

# CARCO®

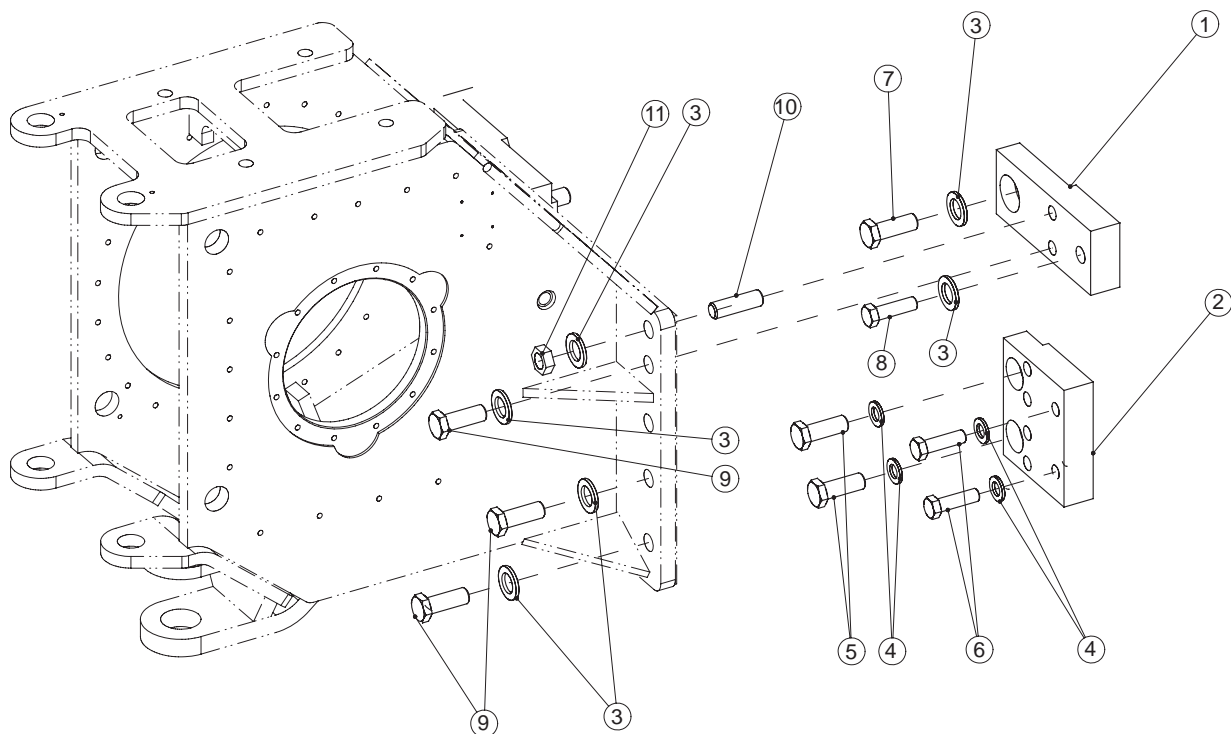
## INSTALLATION AND PARTS MANUAL

### MODEL H110B FOR JOHN DEERE 850J TRACTORS

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**H110B  
MOUNTING GROUP  
JOHN DEERE 850J**



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	104388	SPACER, UPPER	2
2	104390	SPACE, LOWER	2
3	101206	WASHER, HARD(1¼ in.)	12
4	101205	WASHER, HARD (1 in.)	8
5	103332	CAPSCREW, HEX HD (1-8 X 2½, GD8, Z)	4
6	104140	CAPSCREW, HEX HD (1-8 X 3¾, GD8, Z)	4
7	105985	CAPSCREW, HEX HD (1¼-7 X 2¼, GD8, Z)	2
8	105956	CAPSCREW, HEX HD (1¼-7 X 3¾, GD8, Z)	2
9	105986	CAPSCREW, HEX HD (1¼-7 X 4¼, GD8, Z)	6
10	33460	STUD	2
11	70176	HEX NUT (1¼-7)	2
12	102628	DRAWBAR PIN (NOT SHOWN)	1
13	70148	COTTER PIN (NOT SHOWN)	2

## INSTALLATION INSTRUCTIONS

### **CAUTION**

Cleanliness is of utmost importance when working on hydraulic equipment. Contamination may cause damage to close tolerances of the hydraulic components which may result in erratic operation and reduced service life.

1. Clean all paint, oil, grease, rust and dirt from the mounting surfaces of the winch spacers and tractor.
2. Attach the upper spacers, item 1, to the tractor rear face using fasteners, items 7, 8 and 3. Apply Loctite 242 or equivalent and torque the bolts to 1360 lb•ft (1850 N•m).
3. Install the studs, item 10, into the top mounting holes of the upper spacers. Apply Loctite 272 or equivalent to the threads.
4. Attach the lower spacers, item 2, to the tractor rear face using fasteners, items 5, 6 and 4. Apply Loctite 242 or equivalent and torque the bolts to 680 lb•ft (900 N•m).

### **WARNING**

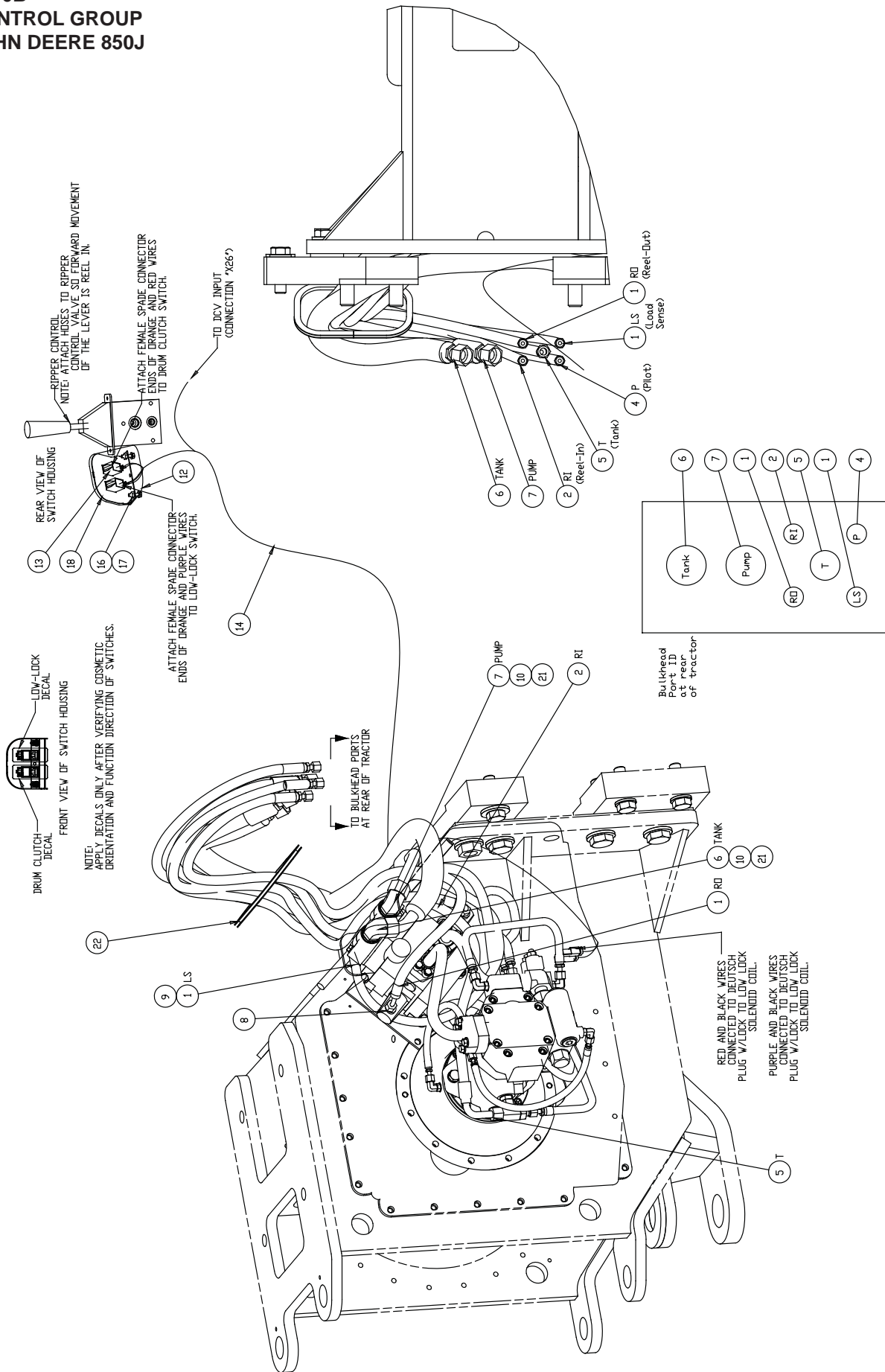
The winch weighs approximately 3,300 lbs (1,500 kg). Ensure your lifting equipment has adequate capacity and use proper lifting techniques to eliminate the possibility of damage or injury.

5. Install the winch onto the spacers. Secure the winch to the tractor using fasteners, items 3, 9 and 11. Apply Loctite 242 to the fastener threads and torque the fasteners to 1360 lb•ft (1850 N•m).
6. Check winch oil level and tractor hydraulic level, and refill as required.

### **WARNING**

Fill the winch to the proper level with the recommended oil **BEFORE** operating the winch. Component damage may occur if the winch is operated without oil.

# H110B CONTROL GROUP JOHN DEERE 850J



## INSTALLATION INSTRUCTIONS

### **CAUTION**

Cleanliness is of utmost importance when working on hydraulic equipment. Contamination may cause damage to close tolerances of the hydraulic components which may result in erratic operation and reduced service life.

**NOTE:** Refer to the appropriate Deere service manual(s) for additional information on tractor hydraulic system. Tractor must be equipped or retrofitted with John Deere "Winch Plumbing Installation" AT309476 as directed in John Deere instruction manual T215517.

The following steps apply to tractors which are sold as "Winch Ready", meaning all winch control components are already in place.

1. Attach pump hoses (items 6 and 7) to the winch control valve and tractor interface. The pump pressure line (item 7) will attach to the forward-most port (lowest position) on the top of the control valve. Attach the hoses to the control valve using the split flange fittings (item 10) and elbows (item 21).
2. Attach the REEL-IN (RI) and REEL-OUT (RO) hoses (items 2 and 1) to the winch control valve and tractor interface. The RO hose will be attached to the upper pilot port of the control valve. Install the ORB-ORFS adapters (item 8) into the control valve pilot ports.
3. Attach the LOAD SENSE (LS) hose (item 1) to the winch control valve and tractor interface. Install the elbow (item 9) into the -6 ORB LS port in the control valve.
4. Attach the PILOT hose (item 4) to the "P" port on the dual solenoid valve and the tractor interface.
5. Attach the TANK hose (item 5) to the end of the tee fitting at the motor case drain port and the tractor interface.
6. Locate the switch housing (item 12) in an easily accessible location on the RH console near the winch control lever. Match drill the mounting holes for ¼ in. bolts.
7. Install the switches (item 13) into the switch housing by pressing the switches into the opening. Label one switch as LOW LOCK and label the other as DRUM CLUTCH. Attach the switch and housing assembly to the console using fasteners (items 16 and 17).
8. Install the wiring harness (item 14). Route the harness to eliminate chafing and scuffing on sharp steel edges.

Attach the 2-pin connector (Red/Black wires) to the DRUM CLUTCH solenoid valve connector (solenoid on "B" port of dual solenoid valve).

Attach the 2-pin connector (Purple/Black wires) to the LOW LOCK solenoid valve connector (solenoid on "A" port of dual solenoid valve).

Attach the spade connectors (Orange/Purple wires) to the LOW LOCK toggle switch, and attach the spade connectors (Orange/Red wires) to the DRUM CLUTCH toggle switch.

Attach the POWER leads (Orange/Black wires) to connector "X26" of the main tractor harness located below the RH console. The orange wire should be connected to power, the black to ground.

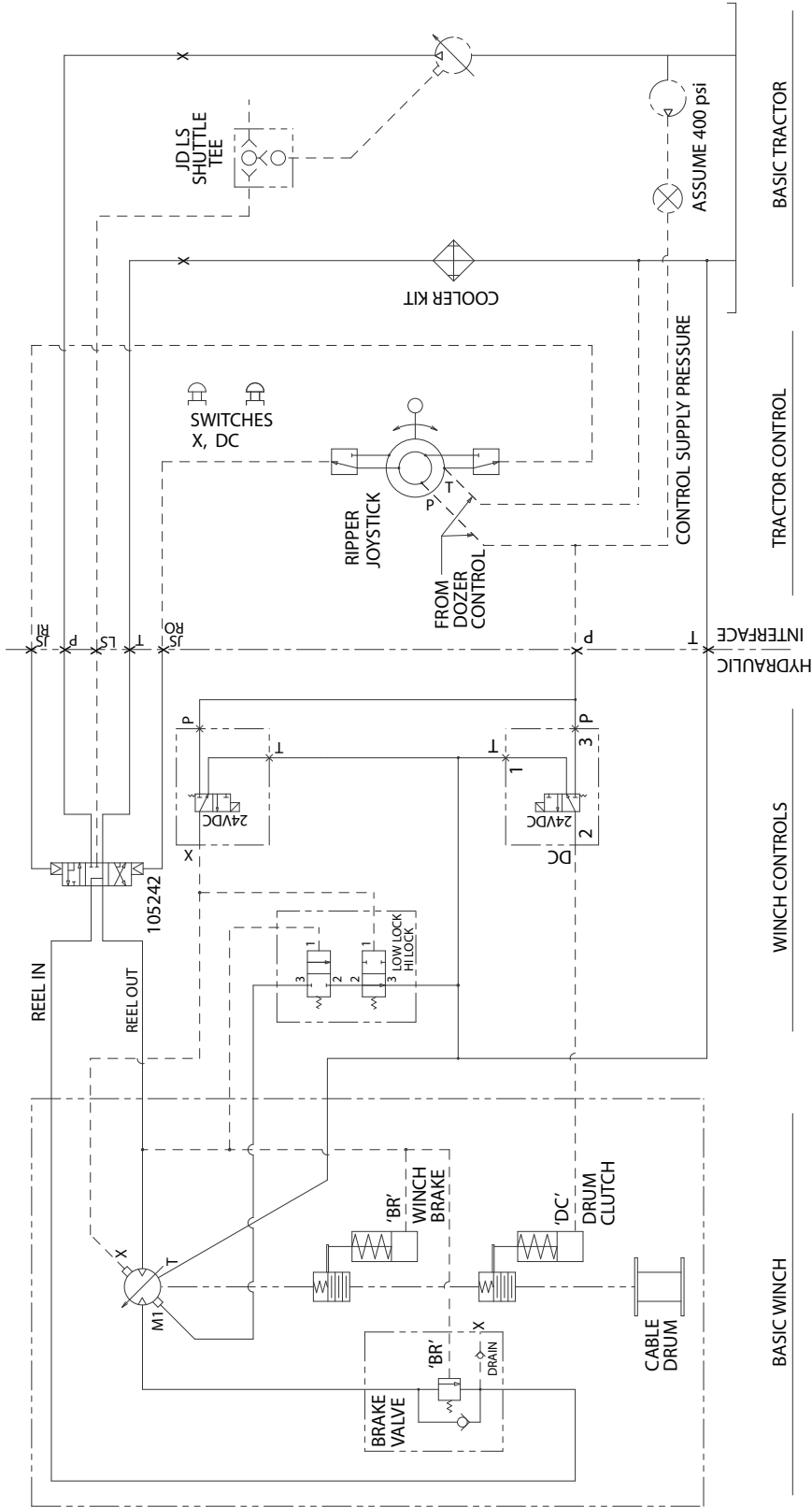
**NOTE:** One set of spade connectors (Orange/Blue wires) and one connector (Blue/Black wires) will remain unused.
9. Before operating the winch, purge air from the LS circuit by operating any other tractor hydraulic function (blade function, etc) to fill the LS circuit with system hydraulic fluid.
10. Confirm winch operation. Move the control lever both directions to verify lever travel versus winch drum operation, and verify proper solenoid operation of the toggle switches. Switch hoses or wires as needed for correct operation.
11. Attach the BRAKE OFF and appropriate LOW LOCK decals to the switch housing over the toggle switches. Attach the REEL-IN / REEL-OUT decal to the tractor console adjacent to the control lever.
12. Use the cable ties and straps (items 11 and 15) as needed to bundle the hoses and aid routing of the wire harness.
13. After verifying winch operation, check the tractor hydraulic fluid level, and refill as needed.

**NOTE:** On initial startup, winch control and operation may be slow or unstable until all air has been purged from the hydraulic control circuits. Clearing all air from the system may require several minutes of operation. In extreme conditions, it may be desirable to manually "bleed" the various hydraulic control connections.

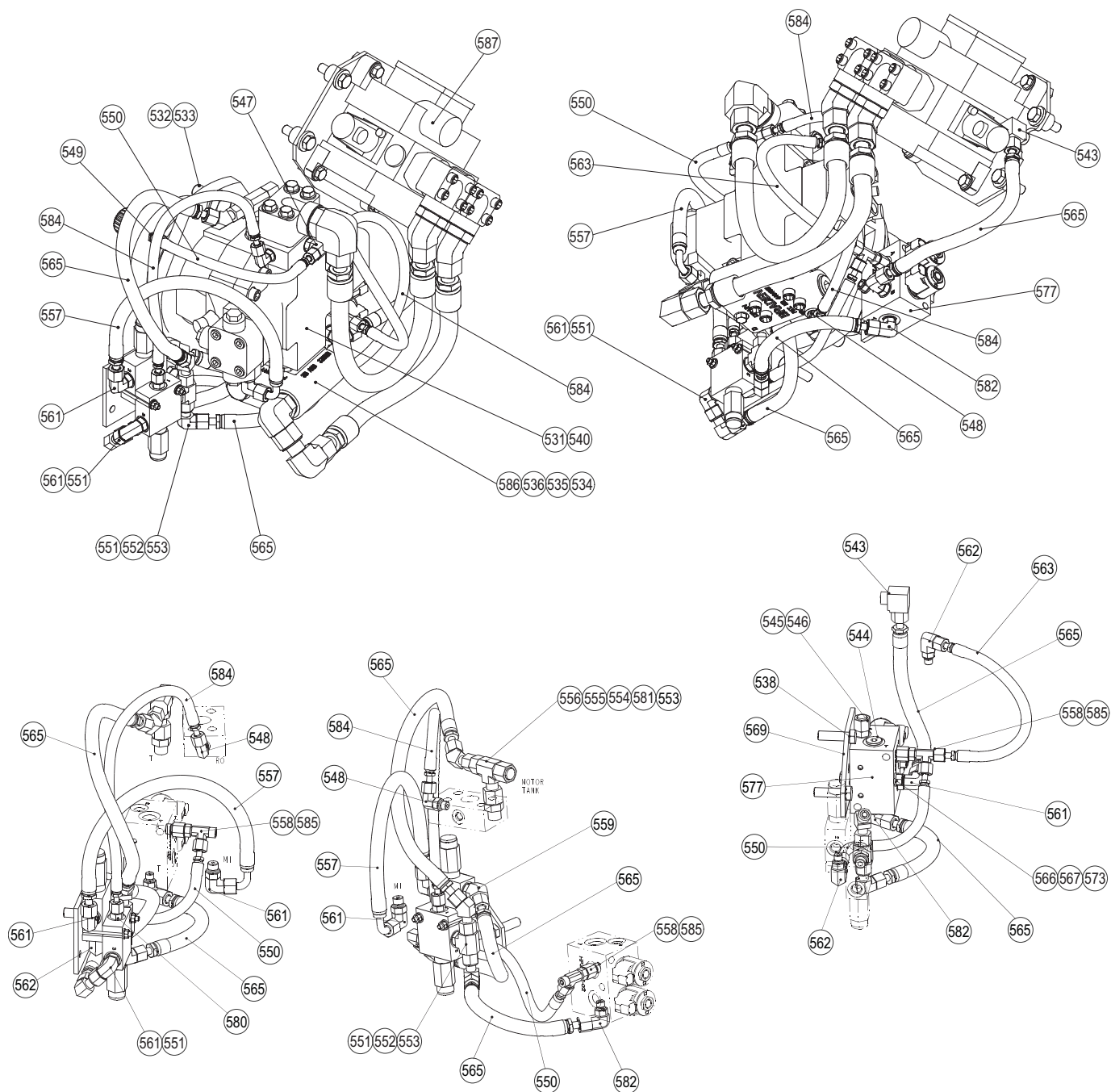
**H110B**  
**CONTROL GROUP**  
**JOHN DEERE 850J**

ITEM	PART NO	DESCRIPTION	QTY
1	106289	HOSE ASSY, -6 X 93.0 (2,362 mm) (RO / LS)	2
2	106288	HOSE ASSY, -6 X 65.0 (1,651 mm) (RI)	1
4	105948	HOSE ASSY, -6 X 86.0 (2,184 mm) (PILOT)	1
5	108485	HOSE ASSY, -10 X 92.0 (2,337 mm) (TANK)	1
6	106286	HOSE ASSY, -16 X 62.0 (1,575 mm) (RETURN)	1
7	106287	HOSE ASSY, -16 X 58.0 (1,473 mm) (PUMP)	1
8	100946	ADAPTER	2
10	106175	ELBOW, -20 SPLIT FLG	2
11	103079	CABLE TIE	4
12	105957	SWITCH HOUSING	1
13	105672	SWITCH	2
14	106461	WIRING HARNESS	1
15	32489	STRAP,BLACK	5
16	11767	CAPSCREW,HEX HD ( $\frac{5}{16}$ - 18 X 1 in., G8, Z)	2
17	100858	WASHER, HARD ( $\frac{5}{16}$ , Z)	2
18	105680	DECAL, CONTROL	1
21	106174	ELBOW, 90°	2
22	70198	TRIM, 24 in. (610 mm)	1

H110B WINCH INSTALLATION ON JOHN DEERE 850J TRACTOR  
RIPPER JOYSTICK - LOW-LOCK/HI-LOCK FUNCTION



**H110B**  
**HYDRAULIC MOTOR GROUP**  
**JOHN DEERE 850J**

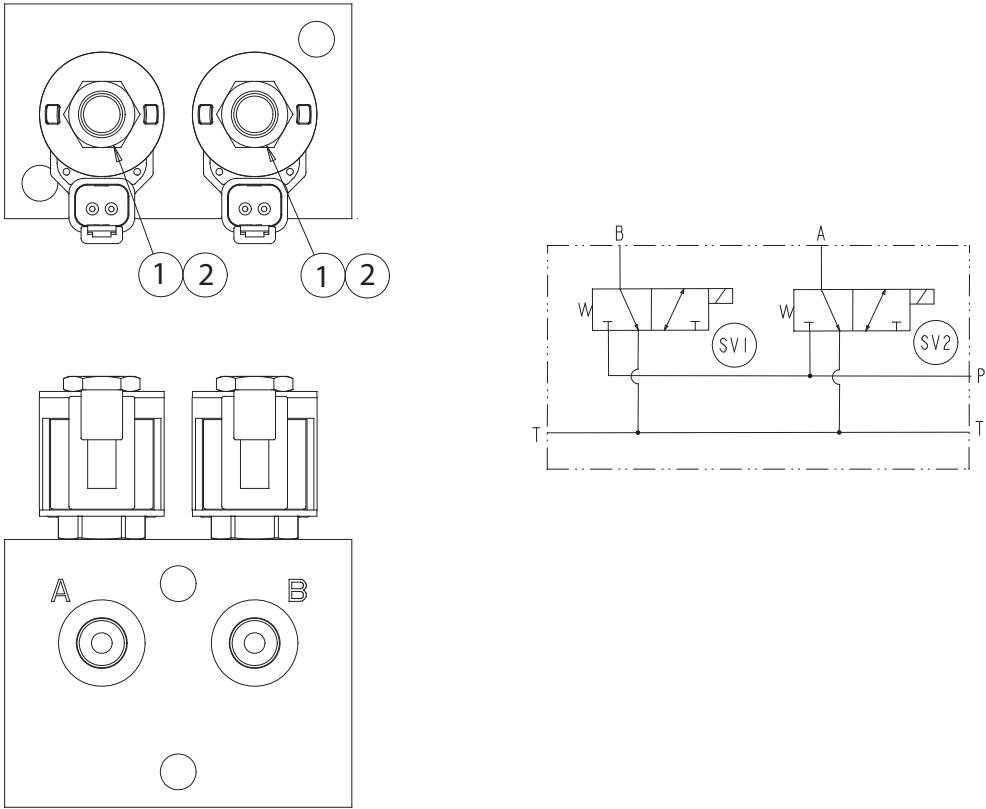




**H110B**  
**HYDRAULIC MOTOR GROUP**  
**JOHN DEERE 850J**

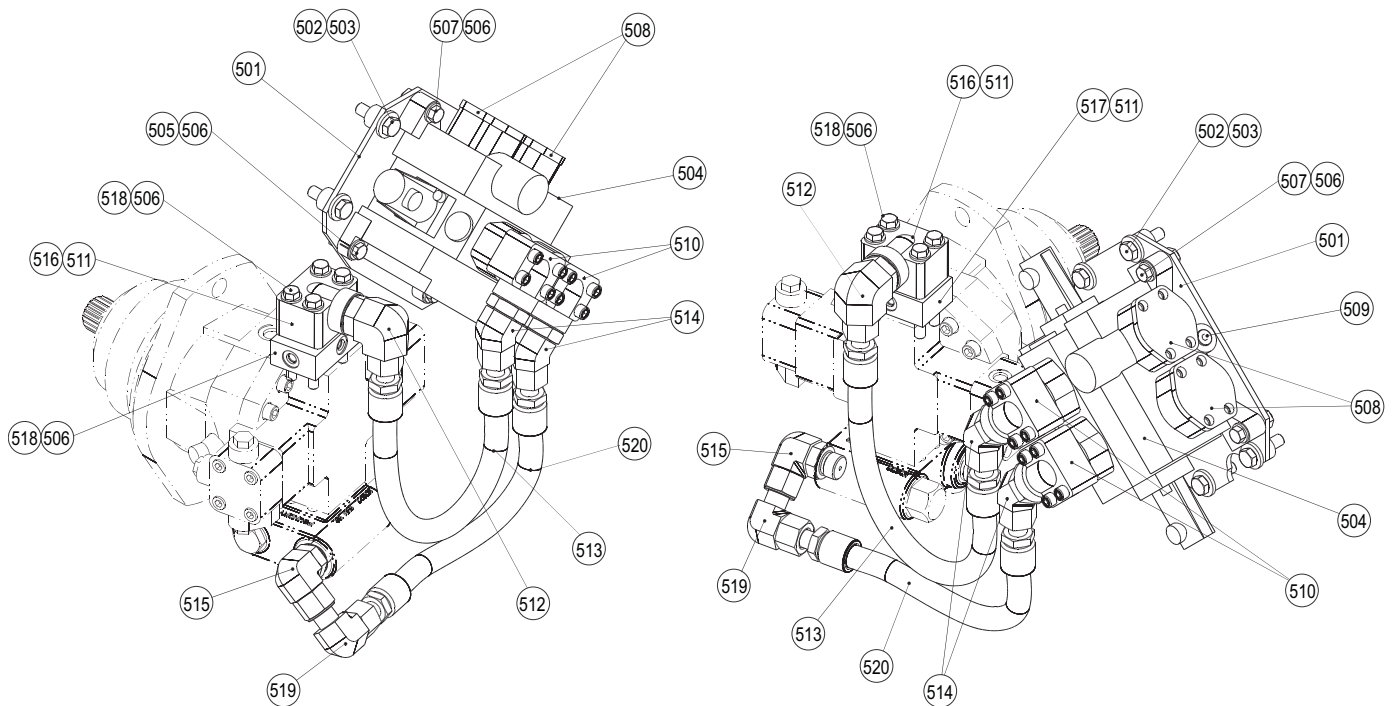
ITEM	PART NO	DESCRIPTION	QTY
531	101323	HYDRAULIC MOTOR	1
532	104328	CAPSCREW, HEX HD (3/4 - 10 X 1 3/4, G8, Z)	2
533	100856	WASHER, HARD (3/4 in., Z)	2
534	21134	CAPSCREW, HEX SKT HD (7/16 - 14 X 3 in, G8, Z)	4
535	83206	BRAKE VALVE ASSY (REFER TO PAGE 12)	1
536	25366	O-RING	2
537	29682	MOTOR COVER (NOT SHOWN)	1
538	104323	CAPSCREW, HEX HD (1/2 - 13 X 1 1/4, G8, Z - NOT SHOWN)	14
539	100859	WASHER, HARD (1/2 in., Z - NOT SHOWN)	11
540	22358	O-RING	1
541	108451	SPACER (USED FOR ITEM 537 - NOT SHOWN)	2
542	108452	SPACER (USED FOR ITEM 537 - NOT SHOWN)	1
543	101287	UNION, 90°	1
544	32411	PLUG	1
545	101222	ADAPTER	1
546	101581	CAP	1
547	101268	TEE	1
548	27430	ADAPTER, ELBOW 90°	2
549	101275	ADAPTER	1
550	101919	HOSE ASSY, -4 X 14.0 in. (356 mm)	2
551	100945	ELBOW, 90°	2
552	101283	TEE	1
553	101281	ELBOW, 45°	2
554	101274	CAP	1
555	104503	TEE	1
556	101267	ADAPTER, METRIC	1
557	106372	HOSE ASSY, -6 X 21.0 in. (533 mm)	1
558	101743	TEE	1
559	101286	ELBOW, 45°	1
560	105330	VALVE	1
560A	105413	SEAL KIT (FOR ITEM 560)	1
561	40107	ELBOW	4
562	26680	ELBOW 90°	1
563	101270	HOSE ASSY, -4 X 17.0 in. (432 mm)	1
565	101435	HOSE ASSY, -6 X 16.0 in. (406 mm)	4
566	100317	CAPSCREW, HEX HD (3/8 - 16 X 3 1/4, G8, Z)	2
567	101440	WASHER, HARD (3/8 in.)	4
569	108444	BRACKET	2
570	108449	CAPSCREW, FLAT HD (1/4 - 20 X 3 in.)	2
571	69645	NUT, HEX (1/4 - 20, G5, Z)	2
572	100857	WASHER, HARD (1/4 in., Z)	2
573	11780	NUT, HEX (3/8 - 16, G5)	2
577	104372	DUAL SOLENOID MANIFOLD VALVE (REFER TO PAGE 10)	1
580	26676	ADAPTER, STRAIGHT	1
581	107345	REDUCER	1
582	103327	ELBOW, 90°	1
583	108048	VALVE	1
584	101271	HOSE ASSY, -4 x 20.0 in. (508 mm)	2
585	103469	REDUCER	1
586	40064	SPACER	1
587	64440	VALVE GROUP, DIRECTION (REFER TO PAGE 11)	1

**H110B**  
**DUAL SOLENOID MANIFOLD VALVE**  
**JOHN DEERE 850J**



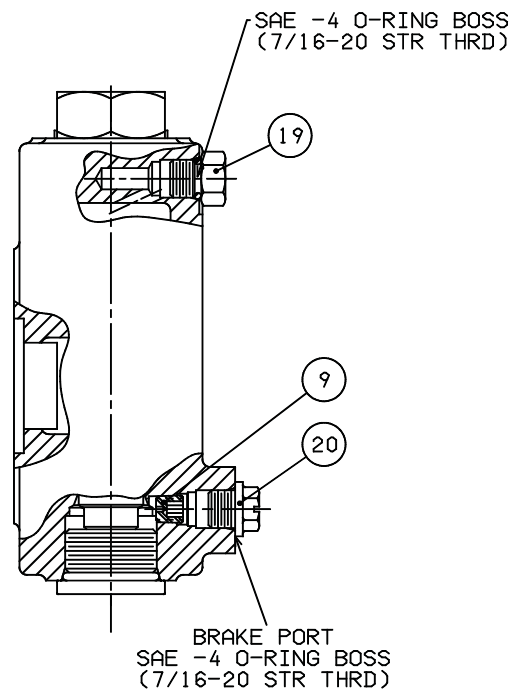
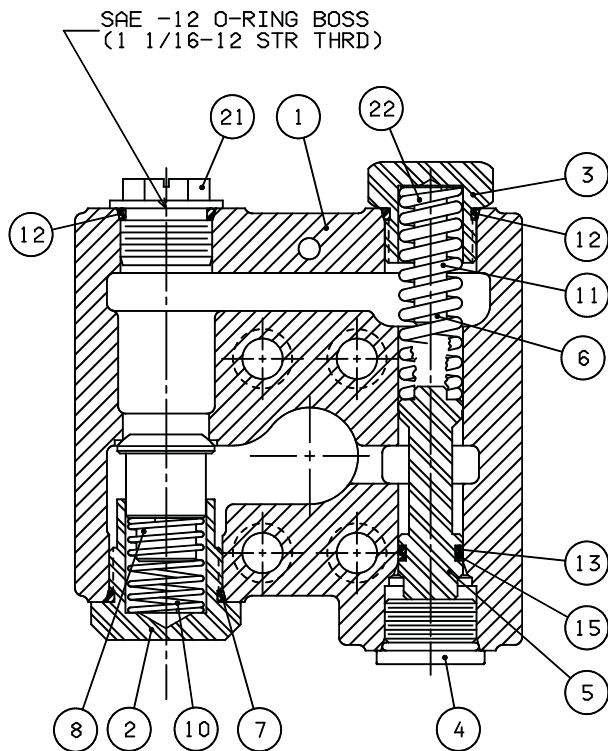
ITEM	PART NO	DESCRIPTION	QTY
1	106518	3-WAY DIRECTIONAL VALVE	2
	29821	SEAL KIT (FOR ITEM 1)	1
2	106378	SOLENOID COIL - 24VDC	2

**H110B**  
**DIRECTION VALVE GROUP**  
**JOHN DEERE 850J**



ITEM	PART NO	DESCRIPTION	QTY
---	64440	VALVE GROUP, DIRECTON	1
501	106391	MOUNTING PLATE ASSEMBLY	1
502	104323	CAPSCREW, HEX HD (½ - 13 X 1¾, G8, Z)	4
503	102987	WASHER, HARD (½ in. Z)	4
504	105242	VALVE	1
505	21253	CAPSCREW, HEX HD (7/16 - 14 X 1½, G8, Z)	2
506	101432	WASHER, HARD (7/16, Z)	8
507	104318	CAPSCREW, HEX HD (7/16 - 14 X 1¾, G8, Z)	2
508	105826	SHIPPING PLATE	2
509	25665	PLUG	1
510	105968	MANIFOLD, 90°	2
511	102199	O-RING	2
512	105977	ELBOW, 90°	1
513	105966	HOSE ASSY, -12 X 23.0 in. (584 mm)	1
514	106371	ELBOW, 45°	2
515	102608	ELBOW, 90°	1
516	108409	MANIFOLD, 90°	1
517	101500	MANIFOLD	1
518	108484	CAPSCREW, HEX HD (7/16 - 14 X 4 in., G8, Z)	4
519	103740	ELBOW, 90°	1
520	108450	HOSE ASSY, -12 X 16.5 in. (419 mm)	1

**H110B  
BRAKE VALVE ASSEMBLY  
JOHN DEERE 850J**



**ASSEMBLY INSTRUCTIONS:**

1. Tighten plug, item 19, to 25 lb•ft (34 N•m) torque.
2. Tighten plugs, items 2, 3 & 4 to 40 lb•ft (54 N•m) torque.

ITEM NO.	PART NO.	DESCRIPTION	QTY.
--	83206	BRAKE VALVE ASSEMBLY	1
1	NSS	BRAKE VALVE HOUSING	1
2	24424	VALVE SPRING RETAINER	1
3	104734	SPRING RETAINER	1
4	22450	PLUG	1
5	NSS	LOW PRESSURE SPOOL	1
6	NSS	SPOOL STOP	1
7	24186	O-RING	1
8	24423	CHECK VALVE POPPET / RELIEF VALVE 6000 PSI (41,400 kPa)	1
9	24200	PILOT ORIFICE	1
10	24190	CHECK VALVE SPRING	1
11	104732	SPOOL SPRING	1
12	23601	O-RING	2
13	24193	O-RING	1
15	24195	BACK-UP RING	1
19	25663	PLUG	1
20	25403	SHIPPING PLUG	1
21	75288	SHIPPING PLUG	1
22	25661	SHIM, VALVE SPRING	AR

NSS - NOT SERVICED SEPARATELY  
AR - AS REQUIRED