Magnum™ 180 CVT
Magnum™ 200 CVT
Magnum™ 220 CVT
Magnum™ 240 CVT
Continuously Variable Transmission (CVT) Tractor

PIN ZFRH05001 and above

SERVICE MANUAL

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CASE IH AGRICULTURE

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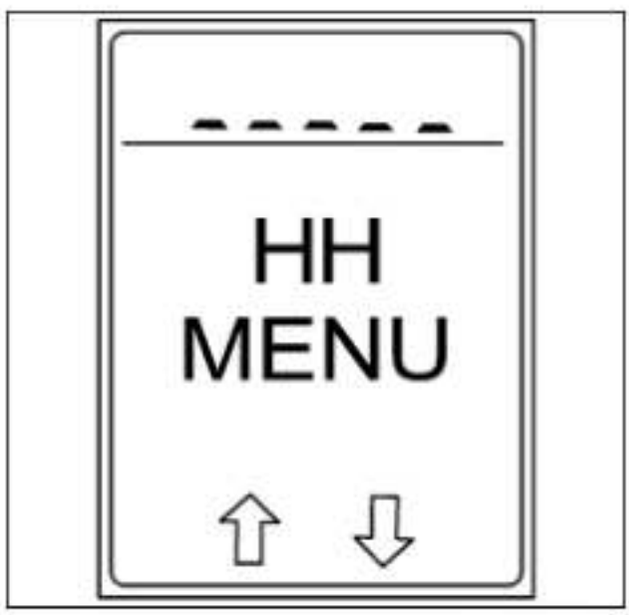
10. Weights are required for hitch valve calibration. Lower the linkage using the position control lever and connect test weights to the hitch. The test weights must be sufficient to overcome any friction in the hydraulic lift assembly and allow the arms to lower without binding. Standard test weights of **1111 - 1542 kg** (**2450 - 3400 lb**) are ideal.
11. Turn off the engine.
12. Rotate all hitch potentiometers to the fully clockwise position.

Calibration

Enter Calibration:

1. Install special tool **380000843** into the CAN bus connector
2. Turn the key switch on
3. Use the procedure which follows to select the U1 module, H1 menu, hitch subsystem

13. Press the program key PROG to enter the menus.



RCPH08CCH011BAA 2

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18040-EHR (remote valve) 1 lever position - voltage too low

NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

Possible failure modes:

1. Faulty EHR Switch
2. Incorrect armrest configuration
3. Faulty connector
4. Swapped connectors
5. Faulty armrest controller

Solution:

1. Before proceeding clear the fault code with the approved diagnostic equipment.

   Run the machine under normal conditions and retest.

   A. Fault code not indicated. Return unit to field operation.

   B. Fault code indicated. Go to step **2**
2. Check the EHR#1 lever position in voltmeter diagnostics H9 channel 101.

   Refer to controller configuration and calibration section of service manual.

   Move the EHR#1 lever from float (display value 1.0), to lower (display value 12.0), to neutral (display value 55.0), to raise (display value 97.0).

   A. Values displayed incorrect. Go to step **3**

   B. Values displayed correct. While still in H9 channel 101 wiggle armrest harness connector **X-137** and the tractor control unit (TCU) connectors **X-350** and **X-351** to check for an intermittent circuit. Channel 101 values will change if an intermittent circuit is indicated, repair or replace as required.
3. Visually inspect the armrest controller connectors.

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B. If there is no voltage, continue with Step .**4**.

4. Check high side driver control wiring for an open circuit condition.

   Place the keyswitch in the off position.

   Disconnect the vehicle (VE) harness from the ECU A-9000 at connector **X-9001**.

   Install a jumper wire from the vehicle (VE) harness side of the ECU A-9000 connector **X-9001 pin 23** to chassis ground.

   Use a multimeter to check for continuity on the vehicle (VE) harness side from:

From	To	Value
X-9110 pin 2	chassis ground	there should be continuity.

   A. If there is no continuity, there is an open condition in the vehicle (VE) harness between connector **X-9110 pin 2** and connector **X-9001 pin 23**, wire VE-114. Locate and repair the broken conductor.

   B. If there is continuity, check the ECU A-9000 for the appropriate software and re-flash, if necessary.

5. Visually inspect the relevant harnesses and connectors for damage, bent or dislocated pins, corroded terminals, or broken wires. Verify that the connectors are fully installed. Flex the harnesses involved to reveal intermittent breaks or shorts in the wiring concerned. Operate the machine while you monitor the display.

   A. If you find damage or the display indicates other than normal display readings, then repair the damage discovered during the inspection or locate and repair the other than normal display condition and verify that the error has been resolved.

   B. If you do not find damage and the display indicates only normal readings, then erase the fault code and continue operation.

Wiring harnesses - Electrical schematic sheet 03 Engine after treatment system (non CAN) (55.100.DP-C.20.E.03)

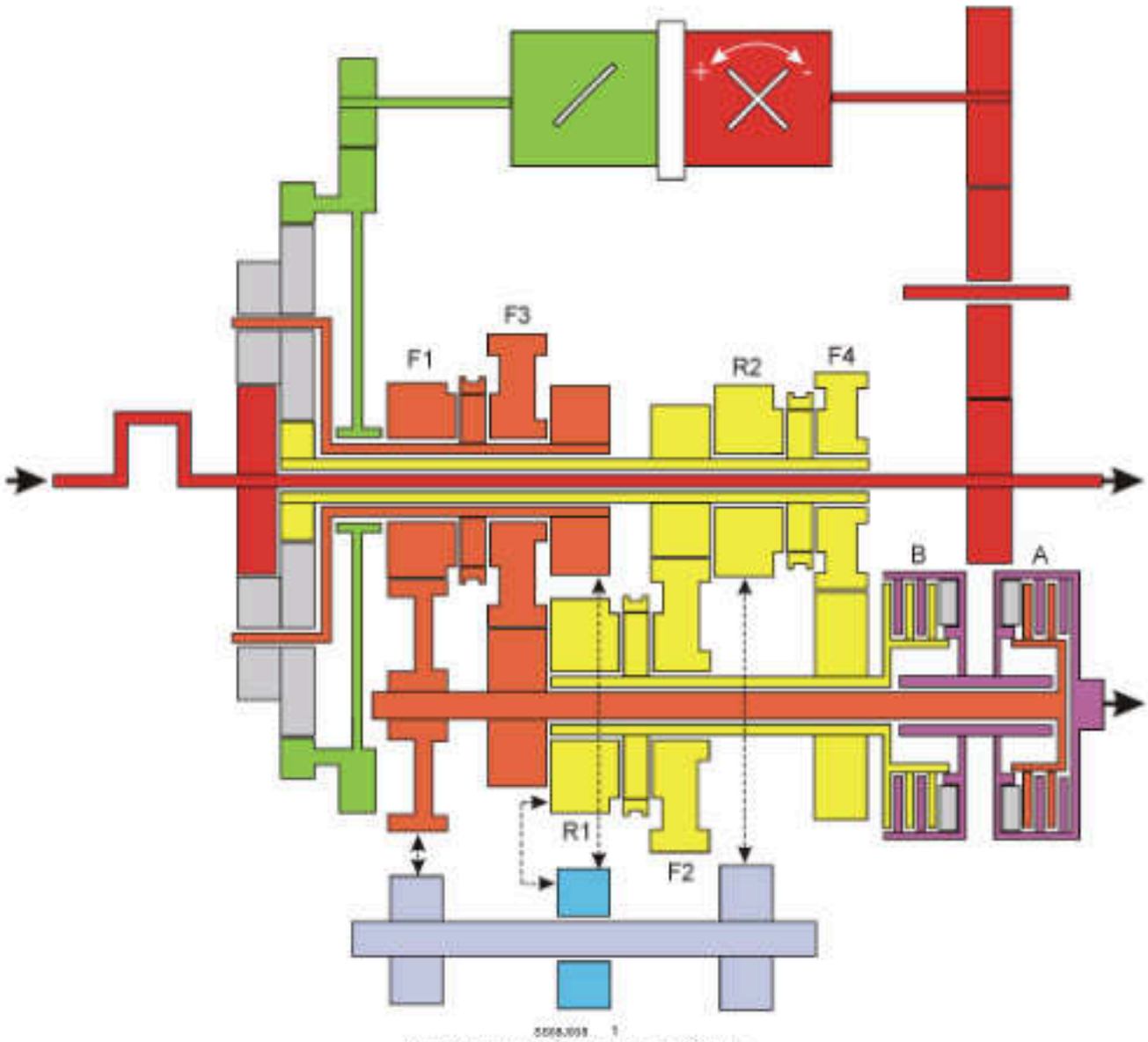
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Continuously Variable Transmission (CVT) - Functional diagram

The following diagrams show the power flow of the transmission in the individual mechanical gears and in the stationary control (powered zero) and neutral position/park position operating modes.

Color coding

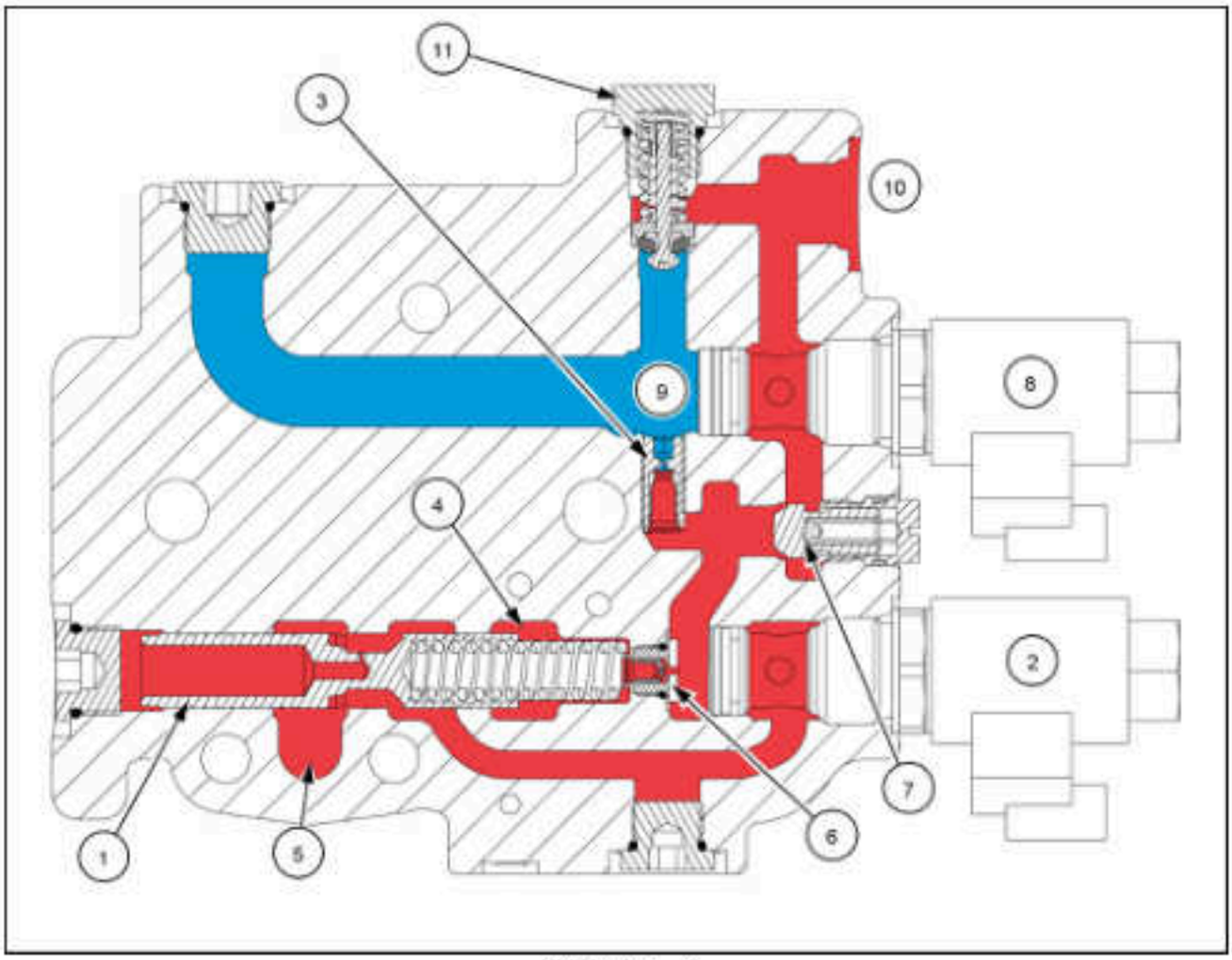
Transmission input and hydrostat drive	Hydrostat output - ring gear summing planetary gears
Power train summing planetary gear/planetary carrier - clutch A	Power train summing planetary gear/sun gear - clutch B
Power flow	



Neutral position/park position

In the neutral position and the park position the transmission is not engaged. No mechanical gear is engaged and the clutches A/B are open. If the tractor rolls off inadvertently in the neutral position, the speed differences arising as a result are equalized by the hydrostat. This means that when shifting out of the neutral position the relevant gear can be engaged again at the synchronous speed.

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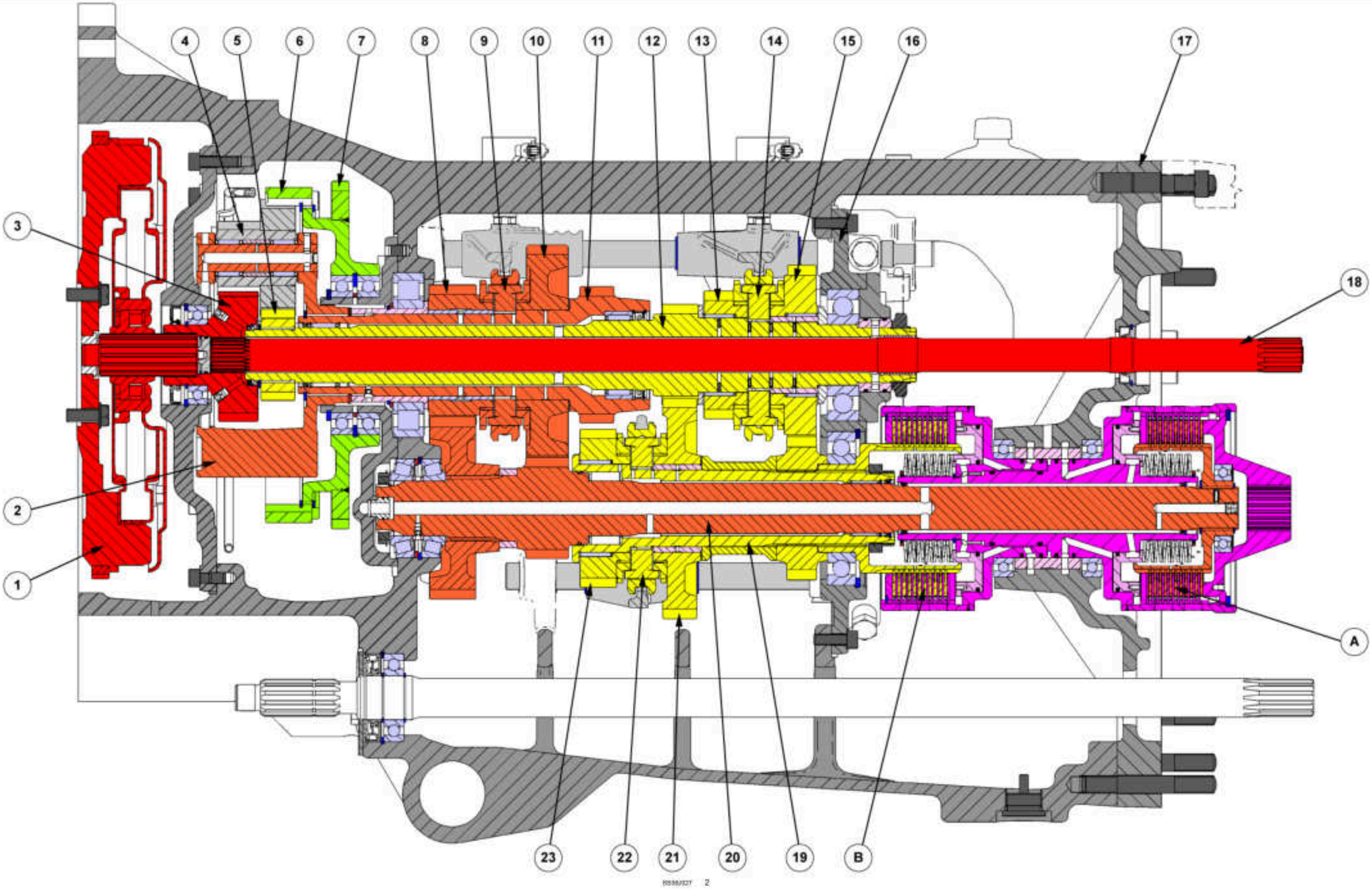
RAISE POSITION

PFC pump pressure	Return to tank pressure
Trapped oil	
1. Flow control spool	7. Load check
2. Raise solenoid	8. Lower solenoid
3. Screened orifice plug	9. Return to tank
4. Pilot signal to compensator	10. Hitch cylinders
5. PFC pump supply	11. Relief valve
6. Check/orifice plug	

Lowering Function

To lower the hitch, the lower proportional solenoid valve must be energized by the central control unit (RM). The amount of spool movement depends on the amount of current supplied by the controller to the proportional solenoid. Once the lower solenoid is energized, the solenoid valve shifts opening a flow path directly back to tank.

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