Rowtrac™ 350 / 400 / 450 / 500
Steiger® 350 / 400 / 450 / 500 / 550 / 600
Quadtrac® 450 / 500 / 550 / 600
Tier 4
Tractor

SERVICE MANUAL

Part number 47488212
English
February 2013
Replaces part number 84354095

CASE IH AGRICULTURE

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tractor Service Manual | Publication 47488212
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

[10.400] Engine cooling system 10.3

[10.414] Fan and drive 10.4

[10.500] Selective Catalytic Reduction (SCR) exhaust treatment 10.5

Transmission 21

[21.113] Powershift transmission 21.1

[21.135] Powershift transmission external controls 21.2

[21.145] Gearbox internal components 21.3

[21.155] Powershift transmission internal components 21.4

Front axle system 25

[25.100] Powered front axle 25.1

[25.102] Front bevel gear set and differential 25.2

[25.310] Final drives 25.3

[25.500] Front axle track yoke assembly 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

[27.610] Rear axle track yoke assembly 27.4

Power Take-Off (PTO) 31

[31.104] Rear electro-hydraulic control 31.1

[31.110] One-speed rear Power Take-Off (PTO) 31.2

[31.220] Gearbox 31.3

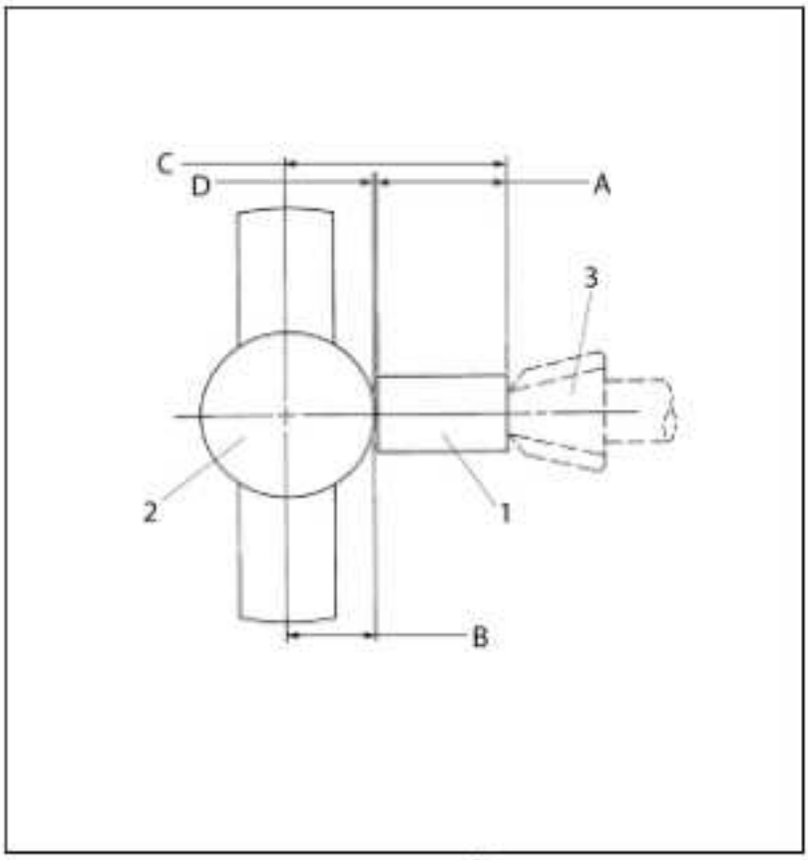
MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tr... Order the manual at mid-west-tech.com >

Brakes and controls 33
[33.110] Parking brake or parking lock 33.1
[33.202] Hydraulic service brakes 33.2
Hydraulic systems 35
[35.000] Hydraulic systems 35.1
[35.102] Pump control valves 35.2
[35.105] Charge pump 35.3
[35.106] Variable displacement pump 35.4
[35.204] Remote control valves 35.5
[35.220] Auxiliary hydraulic pump and lines 35.6
[35.300] Reservoir, cooler, and filters 35.7
[35.304] Combination pump units 35.8
[35.600] High flow hydraulics 35.9
Hitches, drawbars, and implement couplings 37
[37.100] Drawbars and towing hitches 37.1
Frames and ballasting 39
[39.100] Frame 39.1
[39.110] Drawbar and hitch assembly 39.2
Steering 41
[41.101] Steering control 41.1
[41.200] Hydraulic control components 41.2
[41.206] Pump 41.3
Wheels 44
[44.511] Front wheels 44.1
[44.520] Rear wheels 44.2
Tracks and track suspension 48
[48.100] Tracks 48.1
[48.130] Track frame and driving wheels 48.2

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tr... Order the manual at mid-west-tech.com >

[48.134] Track tension units 48.3
[48.138] Track rollers 48.4
Cab climate control 50
[50.104] Ventilation 50.1
[50.200] Air conditioning 50.2
[50.300] Cab pressurizing system 50.3
Electrical systems 55
[55.010] Fuel injection system 55.1
[55.014] Engine intake and exhaust system 55.2
[55.024] Transmission control system 55.3
[55.035] Remote control valve electric control 55.4
[55.045] Front axle control system 55.5
[55.046] Rear axle control system 55.6
[55.048] Rear Power Take-Off (PTO) control system 55.7
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system 55.8
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls 55.9
[55.100] Harnesses and connectors 55.10
[55.130] Rear three-point hitch electronic control system 55.11
[55.301] Alternator 55.12
[55.302] Battery 55.13
[55.404] External lighting 55.14
[55.522] Cab Power Take-Off (PTO) controls 55.15
[55.640] Electronic modules 55.16
[55.988] Selective Catalytic Reduction (SCR) electrical system 55.17
[55.DTC] FAULT CODES 55.18
Platform, cab, bodywork, and decals 90
[90.100] Engine hood and panels 90.1
[90.102] Engine shields, hood latches, and trims 90.2

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tr... Order the manual at mid-west-tech.com >



RGPH15FWD123FBJ SB

(1) CAS2506 pinion depth gauge arbor, (2) CAS1675-2 pinion depth gauge block, (3) pinion

Item	Metric Value	U.S. Value
A	97.99 mm	3.858 in
B	75.82 mm	2.985 in
C	174.25 mm	6.860 in
D Gap measurement	.44 mm	0.017 in

Example:

Item	Metric Value	U.S. Value
Tool constant dimension (A = B)	173.81 mm	6.840 in
Gap measurement (D)	.44 mm	0.017 in
Total measured distance (A + B + D = C)	174.25 mm	6.860 in
Standard nominal pinion depth	174.81 mm	6.882 in
Reading on the pinion	-0.07 mm	0.005 in
Actual nominal pinion depth	174.74 mm	6.880 in
Minus total measured distance	174.25 mm	6.860 in
Shim requirement	0.49 mm	0.019 in

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tr... Order the manual at mid-west-tech.com >

Wire harnesses - Electrical schematic frame 07 - Fuses 57-65

Steiger 350 NA, Steiger 400 NA, Steiger 450 NA, Steiger 450 QT NA, Steiger 500 NA, Steiger 500 QT NA, Steiger 550 NA, Steiger 550 QT NA, Steiger 600 NA, Steiger 600 QT NA, Rowtrac 350 [ZDF100001 -] NA, Rowtrac 400 [ZDF100001 -] NA, Rowtrac 450 [ZDF100001 -] NA, Rowtrac 500 [ZDF100001 -] NA

Item	Description
1	Cab fuse/relay module 6
2	HVAC control module
3	Radar
4	Instrument Control Unit (ICU) controller
5	Armrest Control Module (ACM) controller
6	FNRP lever
7	Autoguidance/steering interface
8	Electronic hydraulic remotes 1 – 8
9	Dipping switch
10	GPS antenna
11	Open
12	Key switched B+

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tractor Service Manual | Publication 47488212

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

B. Expected reading not found. Locate and repair the open circuit in signal wire 336 between pin C at the sensor and pin 14 of connectorC065 at tractor control unit (TCU). Clear all fault codes, and return unit to field operation.

6. Problem may be intermittent. Repeat Steps 3 through 5 while a second person carefully bends and twists the harness between the sensor and the transmission controller.

   Locate and repair any open circuit found on the tested circuit.

   A. Fault code re-displays. Submit a concern to ASIST.

   B. Fault code does not display. Clear all fault codes, and return unit to field operation.

7. Install a pressure gauge into the "M" port at the bottom of the transmission control valve. Start the engine and check transmission pressure at **1400 RPM** . The expected reading is greater than **19.3 bar** (**280 psi**).

   A. Reading is as expected, problem may be in pressure sensor circuit wiring, go to Step **2**.

   B. Reading is not as expected, low transmission pressure is confirmed, go to Step **8**.

8. Check for contamination, or broken spring in main pressure regulation portion of regulator valve. Remove the pilot valve assembly as one piece. Remove the filter screen, housing, spring and main pressure spool.

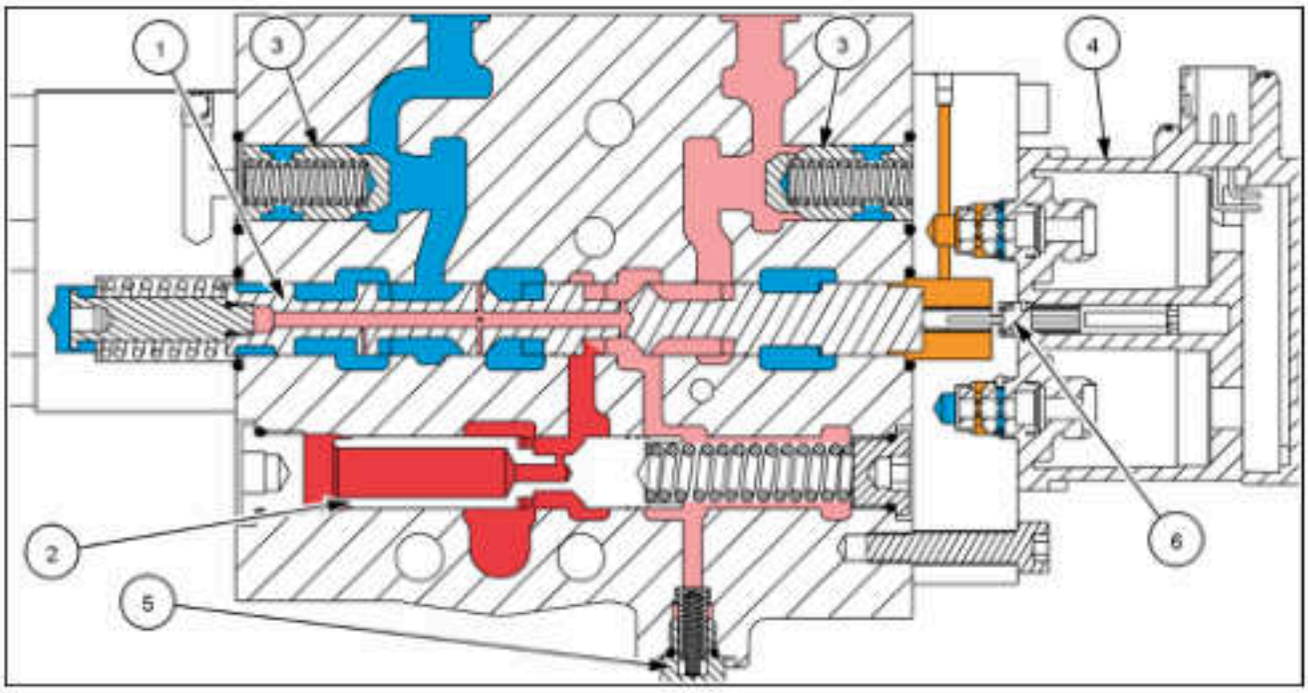
   Disassemble the pilot assembly and clean with solvent. Clean the filter screen and main pressure spool. Use great care to keep these parts absolutely clean.
   Reassemble the pilot valve assembly. Install the clean parts back into regulator valve and repeat transmission pressure check.

   A. The transmission pressure is still below **19.3 bar** (**280 psi**). Flow check the transmission pump. See service manual for procedure.

   B. Transmission pressure is greater than **19.3 bar** (**280 psi**), erase fault code and return to field operation.

Wire harnesses - Electrical schematic frame 26 (55.100.DP-C.20.E.26)
Wire harnesses - Electrical schematic frame 26 (55.100.DP-C.20.E.26)
Wire harnesses - Electrical schematic frame 28 (55.100.DP-C.20.E.28)
Wire harnesses - Electrical schematic frame 28 (55.100.DP-C.20.E.28)
Wire harnesses - Electrical schematic frame 26 (55.100.DP-C.20.E.26)
Wire harnesses - Electrical schematic frame 28 (55.100.DP-C.20.E.28)

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tr... Order the manual at mid-west-tech.com >



RCIL08CCH015GAE 6

PFC pump pressure	Return to tank pressure
Remote valve operating pressure	Trapped oil
Pilot pressure	
1. Main valve spool	4. Extend/retract solenoid valve assembly with micro processor
2. Flow control spool	5. Signal check
3. Lock check	6. Spool position sensor

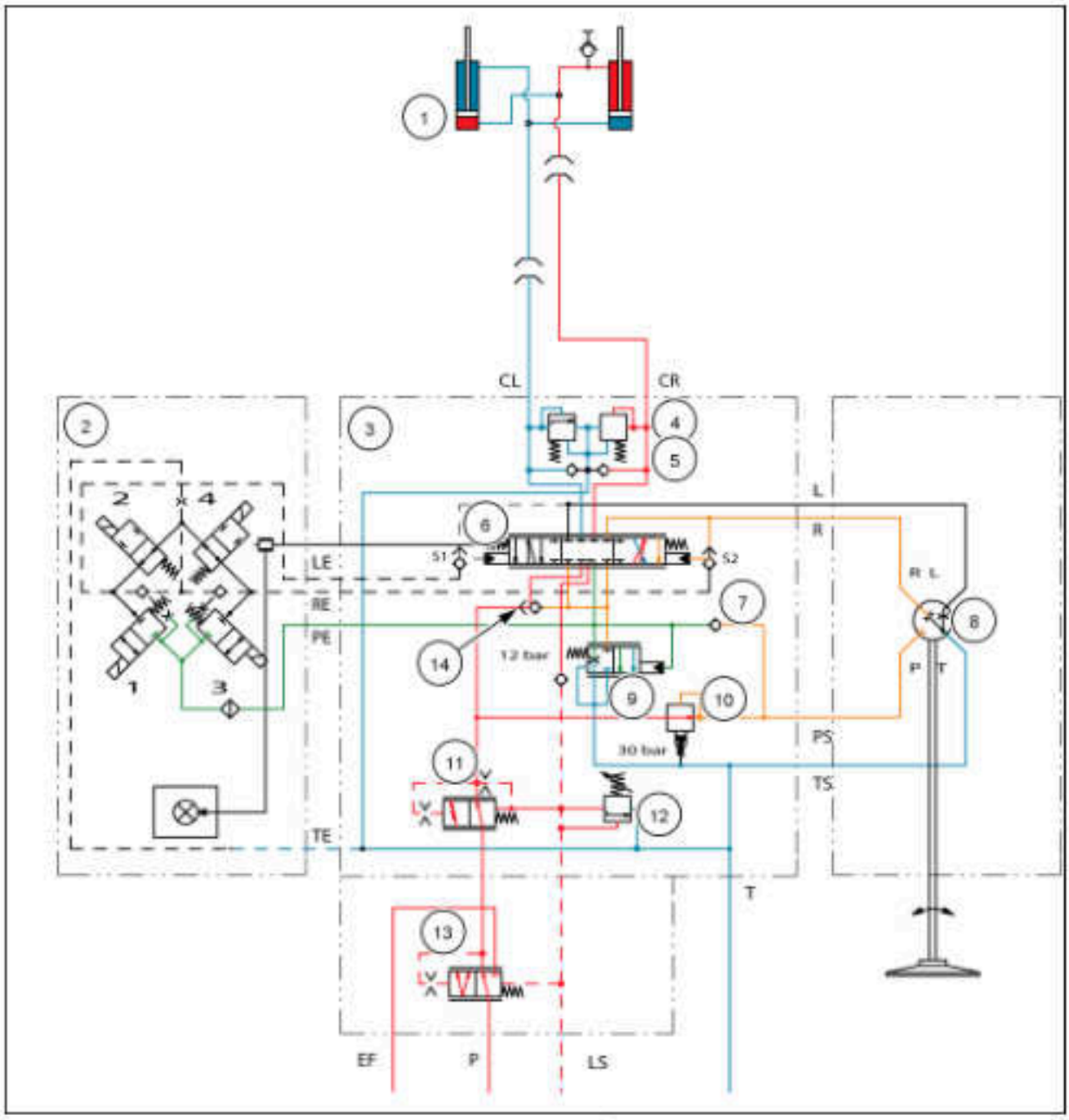
Retract position

When the remote control lever is moved to the retract position, the main valve spool shifts to the right a fixed distance by supply pressure from the retract solenoid valve. The main spool position is based on input from armrest controller, spool position sensor and the extend/retract valve solenoid assembly with micro processor. The position of the main valve spool determines the flow rate to the retract port.

At the same time, work pressure is communicated to the signal check through the center drilled passage in the main valve spool. The signal check is forced off the seat and signal pressure is directed to the pump compensator to increase pump flow.

Also as the main spool begins to shift, any pressure trapped on the spring end of both lock checks is drained to tank. The flow exiting the retract port is now in a free flow condition shifting the lock check and out the retract port: Return oil from the extend coupler is directed into the extend port, shifting lock check to right, continuing past the spool and returning to tank.

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tr... Order the manual at mid-west-tech.com >



RCPH19FWD015HAG 4

Engine running, turning right

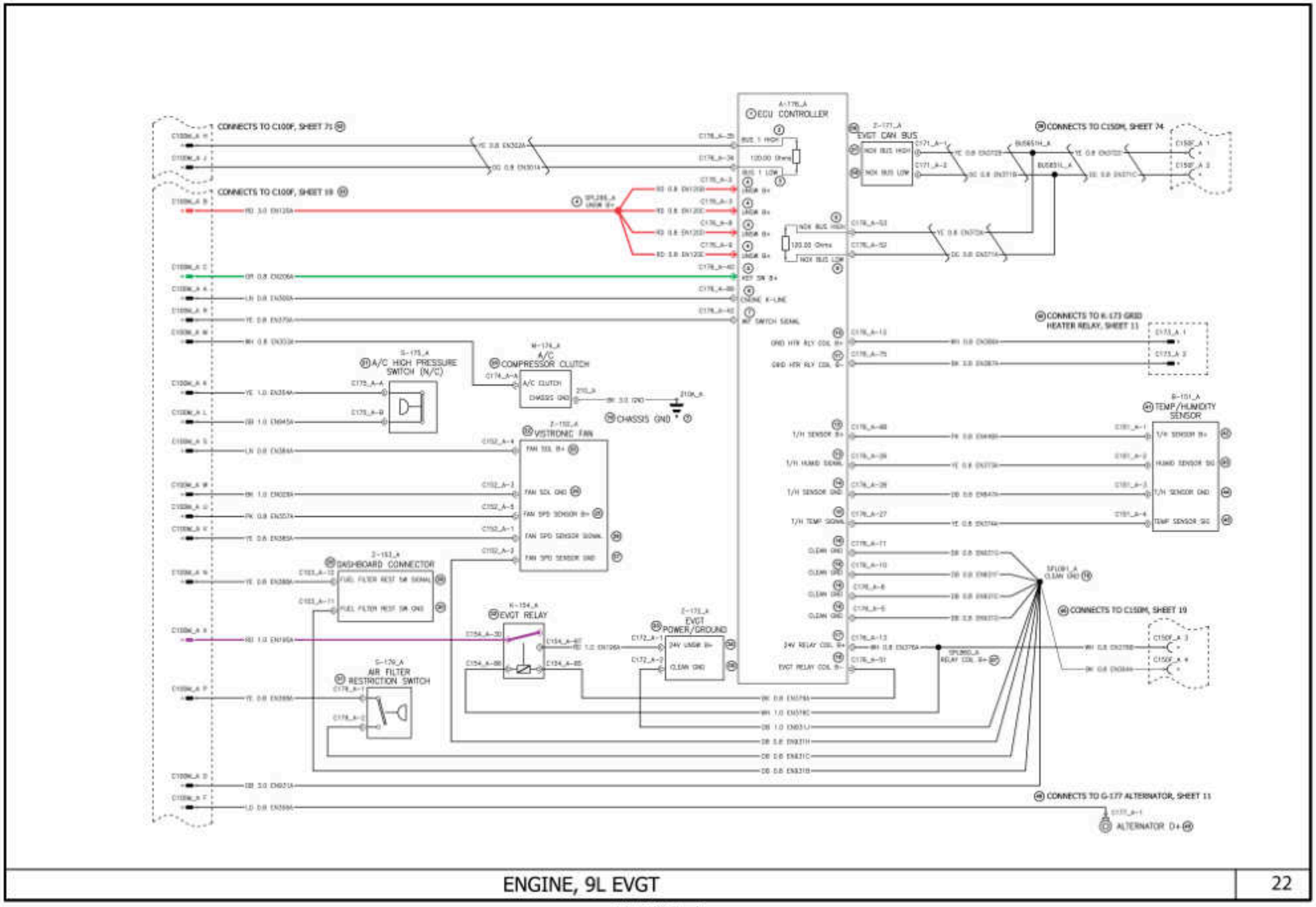
Pressure/flow compensating supply pressure

Steering hand pump **30 bar** (**435 psi**) supply

Electrical actuation module (PVE) **12 bar** (**174 psi**) supply

Return to tank

MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tr... Order the manual at mid-west-tech.com >



MidWestTech | Case Rowtrac, Steiger, Quadtrac 350, 400, 450, 500, 550, 600 Tier 4 Tractor Service Manual | Publication 47488212

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