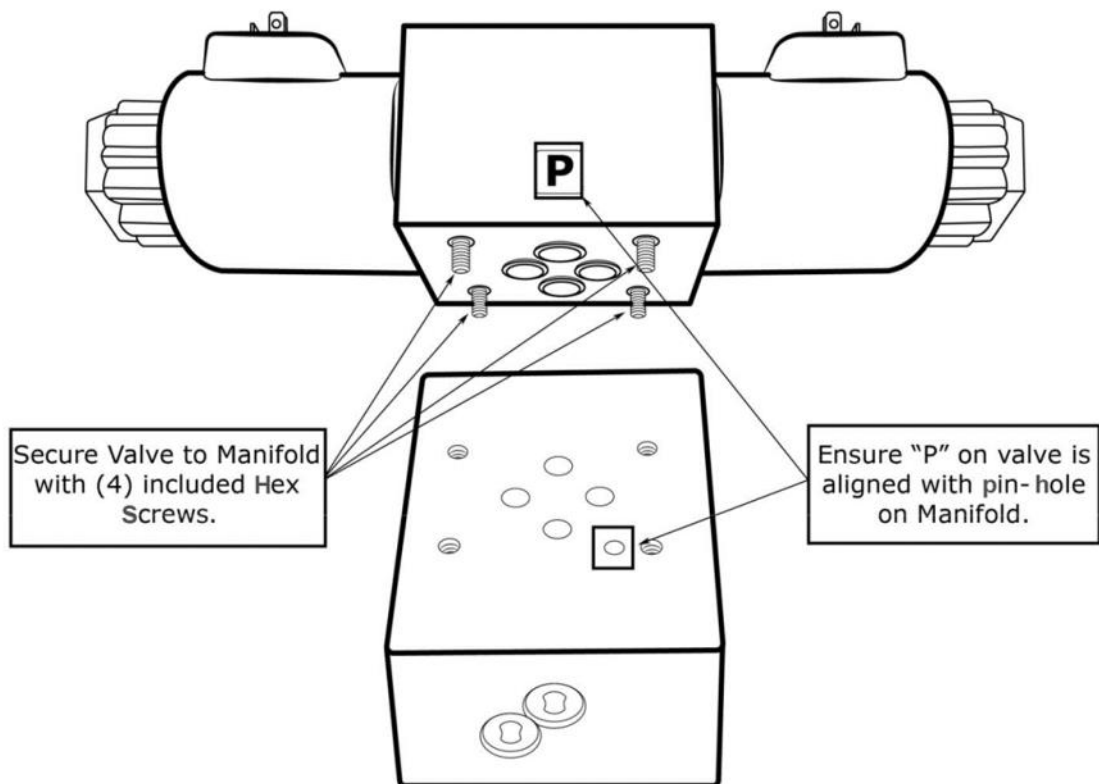


ATTENTION (READ BEFORE PROCEEDING)

REMOVE AND DISCARD CARDBOARD PLATE on valve (held in place by 4 yellow plastic inserts) before attaching baseplate as shown below.



(4) Hex Screws Torque Specs: **2 ft-lbs.**



NEED HELP?

Representatives are here to help with any questions concerning this product. Please email us with questions.

Summit-Hydraulics.com

Contact@Summit-Hydraulics.com

Monday-Thursday—7:30 AM to 4:30 PM (MST)

Friday—8:00 AM to 12:00 PM (MST)

KUBOTA THIRD FUNCTION VALVE KIT

APPLICATIONS: BX1880, BX2380, BX2680 & BX23S | **LOADERS:** LA344, LA344S, LA340 & LA340S

SKU: TFK8

This Summit-Hydraulics complete third function kit allows you to add an electronically controlled hydraulic function to your machine.



INCLUDED:

- 12V solenoid operated valve
- Joystick handle with 2 momentary push button switches
- Wiring harness with weatherproof Deutsch connectors
- Valve mounting bracket (including hardware)
- 1/4" Body ISO 7241-B Female Couplers
- 1/4" Body ISO 7241-B Male Couplers
- Assorted dust caps
- Hydraulics hose assemblies
- Adapters & fittings
- Installation instructions

RECOMMENDED TOOLS & SUPPLIES

- General Mechanic Tool Set
- Open-Ended Wrench Set
- Crescent Wrench
- Torque Wrench

We recommend all Summit Hydraulics products are installed by experienced professionals. With proper installation and maintenance, Summit Hydraulics products will provide exceptional longevity and durability. For any questions, please contact us immediately. Thank you for trusting Summit Hydraulics!

REPLACEMENT PART?

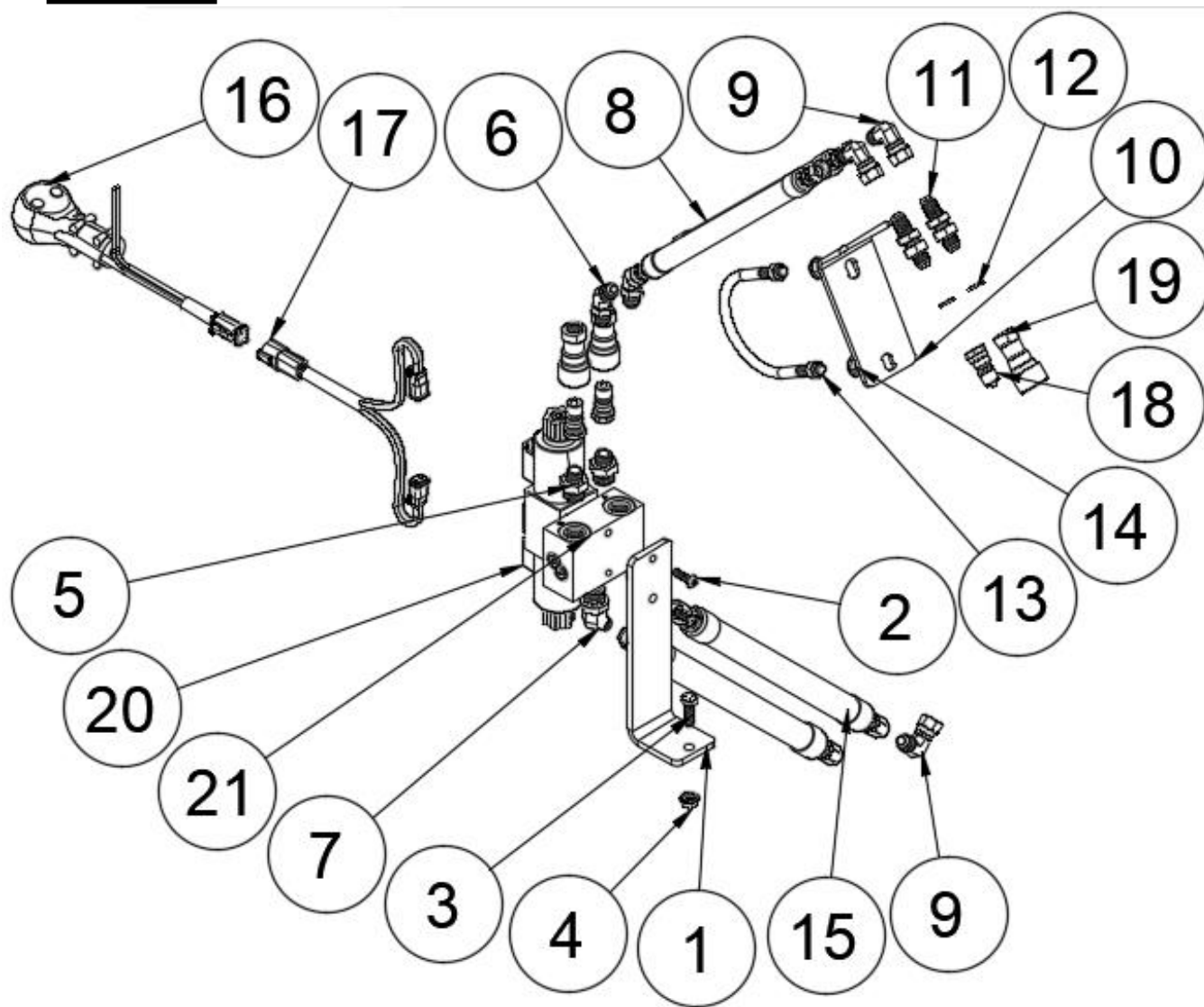
For any OEM replacement hardware/parts, please refer to OEM service. For all included hardware/parts, please refer to Summit Hydraulics' website. Please email Contact@Summit-Hydraulics.com for further questions.

NOTE:

For any OEM hardware, please refer to your OEM service manual for torque specifications. For all included hardware, please torque to the specifications shown in the instructions. We recommend to use a torque wrench when tightening instead of an impact wrench. All torque specifications will be included throughout the instructions. Please reference instructions.

Part Breakdown

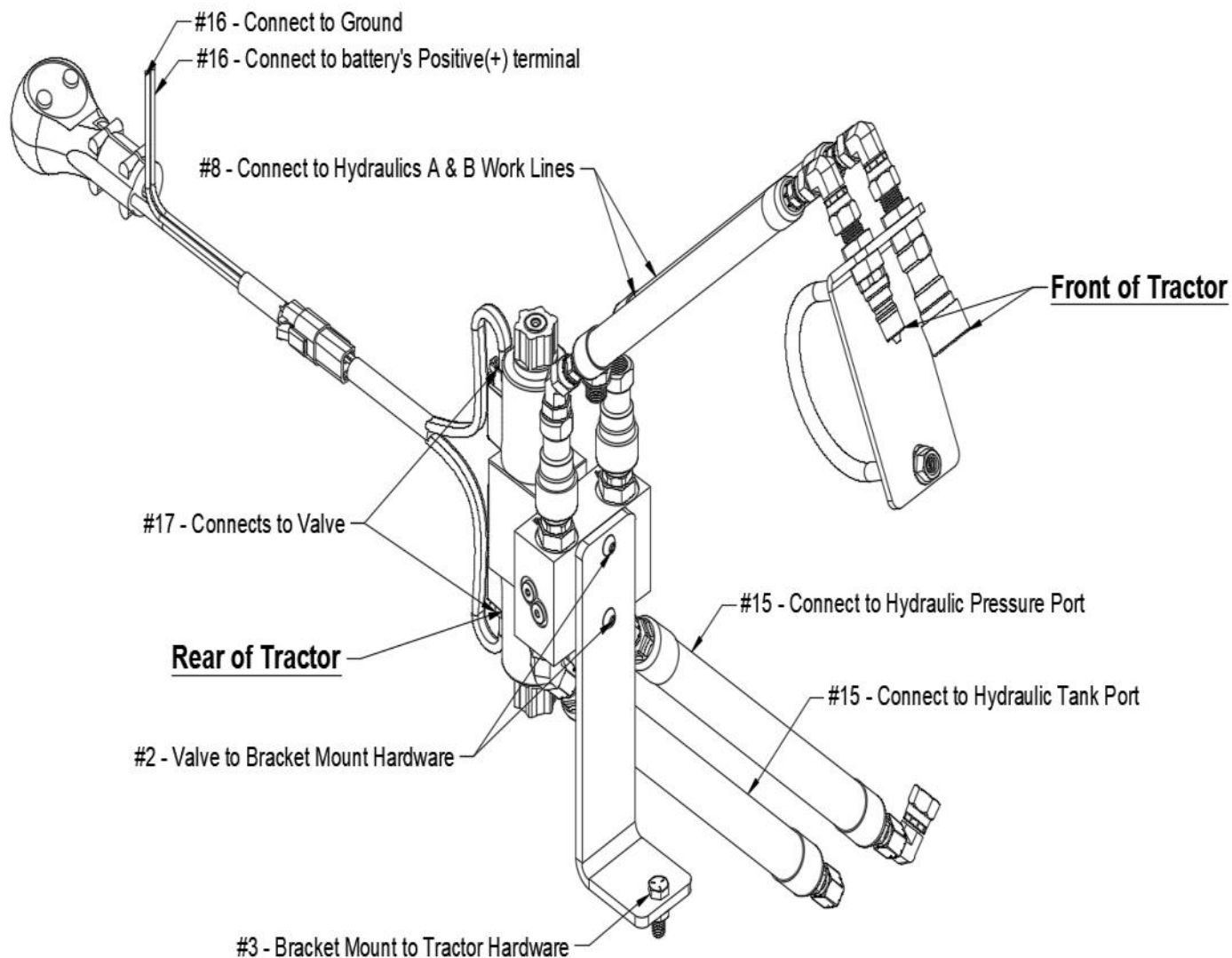
Figure 1



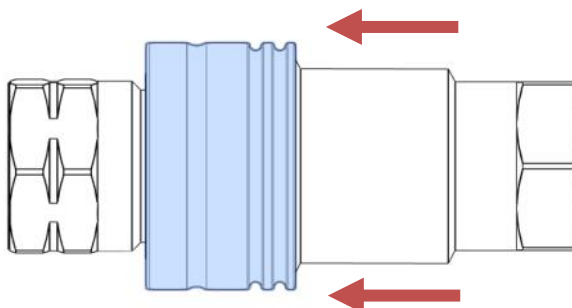
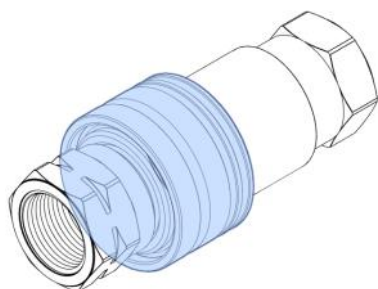
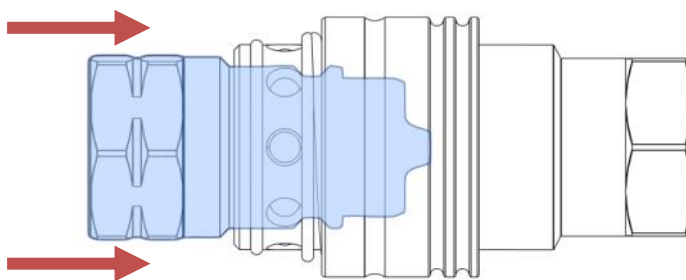
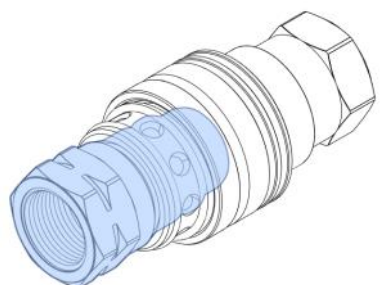
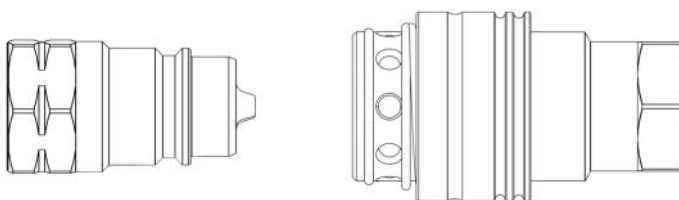
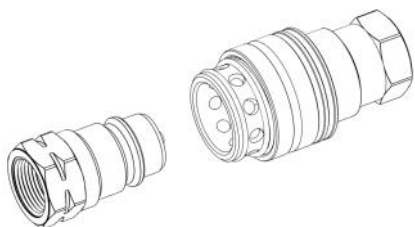
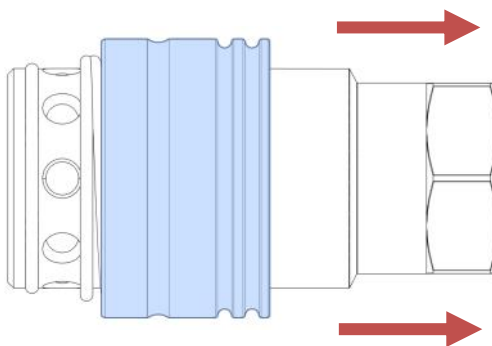
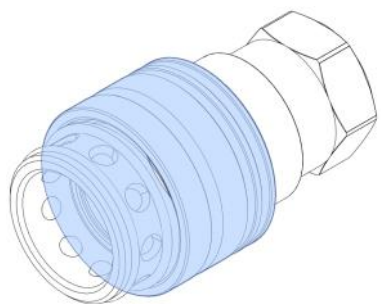
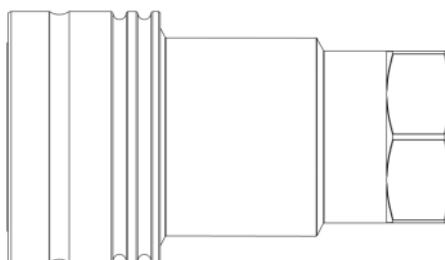
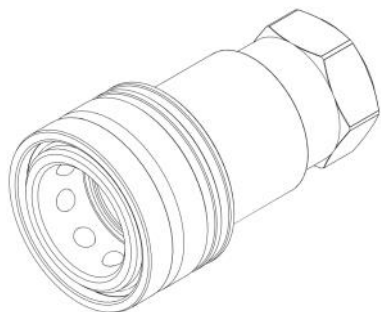
PARTS LIST			PARTS LIST			PARTS LIST		
ITEM	PART NUMBER	QTY	ITEM	PART NUMBER	QTY	ITEM	PART NUMBER	QTY
1	BR010	1	8	H04-06FJ-54	2	15	H06-06FJ-60	2
2	HW025	2	9	6500-06-06-FG	3	16	SW-J2	1
3	HW026	1	10	HW015	1	17	SW-4P2S-3	1
4	HW027	1	11	2700LN-06-06	2	18	B14M-06S	3
5	N08S-06S	2	12	3-906	2	19	B14F-06S	3
6	6802-06-06-FG	2	13	HW030	1	20	D03W-2A-12V	1
7	6802-06-08-FG	2	14	HW028	2	21	D03S12-08S	1

Third Function Valve Kit

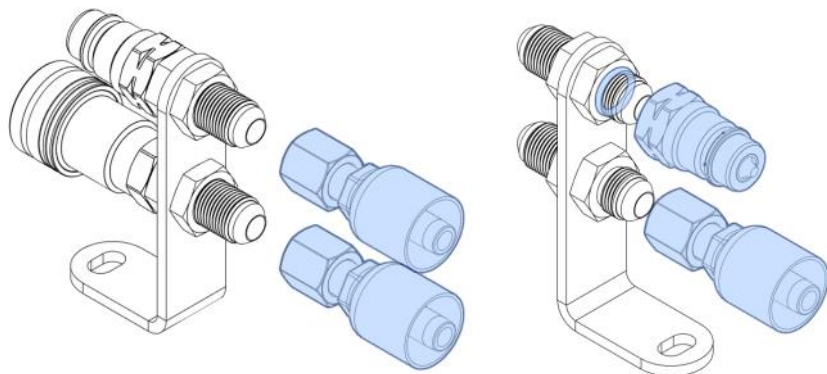
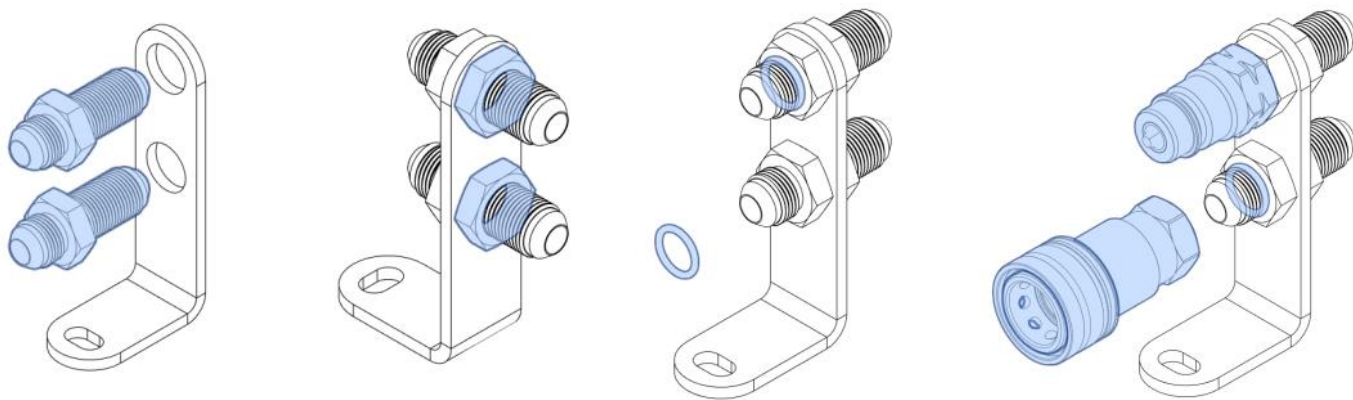
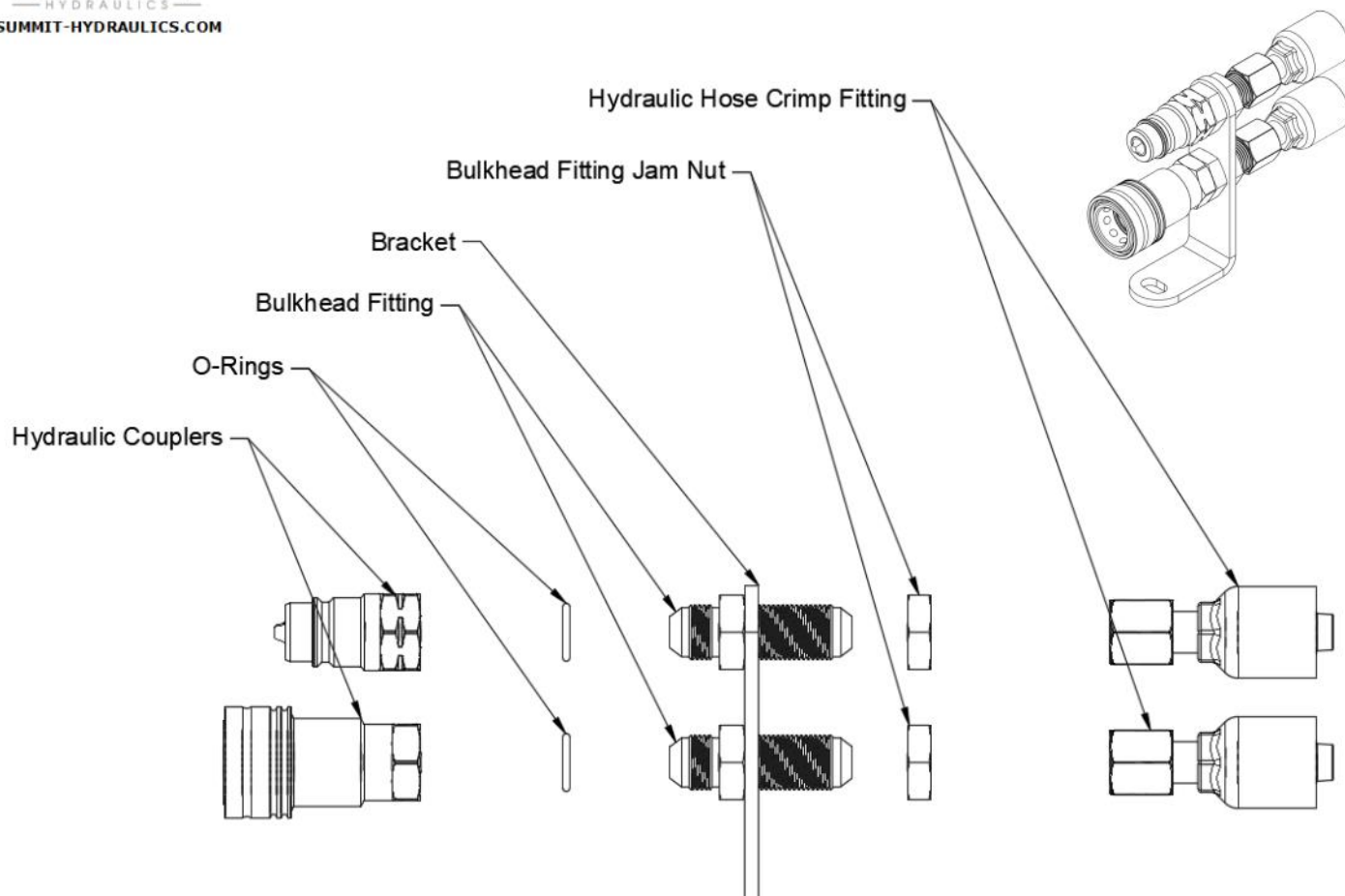
Figure 2



Hydraulic Quick Couplers Guide



Bulkhead Fitting Installation Guide

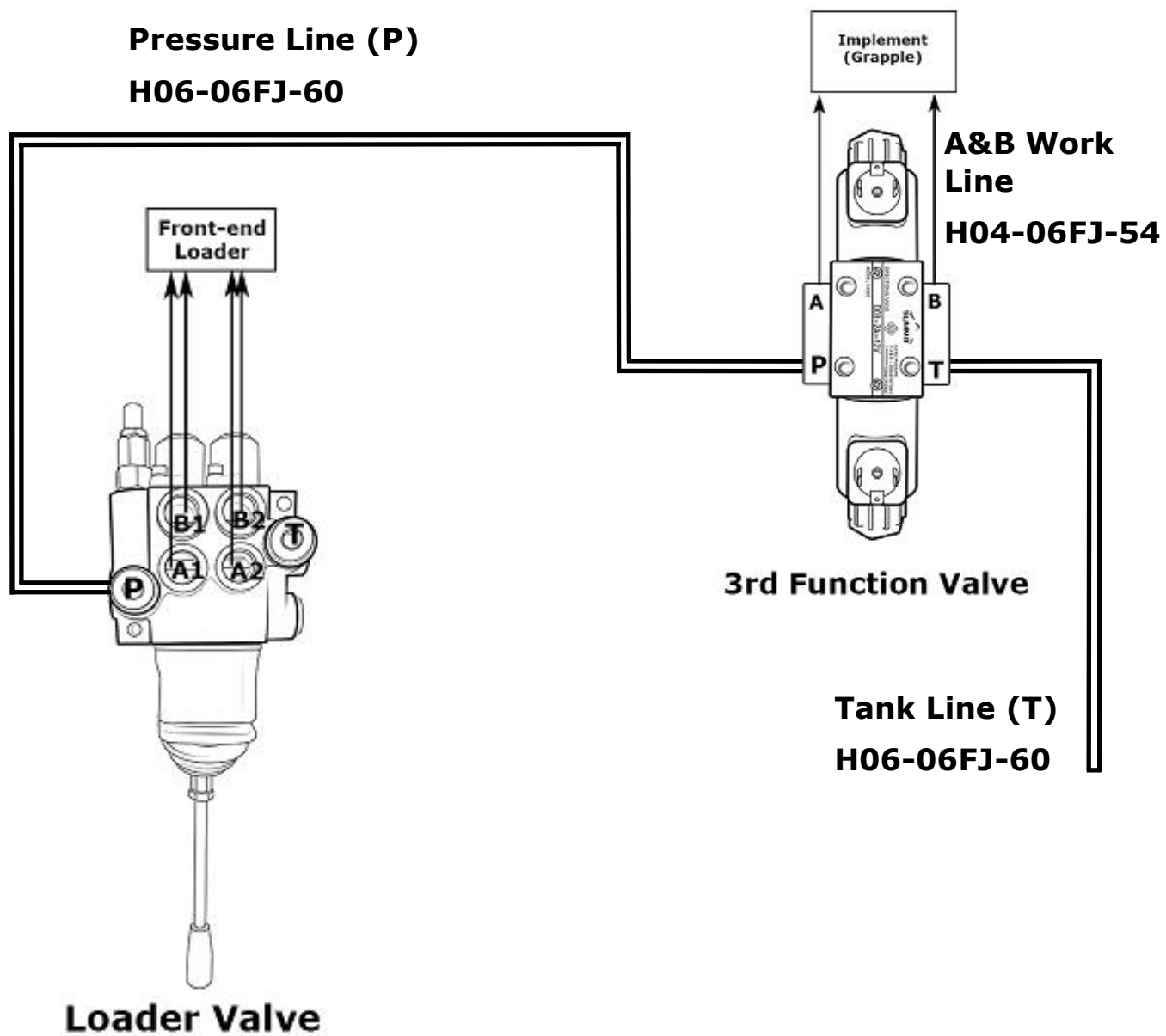


CAUTIONS:

- 1)** The longer side of the bulkhead fitting will only connect **hydraulic hose**.
- 2)** The short end of the bulkhead fitting will have a **O-Ring** for **only coupler**.
- 3)** The short end of the bulkhead fitting will not have a **O-Ring** if a hydraulic hose is connected.

Third Function Kit

Hydraulic Diagram



Installation Procedure

WARNING:

- Lubricate all threads and O-Rings with hydraulic fluid before installing fittings into the hydraulic manifold. All ports are SAE/O-Ring Boss Thread. Do not use Teflon tape or pipe dope.
- We recommend hand tightening the fitting first, snugging the fitting using a wrench, and applying a quarter turn of torque to the fitting.
- Unless stated otherwise, all fittings/adapters are right hand thread. Please tighten all fitting/adapters in the correct orientation. Right turn-tighten. Left turn-loosen. Damaged thread can lead to possible leaks and failure. Improper install of thread will result in warranty denial. Reference warranty page for details.

Initial Preparations

NOTE: These steps need to be followed prior to installation of this valve kit.

- 1)** Park tractor on a flat surface. Place gear shift lever in park. Turn off engine and remove ignition key.
- 2)** Place chocks in front and behind tractor's left rear wheel.

Initial Assembly

- 1)** Install Adapter, 3/8" JIC Male x SAE/ORB Male (**fig. 1 #5**) into both "P" and "T" ports on valve assembly. See (**fig. 3**).
- 2)** Install Adapter, SAE Male x SAE Male (**fig. 1 #7**) into both "A" and "B" ports. See (**fig. 4**).
- 3)** Attach (2) Male Quick Couplers (**fig. 1 #18**) to SAE Male Adapters installed in previous step. See (**fig. 5**).
- 4)** Install (2) 3/8" JIC Male x 3/8" JIC Bulkhead Adapters (**fig. 1 #11**) to Quick Coupler Mounting Bracket (**fig. 1 #10**) as shown in (**fig. 6**).
- 5)** Install (2) #6 SAE/ORB O-Ring (**fig. 1 #12**) to the "Short Threaded Side" of the (2) 3/8" JIC Male x 3/8" JIC Bulkhead Adapters (**fig. 1 #11**). See (**fig. 7**).
- 6)** Attach (1) Male & (1) Female Coupler to the (2) 3/8" JIC Male x 3/8" JIC Bulkhead Adapters (**fig. 1 #11**). See (**fig. 8**).

Figure 3

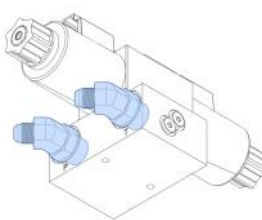


Figure 4

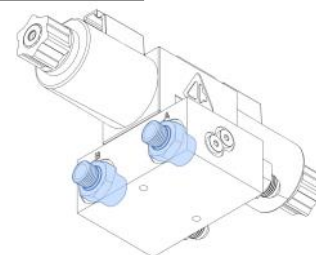


Figure 5

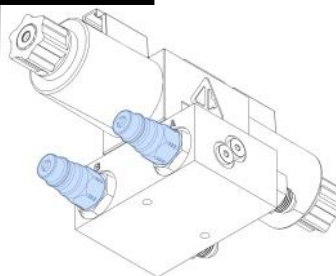


Figure 6

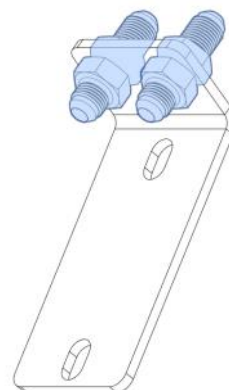


Figure 7

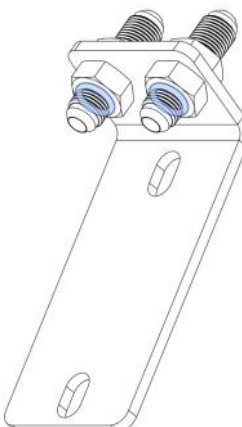
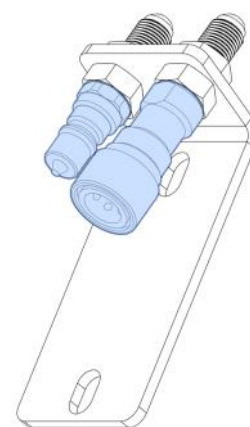


Figure 8

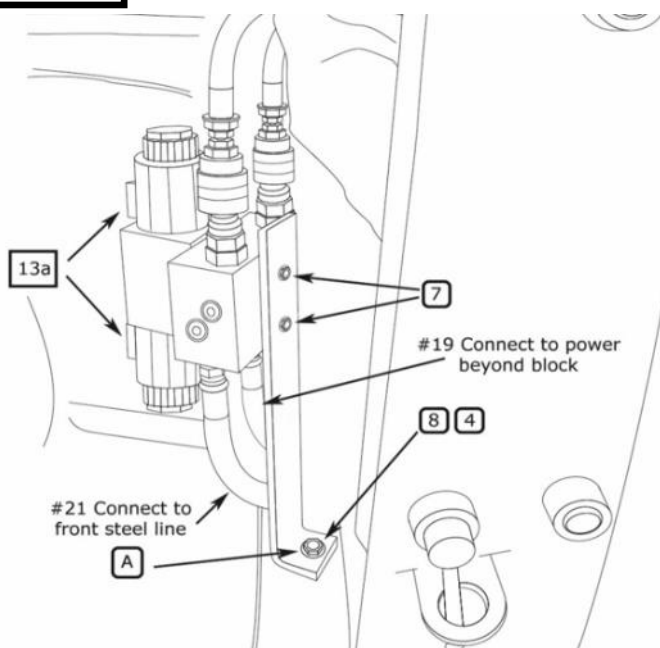


Installation Procedure

Valve Installation

- 1)** Remove platform carriage bolt on right-hand side of tractor. See **(fig. 9)**.
- 2)** Attach Valve Mounting Bracket **(fig. 1 #1)** to existing hole **(fig. 9 #A)** on machine using Socket Head Screw **(fig. 1 #2)** and Flange Nut **(fig. 1 #4)**. Bolt should face upward. See **(fig. 9)**. Torque the bolt to 20 ft-lbs.
- 3)** Attach the Valve Assembly **(fig. 1 #20 & 21)** to Valve Mounting Bracket **(fig. 1 #14)** using two Socket Head Cap Screw **(fig. 1 #2)**. Torque the bolt to 12 ft-lbs.

Figure 9



#7

Torque Specs: 12 ft-lbs.

#8

Torque Specs: 20 ft-lbs.

Pressure & Return Line Installation

NOTE: If you have not already, place chocks in front and behind tractor's left rear wheel.

- 1)** Loosen the lug nuts on the right rear wheel. Do not remove the lug nuts yet.
- 2)** Lift the tractor to a safe height using the recommended factory lift points. Make sure to place safety jack stands where the factory recommends.
- 3)** Once tractor is safely lifted, remove the lug nuts and the right rear wheel. Follow factory procedures to remove the inner fender to expose all of the hydraulic lines.
- 5)** Locate the Power Beyond Port on the Selective Control Valve (SCV). See **(fig. 10)**.
- 6)** Locate the proper Return to Tank port. See **(fig. 11)**.
- 7)** A steel line will be connected from the Power Beyond Port on the SCV, and routed to the Return to Tank Port. Once the line is located, please remove this line.

Figure 10

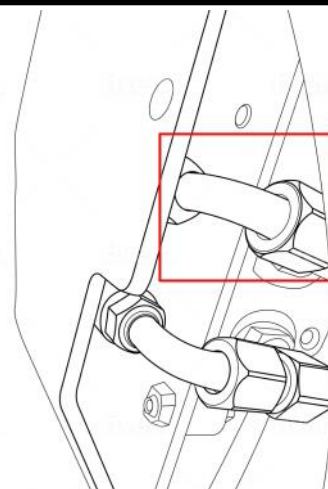
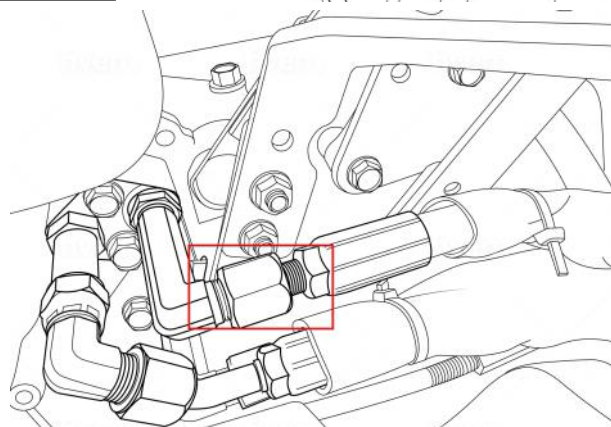


Figure 11



Installation Procedure

Pressure & Return Line Installation

8) Locate the 90 Elbow, 3/8" JIC Male x 3/8" JIC Female Adapter (**fig. 1 #9**). Attach the 90 Elbow Adapter to the Power Beyond Port on the SCV. See (**fig. 10 & 13**).

9) Connect one end of the 3/8" JIC Female Hydraulic Pressure Hose (**fig. 1 #15**) to the 90 Elbow, 3/8" JIC Male x 3/8" JIC Female Adapter (**fig. 1 #9**). Connect the other 3/8" JIC Female Hose end to the "**P**" Port on the Valve Body. See (**fig. 13**).

8) Connect one end of the 3/8" JIC Female Hydraulic Return to Tank Hose (**fig. 1 #15**) to the Tank Port. See (**fig. 11**). Connect the other 3/8" JIC Female Hose end to the "**T**" Port on the Valve Body. See (**fig. 12**).

9) Using the provided zip tie, secure the Pressure and Tank lines to minimize movement during tractor operation.

Figure 12

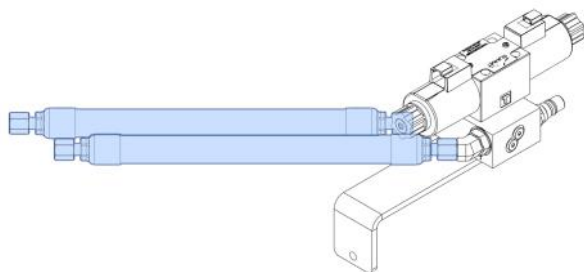
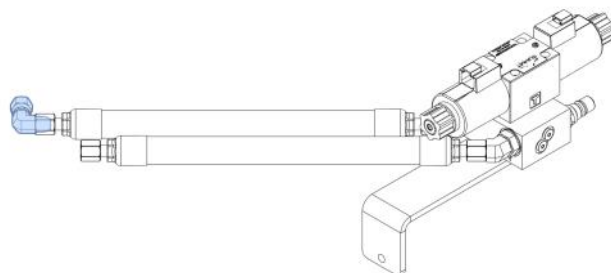


Figure 13



Cross Beam Coupler Mount

1) Attach Quick Coupler Mounting Bracket (**fig. 1 #10**) to right side of loader arm cross beam. Utilize the U-Bolt (**fig. 1 #13**) to tighten the Quick Coupler Mounting Bracket to the loader arm cross beam using the (**2**) U-Bolt Nut (**fig. 1 #14**). See (**fig. 14**).

2) Route the A&B Work-Line Hoses (**fig. 1 #8**) along the loader arm and through the loader loop bracket to the Quick Coupler Mounting Bracket. See (**fig. 19**).

3) Connect the 90 deg adapter on the A&B Work-Line Hoses (**fig. 1 #9**) to the 3/8 Bulkhead Fitting (**fig. 1 #11**) on the Quick Coupler Mounting Bracket on the loader arm cross beam. See (**fig. 15**).

4) Connect the 45 deg adapter (**fig. 1 #6**) to the A&B Work-Line Hoses (**fig. 1 #8**). See (**fig. 16**).

5) Connect the 1/4" Quick Coupler (**fig. 1 #19**) to the 45 deg adapter (**fig. 1 #6**). See (**fig. 17**).

6) Connect the Female Couplers (**fig. 1 #19**) on the hoses to the Male Couplers (**fig. 1 #18**) on the Valve Manifold. See (**fig. 18**).

Figure 14



Figure 15

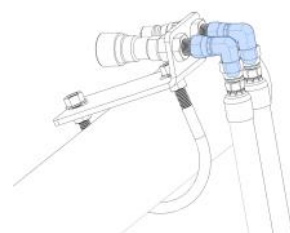


Figure 16



Figure 17



Figure 18

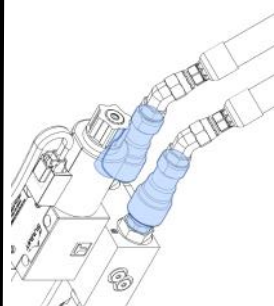
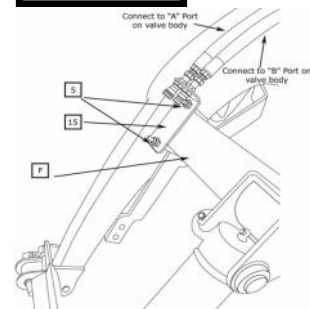


Figure 19



Installation Procedure

Joystick Switch Installation

- 1)** Remove existing knob from end of control lever.
- 2)** Loosen the 4 Tightening Bolts (**fig. 24 & fig. 19 #12b**) on side of Joystick Handle Switch.
- 3)** Remove Bushing (**fig. 28 #12c**) as needed to obtain a rough fit. See (**fig. 25**).

NOTE: All bushings can be removed if needed.

- 4)** Slide Handle and Bushing over control lever and tighten Bolts (**fig. 28 #12b**) on side of Joystick Handle Switch.
- 5)** Connect the red positive terminal end to battery's positive post.
- 6)** Connect the black ground terminal end to battery's negative post.
- 7)** Connect plastic Deutsch connectors on Wiring Harness to Valve Body. Secure with included Screws. See (**fig. 27**).
- 8)** Attach Harness Deutsch Connector to Switch Deutsch Connector. See (**fig. 26**).
- 9)** Properly route the wiring, and use zip ties to secure the routing in place. See (**fig. 28 #b**).

Operation Check

- 1)** Upon completion of installation, ensure all connections are tight and secure.
- 2)** Connect Hydraulic Implements Hoses to Quick Couplers on Cross Beam Coupler Mount.
- 3)** Operate hydraulics using Two-Button Joystick. See (**fig. 28 #A**).
- 4)** After hoses and cylinders are full of hydraulic fluid, check hydraulic fluid levels of your machine. If low, add hydraulic fluid.

NOTE: Air will be in hoses and cylinders. Continued actuation of cylinders will fill both hoses and cylinders with fluid and bleed air out of the hydraulic systems.

Figure 20

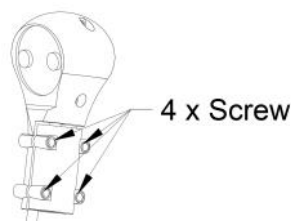


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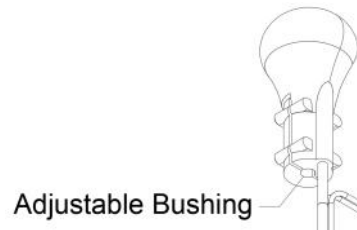


Figure 22

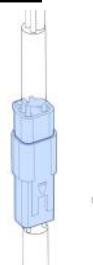


Figure 23

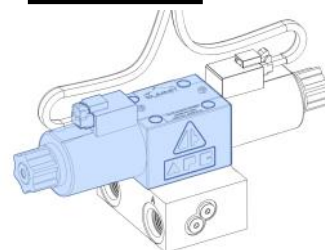
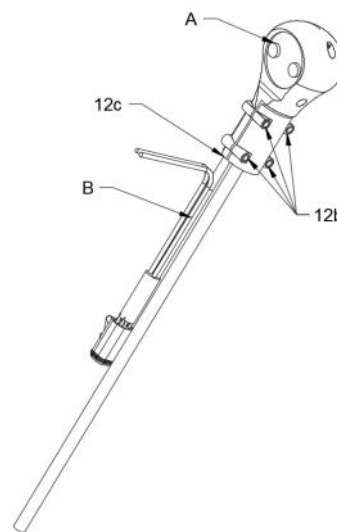


Figure 24



TROUBLESHOOTING

Symptom	Possible Problem	Recommended Action
No Function	Electrical Issue/Solenoid	1) Touch the large mounting nut on the top of solenoid coil with a screwdriver. 2) If screwdriver does not stick to top of coil, use a voltmeter to check for voltage (min. 11V) between the coil terminal and mounting nut. If screwdriver sticks, then this not an electrical issue. 3) If low voltage, check voltage at source where power wire for control was connected. 4) If no voltage is found, measure the voltage between coil terminal and tractor frame. If voltage is indicated, the valve is not being grounded. 5) Check the black ground wire. If no voltage is indicated between the coil wire and the ground, first check the fuse and then the hot wire to the control.
No Function: Non-Electrical	No Hydraulic Flow	1) If multiple valves are connected in-line, then Power Beyond Plug must be used (see section: "if connecting multiple valves in-line:"). 2) Ensure Valve is plumbed in-series and no pressurized lines have tees. 3) Ensure hoses are each connected to their corresponding cylinder. 4) Inspect couplers and tips for proper mating. 5) Ensure that you have an open center hydraulic system; if not, then a Closed Center Plug must be installed.
Slow Actuation	Low Voltage, Low Flow	1) Check voltage between coil terminal and mounting nut. If less than 11V, check all connections, battery and grounding. 2) Ensure pump is large enough to allow for enough flow to cylinders.

WARRANTY

Summit Hydraulics' only obligation under this Limited Warranty shall be as follows: If Summit Hydraulics determines, in its sole judgment, that an operational failure has occurred in a Product manufactured by Summit Hydraulics, that the Product was being used properly, and that such operational failure was caused solely by defective materials or workmanship, Summit Hydraulics will, at its sole option, either refund the price paid by the Customer for the Product, or replace the Product or part and pay shipping charges incurred as a result thereof for the lowest round-trip transportation charges from Summit Hydraulics' Customer's location to a designated Summit Hydraulics location for return. An inspection fee, plus shipping and handling, will apply to all returns that do not result from an operational failure, as determined by Summit Hydraulics.

Unless otherwise specified, Summit Hydraulics warrants all valves manufactured by Summit Hydraulics for a period of one (1) year and all Quick Couplers for a period of (180) days from the date of purchase against operational failure solely to the extent caused by defective materials or workmanship, provided that: (a) such failure occurs during use of the Product in conformance with the Product Specifications provided by Summit Hydraulics, and (b) there has been no disassembly, damage during shipment, abuse, misuse, misapplication, maintenance, alteration, or improper installation or maintenance or repair of the Product. Warranty coverage is conditioned upon Customer: (a) advising Summit Hydraulics in writing of the warranty claim, within fifteen (15) days of the alleged operational failure, (b) obtaining from Summit Hydraulics warranty personnel an RGA and location for return of the Product, (c) complying with all applicable procedures and instructions from Summit Hydraulics regarding the return of Product, (d) providing to Summit Hydraulics a complete written report of the circumstances of the claimed operational failure of the Product, and (e) providing Summit Hydraulics a reasonable time to inspect the Product and investigate the claim.

Summit Hydraulics has the right to refuse a warranty claim if procedures are not met by the original consumer. Summit Hydraulics reserves the right to refuse any and all warranty claims from any Distributor which has not purchased the original Summit Hydraulics product directly from Summit Hydraulics. Summit Hydraulics reserves the right to refuse any Return Goods Authorization of said merchandise in which it is believed to be fraudulent or distressed merchandise not purchased originally from Summit Hydraulics. Summit Hydraulics also reserves the right to not cover any 3rd party costs, labor, or services for troubleshooting or installation of our product.

This warranty does not apply to any Summit Hydraulics' product which has been modified, customized, painted, dented, rusted, or improperly installed.