GROUSER® PRODUCTS

John Deere 9RX

Joystick Installation Instructions

For Models With PTO, With 5 or 6 High Flow Rear SCV's, and Without Rear Three-Point:

John Deere 9RX: 9470RX, 9520RX, 9570RX, 9620RX

Purchase Date
Serial Number
Model Number
Tractor Model
Dealer

Part No: 17752-4-INS Serial Number: 10206190-Current Date 3-3-2020

To The Owner

This manual contains information concerning the installation of the joystick assembly. You have purchased dependable, long lasting equipment, but only by proper care and operation can you expect to receive the performance and long service built into our products. Please have all operators read this manual carefully and keep the manual available for ready reference. If you have any questions or concerns, contact Grouser Products.

Caution:

- **Always use caution when working around any equipment.**
- **Always wear safety glasses.**
- **Follow tractor manufacturer's safety guidelines when installing this product.**
- **Use paint where necessary to prevent rust.**
- **Do not modify or permit anyone else to modify or alter the equipment and its components without first consulting Grouser Products.**

Note:

- **When installing hardware, only finger tighten until all hardware is in place.**
- **Read all instructions prior to performing installation.**
- **All pictures show the final product fully installed.**

To ensure the safety of those working under and around the machine, apply parking brake, remove key from ignition, and block tires before working on the machine.

Bolt Torque Specifications

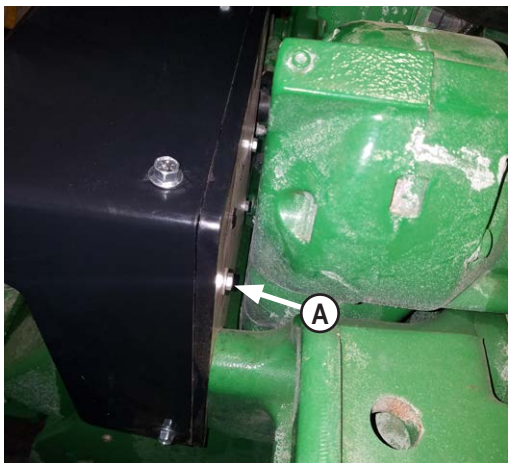
Bolt Dia. (inch)	Thread per inch	Grade 5	Grade 8
		Torque (ft·lbs.)	Torque (ft·lbs.)
1/4	20	8	12
1/4	28	10	14
5/16	18	17	25
5/16	24	19	29
3/8	16	30	45
3/8	24	35	50
7/16	14	50	70
7/16	20	55	80
1/2	13	75	110
1/2	20	90	120
9/16	12	110	150
9/16	18	120	170
5/8	11	150	220
5/8	18	180	240
3/4	10	260	380
3/4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

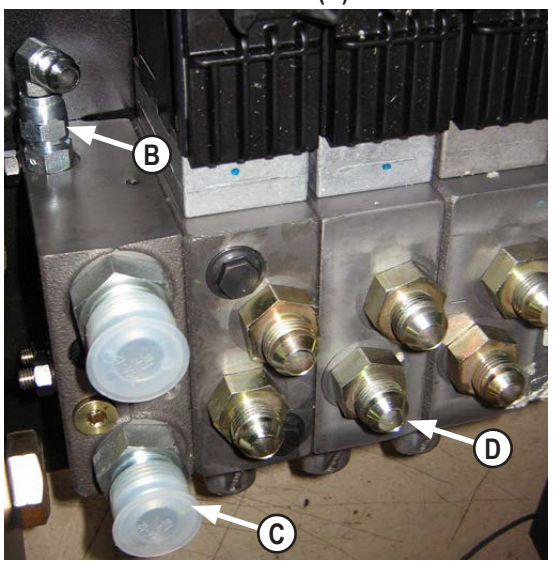
Parts Breakdown

QTY.	PN	Description
4	16-11436	10-24 x 1" Socket Head Cap Screw
4	16-20034	5/16" x 1" Hex Bolt Gr 5 NC
6	16-35C612	3/8" x 3/4" Flanged Bolt
3	16-2488	20mm x 2.5mm x 80mm Metric Hex Bolt Gr 10.9
4	16-610020	6mm x 1.00mm x 20mm Metric Hex Bolt Gr 10.9 Coarse
1	18-42528	Bracket, JD 9RX Joystick
1	18-42530	Mount, JD 9RX / Suregrip Joystick
1	31-19471-04-04	Female OFS Swivel x Male Pipe (6505-4-4)
1	31-34033	Straight JIC x O-Ring (6400-6-5)
1	31-34099	Swivel Nut Elbow 90° JIC (6500-6-6)
1	31-34169	Male Elbow 90° JIC x Pipe (2501-6-4)
1	31-FS-2404-04-04	OFS Male Pipe Connector
2	31-34239	Straight JIC x Metric (7400-12-27)
2	31-15KB1212	Straight JIC x O-Ring (6400-12-12)
6	31-34041	Straight JIC x O-Ring (6400-8-10)
1	35-11684-0340	-12FJIC x -12 FJIC - 34”
1	35-11684-0360	-12FJIC x -12 FJIC - 36”
1	35-11694-0680	-6 FJIC x -6 FJIC - 68”
1	44-11435	Plate, Retaining Ring / SureGrip
1	44-42525	JD 9RX Valve Mount
1	44-42527	JD 9RX Valve Mount Cover
1	56-11653	3 Spool Valve/Joystick
1	56-11658	Shuttle Valve - JD and STX
1	56-12421	Joystick Controller
1	56-12424	Joystick Wire Harness
1	56-12426	Joystick
3	57-19088	3/4” Hardened HD Flat Washer YZ Plated (1.6875” OD x .187” Thick)
4	57-20741	5/16" Flat Washer
4	57-20820	6mm Flat Washer
10	59-34951	Zip / Cable Tie 50# 15.5"
2	70-20622	3/8" Flange Hex Nut Gr 5 NC

Joystick and Valve Installation

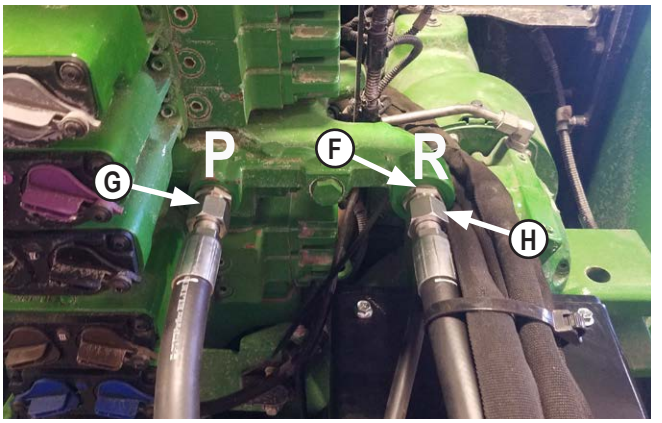


1. Attach joystick valve to valve mount with 4 - 5/16" x 1" bolts and 4 - 5/16" flat washers **(A).**



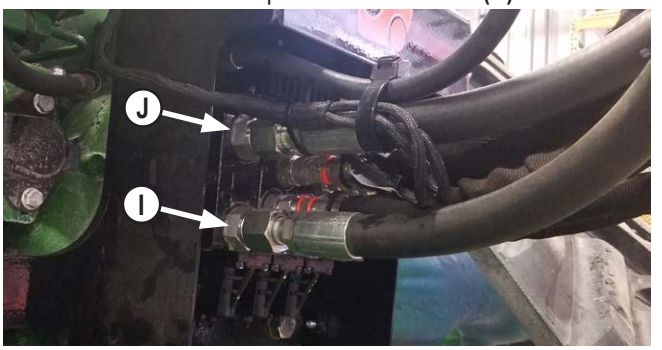
2. Install 1 - straight -6 JIC x -5 O-Ring fitting and 1 - 90° Swivel -6JIC x -6JIC fitting in the **Load Sense** port on top of valve **(B).**
3. Install 2 - straight -12 JIC x -12 O-Ring fittings into **P and T** ports on valve **(C).**
4. Install 6 - straight -8 JIC x -10 O-Ring fittings into remaining ports on valve **(D).**

5. Attach valve mount to rear of tractor above PTO with 3 - 20mm x 80mm bolts and 3 - 3/4" hardened washers **(E).**

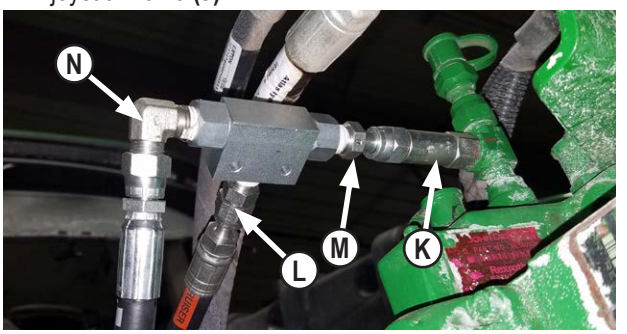


Note: Oil will flow. Be ready with an oil pan.

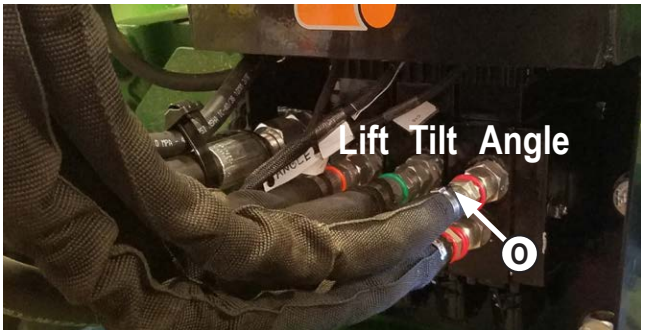
6. Remove plugs from **P** and **R** ports at rear of tractor. Install 2 - Straight JIC x Metric fittings **(F)**.
7. Attach 36" hose at **P** port at rear of tractor **(G).**
8. Attach 34" hose at **R** port at rear of tractor **(H).**



9. Attach 36" hose from **P** port at rear of tractor to **P** port on joystick valve **(I).**
10. Attach 34" hose from **R** port at rear of tractor to **T** port on joystick valve **(J).**



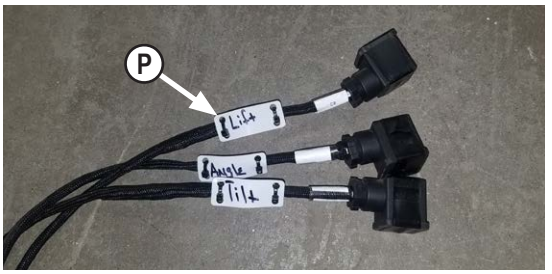
11. Disconnect LS hose from fitting at top of SCV's. Leave fittings in place **(K).**
12. Install a -4 male pipe x -4 male face seal fitting in outlet/top port on shuttle valve **(L)**.
13. Install a -4 male pipe x -46 face seal swivel fitting **(M)** and a -4 male pipe x -6 male JIC 90° fitting **(N)** in opposite ends of shuttle valve.
14. Attach face seal fitting **(M)** to fitting **(K)** on tractor from Step #11.
15. Attach the previously disconnected hydraulic hose from Step #11 to male fitting on outlet port of shuttle valve **(L)**.
16. Attach 68" hose from LS port on valve **(B)** to male 90° fiitting on side of shuttle valve **(N)**.



Note: See undercarriage mounting instructions for hose routing instructions.

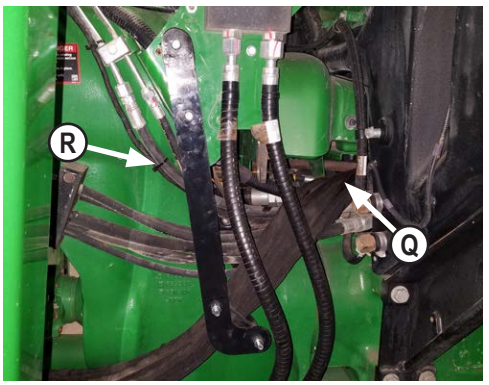
17. Attach dozer **lift, tilt and angle** hoses to corresponding fittings on control valve **(O)**. Hoses with 2 spiral rings go on bottom fittings on control valve. Hoses with 1 spiral ring go on top fittings on control valve.

18. Use zip-ties to hold the hoses into place.



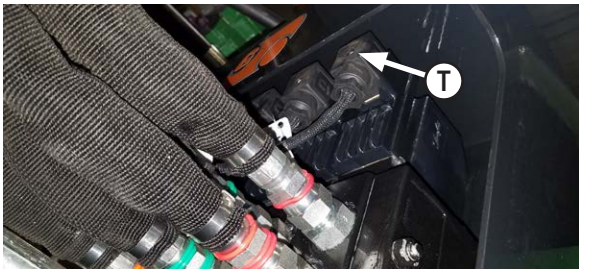
19. Start at pivot area of tractor and route end of wire harness labeled Lift, Tilt and Angle **(P)** to rear of tractor.

Note: Route wire harness so it will not be repeatedly bent in any area or rubbing on any sharp edges when tractor is in use.



20. Follow same path as tractor hoses **(Q)** and secure wire harness in place with zip-ties **(R)**.

21. Put supplied rubber seal on each Din connector **(S)**.

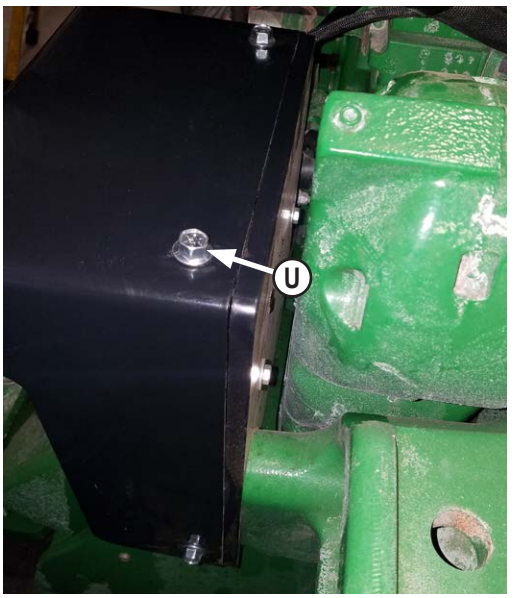


22. Connect the **Lift, Tilt,** and **Angle** Dins to corresponding connections on back of control valve **(T)**.

23. Use screws to fasten the Dins to the control valve.

Note: Electric dozer functions can be overridden by attaching supplied handles to control valve and operating them.

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



25. Attach valve cover to valve mount with 4 - 3/8" x 3/4" flange bolts **(U).**

26. Remove panel from rear of cab. Cut hole in flap and route joystick wire harness through opening **(V)**. Inside the cab, remove cover behind seat and route wire harness into cab.

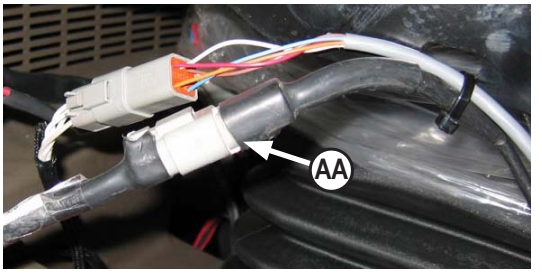
27. Attach joystick bracket to armrest side panel with 4 - 6mm flat washers and 4 - 6mm x 20mm bolts **(W)**.

28. Attach joystick mount to joystick bracket with 2 - 3/8" x 3/4" flange bolts and 2 - 3/8" flange nuts **(X)**.

29. Hold mounting ring inside joystick mount and attach joystick to top of joystick mount and mounting ring with 4 - 1" socket head cap screws **(Y)**.

30. Adjust joystick and mounts to operator's preference. Tighten all fasteners.

31. Route joystick cable along right side of operator seat and attach to harness with zip -ties **(Z)**.



32. Connect cable from joystick to wire harness **(AA)**.

33. Plug power cord in by right window **(AB)**.

34. Plug wire harness into controller. Secure controller with zip-tie behind seat under cover **(AC)**. Reinstall cover.

Joystick Operation

35. To **raise** blade **up**, **pull back** on joystick.

36. To **lower** blade **down**, **push forward** on joystick.

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

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

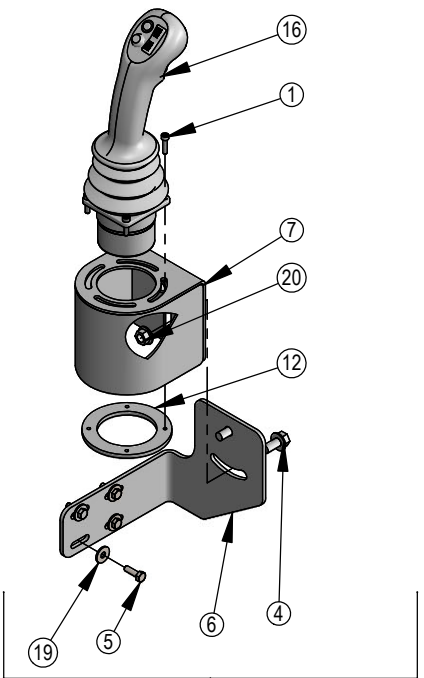
39. To extend and retract right side of blade, operate rocker button on top of joystick.

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

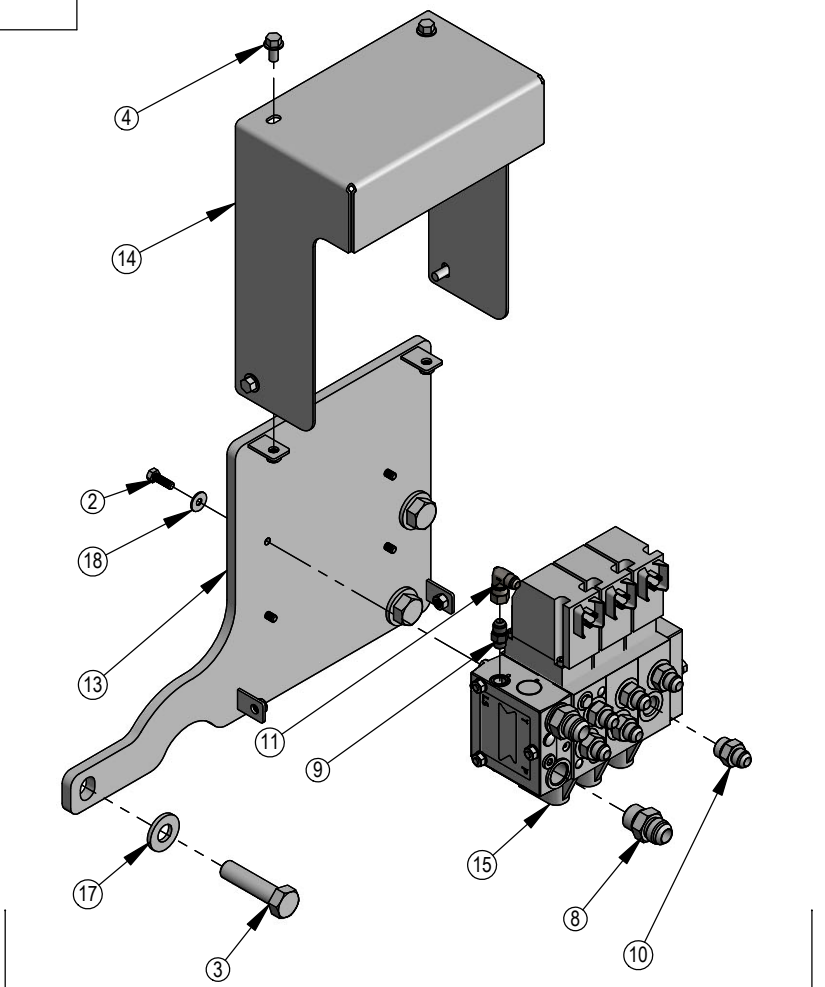
41. To cancel the float function, actuate the joystick.

Note: If directions are not correct, go to Step #17 on Page 5 and switch top and bottom hoses.

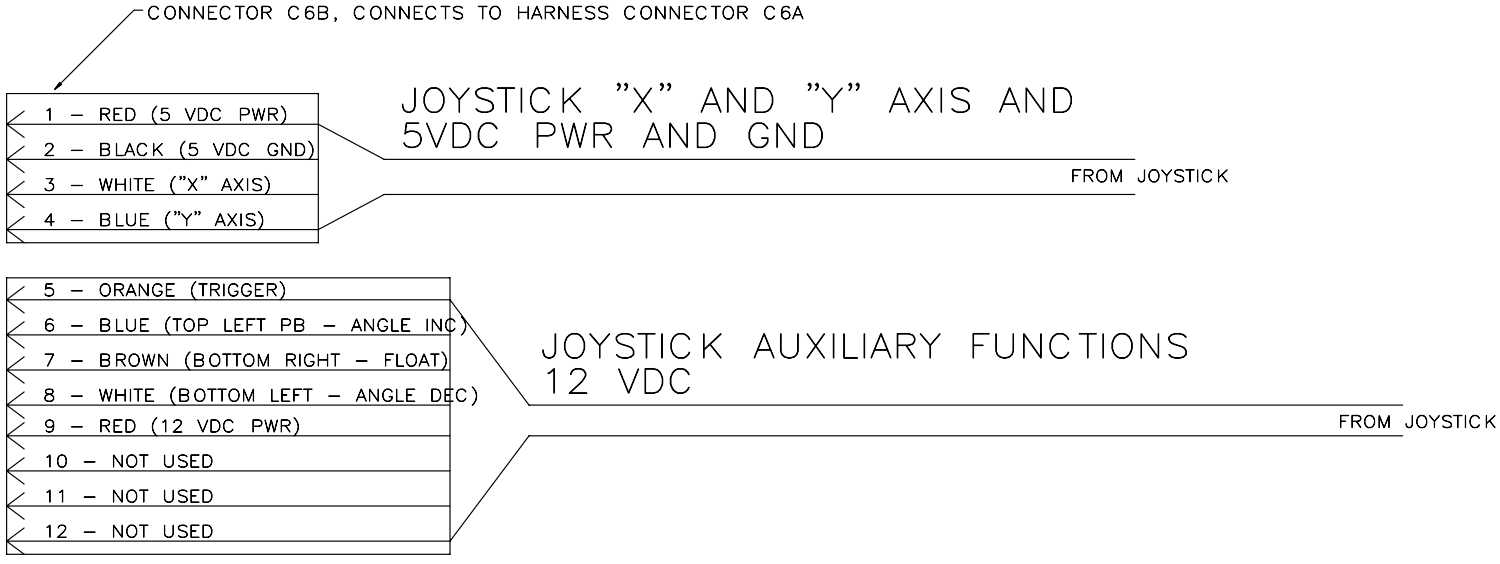
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	4	16-11436	10-24 x 1.00" Socket Head Cap Screw
2	4	16-20034	5/16" x 1" Hex Bolt Gr 5 NC
3	3	16-2488	20mm x 2.5mm x 80mm Hex Bolt Gr. 10.9
4	6	16-35C612	3/8" x 3/4" Flange Bolt
5	4	16-610020	6mm x 1.00mm x 20mm Metric Hex Bolt Gr 10.9
6	1	18-42528	9RX Joystick Adj. Bracket
7	1	18-42530	9RX Joystick Mount
8	2	31-15KB1212	Straight JIC x O-Ring
9	1	31-34033	Straight JIC x O-Ring
10	6	31-34041	Straight JIC x O-Ring
11	1	31-34099	Swivel Nut Elbow 90° JIC
12	1	44-11435	Mounting Ring
13	1	44-42525	9RX Joystick Valve Mount
14	1	44-42527	Plate, Cover
15	1	56-11653	Joystick Valve
16	1	56-12426	Joystick
17	3	57-19088	3/4" Hardened HD Flat Washer
18	4	57-20741	5/16" Flat Washer
19	4	57-20820	6mm Flat Washer
20	2	70-20622	3/8" Flange Hex Nut Gr 5 NC



Joystick Mounted in Cab



Joystick Valve Mounted at Rear of Tractor



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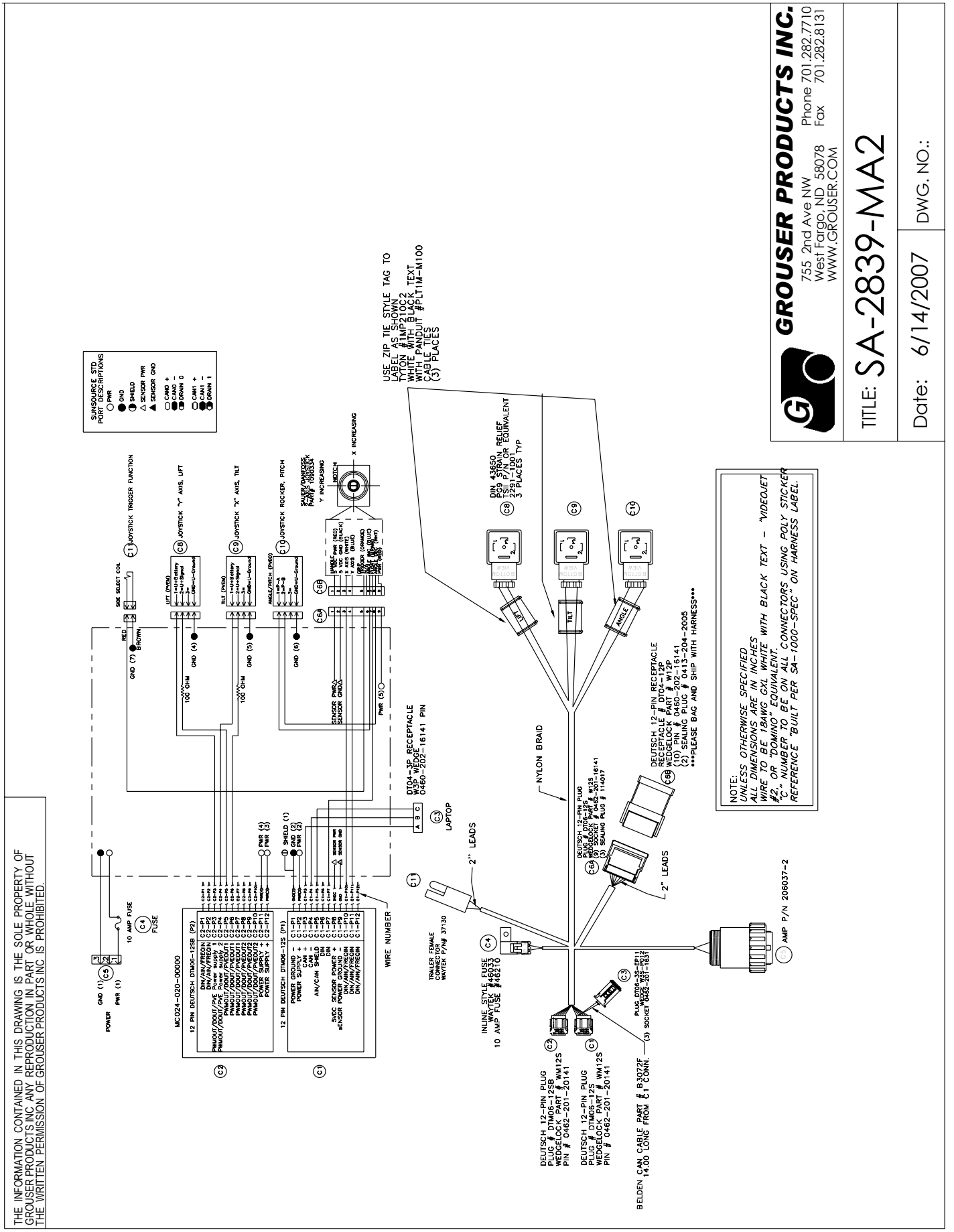
TITLE: SA-2839-SCH-JOYSTICK2

Date: 6/14/2007

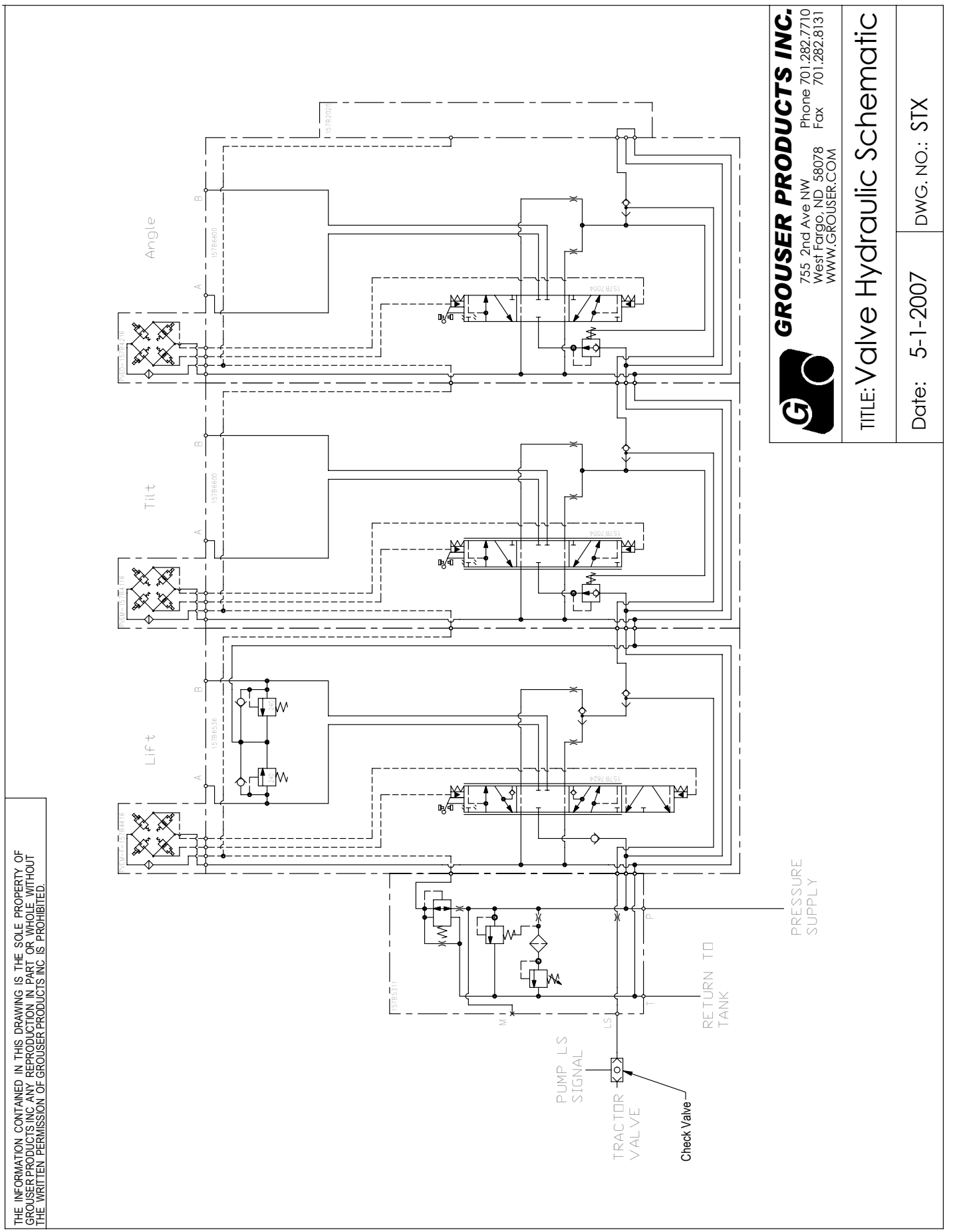
DWG. NO.:

Joystick Schematic

Joystick Schematic



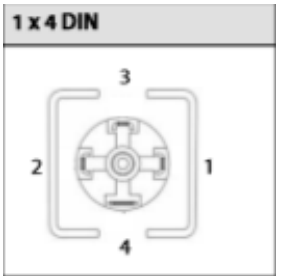
Hydraulic Schematic



Lift and Tilt Connection Information

PVEM 4-pin DIN Connector

Pinout	Pin 1	Pin 2	Pin 3	Pin 4
1x4 DIN	U_{DC}	U_S	Error	GND



PVEM Technical Data

Control Specification

Description	Type	Value
Supply Voltage (U_{DC})	Rated Range	11 to 32 V_{DC}
	Max. ripple	5%
Signal Voltage PWM (U_S)	Neutral	U_S = 0.5 U_{DC} = 50% DUT
	Q: P to A	U_S = (0.5 to 0.25) U_{DC} = 50% to 25% DUT
	Q: P to B	U_S = (0.5 to 0.75) U_{DC} = 50% to 75% DUT
Input Impedance	Rated	12 kΩ
Input Capacitance	Rated	100 nF

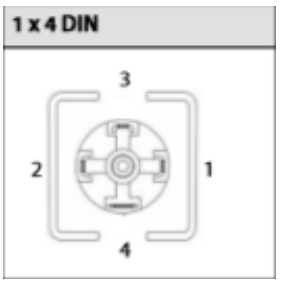
Current consumption

Description	@ 12 V_{DC}	@ 24 V_{DC}
PWM Frequency (U_S) recommended	> 200 Hz	> 200 Hz
Current Consumption	690 mA	350 mA

Angle Connection Information

PVEO, PVEO-R and PVEO-HP 4-pin Connector

Pinout	Pin 1	Pin 2	Pin 3	Pin 4
1x4 AMP	U_{DC}_A	U_{DC}_B	GND	GND
1x4 DEUTSCH	U_{DC}_A	GND	GND	U_{DC}_B
1x4 DIN	U_{DC}_A	U_{DC}_B	-	GND



PVEO Technical Data

Control Specifications

Description	Type	12 V_{DC}	24 V_{DC}
Supply Voltage (U_{DC})	Range	11 to 15 V_{DC}	22 to 30 V_{DC}
	Max. ripple	5%	5%
Current Consumption	Typical	480 mA	250 mA
	Minimum	430 mA	220 mA
	Maximum	950 mA	480 mA

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.

GROUSER® PRODUCTS

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