

MX Third Function Valve Kit Assembly Instructions



For Kubota MX5400 & MX6000 Series Tractors

Manual No. 380-329M

Before You Start



When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

California Proposition 65



WARNING: Cancer and reproductive harm.
www.P65Warnings.ca.gov

IMPORTANT: Before you begin, thoroughly read these instructions and check to be sure all parts are accounted for. Please retain these installation instructions for future reference and parts ordering information.

General Information

Your MX Third Function Valve Kit has been designed specifically for the Kubota MX5400 and MX6000 tractor series equipped with a Kubota LA1065 front loader. These assembly instructions apply to the Third Function Valve Kit Accessories listed below:

- **380-311A: 3FVK FF MX6000 CAB** page 2
- **380-330A: 3FVK PC MX6000 CAB** page 2
- **380-312A: 3FVK FF MX6000 ROPS** page 16
- **380-331A: 3FVK PC MX6000 ROPS** page 16

Further Assistance

Your Land Pride dealer wants you to be satisfied with your new MX Third Function Valve Kit. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

1. Discuss any problems you have with your Third Function Valve Kit with your dealership service personnel so they can address the problem.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the question/problem, and request assistance.
3. For further assistance write to:

Land Pride Service Department
1525 East North Street

P.O. Box 5060
Salina, Ks. 67402-5060

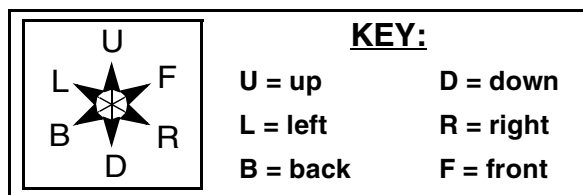
E-mail address
lp servicedept@landpride.com

Assembly Instructions

A detailed listing of parts for your cab tractor's 3rd Function Valve Kit is provided on page 13 for kits using flat-faced couplers, and page 15 for kits using pioneer couplers. For ROPS tractors, a detailed listing of parts for the 3rd Function Valve Kit can be found on page 27 for kits using flat-faced couplers, and page 29 for kits using pioneer couplers. Use the list that is for your specific Third Function Valve Kit as a checklist to inventory parts received. Please contact your local Land Pride dealer for any missing hardware.

Direction Reference

All directional references are made from the operator seat while facing the direction the machine will operate.



Directional Arrows Used in Illustrations

Initial Preparations

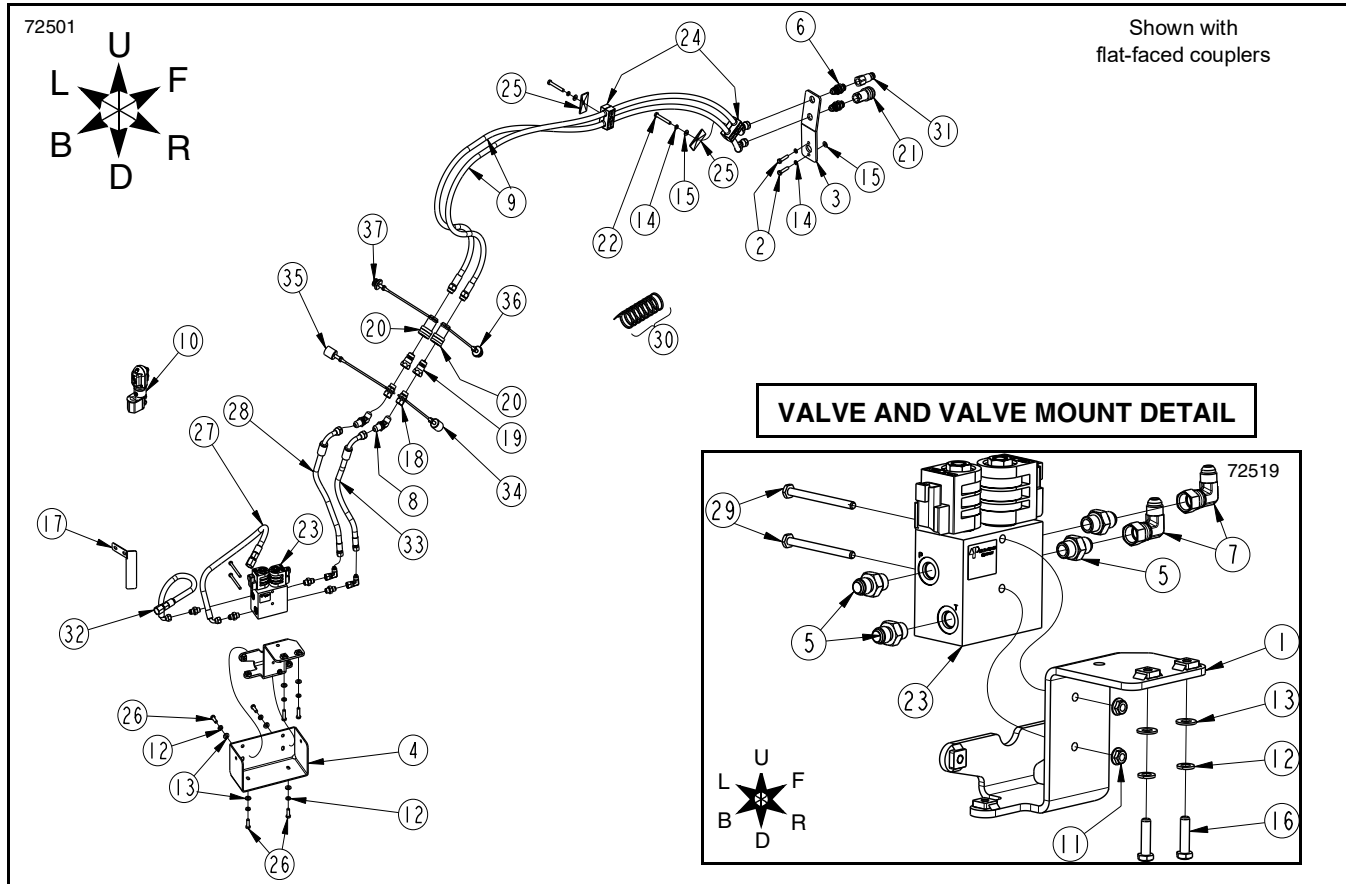


WARNING

To avoid serious injury or death: Hydraulic fluid under high pressure can penetrate the skin and/or eyes causing a serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

The steps listed below must be followed before installing this kit:

1. If attached, dismount loader from tractor. If loader is not attached, skip to step 4.
2. Turn tractor off, then relieve all hydraulic pressure from hydraulic lines by operating the loader control lever in all directions. Proceed with locking the control lever.
3. Disconnect loader hydraulic lines.
 - a. On cab tractors, disconnect loader hydraulic lines from coupler mount.
 - b. On ROPS tractors, disconnect loader hydraulic lines from loader valve.
4. Restart tractor and slowly back away from loader.
5. Park tractor on a flat, level surface. Put tractor in park or set park brake, turn off engine, and remove switch key to prevent unauthorized starting.
6. As a safety precaution, disconnect the negative battery cable from battery terminal. Move cable away from terminal to avoid accidental contact.



MX Third Function Valve Kit for Kubota Cab Tractor
Figure 1-1

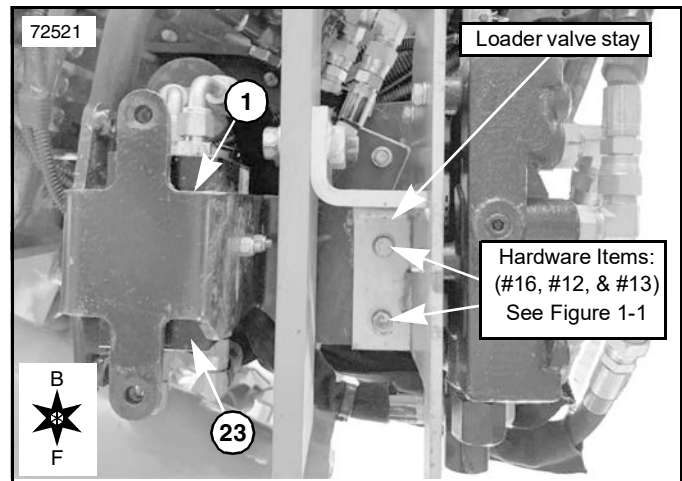
Valve Mount & Valve Assembly

Refer to Figure 1-1 & Figure 1-2:

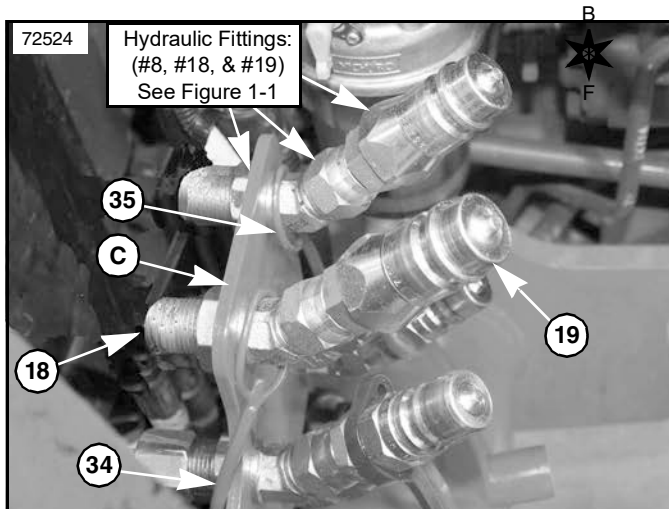
1. Attach third function valve mount (#1) to the loader valve stay using the two vacant holes. Secure valve mount (#1) with two 5/16" x 1 1/4" bolts (#16), two 5/16" lock washers (#12), and two 5/16" flat washers (#13). Tighten bolts (#16) to weld nuts on valve mount (#1) to 17 ft-lbs.
2. Before mounting third function valve to valve mount, install adapter fittings (#5) to all four ports on third function valve (#23). Tighten adapter fittings (#5).

NOTE: Identification letters have been engraved next to each port on the third function valve. Once secured to the valve mount, ports "P" and "T" face the rear of the tractor, while ports "A" and "B" face the front of the tractor.

3. Install elbow fittings (#7) onto adapter fittings (#5) found in ports "A" and "B" on third function valve (#23). Tighten elbow fittings (#7) as shown.
4. Attach third function valve (#23) to valve mount (#1) with two 1/4" x 3" bolts (#29) and secure with two 1/4" whiz nuts (#11). Tighten whiz nuts (#11) to 8 ft-lbs. Correct installation of valve orients ports "P" and "T" to the rear of tractor.



Valve and Valve Mount Assembly (view of underside)
Figure 1-2



Hydraulic Fittings Assembly to Coupler Mount
Figure 1-3

Hydraulic Fittings to Coupler Mount Assembly

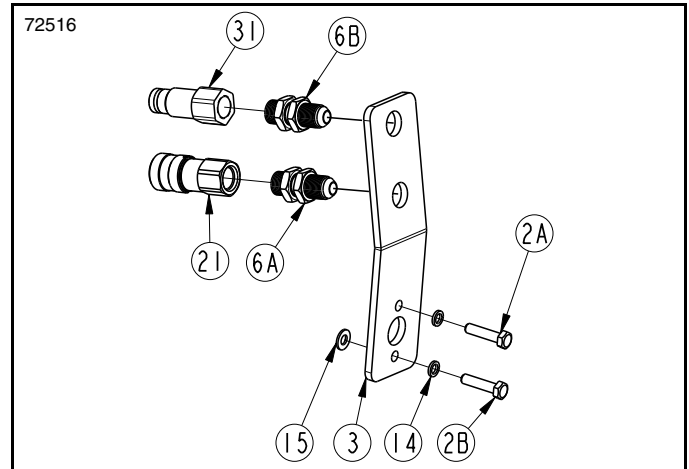
Refer to Figure 1-1 & Figure 1-3:

1. Attach two bulkhead elbow fittings (#6) to coupler mount (#3) on loader as shown in Figure 1-4. Tighten bulkhead locknuts to coupler mount (C).
2. Attach two adapter fittings (#18) to the front side of coupler mount (C). Secure and tighten fittings.
3. Slide green dust cap (#35) onto adapter fitting (#18) closest to tractor engine. Slide black dust cap (#34) onto adapter fitting (#18) furthest from tractor engine.
4. Attach two poppet style male couplers (#19) to adapter fittings (#18). Secure and tighten couplers.

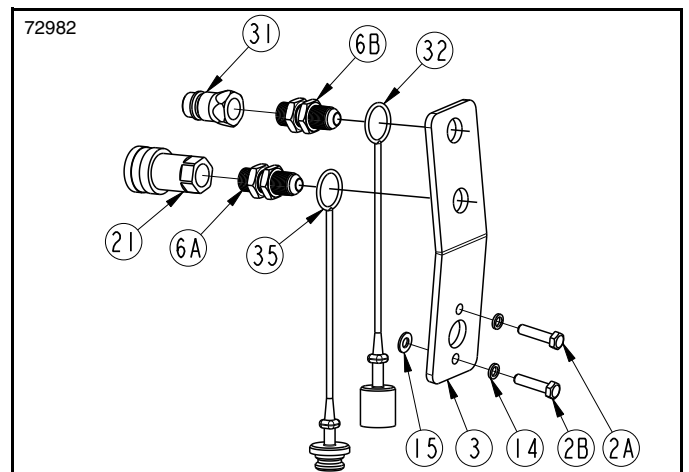
Loader Bulkhead Mount & Hydraulic Fitting Assembly

Refer to Figure 1-4 through Figure 1-6:

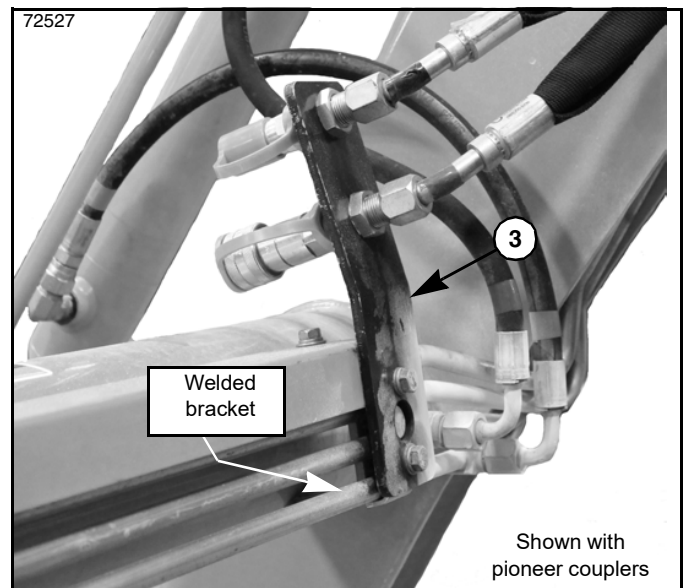
1. Attach bulkhead fittings (#6A & #6B) to bulkhead mount (#3) as shown. Tighten bulkhead locknuts to bulkhead mount (#3).
 - a. When installing kits with pioneer couplers, slide black dust cap (#32) on to top bulkhead fitting (#6B), and green dust plug (#35) onto bottom bulkhead fitting (#6A).
2. Attach female coupler (#21) to the bottom bulkhead fitting (#6A) on bulkhead mount (#3). Tighten and secure fittings.
3. Attach male coupler (#31) to the top bulkhead fitting (#6B) on bulkhead mount (#3). Tighten and secure fittings.
4. Attach bulkhead mount (#3) to welded bracket on loader cross tube with two M8 bolts (#2A & #2B), two M8 lock washers (#14), and one M8 flat washer (#15).
 - a. Install flat washer (#15) onto bottom bolt (#2B), on front side of bulkhead mount (#3). Tighten bolts (#2A & #2B) to 19 ft-lbs.



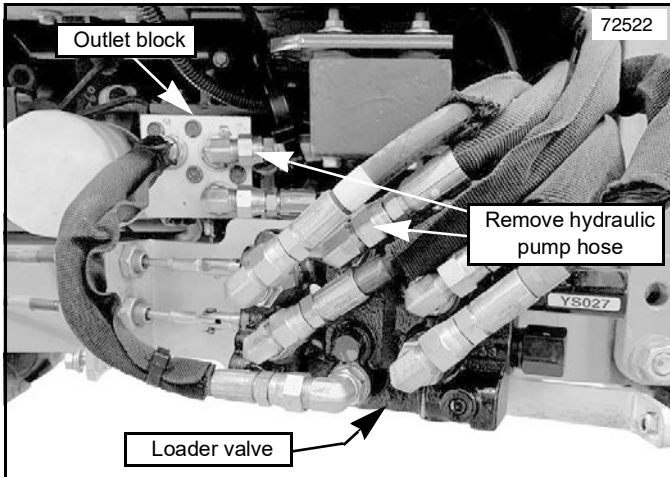
Bulkhead Mount with Flat-faced Couplers
Figure 1-4



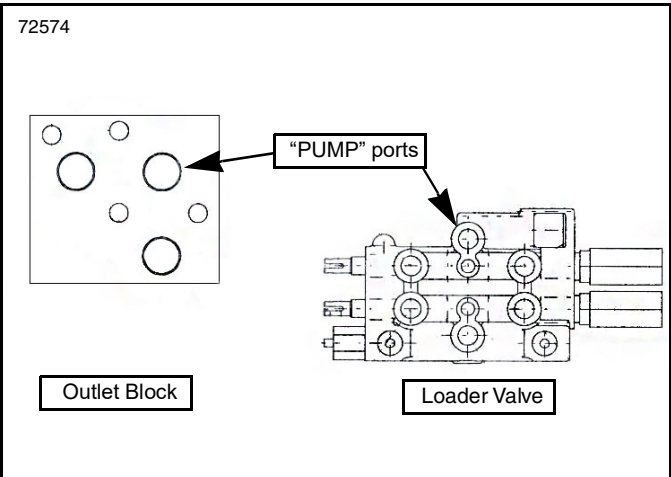
Bulkhead Mount with Pioneer Couplers
Figure 1-5



Complete Assembly of Loader Bulkhead mount
Figure 1-6



Existing Pump Line Hose Removal
Figure 1-7



Cab Tractor Outlet Block & Loader Valve Ports
Figure 1-8

Removal of Existing Pump Line Hose

Refer to Figure 1-7:

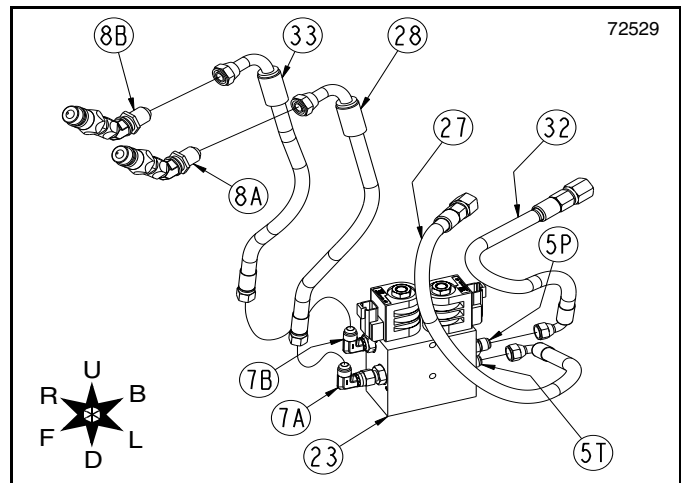
NOTE: Identify the existing hydraulic pump hose to be removed by its orange color marking.

1. Before continuing with kit installation, remove the existing hydraulic pump hose from outlet block and loader valve found below tractor cab. The removed hose is no longer needed, but store for safe keeping.

Third Function Valve Hydraulic Assembly

NOTE: Identification letters have been engraved next to each port on the third function valve. Once secured to the valve mount, ports "P" and "T" face the rear of tractor, while ports "A" and "B" face the front of tractor.

NOTE: Hydraulic hoses can be identified by a label placed on each hose. If the label is missing or is illegible, refer to the "Hydraulic Hose Identification Chart" on page 12 to identify hoses by their length.



Hydraulic Hose Assembly for Third Function Valve
Figure 1-9

Port "T" Hydraulic Hose Assembly

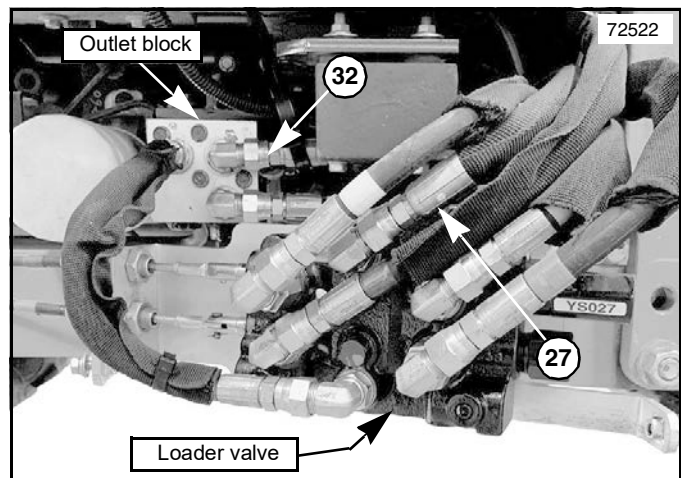
Refer to Figure 1-8 through Figure 1-10:

1. Attach elbow end of hydraulic hose (#27) to adapter fitting (#5T) preinstalled into port "T" on third function valve (#23). Do not tighten hose fitting at this time.
2. Attach straight end of hydraulic hose (#27) to the top middle "PUMP" port on tractor's loader valve, then tighten hose fittings at both ends.

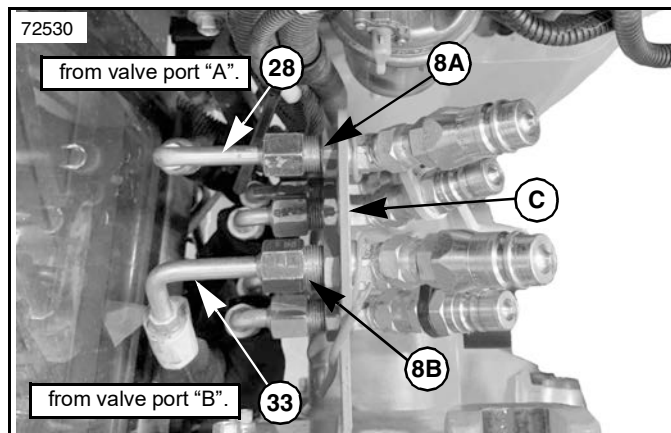
Port "P" Hydraulic Hose Assembly

Refer to Figure 1-8 through Figure 1-10:

3. Attach elbow end of hydraulic hose (#32) to adapter fitting (#5P) preinstalled into port "P" on third function valve (#23). Do not tighten hose fitting at this time.
4. Attach straight end of hydraulic hose (#32) to the top right "PUMP" port on tractor's outlet block, then tighten hose fittings at both ends.



Ports "T" & "P" Hydraulic Hose Assembly
Figure 1-10

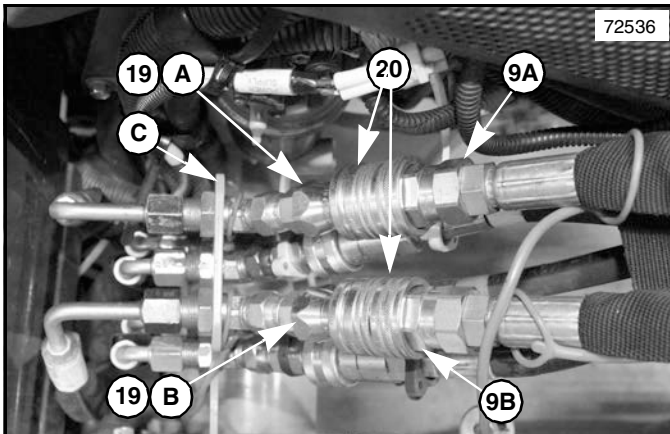


Ports "A" & "B" Hydraulic Hose Assembly
Figure 1-11

Ports "A" & "B" Hydraulic Hose Assembly

Refer to Figure 1-9 & Figure 1-11:

5. Attach straight end of hydraulic hose (#28) to elbow fitting (#7A) preinstalled into port "A" of third function valve (#23). Do not tighten hose fitting at this time.
6. Attach straight end of hydraulic hose (#33) to elbow fitting (#7B) preinstalled into port "B" of third function valve (#23). Do not tighten hose fitting at this time.
7. Route hydraulic hoses (#33 & #28) from under tractor cab, then up and between tractor cab windshield and to loader coupler mount (C).
8. Attach elbow end of hydraulic hose (#28) to bulkhead fitting (#8A) closest to tractor engine, then tighten hose fittings at both ends.
9. Attach elbow end of hydraulic hose (#33) to bulkhead fitting (#8B) furthest from tractor engine, then tighten hose fittings at both ends.
10. To ease installation, flare elbow ends of hydraulic hoses (#33 & #28) away from each other as shown in Figure 1-11.

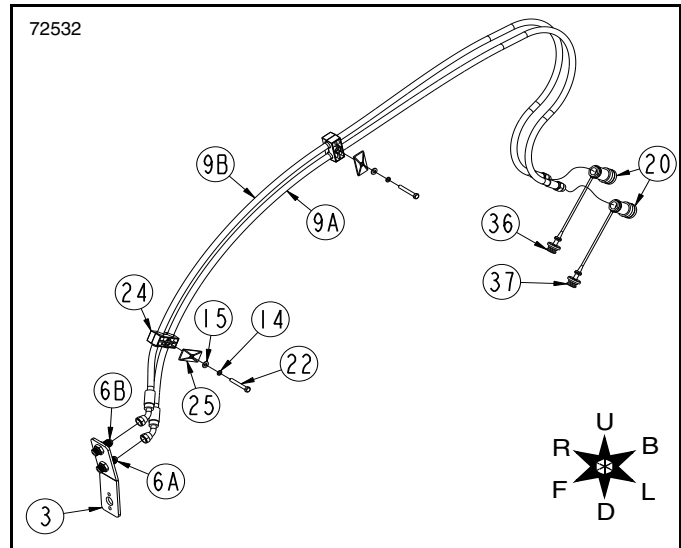


Coupler Hook-up to Hydraulic Fittings on Coupler Mount
Figure 1-12

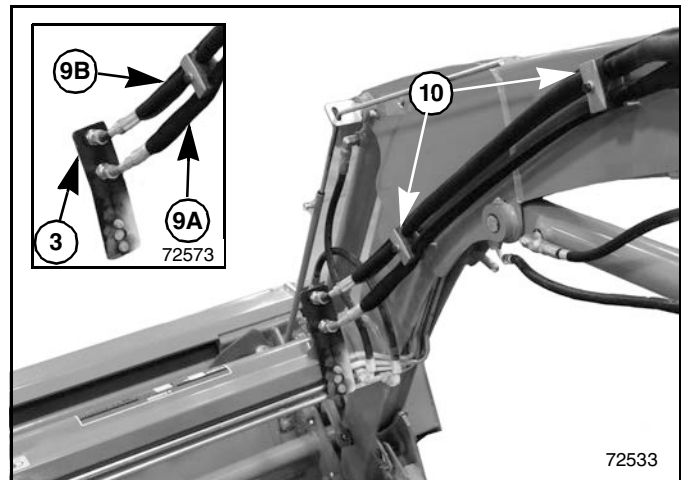
Bulkhead Mount to Coupler Mount Hydraulic Hose Assembly

Refer to Figure 1-12 through Figure 1-15:

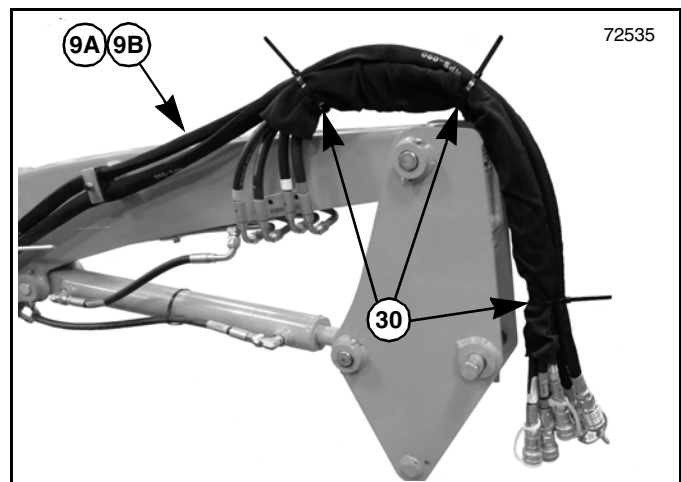
1. Attach female swivel end of hydraulic hose (#9A) to bottom bulkhead fitting (#6A) on bulkhead mount (#3). Do not tighten hose fitting at this time.
2. Attach female swivel end of hydraulic hose (#9B) to top bulkhead fitting (#6B) on bulkhead mount (#3). Do not tighten hose fitting at this time.
3. Place hoses (#9A & #9B) within clamp body (#24).
4. Secure hoses (#9A & #9B), clamp body (#24), and clamp cover (#25) to welded bracket closest to bulkhead mount (#3) with an M8 x 60mm bolt (#22), M8 lock washer (#14), and M8 flat washer (#15).
5. Now secure and tighten female swivel ends of hydraulic hoses (#9A & #9B) to bulkhead fittings (#6A & #6B).
6. Continue routing hydraulic hoses (#9A & #9B) up loader arm. Repeat step 4 to further secure hydraulic hoses and second hose clamp (#24).
7. Continue routing hydraulic hoses (#9A & #9B) up loader arm, placing them on top of the existing hoses. Secure all hydraulic hoses together with three cable ties (#30). See Figure 1-15.
8. Slide green dust plug (#37) over male end of hydraulic hose (#9A). Slide black dust plug (#36) over male end of hydraulic hose (#9B).
9. Attach female couplers (#20) to the male ends of both hydraulic hoses (#9A & #9B). Tighten and secure fittings.
10. At this time, hook up the loader back to the tractor.
11. Connect female coupler (#20) with green dust plug on hydraulic hose (#9A) to the poppet style male coupler (#19A) closest to tractor engine. See Figure 1-12.
12. Connect female coupler (#20) with black dust plug on hydraulic hose (#9B) to the poppet style male coupler (#19B) furthest from tractor engine. See Figure 1-12.
13. For proper installation, confirm correct hook-up of steps 1, 2, 11, and 12.



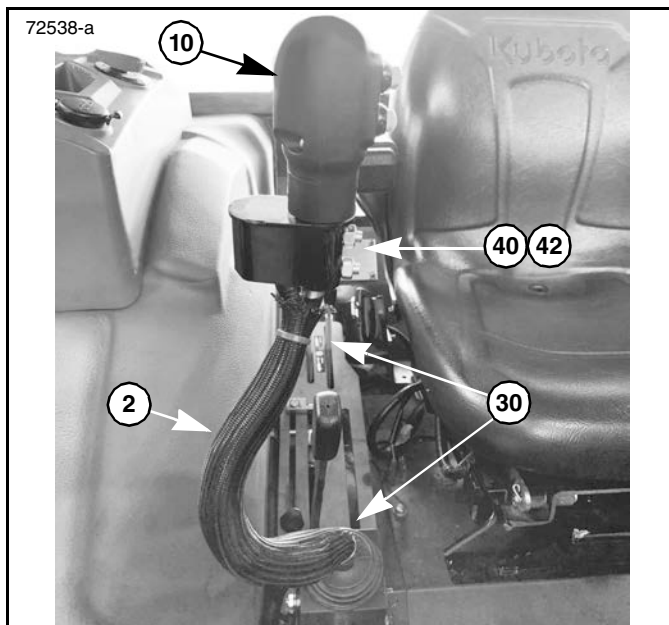
Loader Hydraulic Hose Assembly
Figure 1-13



Hydraulic Hose Routing and Hose Clamp Assembly
Figure 1-14



Securing Hydraulic Hoses with Cable Ties
Figure 1-15

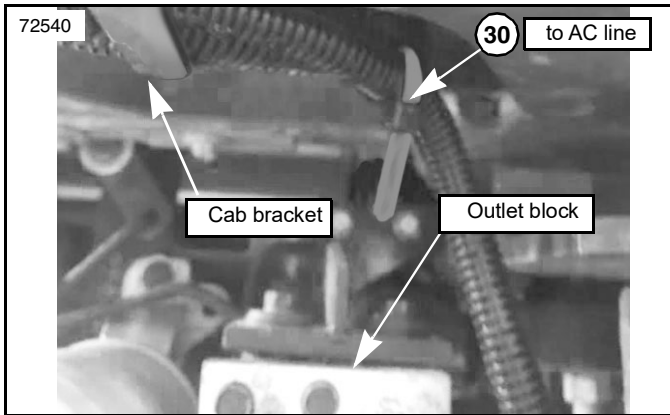


Control Handle Orientation
Figure 1-16

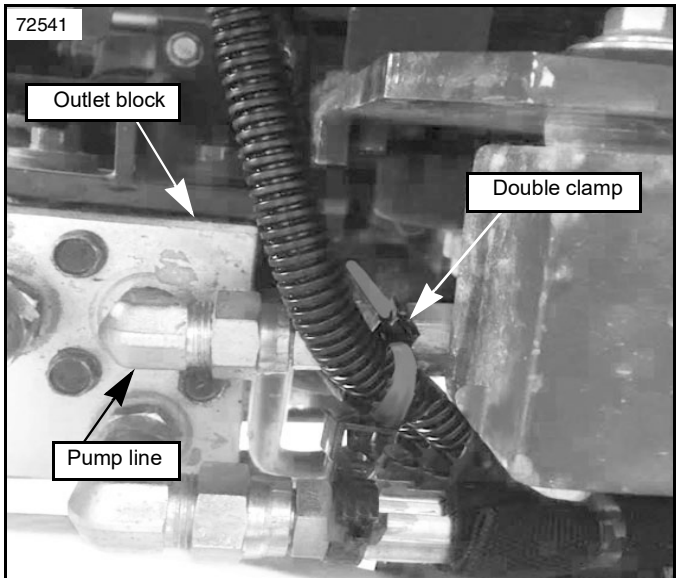
Control Lever Assembly

Refer to Figure 1-16:

1. Remove existing control handle (not shown) from loader control lever.
2. Feed wire harness (not shown) from new control handle (#10) completely through braided sleeve (#2).
3. Slide braided sleeve (#2) and wire harness over top and down loader control lever.
4. Position new control handle (#10) onto control lever with red switches facing left side of tractor.
5. Secure new control handle (#10) to loader control lever with two 5/16" set screws (#40). Tighten both set screws (#40).
6. Secure set screws (#40) with two 5/16" jam nuts (#42). Tighten both jam nuts (#42).
7. Secure new control handle's wire harness to loader control lever by applying two cable ties (#30) around braided sleeve (#2) and loader control lever.
8. Continue instructions on next page.



Wire Harness Routing - Under Cab
Figure 1-17

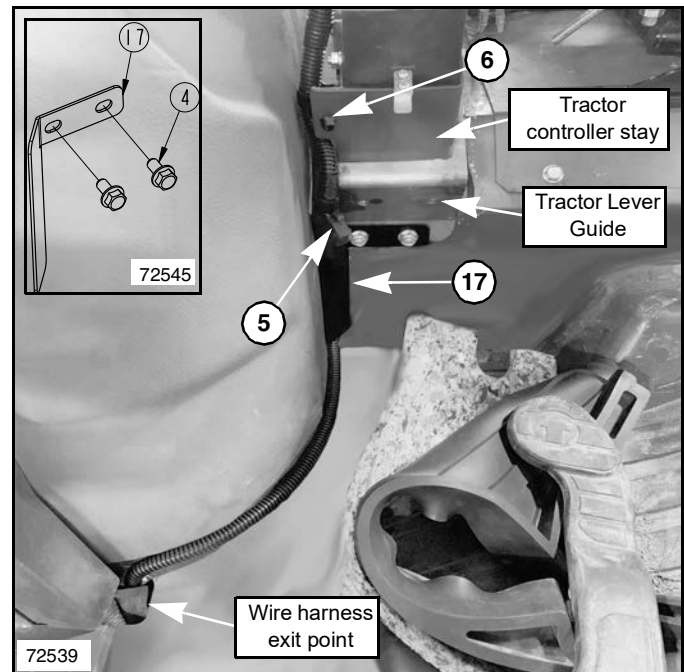


Wire Harness Routing - Under Cab
Figure 1-18

Third Function Wire Harness Routing

Refer to Figure 1-17 through Figure 1-18:

1. Secure routing starting point of third function wire harness by placing wire harness behind the tractor controller stay. See Figure 1-19.
2. Secure wire harness to tractor controller stay with push pin (#6) provided with the wire harness assembly. See Figure 1-19.
3. Continue routing wire harness down to the cab floor. See Figure 1-19.
 - a. Ensure fuse (#5) on third function wire harness will reside above wire harness cover bracket (#17)
4. Contain wire harness by installing cover bracket (#17) and securing with the tractor's existing flange bolts (#4), to the tractor lever guide. See Figure 1-19.
5. Pull back floor coverings and continue to route third function wire harness through cab floor to the underside of the tractor cab. See Figure 1-19.
6. Once wire harness is routed to the underside of the cab, reposition floor coverings as they came from the factory.
7. From the underside of tractor cab, route third function wire harness through welded cab bracket, then secure to AC line with cable tie (#30). See Figure 1-17 on page 8.
8. From the AC line, continue routing wire harness down to the pump line hydraulic hose on tractor's outlet block. Secure with cable tie (#30). See Figure 1-18.

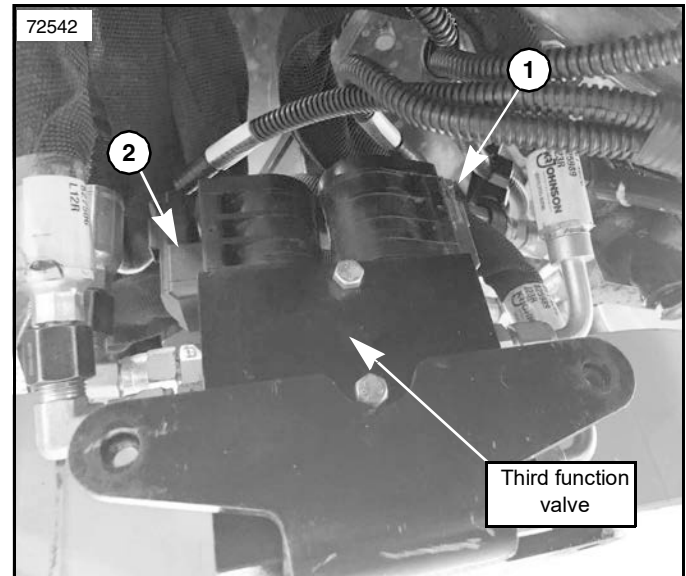


Wire Harness Routing - Inside Cab
Figure 1-19

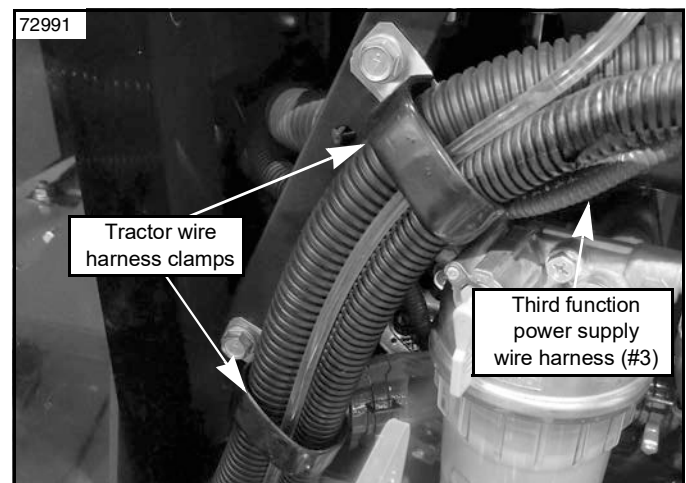
Routing & Connecting Third Function Wire Harness

Refer to Figure 1-20 through Figure 1-22:

9. At this point, the third function wire harness separates into two branches. For the first branch:
 - a. Connect green Deutsch connector (#1) to the rear solenoid on third function valve. See Figure 1-20.
 - b. Connect black Deutsch connector (#2) to the front solenoid on third function valve. See Figure 1-20.
10. Continue routing power supply branch of third function wire harness along underside of tractor cab.
 - a. Secure wire harness with cable ties (#30) at the indicated points marked with tape.
11. Continue routing third function power supply wire harness (#3) up between tractor cab windshield and coupler mount. See Figure 1-21.
 - a. Secure wire harness within the wire harness clamps found on the tractor.



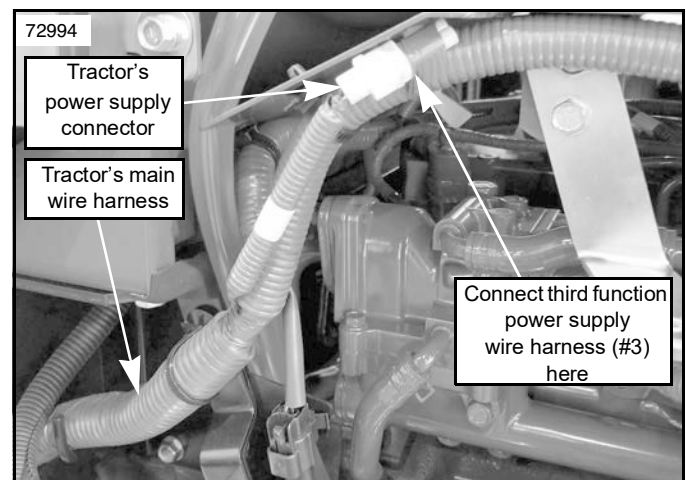
Deutsch Connectors to Valve
Figure 1-20



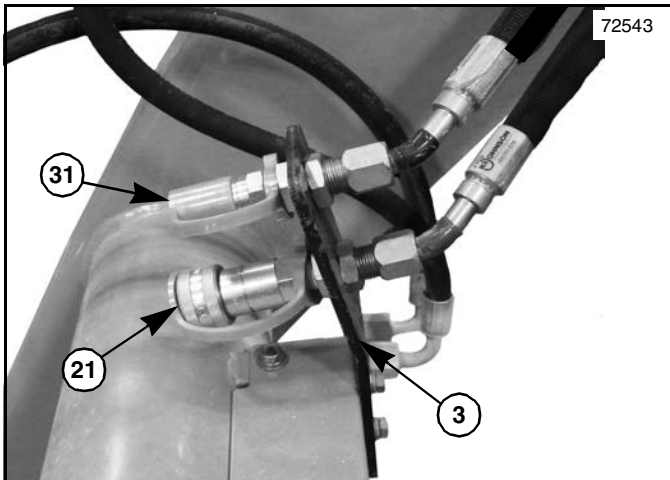
Securing Power Supply Wire Harness
Figure 1-21

Disconnect negative battery cable from battery terminal to eliminate potential risk of exposure to electrical shock when connecting power supply wire harness to tractor.

12. Connect power supply of third function wire harness (#3) to the tractor's power supply wire harness. See Figure 1-22.
 - a. Locate the tractor's power supply wire harness underneath the side panel, taped to the tractor's main wire harness.
 - b. Remove the cap from the tractor's power supply connector, then connect the third function valve power supply wire harness (#3) to the tractor's power supply wire harness.



Connecting the Power Supply Wire Harness
Figure 1-22



Attachment Hook-up to Bulkhead Mount
Figure 1-23

Check Operation & Fluid Level

Refer to Figure 1-23:

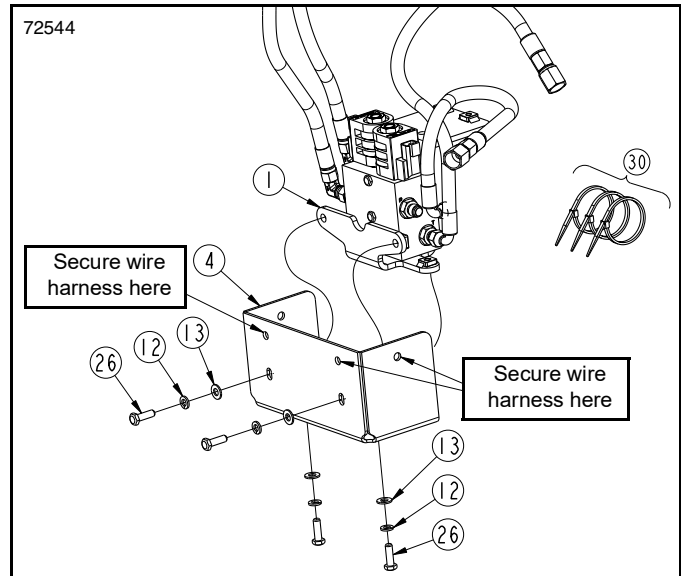
1. Mount attachment to tractor's front loader. Connect attachment's hydraulic hoses to couplers (#21 & #31) found on bulkhead mount (#3).
2. Raise attachment off the ground and operate third function hydraulics using push-buttons on the newly installed control handle. Refer to "**Operating the Third Function Valve Kit**" on page 11.

Refer to Figure 1-20 on page 9:

3. Switch wire connections (#1 & #2) at solenoid valve if the attachment's hydraulic cylinder(s) operate in the opposite direction intended.

IMPORTANT: Refer to your tractor Operator's Manual for recommended hydraulic fluid and procedure for checking hydraulic fluid level.

4. Once hoses and cylinder(s) are full of hydraulic fluid, check tractor hydraulic fluid level. If low, add recommended hydraulic fluid until correct levels are attained.
5. Check all connection points on the Third Function Valve Kit for any hydraulic fluid leaks.



Valve Cover Plate Assembly
Figure 1-24

Attaching Third Function Cover Plate

Refer to Figure 1-24:

1. If there are no hydraulic fluid leaks from valve kit, fasten third function valve cover plate (#4), to valve mount (#1) with four 5/16" bolts (#26), lock washers (#12), and flat washers (#13). Tighten bolts (#26) to 17 ft-lbs.
2. Secure third function wire harness to cover plate (#4) with cable ties (#30) at the indicated holes.

Operating the Third Function Valve Kit

At this point, your Third Function Valve Kit is now ready to be used with a multitude of attachments. Be sure to familiarize yourself with a complete understanding of how to operate the Third Function Valve Kit before attempting to do so.

DANGER

To avoid serious injury or death: Do not allow bystanders to be near the attachment, loader arms, or tractor during operation. They can become entangled, pinched, or crushed by the equipment. Disconnect and lockout power source before making adjustments or servicing tractor and attachment.

Refer to Figure 1-25:

Powering On Third Function Valve Kit

- Provide power to the Third Function Valve Kit by pressing power switch into the compressed position.
- The LED light on the power switch will light up to indicate the Third Function Valve Kit is turned on.

Actuating Attachment

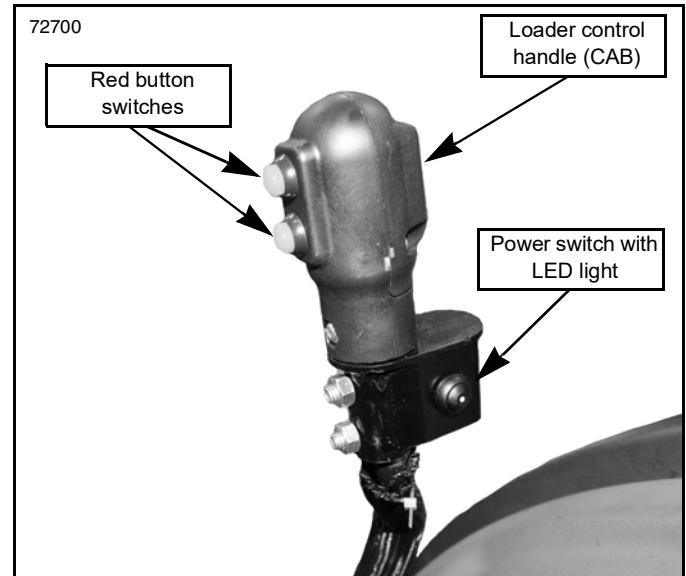
- The two red button switches on the loader control handle will actuate the functions of the attachment.
 - The top red button switch will actuate the functions of the attachment in one direction.
 - The bottom red button switch will actuate the attachment in the opposite direction.

Powering Off Third Function Valve Kit

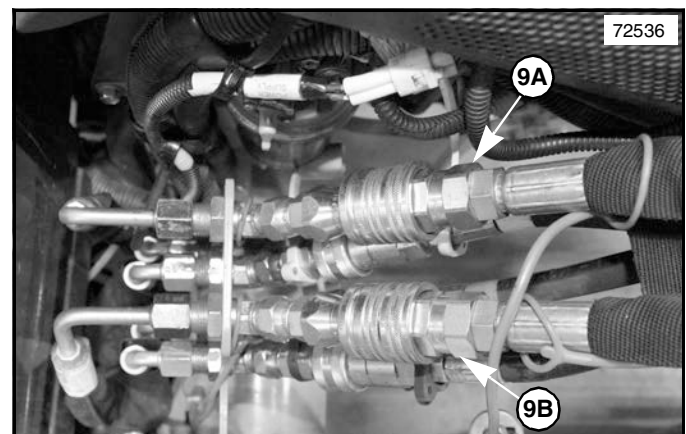
- Turn power off to the Third Function Valve Kit by pressing power switch into the decompressed position.
- The LED light on the power switch will turn off to indicate the Third Function Valve Kit is powered off.

Relieving Hydraulic Pressure

- Once Third Function Valve Kit is powered off, be sure to relieve all hydraulic pressure.
 - To relieve all hydraulic pressure from the hydraulic system, turn the tractor key switch to the auxiliary position, then press both red button switches on the loader control handle.



Operating Third Function Valve Kit
Figure 1-25



Disconnect Hydraulic Hoses Before Dismounting Loader
Figure 1-26

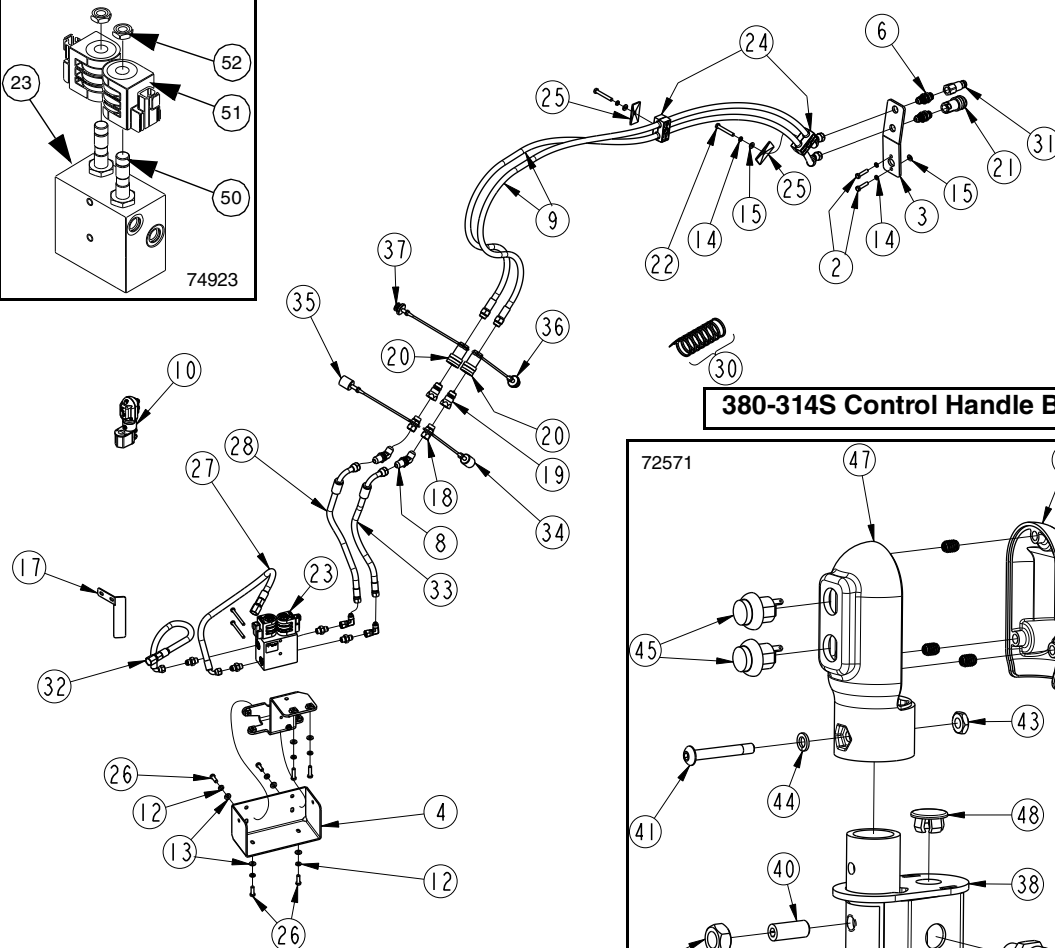
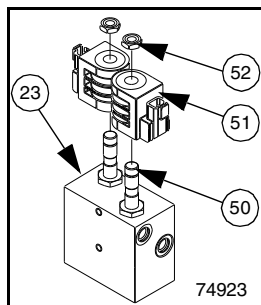
Unhook Loader

Refer to Figure 2-26:

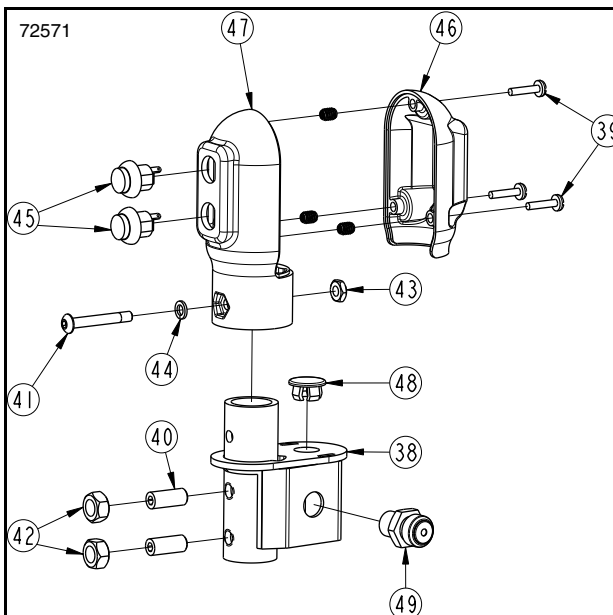
3. Disconnect hydraulic hoses (#9A & #9B) from third function valve before unhooking the loader from cab tractor.

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850-313C



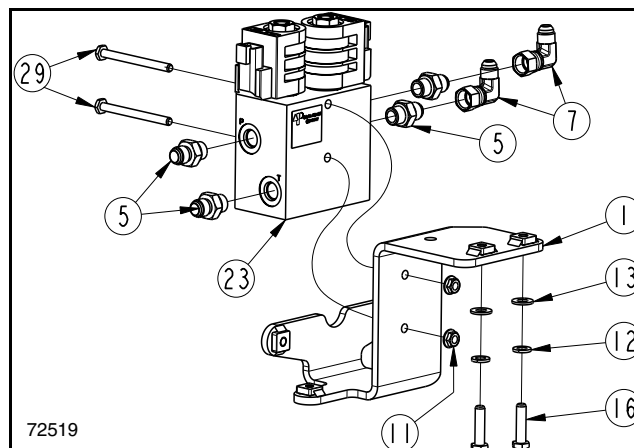
380-314S Control Handle Breakdown



Hydraulic Hose Identification Chart

861-426C - (#27)	
861-462C - (#32)	
861-427C - (#28)	
861-471C - (#33)	

Valve and Valve Mount Detail

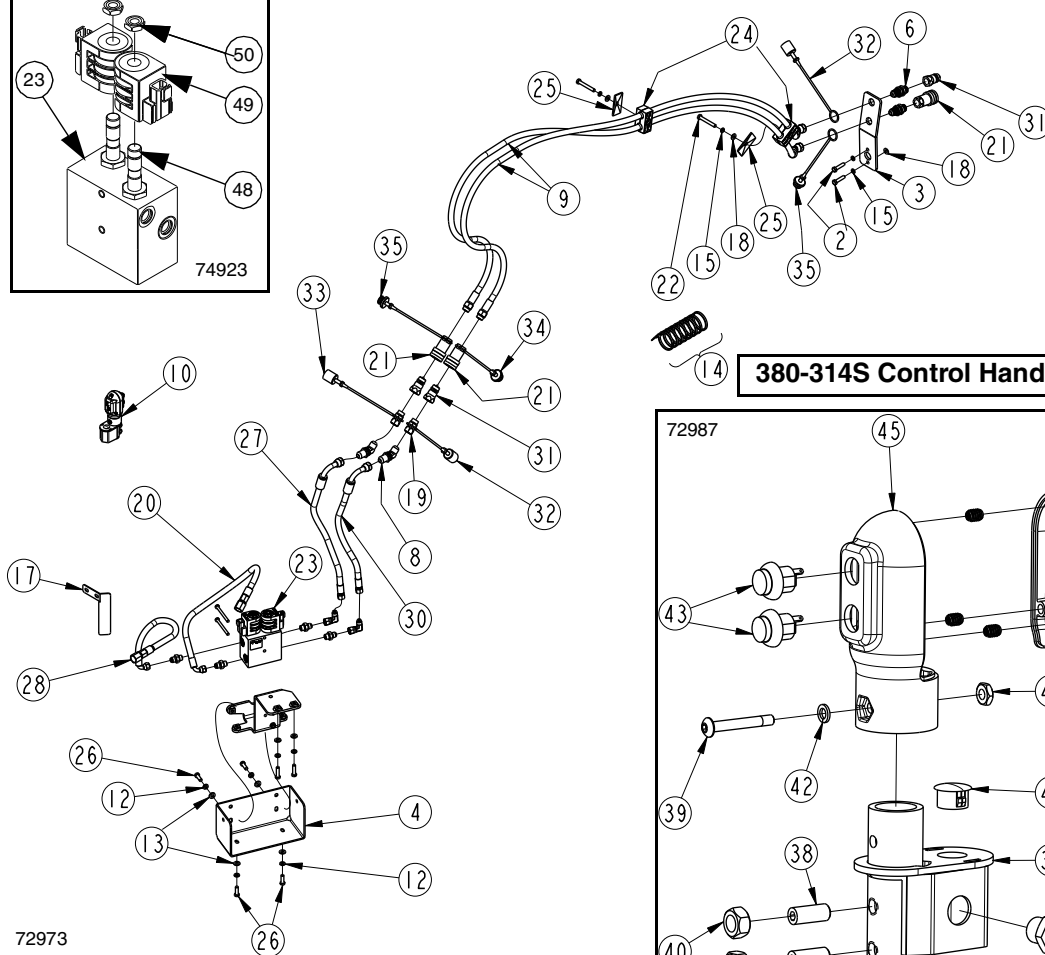
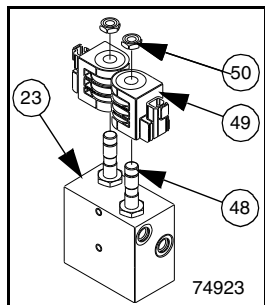


Third Function Valve Kit for Cab Tractor
Figure 1-26

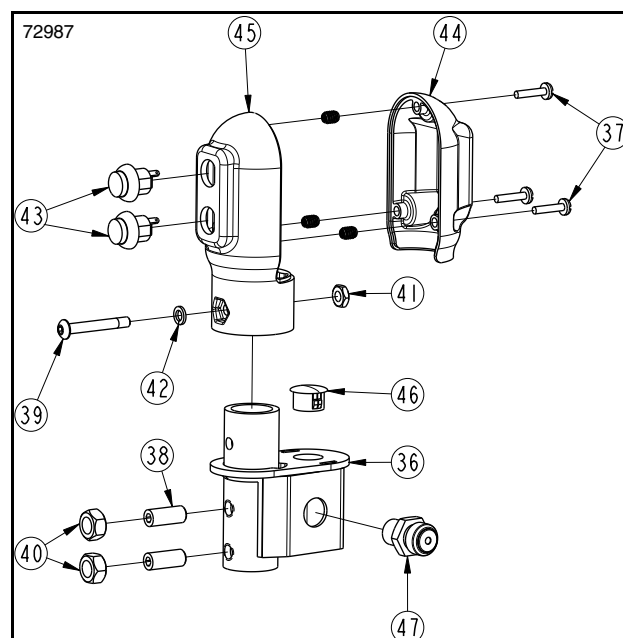
Kit No. 380-311A MX THIRD FUNCTION VALVE KIT FOR CAB TRACTOR
(Equipped with flat-faced couplers)

Item	Part No.	Description	Qty
1	380-310H	WMT, VALVE MNT BRKT	1
2	802-967C	HHCS M8X1.25X35 GR8.8	2
3	380-418D	PLATE, BULKHEAD MOUNT	1
4	380-419D	COVER PLATE, 3RD VALVE.	1
5	811-170C	AD 9/16MORB 9/16MJIC	4
6	851-344C	AD 3/4MJIC 3/4MORB BLKHD W/ LN	2
7	811-169C	EL 9/16MJIC 9/16FJIC	2
8	851-481C	EL 3/4MJIC BLKHD 45 W/ LN	2
9	861-428C	HH3/8R2 090 3/4FJIC45 3/4MORB.	2
10	380-314S	ASY, PSH BUTTN CNTRL HNDL CAB	1
11	803-194C	NUT HEX WHIZ 1/4-20 PLT	2
12	804-009C	WASHER LOCK SPRING 5/16 PLT	6
13	804-036C	WASHER FLAT 5/16 SAE PLT	6
14	804-157C	WASHER SPRING LOCK M8 PLT	4
15	804-161C	WASHER FLAT M8 PLT	3
16	802-010C	HHCS 5/16-18X1 1/4 GR5	2
17	380-427D	COVER BRKT, WIRE HARNESS	1
18	811-324C	AD 3/4MORB 3/4FJIC	2
19	811-394C	CP 3/4FORB MALE QD POPPET TYPE	2
20	811-870C	CP 3/4FORB QD FEMALE (POPPET)	2
21	861-543C	CP 3/4FORB QD FML FLATFACE	1
22	842-017C	HHCS M8X1.25X60 GR8.8	2
23	850-313C	VALVE, THIRD FUNCTION (DELTA).	1
24	851-241C	STAUFF CLAMP BODY 3D 0.79HOLE	2
25	851-245C	STAUFF COVER PLATE GROUP 3D	2
26	802-159C	HHCS 5/16-18X1 GR5	4
27	861-426C	HH3/8R2 022 9/16FJIC90 3/4FJIC.	1
28	861-427C	HH3/8R2 017 9/16FJIC 3/4FJIC90.	1
29	802-274C	HHCS 1/4-20X3 GR5	2
30	800-112C	CABLE TIE .19X7.25 1.75D 50LB	8
31	841-099C	CP 3/4FORB QD FLATFACE	1
32	861-462C	HH3/8R2 018 9/16FJIC90 3/4FJIC.	1
33	861-471C	HH3/8R2 016 9/16FJIC 3/4FJIC90.	1
34	861-539C	BLACK DUST CAP, 1/2" QD AG	1
35	861-540C	GREEN DUST CAP, 1/2" QD AG	1
36	861-541C	BLACK DUST PLUG, 1/2" QD AG	1
37	861-542C	GREEN DUST PLUG, 1/2" QD AG	1
38	380-313H	WMT, CONTROL HANDLE MOUNT.	1
39	801-091C	CRPHMS 6-32X5/8 SS.	3
40	801-204C	SCREW SET SCKT HD 5/16-18X3/4	2
41	801-250C	HSBHCS #10-32X1 3/8	1
42	803-008C	NUT HEX 5/16-18 PLT	2
43	803-269C	NUT HEX 10-32 PLT.	1
44	804-054C	WASHER LOCK #10.	1
45	833-739C	SWITCH, P9 PB NO SPST MOM RED.	2
46	837-053C	COVER, PUSH BUTTON CNTRL HNDL	1
47	837-054C	BASE, PUSH BUTTON CNTRL HNDL	1
48	837-365C	PLASTIC SNAP-IN PLUG.	1
49	843-178C	POWER SWITCH ON/OFF.	1
50	85002296	4-WAY, 2-POS SOLENOID VALVE	2
51	39680034	12VDC SOLENOID COIL, DT04-2P	2
52	36202020	COIL NUT.	2

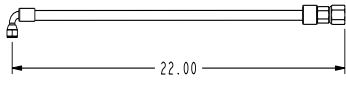
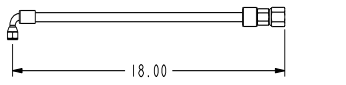
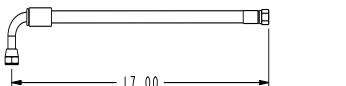
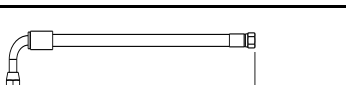
850-313C



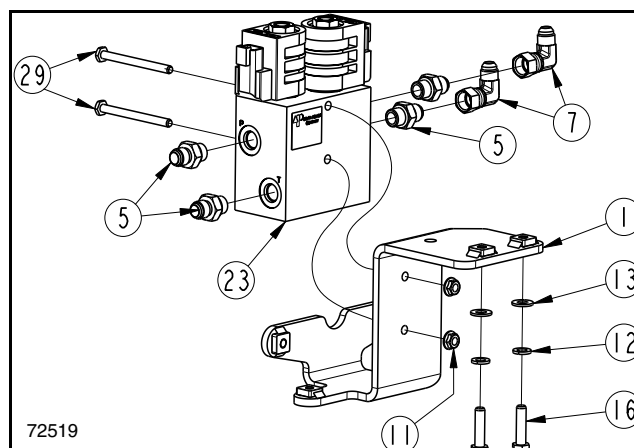
380-314S Control Handle Breakdown



Hydraulic Hose Identification Chart

861-426C - (#20)	
861-462C - (#28)	
861-427C - (#27)	
861-471C - (#30)	

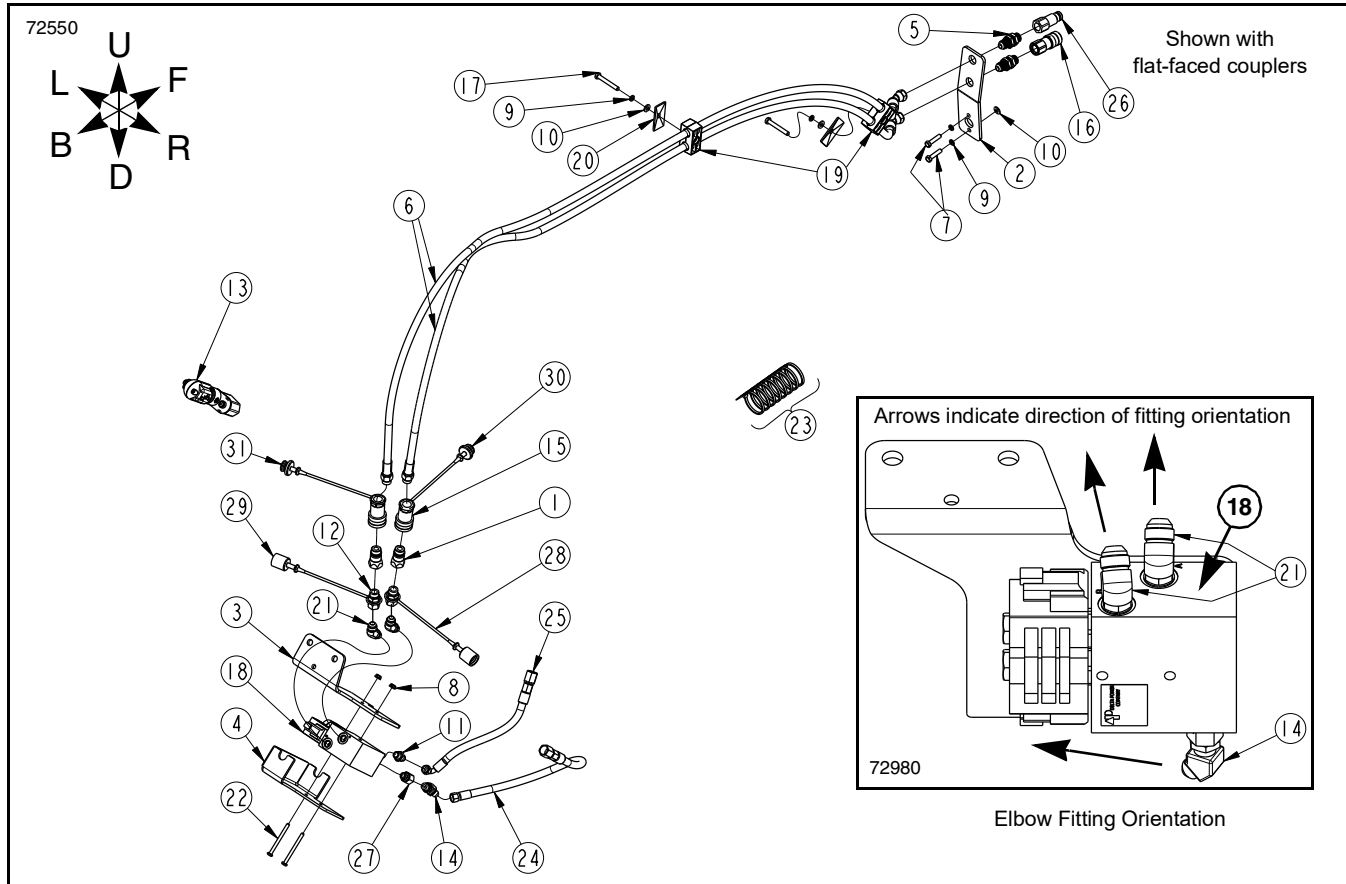
Valve and Valve Mount Detail



Third Function Valve Kit for Cab Tractor
Figure 1-27

Kit No. 380-330A MX THIRD FUNCTION VALVE KIT FOR CAB TRACTOR
(Equipped with pioneer couplers)

Item	Part No.	Description	Qty
1	380-310H	WMT, VALVE MNT BRKT	1
2	802-967C	HHCS M8X1.25X35 GR8.8	2
3	380-418D	PLATE, BULKHEAD MOUNT	1
4	380-419D	COVER PLATE, 3RD VALVE.	1
5	811-170C	AD 9/16MORB 9/16MJIC	4
6	851-344C	AD 3/4MJIC 3/4MORB BLKHD W/ LN	2
7	811-169C	EL 9/16MJIC 9/16FJIC	2
8	851-481C	EL 3/4MJIC BLKHD 45 W/ LN	2
9	861-428C	HH3/8R2 090 3/4FJIC45 3/4MORB.	2
10	380-314S	ASY, PSH BUTTN CNTRL HNDL CAB	1
11	803-194C	NUT HEX WHIZ 1/4-20 PLT	2
12	804-009C	WASHER LOCK SPRING 5/16 PLT	6
13	804-036C	WASHER FLAT 5/16 SAE PLT	6
14	800-112C	CABLE TIE .19X7.25 1.75D 50LB	8
15	804-157C	WASHER SPRING LOCK M8 PLT	4
16	802-010C	HHCS 5/16-18X1 1/4 GR5	2
17	380-427D	COVER BRKT, WIRE HARNESS	1
18	804-161C	WASHER FLAT M8 PLT	3
19	811-324C	AD 3/4MORB 3/4FJIC	2
20	861-426C	HH3/8R2 022 9/16FJIC90 3/4FJIC.	1
21	811-870C	CP 3/4FORB QD FEMALE (POPPET)	3
22	842-017C	HHCS M8X1.25X60 GR8.8	2
23	850-313C	VALVE, THIRD FUNCTION (DELTA).	1
24	851-241C	STAUFF CLAMP BODY 3D 0.79HOLE	2
25	851-245C	STAUFF COVER PLATE GROUP 3D	2
26	802-159C	HHCS 5/16-18X1 GR5	4
27	861-427C	HH3/8R2 017 9/16FJIC 3/4FJIC90	1
28	861-462C	HH3/8R2 018 9/16FJIC90 3/4FJIC.	1
29	802-274C	HHCS 1/4-20X3 GR5	2
30	861-471C	HH3/8R2 016 9/16FJIC 3/4FJIC90	1
31	811-394C	CP 3/4FORB MALE QD POPPET TYPE	3
32	861-539C	BLACK DUST CAP, 1/2" QD AG	2
33	861-540C	GREEN DUST CAP, 1/2" QD AG	1
34	861-541C	BLACK DUST PLUG, 1/2" QD AG	1
35	861-542C	GREEN DUST PLUG, 1/2" QD AG	2
36	380-313H	WMT, CONTROL HANDLE MOUNT.	1
37	801-091C	CRPHMS 6-32X5/8 SS.	3
38	801-204C	SCREW SET SCKT HD 5/16-18X3/4	2
39	801-250C	HSBHCS #10-32X1 3/8	1
40	803-008C	NUT HEX 5/16-18 PLT	2
41	803-269C	NUT HEX 10-32 PLT	1
42	804-054C	WASHER LOCK #10.	1
43	833-739C	SWITCH, P9 PB NO SPST MOM RED	2
44	837-053C	COVER, PUSH BUTTON CNTRL HNDL	1
45	837-054C	BASE, PUSH BUTTON CNTRL HNDL	1
46	837-365C	PLASTIC SNAP-IN PLUG.	1
47	843-178C	POWER SWITCH ON/OFF.	1
48	85002296	4-WAY, 2-POS SOLENOID VALVE	2
49	39680034	12VDC SOLENOID COIL, DT04-2P	2
50	36202020	COIL NUT.	2



MX Third Function Valve Kit for Kubota ROPS Tractor
Figure 2-1

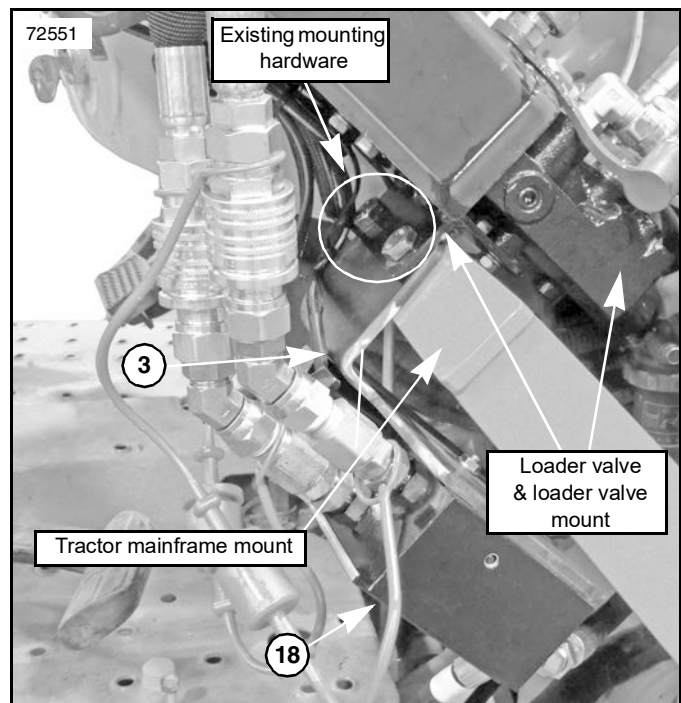
Valve Mount & Valve Assembly

Refer to Figure 2-1 through Figure 2-4:

1. Remove existing mounting hardware from loader valve mount shown in Figure 2-2.
2. Position third function valve mount (#3) between loader valve mount and tractor mainframe mount.
3. Secure third function valve mount (#3) by reinstalling the existing mounting hardware from loader valve mount shown in Figure 2-2.

NOTE: Identification letters have been engraved next to each port on the third function valve. Once secured to the valve mount, ports "P" and "T" face downward, while ports "A" & "B" face upward. The valve solenoids face toward the left side of the tractor.

4. Before mounting third function valve (#18) to valve mount (#3), install hydraulic fittings to all four ports on valve (#18).
 - a. Install elbow fittings (#21) into ports "A" and "B" on third function valve (#18). Refer to Figure 2-1 for correct fitting orientation.
 - b. Install adapter fitting (#11) into port "P" on third function valve (#18).
 - c. Install adapter fitting (#27) into port "T" on third function valve (#18).



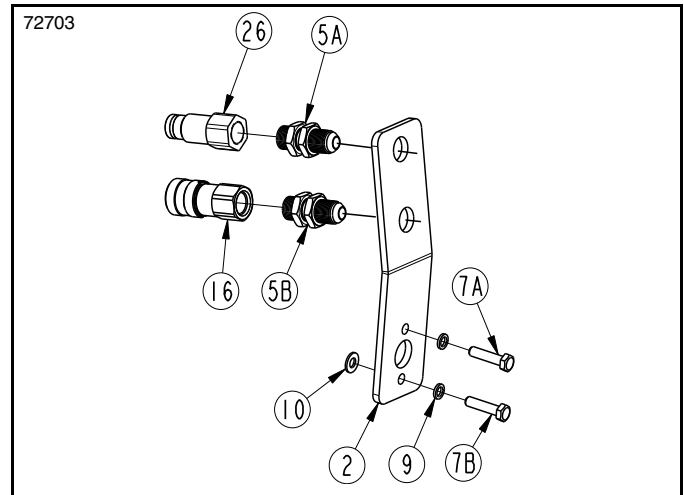
Valve and Valve Mount Assembly
Figure 2-2

5. Attach elbow fitting (#14) to adapter fitting (#27) installed into port "T" on third function valve (#18). Refer to Figure 2-1 for correct fitting orientation.
6. Tighten fittings (#21, #11, and #27) installed in ports on third function valve (#18). Leave elbow fitting (#14) hand tight until after hose routing is complete.
7. Temporarily attach third function valve (#18) to valve mount (#3) with two 1/4" x 3" bolts (#22) and secure with two 1/4" whiz nuts (#8). At this time, leave valve cover (#4) off.
8. Attach adapter fittings (#12) to elbow fittings (#21) installed in ports "A" & "B" on third function valve (#18). Secure and tighten fittings.
 - a. Slide green dust cap (#29) onto adapter fitting (#12) found on port "B".
 - b. Slide black dust cap (#28) onto adapter fitting (#12) found on port "A".
9. Attach two poppet style male couplers (#1) to adapter fittings (#12). Secure and tighten couplers.

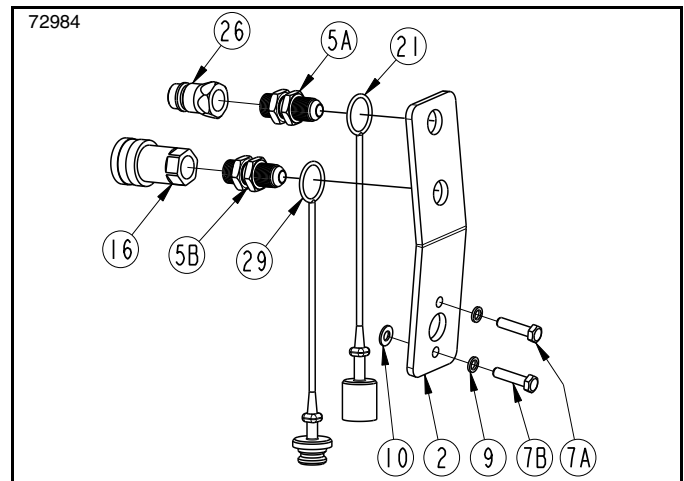
Bulkhead Mount Assembly

Refer to Figure 2-3 through Figure 2-5:

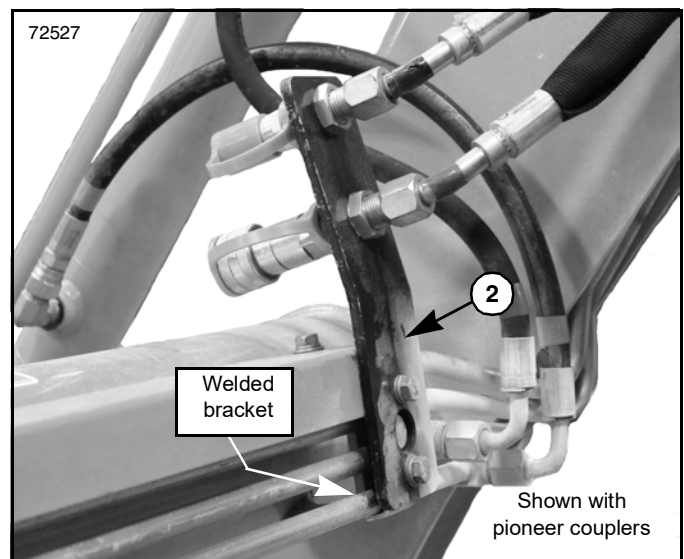
1. Attach bulkhead fittings (#5A & #5B) to bulkhead mount (#2). Tighten bulkhead locknuts to bulkhead mount (#2).
 - a. When installing kits with pioneer couplers, slide black dust cap (A) on to top bulkhead fitting (#5A), and green dust plug (B) onto bottom bulkhead fitting (#5B).
2. Attach female coupler (#16) to the bottom bulkhead fitting (#5B) on bulkhead mount (#2). Tighten and secure fittings.
3. Attach male coupler (#26) to the top bulkhead fitting (#5A) on bulkhead mount (#2). Tighten and secure fittings.
4. Attach bulkhead mount (#2) to welded bracket on loader cross tube with two M8 bolts (#7A & #7B), two M8 lock washers (#9), and one M8 flat washer (#10).
 - a. Install flat washer (#10) onto bottom bolt (#7B), on front side of bulkhead mount (#2). Tighten bolts (#7A & #7B) to 19 ft-lbs.



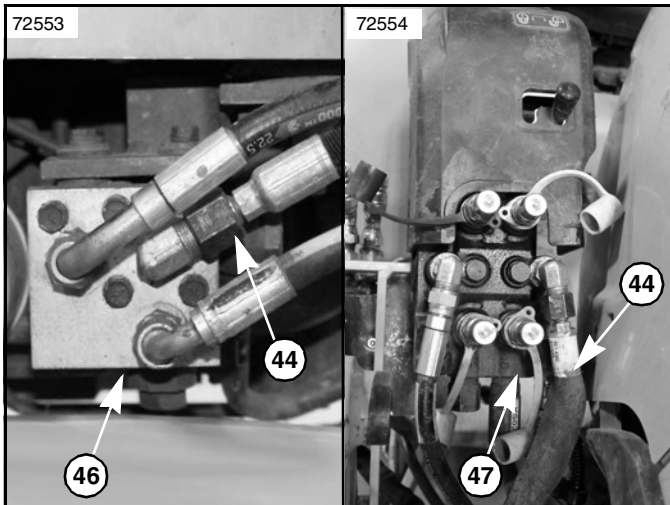
Bulkhead Mount with Flat-faced Couplers
Figure 2-3



Bulkhead Mount with Pioneer Couplers
Figure 2-4



Complete Assembly of Loader Bulkhead Mount
Figure 2-5



Existing Pump Line Hose Removal
Figure 2-6

Removal of Existing Pump Line Hose

Refer to Figure 2-6:

NOTE: Identify the existing hydraulic pump hose (#44) to be removed by its orange color marking.

1. Before continuing with kit installation, remove the existing hydraulic pump hose (#44) from outlet block (#46) and loader valve (#47). The removed hose is no longer needed, but store for safe keeping.

Third Function Valve Hydraulic Assembly

NOTE: Identification letters have been engraved next to each port on the third function valve. Once secured to the valve mount, ports "P" and "T" face downward, while ports "A" & "B" face upward. The valve solenoids face the left side of the tractor.

Port "T" Hydraulic Hose Assembly

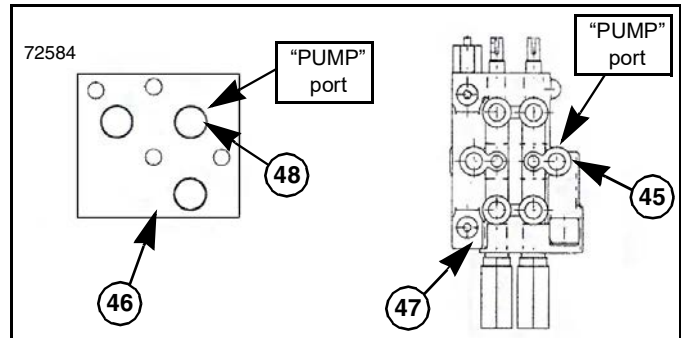
Refer to Figure 2-7 through Figure 2-9:

1. Attach hydraulic hose (#24) to the middle "PUMP" port (45) on tractor loader valve. Tighten hose to elbow fitting.
2. Attach hydraulic hose (#24) to elbow fitting (#14) installed into port "T" on third function valve (#18). Tighten hose to elbow fitting.
3. Tighten elbow fitting (#14) to the indicated orientation found in Figure 2-1 on page 16 to ensure clearance for hydraulic hose (#24).

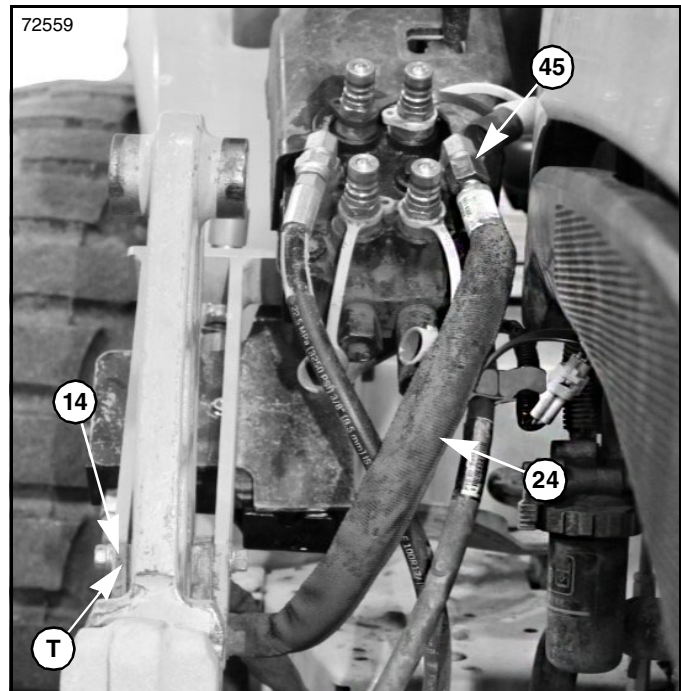
Port "P" Hydraulic Hose Assembly

Refer to Figure 2-7 through Figure 2-10:

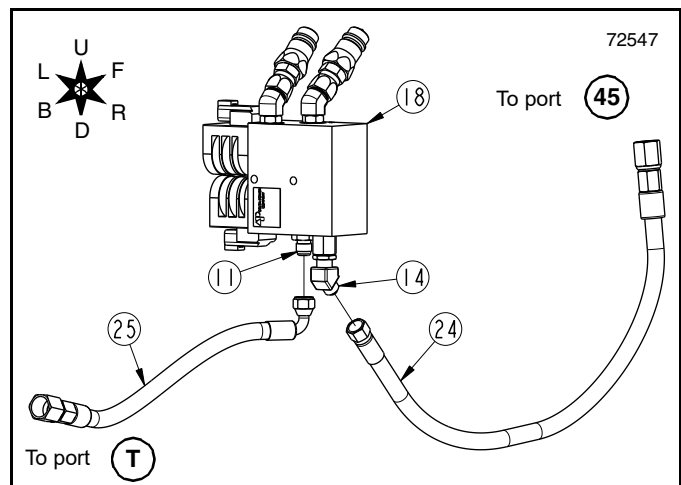
4. Attach elbow end of hydraulic hose (#25) to adapter fitting (#11) preinstalled into port "P" on third function valve (#18). Do not tighten hose fitting at this time.
5. Attach straight end of hydraulic hose (#25) to the top right "PUMP" port (#48) on tractor outlet block, then tighten fittings at both ends.



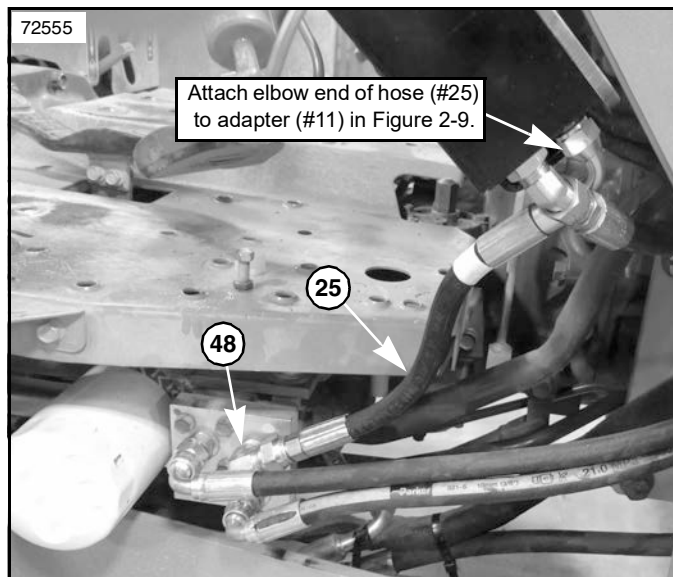
ROPS Tractor Outlet Block and Loader Valve Ports
Figure 2-7



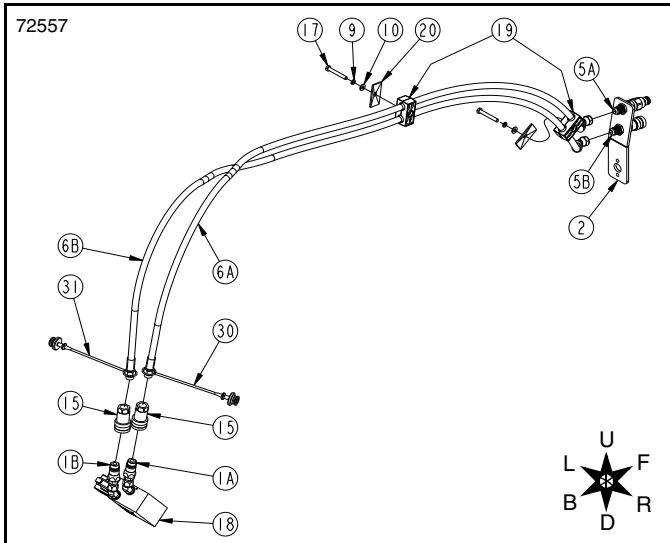
Port "T" Hydraulic Hose Assembly
Figure 2-8



Hydraulic Hose Assembly for Third Function Valve
Figure 2-9



Port "P" Hydraulic Hose Assembly
Figure 2-10

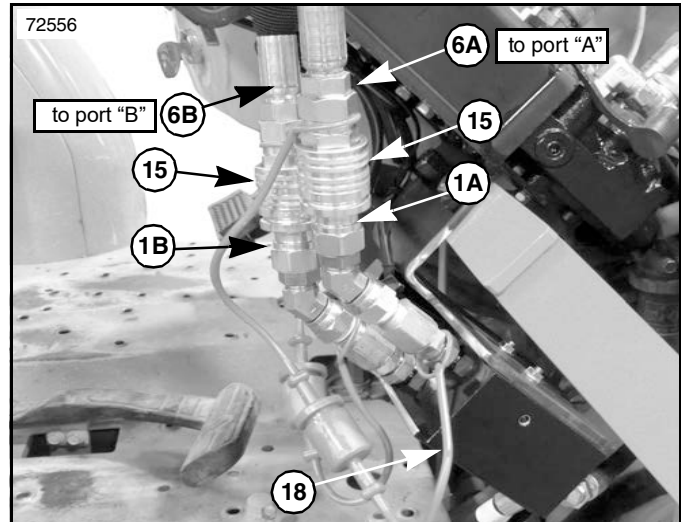


Loader Hydraulic Hose Assembly
Figure 2-11

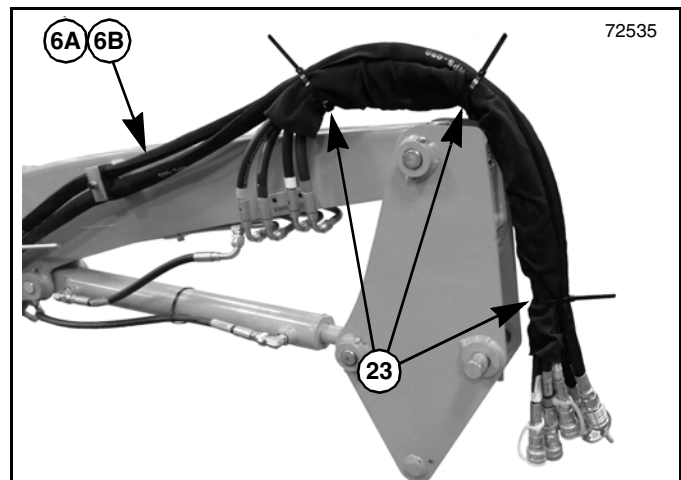
Ports "A" & "B" Hydraulic Hoses to Bulkhead Mount Assembly

Refer to Figure 2-11 through Figure 2-14:

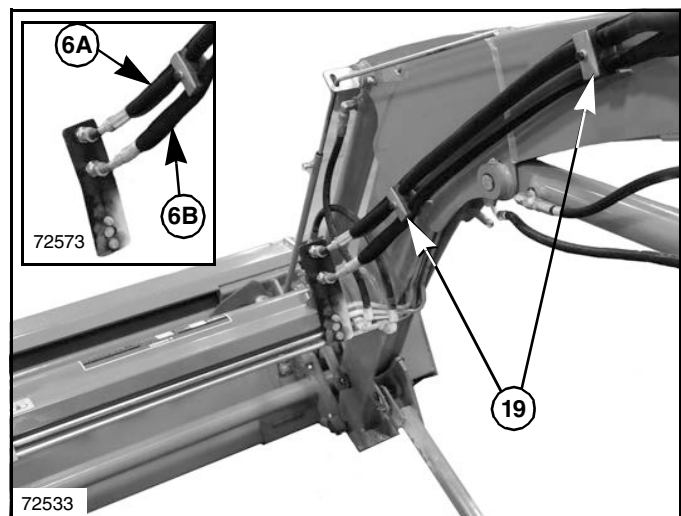
1. Attach female swivel end of hydraulic hose (#6A) to top bulkhead fitting (#5A) on bulkhead mount (#2). Do not tighten hose fitting at this time.
2. Attach female swivel end of hydraulic hose (#6B) to bottom bulkhead fitting (#5B) on bulkhead mount (#2). Do not tighten hose fitting at this time.
3. Place and enclose hydraulic hoses (#6A & #6B) within clamp body (#19).
4. Secure hoses (#6A & #6B), clamp body (#19), and clamp cover (#20) to welded bracket closest to bulkhead mount (#2) with an M8 x 60mm bolt (#17), M8 lock washer (#9), and M8 flat washer (#10).
5. Now secure and tighten female swivel ends of hydraulic hoses (#6A & #6B) to bulkhead fittings (#5A & #5B).
6. Continue routing hydraulic hoses (#6A & #6B) up loader arm. Repeat step 4 to further secure hydraulic hoses to second hose clamp.
7. Continue routing hydraulic hoses (#6A & #6B) up loader arm, placing them on top of the existing hoses. Secure all hydraulic hoses together with three cable ties (#23). See Figure 2-13.
8. Slide green dust plug (#31) over male end of hydraulic hose (#6B). Slide black dust plug (#30) over male end of hydraulic hose (#6A).
9. Attach female couplers (#15) to the male ends of both hydraulic hoses (#6A & #6B). Tighten and secure couplers.
10. At this time, hook up the loader back to the tractor.
11. Connect female coupler (#15) with black dust plug on hydraulic hose (#6A) to the poppet style male coupler (#1A) connected to port "A" on valve (#18). See Figure 2-11 on page 20.



Coupler Hook-up to Hydraulic Fittings on Valve
Figure 2-12

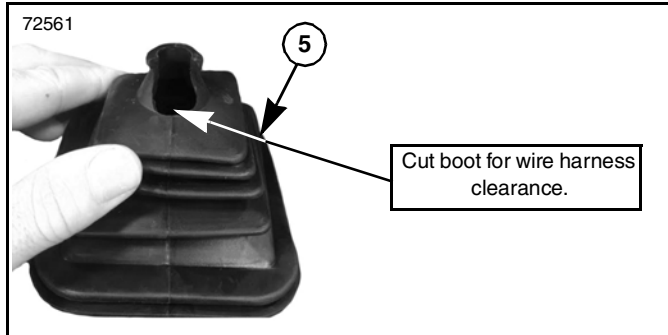


Securing Hydraulic Hoses with Cable Ties
Figure 2-13



Hydraulic Hose routing and Hose Clamp Assembly
Figure 2-14

12. Connect female coupler (#15) with green dust plug on hydraulic hose (#6B) to the poppet style male coupler (#1B) connected to port "B" on valve (#18). See Figure 2-11 on page 20.
13. For proper installation, confirm correct hook-up of steps 1, 2, 11, and 12.

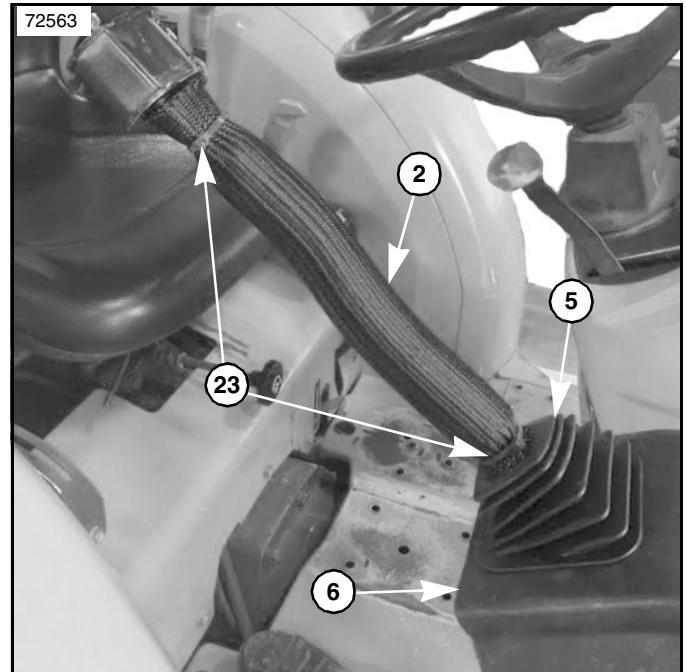


Control Lever Boot Modification
Figure 2-15

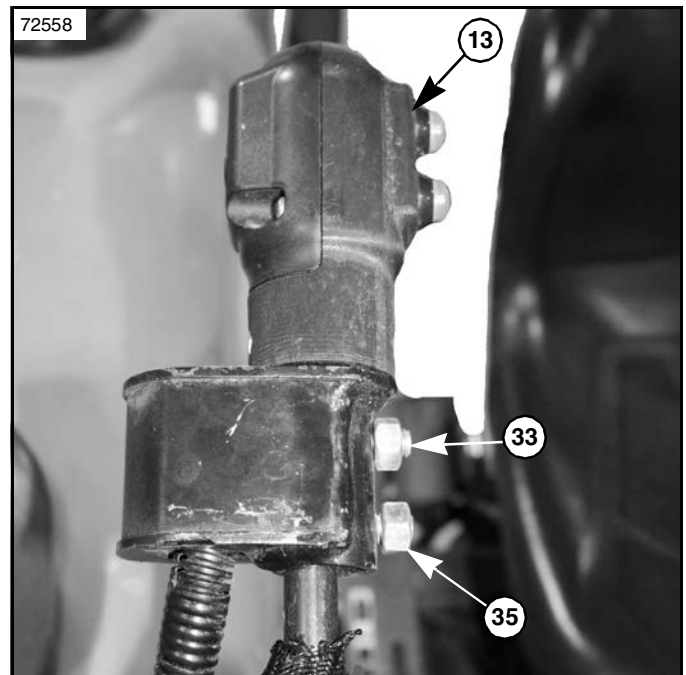
Control Lever Assembly

Refer to Figure 2-15 through Figure 2-17:

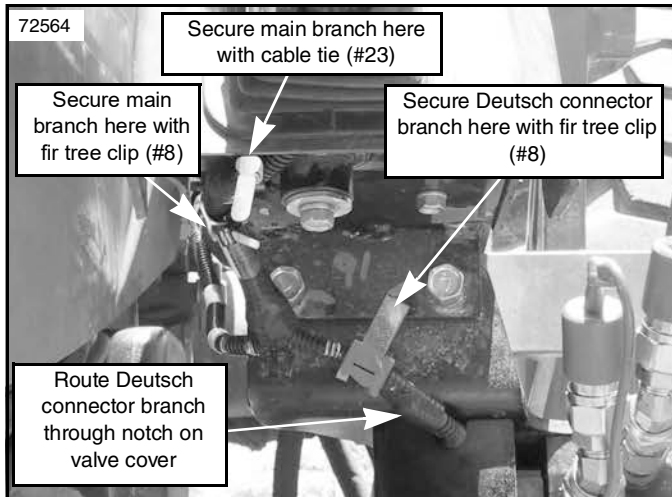
1. Remove existing control handle (not shown) from loader control lever.
2. Remove control lever boot (#5) from lever base.
3. For wire harness clearance, modify boot as shown in Figure 2-15, then replace boot onto control lever base.
4. Feed wire harness (not shown) from new control handle completely through braided sleeve.
5. Slide braided sleeve (#2) and wire harness over top and down control lever. Feed wire harness and braided sleeve (#2) down through control lever boot (#5) and base (#6). See Figure 2-16.
6. Position new control handle (#13) onto control lever with red switches facing left side of tractor. See Figure 2-17.
7. Secure new control handle (#13) to loader control lever with two 5/16" set screws (#33). Tighten both set screws (#33).
8. Secure set screws (#33) with two 5/16" jam nuts (#35). Tighten both jam nuts (#35).
9. Secure wire harness to loader's control lever by applying two cable ties (#23) around braided sleeve (#2) and control lever. See Figure 2-16.



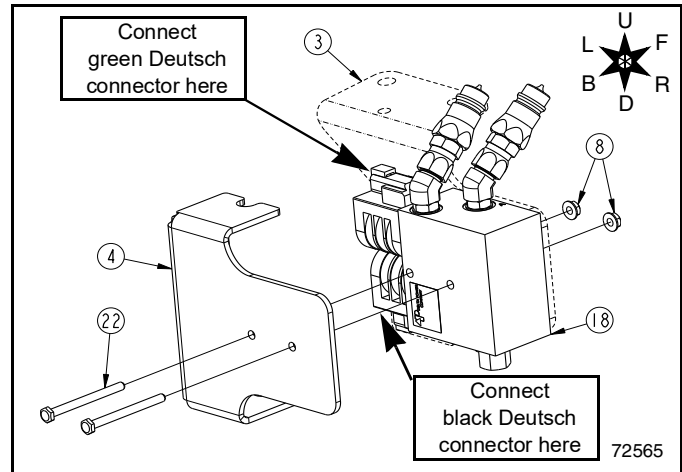
Control Handle Wire Harness Routing
Figure 2-16



Control Handle Orientation
Figure 2-17



Third Function Wire Harness Routing
Figure 2-18

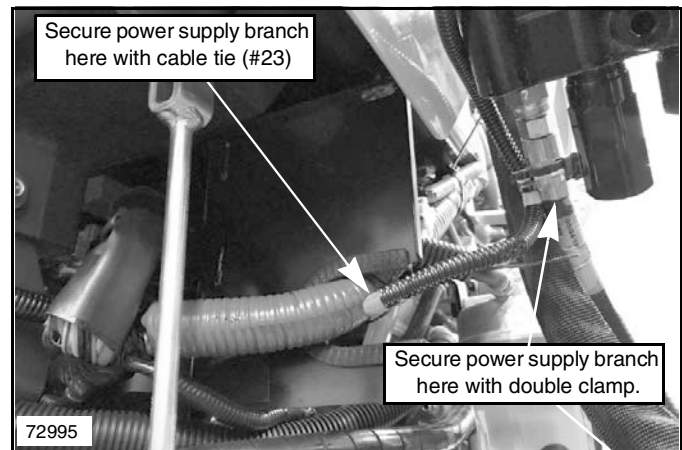


Deutsch Connectors to Solenoids on Valve
Figure 2-19

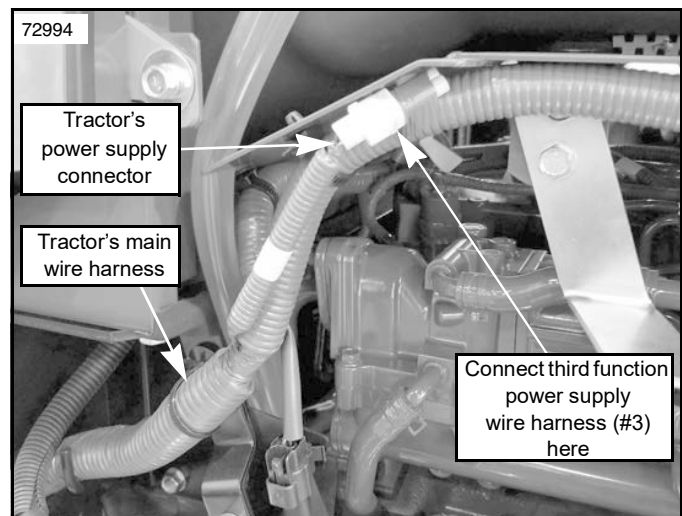
Connecting and Routing Third Function Wire Harness

Refer to Figure 2-18 through Figure 2-21:

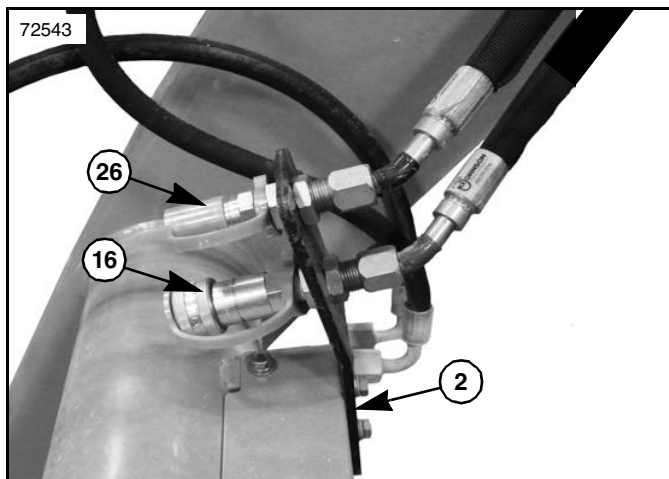
1. Pull third function wire harness down from underside of control lever boot and base, making fuse accessible from underside of control lever base.
2. Secure main branch of third function wire harness to control lever mount with cable tie (#23).
3. Continue routing main branch of third function wire harness down control lever mount and secure main branch of third function wire harness to valve mount with fir tree clip (#8).
4. At this point, wire harness separates into two branches. Secure branch with green and black Deutsch connectors to hole on valve mount with fir tree clip (#8).
5. Connect green Deutsch connector to top solenoid on third function valve (#18). See Figure 2-19.
6. Connect black Deutsch connector to bottom solenoid on third function valve (#18). See Figure 2-19.
7. Remove both 1/4" whiz nuts (#8) and 1/4" x 3" bolts (#22) from third function valve (#18) and valve mount (#3).
8. Place third function valve cover (#4) over valve (#18), and route wire harness branch with Deutsch connectors through notch on valve cover.
9. Secure valve cover (#4) and third function valve (#18) to valve mount (#3) with two 1/4" x 3" bolts (#22) and secure with two 1/4" whiz nuts (#8). See Figure 2-19.
10. Route power supply branch of third function wire harness between steering console and the control lever mount. Secure wire harness to the tank hydraulic line using a double clamp. See Figure 2-20.
11. Further secure power supply branch of the third function wire harness to the tractor's main wire harness With cable tie (#23). See Figure 2-19.
12. Connect the power supply of the third function wire harness to the tractor power supply wire harness. See Figure 2-21.



Third Function Power Supply Wire Harness Routing
Figure 2-20



Connecting the Power Supply Wire Harness
Figure 2-21



Attachment Hook-up to Bulkhead Mount
Figure 2-22

Check Operation & Fluid Level

Refer to Figure 2-22:

1. Mount attachment to tractor's front loader. Connect attachment's hydraulic hoses to couplers (#26 & #16) found on bulkhead mount (#2).
2. Raise attachment off the ground and operate third function hydraulics using push-buttons on the newly installed control handle. Refer to **"Operating the Third Function Valve Kit"** on page 24.

Refer to Figure 2-19 on page 22:

3. Switch green and black wire connections at solenoid valve (#18) if the attachment's hydraulic cylinder(s) operate in the opposite direction intended.

IMPORTANT: Refer to your tractor Operator's Manual for recommended hydraulic fluid and procedure for checking hydraulic fluid level.

4. Once hoses and cylinder(s) are full of hydraulic fluid, check tractor hydraulic fluid level. If low, add recommended hydraulic fluid until correct levels are attained.
5. Check all connection points on the Third Function Valve Kit for any hydraulic fluid leaks.

Operating the Third Function Valve Kit

At this point, your Third Function Valve Kit is now ready to be used with a multitude of attachments. Be sure to familiarize yourself with a complete understanding of how to operate the Third Function Valve Kit before attempting to do so.

DANGER

To avoid serious injury or death: Do not allow bystanders to be near the attachment, loader arms, or tractor during operation. They can become entangled, pinched, or crushed by the equipment. Disconnect and lockout power source before making adjustments or servicing tractor and attachment.

Refer to Figure 2-23:

Powering On Third Function Valve Kit

- Provide power to the Third Function Valve Kit by pressing power switch into the compressed position.
- The LED light on the power switch will light up to indicate the Third Function Valve Kit is turned on.

Actuating Attachment

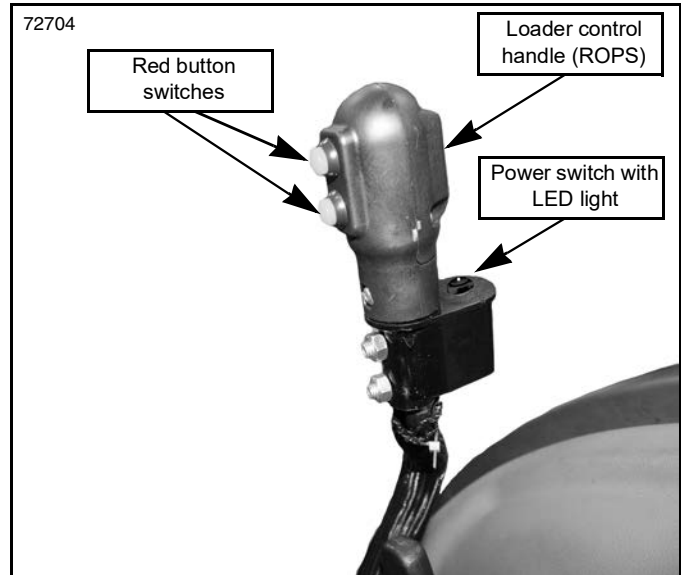
- The two red button switches on the loader control handle will actuate the functions of the attachment.
 - The top red button switch will actuate the functions of the attachment in one direction.
 - The bottom red button switch will actuate the attachment in the opposite direction.

Powering Off Third Function Valve Kit

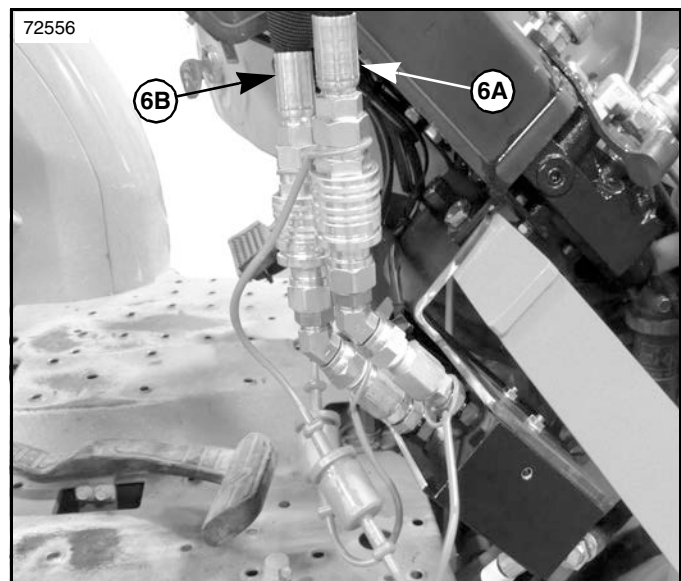
- Turn power off to the Third Function Valve Kit by pressing power switch into the decompressed position.
- The LED light on the power switch will turn off to indicate the Third Function Valve Kit is powered off.

Relieving Hydraulic Pressure

- Once Third Function Valve Kit is powered off, be sure to relieve all hydraulic pressure.
 - To relieve all hydraulic pressure from the hydraulic system, turn the tractor key switch to the auxiliary position, then press both red button switches on the loader control handle.



Operating Third Function Valve Kit
Figure 2-23



Disconnect Hydraulic Hoses Before Dismounting Loader
Figure 2-24

Unhook Loader

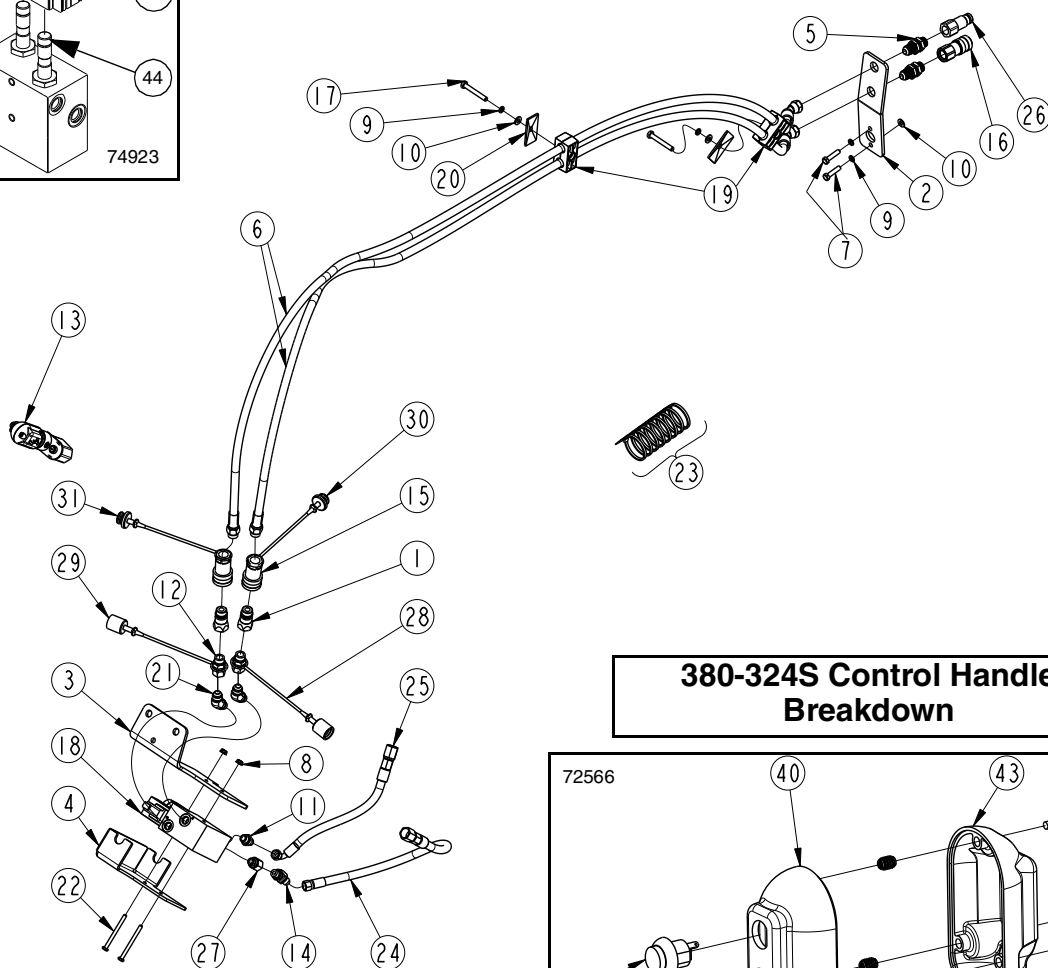
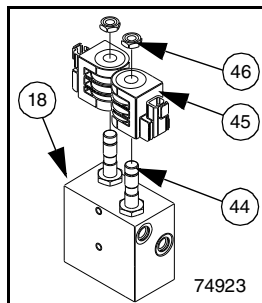
Refer to Figure 2-24:

1. Disconnect hydraulic hoses (#6A & #6B) from third function valve before unhooking the loader from ROPS tractor.

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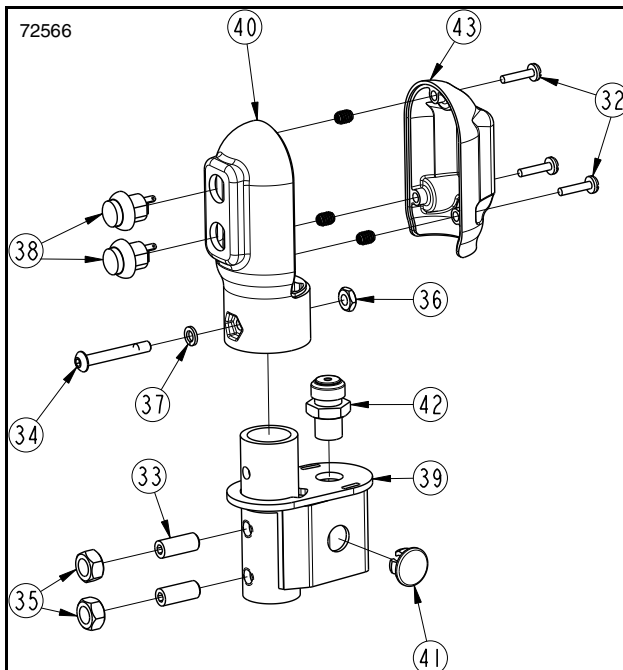
72550

850-313C



**380-324S Control Handle
Breakdown**

72566



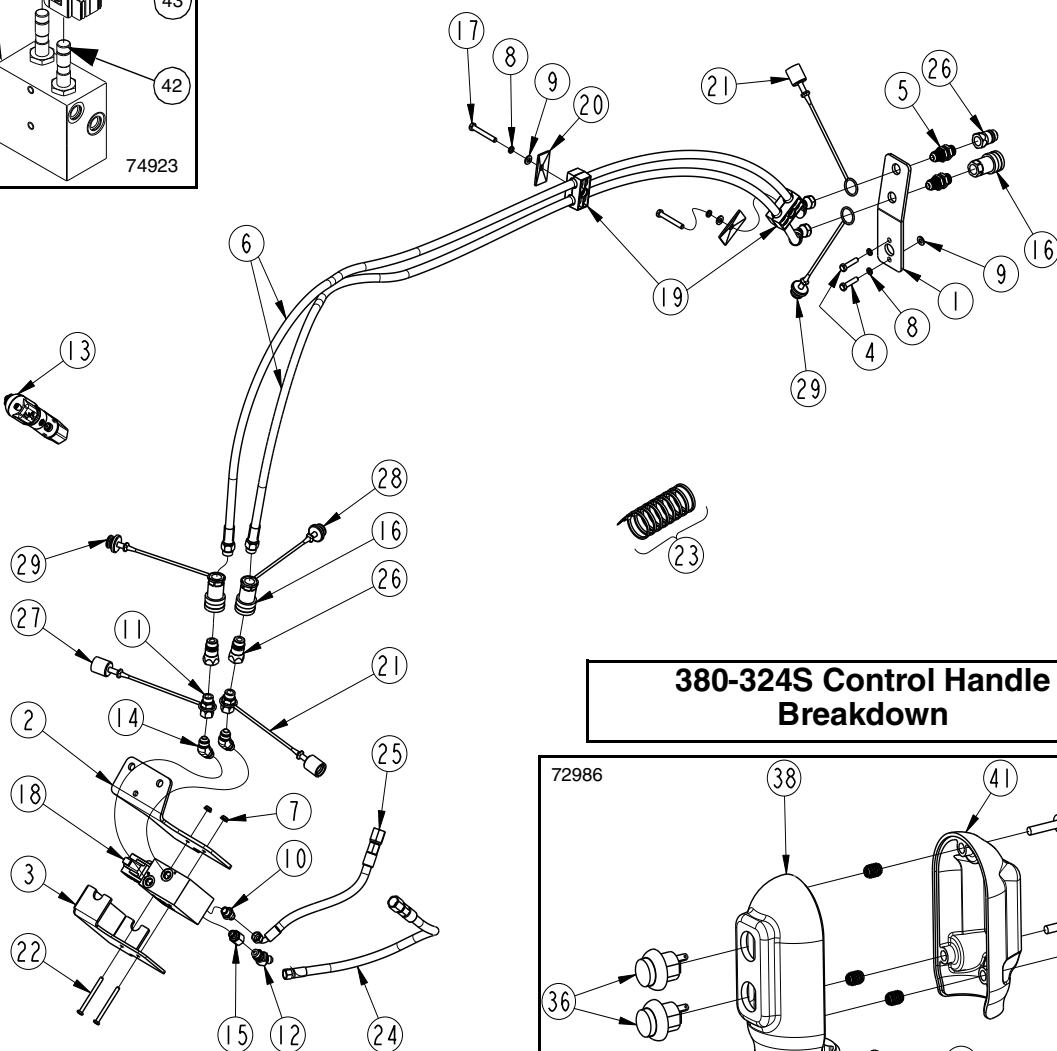
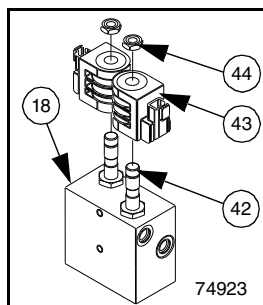
MX Third Function Valve Kit for Kubota ROPS Tractor
Figure 2-25

Kit No. 380-312A MX THIRD FUNCTION VALVE KIT FOR ROPS TRACTOR
(Equipped with flat-faced couplers)

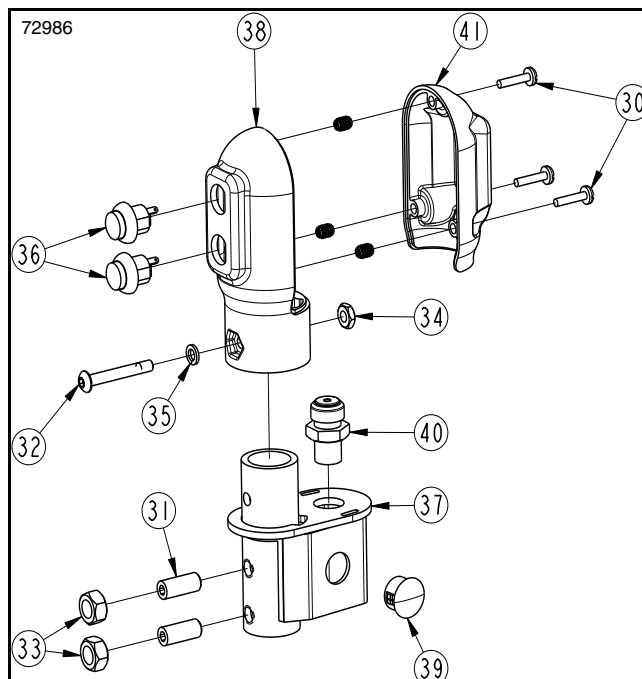
Item	Part No.	Description	Qty
1	811-394C	CP 3/4 FORM MALE QD POPPET TYPE.....	2
2	380-418D	PLATE, BULKHEAD MOUNT	1
3	380-421D	BRKT, VALVE MOUNT	1
4	380-422D	COVER, 3RD VALVE	1
5	851-344C	AD 3/4MJIC 3/4MORB BLKHD W/ LN	2
6	861-428C	HH3/8R2 3/4FJIC45 3/4MORB	2
7	802-967C	HHCS M8X1.25X35 GR8.8	2
8	803-194C	NUT HEX WHIZ 1/4-20 PLT	2
9	804-157C	WASHER SPRING LOCK M8 PLT	4
10	804-161C	WASHER FLAT M8 PLT	3
11	811-170C	AD 9/16MORB 9/16MJIC	1
12	811-324C	AD 3/4MORB 3/4FJIC	2
13	380-324S	ASY, PSH BUTTN CNTRL HNDL ROPS	1
14	811-416C	EL 45 9/16MJIC 9/16MORB	1
15	811-870C	CP 3/4FORB QD FEMALE (POPPET)	2
16	861-543C	CP 3/4FORB QD FML FLATFACE	1
17	842-017C	HHCS M8X1.25X60 GR8.8	2
18	850-313C	VALVE, THIRD FUNCTION (DELTA).....	1
19	851-241C	STAUFF CLAMP BODY 3D 0.79HOLE	2
20	851-245C	STAUFF COVER PLATE GROUP 3D	2
21	851-647C	EL 45 9/16MORB 3/4MJIC	2
22	802-274C	HHCS 1/4-20X3 GR5	2
23	800-112C	CABLE TIE .19X7.25 1.75D 50LB	8
24	861-430C	HH3/8R2 023 3/4FJIC 9/16FJIC	1
25	861-431C	HH3/8R2 013 3/4FJIC 9/16FJIC90	1
26	841-099C	CP 3/4FORB QD FLATFACE	1
27	861-528C	AD 9/16MORB 9/16FORB	1
28	861-539C	BLACK DUST CAP, 1/2" QD AG	1
29	861-540C	GREEN DUST CAP, 1/2" QD AG	1
30	861-541C	BLACK DUST PLUG, 1/2" QD AG	1
31	861-542C	GREEN DUST PLUG, 1/2" QD AG	1
32	801-091C	CRPHMS 6-32X5/8 SS	3
33	801-204C	SCREW SET SCKT HD 5/16-18X3/4	2
34	801-250C	HSBHCS #10-32X1 3/8	1
35	803-008C	NUT HEX 5/16-18 PLT	2
36	803-269C	NUT HEX 10-32 PLT	1
37	804-054C	WASHER LOCK #10	1
38	833-739C	SWITCH, P9 PB NO SPST MOM RED	2
39	380-313H	WMT, CONTROL HANDLE MOUNT	1
40	837-054C	BASE, PUSH BUTTON CNTRL HNDL	1
41	837-365C	PLASTIC SNAP-IN PLUG	1
42	843-178C	POWER SWITCH ON/OFF	1
43	837-053C	COVER, PUSH BUTTON CNTRL HNDL	1
44	85002296	4-WAY, 2-POS SOLENOID VALVE	2
45	39680034	12VDC SOLENOID COIL, DT04-2P	2
46	36202020	COIL NUT	2

72977

850-313C



380-324S Control Handle Breakdown



MX Third Function Valve Kit for Kubota ROPS Tractor
Figure 2-26

Kit No. 380-331A MX THIRD FUNCTION VALVE KIT FOR ROPS TRACTOR
(Equipped with pioneer couplers)

Item	Part No.	Description	Qty
1	380-418D	PLATE, BULKHEAD MOUNT	1
2	380-421D	BRKT, VALVE MOUNT	1
3	380-422D	COVER, 3RD VALVE	1
4	802-967C	HHCS M8X1.25X35 GR8.8	2
5	851-344C	AD 3/4MJIC 3/4MORB BLKHD W/ LN	2
6	861-428C	HH3/8R2 3/4FJIC45 3/4MORB	2
7	803-194C	NUT HEX WHIZ 1/4-20 PLT	2
8	804-157C	WASHER SPRING LOCK M8 PLT	4
9	804-161C	WASHER FLAT M8 PLT	3
10	811-170C	AD 9/16MORB 9/16MJIC	1
11	811-324C	AD 3/4MORB 3/4FJIC	2
12	811-416C	EL 45 9/16MJIC 9/16MORB	1
13	380-324S	ASY, PSH BUTTN CNTRL HNDL ROPS	1
14	851-647C	EL 45 9/16MORB 3/4MJIC	2
15	861-528C	AD 9/16MORB 9/16FORB	1
16	811-870C	CP 3/4FORB QD FEMALE (POPPET)	3
17	842-017C	HHCS M8X1.25X60 GR8.8	2
18	850-313C	VALVE, THIRD FUNCTION (DELTA)	1
19	851-241C	STAUFF CLAMP BODY 3D 0.79HOLE	2
20	851-245C	STAUFF COVER PLATE GROUP 3D	2
21	861-539C	BLACK DUST CAP, 1/2" QD AG	2
22	802-274C	HHCS 1/4-20X3 GR5	2
23	800-112C	CABLE TIE .19X7.25 1.75D 50LB	8
24	861-430C	HH3/8R2 023 3/4FJIC 9/16FJIC	1
25	861-431C	HH3/8R2 013 3/4FJIC 9/16FJIC90	1
26	811-394C	CP 3/4FORB MALE QD POPPET TYPE	3
27	861-540C	GREEN DUST CAP, 1/2" QD AG	1
28	861-541C	BLACK DUST PLUG, 1/2" QD AG	1
29	861-542C	GREEN DUST PLUG, 1/2" QD AG	2
30	801-091C	CRPHMS 6-32X5/8 SS	3
31	801-204C	SCREW SET SCKT HD 5/16-18X3/4	2
32	801-250C	HSBHCS #10-32X1 3/8	1
33	803-008C	NUT HEX 5/16-18 PLT	2
34	803-269C	NUT HEX 10-32 PLT	1
35	804-054C	WASHER LOCK #10	1
36	833-739C	SWITCH, P9 PB NO SPST MOM RED	2
37	380-313H	WMT, CONTROL HANDLE MOUNT	1
38	837-054C	BASE, PUSH BUTTON CNTRL HNDL	1
39	837-365C	PLASTIC SNAP-IN PLUG	1
40	843-178C	POWER SWITCH ON/OFF	1
41	837-053C	COVER, PUSH BUTTON CNTRL HNDL	1
42	85002296	4-WAY, 2-POS SOLENOID VALVE	2
43	39680034	12VDC SOLENOID COIL, DT04-2P	2
44	36202020	COIL NUT	2



Corporate Office: P.O. Box 5060
Salina, Kansas 67402-5060 USA
www.landpride.com
