Magnum™ 180
Magnum™ 200
Magnum™ 220
Magnum™ 240

Continuously Variable Transmission (CVT) Tractor

PIN ZERH08100 and above

SERVICE MANUAL

Part number 47748092
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CASE IH AGRICULTURE

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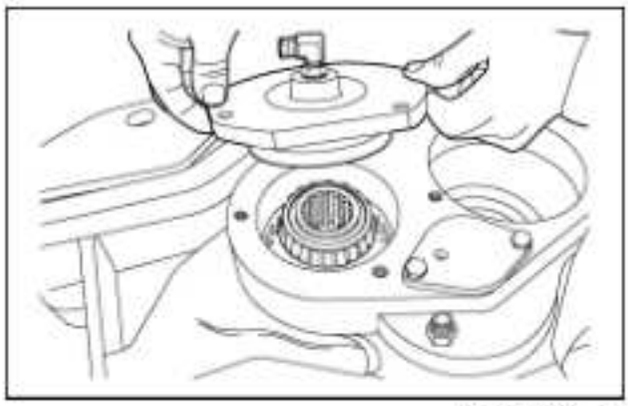
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Example

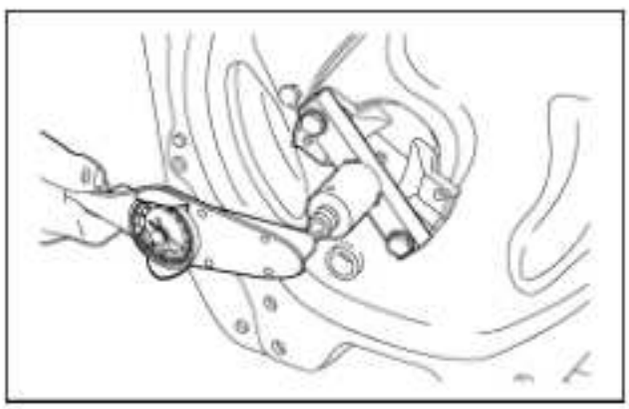
Bolt 1	**1.143 mm (0.045 in)**
Bolt 2	**1.168 mm (0.046 in)**
Bolt 3	**1.118 mm (0.044 in)**
Total	**3.429 mm (0.135 in)**
Average of all three	**1.143 mm (0.045 in)**
Additional shims to add	**0.254 mm (0.010 in)**
Total thickness required	**1.397 mm (0.055 in)**

39. Place the shim pack onto the bearing cage and install on the housing. Install the mounting bolts and tighten to a torque of **51 - 57 Nm (38 - 42 lb ft)**.



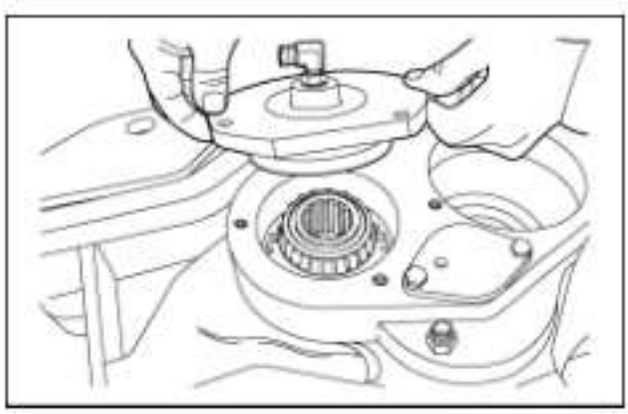
RDPH08CCH058AAB 38

40. Rotate the output shaft a minimum of ten revolutions. Check the rolling torque.
    A. The rolling torque must be between **0.2 - 1.0 N·m (2 - 9 lb in)**.
    B. If rolling torque is below **0.2 N·m (2 lb in)**, remove a small amount of shims. Torque the bearing cage bolts again, and check rolling torque.
    C. If the rolling torque is above **1 N·m (9 lb in)**, add a small amount of shims. Torque the bearing cage bolts again, and check rolling torque.



RDPH08CCH059AAB 39

41. Once the proper rolling torque has been set:
    A. Remove the input shaft (that was used in step 43).
    B. Place the housing back onto a work surface.
    C. Remove the bearing cage with the shim pack.



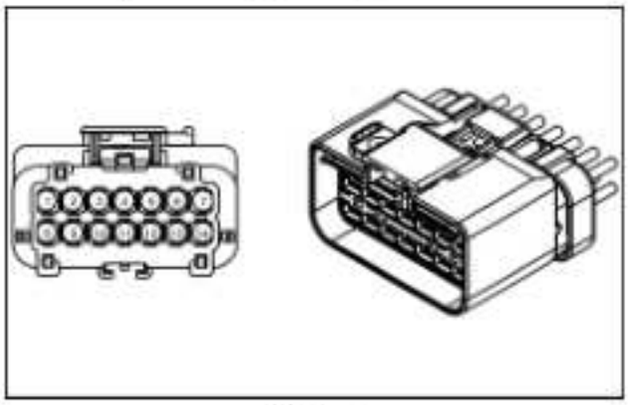
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Wire connectors - Component diagram 99 - Connectors 990 and higher

P1314 - TO ISO CAN JUMPER HARNESS (Female)

X-1000 - TO LH PLATFORM HARNESS (87382926) (Female)



87382926 1

87382926

Pin	From	Wire	Description	Color-Size	Frame
1	**X-060 (Male) pin 31** TO ENGINE HARNESS	EN-266	FUEL SENDER	YE - 0.8	**Wiring harnesses - Electrical schematic sheet 18 - Instrument Control Unit (ICU) (55.100)**
2	SP-168-P-PIN1	EN-168B	ICU SENSOR GND	BL - 0.8	
3	SP-933-P-X	EN-933E	CLEAN GND	BK - 1.0	**Wiring harnesses - Electrical schematic sheet 12 - Power distribution - engine/sensors (55.100)**
4	**X-180 (Female) pin 72** ECU CONTROLLER	EN-387	DEF TANK HEAT VALVE B-	GY - 1.0	**Wiring harnesses - Electrical schematic sheet 11 - Engine Control Unit (ECU) (55.100)**
5	**X-180 (Female) pin 50** ECU CONTROLLER	EN-351	ENG COMMON B+	RD - 1.0	
6	**X-180 (Female) pin 85** ECU CONTROLLER	EN-382	DEF SM REV VALVE B-	GY - 0.8	
7	**X-180 (Female) pin 84** ECU CONTROLLER	EN-194	DEF SM PUMP SIGNAL	YE - 0.8	
8	**X-180 (Female) pin 89** ECU CONTROLLER	EN-195	DEF SM PUMP B-	GY - 0.8	
9	**X-180 (Female) pin 68** ECU CONTROLLER	EN-178	+5V REFERENCE	PK - 0.8	
10	**X-180 (Female) pin 7** ECU CONTROLLER	EN-184	DEF SM PRESS SIGNAL	YE - 0.8	
11	**X-180 (Female) pin 39** ECU CONTROLLER	EN-992	SENSOR GND	BL - 0.8	
12	**X-180 (Female) pin 31** ECU CONTROLLER	EN-148	DEF TANK LEVEL SIGNAL	YE - 0.8	
13	**X-180 (Female) pin 8** ECU CONTROLLER	EN-151	DEF TANK TEMP SIGNAL	YE - 0.8	
14	SP-193-P-X	EN-193D	ENG AUX B+	WH - 1.0	**Wiring harnesses - Electrical schematic sheet 12 - Power distribution - engine/sensors (55.100)**

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A. Error code does not redisplay. Return unit to field operation.

B. Error code redisplays. Continue to step **6**.

6. Swap the pilot head causing the error with another pilot head.

   Retest system operation.

   A. Error code follows the pilot head move. Replace the pilot head. Return unit to field operation.

   B. Error code does not follow the pilot head move. Return the pilot heads to their original location and submit a concern to ASIST.

Wiring harnesses - Electrical schematic sheet 26 (55.100) Wiring harnesses - Electrical schematic sheet 41 (55.100)

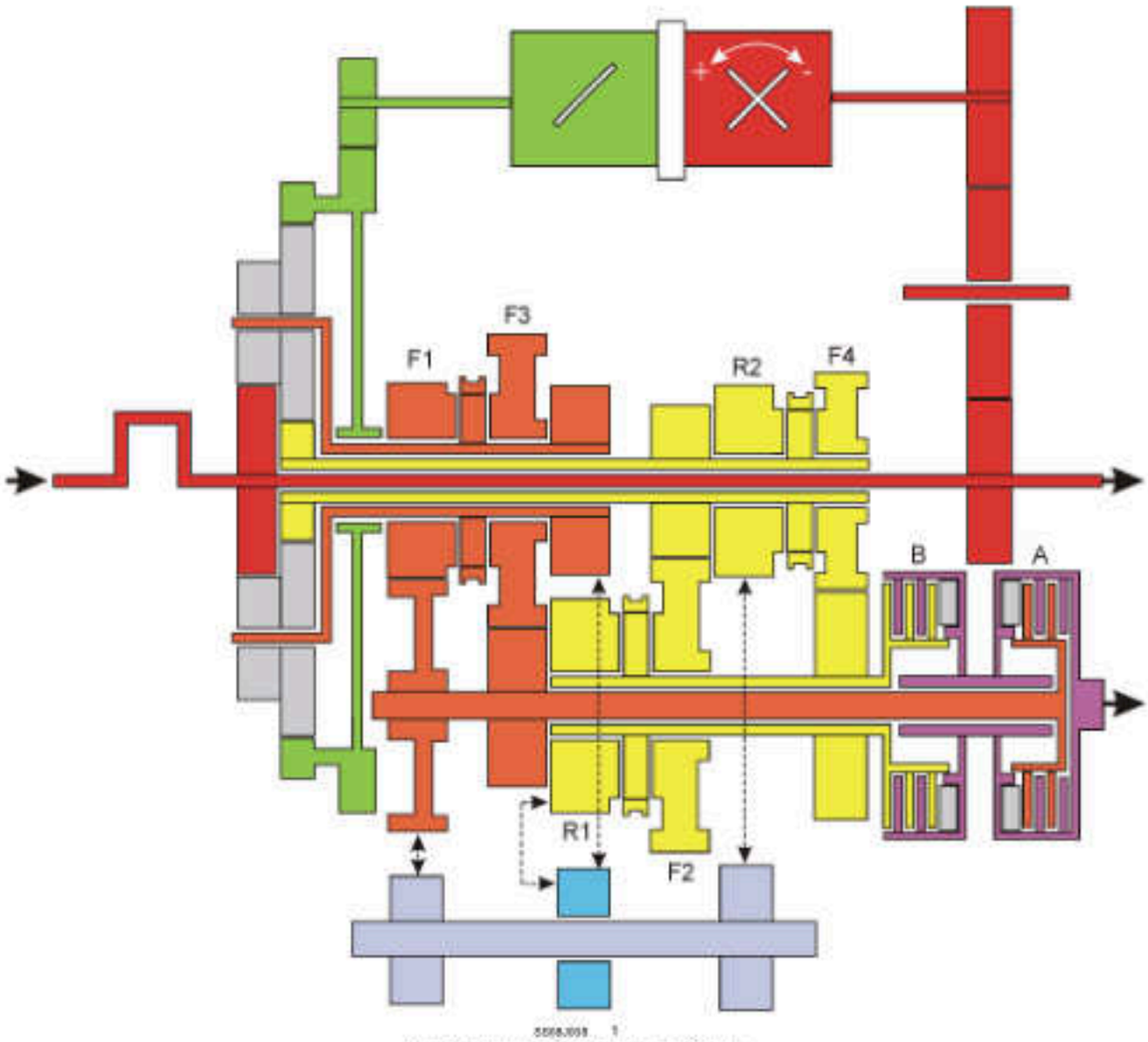
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Continuously Variable Transmission (CVT) - Functional diagram

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

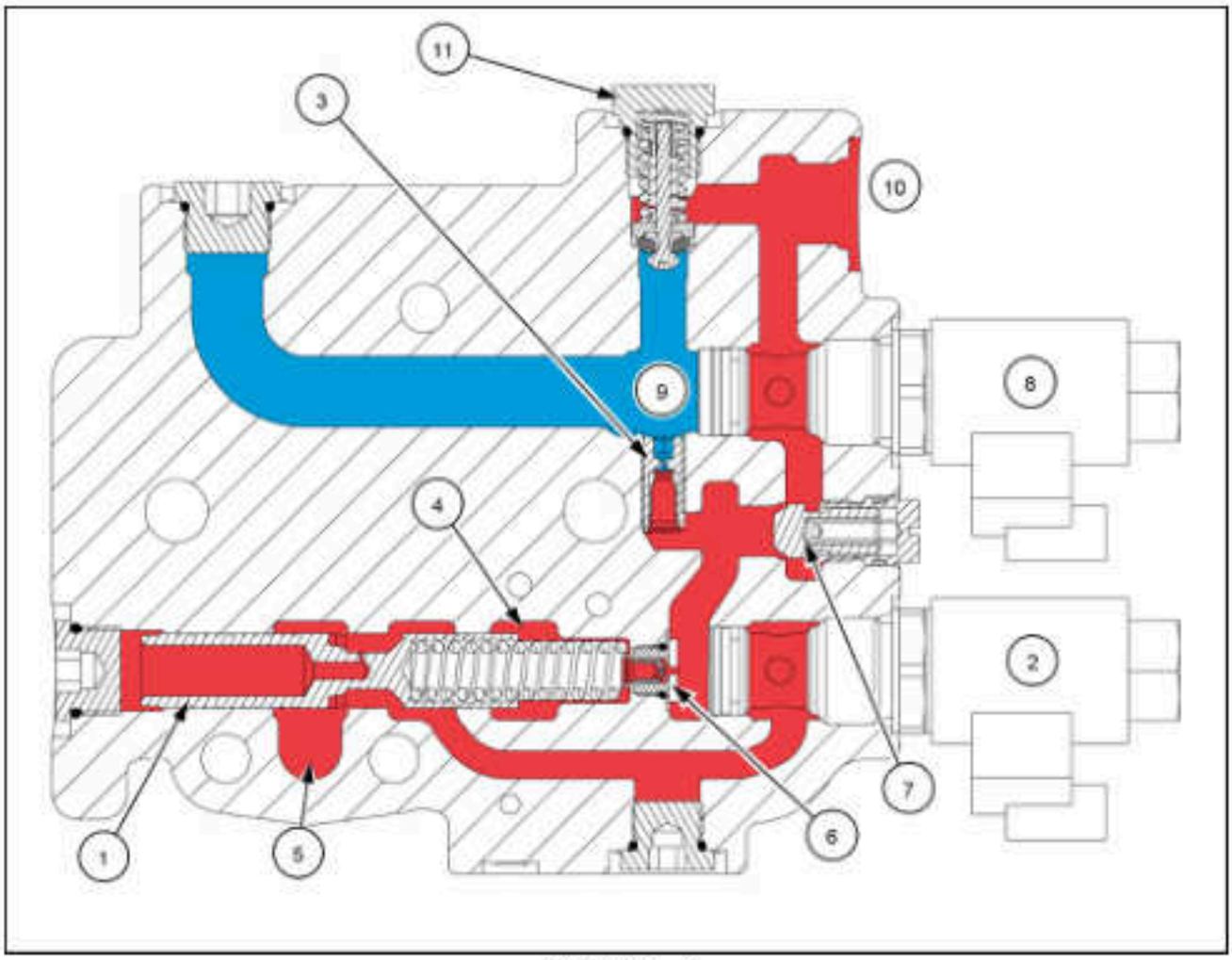
Transmission input and hydrostat drive	Hydrostat output - ring gear summing planetary gears
Power train summing planetary gear/planetary carrier - clutch A	Power train summing planetary gear/sun gear - clutch B
Power flow	



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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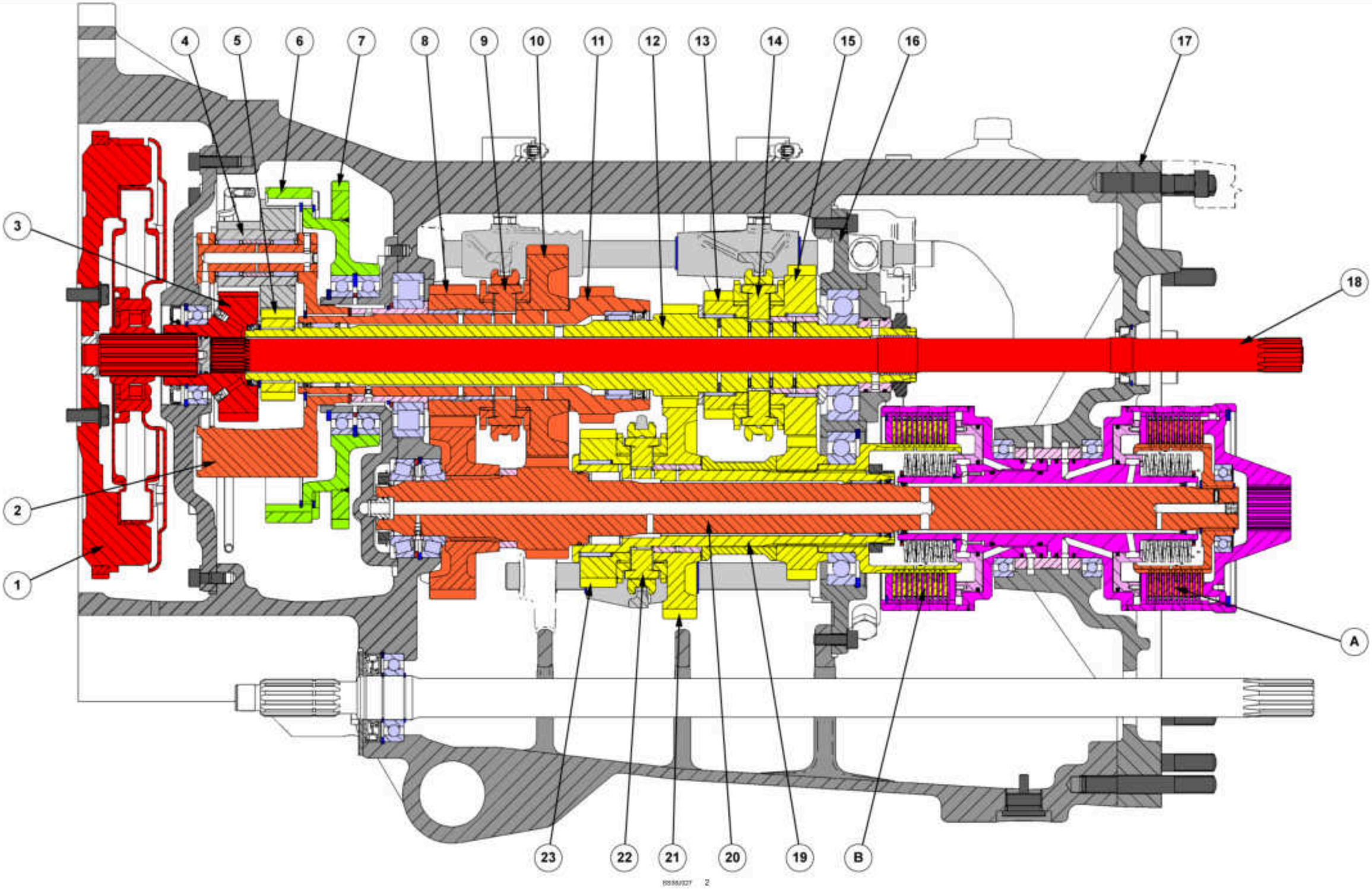
RAISE POSITION

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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