

# YANMAR

## INSTALLATION INSTRUCTIONS

# YL110/210 Third Function Valve Kit for SA Tractors

This document is designed for use by authorized YANMAR personnel only. All non-authorized personnel should seek the assistance from an authorized YANMAR service technician to perform the procedure as outlined in this document.

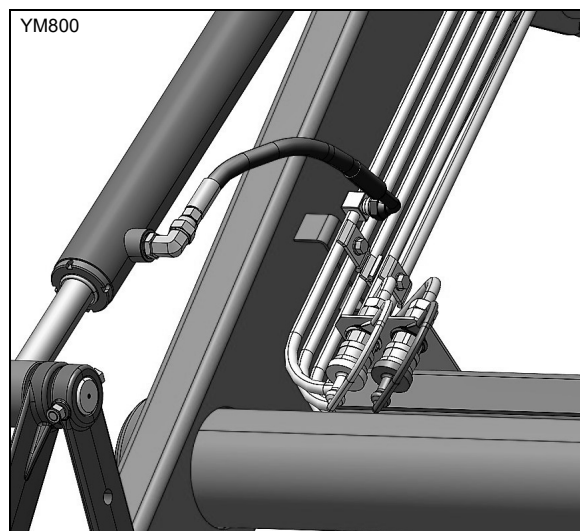


## WARNING

- All work must be performed on a solid, dry, stable and level surface.
- Always use Personnel Protective Equipment (PPE) when servicing, performing repairs or installations to YANMAR equipment.
- Never use flammable fluids to clean parts. Use only approved non flammable cleaning solvents.
- Always follow the procedures as outlined in this document. Deviation or skipping a procedure may result in sudden failure to the component or equipment.
- Always support the equipment using the proper jack stands rated for the weight of the machine. Never support equipment with a hydraulic jack.
- When working on the machine, always set the parking brake and chock the wheels.
- Always keep your work area clean and free from spills or trip hazards.
- When making electrical repairs or installing an electrical component always disconnect the battery first.

## 1. General Precautions

1. The YL110/210 Third Function Valve Kit is designed for use on the SA loader only. Any unauthorized use, modification or changes to this kit may result in equipment damage, component failure or possible injury. Only approved YANMAR accessories for this Third Function Valve Kit shall be used. Any other attachments not approved by YANMAR could cause injury or damage to the Third Function Valve Kit or tractor.
2. This Third Function Valve Kit may be impaired by structural damage, sudden impact, excessive heat or alteration. Never heat, weld or drill the Third Function Valve Kit. Applying heat, welding or drilling on the Third Function Valve Kit will reduce the support capacity of the material resulting in unexpected component failure. If any of these conditions occur, this structure must be replaced.



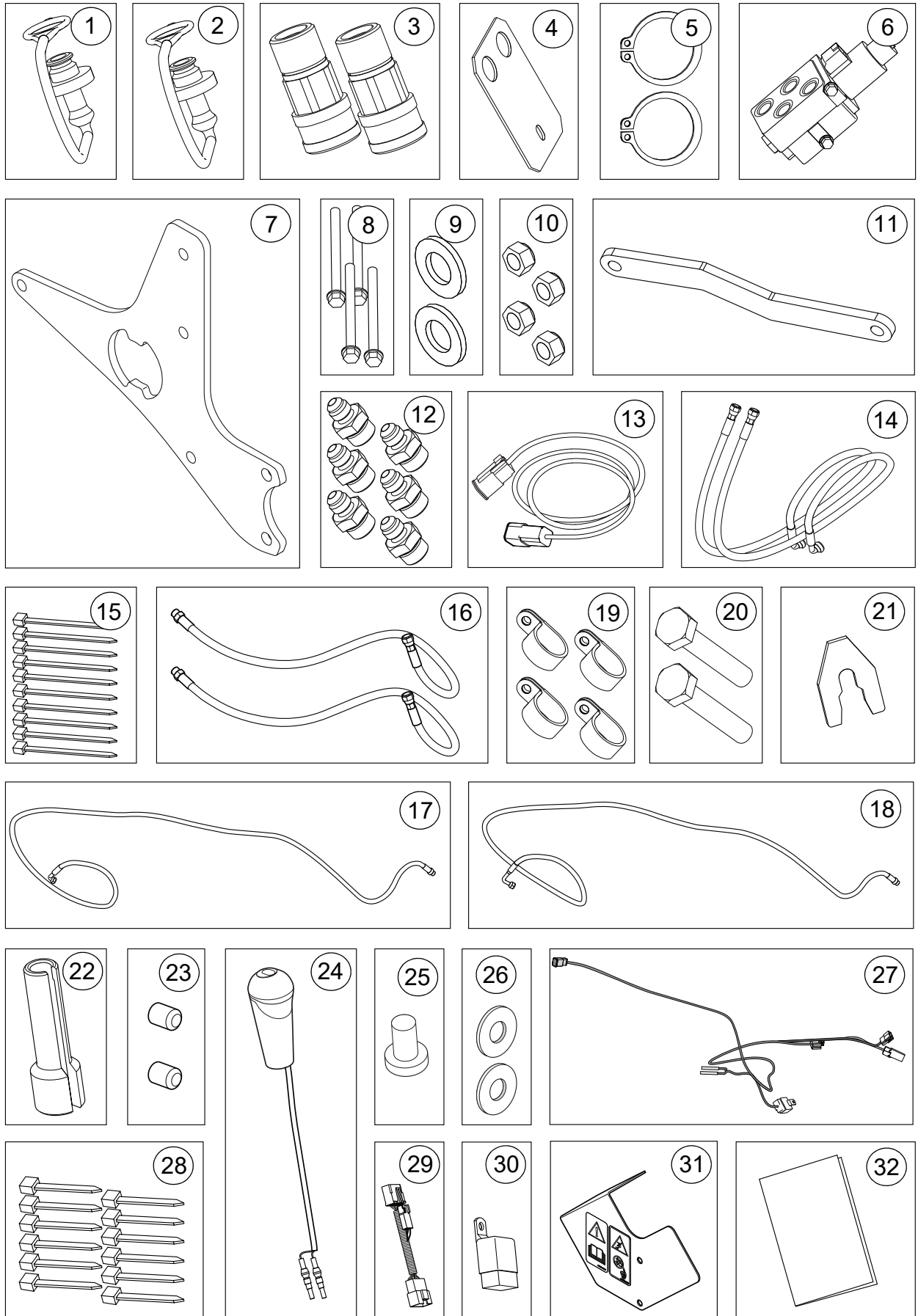
## 2. Kit Contents

Your YL110/210 Third Function Valve Kit comes complete with all the parts needed. Before assembling and installing the Third Function Valve Kit, take inventory and check to be sure all the parts listed in the parts list and shown in the illustrations below are in the kit.

If you should find any parts missing, contact your YANMAR dealer to obtain the missing parts. Do not install the Third Function Valve Kit to the loader or tractor with after market parts, incorrect parts or missing parts. Possible injury or damage to the machine may result.

Item No.	YL110 Part Number	YL210 Part Number	Part Description	Qty.
1	1A7880-47570	1A7880-47570	Yellow Dust Plug	1
2	1A7880-47580	1A7880-47580	Green Dust Plug	1
3	198223-46250	198223-46250	Hydraulic Quick Coupler	2
4	1TN339-43050	1TN339-43050	Coupler Stay	1
5	22242-000220	22242-000220	Snap Ring (22)	2
6	1TN323-43110	1TN323-43110	Valve Assembly	1
7	1TN328-43410	1TN329-43410	Valve Stay Plate	1
8	26106-080902	26106-080902	M8x100 Bolt	4
9	22117-080000	22117-080000	8 Washer	4
10	26366-080002	26366-080002	8 U-nut	4
11	1TN328-43420	1TN329-43420	Valve Back Plate	1
12	1A7882-47210	1A7882-47210	Joint Assembly	6
13	1TN328-43320	1TN328-43320	Extension Harness	1
14	1TN328-43040	1TN328-43040	C Hose—Straight swivel fitting & short 90° elbow	2
15	1A8300-51210	1A8300-51210	Repeat Band	10
16	1TN328-43050	1TN329-43050	D Hose—Straight fittings on both ends	2
17	1TN328-43190	1TN329-43190	B Hose—Straight fitting and short 90° elbow	1
18	1TN328-43180	1TN329-43180	A Hose—Straight fitting and long 90° elbow	1
19	1TN328-43030	1TN328-43030	Pipe Band	4
20	1TN328-43520	1TN328-43520	M6x35 Iso4017 Bolt	2
21	1TN328-43450	1TN328-43450	Lock Regen Plate	1
22	1TN328-43250	1TN328-43250	F Sleeve Handle	1
23	1TN328-43550	1TN328-43550	M6x8 Set Screw	2
24	172663-17950	172663-17950	Vessel Knob Assembly	1
25	1TN328-43540	1TN328-43540	M4x6 Set Screw	1
26	1TN328-43530	1TN328-43530	M4 ISO7089 Washer	2
27	1TN328-43310	1TN328-43310	Electrical Harness	1
28	29622-250001	29622-250001	250 Band	10
29	129927-91151	129927-91151	Diode Harness	1
30	119247-77100	119247-77100	Power Relay	1
31	1TN328-43500	1TN328-43500	Hose Cover M Assembly	1
32	0F052-EN0050	0F052-EN0050	Assembly Instructions	1

The images in the manual represent the YL110 Third Function Valve Kit. There are only minor differences between YL110 and YL210 Third Function Valve Kits. The same instructions apply for YL110 and YL210 with regards to assembly and installation.

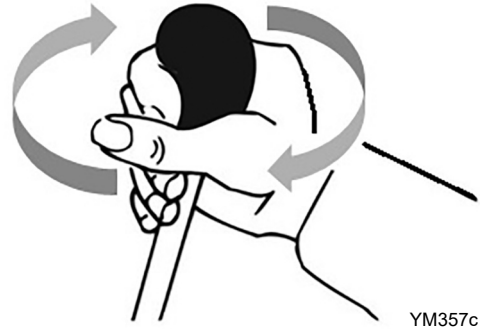


### 3. Installation Instructions

- Always keep in mind when installing parts or components to the tractor, the reference points may be stated according to the operators seated position on the tractor facing forward.
- Be sure you have enough room around you and the tractor to perform the procedures as outlined in this document.
- It is advised to lay the parts out in an orderly fashion for each step listed in this document so confusion during the installation process can be avoided.
- Be aware of the tools you are using, always use the proper tool for the task you are performing. Failure to do so may result in damage to the component or possible injury.
- Whenever a specific torque value is listed in this document, always torque the fastener to the value as listed. Failure to do so may result in equipment or component failure.
- If you should need assistance during your installation process, contact your YANMAR distributor.

#### 3.1 Removing the Loader

1. Park the tractor and loader in a level stable and well illuminated area.



2. Remove the front loader from the tractor. Refer to the loader Operation Manual for details.
3. With the loader off the tractor and the engine OFF, slowly move the control lever in all directions to release any residual hydraulic pressure in the system before disconnecting the hydraulic couplers.
4. Park the tractor near the loader, turn the engine off, set the parking brake and chock the wheels.
5. When the installation is complete, refer to the loader Operation Manual to reattach the loader.



#### WARNING

**To prevent serious injury or death!**

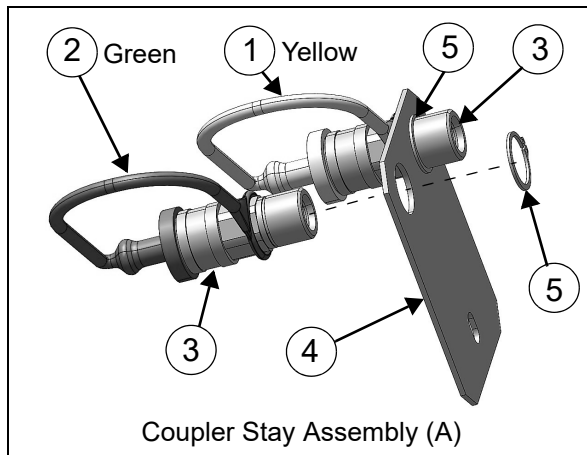
- Use approved safety glasses and gloves when performing any maintenance.
- Make sure that all surfaces have cooled before attempting to perform any maintenance work.
- Make sure the hydraulic system has cooled down to avoid burns.
- Make sure all hydraulic pressure is released before disconnecting any hydraulic lines.
- Pressurized transmission hydraulic oil has enough force to penetrate the skin and can cause serious injury
- If an injury does occur due to escaping oil, immediately consult a physician to receive the appropriate medical treatment to prevent serious infection or allergic reaction.

## 3.2 Install Front Couplers

Parts needed:

Item No.	Part No.	Description	Qty.
1	1A7880-47570	Yellow Dust Plug	1
2	1A7880-47580	Green Dust Plug	1
3	198223-46250	Quick Coupler	2
4	1TN339-43050	Coupler Stay	1
5	22242-000220	Snap Ring	2

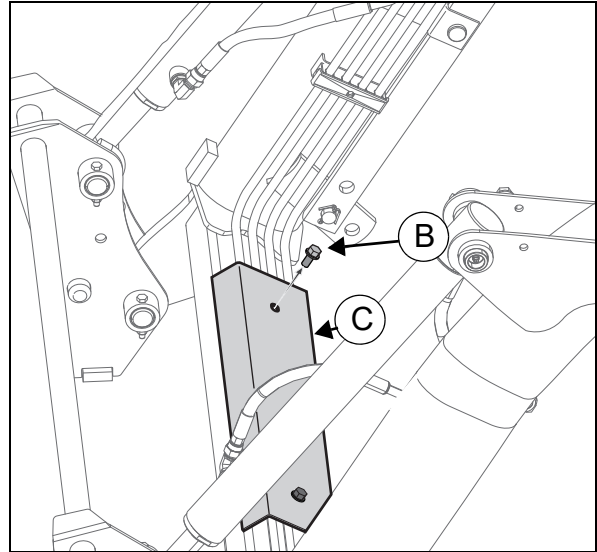
1. Attach the Yellow (1) and Green (2) Dust Plugs to the Hydraulic Quick Couplers (3).
2. Install the Hydraulic Quick Couplers (3) into the Coupler Stay (4).
3. Secure the Hydraulic Quick Couplers (3) to the Coupler Stay (4) with the Snap Rings (5).



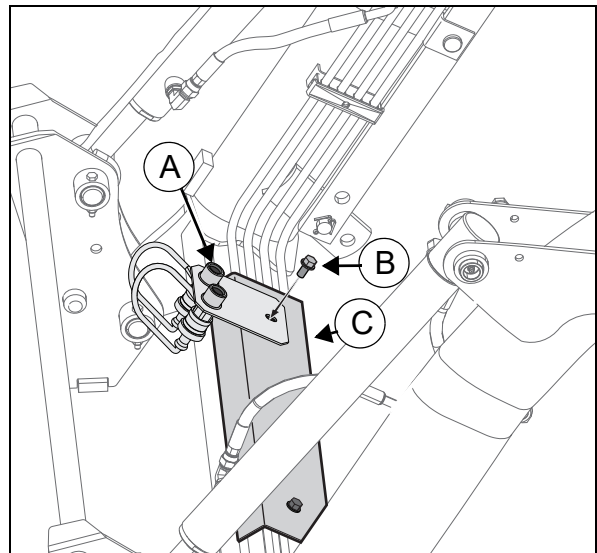
### NOTE

Make sure the Snap Ring (5) is in the groove on each of the Hydraulic Quick Couplers (3).

4. Remove bolt (B) from the right side of the loader hydraulic line cover (C).



5. Secure the Coupler Stay Assembly (A) and hydraulic line cover (C) to the loader with the bolt (B) removed earlier.



### 3.3 Valve Assembly and Installation

Parts needed:

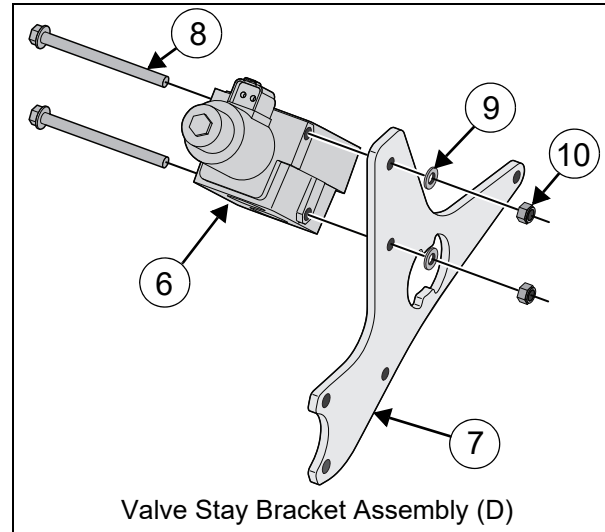
YL110			
Item No.	Part No.	Description	Qty.
6	1TN323-43110	Valve Assembly	1
7	1TN328-43410	Valve Stay Plate	1
8	26106-080902	M8x100 Bolt	4
9	22117-080000	8 Washer	4
10	26366-080002	8 U-nut	4
11	1TN328-43420	Valve Back Plate	1
12	1A7882-47210	Joint Assembly	6
13	1TN328-43320	Extension Harness	1

YL210			
Item No.	Part No.	Description	Qty.
6	1TN323-43110	Valve Assembly	1
7	1TN329-43410	Valve Stay Plate	1
8	26106-080902	M8x100 Bolt	4
9	22117-080000	8 Washer	4
10	26366-080002	8 U-nut	4
11	1TN329-43420	Valve Back Plate	1
12	1A7882-47210	Joint Assembly	6
13	1TN328-43320	Extension Harness	1

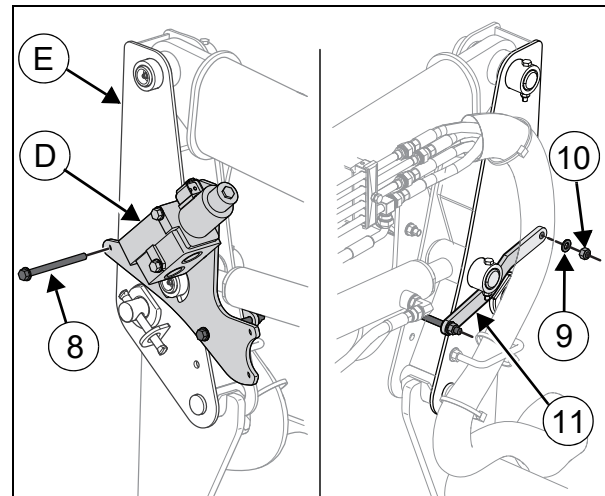
**NOTE:**

If the valve ports are not covered, make sure debris does not fall into the valve ports when handling the Valve Assembly. If necessary, cover the ports with masking tape.

1. Secure the Valve Assembly (6) to the Valve Stay Plate (7) using two Bolts (8), Washers (9) and Nuts (10). The bolts will be torqued later in the assembly process.

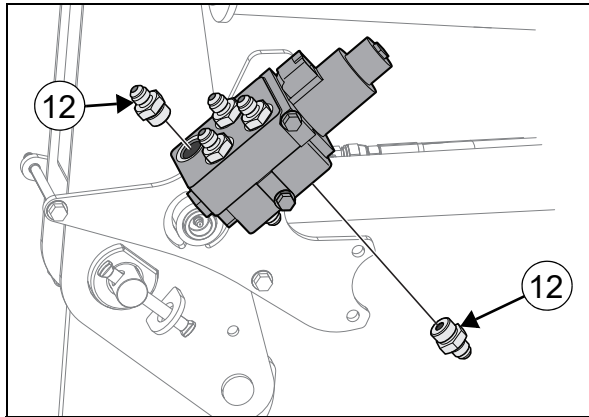


2. Secure the Valve Stay Bracket Assembly (D) to the Loader Mast (E) with the Valve Back Plate (11), two Bolts (8), Washers (9), and Nuts (10).



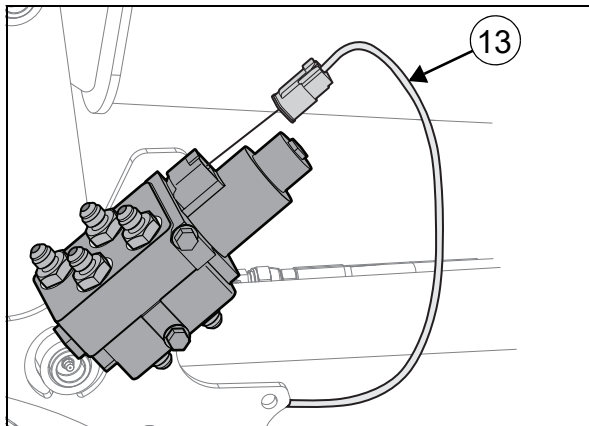
**Tightening Torque:**  
17–22 ft-lb (23–29 Nm)

3. Install the Joint Assembly fittings (12) into the top and bottom of the Valve Assembly (6).



**Tightening Torque:**  
40–43 ft-lb (54–58 Nm)

4. Connect either end of the Extension Harness (13) to the Valve Assembly (6).

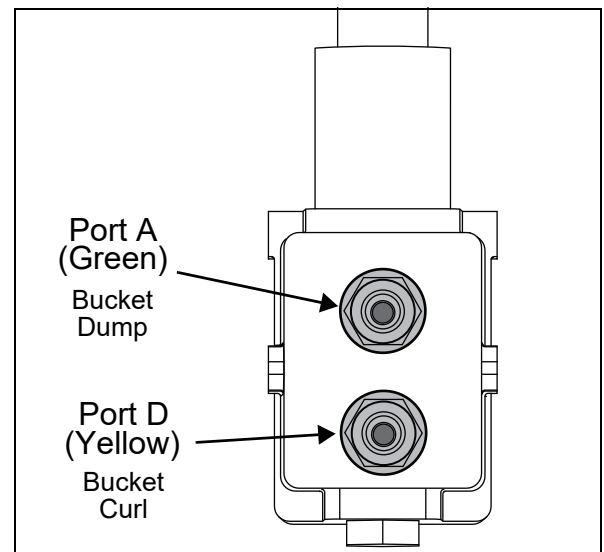
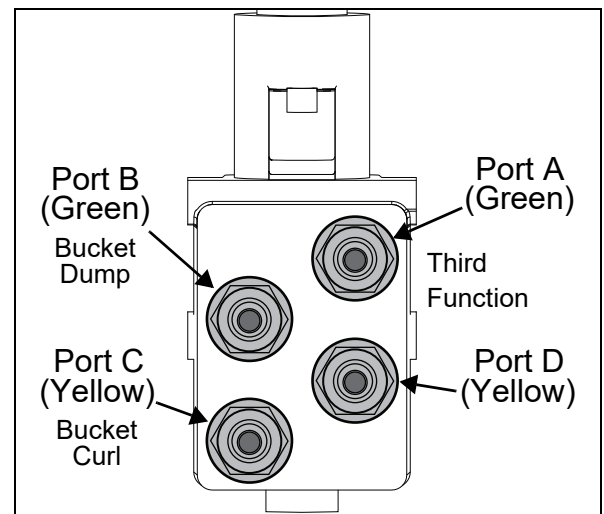


### 3.4 Installing Hydraulic Hoses

Parts needed:

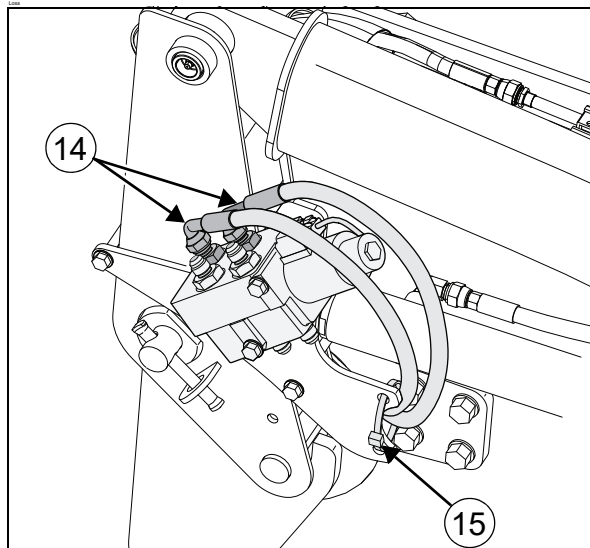
YL110 Parts			
Item No.	Part No.	Description	Qty.
14	1TN328-43040	C Hose	2
15	1A8300-51210	Repeat Band	3
16	1TN328-43050	D Hose	2
17	1TN328-43190	B Hose	1
18	1TN328-43180	A Hose	1

YL210 Parts			
Item No.	Part No.	Description	Qty.
14	1TN328-43040	C Hose	2
15	1A8300-51210	Repeat Band	3
16	1TN329-43050	D Hose	2
17	1TN329-43190	B Hose	1
18	1TN329-43180	A Hose	1



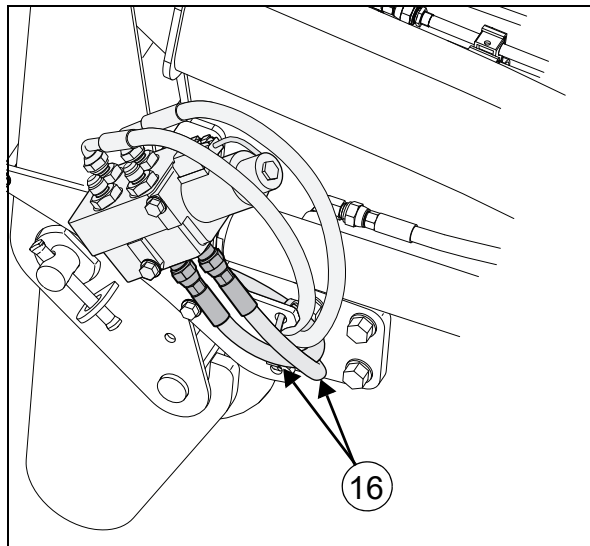


1. Install the two C Hose (14) lines to the Port A and Port D fittings on the top of the Valve Assembly.



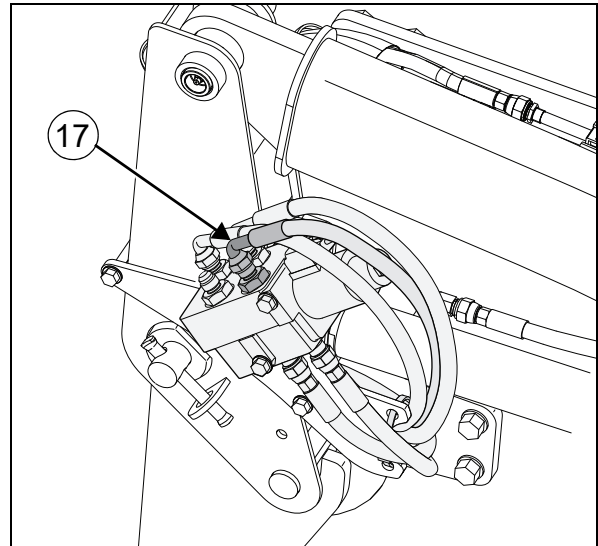
**Tightening Torque:**  
18–20 ft-lb (24–27 Nm)

2. Install a Repeat Band (15) to secure the hoses to the Stay Plate Assembly. DO NOT tighten at this time.
3. Route all of the hoses through the Repeat Band and behind the mast as they are added to the Valve Assembly.
4. Install the two D Hose (16) lines to the Port A and Port D fittings on the bottom of the Valve Assembly.



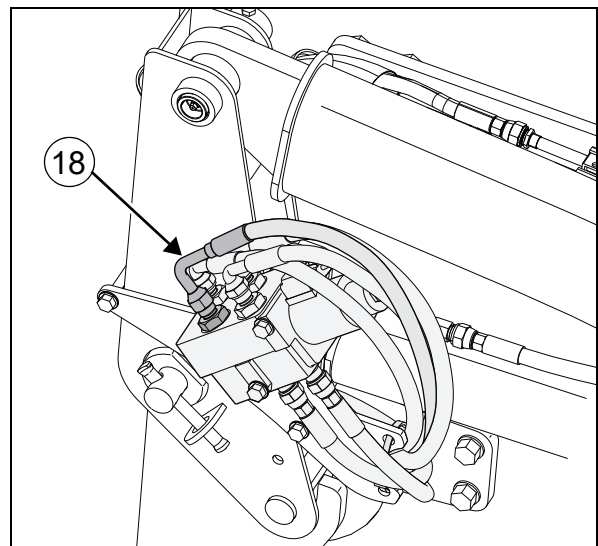
**Tightening Torque:**  
18–20 ft-lb (24–27 Nm)

5. Install the B Hose (17) line to the Port B fitting on the top of the Valve Assembly.



**Tightening Torque:**  
18–20 ft-lb (24–27 Nm)

6. Install the A Hose (18) line to the Port C fitting on the top of the Valve Assembly.



**Tightening Torque:**  
18–20 ft-lb (24–27 Nm)

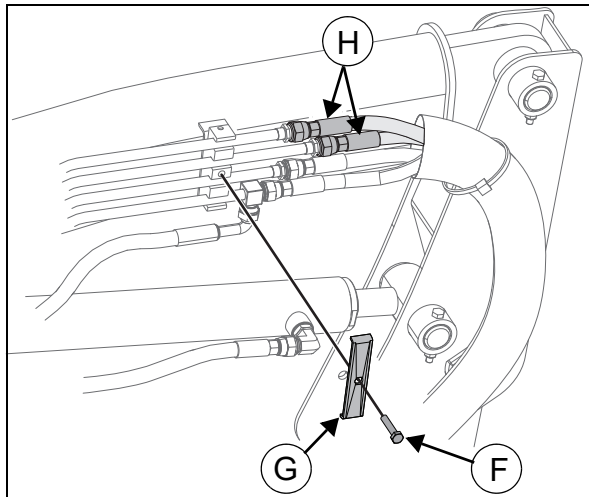


## ! WARNING

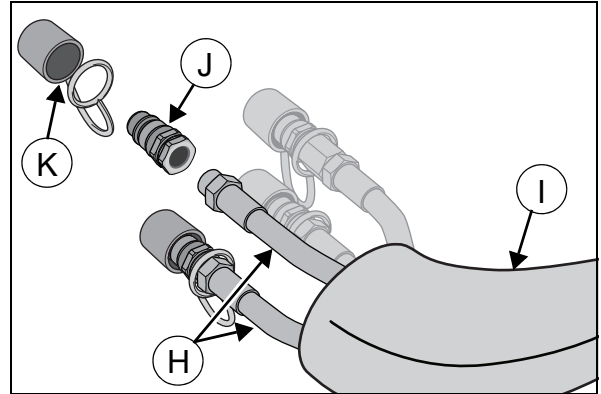
To prevent serious injury or death!

- Use approved safety glasses and gloves when performing any maintenance.
- Make sure that all surfaces have cooled before attempting to perform any maintenance work.
- Make sure the hydraulic system has cooled down to avoid burns.
- Make sure all hydraulic pressure is released before disconnecting any hydraulic lines.
- Pressurized transmission hydraulic oil has enough force to penetrate the skin and can cause serious injury
- If an injury does occur due to escaping oil, immediately consult a physician to receive the appropriate medical treatment to prevent serious infection or allergic reaction.

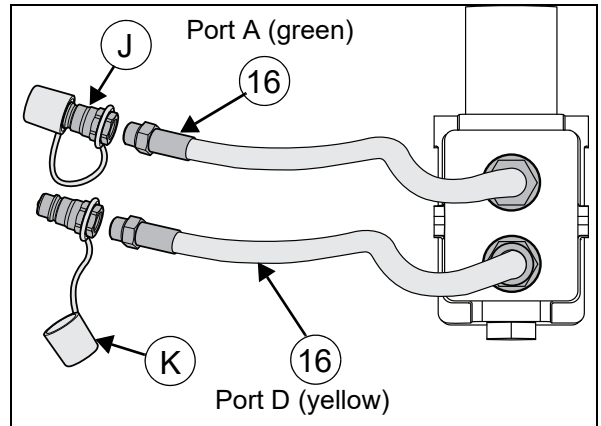
7. Remove the bolt (F) securing the bracket (G) to the loader.
8. Retain the bracket and discard the bolt.
9. Detach the top two hoses (H).



10. Remove the Hoses (H) from the Hose Bundle (I).

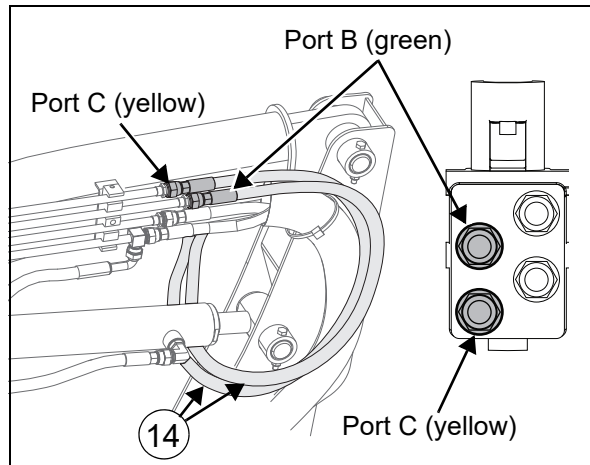


11. Remove the Quick Coupler Fittings (J) and Dust Covers (K) from the hoses (H) for reuse on the new hoses.
12. Install the Dust Covers (K) and Quick Coupler Fittings (J) onto the D Hoses (16) from the bottom of the Valve Assembly.



**Tightening Torque:**  
22–24 ft-lb (29–33 Nm)

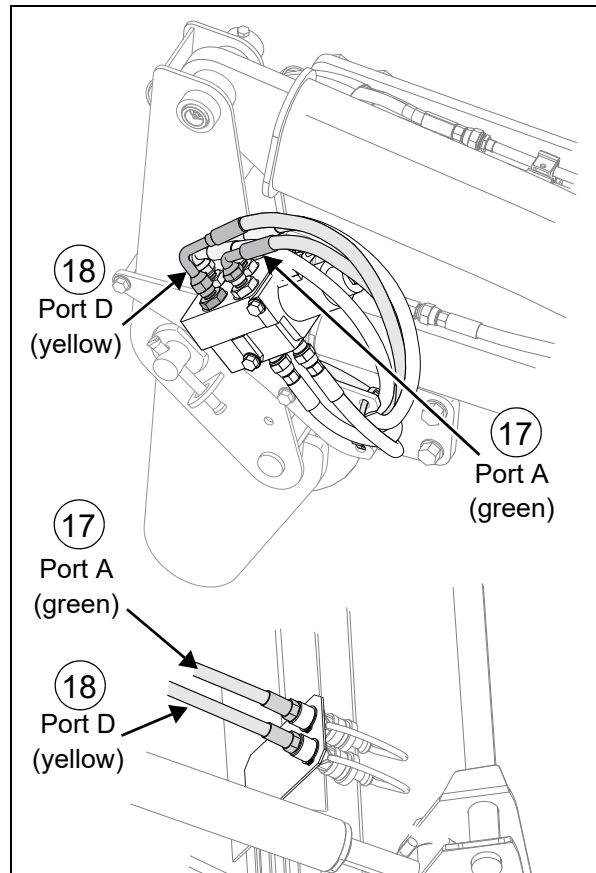
13. Connect the C Hoses (14) to the Port A and Port D hydraulic lines on the loader.



**Tightening Torque:**  
18–20 ft-lb (24–27 Nm)

14. Connect the B Hose (17) to the Port B fitting on the Stay Assembly.

15. Connect the A Hose (18) to the Port C fitting on the Stay Assembly.



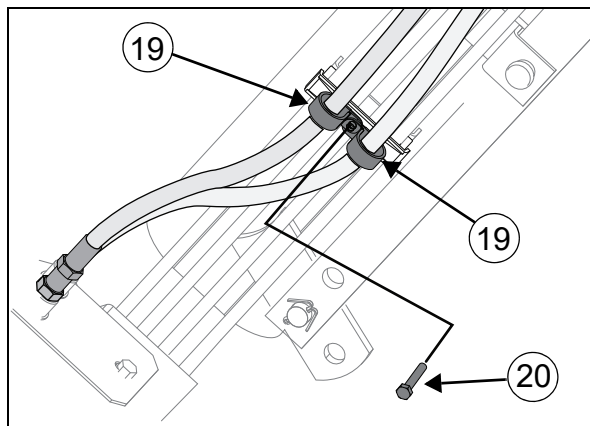
**Tightening Torque:**  
18–20 ft-lb (24–27 Nm)

### 3.5 Secure the Hoses

Parts needed:

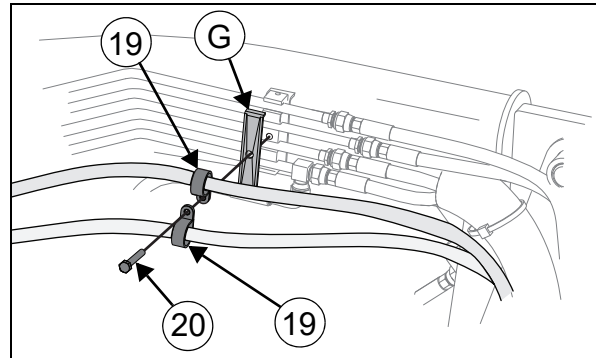
Item No.	Part No.	Description	Qty.
15	1A8300-51210	Repeat Band	7
19	1TN328-43030	Pipe Band	4
20	1TN328-43520	M6x35 Iso4017 Bolt	2

1. Remove and discard the bolt that secures the lower bracket to the loader.
2. Slide two Pipe Bands (19) over the hoses.
3. Secure the bracket and two Pipe Bands to the loader with the Bolt (20).

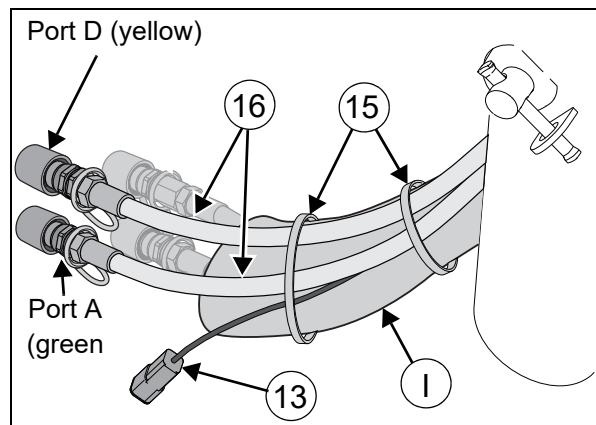


4. Slide two Pipe Bands (19) over the hoses near the upper bracket.
5. Position the Bracket (G) removed earlier for installation of the Pipe Bands.

6. Secure the two Pipe Bands and bracket to the loader with the Bolt (20) provided.



7. Secure the D Hoses (16) and Extension Harness (13) to the Hose Bundle (I) with the Repeat Bands (15).



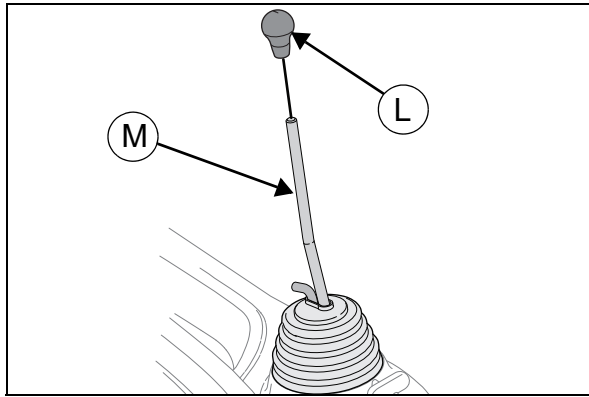
8. Use the remaining repeat bands to secure the hoses to prevent damage or wear.

### 3.6 Install Third Function Knob

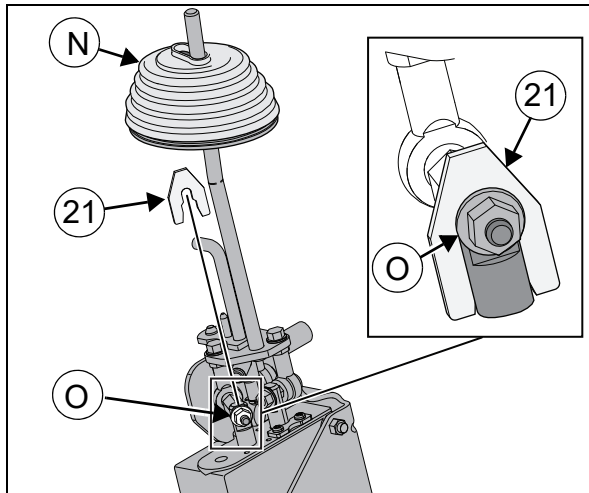
Parts needed:

Item No.	Part No.	Description	Qty.
21	1TN328-43450	Lock Regen Plate	1
22	1TN328-43250	F Sleeve Handle	1
23	1TN328-43550	M6x8 Set Screw	2
24	172663-17950	Vessel Knob Assembly	1
25	1TN328-43540	M4x6 Set Screw	1
26	1TN328-43530	M4-ISO7089 Washer	2

1. Remove the Knob (L) on the Loader Control Lever (M).

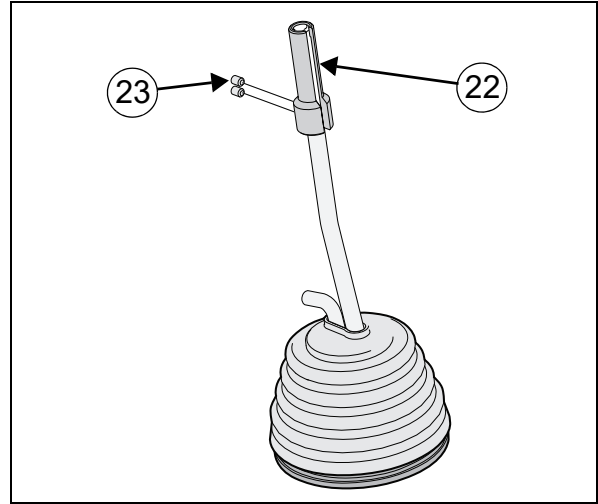


2. Slide the Lever Boot Cover (N) up the lever to allow for access to the lever control linkage
3. Loosen the Nut (O) on the lever control linkage to allow for insertion of the Lock Regen Plate (21).
4. Install the Lock Regen Plate and secure it by tightening the Nut (O).

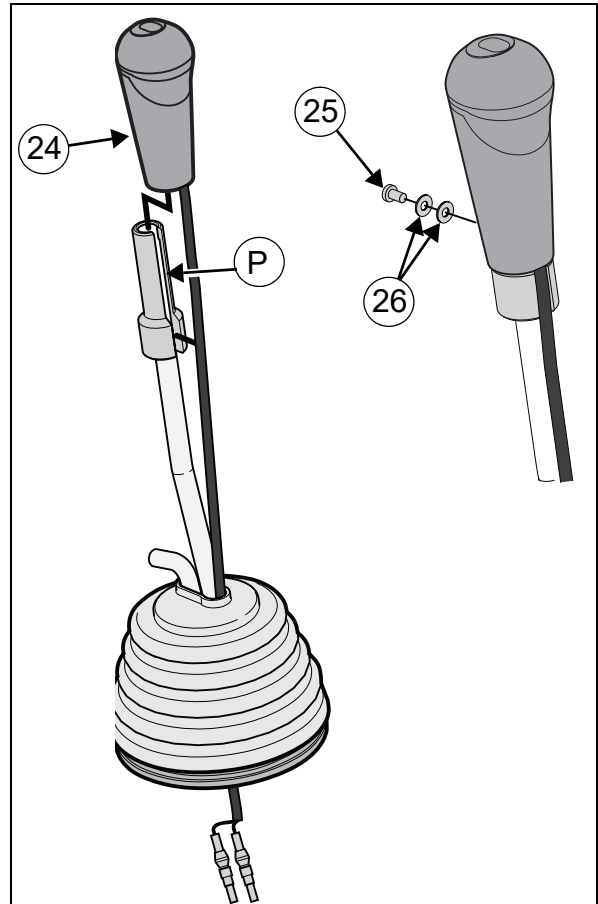


**Tightening Torque:**  
17–22 ft-lb (23–29 Nm)

5. Install the F Sleeve Handle (22) onto the lever and secure with the two Set Screws (23).



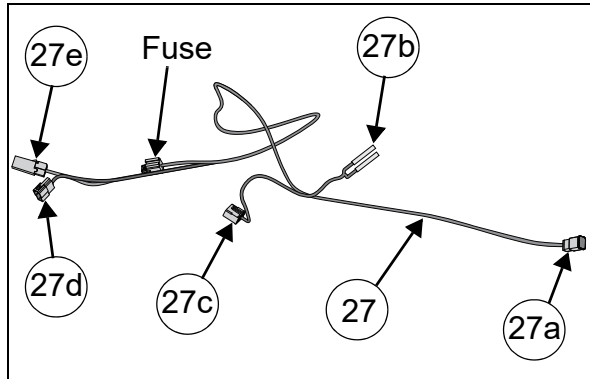
6. Install the Vessel Knob Assembly (24) onto the F Sleeve Handle.
7. Make sure the assembly wire is routed through the Notch (P) in the F Sleeve Handle.
8. Feed the assembly wire through the Lever Boot Cover and down the side of the Lever Control Linkage for later connection.
9. Secure the Vessel Knob Assembly to the lever with the Set Screw (25) and Washers (26).



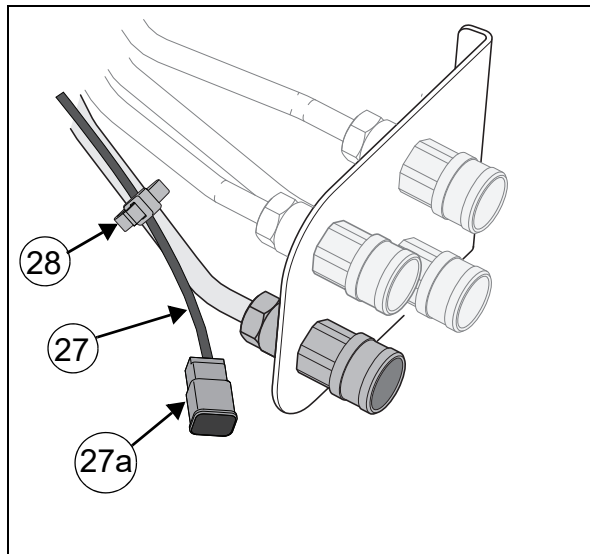
### 3.7 Install Electrical Harness

Parts needed:

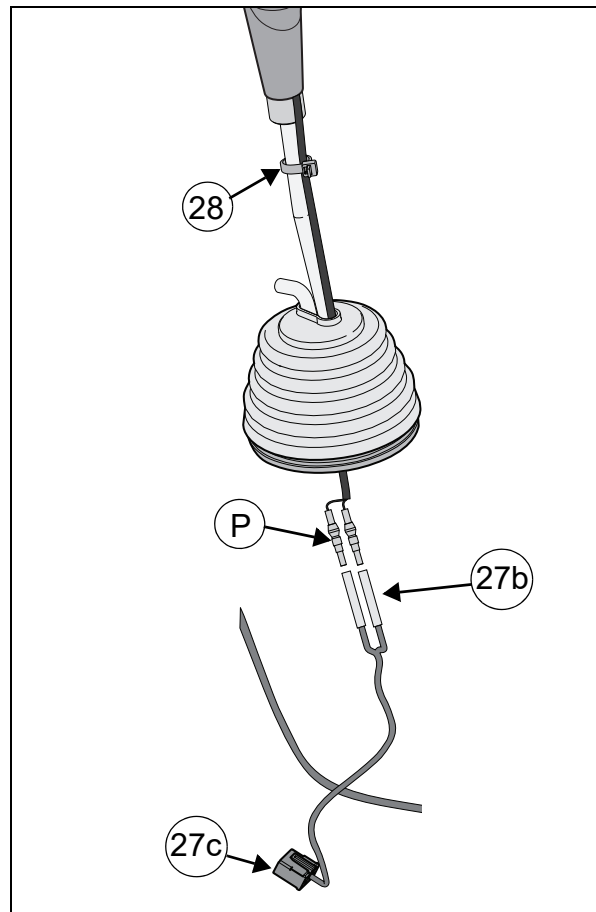
Item No.	Part No.	Description	Qty.
27	1TN328-43310	Electrical Harness	1
28	29622-250001	250 Band	10
29	129927-91151	Diode Harness	1
30	119247-77100	Power Relay	1



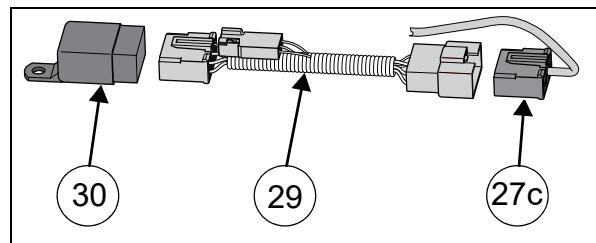
1. Secure the Electrical Harness End (27a) of the Electrical Harness (27) to the tractor hydraulic line with a band (28)).



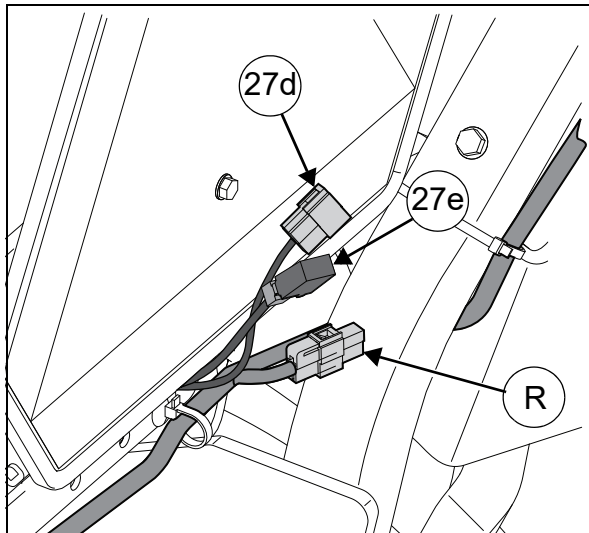
2. Route the Electrical Harness Leads (27b) upward through the control lever housing.
3. Connect the Electrical Harness Leads (27b) to the Vessel Knob Assembly electrical connectors (P).
4. Secure the wire to the lever with a Band (28).



5. Connect the Diode Harness (29) to the Electrical Harness (27c) connector.
6. Connect the Power Relay (30) to the Diode Harness.



7. Connect the Electrical Wiring Harness (27d) connector to the rear external connector (R) located at the rear of the tractor.
8. Electrical Wiring Harness connector (27e) becomes the default external connector.



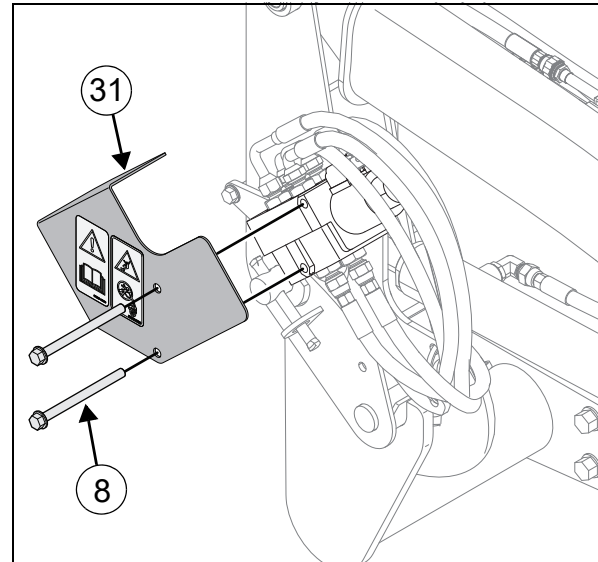
9. Secure all wires and cover any open connectors.

### 3.8 Installing Hose Cover

Parts needed:

Item No.	Part No.	Description	Qty.
31	1TN328-43500	Hose Cover	1

1. Remove the two Bolts (8) that secure the Valve Assembly to the loader.
2. Secure the Hose Cover (29) and Valve Assembly to the loader with the two Bolts removed earlier.

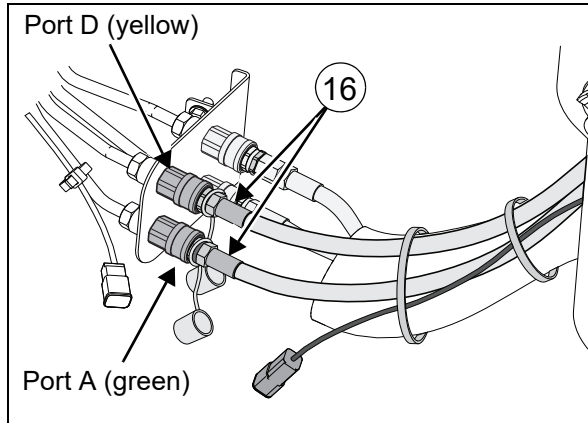


**Tightening Torque:**  
17–22 ft-lb (23–29 Nm)

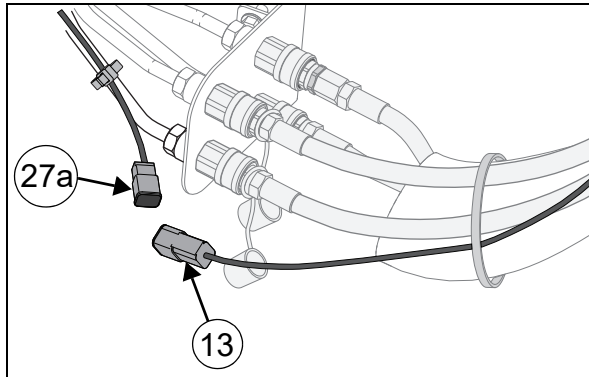
## 4. Tractor Connection

### 4.1 Connect to the Tractor

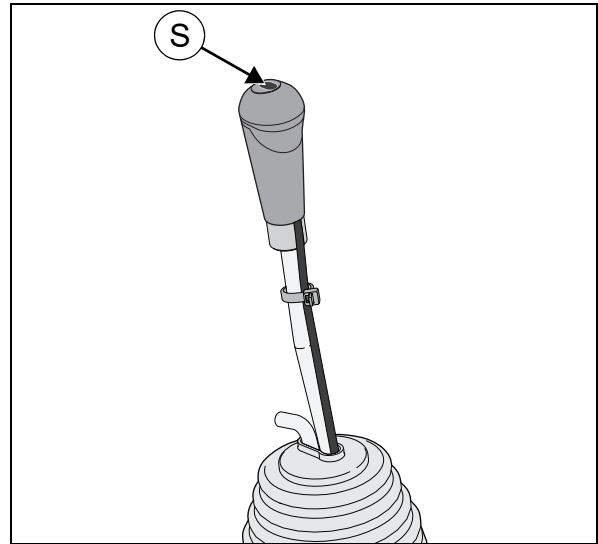
1. Attach the D Hoses (16) to the matching tractor mounted quick couplers.



2. Connect the Electrical Harness End (27a) to the Extension Harness (13).



3. When fully connected, make sure all hoses and electrical wiring is secured to the tractor and loader. Make sure all Repeat Bands are tightened and trimmed.
4. To pressurize the hydraulic system after connection, press and hold the Third Function Button (S) while slowly moving the control lever to the left and right.



5. Move the control lever to the right and left without holding the Third Function Button.

### 4.2 Disconnect from the Tractor

1. Park the tractor and loader in a level and stable area that is illuminated.
2. Disconnect electrical harness.
3. Refer to the Loader Operator's Manual for proper safety practices and disconnection procedure.



## 5. Operation

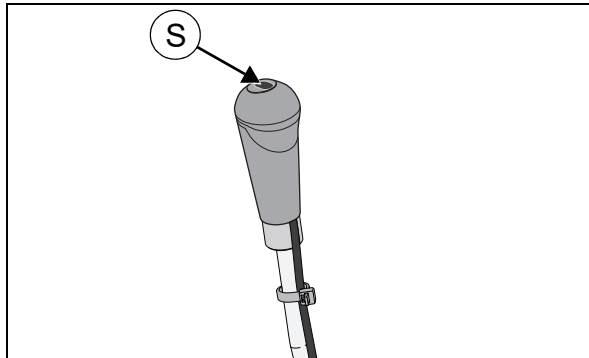
### WARNING

To prevent serious injury or death!

- **Never operate the hydraulic functions while off the tractor.**
- **Operate the hydraulic functions while seated on the tractor seat.**
- **Read the Operator's Manual for safe tractor operating instructions.**
- **Read the Operator's Manual for the attachment you will be using prior to operation.**
- **All individuals must maintain a safe distance during operation.**
- **Never operate the Third Function with the regen lock plate removed.**

### 5.1 Third Function Operation

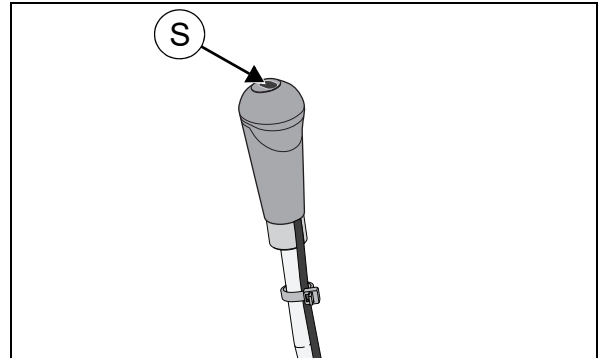
1. Refer to the loader Operator's Manual for safe loader operation.
2. Press and hold the Third Function Button (S) to engage the control of an attachment.



3. Refer to the Operator's Manual of the Third Function attachment for the safe operation of the attachment.

### 5.2 Release Hydraulic Pressure

1. Turn off the engine.
2. Turn the key switch to the on position. Do Not start the engine
3. Press and hold the Third Function Button (S) while slowly moving the control lever in all directions. This will release any hydraulic pressure in the hydraulic system.



4. Turn the key switch to the OFF position.

© 2021 YANMAR AMERICA CORPORATION  
YANMAR licenses the usage rights of this document in North America to  
YANMAR America Corporation.

YANMAR America Corporation  
101 International Pkwy  
Adairsville, GA 30103

Version 1.0

Code No.: 0F052-EN0050  
ENGLISH  
PRINTED IN THE U.S.A.