580N EP
Tier 4B (final)
Tractor Loader Backhoe

PIN NFC716000 and above

SERVICE MANUAL

Part number 47830957
1st edition English
October 2015

CASE CONSTRUCTION

MidWestTech | Case 580N EP Tier 4B Tractor Loader Backhoe Service Manual | Publication 47830957
Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1

[10.202] Air cleaners and lines 10.2

[10.206] Fuel filters 10.3

[10.216] Fuel tanks 10.4

[10.218] Fuel injection system 10.5

[10.304] Engine lubrication system 10.6

[10.400] Engine cooling system 10.7

[10.414] Fan and drive 10.8

[10.501] Exhaust Gas Recirculation (EGR) exhaust treatment 10.9

Transmission 21

[21.112] Power shuttle transmission 21.1

[21.134] Power shuttle transmission external controls 21.2

[21.154] Power shuttle transmission internal components 21.3

Front axle system 25

[25.100] Powered front axle 25.1

[25.102] Front bevel gear set and differential 25.2

[25.108] Final drive hub, steering knuckles, and shafts 25.3

[25.400] Non-powered front axle 25.4

Rear axle system 27

[27.100] Powered rear axle 27.1

[27.106] Rear bevel gear set and differential 27.2

[27.120] Planetary and final drives 27.3

Brakes and controls 33

[33.110] Parking brake or parking lock 33.1

MidWestTech | Case 580N EP Tier 4B Tractor Loader Backhoe Service Manual | Publi... Order the manual at mid-west-tech.com >

[33.202] Hydraulic service brakes 33.2

Hydraulic systems 35

[35.000] Hydraulic systems 35.1

[35.102] Pump control valves 35.2

[35.104] Fixed displacement pump 35.3

[35.106] Variable displacement pump 35.4

[35.204] Remote control valves 35.5

[35.300] Reservoir, cooler, and filters 35.6

[35.350] Safety and main relief valves 35.7

[35.359] Main control valve 35.8

[35.525] Auxiliary hydraulic valves and lines 35.9

[35.703] Stabilizer hydraulic system 35.10

[35.723] Front loader bucket hydraulic system 35.11

[35.726] Excavator and backhoe hydraulic controls 35.12

[35.736] Boom hydraulic system 35.13

[35.737] Dipper hydraulic system 35.14

[35.738] Excavator and backhoe bucket hydraulic system 35.15

[35.739] Swing arm hydraulic system 35.16

[35.740] Telescopic arm hydraulic system 35.17

Frames and ballasting 39

[39.100] Frame 39.1

[39.129] Stabilizers 39.2

Steering 41

[41.101] Steering control 41.1

[41.200] Hydraulic control components 41.2

[41.216] Cylinders 41.3

Wheels 44

[44.511] Front wheels 44.1

MidWestTech | Case 580N EP Tier 4B Tractor Loader Backhoe Service Manual | Publi... Order the manual at mid-west-tech.com >

[44.520] Rear wheels 44.2

Cab climate control 50

[50.200] Air conditioning 50.1

Electrical systems 55

[55.100] Harnesses and connectors 55.1

[55.301] Alternator 55.2

[55.302] Battery 55.3

[55.404] External lighting 55.4

[55.510] Cab or platform harnesses and connectors 55.5

[55.991] Telematics 55.6

[55.DTC] FAULT CODES 55.7

Front loader and bucket 82

[82.100] Arm 82.1

[82.300] Bucket 82.2

Booms, dippers, and buckets 84

[84.100] Bucket 84.1

[84.114] Boom pivoting support 84.2

[84.910] Boom 84.3

[84.912] Dipper arm 84.4

Platform, cab, bodywork, and decals 90

[90.105] Machine shields and guards 90.1

[90.114] Operator protections 90.2

[90.124] Pneumatically-adjusted operator seat 90.3

[90.150] Cab 90.4

[90.151] Cab interior 90.5

[90.154] Cab doors and hatches 90.6

MidWestTech | Case 580N EP Tier 4B Tractor Loader Backhoe Service Manual | Publi... Order the manual at mid-west-tech.com >

Power shuttle transmission - Pressure test 2 Wheel drive, test two engine at 2200 RPM

580N EP TWO-WHEEL DRIVE (2WD) TIER 4B (FINAL) Transmission - Power Shuttle

Test Port	Item	Specifications — 2 wheel Drive	Actual
1 and 2	Supply Pump Flow	62 to 70L/min at 1379 kPa 14 bar at 49° C (16.3 to 18.5 gpm at 200 psi at 120° F)	
1 and 2	Cold Oil By-Pass	3034 kPa to 3310 kPa 30.9 bar to 33.7 bar at 49° C (440 to 480 psi I at 120° F)	
7	Differential Lock Pressure (FNR must be in forward or reverse	1262 to 1317 kPa, 12.7 to 13.4 bar (183 to 191 psi)	
Forward			
10	Pump Supply Pressure	1586 to 1655 kPa 16.2 to 16.9 bar (230 to 240 kPa)	
4	Regulated Clutch Pressure	1276 to 13179 kPa 13.0 to 14.1 bar (185 to 200 psi)	
6	Torque Converter IN	827 to 965 kPa 8.4 to 9.8 bar (120 to 140 psi)	
8	Torque Converter OUT	434 to 455 kPa 4.4 to 4.6 bar (63 to 65 psi)	
9	Lubrication Pressure	290 to 303 kPa 3.0 to 3.1bar (42 to 44 psi)	
Neutral			
10	Pump Supply Pressure	862 to 965 kPa 8.8 to 9.8 bar (125 to 140psi)	
6	Torque Converter IN	724 to 862kPa 7.4 to 8.8 bar (105 to 125 psi)	
8	Torque Converter OUT	483 to 503 kPa 4.9 to 5.3 bar (70 to 73 psi)	
9	Lubrication Pressure	414 to 434 kPa 4.2 to 4.4 bar (60 to 63 psi)	
Reverse			
10	Pump Supply Pressure	1558 to 1627 kPa 15.9 to 16.6 psi (226 to 236 psi)	
5	Regulated Clutch Pressure	1276 to 1379 kPa 13.0 to 14.1 bar (185 to 200 psi)	
6	Torque Converted IN	827 to 965 kPa 8.4 to 9.8 bar (120 to 140 psi)	
8	Torque Converter OUT	393 to 414 kPa 4.0 to 4.2 bar (57 to 60 psi)	
9	Lubrication Pressure	241 to 255 kPa 2.5 to 2.6 bar (35 to 37 psi)	

MidWestTech | Case 580N EP Tier 4B Tractor Loader Backhoe Service Manual | Publi... Order the manual at mid-west-tech.com >

Connector Number	Connector Name	Schematic Frame
X-031	Horn	**Wiring harnesses - Electrical schematic sheet 19 Horn (55.100)**
X-032	Horn	**Wiring harnesses - Electrical schematic sheet 19 Horn (55.100)**
X-052	Ride Control Tank Solenoid	**Wiring harnesses - Electrical schematic sheet 20 Comfort steer / Ride control (55.100)**
X-053	Return-To-Dig (RTD) Solenoid	**Wiring harnesses - Electrical schematic sheet 07 Hydraulics (55.100)**
X-054	Interface to Pilot Control (X-455)	**Wiring harnesses - Electrical schematic sheet 03 Grounding (55.100)** **Wiring harnesses - Electrical schematic sheet 12 Instrument cluster (55.100)** **Wiring harnesses - Electrical schematic sheet 19 Horn (55.100)** **Wiring harnesses - Electrical schematic sheet 22 Pilot control inputs (55.100)** **Wiring harnesses - Electrical schematic sheet 23 Combo / Aux / Uni hydraulics (55.100)**
X-055	Backup Alarm	**Wiring harnesses - Electrical schematic sheet 06 Drives (55.100)**
X-056	Ride Control Accumulator Solenoid	**Wiring harnesses - Electrical schematic sheet 20 Comfort steer / Ride control (55.100)**
X-057	SAHR Brake Solenoid	**Wiring harnesses - Electrical schematic sheet 14 SAHR park brake (55.100)**
X-058	Comfort Steer	**Wiring harnesses - Electrical schematic sheet 20 Comfort steer / Ride control (55.100)**
X-059	Backhoe Quick Coupler Solenoid	**Wiring harnesses - Electrical schematic sheet 07 Hydraulics (55.100)**
X-060	Loader Quick Coupler Solenoid	**Wiring harnesses - Electrical schematic sheet 07 Hydraulics (55.100)**

MidWestTech | Case 580N EP Tier 4B Tractor Loader Backhoe Service Manual | Publication 47830957
Order the manual at mid-west-tech.com >

9010-A/D fault hand throttle, internal error

Cause:

1. Faulty instrument cluster.

Solution:

1. Verify that the fault code is active.

   Connect the Electronic Service Tool to the service tool connector.

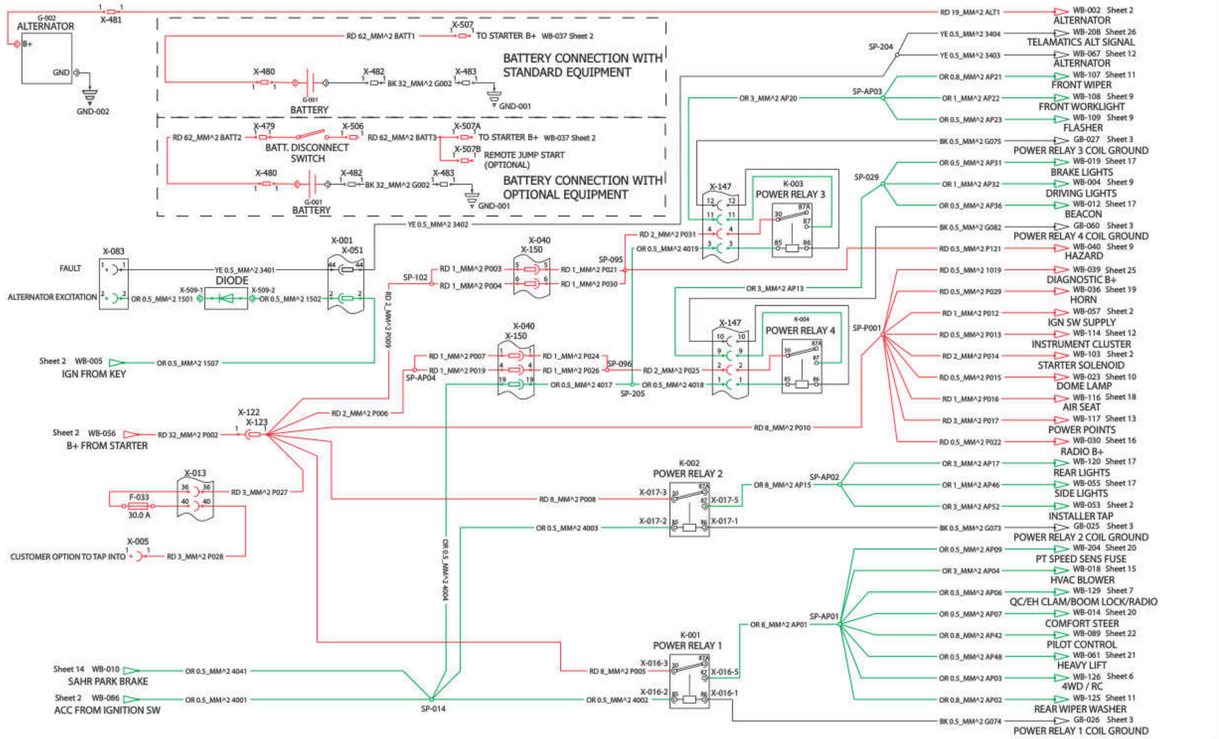
   To check for fault code: Start and operate machine.

   A. Fault is not recorded again. OK to return the machine to service.

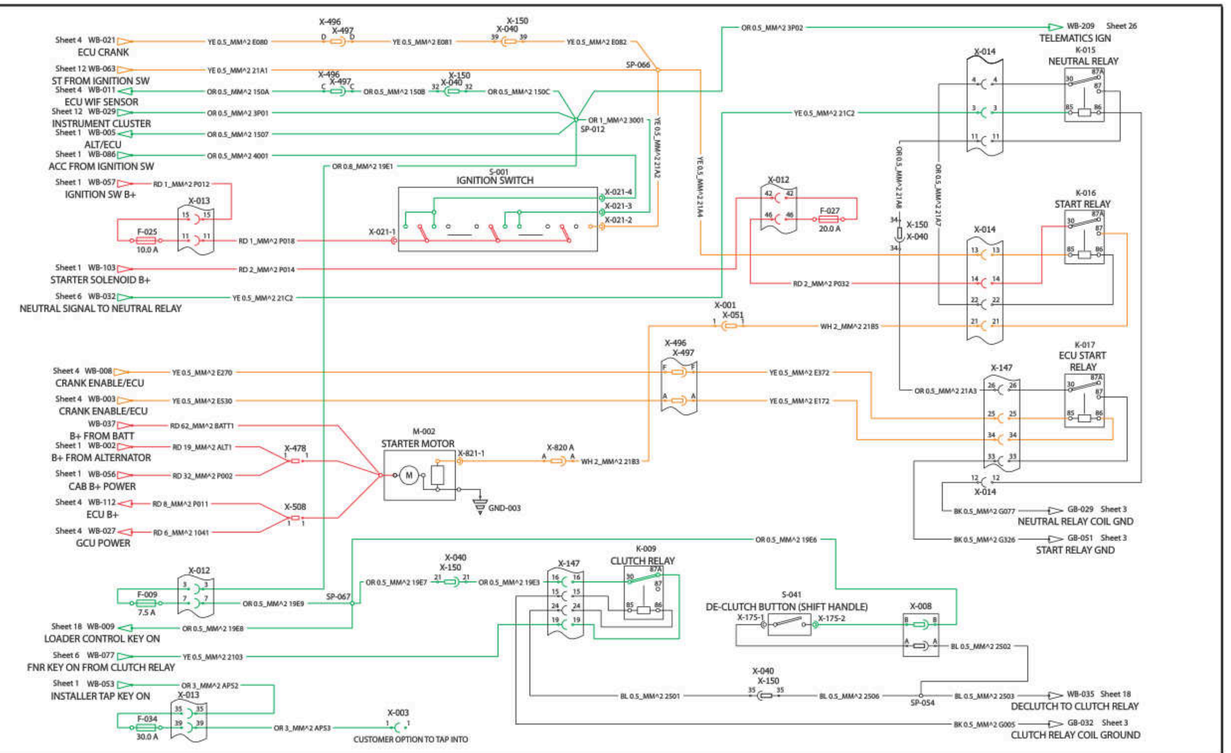
   B. Fault code **9010 - A/D fault hand throttle, internal error** is recorded again. Go to step **2**.
2. Replace instrument cluster.

   A. Return to step **1** to confirm elimination of fault.

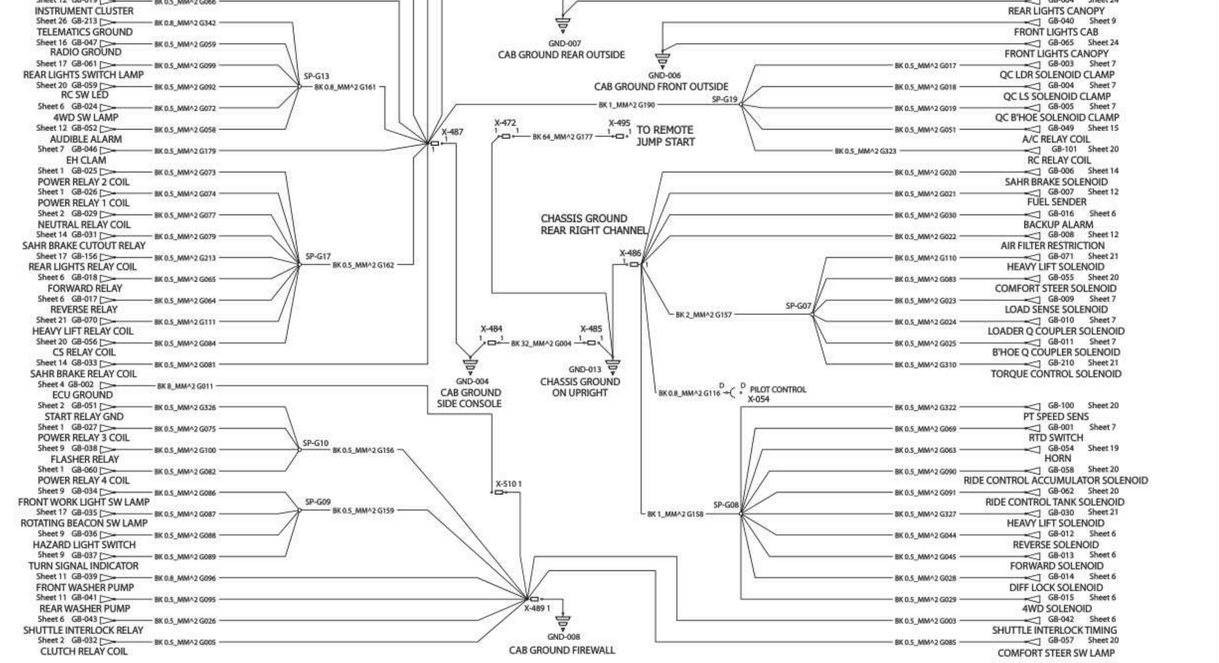
MidWestTech | Case 580N EP Tier 4B Tractor Loader Backhoe Service Manual | Publi... Order the manual at mid-west-tech.com >



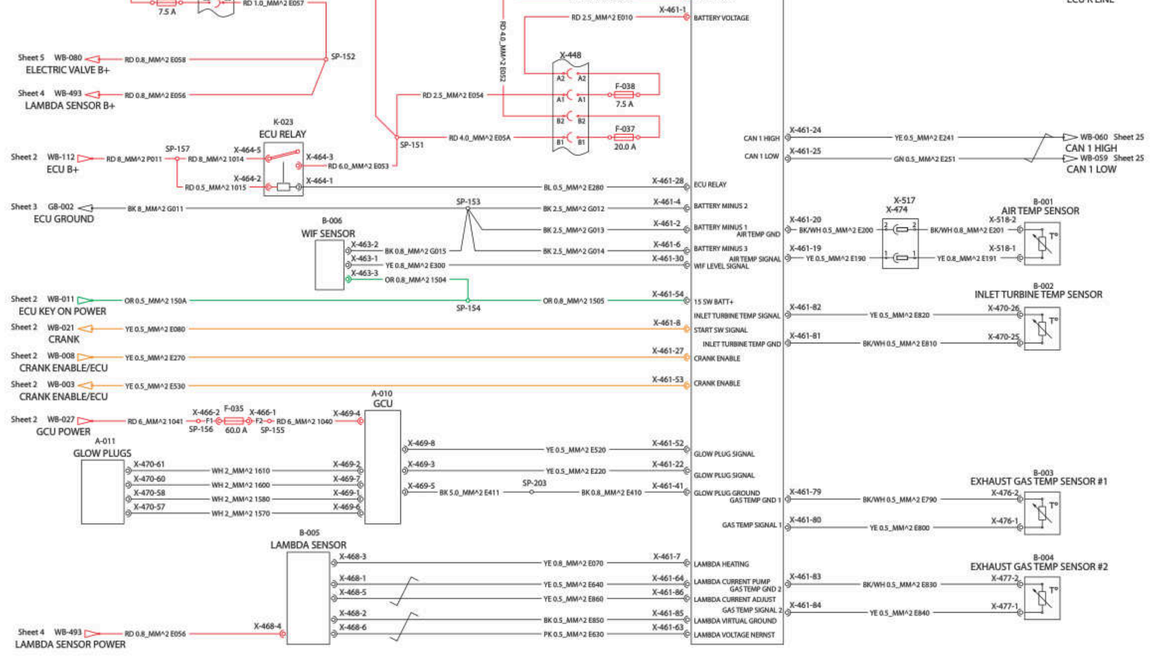
POWER DISTRIBUTION - CHARGING 1



STARTING SYSTEM 2



GROUNDING 3



ENGINE CONTROL 4

SHEET	DESCRIPTION	SHEET	DESCRIPTION	SHEET	DESCRIPTION
1	POWER DISTRIBUTION - CHARGING	10	INTERIOR LIGHTS	19	HORN
2	STARTING SYSTEM	11	WIPERS AND WASHERS	20	COMFORT STEER - RIDE CONTROL
3	GROUNDING	12	INSTRUMENT CLUSTER	21	HYDRAULIC OPTIONS
4	ENGINE CONTROL	13	POWER POINTS	22	PILOT CONTROL INPUTS
5	ENGINE CONTROL	14	SAHR PARK BRAKE	23	COMBO-AUX-UNI HYDRAULICS
6	DRIVES	15	HVAC	24	CANOPY EXTERIOR LIGHTS
7	HYDRAULICS	16	AUDIO	25	CAN BUS - DIAGNOSTIC
8	PILOT CONTROLS	17	REAR LIGHTS EXTERIOR	26	TELEMATICS
9	FRONT EXTERIOR LIGHTS	18	OPTIONS	27	2WD RIDE CONTROL JUMPER

LEGEND

- INDICATES CONSTANT POWER 12V
- INDICATES POWER WHEN KEY SWITCH IS ON
- INDICATES POWER WHEN KEY SWITCH IS IN START POSITION
- INDICATES 5V SECONDARY POWER SUPPLY FROM MODULE

COLOR ABBREVIATIONS

ABBREVIATION	COLOR
BK	BLACK
BK\WH	BLACK\WHITE
BL	BLUE
BR	BROWN
GN	GREEN
GY	GRAY
LB	LIGHT BLUE
LG	LIGHT GREEN
OR	ORANGE
PK	PINK
RD	RED
TN	TAN
VT	VIOLET
WH	WHITE
YE	YELLOW

TRACTOR LOADER BACKHOE 55 kW 580N EP TIER 4B FINAL ELECTRICAL SCHEMATIC

SHEET 1 SIDE 1

Additional copies of this schematic can be ordered through Technical Publications Distribution System. Part # RAC 47736519

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