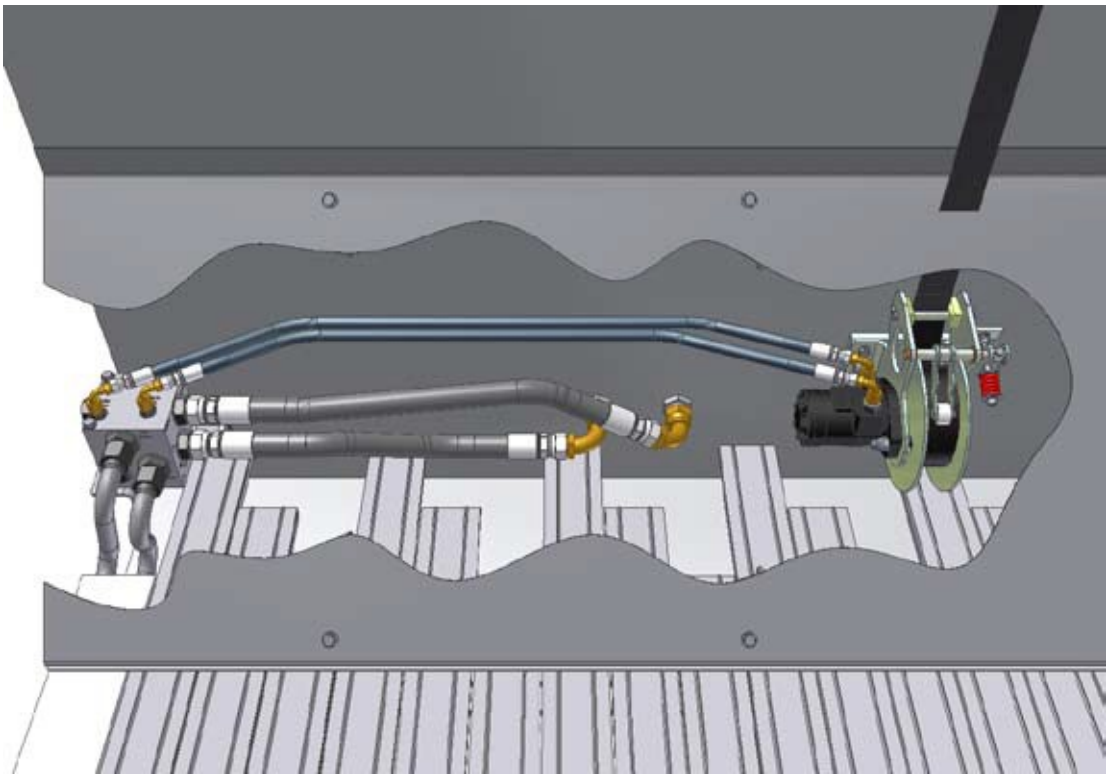


Figure 1: Winch and manifold mounted below the front shield (low-mount).

Mount the winch to the lower center of the front wall of the trailer. The winch should be under the front shield and must not interfere with the operation of the floor slats – maintain at least 1” (25 mm) clearance between the winch and floor slats. The winch should be mounted with the strap guide up. Ensure all moving parts of the winch have adequate clearance.
Note: Front wall may need to be reinforced to withstand the forces created by the winch.

Option 1 requires the use of the strap roller assembly mounted at the top center of the front wall or top rail – see section 2.4 for installation instructions.

Step 1: Front shield modification: It is recommended that the front shield be hinged or fitted with a door/panel to gain access to the winch after it is installed to facilitate adjustment, inspection and maintenance.

Step 2: A slot must be cut through the front shield for the strap to pass through. The slot must be centered along the path of the strap, from the winch to the strap roller assembly and all sharp edges removed or covered to prevent damage to the strap. Maintain at least 1/2” (13 mm) clearance all around the strap.

Step 3: Locate the center of the front wall of the trailer. Please note that it is crucial that the winch is mounted in the absolute center of the trailer and at a 90-degree angle. If the winch is not mounted square, it will put uneven pressure on the tarp strap.

Step 4: Measure 3 1/2” (89 mm) up from the top of the floor slats to locate the bottom of the base plate. Transfer the winch base plate bolt pattern to the wall and drill two 17/32” (13mm) bolt clearance holes (or four 7/16” (11 mm) bolt clearance holes if installing the SAE mounting version with the 3/8”-16 threaded base plate).

Step 5: Attach the winch to the front wall using 1/2” grade 8+ (M12 class 10.9+) locking fasteners (or appropriate length 3/8” -16 bolts if installing the SAE mounting version with the 3/8” -16 threaded base plate).

Option 2: Winch mounted at top of trailer front wall (high-mount)

Figure 2: Winch mounted at top of front wall.

Mount the winch to the top center of the front wall of the trailer. The winch should be mounted with the strap guide down. Ensure all moving parts of the winch have adequate clearance. Note: Front wall may need to be reinforced to withstand the forces created by the winch.

Option 2 does not require the strap roller assembly because the winch structure with strap guide is designed to locate the tarp at the front wall and stop the tarp when it is fully retracted.

Step 1: Locate the center of the front wall of the trailer. Please note that it is crucial that the winch is mounted in the absolute center of the trailer and at a 90-degree angle. If the winch is not mounted square, it will put uneven pressure on the strap.

Step 2: Transfer the winch base plate bolt pattern to the wall and drill two 17/32” (13 mm) bolt clearance holes (or four 7/16” (11 mm) bolt clearance holes if installing the SAE mounting version with the 3/8”-16 threaded base plate).

Step 3: Attach the winch to the front wall using 1/2” grade 8+ (M12 class 10.9+) locking fasteners (or appropriate length 3/8”-16 bolts if installing the SAE mounting version with the 3/8”-16 threaded base plate).

2.4 Strap Roller Assembly Installation

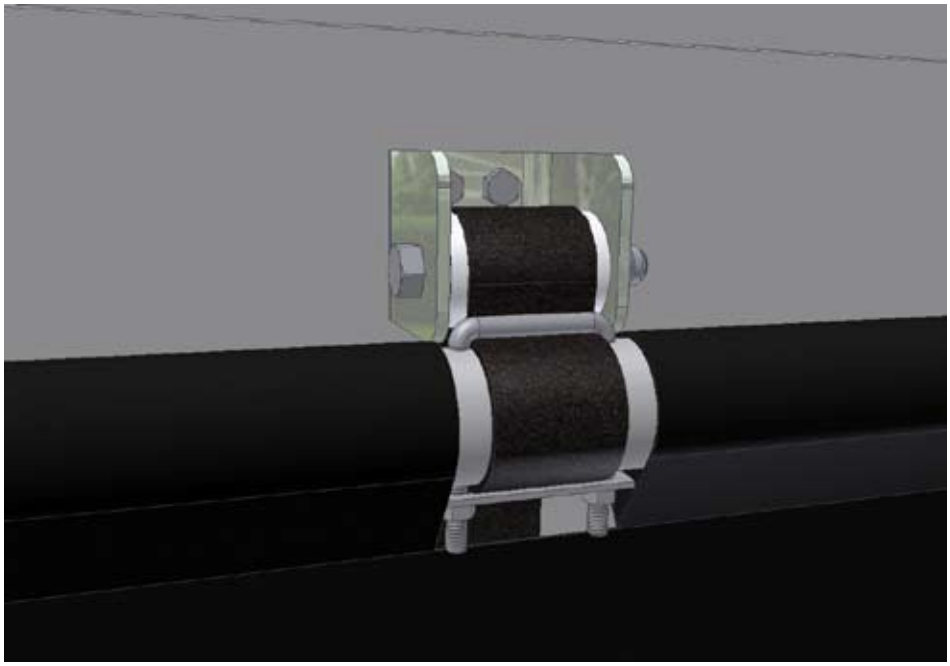


Figure 3: Strap roller assembly mounted at top of front wall.

The strap roller assembly is only required for low-mount winch installations.

The strap roller assembly may be mounted at the top of the front wall or to the top rail at the front of the trailer. Please note that it is crucial that the strap roller assembly is mounted in the absolute center of the trailer and at a 90-degree angle. If the strap roller assembly is not mounted square, it will put uneven pressure on the tarp strap.
Note: Front wall may need to be reinforced to withstand the forces created by the winch.

Step 1: Locate the top center of the trailer front wall or the center of the top rail.

Step 2: Measure 1 1/2” from the front (if mounting to the top rail) or from the top rail downward to locate the strap roller base mounting location.

Step 3: Transfer the strap roller bracket bolt pattern to the wall or top rail and drill two 7/16” (11 mm) bolt clearance holes (or four 7/16” (11 mm) bolt clearance holes if installing the SAE mounting version with the 3/8”-16 threaded base plate).

Step 4: Attach the strap roller to the front wall using 3/8” grade 5+ (M10 class 8.8+) locking fasteners (or appropriate length 3/8”-16 bolts if installing the SAE mounting version with the 3/8”-16 threaded base plate).

2.5 Manifold Installation

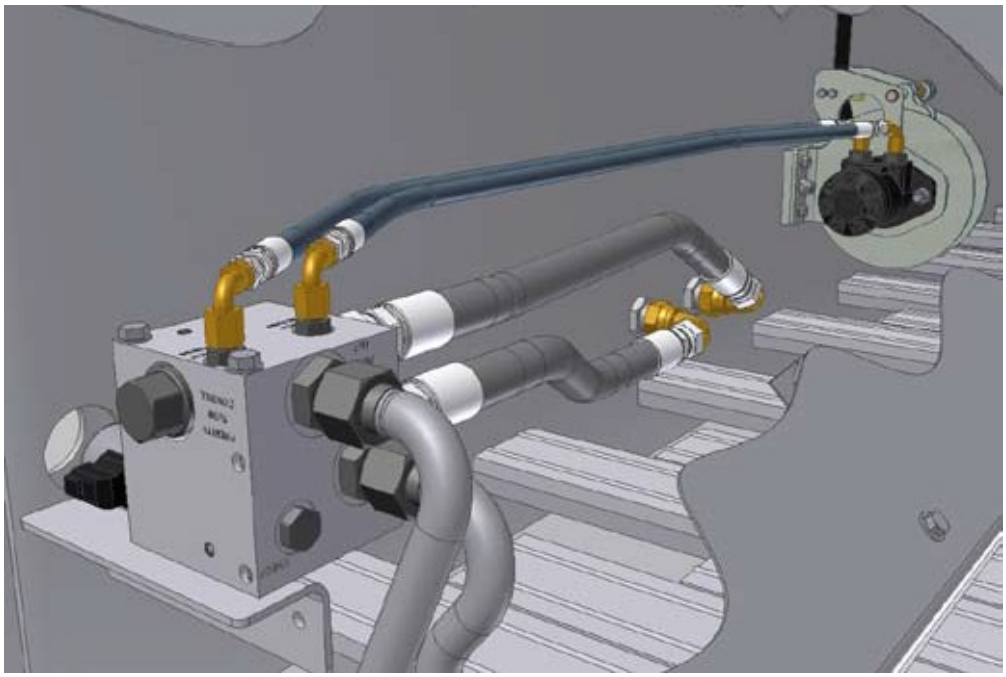


Figure 4: Manifold mounted below front shield.

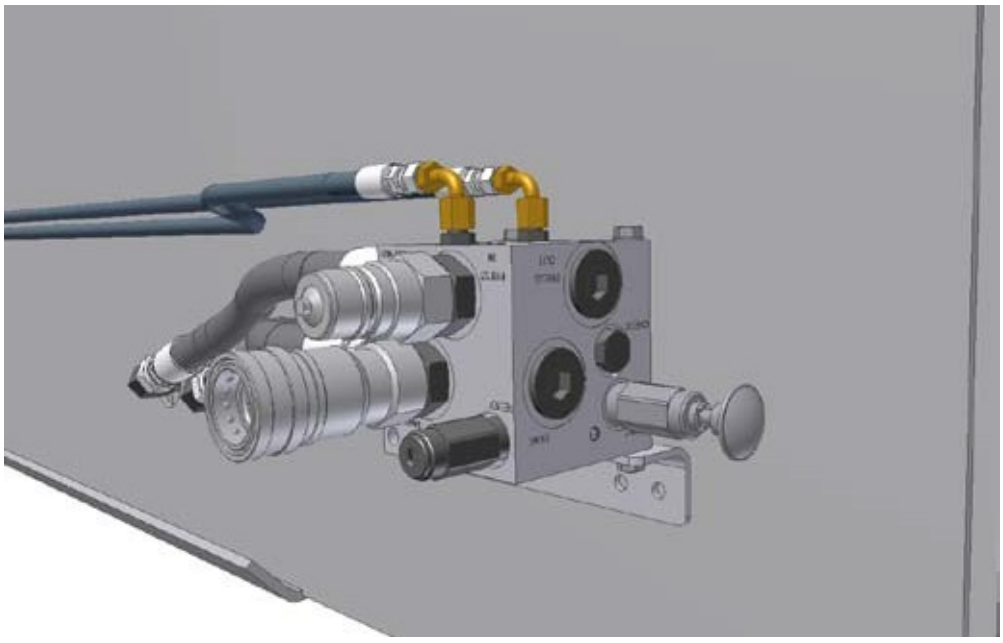


Figure 5: Manifold mounted to exterior front wall on driver's side.

The manifold can be mounted in several locations based on installer preference, trailer construction and other installed equipment. The most common mounting locations are under the front shield, on the driver's side of the exterior front wall or on the driver's side landing gear.

See Section 2.6 for hydraulic plumbing installation considerations before choosing a location and installing the manifold.

Step 1: If the manifold is mounted below the front shield it is recommended that the front shield and/or trailer wall be hinged or fitted with a door/panel to gain access to the manifold after it is installed to facilitate adjustment, inspection and maintenance.

Step 2: Determine the orientation and location of the manifold and manifold fittings based on hose/tube routing requirements, clearance requirements and valve access.

- When mounting the manifold under the front shield position, the manifold and manifold mounting bracket must be installed so that hydraulic hoses cannot interfere with the operation of the floor slats. A manifold distance of 2 1/2" to 3" above the top of the slats works well.

- Maintain at least 1" (25 mm) clearance between any part of the CleenSweep system assembly and the floor slats.

Step 3: Attach the manifold mounting bracket to the trailer by welding or using 3/8" (10 mm) nuts, washers, locking washers and bolts of appropriate length (not supplied).

Step 4: The manual override knob on electric systems and the manual valve knob on manual systems must be accessible from the outside of the trailer. This will require a hole through the wall of the trailer or an appropriate access panel in the wall of the trailer, if the manifold is mounted below the front shield.

- For manual systems, the knob may be removed temporarily and reattached on the opposite side of the wall after mounting the manifold with the valve body inserted through a 1 1/4" (32 mm) hole in the trailer wall.

- An extension (not supplied) may be fitted to the manual valve stem if necessary. The valve stem knob may be removed and the valve stem is threaded ¼"-20 UNC.

Step 5: Attach the manifold to the manifold mounting bracket using the supplied 3/8"-16 X 5 3/4" bolts, locking nuts and washers.

2.6 Hydraulic Plumbing Installation

The manifold is plumbed into the hydraulic system, between the pump and the *WALKING FLOOR*® drive. All fluid traveling to and from the drive goes through the CleenSweep system manifold first -this requires rerouting some of the existing trailer hydraulic plumbing. Careful planning is necessary before making any modifications to the existing trailer plumbing. Due to the wide variety of existing plumbing configurations and possible CleenSweep system manifold installation options, specific plumbing details including hose/tube lengths, etc. are not provided.

All ports on the manifold are labeled. There are two ports each for the winch pressure, winch return, pressure out to floor, return from floor, and return to tank to allow several mounting/ plumbing options. The manifold is shipped with one of the paired ports plugged but it may be necessary to swap plugs/fittings for certain installations.

- All components, lines and fittings must be kept absolutely clean to prevent contamination of the hydraulic system.
- Keep bends and fittings to a minimum.
- Ensure all hoses and tubes are adequately protected from moving parts and possible damage from material loading by providing at least 1” clearance from moving parts, firmly clamping hoses and tubing in place and using shields or guards where applicable. Use rubber grommets or equivalent protection when routing through cross-members, walls or other structures.
- All hoses, tubes and fittings must be suitable for a working pressure of at least 3000 PSI (207 bar).
- The fittings supplied on the winch motor and manifold for the winch pressure and return lines are male -6 (3/8”) 37º JIC (ISO 8434-2).
- The fittings supplied on the manifold for the Pump-Pressure-In, Pressure-Out-To-Drive, Tank-Return-From-Drive and Return-To-Tank are male -16 (1”) 37º JIC (ISO 8434-2).
- Manifold ports are SAE O-ring ports of the same size as the hose/tube fitting.
- The manifold is connected to the winch and the trailer hydraulic system according to Table 1.

Table 1: Manifold plumbing

MANIFOLD FITTING:	CONNECTS TO:
WINCH PRESS Male -6 (3/8”) 37º JIC (ISO 8434-2)	**Winch motor pressure** port (pressure port is the one that will cause counter-clockwise spool rotation when viewing winch from motor side) Male -6 (3/8”) 37º JIC (ISO 8434-2)
WINCH RETURN Male -6 (3/8”) 37º JIC (ISO 8434-2)	**Winch return port** Male -6 (3/8”) 37º JIC (ISO 8434-2)
PRESS IN Male -16 (1”) 37º JIC (ISO 8434-2)	**Pressure line in from pump**
PRESS OUT Male -16 (1”) 37º JIC (ISO 8434-2)	**Pressure line out to floor drive**
TANK Male -16 (1”) 37º JIC (ISO 8434-2)	**Tank return line from floor drive**
TANK Male -16 (1”) 37º JIC (ISO 8434-2)	**Return line to tank**

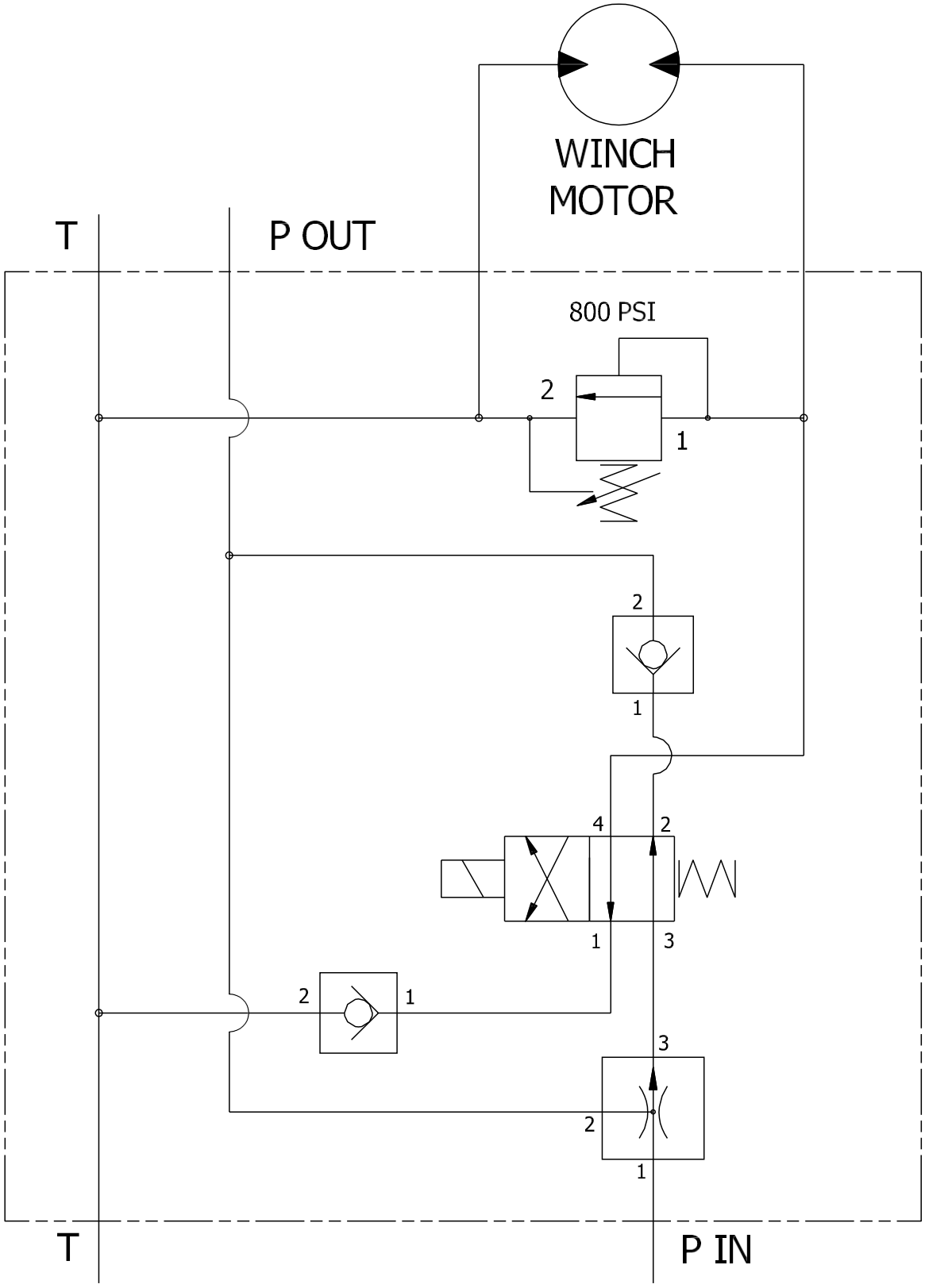


Figure 6: Control manifold hydraulic schematic.

2.7 Tarp Installation

Please note that tarp poles are not supplied by KEITH Mfg. Co. For the top pole, located at the top of the tarp, one 2” (50 mm) schedule 40 PVC pipe (or equivalent) is recommended. For all other poles, use three 1 ½” (40 mm) schedule 40 PVC pipes.

Step 1: Thread the strap through the strap guide on the winch, through the slot in the front shield (if winch is low-mounted) and through the strap roller (if used).

Step 2: Cut the tarp poles approximately 1” (25 mm) shorter than the inside width of the trailer. Take this measurement just above the trailer floor.

Step 3: If the tarp is more than 3” (75 mm) wider than the width of the trailer, cut the tarp to the same width as the inside of the trailer. Use the vertical stitching as a guide and remove half of the material from each side of the tarp.

Step 4: Center the tarp poles in the tarp pockets. The 2” (50 mm) pole should be inserted into the top pocket with the notch in the center. The smaller diameter poles go into the next two pockets down from the top and either in the third or fourth pocket down from the top, depending on the height of the trailer. A pole in the very bottom pocket is optional.

Step 5: Keep the tarp poles in place by pop riveting the tarp to the poles—two rivets on each end (not supplied).

Step 6: Find the center of the top tarp pole. Drill 3/8” (9.5 mm) holes through the top pole to attach the U-Bolt. It must be centered and installed so that when the tarp is hanging from the winch, the threads of the U-Bolt are facing downward. If necessary, you can make the notch in the middle of the tarp wider to accommodate the U-Bolt.

Step 7: Place the tarp in the trailer, with the handles facing upward and the 2” (50 mm) top tarp pole towards the front of the trailer.

Step 8: Making sure that the strap is not twisted, wrap it around the pole tightly at least twice and tighten the U-Bolt.

2.8 Tarp Out-Stop Installation

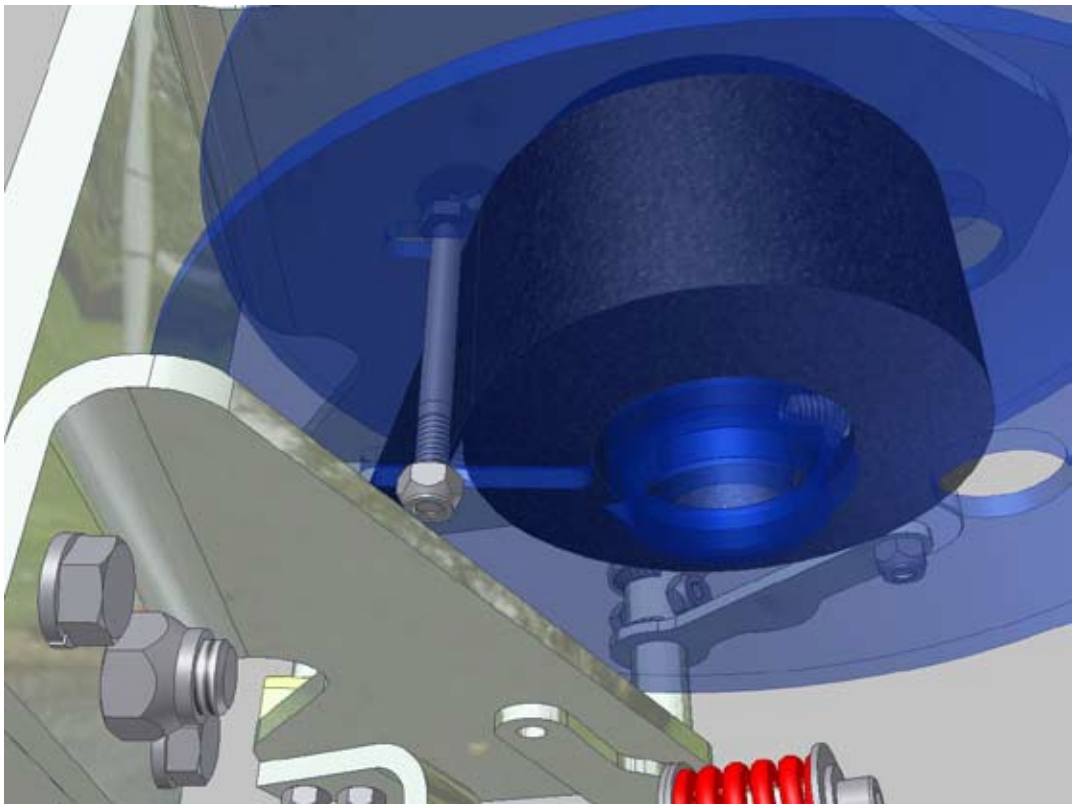


Figure 7: Tarp out-stop installation.

The tarp out-stop prevents the tarp from coming completely out the back of the trailer during unloading.

Step 1: Pull the tarp out the back of the trailer until approximately 24” (610 mm) remains in the trailer with the strap pulled tight.

Step 2: At the winch, install a 1/4”-20 X 2 3/4” bolt through the slot in the spool. Holding the bolt tight against the strap roll, tighten the bolt with a 1/4”-20 low-profile locking nut.

Step 3: After tightening the bolt, tap it down against the strap roll with a hammer or mallet – this recesses the bolt so there is not a bump in the strap roll.

Step 4: Verify that the top pole of the tarp stops approximately 24” (610 mm) from the rear of the trailer with the strap pulled tight. Small adjustments can be made by wrapping more or less strap around the top pole under the U-Bolt.

2.9 Winch Brake Adjustment

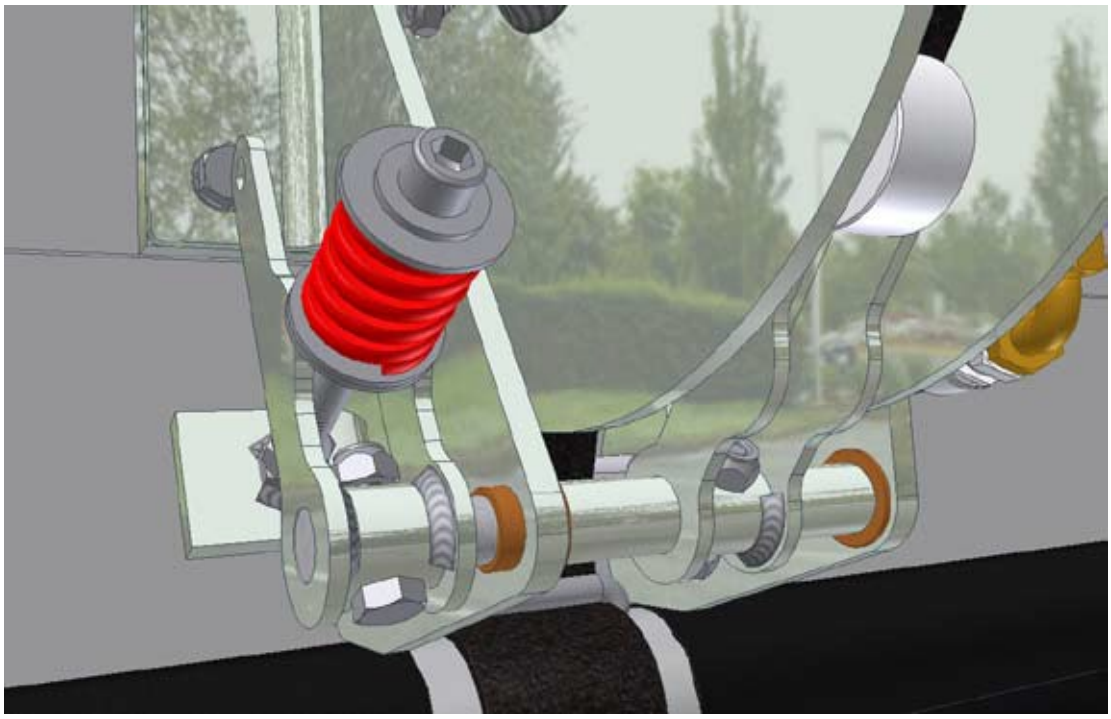


Figure 8: Winch brake

The winch brake retains the tarp in the retracted position at the top of the front wall during loading, transport and the beginning of the unloading cycle.

During loading, the tarp must conform to the load and the front wall of the trailer. The brake must release a short length - usually less than 12” (305 mm) – of strap from the spool while maintaining sufficient (but not excessive) tension on the strap. Excessive tension may cause the tarp pole to bend or restrict the tarp from coming out with the load.

Do not tighten the spring bolt more than 2 turns between testing.

Step 1: Begin adjustment by pulling the tarp out so that it is approximately 15 feet (4600 mm) from being fully retracted and adjust the 5/16”-18 spring bolt so the roller just touches the strap roll – this will ensure the spring bolt is not initially over-tightened which may cause damage.

Step 2: Retract the tarp and verify that the tarp will stay in the retracted position. Test by hanging a 10 lb (7 kg) object from the top pole at the strap.

Step 3: Adjust as necessary to achieve sufficient strap tension and tighten the jam-nut before operating the winch.

2.10 System Check

Inspect all fasteners and fittings for proper torque. Ensure there are no leaks and that all lines are secure before putting the trailer in service.

3.0 OPERATION

3.1 Normal Operation

Step 1: Verify that the tarp is fully retracted prior to loading the trailer. It is suggested that a viewing window/port be installed in the top of the front trailer wall so the operator can verify that the tarp is fully retracted from the winch operating position.

Step 2: It is recommended that the trailer is moved forward slightly, near the end of the unloading cycle, to reduce the amount of material unloaded on top of the tarp.

Step 3: After unloading the trailer, dislodge the tarp by hand from underneath any material that may have been unloaded on top of the tarp. Do not attempt to pull the tarp from under a load by using the winch or moving the trailer – this may damage the winch, tarp, strap or trailer.

Step 4: Tarp and strap life is extended if the tarp is placed inside the rear of the trailer prior to retraction – this reduces the wear caused by pulling the tarp over the sharp edges of the rear of the trailer.

Step 5: Ensure hydraulic power is supplied to the trailer and engage the winch by activating the power switch (electric systems) or pulling out the manual valve knob (manual systems).

Step 6: The tarp takes 5-15 seconds to retract and when fully retracted, hydraulic fluid delivered to the winch is redirected through the relief valve in the manifold. Full retraction can be verified through the viewing window/port (if installed), otherwise it is signified by an audible bang as the tarp top pole impacts the strap roller, as well as an audible change in the hydraulic system sound as the fluid is directed through the relief valve. At this point, disengage the winch and verify that the tarp is fully retracted.

3.2 Electric System Manual Override

The electrically-activated valve supplied with electric systems includes a manual override knob that allows the operator to activate the winch without electric power. The manual override is intended for emergency use, not for continuous-duty operation.

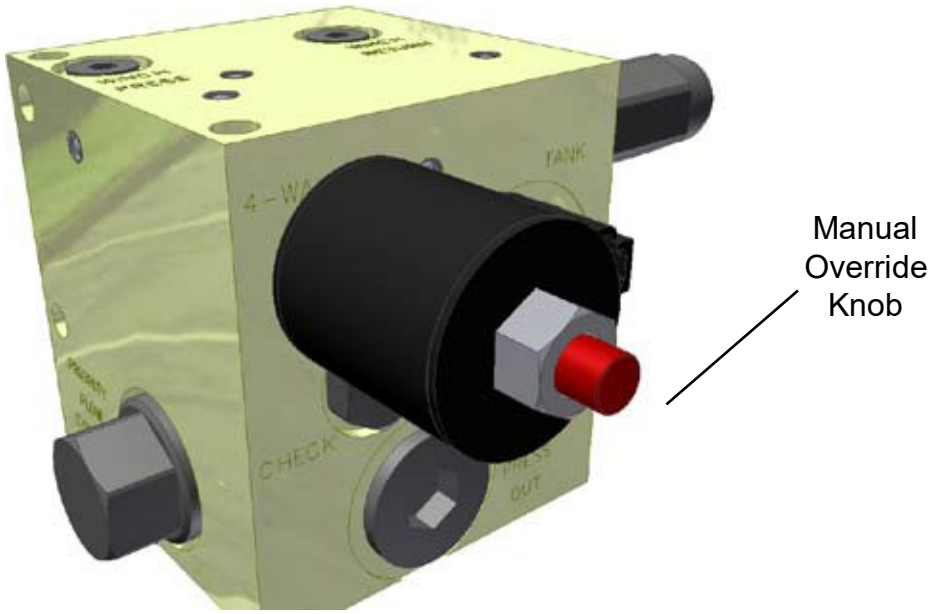
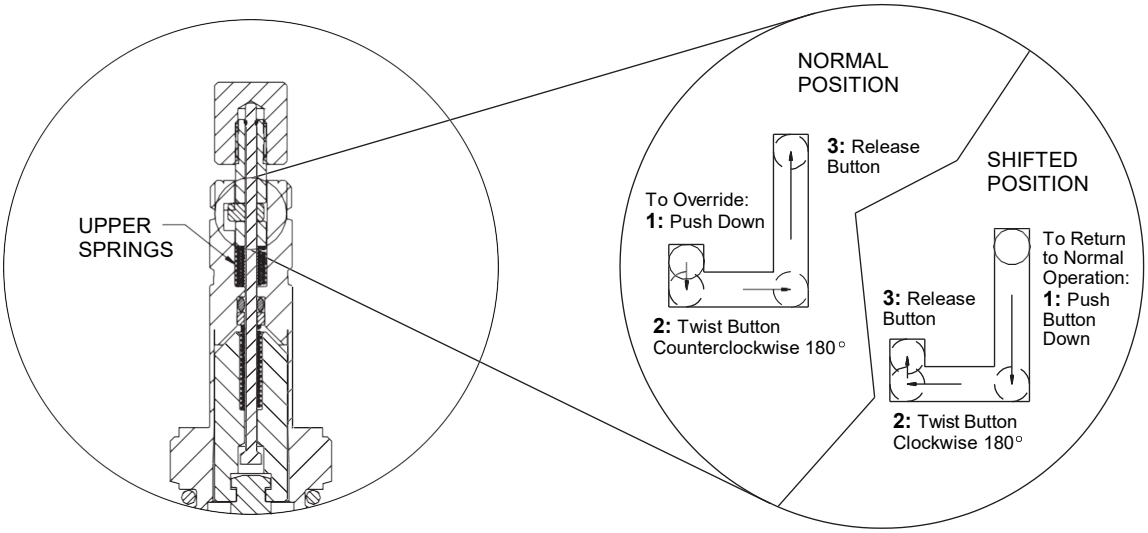


Figure 9: manual override knob on electrically-activated valve.



Exaggerated illustration of operation of Manual Override “M” option

Figure 10: operation of the manual override knob. Ensure the valve is returned to the normal position after the tarp is retracted.

TOOL:	WHERE USED:
End wrenches:	
7/16”	1/4”-20 nuts & bolts (Tarp out-stop)
1/2”	5/16”-18 nuts (Spring bolt jam-nut, U-bolt nuts)
9/16”	3/8”-16 nuts & bolts (Base plates, manifold bracket)
5/8”	-6 (3/8”) port/hose/tube fittings
11/16”	-6 (3/8”) port/hose/tube fittings
3/4”	1/2”-13 nuts & bolts (Strap roller nut & bolt, motor nuts)
1”	Control valve, relief valve
1 3/8”	-16 (1”) port/hose/tube fittings
1 1/2”	-16 (1”) port/hose/tube fittings
Ratcheting driver with the following sockets:	
7/16”	1/4”-20 nuts & bolts (Tarp out-stop)
1/2”	5/16”-18 nuts (Spring bolt jam-nut, U-bolt nuts)
9/16”	3/8”-16 nuts & bolts (Strap Roller, manifold bracket)
3/4”	1/2”-13 nuts & bolts (Strap roller nut & bolt, motor nuts, mounting winch)
Hex (Allen) wrenches:	
1/8”	#10-24 button head socket screws (SAE strap roller bracket)
5/32”	1/4” button head socket screws (strap/spool attach)
1/4”	-6 port plugs, 5/16”-18 socket head cap screw (spring bolt)
5/16”	1/2”-13 countersunk bolts (motor bolts)
5/8”	-16 port plugs
Power drill and the following bits:	
3/8” (9.5 mm)	Tarp top pole for U-bolt attachment
7/16” (11 mm)	Mounting winch, strap roller, manifold bracket (opt. – may be welded on)
1 1/4” (32 mm) hole saw (optional)	Manual valve clearance through trailer wall (opt. - if manifold is mounted below front shield)
Welding equipment (optional)	Mounting manifold bracket (opt. – may be bolted on)
Cutting tools (optional)	Cutting access panels in trailer wall or front shield (opt. - if necessary)

MATERIAL:	WHERE USED:
Hoses/tubing:*	*Hose/tube lengths will vary depending on installation
-6 (3/8”) (10 mm) hose/tube with Female -6 (3/8”) 37º JIC (ISO 8434-2) each end	MANIFOLD – TO – WINCH MOTOR: PRESSURE WINCH MOTOR – TO – MANIFOLD: RETURN
-16 (1”) (25 mm) hose/tube with female -16 (1”) 37º JIC (ISO 8434-2) fitting on manifold end	PUMP – TO – MANIFOLD MANIFOLD – TO – DRIVE: PRESSURE DRIVE – TO – MANIFOLD: RETURN MANIFOLD – TO – TANK
Fittings:*	*Required fittings will vary depending on installation
Hose/tube clamps:*	*Required clamps will vary depending on installation
Fasteners:*	*Fastener lengths and required quantities will vary depending on installation
3/8” (M10) bolts, nuts, washers, locking nuts (or plain nuts w/locking washers)	Mounting strap roller (2 each) and manifold bracket (2 each); use grade 5 (class 8.8) or stronger fasteners.
1/2” (M12) bolts, nuts, washers, locking nuts (or plain nuts w/locking washers)	Mounting winch (2 each); use grade 8 (class 10.9) or stronger fasteners.
rivets	Securing tarp poles to tarp
PVC pipe:	
2” (50 mm)	Top tarp pole (1); Length: 1” (25 mm) shorter than trailer interior width
1 1/2” (40 mm)	Middle tarp poles (3);Length: 1” (25 mm) shorter than trailer interior width
Wiring	Wiring length will vary depending on installation
14 AWG 2-conductor	Electric-controlled systems

KITS (INCLUDE ALL REQUIRED PARTS- EXCLUDING TARPS AS NOTED):		
DESCRIPTION	**PART #**	
MANUAL ASSEMBLY WITH TARP	06277701	
MANUAL ASSEMBLY WITHOUT TARP	06277702	
ELECTRIC 12VOLT ASSEMBLY WITH TARP	06277703	
ELECTRIC 24VOLT ASSEMBLY WITH TARP	06277704	
ELECTRIC 12VOLT ASSEMBLY WITHOUT TARP	06277705	
ELECTRIC 24VOLT ASSEMBLY WITHOUT TARP	06277706	

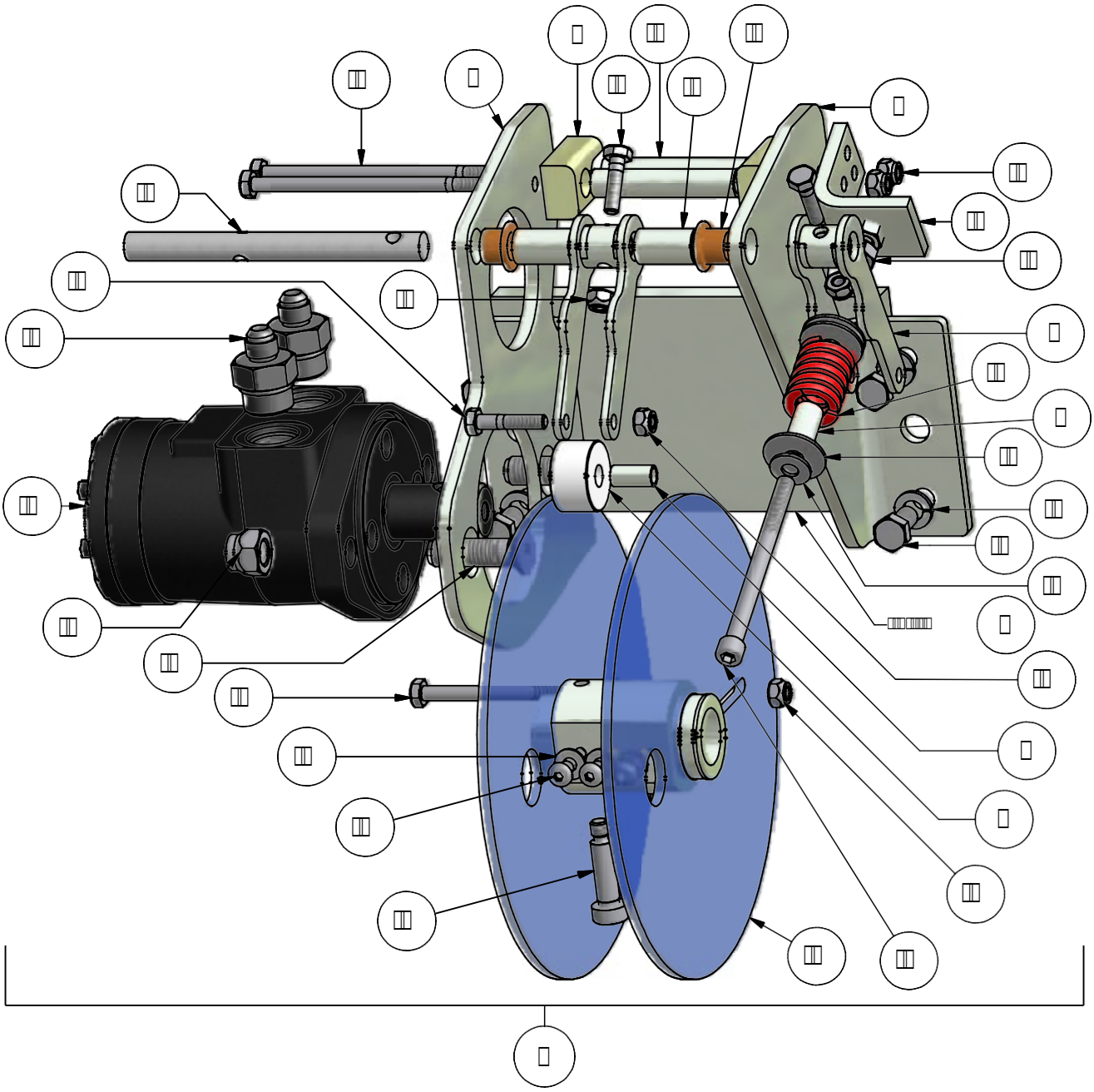
PARTS (INCLUDED IN KITS AS REQUIRED):
[E]= FOR ELECTRIC KITS ONLY

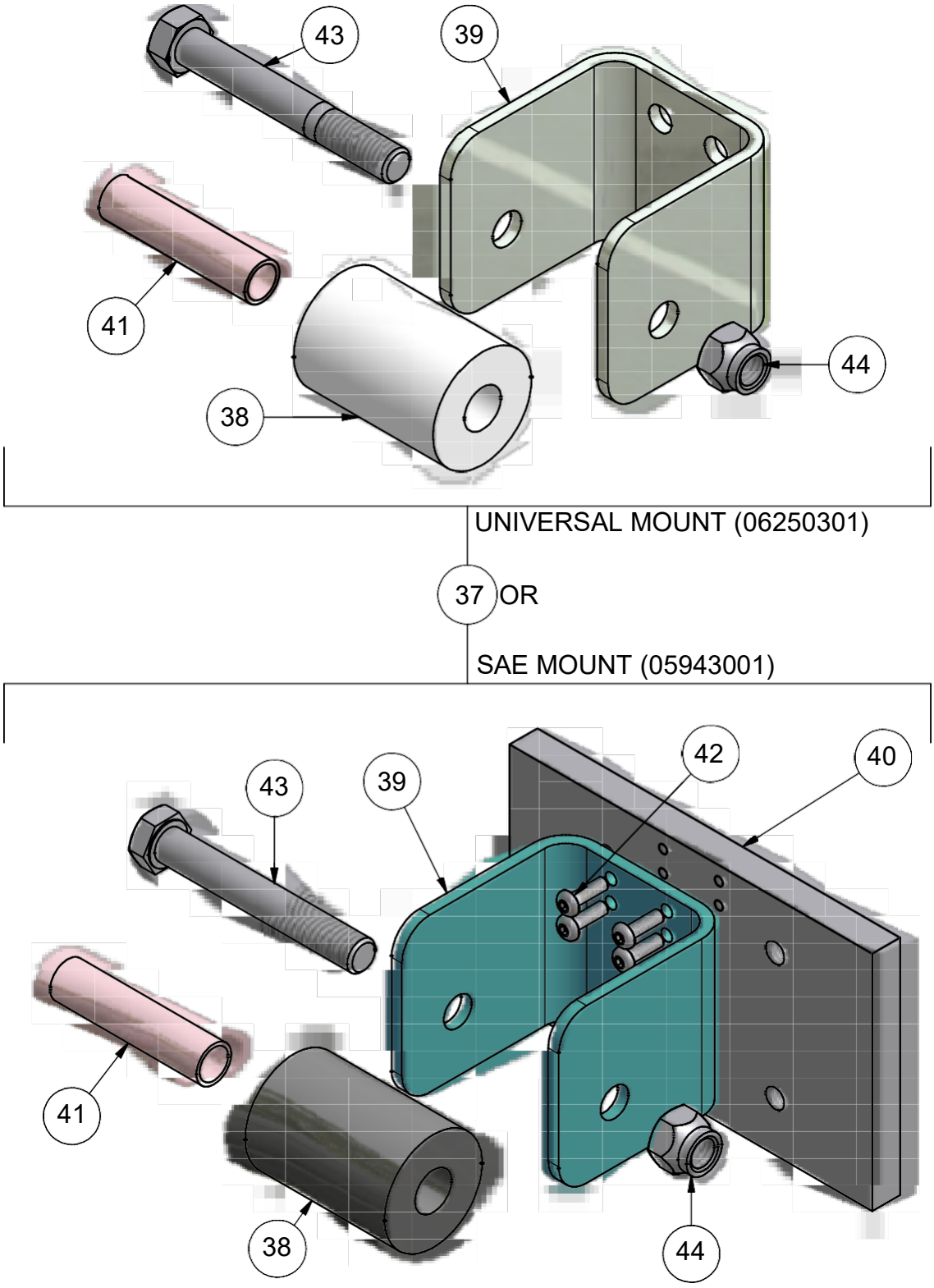
ID #	QTY	DESCRIPTION	PART #	
			*SAE MOUNTING	UNIVERSAL MOUNTING
1	1	HYDRAULIC WINCH ASSEMBLY	05942301	06250201
		INCLUDES ITEMS 2-36		
2	1	ROLLER, BRAKE	06049201	06049201
3	1	ROLLER AXLE, BRAKE	06093401	06093401
4	1	SPRING SPACER, BRAKE	06117101	06117101
5	2	SWING ARM WELDMENT, BRAKE	06119201	06119201
6	1	WINCH MOTOR MOUNT	06126701	06126701
7	1	SUPPORT, WINCH STRAP GUIDE AND BRAKE	06126801	06126801
8	1	WINCH BASE PLATE	06126901	06250501
9	2	WINCH STRAP GUIDE	06127301	06127301
10	2	SPACER, WINCH STRAP GUIDE	06127401	06127401
11	1	SPRING MOUNT, BRAKE	06127501	06127501
12	1	SWING ARM SHAFT, BRAKE	06127601	06127601
13	2	SHAFT SPACER, BRAKE	06127701	06127701
14	1	WINCH SPOOL WELDMENT, BOLT-ON	06175301	06175301
15	1	SHOULDER SCREW, BOLT-ON WINCH SPOOL	06175401	06175401
16	1	SPRING 105-505	84452610	84452610
17	2	6400-06-10 ST THREAD CONNECTOR MJIC X M ORING	84684100	84684100
18	2	BUSHING SINTERED SF-1620-8	85811020	85811020
19	1	STRAP NYLON CSW 2”X75’ (NOT PICTURED)	85811050	85811050

* All hydraulic CleenSweeps are now universal mounting – SAE mounting part #’s listed are for replacement parts only.

20	1	HYDRAULIC MOTOR	85819475	85819475
21	3	SCREW BUTTON ZN 1/4”-20 X 3/8”	86404312	86404312
22	2	BOLT HEX GR5 ZN 1/4”-20 X 1”	86414050	86414050
23	1	BOLT HEX GR5 ZN 1/4”-20 X 1-1/4”	86415500	86415500
24	1	BOLT HEX GR5 ZN 1/4”-20 X 2-3/4”	86420500	86420500
25	2	BOLT HEX GR5 ZN 1/4”-20 X 4-1/2”	86424000	86424000
26	1	BOLT SOCKET ZN 5/16”-18 X 4”	86432510	86432510
27	4	BOLT HEX GR5 ZN 3/8”X3/4”	86437000	86437000
28	3	WASHER FLAT #12 SAE	86550552	86550552
29	1	WASHER FLAT 1/4”	86551000	86551000
30	3	WASHER FENDER 5/16” X 1-1/4”	86552530	86552530
31	4	WASHER LOCK 3/8”	86555000	86555000
32	2	NUT HEX NYLOCK 1/4”-20	86626000	86626000
33	4	NUT HEX NYLOCK JAM NUT1/4”-20	86626030	86626030
34	1	NUT HEX 5/16”-18	86627000	86627000
35	2	NUT HEX NYLOCK 1/2”	86629500	86629500
36	2	BOLT FLOOR GR8 1/2” X 1-3/4”	87420100	87420100
37	1	STRAP ROLLER ASSEMBLY	05943001	06250301
		INCLUDES ITEMS 38-44		
38	1	STRAP ROLLER	05795501	05795501
39	1	STRAP ROLLER BRACKET	05796201	06250401
40	1	STRAP ROLLER BRACKET BASE PLATE	05797701	NOT REQ.
41	1	STRAP ROLLER BUSHING	05813401	05813401
42	4	SCREW BUTTON #10-24 X 5/8”	86404350	NOT REQ.
43	1	BOLT HEX GR8 1/2”-13 X 3 1/2”	86456500	86457000
44	1	NUT HEX NYLOCK 1/2”-13	86629500	86629500
45	1	HYDRAULIC MANIFOLD ASSEMBLY (ELECTRIC)[E] ********** OR********** HYDRAULIC MANIFOLD ASSEMBLY (MANUAL)	05973301 ********** 05973304	05973301 ********** 05973304
		INCLUDES ITEMS 46-55		
46	1	MANIFOLD BODY	05971601	05971601
47	4	HEX UNION, -16 37º JIC X -16 SAE O-RING	84685400	84685400

48	2	HEX UNION,-6 37º JIC X -6 SAE O-RING	84684000	84684000
49	7	8 mm EXPANDER PLUG MB 800-080	85101130	85101130
50	2	PLUG, HEX SOCKET,-16 SAE O-RING	84687900	84687900
51	2	PLUG, HEX SOCKET,-6 SAE O-RING	84687400	84687400
52	1	PRIORITY FLOW CONTROL (5 GPM), FREA-XAN-5.0	85101045	85101045
53	2	CHECK VALVE CV08-20-0-N-25	85103601	85103601
54	1	RELIEF VALVE RV08-20H-0-N-18/800	85107555	85107555
55	1	CART. VALVE SV10-40M-0-N-0 (ELECTRIC) E ********** OR ********** CART. VALVE, 4-WAY PULL MP10-40K-0-N (MANUAL)	85108800 ********** 85104949	85108800 ********** 85104949
56	1	TARP, 18 OZ. VINYL, STANDARD TRIM-TO-FIT (NOT PICTURED)	85811120	85811120
57	1	U-BOLT ASSEMBLY (NOT PICTURED)	86671100	86671100
58	1 E	COIL 12V WEATHERPROOF 4303712 (NOT PICTURED) **********OR********** COIL 24V WEATHERPROOF 4303724 (NOT PICTURED)	85601805 ********** 85600250	85601805 ********** 85600250
59	2 E	SOCKET 0462-209-16141 (NOT PICTURED)	85600120	85600120
60	1 E	2 PIN PLUG DT06-2S(NOT PICTURED)	85600100	85600100
61	1 E	W2S WEDGELOCK (NOT PICTURED)	85100110	85100110
62	1 E	BUTTON START W/BOX XALD101 (NOT PICTURED)	85791635	85791635
63	1	MANIFOLD MOUNTING BRACKET, STEEL (NOT PICTURED)	06033101	06033101
64	1	MANIFOLD MOUNTING BRACKET, ALUMINUM (NOT PICTURED)	06033102	06033102
65	2	BOLT HEX GR5 ZN 3/8” X 5 3/4” (NOT PIC-TURED)	86446012	86446012
66	2	WASHER FLAT 3/8” (NOT PICTURED)	86554000	86554000
67	2	NUT HEX NYLOCK 3/8” (NOT PICTURED)	86626000	86626000

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UNIVERSAL MOUNT (06250301)
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OR
SAE MOUNT (05943001)
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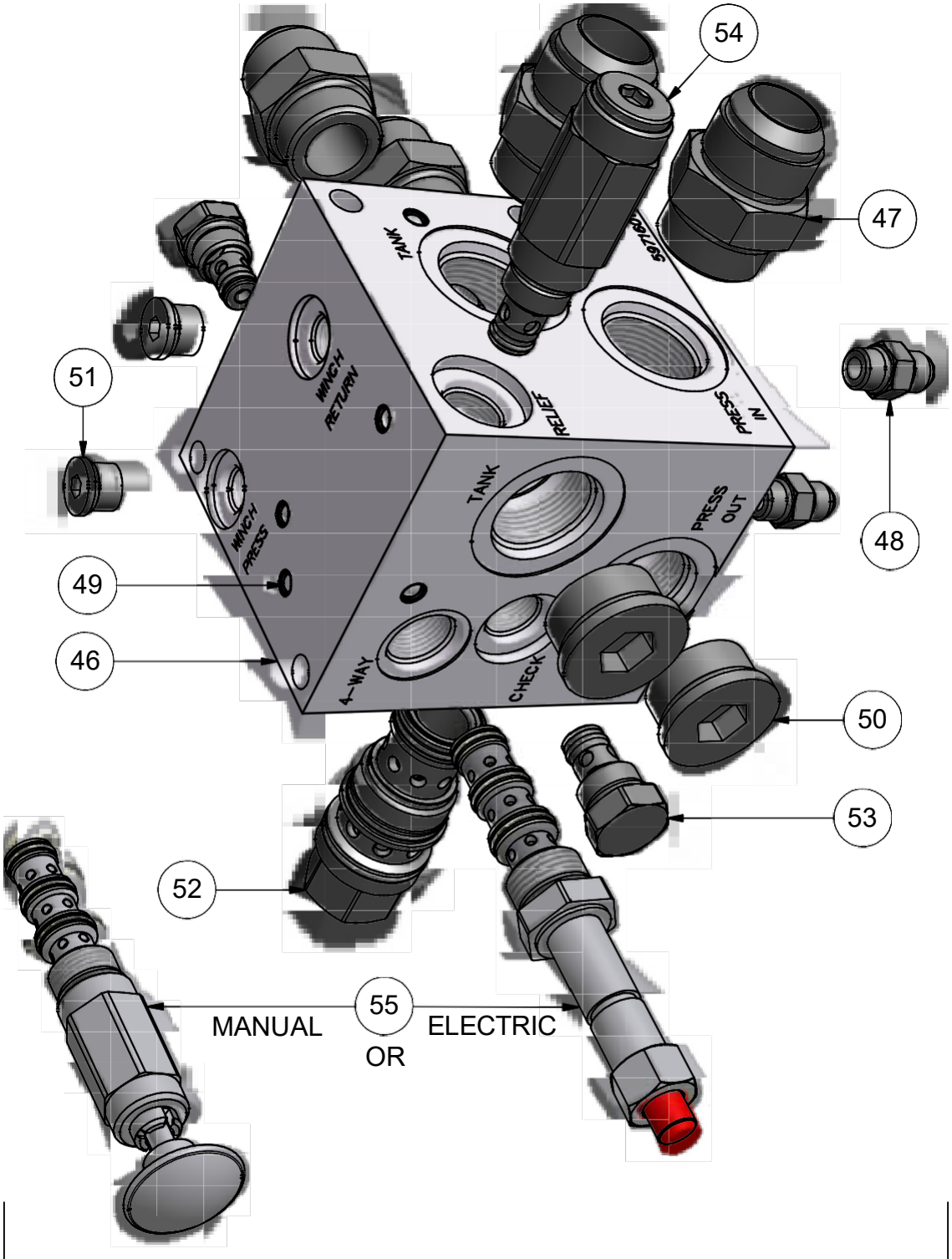
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MANUAL
OR
ELECTRIC
TANK
RETURN
PRESS IN
RELIEF
WINCH RETURN
TANK
PRESS OUT
WINCH PRESS
4-WAY
CHECK