

INSTALLATION AND PARTS MANUAL

MODEL H110VS

FOR D8R SERIES II TRACTORS

TABLE OF CONTENTS

Foreword2
Installation Instructions2
Winch Mounting and Motor Lines Group Drawing4
Pilot Lines and Winch Lines Group Drawing5
Manifold Assembly8
Hydraulic Circuit9
Motor Group10
Brake Valve Assembly11

MODEL NUMBER DESCRIPTION

H110VS	245	V	65/33	3
Basic Winch Model	Overall Gear Ratio 245:1	Motor Type V - Variable Displacement	Motor Size Cu. In. Displacement per revolution 6.5 cu in. (High) 3.3 cu in. (Low)	Fairlead 3 - 3 roller 4 - 4 roller

**MODEL H110VS
WINCH INSTALLATION
CATERPILLAR D8R SERIES II**

FOREWORD

This manual includes parts listings and installation information for the H110VS winch for use on the CATERPILLAR D8R Series II tractor.

Continuing product improvement may cause changes in your PACCAR built winch, which may not be included in this manual. If a question arises regarding your winch or this manual, contact your nearest CAT dealer, or the PACCAR WINCH DIVISION PRODUCT SUPPORT DEPARTMENT at 1-918-251-8511, Monday – Friday, 0800 hrs – 1630 hrs CST, or by fax at 1-918-259-1575. Please provide the complete winch MODEL number and SERIAL number when making inquiries.

INSTALLATION INSTRUCTIONS

 **CAUTION** 

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

 **WARNING** 

Personal injury can result from the sudden release of hydraulic oil under pressure or hot oil. Hydraulic oil pressure can remain in the hydraulic system after the tractor engine has been stopped. Serious injury can be caused if this pressure is not released before performing any service on the hydraulic system or equipment. Make sure all of the work tools have been lowered to the ground, and the oil is cool before removing any components or lines. Remove the oil filler cap only when the engine is stopped, and the filler cap is cool enough to touch with the bare hand.

 **WARNING** 

Winch weighs approximately 3,950 lb (1,790 kg), without wire rope and mounting adapters. Make certain that lifting equipment has adequate capacity. Failure to use adequate lifting equipment may result in property damage, personal injury or death.

NOTE: Refer to the appropriate Caterpillar service manuals for additional information regarding service procedures to the tractor.

To prepare the tractor for service, lower the blade to the ground. Turn the engine off and relieve any oil pressure in all tractor circuits as required. Relieve oil pressure in the hydraulic reservoir by opening the fill cap. Turn the

tractor master electrical switch off.

1. Drain the tractor hydraulic oil into a suitable container. Recycle or dispose of used oil in an environmentally responsible manner. Securely install the hydraulic reservoir drain plug after draining.
2. Clean all paint, oil, grease, rust and dirt from the mounting surfaces of the winch, winch adapter brackets and tractor rear face.

 **WARNING** 

Winch adapters weigh approximately 340 lb (154 kg) each. Make certain that lifting equipment has adequate capacity. Failure to use adequate lifting equipment may result in property damage, personal injury or death.

3. Attach winch adapters, items 21 and 22, to the tractor rear face with bolts, item 20. Apply Loctite 272 or equivalent to bolt threads. Leave bolts loose at this time to aid alignment of winch to adapters.
4. Carefully hoist the winch and install to the winch adapters, using bolts, item 20. Apply Loctite 272 or equivalent to bolt threads.
5. Torque all winch mounting bolts to 1,100 lb•ft (1,500 N•m).
6. Remove and discard the motor port cover plate and bolts on the upper port of the winch motor.
7. Attach one end of the REEL-OUT hose, item 5, to the manifold at the upper motor port. Use split flange halves, item 1, D-ring, item 4, and fasteners, items 2 and 3. Torque bolts to 50 lb•ft (70 N•m). Attach the opposite end to the LH port of the manifold, utilizing hardware previously defined and new D-ring, item 4.
8. Attach one end of the REEL-IN hose, item 7, to the port in the brake valve on the lower motor port, utiliz-

**MODEL H110VS
WINCH INSTALLATION
CATERPILLAR D8R SERIES II**

ing adapter, item 6. Attach the opposite end to the RH port of the manifold, utilizing the hardware defined previously and new D-ring, item 4.

9. Install MOTOR SHIFT hose, item 9, to the -4 elbow in the "X" port on the forward side of the winch motor. Install the opposite end to the "X" port on the lower surface of the manifold, using -4 elbow, item 19.
10. Install DRUM CLUTCH RELEASE hose, item 10, between the elbow located on the RH side of the winch case and the "DC" port of the manifold, using -6 elbow, item 11.
11. Install MOTOR DRAIN hose, item 12, between the -8 elbow located on top of the motor, and to the "T" port on the manifold, utilizing the -8 elbow, item 13.
12. Route the hoses approximately as shown and bundle them together utilizing the clips, 16 and 17, fasteners, items 14 and 18, and spacer, item 15. Attach the clip set to the winch case and tighten the bolt snugly.

 **CAUTION** 

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

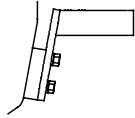
NOTE: After winch and controls installation has been completed, refill the tractor hydraulic reservoir with the proper lubricant. Refer to the appropriate Caterpillar service literature for the oil specs.

Start the tractor engine and operate at low engine idle to purge air from the hydraulic lines. Operate the winch in all functions to verify proper operation.

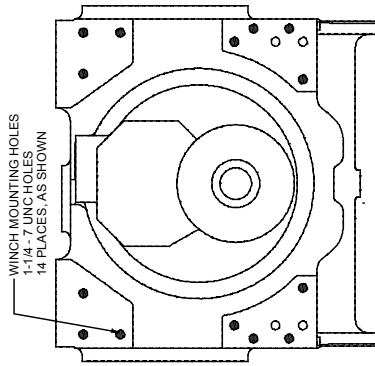
Check all connections for leaks and make any needed repairs. Check the hydraulic oil reservoir level. Add oil as needed to maintain the level at the "FULL" mark on the sight gauge.

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	101277	SPLIT FLANGE HALF	2
2	104319	BOLT (7/16 - 14 UNC X 2-3/4 G8)	4
3	101432	WASHER, HARD (7/16)	4
4	101278	D-RING	3
5	101833	HOSE AS.	1
6	40115	ADAPTER	1
7	101832	HOSE AS.	1
9	101831	HOSE AS.	1
10	101261	HOSE AS.	1
11	40107	ADAPTER	1
12	101830	HOSE AS.	1
13	101282	ADAPTER	2
14	102347	BOLT (1/2 - 13 UNC X 3 G8)	1
15	102346	SPACER	1
16	PA6D7573	CLIP	1
17	27501	CLIP	1
18	100859	WASHER, HARD (1/2)	2
19	27430	ADAPTER	1
20	101872	BOLT (1-1/4 - 7 UNC X 3-1/2 G8)	24
21	29752	RH ADAPTER	1
22	29753	LH ADAPTER	1
23	103102	DRAWBAR PIN	1
24	70148	COTTER PIN	2

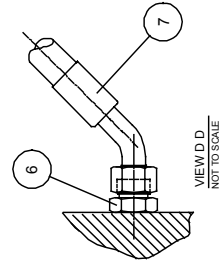
**MODEL H110VS
MOUNTING GROUP/MOTOR LINES GROUP
CATERPILLAR D8R SERIES II**



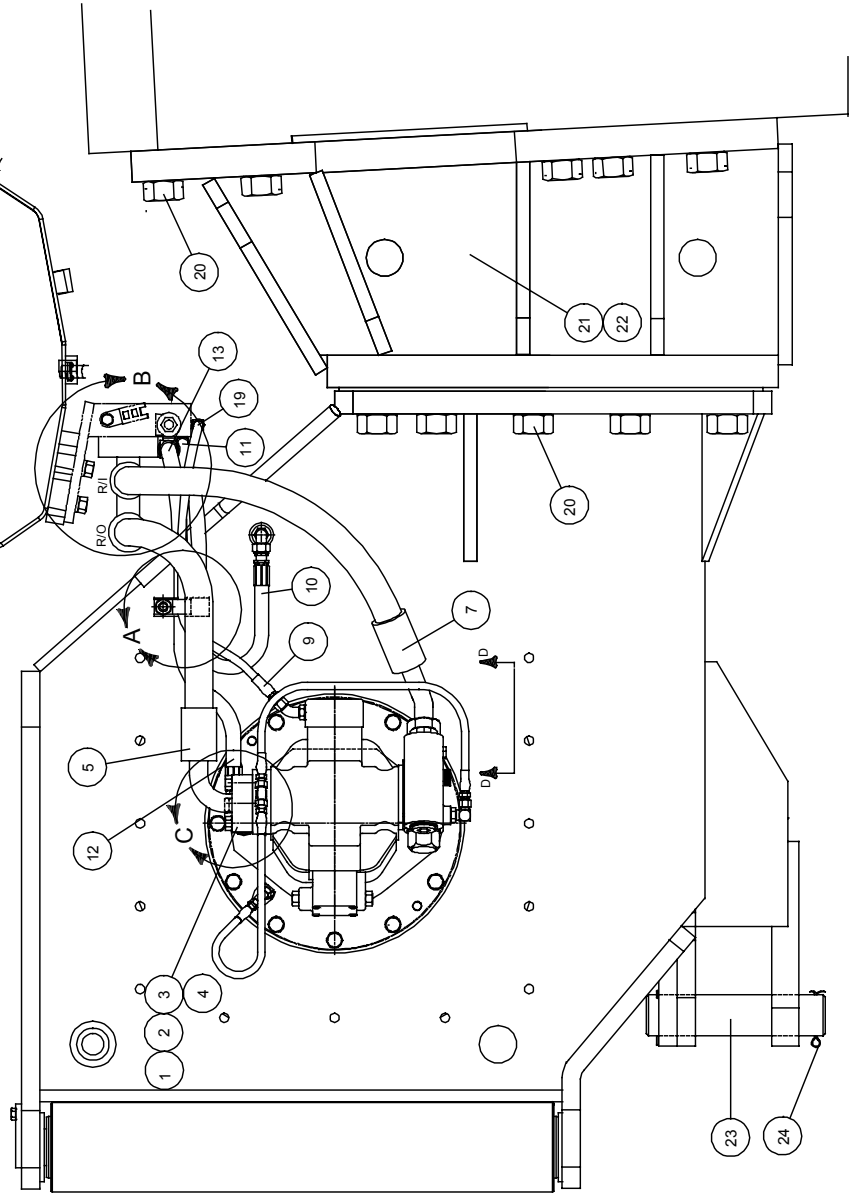
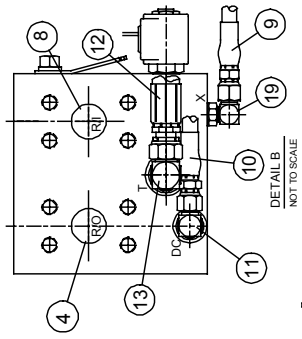
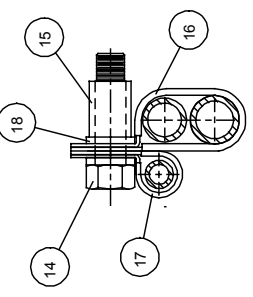
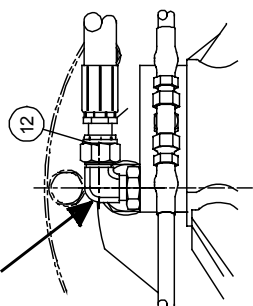
REF: MANIFOLD ASSEMBLY
MOUNTING POSITION



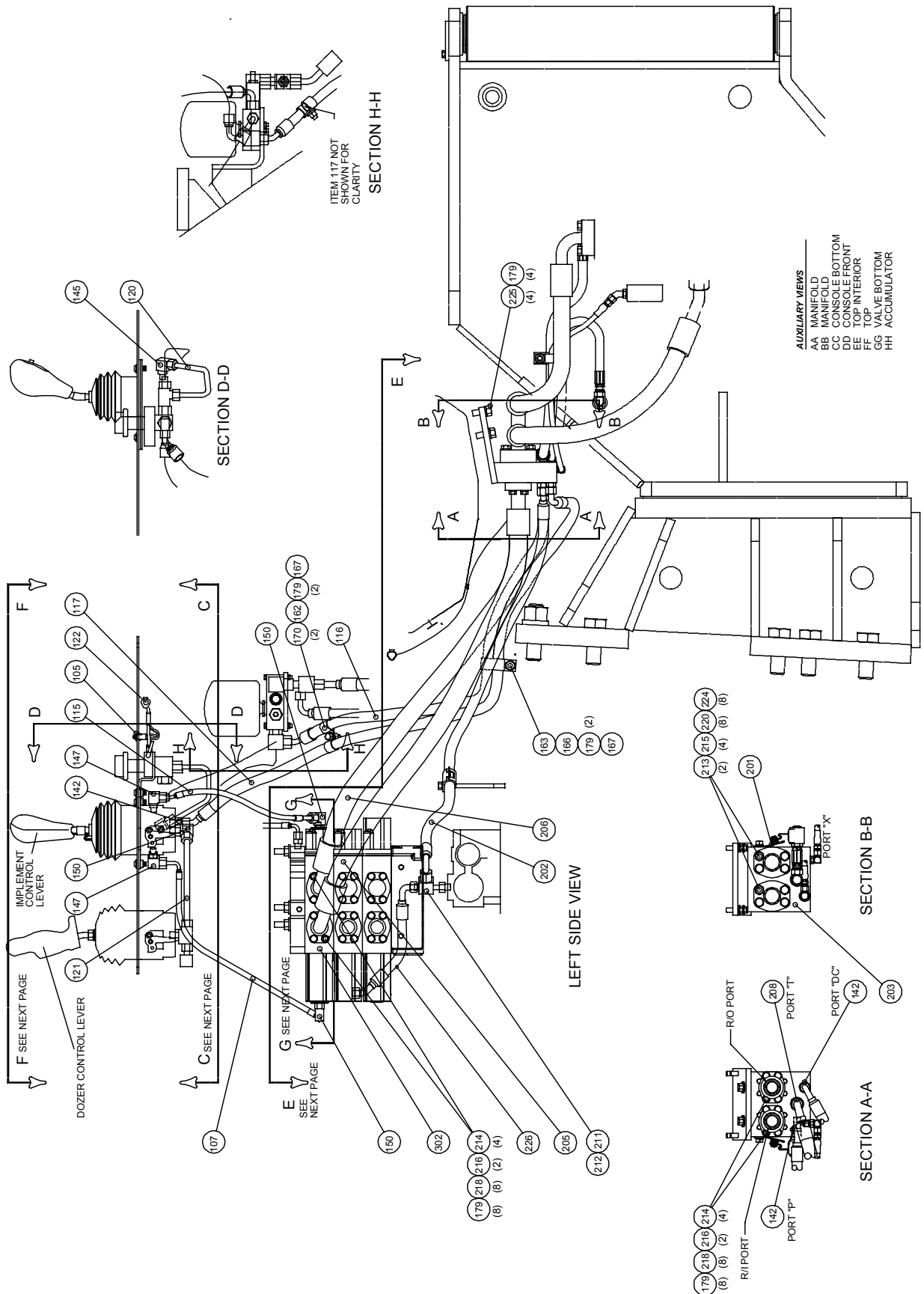
TRACTOR REAR FACE



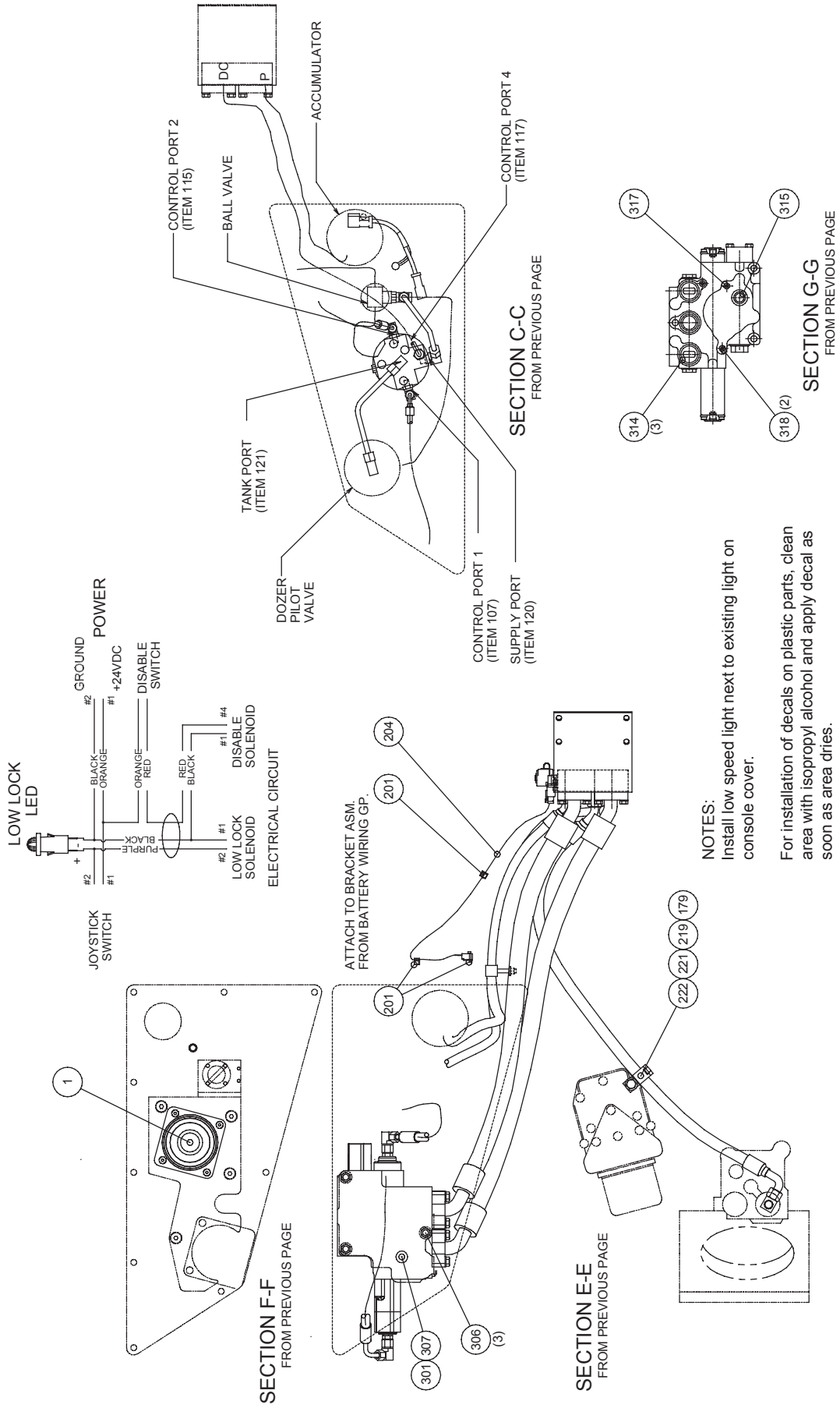
MOTOR CASE DRAIN PORT (REF)



**MODEL H110VS
PILOT LINES AND WINCH LINES GROUP
CATERPILLAR D8R SERIES II**



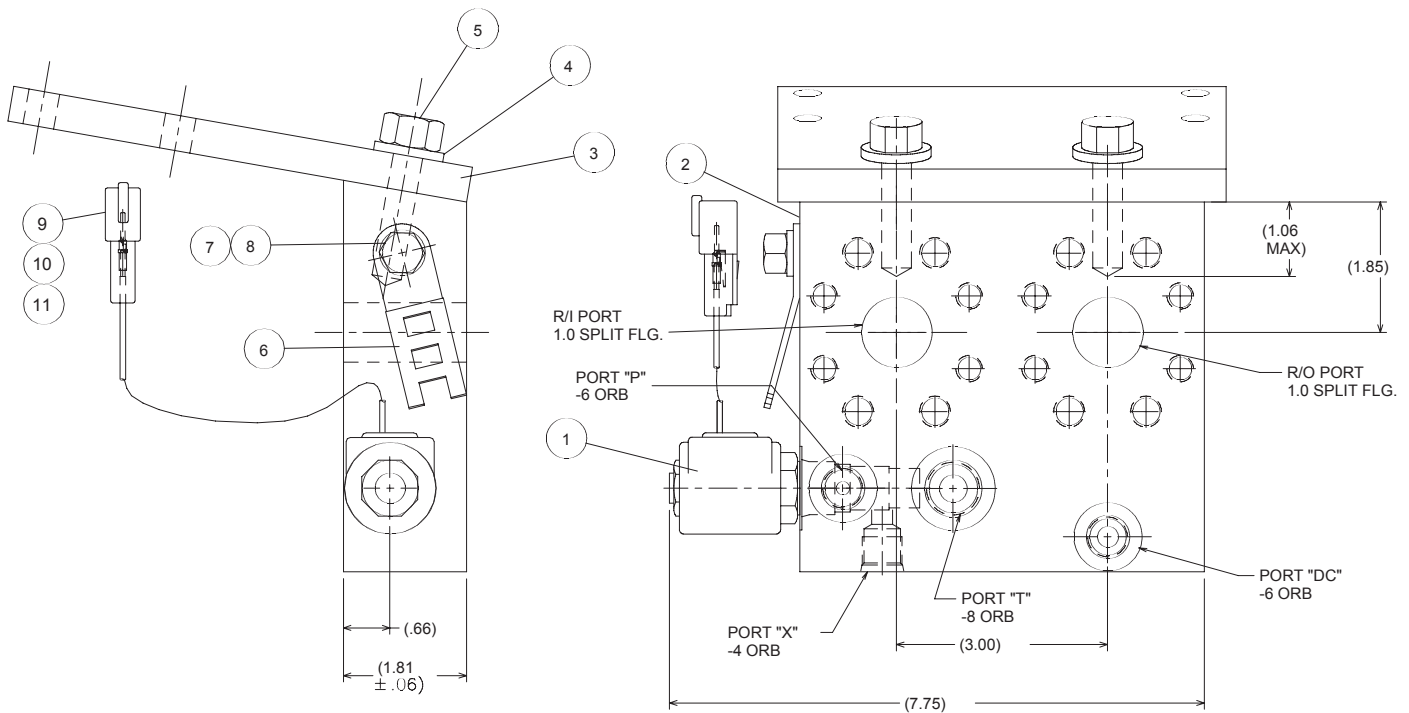
**MODEL H110VS
PILOT LINES AND WINCH LINES GROUP
CATERPILLAR D8R SERIES II**



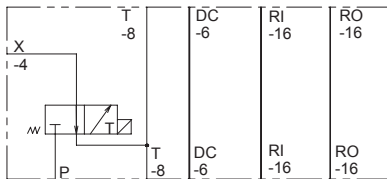
**MODEL H110VS
PILOT LINES AND WINCH LINES GROUP
CATERPILLAR D8R SERIES II**

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	PA1600766	JOYSTICK CONTROL AS.	1
105	29846	INDICATOR LIGHT, GREEN	1
107	PA1593453	HOSE AS.	1
115	PA1612109	HOSE AS.	1
116	PA1612338	HOSE AS.	1
117	PA1612339	HOSE AS.	1
120	PA1633434	TUBE AS.	1
121	PA1633435	TUBE AS.	1
122	PA1650107	HARNESS	1
142	101222	CONNECTOR	3
145	PA1488361	ELBOW	1
147	27430	ELBOW	2
150	40107	ELBOW	3
162	104309	BOLT (3/8 - 16 x 1 in. G8)	1
163	PA5K5338	CLIP	1
166	104311	BOLT (3/8 - 16 x 1-3/4 G8)	1
167	27153	HEX NUT (3/8 - 16)	2
170	PA8M2773	CLIP	2
179	101440	WASHER, HARD (3/8)	24
201	32489	STRAP	4
202	PA1613948	HOSE AS.	1
203	82596	MANIFOLD & CARTRIDGE AS. (REFER TO PAGE X)	1
204	PA1704891	HARNESS	1
205	PA1978494	HOSE AS.	1
206	PA1978495	HOSE AS.	1
208	101284	ADAPTER	1
211	PA1488415	REDUCER, ORFS	1
212	PA1488444	TEE, ORFS	1
214	101278	SEAL, D-RING	2
215	101444	SPLIT FLANGE HALF	8
216	101277	SPLIT FLANGE HALF	4
217	102199	O-RING	4
220	104318	BOLT (7/16 - 14 X 1-3/4 G8)	8
221	PA8T1891	CLIP	1
222	PA8T1892	CLIP	1
224	101432	WASHER, HARD (7/16)	8
225	104132	BOLT (3/8 - 16 X 1-1/4 G8)	4
226	PA2355971	HOSE AS.	1
302	100141	CONTROL VALVE SECTION	1
306	PA1647677	ROD	3
314	PA4J0522	O-RING	3
315	PA4J8997	O-RING	1
317	PA6V0913	O-RING	1
318	PA6V5555	O-RING	2
-	PA1649928	DECAL	1
-	PA1649930	DECAL	1

**MODEL H110VS
MANIFOLD ASSEMBLY
CATERPILLAR D8R SERIES II**



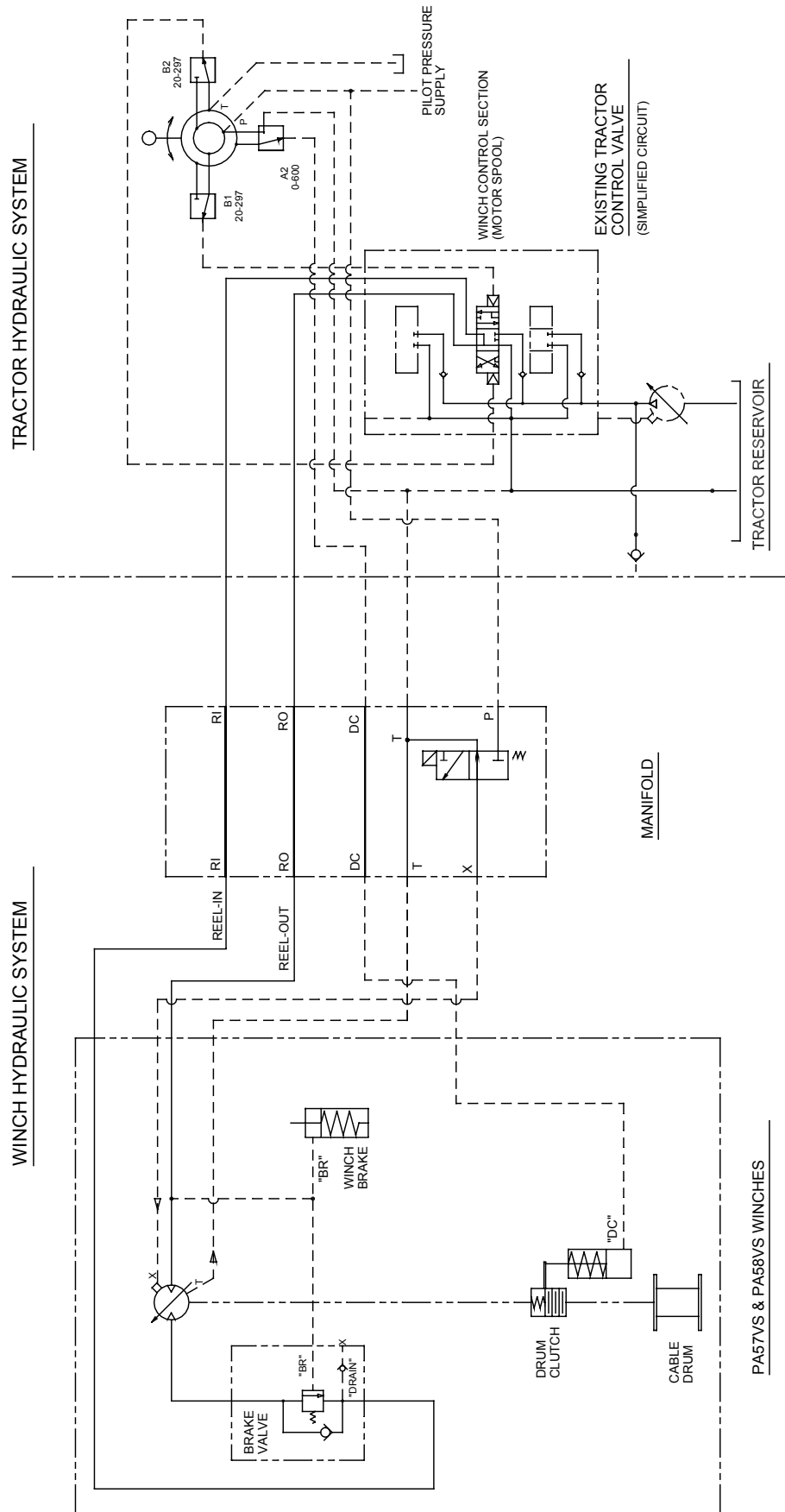
REF.-DUAL SPLIT FLANGE PATTERNS



HYDRAULIC CHART

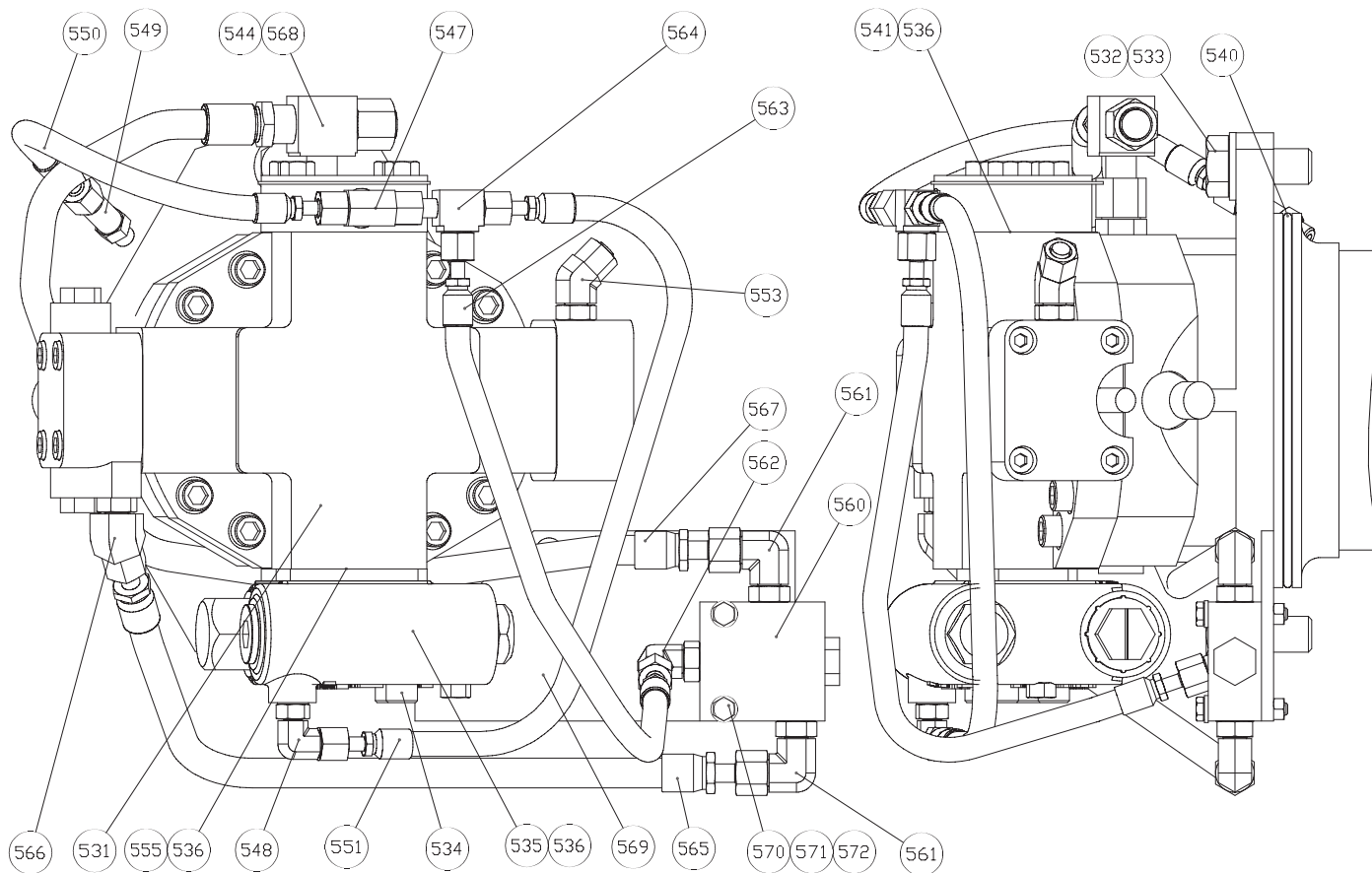
ITEM NO.	PART NO.	DESCRIPTION	QTY.
--	82596	MANIFOLD AND CARTRIDGE AS.	1
1	82213	SOLENOID VALVE AND TERMINATION AS. - LOW RANGE LOCK	1
	29820	SOLENOID VALVE CARTRIDGE AS.	1
	29821	SEAL KIT (FOR 29820)	1
	29822	COIL (FOR 29820)	1
	2	101828	MANIFOLD
3	101829	PLATE	1
4	100859	WASHER, HARD (1/2)	2
5	104174	BOLT (1/2 -13 X 1-1/4 G8)	2
6	PA4P8571	CLIP	1
7	PA5P8167	BOLT (3/8-16 x 5/8 G8)	1
8	101440	WASHER, HARD (3/8)	1
9	100208	RECEPTACLE (FOR 82213)	1
10	100210	WEDGE, CONNECTOR (FOR 82213)	1
11	100209	CONTACT PIN (FOR 82213)	2

**MODEL H110VS
HYDRAULIC CIRCUIT
CATERPILLAR D8R SERIES II**



PA57VS & PA58VS WINCHES

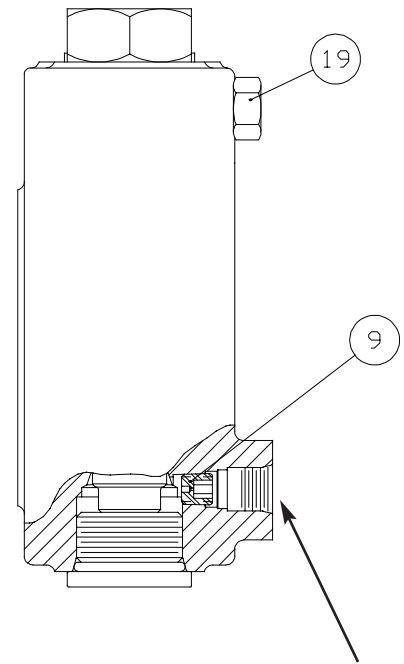
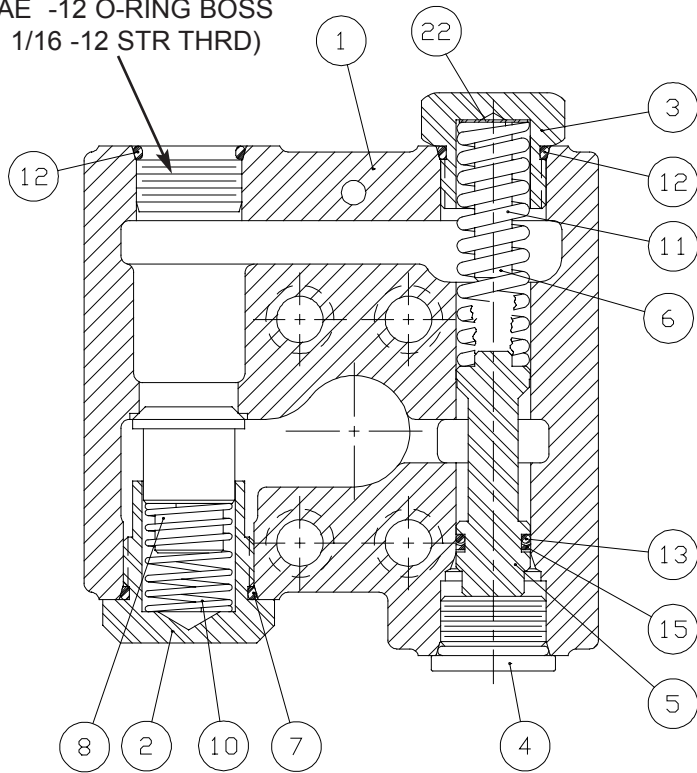
**MODEL H110VS
MOTOR GROUP
CATERPILLAR D8R SERIES II**



ITEM NO.	PART NO.	DESCRIPTION	QTY.
531	101323	HYD MOTOR, 3.34 CID / 3100 PSI	1
532	104328	CAPSCREW, 3/4 - 10 UNC X 1-3/4 G8	2
533	100856	WASHER, HARD (3/4)	2
534	21134	CAPSCREW, 7/16 - 14 UNC X 3 in. G8, HEX SOCKET	4
535	83206	BRAKE VALVE AS (REFER TO PAGE X)	1
536	25366	O-RING	3
540	22358	O-RING	1
541	29395	ADAPTER BLOCK	1
544	101267	ADAPTER, METRIC	1
547	101268	TEE	1
548	27430	ELBOW, 90°	1
549	101275	ADAPTER	1
550	101919	HOSE AS.	1
551	101271	HOSE AS.	1
553	101433	ELBOW, 45°	1
555	40064	SPACER	1
560	104202	CHECK VALVE	1
561	40107	ELBOW, 90°	2
562	26680	ELBOW, 90°	1
563	101270	HOSE AS.	1
564	104204	TEE	1
565	104203	HOSE AS.	1
566	101286	ELBOW, 45°	1
567	104205	HOSE AS.	1
568	104503	TEE	1
569	104207	BRACKET	1
570	21461	CAPSCREW, 1/4 - 20 UNC X 1-3/4 G8	2
571	69645	HEX NUT, 1/4 - 20 UNC	2
572	100857	WASHER, HARD (1/4)	2

**MODEL H110VS
BRAKE VALVE ASSEMBLY
CATERPILLAR D8R SERIES II**

SAE -12 O-RING BOSS
(1 1/16 -12 STR THRD)



BRAKE PORT
SAE -4 O-RING BOSS
(7/16 -20 STR THRD)

ASSEMBLY INSTRUCTIONS

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

ITEM NO.	PART NO.	DESCRIPTION	QTY.
-	82133	BRAKE VALVE AS.	1
1	NSS	BRAKE VALVE HOUSING	1
2	24424	VALVE SPRING RETAINER	1
3	104733	SPRING RETAINER	1
4	22450	PLUG	1
5	NSS	SPOOL	1
6	29993	SPOOL STOP	1
7	24186	O-RING	1
8	24423	CHECK VALVE POPPET	1
9	24200	PILOT ORIFICE	1
10	24190	CHECK VALVE SPRING	1
11	104732	SPRING, MAIN SPOOL	1
12	23601	O-RING	2
13	24193	O-RING	1
15	24195	BACK-UP RING	1
19	25663	PLUG	1
22	25661	SHIM, SPOOL SPRING	AR

NSS - NOT SERVICE SEPARATELY

AR - AS REQUIRED