SERVICE MANUAL

522D 534D-6
524D 534D-6T

9133-4002

July 2002

522D 524D Starting
S/N 0277001
534D-6 534D-6T
Starting S/N
0588001

CORPORATE OFFICE

JLG INDUSTRIES, INC.
1 JLG DRIVE
McConnellsburg, PA
17233-9533
USA
Telephone: (717) 485-5161
Fax: (717) 485-6417

GRADALL DIVISION

JLG INDUSTRIES, INC.
406 Mill Avenue S.W.
New Philadelphia, OH
44663
USA
Telephone: (330) 339-2211
Fax: (330) 339-8458

MidWestTech | Gradall 522D, 534D-6, 524D, 534D-6T Telehandler Service Manual | Publication 91334002

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

TABLE OF CONTENTS

System Schematic....Page 2
Representative Performance Data....Page 2
Description and Operation of Power Brake Valve....Pages 3, 4 & 5
External Dimensional Views....Page 5
Installation of Power Brake Valve....Page 5
Cross Sectional Views of Three Power Brake Valve Designs....Page 6
Specification Chart....Page 7
Primary Cup Design....Pages 8 & 9
Teflon Seal Design....Pages 10 & 11
Sliding Piston Design....Pages 12 & 13
Service Diagnosis....Page 14
Bleeding....Pages 14 & 15

SYSTEM SCHEMATIC (TYPICAL)

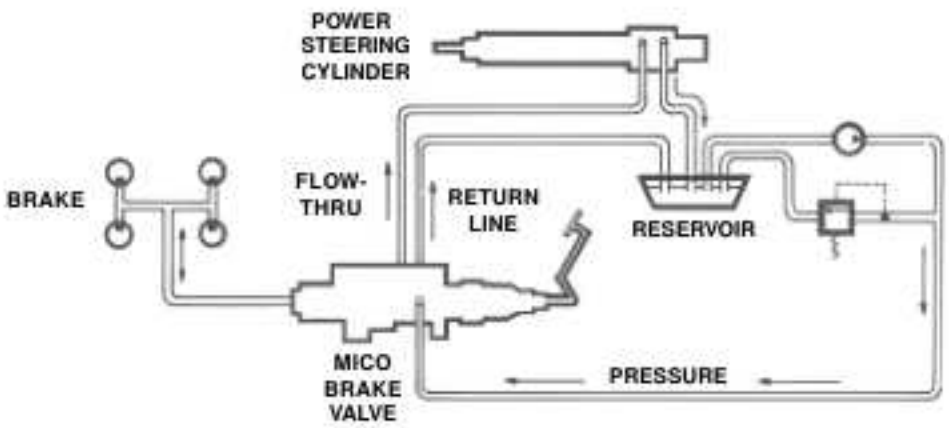


FIGURE 1

PERFORMANCE DATA (Typical)

Flow capacity....See Specification Chart (page 7)
System pressure....0 - 2000 psi
Brake line pressure....See Specification Chart (page 7)
Master cylinder, capacity....3.1 $in.^3$
Push rod travel with power....0.2" (approx.)
Push rod force with power.... 340 lbs. at 1500 psi brake line pressure
225 lbs. at 250 psi brake line pressure (Model 06-460-652 only)
Push rod travel without power....1.844" (approx.)
Push rod force without power....1500 lbs. at 725 psi
518 lbs. at 250 psi (Model 06-460-652 only)

NOTE: Brake system rubber parts (Buna-N) must be compatible with mineral based hydraulic oil.

MidWestTech | Gradall 522D, 534D-6, 524D, 534D-6T Telehandler Service Manual | Public... Order the manual at mid-west-tech.com >

MERITOR™

Table of Contents

Section 1: Introduction

Description 1
Identification

Section 2: Removal and Disassembly

Remove Axle 2
Disassemble Ball and Ramp Brake
Disassemble Trumpet Assembly 3
Disassemble Planetary System and Axle Shaft 4
Disassemble Hydraulic Apply Wet Disc Brake 5
Disassemble Three Function Wet Disc Brake
Disassemble Main Housing 7
Disassemble Differential Case 8
Disassemble Pinion Bearing Cage 10

Section 3: Prepare Parts for Assembly

Clean Ground and Polished Parts 13
Clean Parts With Rough Finish
Clean Axle Assemblies
Dry Cleaned Parts
Prevent Corrosion
Inspect Parts
Inspect Tapered Roller Bearings 14
Inspect Hypoid Pinion and Ring Gear Sets 15
Inspect Main Differential Assembly
Inspect Axle Shafts
Inspect Main Housing 16
Inspect Yoke
Inspect Planetary System Parts
Inspect Brakes
Repair or Replace Parts
Repair Welding
Liquid Adhesive 17
Disassemble Locked Sets
Cleaning
Reassembly
Application
Apply Silicone Gasket Material 18
Duo-Cone Oil Seal: Mount and Install

Section 4: Assembly and Installation

Assemble Differential Case 23
Check Rotating Resistance of Differential Gears (Not Limited Slip) 26
Assemble Drive Pinion and Bearing Cage 27
Adjust Pinion Bearing Preload (Without Press) 28
Adjust Thickness of Pinion Bearing Cage Shim Pack (Depth of Pinion) 29
Install Pinion Bearing Cage Assembly on Main Housing 31
Install Differential Housing Assembly into Main Housing (With Shims) 32
Install Differential Housing Assembly into Main Housing (With Adjusting Ring 2 Sides) 33
Assemble Axle Shaft 34
Assemble Trumpet Assembly 35

MidWestTech | Gradall 522D, 534D-6, 524D, 534D-6T Telehandler Service Manual | Public... Order the manual at mid-west-tech.com >

Table of Contents

Assemble Hydraulic Apply Brake Housing Assembly 38
Hydraulic Apply Brake Housing Functional Test
Assemble Three Function Brake Housing Assembly 39
Assemble Ball and Ramp Brakes, Brake Discs, Reaction Plate and Pins 42
Assemble Three Function Brake, Brake Discs, Reaction Plate and Pins 43
Install Housing Assembly into Main Housing
Assemble Three Function Brake Release Bolts and Sleeves 44
Assemble Ball and Ramp Brake Cylinder Assembly and Install on Main Housing

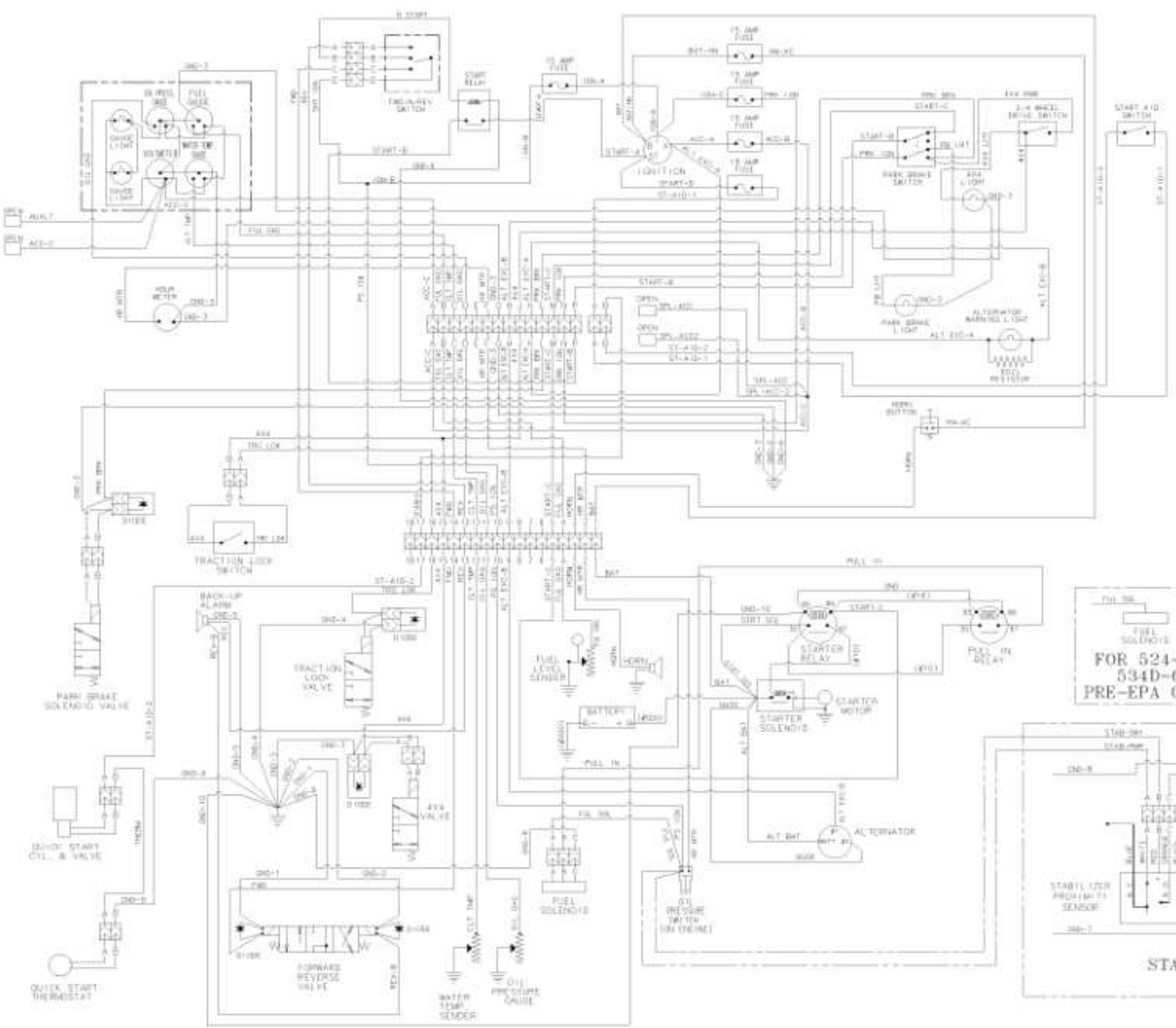
Section 5: Adjustments

Check Ring Gear Runout Specification: 0.008 in. (0.20 mm) 47
Adjust Pinion and Ring Gear Backlash Specification: 0.005 in-0.015 in (0.13 mm-0.38 mm)
Teeth Contact Patterns 48
Verification Procedure
Correct Contact Patterns 49
Incorrect Contact Patterns
High Contact Pattern
Deep Contact Pattern 50
Variations Along Length of Gear Teeth
Replace Lubricant 51

Section 6: Specifications

Oil Change Intervals and Specifications 52
Nut Lock Special Tool 53
Torque Charts
PROA 352/382 54
PRA 352 56
PROA 352 G2H/G2M 58

MidWestTech | Gradall 522D, 534D-6, 524D, 534D-6T Telehandler Service Manual | Public... Order the manual at mid-west-tech.com >



KEY		
WIRE DESIGNATION	WIRE COLOR/STRIPE	WIRE GAGE
ACC-A	ORANGE/TAN	16
ACC-B	ORANGE/BLUE	16
ACC-C	ORANGE/RED	16
ALT BAT	RED/WHITE	8
ALT EXC-A	VIOLET/RED	16
ALT EXC-B	VIOLET/RED	16
AUX_T	BLACK	16
BAT	RED	8
BAT-HN	RED	16
CLT TMP	BLUE/VIOLET	16
FUL GAG	BLUE/BLACK	16
FUL SOL	VIOLET	16
FMI	BROWN/WHITE	16
GND-1	BLACK	16
GND-2	BLACK	16
GND-3	BLACK	16
GND-4	BLACK	16
GND-5	BLACK	16
GND-6	BLACK	12
GND-7	BLACK	16
GND-8	BLACK	16
GND-9	BLACK	16
GND-10	BLACK	16
HN-AC	ORANGE/VIOLET	16
HORN	VIOLET/YELLOW	16
HR MTR	BLUE/RED	16
IGN-A	ORANGE/GRAY	16
IGN-B	ORANGE/LT. GREEN	16
IGN-C	ORANGE/DK. GREEN	16
N-START	BROWN/LT. GREEN	16
OIL GAG	BLUE/BROWN	16
PB LHT	BLACK	16
PRK BRK	VIOLET	16
PRK IGN	ORANGE/BLACK	16
PS IGN	ORANGE/YELLOW	16
PULL IN	VIOLET/WHITE	12
REV	BROWN/YELLOW	16
RES-B	BLUE	16
SHT IGN	ORANGE/BROWN	16
SNSR	RED/BLACK	16
SPL ACC	ORANGE	16
SPL ACC2	ORANGE/VIOLET	16
STAB PWR	ORANGE/LT. GREEN	16
STAB SW1	ORANGE/DK. GREEN	16
STAB SW2	VIOLET	16
START-A	VIOLET/BROWN	16
START-B	VIOLET/BROWN	16
START-C	VIOLET/BROWN	16
START-D	VIOLET/ORANGE	16
ST-AID-1	VIOLET/ORANGE	16
ST-AID-2	VIOLET/ORANGE	16
STRT SOL	RED/VIOLET	10
THERM	VIOLET/ORANGE	16
TRC LOK	BROWN/GRAY	16
4X4	BROWN	16
4X4 LHT	BLACK	16
4X4 PWR	BALCK	16

ELECTRICAL SCHEMATIC
524-D 534D-6 534D-6T 534D-9 534D-10

9134-9012

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