SERVICE MANUAL

L230
Tier 4B (final)
200 Series Skid Steer Loader

PIN NFM483191 and above

C238
Tier 4B (final)
200 Series Compact Track Loader

PIN NFM470756 and above

Part number 47685160
1st edition English
June 2015

NEW HOLLAND CONSTRUCTION

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SERVICE MANUAL
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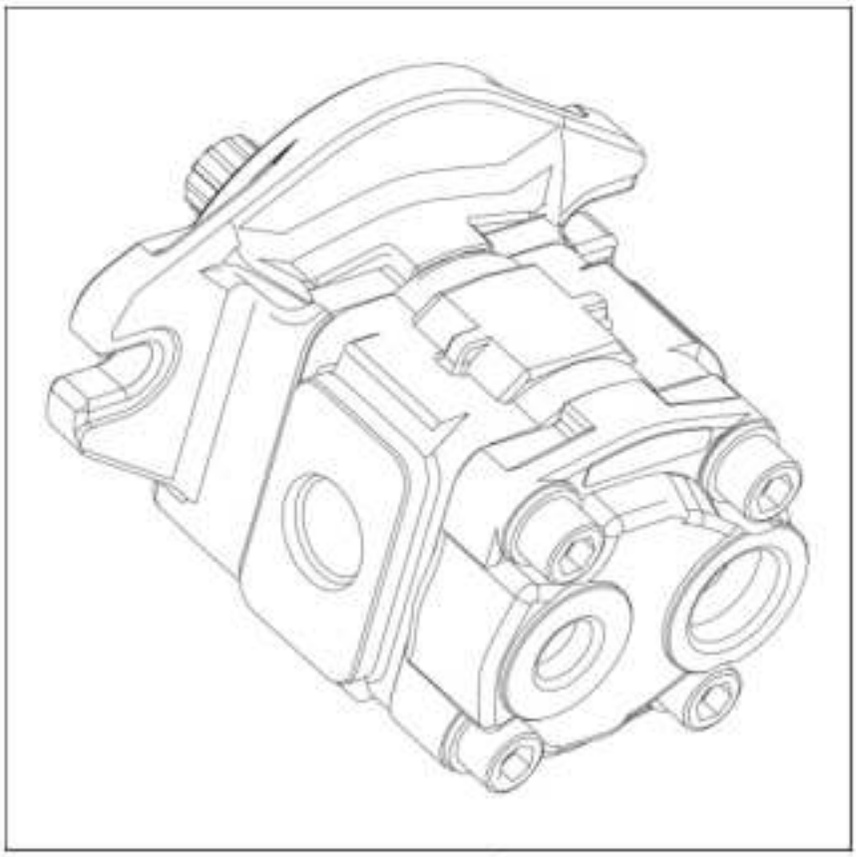
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ENGINE SERVICE MANUAL (sold separately) **47730922**

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Fixed displacement pump - General specification

C238 TIER 4B (FINAL) [NFM470756 -]	NA
L230 TIER 4B (FINAL) [NFM483191 -]	NA



RAPH145SL0002GA 1

Fixed displacement pump

Type	Gear pump
Pump displacement	**36.6 cm³ (2.23 in³)**
Engine RPM	**2475 RPM**
Pump flow at RPM	**92.3 l/min (24.4 US gpm)**
High flow pump displacement (if applicable)	**13.7 cm³ (0.84 in³)**
Combined pump flow at RPM (if applicable)	**143.8 l/min (38.0 US gpm)**

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Wiring harnesses - Electrical schematic sheet 28 Diagnostic Connector

C238 TIER 4B (FINAL) [NFM470756 -]	NA Mechanical hydraulic controls
L230 TIER 4B (FINAL) [NFM483191 -]	NA Mechanical hydraulic controls

Type	Component	Connector / Link	Description
Connector	X-DIAG	X-DIAG	CAN DIAGNOSTIC CONNECTOR

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5282-Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply Shorted To Ground

C238 TIER 4B (FINAL) [NFM470756 -]	NA Electro hydraulic controls
L230 TIER 4B (FINAL) [NFM483191 -]	NA Electro hydraulic controls

Context:
The UCM has sensed that the proportional auxiliary extend solenoid current is too high. Diagnostic Trouble Code **5282 - Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply Shorted To Ground** has an error priority of White.
Auxiliary hydraulic functions are disabled while Diagnostic Trouble Code **5282 - Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply Shorted To Ground** is active.

Cause:
The UCM has sensed that the proportional auxiliary extend solenoid current is too high. The fault is active when the hydraulics are enabled and the solenoid output current, **X-CN1B (Female) pin 33** is greater than **3 A**.

Possible failure modes:

1. A short circuit in the solenoid wiring.
2. A failure of the proportional auxiliary extend solenoid.
3. The UCM has an internal failure.

Solution:

1. Verify that the fault code is active.

   Connect the Electronic Service Tool to the service tool connector.

   To check for fault codes: Start and operate the machine.

   A. The fault code is not recorded again. OK to return the machine to service.

   B. Fault code **5282 - Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply Shorted To Ground** is recorded again. Go to step **2**.

2. Verify that the wiring and connectors are free of damage.

   Inspect the UCM and the proportional auxiliary solenoid connections. All connections should be secure, tight, free of corrosion, abrasion and damage.

   Inspect the harness from the UCM to the proportional auxiliary solenoids. Verify that the harness is free of damage, corrosion, abrasion and incorrect attachment.

   A. The connectors are secure and the harness is free of damage. Go to step **3**.

   B. The connectors or the harness has damage. Repair or replace the harness or the connectors as required. Return to step **1** to confirm elimination of fault.

3. Test the UCM.

   Turn the ignition switch OFF.

   Disconnect solenoid connector **X-24 (Female)** .

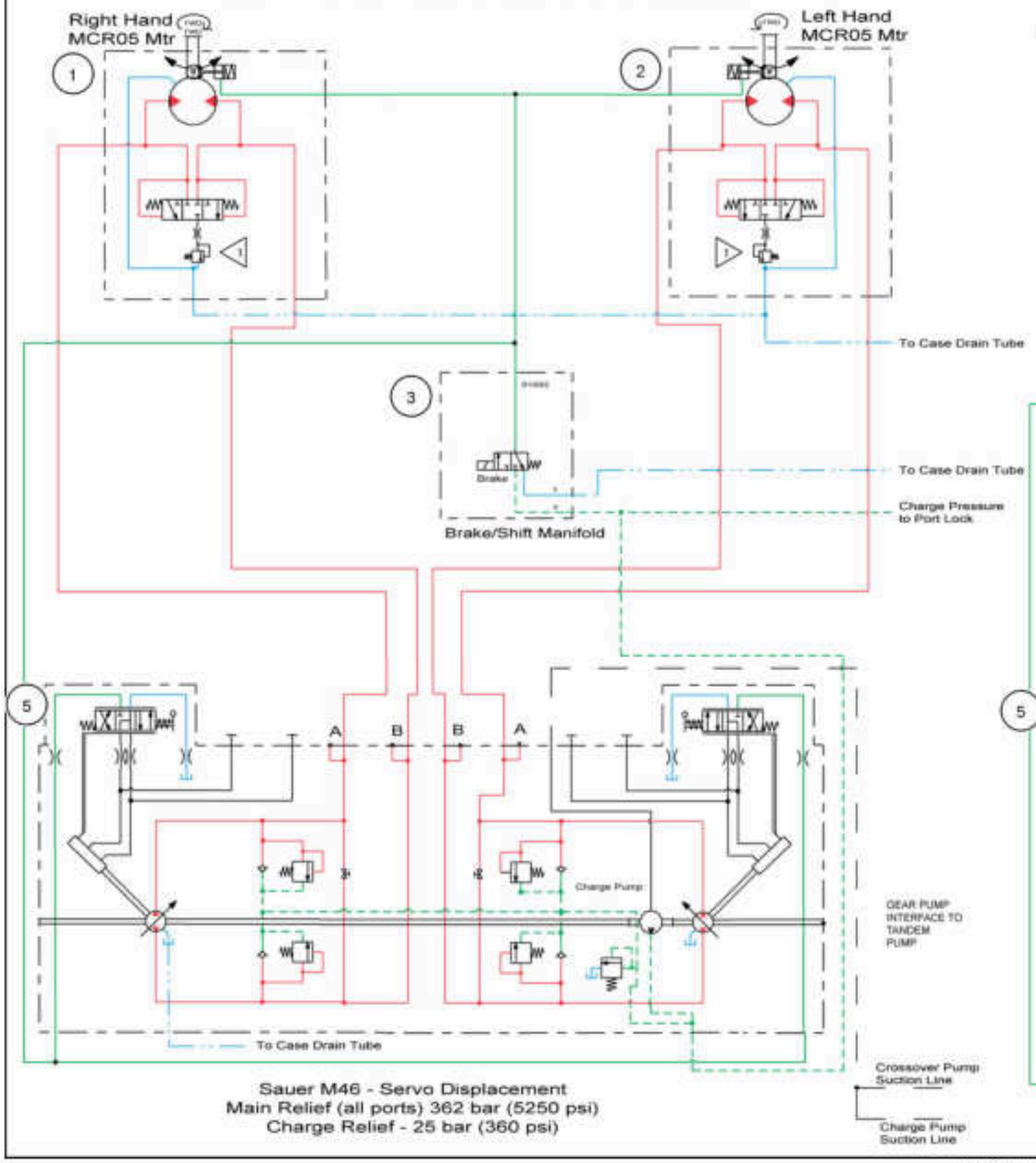
   Turn the ignition switch ON.

   Use the electronic service tool to access the fault code screen. Fault code **5282 - Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply Shorted To Ground** should no longer be active. Fault code **5281 - Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply Open Circuit** is now active.

   A. Fault code **5282 - Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply Shorted To Ground** is no longer active. Fault code **5281 - Loader Auxiliary Valve (Directional) Solenoid Forward (A) Supply**

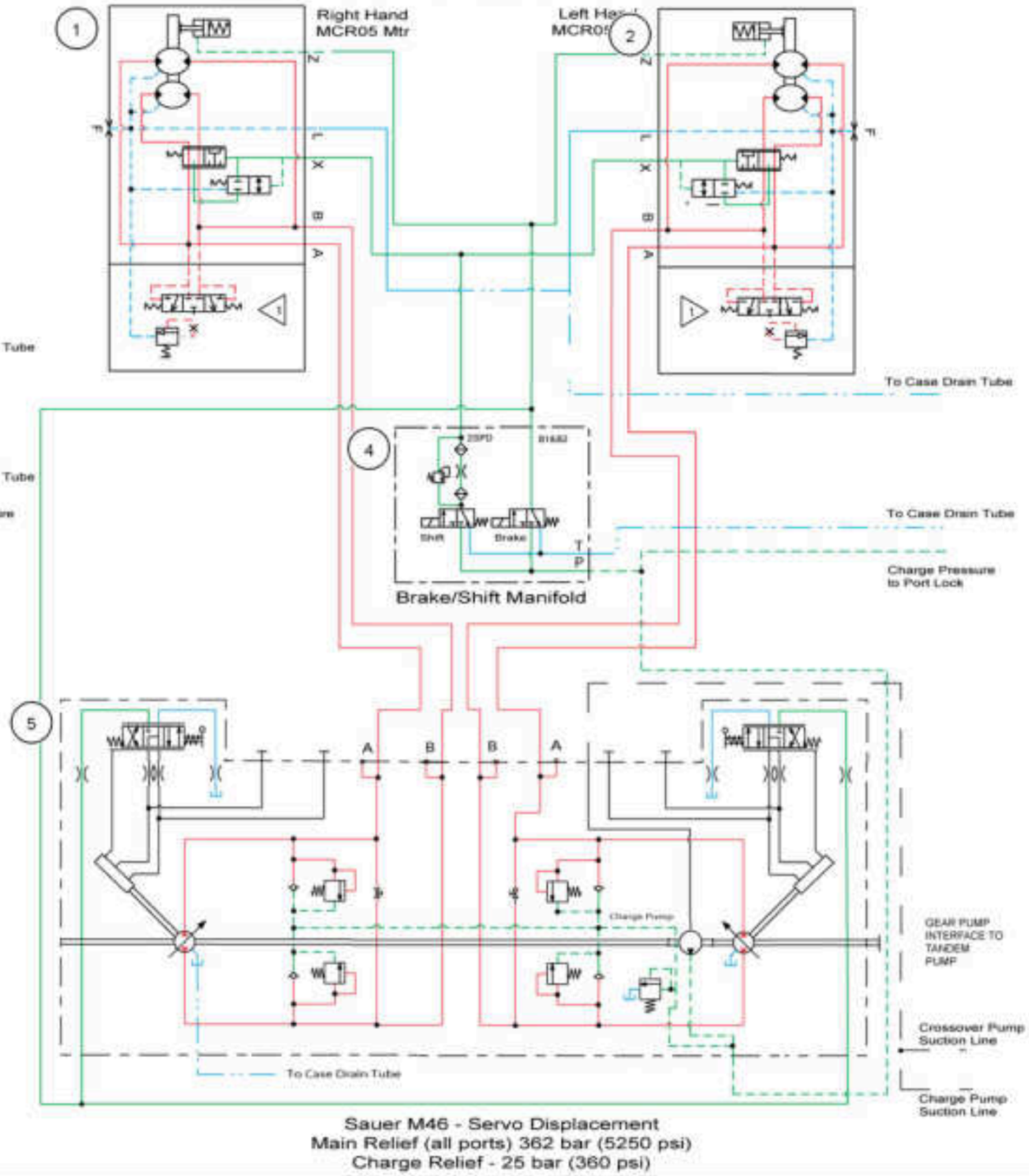
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MECHANICAL SINGLE SPEED DRIVE ASSEMBLY



Sauer M46 - Servo Displacement
Main Relief (all ports) 362 bar (5250 psi)
Charge Relief - 25 bar (360 psi)

MECHANICAL TWO SPEED DRIVE ASSEMBLY



Sauer M46 - Servo Displacement
Main Relief (all ports) 362 bar (5250 psi)
Charge Relief - 25 bar (360 psi)

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EH SINGLE SPEED DRIVE ASSEMBLY

Right Hand MCR03 Mtr

Rexroth - A20VG - ET (EH)
Main Relief (all ports) - 362 bar (5250 psi)
Charge Relief - 25 bar (360 psi)

Left Hand MCR03 Mtr

1

2

To Case Drain Tube

3

LV

B1&B2

15b (225psi)

Brake

EH Shift

Brake

T

P

To Case Drain Tube

Charge Pressure to Port Lock

Brake/Shift Manifold

5

YST

G1

A B B A

Charge Pump

Gear Pump interface to Tandem Pump

Charge Pump Suction Line

To Case Drain Tube

Crossover Pump Suction Line

EH TWO SPEED DRIVE ASSEMBLY

Right Hand MCR03 Mtr

Rexroth - A20VG - ET (EH)
Main Relief (all ports) - 362 bar (5250 psi)
Charge Relief - 25 bar (360 psi)

Left Hand MCR03 Mtr

1

2

N

L

X

B

A

To Case Drain Tube

4

LV

2SPD

B1&B2

15b (225psi)

Brake

EH Shift

Shift

Brake

T

P

Pilot Control Pressure from Brk/Shift/ EH Valve

To Case Drain Tube

Charge Pressure to Port Lock

Brake/Shift Manifold

5

YST

G1

A B B A

Charge Pump

Gear Pump interface to Tandem Pump

Charge Pump Suction Line

Crossover Pump Suction Line

To Case Drain Tube

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NOTES:

1. FLUSHING VALVE
   -10 BAR SPRINGS
   -2 mm FLUSHING ORIFICE
   -290 PSI (20BAR) CUTOFF RELIEF
2. LOAD CHECK REMOVED IF HIGH FLOW INSTALLED.
3. IN-LINE ORIFICE AT MANIFOLD BLOCK FOR VERTICAL MACHINES ONLY.
4. LIFT CYLINDERS ARE CUSHIONED FOR VERTICAL FRAME MACHINES ONLY.

Main Control Valve Pressure Relief

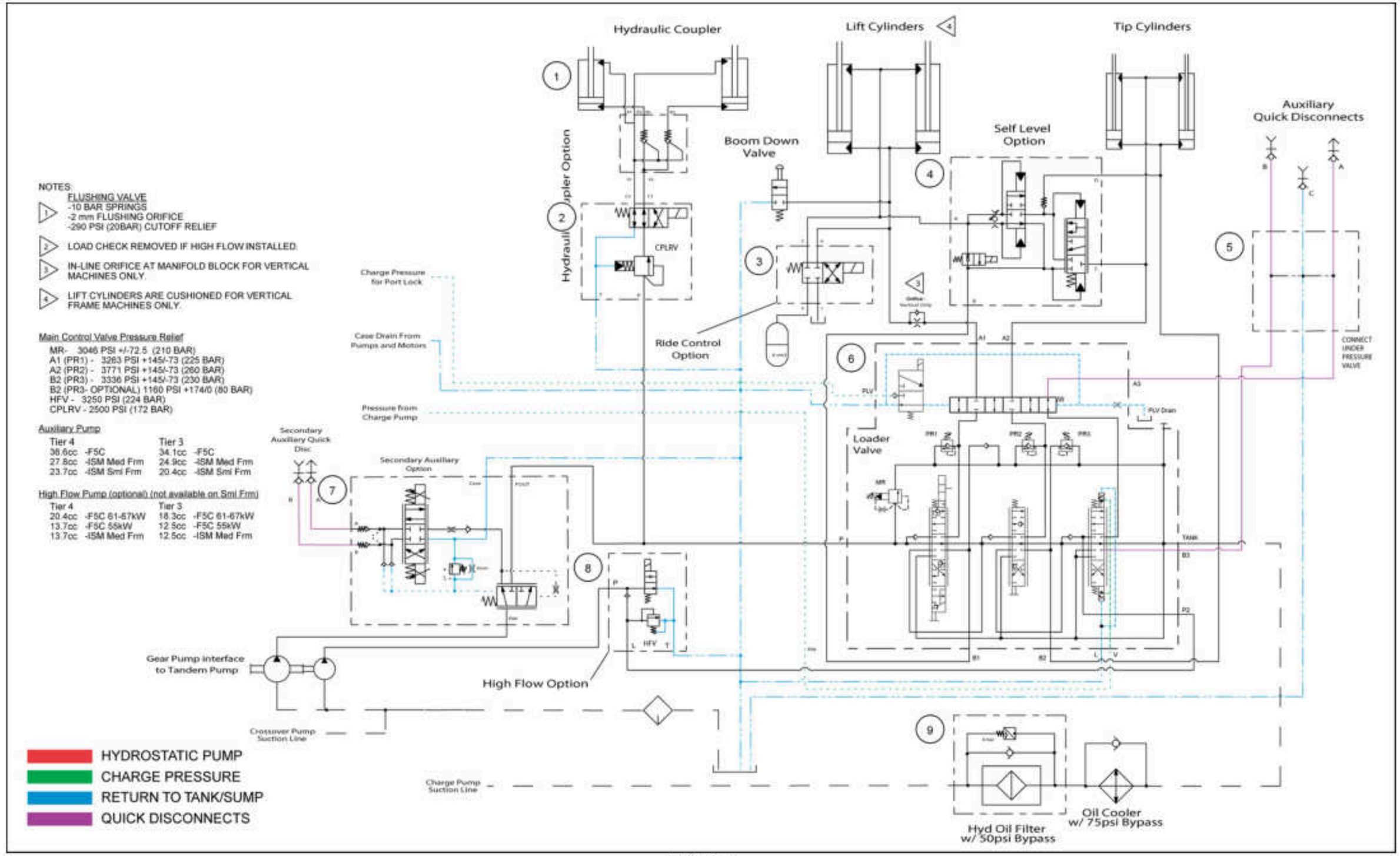
MR- 3046 PSI +/-72.5 (210 BAR)
A1 (PR1) - 3283 PSI +145/-73 (225 BAR)
A2 (PR2) - 3771 PSI +145/-73 (260 BAR)
B2 (PR3) - 3336 PSI +145/-73 (230 BAR)
B2 (PR3- OPTIONAL) 1160 PSI +174/0 (80 BAR)
HFV - 3250 PSI (224 BAR)
CPLRV - 2500 PSI (172 BAR)

Auxiliary Pump

Tier 4		Tier 3	
38.6cc	-F5C	34.1cc	-F5C
27.8cc	-I5M Med Frm	24.9cc	-I5M Med Frm
23.7cc	-I5M Sml Frm	20.4cc	-I5M Sml Frm

High Flow Pump (optional) (not available on Sml Frm)

Tier 4		Tier 3	
20.4cc	-F5C 61-67kW	18.3cc	-F5C 61-67kW
13.7cc	-F5C 55kW	12.5cc	-F5C 55kW
13.7cc	-I5M Med Frm	12.5cc	-ISM Med Frm



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