GRADALL®

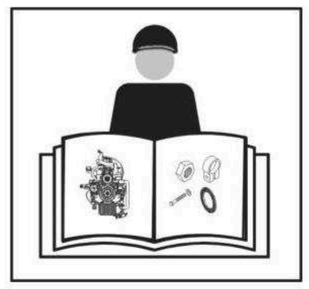
Illustrated Parts Manual

Models
522D
524D

S/N 0277001

P/N - 9138-4001

Revised July 6, 2007



MidWestTech | Gradall 522D, 524D Telehandler Parts Manual | Publication 9138-4001

Order the manual at mid-west-tech.com >

SECTION 1 — INTRODUCTION

Table of Contents ..... 1-1 thru 1-4
Alphabetical Index ..... 1-5 thru 1-8
Service Kits 1-9, 1-10
Part Number Index ..... 1-11 thru 1-26

SECTION 2 — CHASSIS & ATTACHING PARTS

Frame Shrouding & Trim 2-1
Open Cab 2-2
Rear Axle & Attaching Parts 2-3
Front Axle Mounting 2-4

SECTION 3 — BOOM

First Boom Section 3-1
Second Boom Section 3-2
Quick Switch 3-3

SECTION 4 — ATTACHMENTS

Carriage Assembly 4-1
Quick Switch Mounted Carriage Assembly 4-2
Buckets 4-3
Slope Piler Carriage 4-4

SECTION 5 — ENGINE & ATTACHING PARTS

Engine Left Side View (524D) 5-1
Engine Right Side View (524D) 5-2
Engine Pump Mount & Flywheel Housing (524D) 5-3
Engine Left Side View (522D) 5-4
Engine Right Side View (522D) 5-5
Engine Pump Mount & Flywheel Housing (522D) 5-6
Fuel Tank & Lines 5-7
Radiator & Hoses 5-8
Oil Cooler 5-8
Air Cleaner Piping 5-9
Air Cleaner 5-10
Exhaust System 5-11

* *Changed the final page number of the Part Number Index from 1-19 to 1-26.*

MidWestTech | Gradall 522D, 524D Telehandler Parts Manual | Publication 9138-4001 Order the manual at mid-west-tech.com >

SECTION 6 — DRIVE TRAIN

Front Axle Assembly 6-1
Front Axle Housing 6-2
Front Axle Differential Carrier 6-3
Brake Assembly 6-4
Front Axle Shaft & Planetary Wheel End 6-5
Rear Steering Axle Drive Hub 6-6
Rear Steering Axle Non-Drive Hub 6-7
Wheels & Tires 6-8

SECTION 7 — CONTROLS

Tilt & Sway 7-1
Accelerator Pedal Assembly 7-2
Steering Column - Forward Nuetral Reverse Shifter 7-3
Floorplate Components 7-4
Brake & Inching Linkage 7-5

SECTION 8 — BRAKES

Service Brake Lines. 8-1

SECTION 9 — HYDRAULIC CIRCUITS

Oil Supply & Pressure Lines 9-1
Dump Circuit 9-2
Drive Circuit (front) 9-3
Drive Circuit (rear) 9-4
Lift Cylinder 9-5
Crowd Cylinder 9-6
Tilt & Tilt Compensating Cylinder 9-7
Sway Cylinder 9-8
Steering Cylinder 9-9
Joystick Circuit 9-10

SECTION 10 — HYDRAULIC COMPONENTS

Lift Cylinder (Iowa) 10-1

MidWestTech | Gradall 522D, 524D Telehandler Parts Manual | Publication 9138-4001 Order the manual at mid-west-tech.com >

SECTION 10 — HYDRAULIC COMPONENTS (continued)

Crowd Cylinder 10-2
Tilt Cylinder (Iowa) 10-3
Compensating Cylinder (Iowa) 10-4
Sway Cylinder (Iowa) 10-5
Steering Cylinder (Iowa) 10-6
Main Hydraulic Control Valve 10-7
Rear Drive Motor 10-8
Priority Flow Control Valve 10-9
Flow Divider Valve 10-10
Brake Valve 10-11
Solenoid Valve 10-12
Sway Cylinder Valve 10-13
Inching Valve 10-14
Main Hydraulic Pump 10-15
Hydrostatic Transmission Pump 10-16
Front Drive Motor (524D) 10-17
Hydraulic Reservoir & Filters 10-18
Joystick Assembly 10-19
Traction Lock Valve 10-20
Quick Start Cylinder & Valve Assembly 10-21
* Front Drive Motor (522D) 10-22

SECTION 11 — ELECTRICAL

Dash Panel 11-1
Engine Wiring Harness 11-2
Dash Harness Assembly 11-3
Gauge Panel 11-4
Battery & Cables 11-5

SECTION 12 — MISCELLANEOUS

Frame Decals 12-1
Boom Decals 12-2

SECTION 13 — OPTIONAL EQUIPMENT

Inline Bypass 13-1

* *Renamed page 11-2 from Engine Wiring to Engine Wiring Harness.*

MidWestTech | Gradall 522D, 524D Telehandler Parts Manual | Publication 9138-4001 Order the manual at mid-west-tech.com >

ENGINE & ATTACHING PARTS

(9139-5001) EPA Engine Left Side View - 522D

Starting Serial No. 0277120
Original Issue 9-98
Revised 5-16-00

⚠ CAUTION

Pay close attention to Serial Number of machine when ordering Engine Filter Kits.

SERVICE NOTES:

1. **Use Loctite, P/N 1440-3364, on all bolt & fitting threads except pipe threads.**
2. **Use Loctite pipe sealant, P/N 1440-4082, on all pipe threads.**
3. **Add 12 qts. of oil, P/N 1440-3420, to crankcase.**

Part No.	Description Of Part
* 9137-5002	ENGINE FILTER KIT (includes all items) *(S.S.N. 0277120 thru 0277594)*
9020-6262	AIR FILTER
9108-3218	FUEL FILTER
7738-3303	FUEL FILTER
9108-4001	LUBE FILTER

Part No.	Description Of Part
* 9133-5033	ENGINE FILTER KIT, (includes all items) *(S.S.N. 0277595 thru Current)*
9108-4001	OIL FILTER ELEMENT
7738-3303	FUEL FILTER ELEMENT
9108-3218	FUEL FILTER
9140-3103	AIR FILTER SAFETY ELEMENT
9140-3102	AIR FILTER

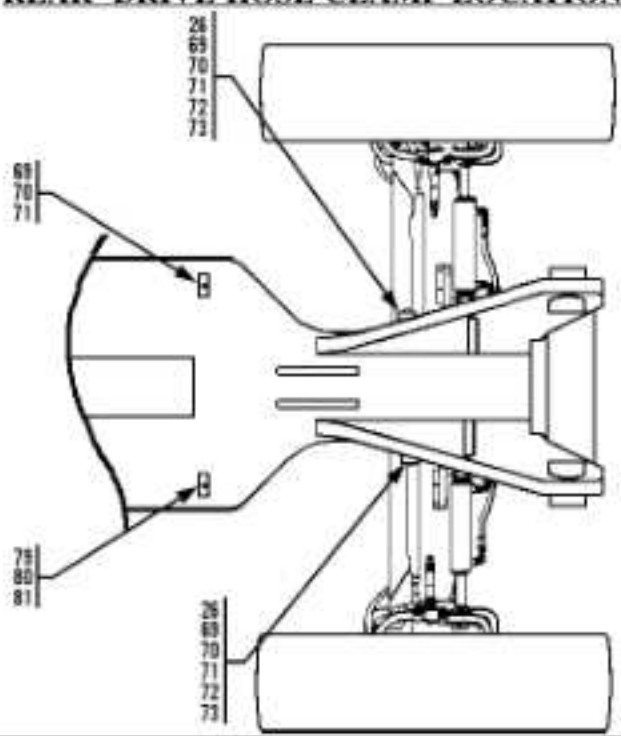
Item	Part No.	Qty.	Description Of Part
	9139-5001	Ref	ENGINE ASSY (includes all items on page 5-4 except items 50 thru 56, all items on page 5-5 except items 34, 35 & 36 and all items on page 5-6)
	9138-3001	1	CUMMINS ENGINE - B3.9C 80HP
1	9130-3056	1	FAN ASSY
2		132"	FUEL LINE HOSE, 5/16
3	8688-3106	4	HOSE CLAMP
4	8319-1010	12	LOCKWASHER, M12
5	9133-6004	2	REAR ENGINE MOUNTING BRACKET
6	8319-1032	8	HEX HD CAPSCREW, M12x1.75x35 (torque to 58-68 ft.lbs.)
7	9116-3260	1	ACCELERATOR CABLE
8	9002-7684	1	YOKE END
9	9116-6075	1	THROTTLE CABLE BRACKET
10	8319-1004	2	HEX HD CAPSCREW, M12x1.75x30
11	8471-4006	2	ORS CAP
12	9108-1388	1	TAPPED BAR
13	8688-3075	1	TUBE FITTING
14		18"	NYLON TUBE, 3/8"
15	9108-3106	1	O-RING
16	9114-3055	1	TUBE ASSY
17		16"	SPLIT FLEX LOOM, 1/2" I.D.
18	8471-2738	2	SPLIT FLANGE CLAMP
19	8320-1135	4	HEX HD CAPSCREW, 7/16-14x1-1/2", GR8
20	8855-1012	4	LOCKWASHER, 7/16
21	8688-3074	1	TUBE FITTING, 90 DEGREES
22	9116-3259	1	THROTTLE SPRING
23	9020-5792	1	CUSHION CLAMP
24	9002-7187	6	TY-RAP
25	9003-0271	1	HOSE NIPPLE
26	8698-3649	1	ELBOW, 90 DEGREES, 1/4 PIPE
27	9132-3022	1	SUCTION TUBE
28	8866-2090	1	ELBOW, 45 DEGREES, (includes o-ring)
	8859-1210	1	O-RING
29	8471-7934	1	HOSE ASSY
30	9132-3023	1	TUBE ASSY
31	8866-2010	1	CONNECTOR, (includes o-ring)
	8859-1209	1	O-RING
32	8471-7851	1	HOSE ASSY
33		Ref	MAIN PUMP (see page 10-15 for details)
34	8319-1057	2	HEX SOCKET HD CAPSCREW, M12x1.75x80
35	9002-7471	2	HARD WASHER
36	8319-1041	4	HEX HD CAPSCREW, M8x1.25x70
37	8856-1108	4	STANDARD WASHER, 5/16
38	9114-6101	1	DIP-STICK WELDMENT
39	9136-3029	1	ATOMIZER, 1/8
40	9136-5014	1	QUICK START THERMOSTAT ASSY, (includes the following four items)
	8096-3058	1	SHROUD
	8096-3065	2	CABLE SEAL, GREEN
	8096-3069	2	MALE PIN TERMINAL
	9136-3031	1	THERMOSTAT
41	8319-1038	1	HEX HD CAPSCREW, M10x1.50x20
42	9133-3013	1	WIRING HARNESS, ENGINE
43	9116-1323	1	THROTTLE BAR
44	8319-1035	2	SOCKET HD SCREW, M6x1.00x16
45	8319-1012	2	LOCKWASHER, M6
46	9114-3345	1	BALL SOCKET
47	9114-3344	1	OVER TRAVEL
48	2474-1047	1	PRESSURE SWITCH
49	9114-3315	1	OIL PRESSURE SENDER
50	9108-1158	2	SPECIAL WASHER
51	9133-3002	1	SHOCK MOUNT
52	9108-3338	1	HEX HD CAPSCREW, M16X2X120
53	7732-1274	2	HEX HD CAPSCREW, 7/8-9X5
54	9133-3003	2	SHOCK MOUNT
55	9133-1002	2	SPECIAL WASHER
56	8852-1214	2	LOCKNUT, 7/8-9
* 57	9112-4125	1	DIPSTICK
			NOTE: ONLY ITEMS WITH PART NUMBERS ARE AVAILABLE FOR SERVICE.

** Revised illustration; added item 57, Engine Filter Kit (9133-5033), caution note & S/N range to Engine Filter Kit (9137-5002)*

MidWestTech | Gradall 522D, 524D Telehandler Parts Manual | Publication 9138-4001 Order the manual at mid-west-tech.com >

Item	Part No.	Qty.	Description Of Part
1	8820-1035	4	HEX HD CAPSCREW, 3/8-16x1, GR5
2	8855-1011	8	LOCKWASHER, 3/8
3	8820-1036	4	HEX HD CAPSCREW, 3/8-16x1-1/4 GR5
4	9108-1201	4	TUBE CLAMP
5	9002-7470	4	HARDENED WASHER, 3/8
6	9108-3465	1	TUBE ASSY
7	9108-3466	1	TUBE ASSY
8	8471-9037	1	HOSE ASSY
9	8471-9069	1	HOSE ASSY
10	8859-1508	10	O-RING
11	9108-1522	1	R.H. TUBE SUPPORT
	9108-1523	1	L.H. TUBE SUPPORT
12	8850-1006	4	HEX NUT, 3/8-16
13	8471-7878	2	HOSE ASSY
14	9108-3191	1	TUBE ASSY
15	9112-3092	4	STUD
16	9002-7471	4	HARD WASHER
17	9108-3449	4	HEX NUT, 1/2-13
18	8866-2425	2	ELBOW, 45 DEGREES (includes item 19)
19	8859-1209	4	O-RING
20		Ref	REAR DRIVE MOTOR (see page 10-8 for details)
21	9108-5064	2	RESTRICTOR
22	8859-1207	6	O-RING
23	8866-2087	1	ELBOW, 45 DEGREES (includes item 22)
24	8866-2306	2	CONNECTOR (includes item 19)
25		12	NYLON TIE
26	8850-1005	2	HEX NUT, 5/16-18
27	9130-3049	2	HOSE SUPPORT (one each side)
28	8866-2421	2	ELBOW, 45 DEGREES (includes item 22)
29	8856-1108	4	FLAT WASHER, 5/16
30	8820-1018	2	HEX HD CAPSCREW, 5/16-18x3/4 GR5
31	9108-3464	1	TUBE ASSY
32	8471-9036	1	HOSE ASSY
33	8866-2008	2	CONNECTOR (includes item 22)
34	8866-2222	1	BRANCH TEE (includes item 60)
35	8471-9070	1	HOSE ASSY
36	9108-3463	1	TUBE ASSY
37	9108-3266	1	TUBE ASSY
38	9114-3055	1	TUBE ASSY
39	9020-5792	1	CUSHION CLAMP
40	8866-2105	1	ELBOW - 90 DEGREES (swivel nut)
41	8866-2239	2	SWIVEL NUT RUN TEE, 3/8 TUBE
42	9108-3222	1	REDUCING CONNECTOR (includes item 22)
43	9105-3020	2	TEST COUPLING
44	8471-7304	1	HOSE ASSY
45	7713-3447	1	HOSE ASSY
46	8320-1135	8	HEX HD CAPSCREW, 7/16-14x1-1/2
47	8855-1012	16	LOCKWASHER, 7/16
48	8471-2738	8	SPLIT FLANGE CLAMP
49	8320-1155	8	HEX HD CAPSCREW, 7/16-14x3/4
50	9108-3106	4	O-RING
51	9116-3201	1	TUBE ASSY
52		Ref	HYDROSTATIC TRANSMISSION (see page 10-16 for details)
53	8866-2242	1	SWIVEL NUT RUN TEE, 3/4 TUBE
54	8365-1133	1	REDUCER W/ ADAPTOR

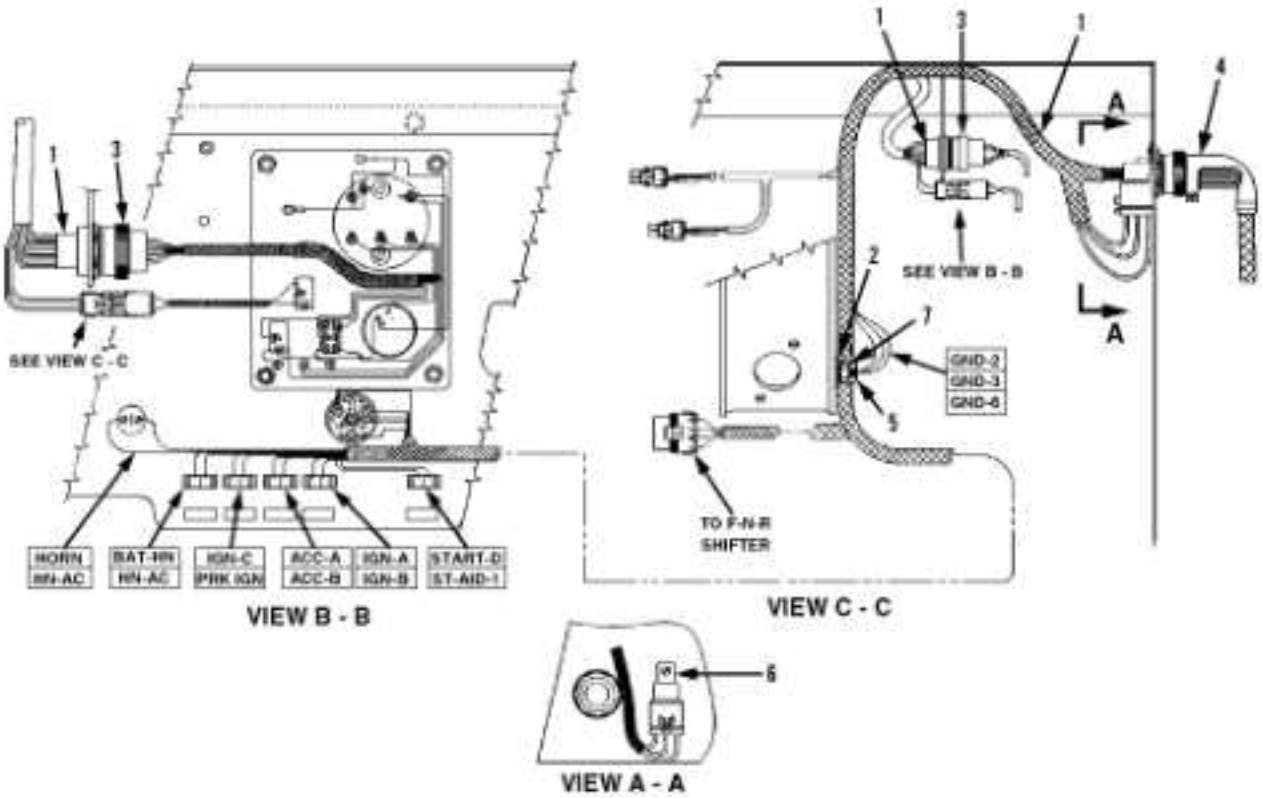
REAR DRIVE HOSE CLAMP LOCATIONS



Item	Part No.	Qty.	Description Of Part
55	9108-3306	1	CONNECTOR (includes item 56)
56	8859-1206	1	O-RING
57		Ref	TRACTION LOCK VALVE (see page 10-20 for details)
58	9116-3098	1	TUBE ASSY
59	8471-9142	1	HOSE ASSY
60	8859-1204	5	O-RING
61	8866-2005	1	CONNECTOR (includes item 60)
62	8866-2224	1	SWIVEL NUT BRANCH TEE, 3/8 TUBE
63	8471-8185	1	HOSE ASSY
64		Ref	SOLENOID VALVE (see page 10-12 for details)
65	8856-1001	2	FLAT WASHER, 3/16
66	8820-1008	2	HEX HD CAPSCREW, 1/4-20x1-3/4 GR5
67	8855-1009	2	LOCKWASHER, 1/4
68	8866-2017	1	CONNECTOR (includes item 60)
69	7713-3279	3	CLAMP SET
70	8820-1023	3	HEX HD CAPSCREW, 5/16-18x1-3/4 GR5
71	7713-3137	3	COVER PLATE
72	7713-3390	2	SAFETY CLIP
73	7713-3306	2	STACK BOLT
74	8093-3140	2	CLAMP SET
75	9002-3155	2	O-RING
76	9108-3194	1	TUBE ASSY
77	8866-2064	2	ELBOW, 90 DEGREES (includes item 60)
78	8471-7824	2	HOSE ASSY
79	7713-3053	1	CLAMP SET
80	7713-3052	1	COVER PLATE
81	7713-3209	2	HEX HD CAPSCREW, 1/4-20x1-3/8

MidWestTech | Gradall 522D, 524D Telehandler Parts Manual | Publication 9138-4001

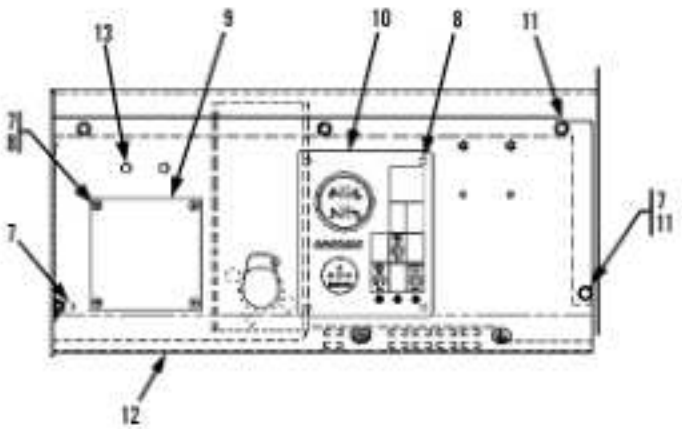
Order the manual at mid-west-tech.com >



VIEW B - B

VIEW C - C

VIEW A - A



Item	Part No.	Qty.	Description Of Part
1		Ref	DASH HARNESS ASSY (see page 11-3 for details)
2	8856-1003	1	FLAT WASHER, 1/2
3		Ref	GAUGE PANEL WIRING HARNESS (see page 11-4 for details)
4		Ref	ENGINE WIRING HARNESS (see page 11-2 for details)
5	2486-1170	1	CLAMP
6	8832-1029	1	SELF-TAPPING SCREW, #10-24x3/8

Item	Part No.	Qty.	Description Of Part
7	7714-3006	7	WHIZ-LOC NUT, 5/16-18
8	8826-1022	8	SOCKET BUTTON HD CAPSCREW, 5/16-18x3/4
9	9114-1480	1	COVER
10		Ref	GAUGE PANEL ASSY (see page 11-4 for details)
11	7714-3003	4	WHIZ-LOC SCREW, 5/16-18x5/8
12	9136-1008	1	DASH PANEL
13	9109-3031	2	NYLON HOLE PLUG

Order the manual at mid-west-tech.com >