



STX, TJ 375-500

Joystick Installation Instructions

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

Index

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Bolt Torque Specifications

Bolt Dia. (inch)	Thread per inch	Grade 5	Grade 8
		Torque (ft·lbs.)	Torque (ft·lbs.)
1/4	20	8	12
1/4	28	10	14
5/16	18	17	25
5/16	24	19	29
3/8	16	30	45
3/8	24	35	50
7/16	14	50	70
7/16	20	55	80
1/2	13	75	110
1/2	20	90	120
9/16	12	110	150
9/16	18	120	170
5/8	11	150	220
5/8	18	180	240
3/4	10	260	380
3/4	16	300	420
7/8	9	430	600
7/8	14	470	660
1	8	640	900
1	12	710	990

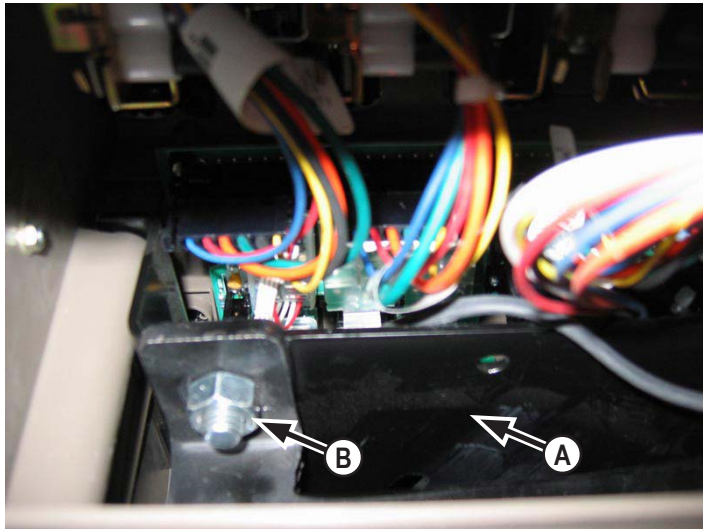
Bolt Dia. (mm)	Pitch	Grade 8.8	Grade 10.9
		Torque (ft·lbs.)	Torque (ft·lbs.)
4	0.70	2	
5	0.80	4	
5	1.00	7	11
7	1.00	12	
8	1.25	17	26
8	1.00	18	
10	1.50	35	51
10	1.20	37	
10	1.00	39	
12	1.75	59	88
12	1.50	62	
12	1.25	65	
14	2.00	94	139
14	1.50	101	
16	2.00	146	210
18	2.50	210	
20	2.50	292	
22	2.50	398	
44	3.00	503	

Inventory

QTY.	PN	Description
4	16-11436	10-24 x 1.00" Socket Head Cap Screw
1	16-20006	1/4" X 1-1/2" Hex Bolt Gr 5 NC
4	16-20034	5/16" X 1 " Hex Bolt Gr 5 NC
4	16-20064	3/8" X 1" Hex Bolt Gr 5 NC Plated
2	16-20558	1" X 2" Hex Bolt Gr 8 NC
4	16-21064	3/8" x 1" Carriage Bolt Gr 5 NC
1	17-3083	Joystick Mount Plate
1	17-3084	Joystick Mount Plate
1	18-11426	Mount, Rear Valve- STX / Danfoss
1	18-11434	Mount, STX / Suregrip Joystick
1	31-12331-6-6	-6 JIC to -6 ORFS Swivel (FF6504 -6-6)
1	31-12332-6-4	Female JIC Swivel x Male Pipe (6505-6-4)
2	31-15KB1212	Straight JIC x O-Ring (6400-12-12)
1	31-34033	Straight JIC x O-Ring (6400-6-5)
4	31-34041	Straight JIC x O-Ring (6400-8-10)
1	31-34099	Swivel Nut Elbow 90° JIC (6500-6-6)
1	31-34169	Male Elbow 90° JIC x Pipe (2501-6-4)
2	31-34259	Straight Threaded Elbow 90° JIC X Metric (7801-12-27)
2	31-6400-12-10	Straight JIC x O-Ring (6400-12-10)
1	31-FS-2404-06-04	OFS Male Pipe Connector
2	35-11684-0500	-12FJIC x -12 FJIC - 50"
1	35-11694-0470	-6 FJIC x -6 FJIC - 47"
2	35-3970-20-24	Velcro Cordura 2" Diameter (24 Inches)
1	44-11424	Valve Mount Cover- STX / Danfoss
1	44-11435	Plate, Retaining Ring / SureGrip
1	56-11653	Sunsource/Danfoss 3 Spool Valve/Joystick
1	56-11658	Shuttle Valve - JD and STX
1	57-20740	1/4" Flat Washer
5	57-20741	5/16" Flat Washer
7	57-20742	3/8" Flat Washer
10	59-34951	Zip Tie 50# 15.5"
1	69-11663	4100 Joystick Extension Cord 30'
1	70-20580	1/4" Hex Nut Gr 5 NC
1	70-20581	5/16" Hex Nut Gr 5 NC
2	70-20599	1" Hex Nut Gr 8 NC
5	70-20622	3/8" Flange Hex Nut Gr 5 NC

Bracket & Joystick Installation

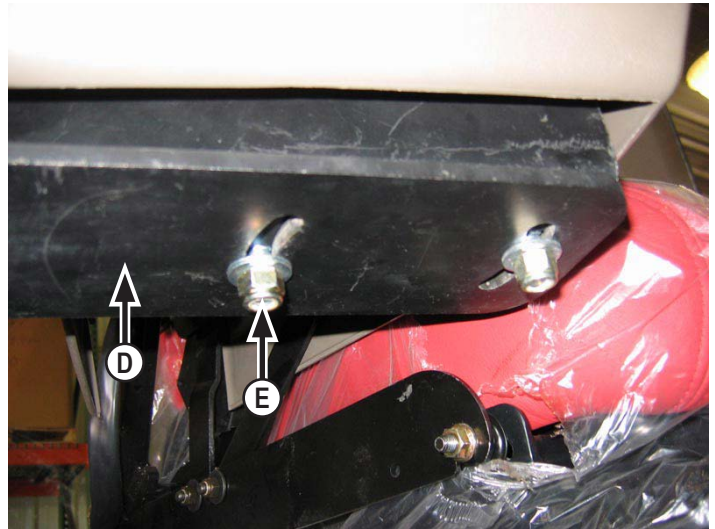
NOTE: Your machine may vary slightly from the machine in this manual, but the same installation procedure will be compatible.



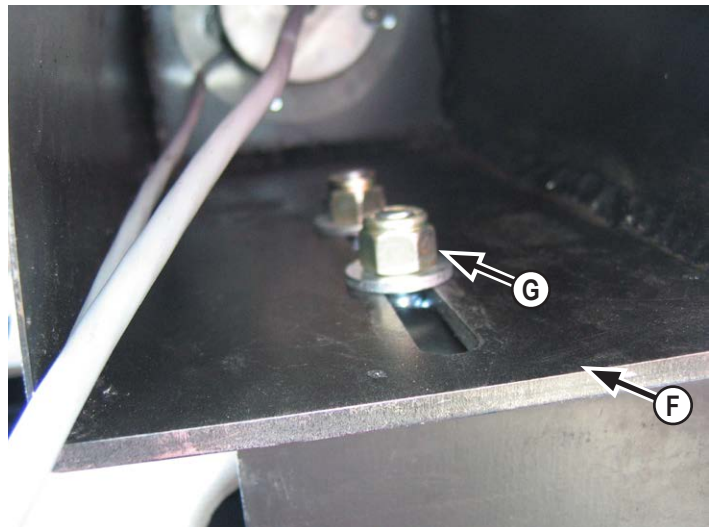
1. Attach the joystick mount plate (PN: 17-3083) to the armrest frame (A) located underneath the armrest. Use a 3/8" x 1" bolt and a 3/8" nut in the hole furthest away from the operator seat (B).



2. Use a 5/16" x 1" bolt with a 5/16" flat washer and a 5/16" nut in the hole closest to the operator seat (C).



3. Attach the bottom joystick mount plate (PN: 17-3084) (D) to the previously attached plate with 2 - 3/8" x 1" carriage bolts, 2 - 3/8" flat washers and 2 - 3/8" nuts (E).

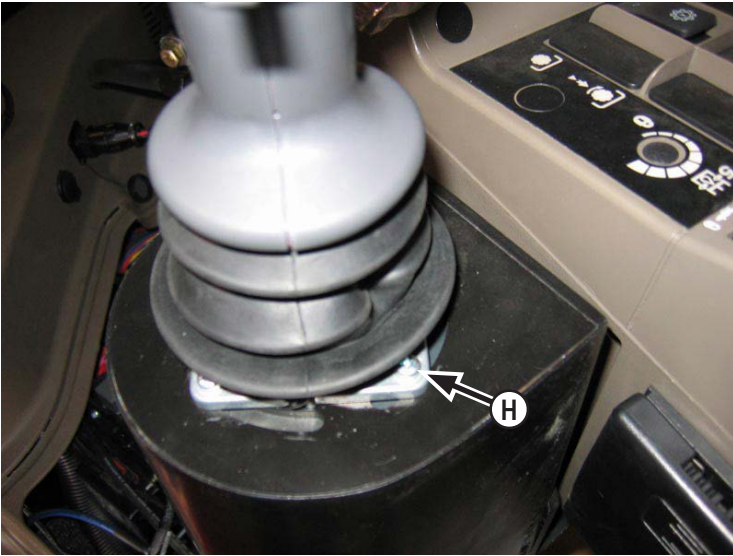


4. Attach the side joystick mount (PN: 18-11434) (F) to the previously attached plate with 2 - 3/8" x 1" carriage bolts, 2 - 3/8" flat washers and 2 - 3/8" nuts (G).

5. Verify that the hole for the joystick is at the top by the arm rest, and the open side of the mount is towards the operator platform.

NOTE: The picture for the side joystick mount is from the bottom, and the joystick is already in place. The joystick will be installed in a later step.

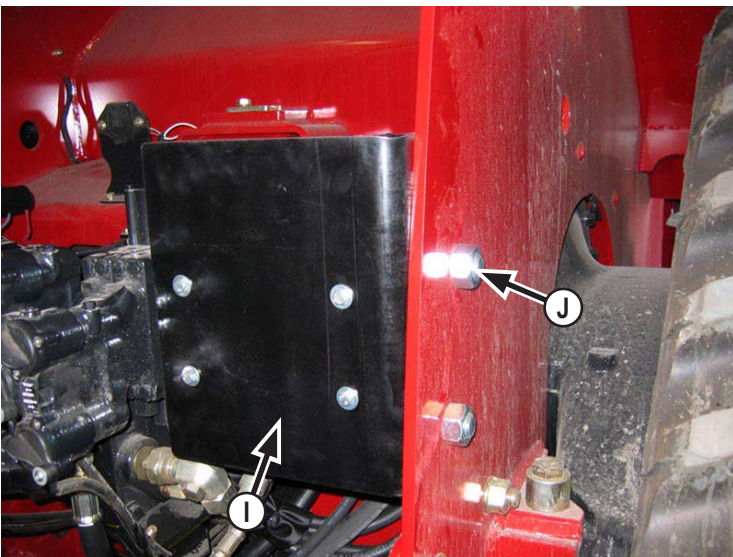
Joystick Installation



6. Hold the mounting ring (PN: 44-11435) inside the side mount, and attach the joystick to the top of the side mount and the mounting ring with 4 - 1" socket head cap screws (**H**).

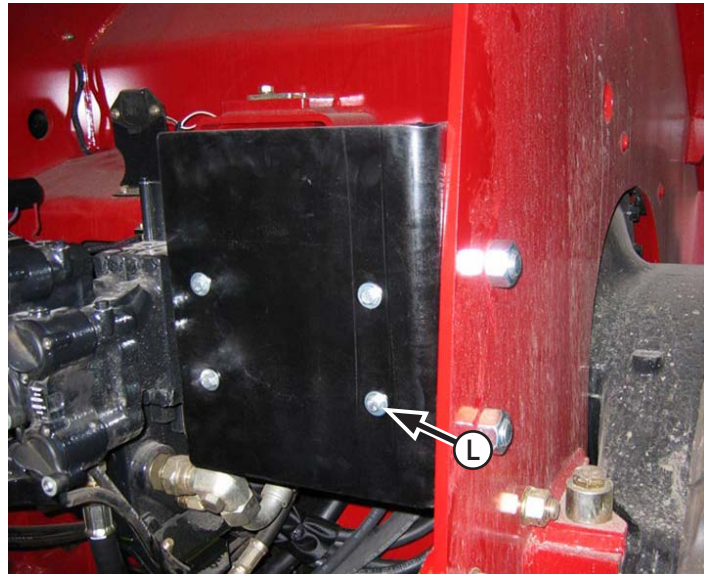
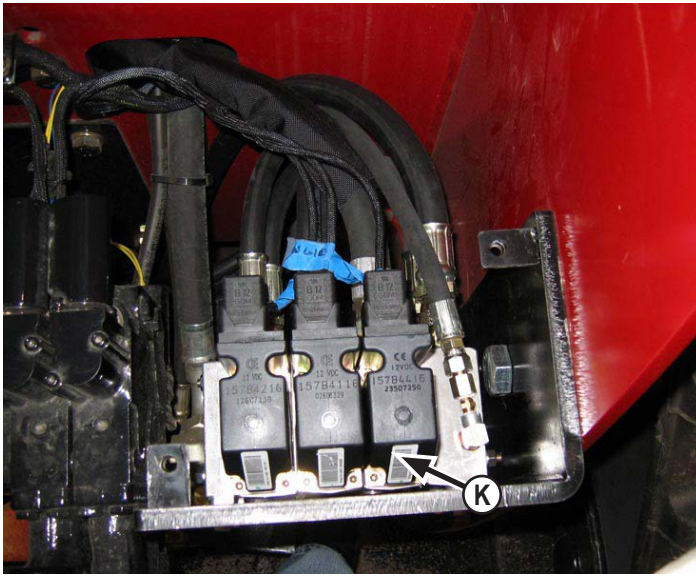
7. Adjust the joystick and mounts to position the joystick to the operator's preference. Once the joystick is in the correct position, tighten all of the fasteners.

Valve Bracket Installation



8. Attach the rear valve mount (PN: 18-11426) (**I**) to the rear of the tractor. Use 2 - 1" x 2" bolts and 1" nuts to attach the mount to the side of the tractor frame (**J**).

Valve Installation

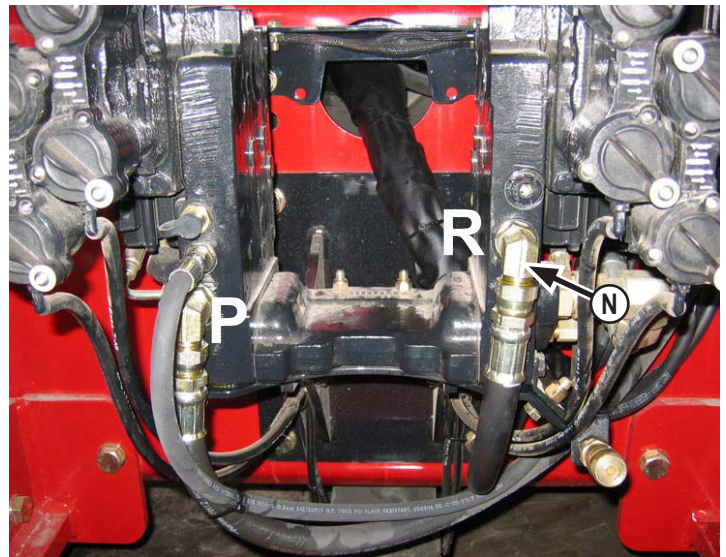


9. Attach the control valve (**K**) to the valve mount with 4 - 5/16" x 1" bolts and 4 - 5/16" flat washers (**L**).
NOTE: Pictures shown are with the valve in a different location but installation steps are still the same. Cables are shown in photo. The cables will be installed in a later step.

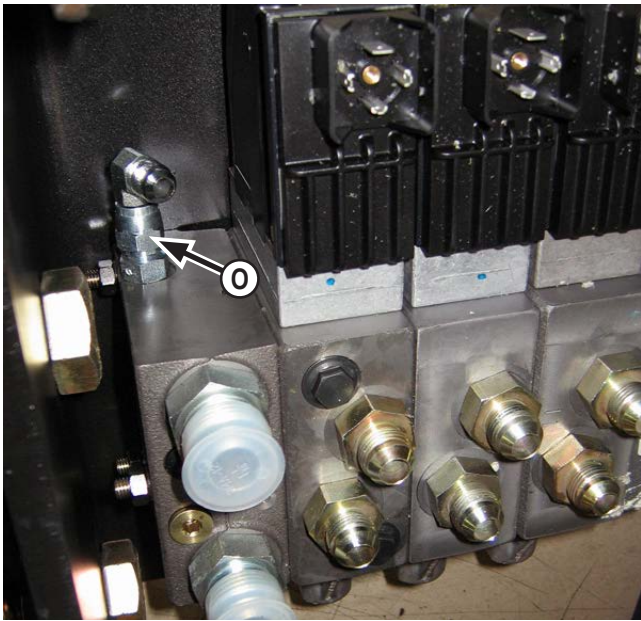
Plumbing



- NOTE:** Valve shown from the bottom.
10. Attach the 50" hoses to the two fittings on the control valve that are closest to the right side of the tractor frame (**M**).

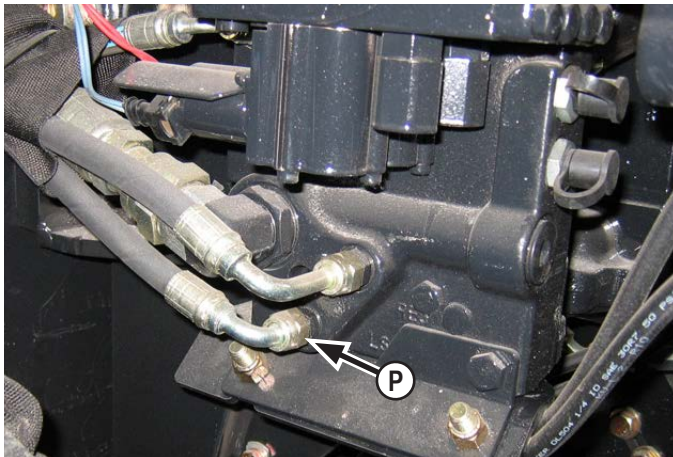


- NOTE:** Oil will flow. Be ready with an oil pan.
11. Remove the plug or quick connect from the **P** and **R** ports at the rear of the tractor and replace each with a 90° fitting (PN: 31-34259) (**N**).
12. Attach the 50" hose from the **bottom** fitting on the control valve to the 90° fitting at the **P** port.
13. Attach the 50" hose from the **top** fitting on the control valve to the 90° fitting at the **R** port.

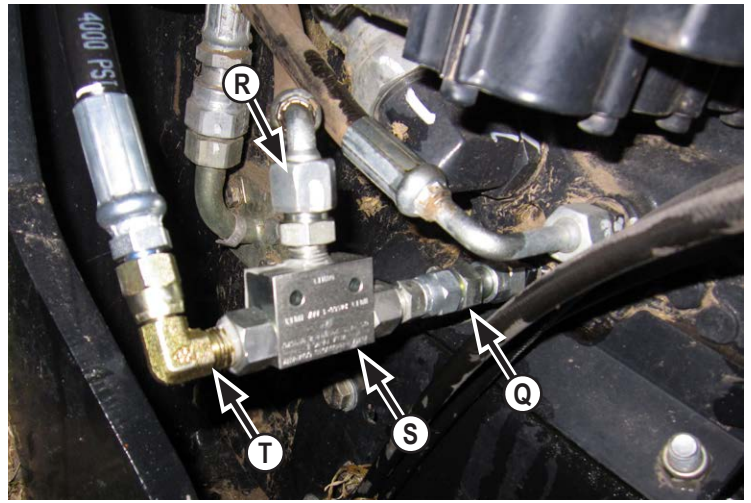


14. If fittings are not installed in the LS port on the control valve, install a straight -6-5 fitting (PN: 31-34033) and a 90° -6-6 fitting (PN: 31-34099) in the LS port (O).

15. Attach a 47" hose (PN: 35-11694-0470) to the 90° fitting in the LS port.



16. On the left side of the manifold valve, disconnect the bottom hydraulic line (P).



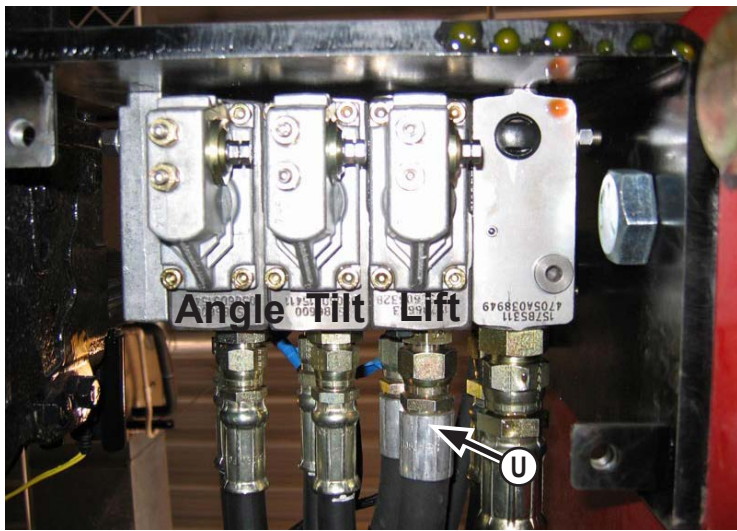
17. Install a JIC x Face Seal Swivel (PN: 31-12331-6-6) to the fitting that the hydraulic line was removed from. Also install a Female JIC Swivel x Male Pipe fitting (PN: 31-12332-6-4) onto the previous fitting (Q).

18. Install a male pipe connector fitting (PN: 31-FS-2404-06-04) (R) in the top port on the shuttle valve (S).

19. Install a male pipe x male JIC elbow fitting (PN: 31-34169) (T) in the remaining port on the shuttle valve.

20. Attach the previously disconnected hydraulic line from Step #16 to the male fitting on the shuttle valve (R).

21. Attach the 47" hose from Step #15 to the female swivel fitting on the shuttle valve (T).



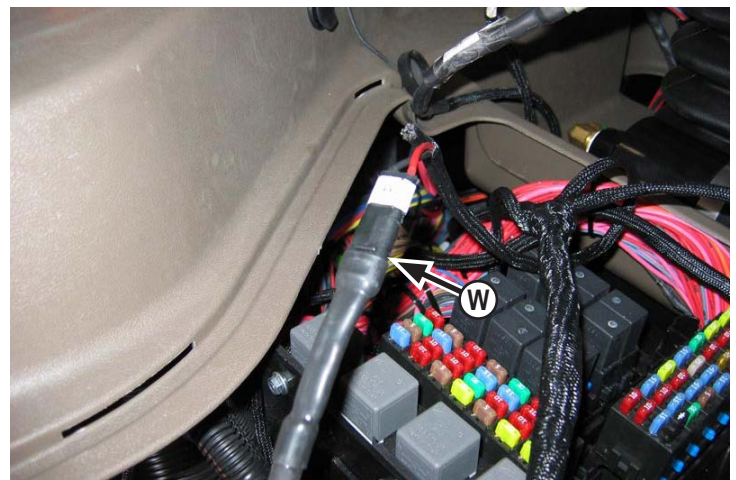
NOTE: Valve shown from the bottom.

- 22.** Guide the dozer **lift** hoses to the rear of the tractor. Wrap a hose protector around the hoses. If necessary, use zip ties to keep the hose protector in place.
- 23.** Attach the dozer **Lift** hoses to the corresponding fittings on the control valve (**U**). The cylinder **base** end hose goes to the top fitting on the control valve. The cylinder **rod** end hose goes to the **bottom** fitting on the control valve.
- 24.** Guide the dozer **Angle** and **Tilt** hoses to the rear of the tractor. Attach the dozer **Angle** and **Tilt** hoses to the corresponding fittings on the control valve.
- 25.** Use zip-ties to hold the hoses into place.

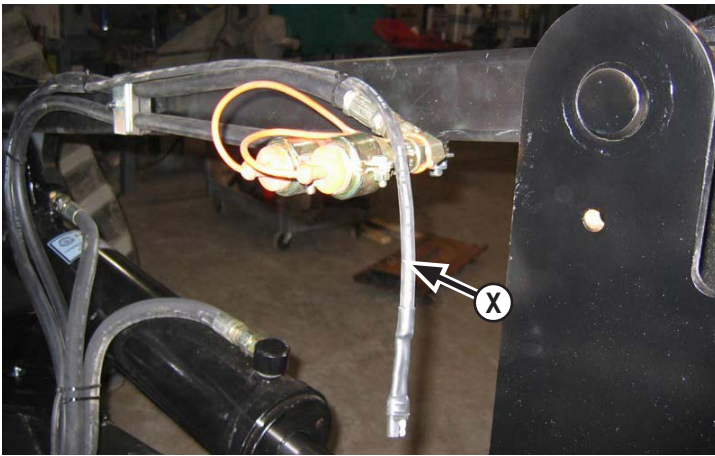
Cable Installation



- 26.** Set control box in fuse compartment (**V**).



- 27.** Connect the dozer angle extension cord (PN: 69-11663) to the wire harness (**W**). Run the cord through the hole in the floor of the fuse compartment.



28. Guide the extension cord from the wire harness to the front of the tractor. Run the wire along the hoses on the left side of the lift system (**X**).

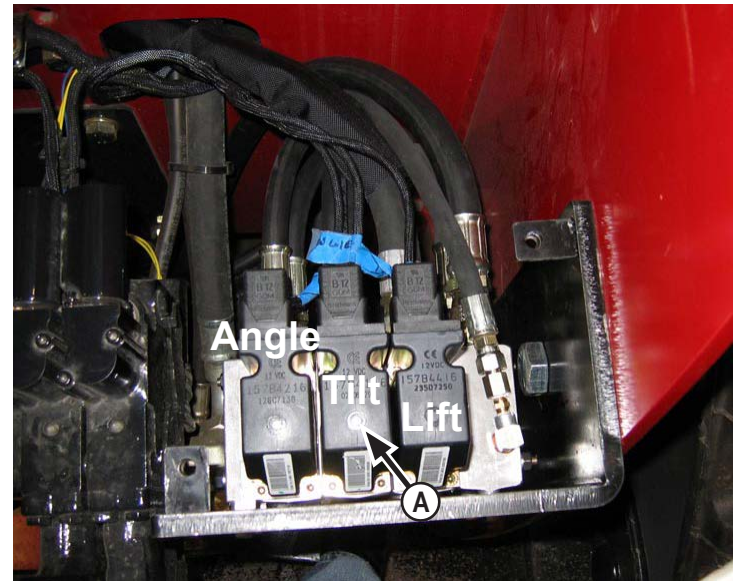
29. Connect to the wire harness from the angle valve on the blade.



30. Connect the cable from the joystick to the wire harness (**Y**).



31. Plug the power cord from the wire harness into the port located behind and to the right of the operator's seat in the tractor cab (**Z**).



32. Guide the 3 cables and Dins from the wire harness out to the rear of the tractor.

NOTE: When routing the wire harness follow other hoses and wires through the pivot area of the tractor. Route the wire harness so that it is not being repeatedly bent in any area.

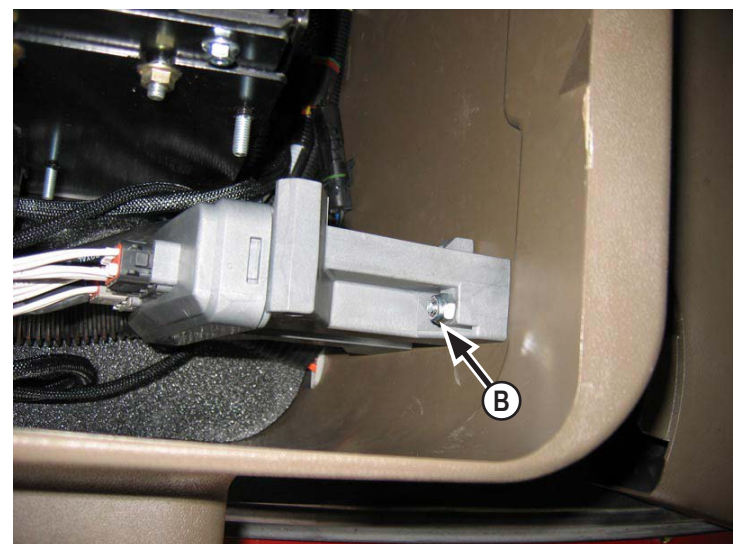
33. Put the supplied rubber seal on each Din connector.

34. Connect the **Lift**, **Tilt**, and **Angle** Dins to the corresponding connections on the back of the control valve.

35. Use screws to fasten the Dins to the control valve (**A**).

NOTE: The electric dozer functions can be overridden by attaching the supplied handles to the control valve and operating them.

36. Use zip-ties to hold cables in place.



37. Drill a hole for a 1/4" bolt in the fuse compartment. Attach the wire harness to the compartment with a 1/4" bolt, 1/4" washer, and a 1/4" nut (**B**).

Valve Cover Installation



38. Place the valve cover over the valve and hoses as shown in the picture. Verify that the hoses are not being pinched.

39. Attach the valve cover to the valve bracket with 3 - 3/8" x 1" bolts and 3 - 3/8" washers (**C**).

Joystick Operation

40. To **raise** the blade **up**, **pull back** on joystick.

41. To **lower** the blade **down**, **push forward** on joystick.

42. To **tilt** the blade **left**, tilt the joystick to the **left**.

43. To **tilt** the blade **right**, tilt the joystick to the **right**.

44. To extend and retract the **left** side of the blade, operate the rocker button on the top of the joystick.

45. To extend and retract the **right** side of the blade, hold down the trigger switch on the joystick handle and operate the rocker button on the top of the joystick.

46. To operate the float function, push the bottom switch on the left side on the top of the joystick.

46. To cancel the float function, actuate the joystick.

NOTE: If directions are not correct, go to Step #23 and #24 on Page 8 and verify that the hoses are installed correctly.

Joystick Schematic

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CONNECTOR C6B, CONNECTS TO HARNESS CONNECTOR C6A

< 1 - RED (5 VDC PWR)
< 2 - BLACK (5 VDC GND)
< 3 - WHITE ("X" AXIS)
< 4 - BLUE ("Y" AXIS)

JOYSTICK "X" AND "Y" AXIS AND
5VDC PWR AND GND

FROM JOYSTICK

< 5 - ORANGE (TRIGGER)
< 6 - BLUE (TOP LEFT PB - ANGLE INC)
< 7 - BROWN (BOTTOM RIGHT - FLOAT)
< 8 - WHITE (BOTTOM LEFT - ANGLE DEC)
< 9 - RED (12 VDC PWR)
< 10 - NOT USED
< 11 - NOT USED
< 12 - NOT USED

JOYSTICK AUXILIARY FUNCTIONS

12 VDC

FROM JOYSTICK



GROUSER PRODUCTS INC.
755 2nd Ave NW Phone 701.282.7710
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WWW.GROUSER.COM

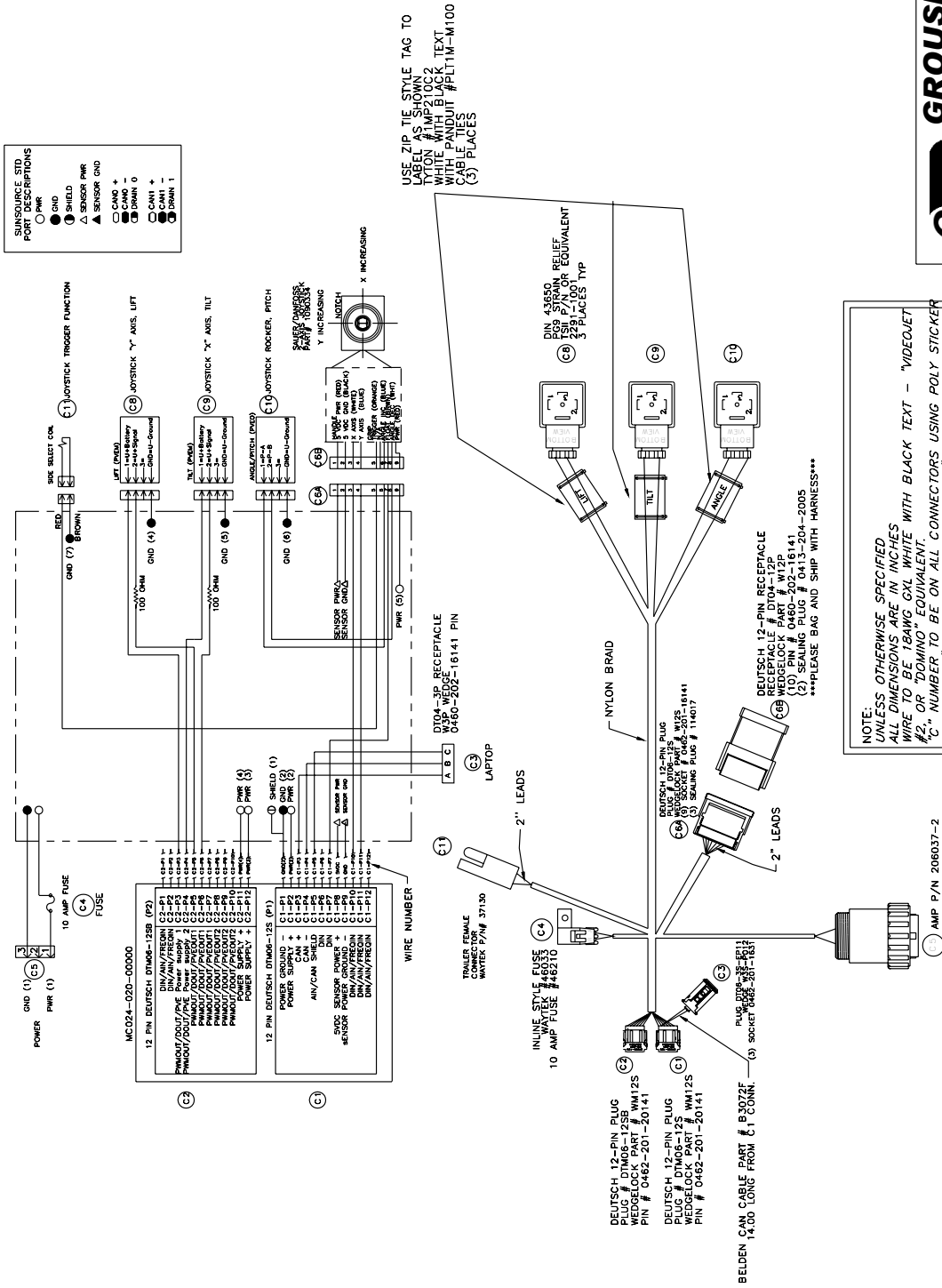
TITLE: SA-2839-SCH-JOYSTICK2

Date: 6/14/2007

DWG. NO.:

Joystick Schematic

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NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
WEAVE TO BE TBANG GXL WHITE WITH BLACK TEXT - "VIDEOJET
#2, OR "DOMINO" EQUIVALENT.
"C" NUMBER TO BE ON ALL CONNECTORS USING POLY STICKER
REFERENCE "BUILT PER SA-1000-SPEC" ON HARNESS LABEL.



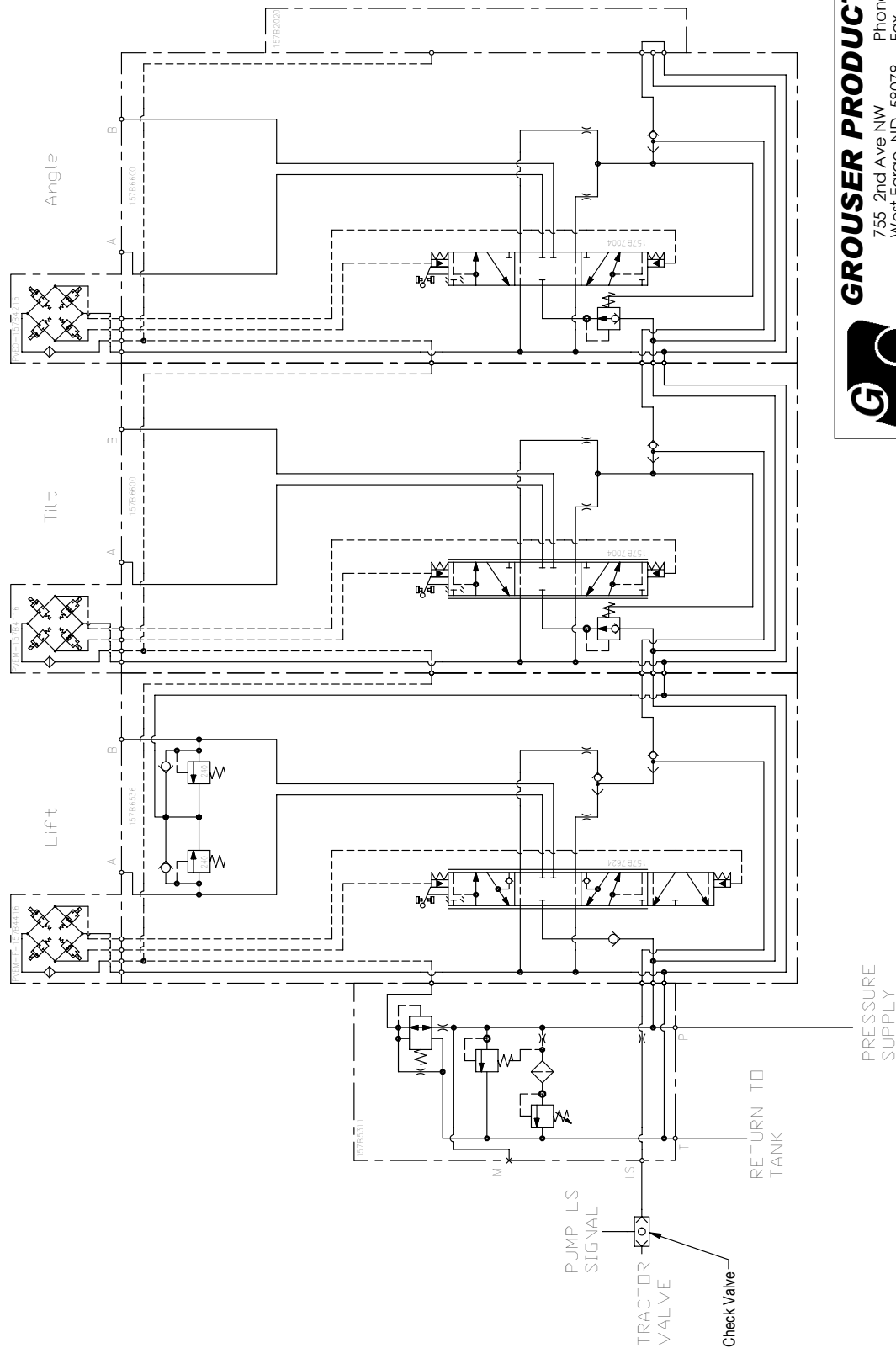
GROUSER PRODUCTS INC.
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West Fargo, ND 58078
Phone 701.282.7710
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WWW.GROUSER.COM

TITLE: SA-2839-MA2

Date: 6/14/2007

Hydraulic Schematic

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TITLE: Valve Hydraulic Schematic

Date: 5-1-2007

DWG. NO.: STX

Notes

Notes

Improvements

Grouser Products Inc. is continually striving to improve its products. We reserve the right to change prices, specification, or equipment at any time without notice. We also reserve the right to make improvements or changes when it becomes practical and possible to do so without incurring any obligation to make changes or additions to the equipment sold previously.

Warranty

Grouser Products warrants to the original purchaser of each item that the product be free from defects in material and workmanship under normal use and service for a period of **two (2) years for Agriculture Series Blades and one (1) year for Heavy Duty Series from date of original retail delivery.**

The obligation of the consumer under this warranty:

1. To read the operators manual and to operate, lubricate, maintain and store equipment in accordance with the instructions listed in the operators manual.
2. To inspect equipment and if any part needs repair or replacement when continued use would cause damage or wear to other parts or safety.
3. All equipment or parts claimed to be defective in material or workmanship must be made available for inspection at the place of business of a dealer authorized to handle the equipment covered by this warranty, or, upon request by Grouser Products, shipped to the Grouser Products factory in West Fargo, North Dakota.

The obligation of the dealer under this warranty:

1. Complete warranty registration form and submit within 30 days of sale.
2. Contact Grouser Products for authorization prior to performing any warranty repairs or part replacement.
3. Complete warranty request form and submit with photos and supporting documentation.

The obligation of Grouser Products under this warranty:

1. Repair or replace, any equipment or parts, in the judgment of Grouser Products to be defective in material or workmanship.
2. Grouser Products will cover the cost of parts and ground shipping at dealer invoice only.
3. Grouser Products shall have no obligation to bear the cost of labor or transportation in connection with replacement or repair of any such defective parts.

This warranty does not cover:

1. Depreciation or damage caused by normal wear, accident, improper assembly, improper adjustments.
2. Improper maintenance including lack of proper lubrication, or improper use. Including loose bolts, nuts, or fitting due to over tightening or vibration after 20 hours of operation.
3. Repairs or alterations without authorization from a Grouser Products representative.
4. Grouser Products shall have no liability if the equipment has been altered or reworked without the written authorization of Grouser Products.

Grouser Products' parts, which are furnished under this warranty and properly installed, shall be warranted to the same extent as the original parts under this warranty if, and only if, such parts are found to be defective within the original warranty period covering the original equipment.

NO EMPLOYEE OR REPRESENTATIVE OF GROUSER PRODUCTS IS AUTHORIZED TO CHANGE THE WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY.

Contact Us

As always, if you have any questions about your system or other products made by Grouser, feel free to contact us.



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