AXIAL-FLOW® 7120
AXIAL-FLOW® 8120
AXIAL-FLOW® 9120

Combine

SERVICE MANUAL

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CASE IH AGRICULTURE

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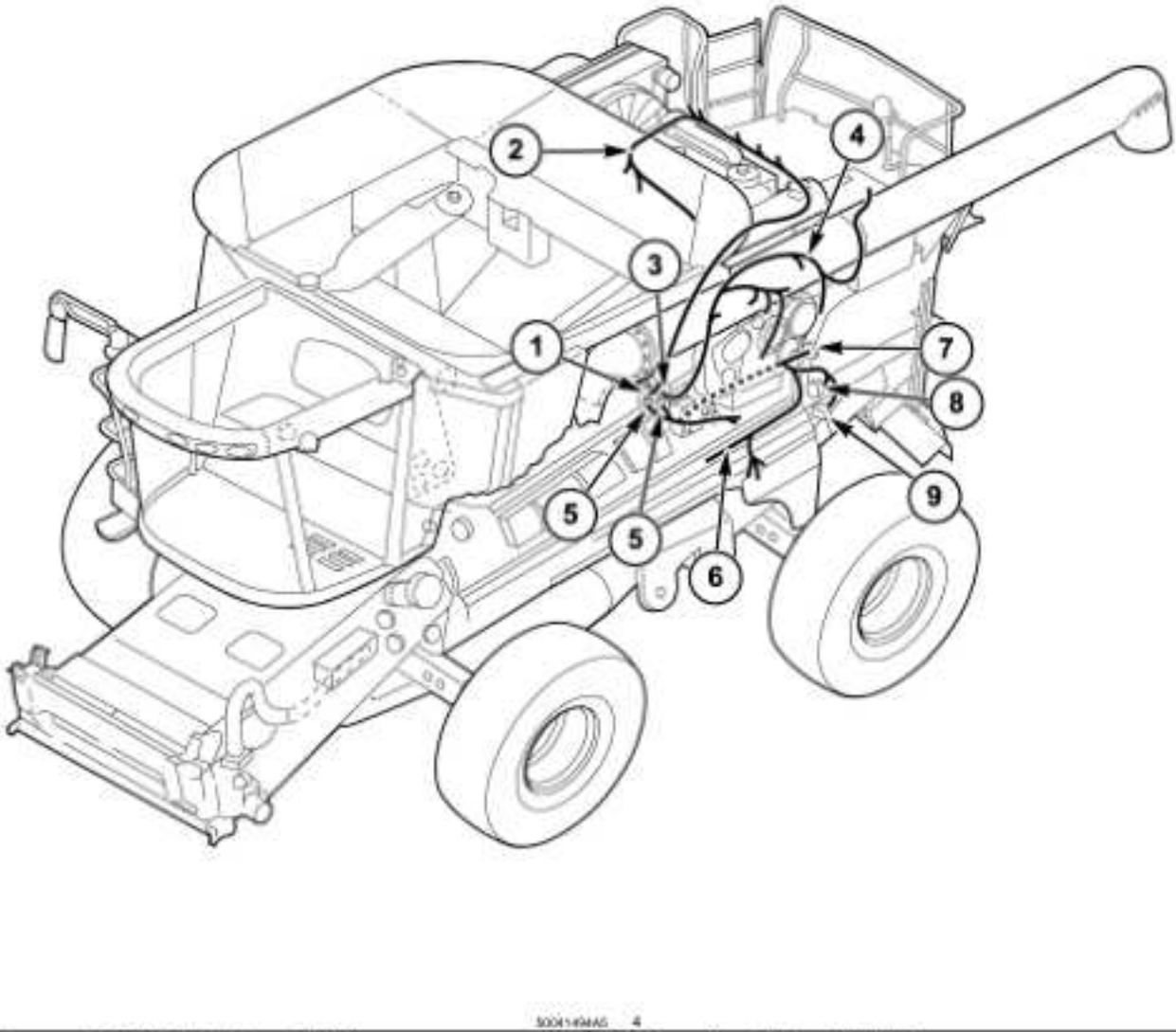
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Engine (EN), Gearbox (GB) and Straw Hood Front (SW) Wire Harnesses



(1) Connector **X010** to Engine (EN) harness	**(6)** Straw Hood Front (SW) harness
(2) Engine (EN) wire harness	**(7)** Connector **X071** to Straw Hood Rear (SH) harness
(3) Connector **X011** to Gearbox (GB) harness	**(8)** Connector **X072** to Lower Frame Rear (LR) harness
(4) Gearbox (GB) wire harness	**(9)** Connector **X285** to Trailer harness
(5) Connectors **X024**, **X025** to Straw Hood Front (SW) harness	

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E0682-04-Unload Tube Swing Out Switch

AXIAL-FLOW 7120, AXIAL-FLOW 8120, AXIAL-FLOW 9120

Control Module : RHM

Cause:
The Right Hand Module (RHM) has detected that the Unload Tube Swing Out Switch circuit voltage is **<0.25 volts**.

Possible failure modes:

1. The Unload Tube Swing Out Switch circuit is shorted to **<0.25 volts**.
2. RHM internal failure.
3. Multi Function Handle (MFH) failure.

Solution:

1. Verify the fault is present.
   Using the Display Monitor diagnostics capability to view "Parameter" status, reference **Instrument cluster - Detailed view (55.408)**, if needed, observe the voltage.

   The normal operating range for the Unload Tube Swing Out Switch circuit is **0.25 - 5.5 volts**.

   A. If the voltage reading is **<0.25 volts**, continue with Step **2**.

   B. If the voltage reading is within the proper limits, the fault may be intermittent. Continue troubleshooting at Step **3**.

2. Verify the MFH is good.
   Turn off the ignition switch.
   Disconnect the Right Console Harness connector **X028**.
   Using an ohmmeter, measure the continuity between the positive (+) and negative (-) pins of the Right Console Harness connector **X028** according to the table below. Operate the respective switch while observing the ohmmeter. When a switch is activated the meter should read between **1.5M - 1.7M ohms**, and open when idle. Check for shorted wiring to other pins as you test each circuit. Refer to the schematic as needed.

Switch	+ Pin	- Pin
Head Raise	10	6
Head Lower	11	6
Head Tilt Left	5	6
Head Tilt Right	2	6
Header Resume	9	6
Unload Swing Out	11	1
Unload Swing In	9	1
Unload Engage	4	1
Reel Raise	4	7
Reel Lower	11	7
Reel Fore	5	7
Reel Aft	9	7
Emergency Stop	8	7

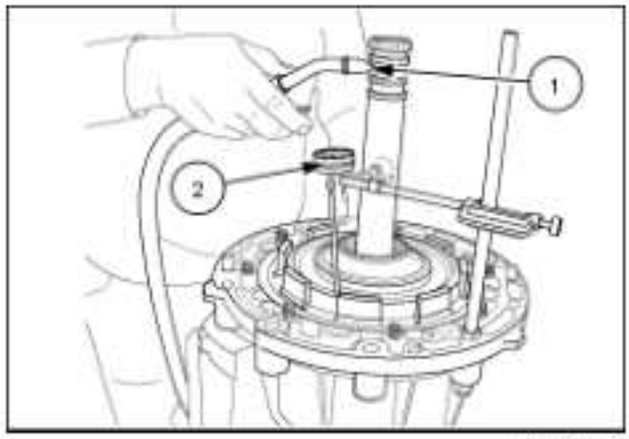
   A. If all of the switches and wires test good, then the MFH is good. Reload the system software to see if the fault code clears. If the fault is still present after reloading the software, replace the RHM. Continue troubleshooting at Step **3**.

   B. If the ohmmeter reads outside the range given above, then the fault is in the MFH. Replace the MFH. Continue troubleshooting at Step **3**

3. Visually inspect the harness and connectors for damage, bent or dislocated pins, broken or pinched wires.

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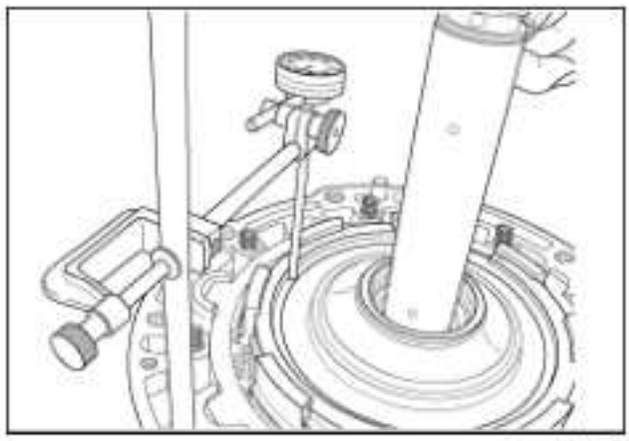
38. Use standard shop air, free of moisture, and a blow gun with a rubber tip to insert into the clutch inlet port located near the end of the shaft.
Apply **552 - 690 kPa** (**80 - 100 psi**), air pressure to the clutch inlet port **(1)** of the shaft.
Record the distance indicated on the dial indicator **(2)** the clutch pack has traveled. The acceptable gap range should be **1.8 - 2.2 mm** (**0.07 - 0.09 in**).



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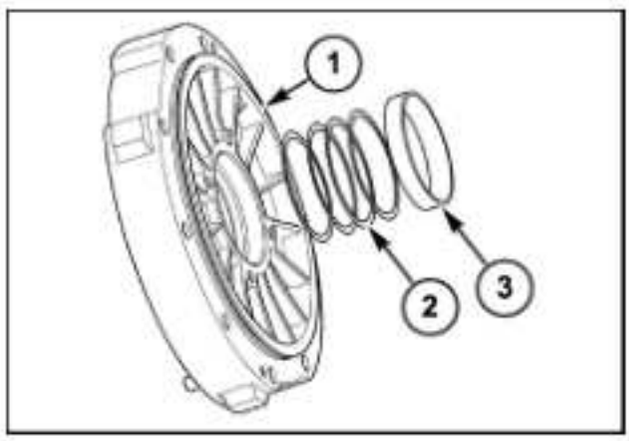
NOTE: *If the range cannot be accomplished to meet the specification, then the steel disc separator plates between the friction disc plates need to be reorganized using the two disc thicknesses available of* ***2.1 mm*** *(**0.08 in**) or* ***2.4 mm*** *(**0.09 in**) until the gap is acceptable. The steel disc plates may be of assorted thicknesses to meet the acceptable range.*

39. Remove the air pressure from the clutch inlet port on the shaft. The dial indicator should return to zero.


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NOTE: *If the dial indicator does not return to zero, check to see that the top plate is not sticking to the end plate. Also check that the magnetic base of the dial indicator is securely attached and that the extension rod on the indicator has free movement.*

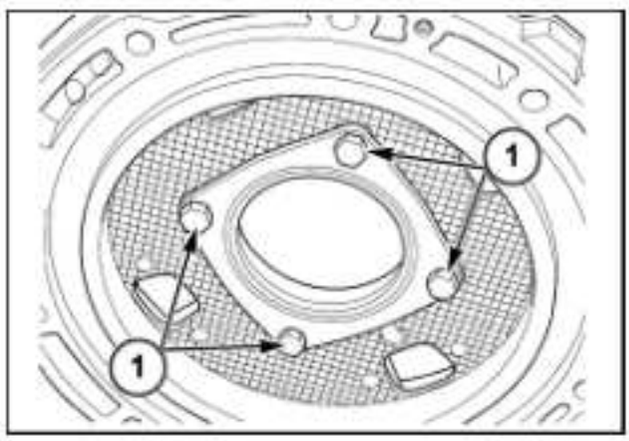
40. Install the bearing cup **(3)** and shims **(2)** into the main cover variator bearing flange **(1)**. Place the cup part of bearing onto the cover.
Measure the height of cup above variator mounting surface. Record this measurement.
Measure depth of cup seating surface relative to variator mounting flange. Record this measurement.
Calculate the required thickness of shims to yield a rolling torque of **0.2 - 1.5 Nm** (**1.8 - 13.3 lb in**).
Press required shims and bearing cup into variator mounting flange. Check to be sure cup is fully seated.



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NOTE: *Use the* ***0.1, 0.3, 0.5, and 0.7 mm*** *shims that are available for this procedure.*

41. After the bearing cup is properly shimmed, install the retaining plate and four M10 x 25 bolts **(1)**.
Torque the bolts to **33 - 38 Nm** (**25 - 28 lb ft**).



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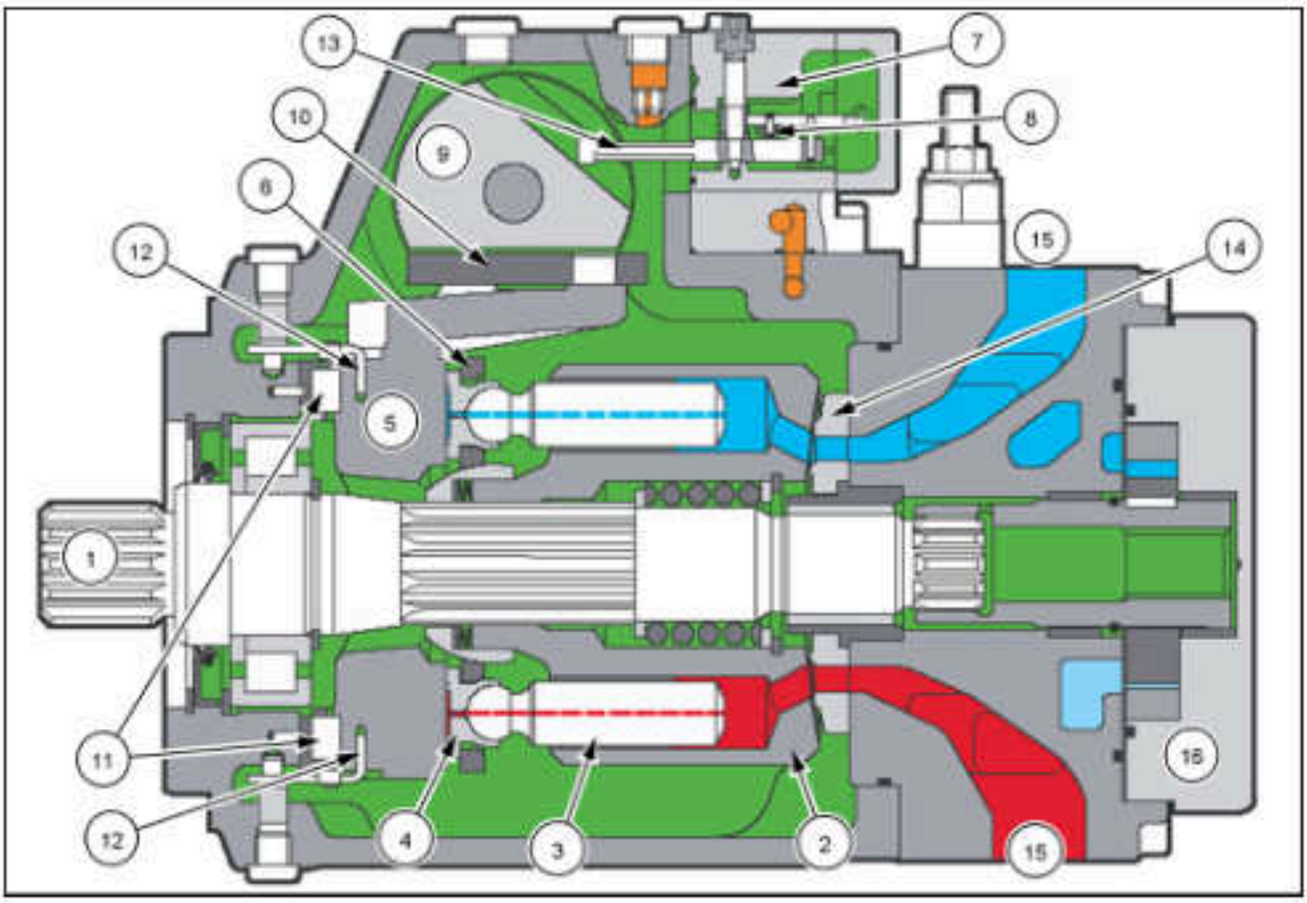
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Pump - Dynamic description - Hydrostatic Ground Drive

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Variable Displacement Pump

The variable displacement pump converts power from the engine into hydraulic power to run the hydrostatic ground drive motor.



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Variable Displacement Pump

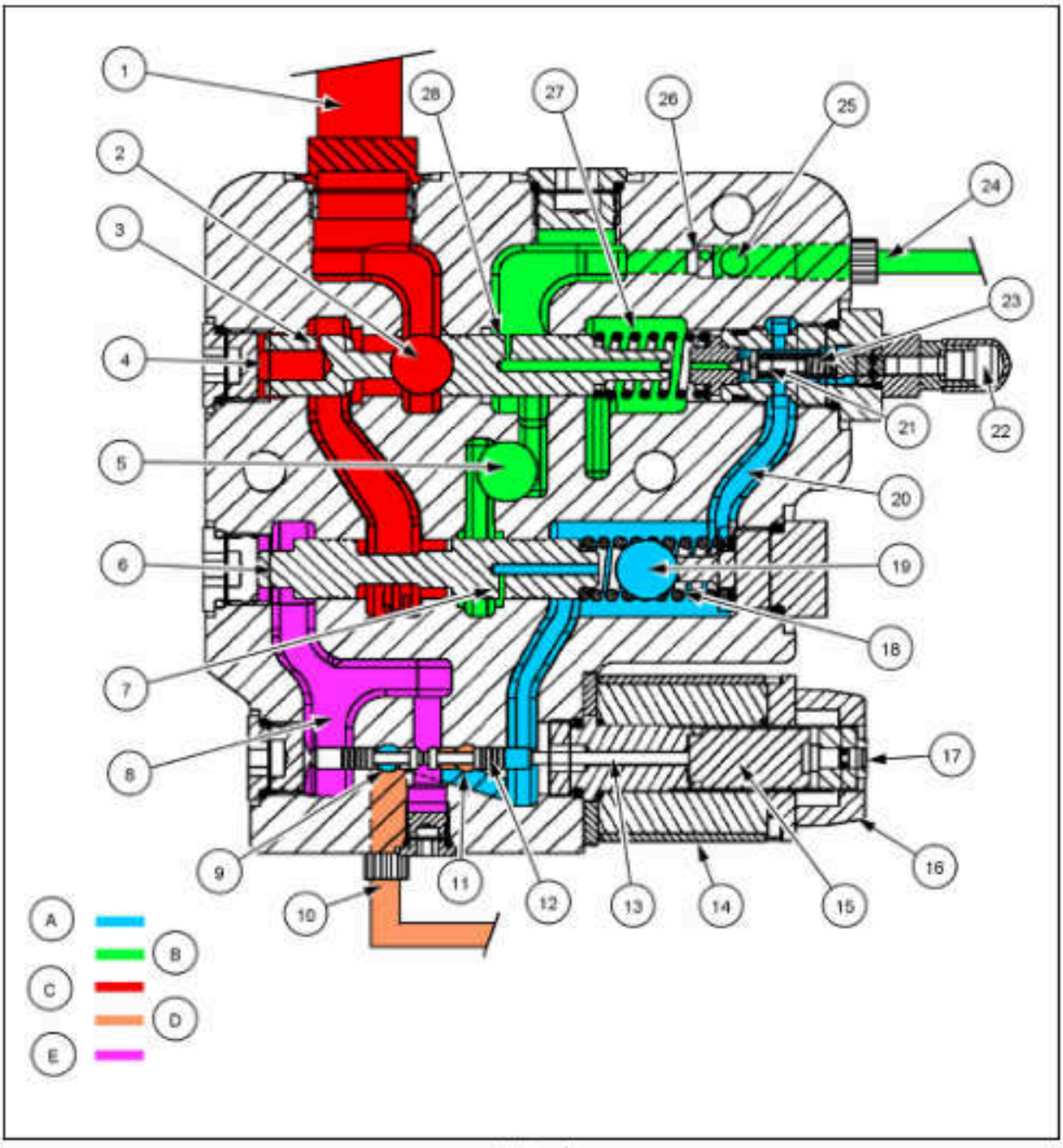
1. Drive shaft	5. Swash plate	9. Stroke piston	13. Feedback linkage
2. Rotating cylinder	6. Retaining plate	10. Slide ring	14. Lens plate
3. Piston	7. Displacement control	11. Bearing	15. Service line port
4. Slipper pad	8. Control spool	12. Retaining pin	16. Charge pump

The drive shaft **(1)** turns the rotating cylinder assembly **(2)**, which contains the pump's nine pistons **(3)**. A slipper pad **(4)** on the end of each piston rides on the surface of the swash plate **(5)**. The slipper pads are held on and guided along the surface of the swash plate by a retaining plate **(6)**.

In its neutral position, the swash plate is centered, and is parallel to the rotating pistons. In this state, the pistons do not stroke, since stroking requires that the swash plate describe an angle relative to the face of the rotating cylinder assembly. The angle of the swash plate determines the stoke length of the pistons in their cylinder bores. The greater the angle, the longer the piston stroke and the greater the displacement of oil, resulting in higher motor speed as the angle increases.

The electronic displacement control (EDC) **(7)** sets the angle of the swash plate in accordance with the position of the propulsion control lever. The EDC contains a control spool **(8)** which is controlled by two proportional solenoids, one for each direction of travel. The control spool moves to admit control pressure oil to the stroke piston **(9)**. The stroke piston is mechanically linked to the swash plate pivot arm through a slide ring **(10)**. As the stroke piston moves (picture it moving in or out of the page), the swash plate swivels, changing pitch relative to the rotating cylinder assembly **(2)**. The swash plate rides on semicircular cradle bearing sectors **(11)**. Retaining pins **(12)** stabilize the swash plate at its upper and lower pivot points.

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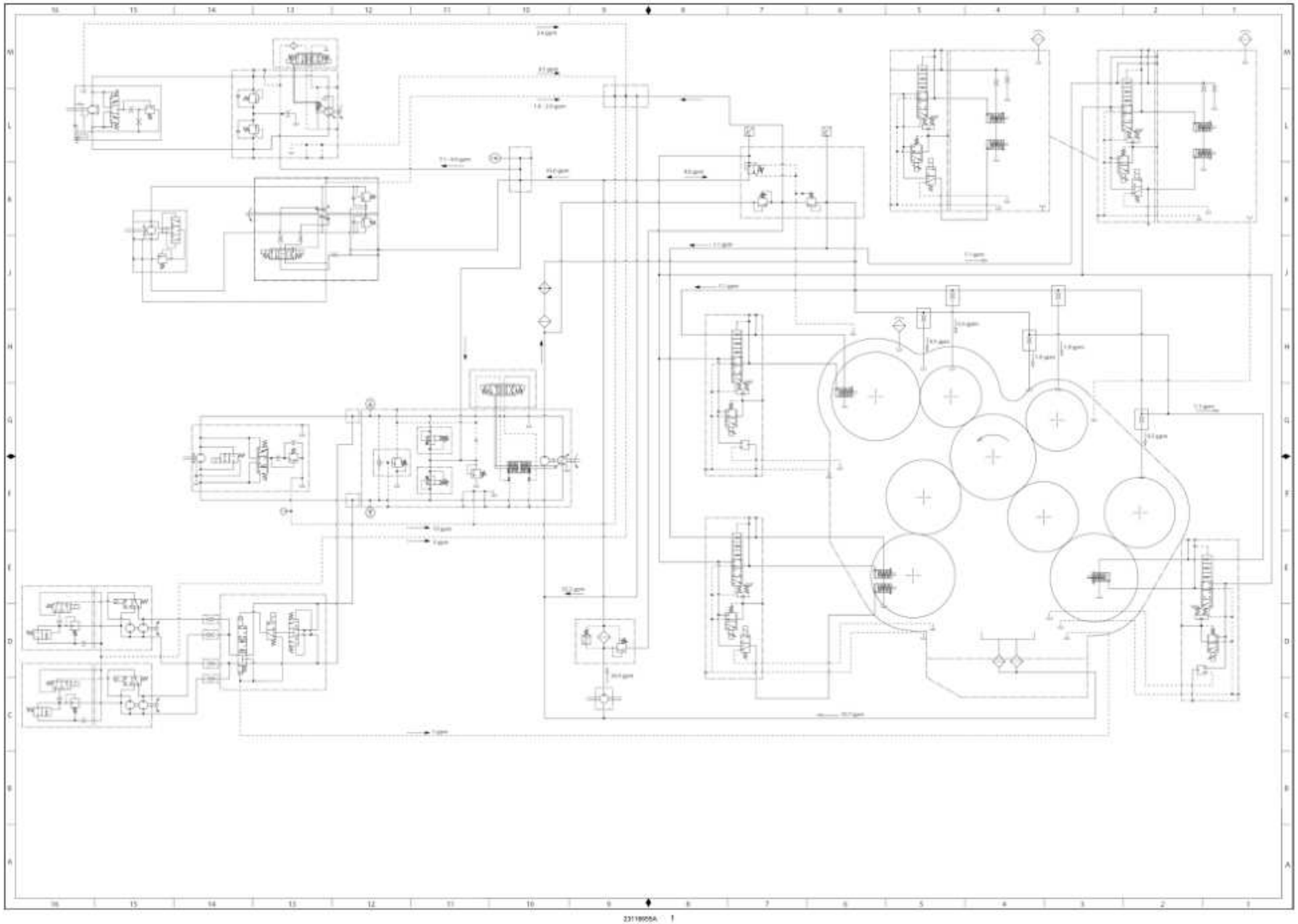


Reel Drive Valve - Sectional View

Color Key: (A) = Return, (B) = Working Pressure, (C) = PFC Supply, (D) = Pilot Supply, (E) = Regulated Supply

1. PFC Supply Port	15. Armature
2. Auxiliary Function Port (Header Functions)	16. Cap
3. Orifice	17. Manual Override Button
4. Pressure-Compensation Spool [shifts at **20.7 bar (300 psi)**]	18. Main Spring
5. Reel Drive Work Port (to Reel Drive Motor)	19. Return Port (through valve stack to reservoir)
6. Main Spool	20. Return Passage
7. Orifice	21. Pilot Poppet
8. Regulated Oil Pressure	22. Relief Valve [factory set to **145 bar (2100 psi)**]
9. Return Passage	23. Pilot Spring
10. Pilot Supply Port	24. Load Sense Port (to PFC pump flow compensator)

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