SERVICE MANUAL

T8.320 / T8.350 / T8.380 / T8.410 / T8.435
Continuously Variable Transmission (CVT)
Tractor

PIN ZERE08100 and above

Part number 47794970
1st edition English
November 2014

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Differential - Static description - Determining ram pressure

T8.320 696110728 CVT TIER 4B [ZERE08100 -]	WE
T8.350 696110738 CVT TIER 4B [ZERE08100 -]	WE
T8.380 696110748 CVT TIER 4B [ZERE08100 -]	WE
T8.410 696110758 CVT TIER 4B [ZERE08100 -]	WE

To determine what the pressure gauge on a press must read for its ram size:

1. Determine the effective area of the ram or rams.
2. Determine the minimum and maximum pressure gauge readings.

To find the effective area for single or dual ram equipped presses, use the formulas below:

- single ram: (d x d) x 0.7854 where d equals the diameter of the ram
- dual ram: [(d x d) + (d x d)] x 0.7854 where d equals the diameter of each ram

If the diameter of the ram is **1.5 in**, the effective area for a single ram is (**1.5 in** x **1.5 in**) x 0.7854 = **1.767 in²**.

If twin rams are used, if the diameter of each ram is **1.5 in**, the effective area for both rams is [(**1.5 in** x **1.5 in**) + (**1.5 in** x **1.5 in**)] x 0.7854 = **3.534 in²**.

To determine the minimum and maximum pressure gauge readings, use the formulas below:

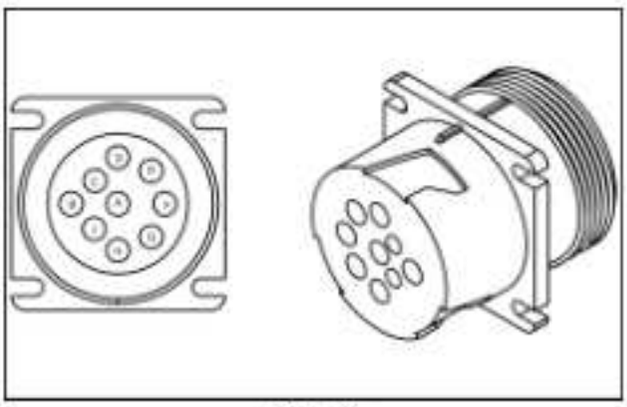
- Minimum pounds force divided by effective area = minimum PSI
- Maximum pounds force divided by effective area = maximum PSI

If the minimum pound force is **2090 lb**, divide **2090 lb** by the effective area (**3.534 in²**) for a minimum gauge reading of **591 psi**. If the maximum pound force is **2610 lb**, divide **2610 lb** by the effective area (**3.534 in²**) for a maximum gauge reading of **738 psi**.

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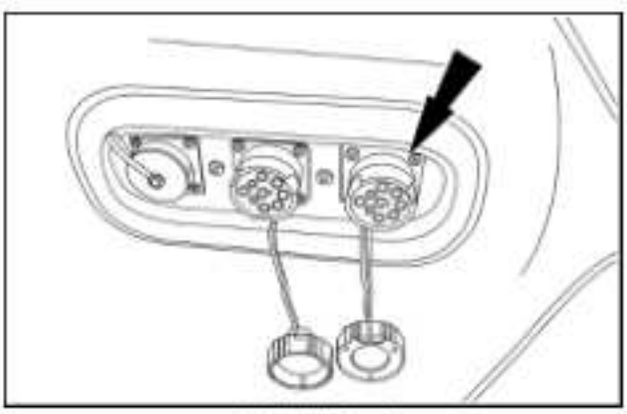
Pin	From	Wire	Description	Color-Size	Frame
23	**X-026 (Male) pin AB1** TO OUTSIDE CAB HARNESS	OC-511	HITCH/EDC POSITION POT LO	GY - 0.8	**Wiring harnesses - Electrical schematic sheet 16 - Transmission, brakes, hitch, radar (55.100)**
24	**X-010 (Female) pin BC8** TO CAB HARNESS	OC-944A	FOOT THROTTLE/ACCL POS SIGNAL	YE - 0.8	**Wiring harnesses - Electrical schematic sheet 39 - Transmission control lever (FNRP), foot throttle (55.100)**
25	**X-531 (Male) pin 7** SCRAPER IMPLEMENT POSITION	OC-145B	SCRAPER 5 LASER POS	YE - 0.8	**Wiring harnesses - Electrical schematic sheet 36 - Scraper position, implement potentiometer, steering potentiometer (55.100)**
26	SP-179-P-X	OC-179E	POWER GROUND	BK - 0.8	**Wiring harnesses - Electrical schematic sheet 14 - Transmission, power distribution (55.100)**

X-443 - CAN SECOND DIAGNOSTICS (87516075) (Male)



87516075 3

87516075



RAL13TR00623AA 4

Pin	From	Wire	Description	Color-Size	Frame
A	**X-239 pin 8A** FUSE BLOCK X-239	CB-176H	DIAGNOSTICS CONNECTOR GROUND	BK - 0.8	**Wiring harnesses - Electrical schematic sheet 48 - Luxury cab power outlets, diagnostic connections (55.100)**
B	**X-061 pin 13** TO OUTSIDE CAB HARNESS	CB-152B	UNSWITCHED B+	RD - 0.8	
C	A-019-P-C	WIRE179			**Wiring harnesses - Electrical schematic sheet 45 - Secondary CAN bus (55.100)**
C	SP-222C-P-X	CB-222D	CAN HI (SEC)	YE - 0.8	
D	A-019-P-D	WIRE180			
D	SP-482D-P-X	CB-482E	CAN LO (SEC)	GN - 0.8	

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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.

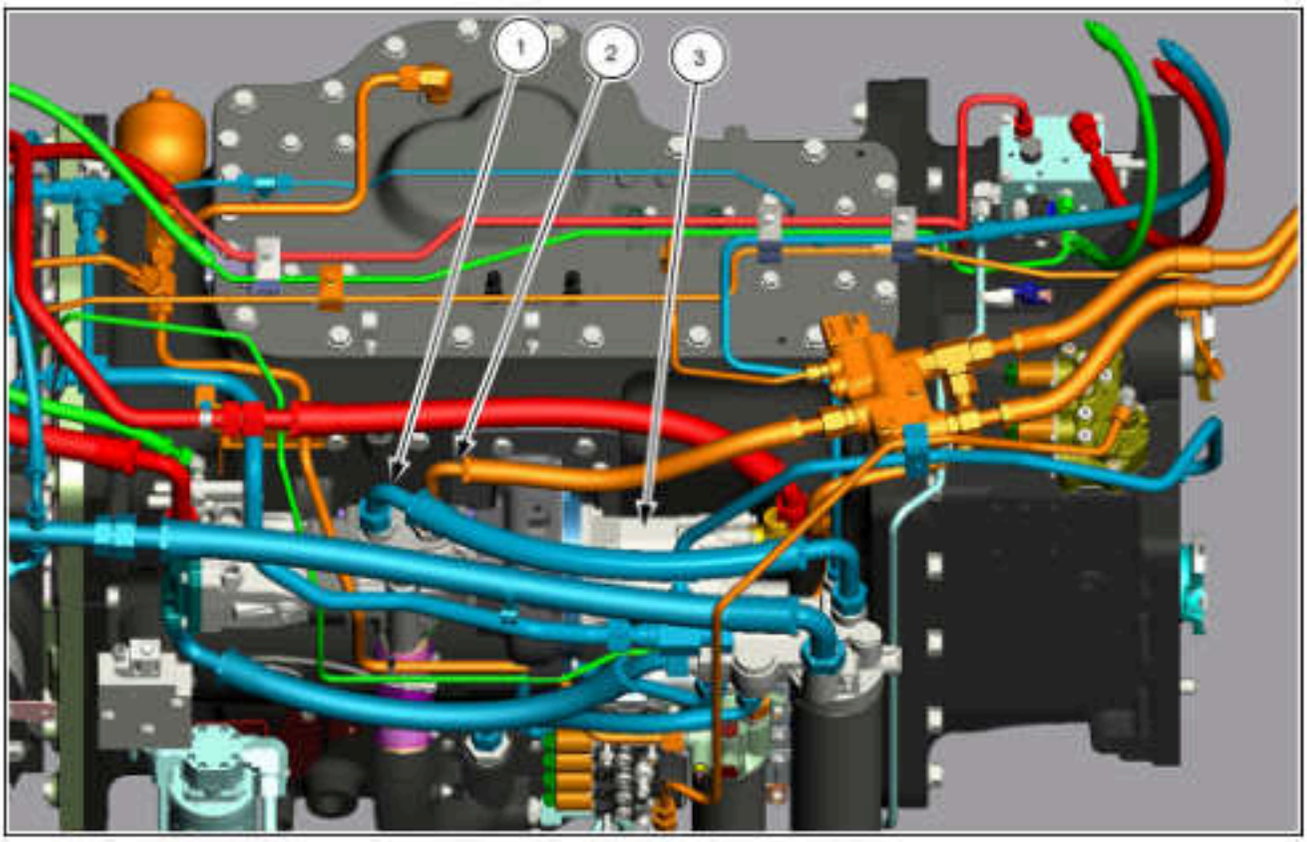
   A. Error code follows the pilot head move. Replace the pilot head. Return unit to field operation.

   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 23 - Auxiliary remote valves (55.100.DP-C.20.E.23)
Wiring harnesses - Electrical schematic sheet 45 - Secondary CAN bus (55.100.DP-C.20.E.45)

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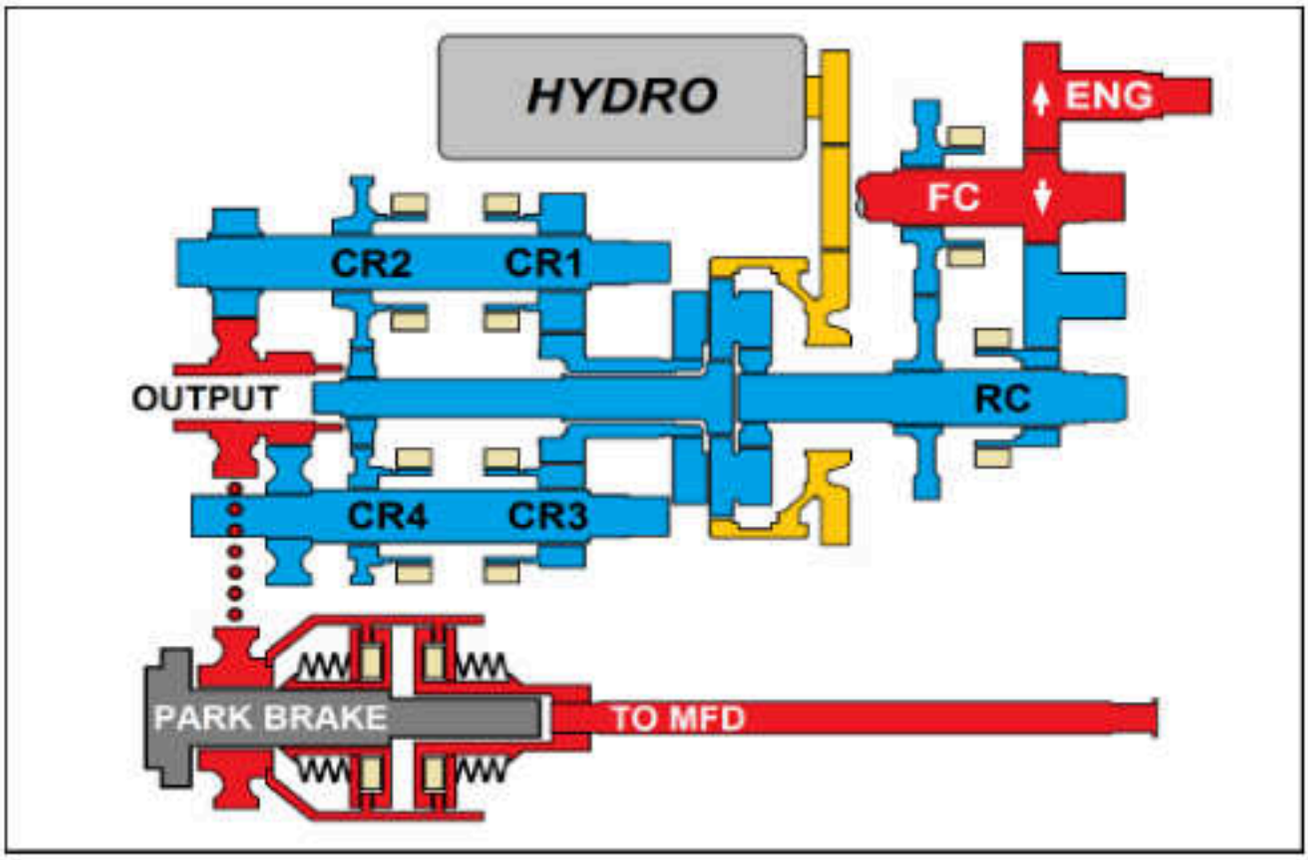
High flow pressure/flow compensating pump — Component identification



RAIL13TR032746A 3

1. Charge/lubrication pump outlet	3. High flow PFC pump
2. Regulated charge pump outlet	

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Park position with Mechanical Front Drive (MFD) engaged

Torque transmitting/clutch pressurized	HSU driven
Non-torque transmitting	Clutch not pressurized

In park, no drive clutches are engaged, but the park brake is; and this locks the output shaft of the transmission. If the Mechanical Front Drive (MFD) clutch is not released, braking is also through the front axle.

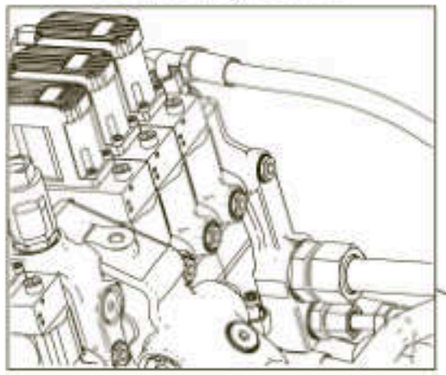
The HSU motor drives the large compound planetary ring gear. By varying the speed of the ring gear, the output speed of the planetary system is varied. The engine drives the input sun in the planetary system through the forward or reverse clutch.

The dual output planetary; one output from the planetary carrier, the other from the output sun gear shaft drives two range shafts containing the four range clutches.

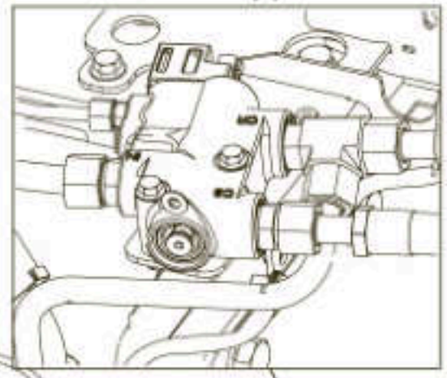
As the vehicle speed increases, the clutches alternate between the planetary outputs and range shafts to ensure seamless shifts and constant transmission output speed increase. The pump swashes back and forth as the clutches are shifted. The TCU calculates when the off-going and the on-coming clutches are speed matched so there is minimal slipping of the clutches during transition. One of the two range shafts then drives the transmission output shaft, depending on which clutch is selected.

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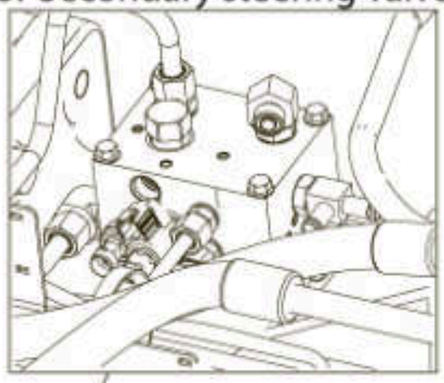
1. Priority valve



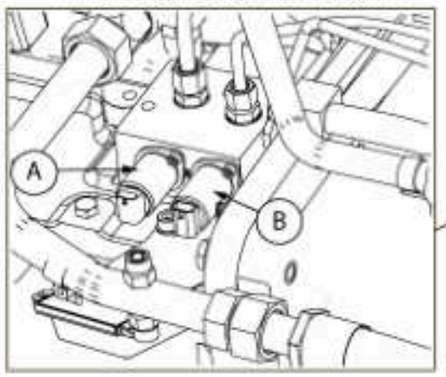
2. Oil cooler bypass valve

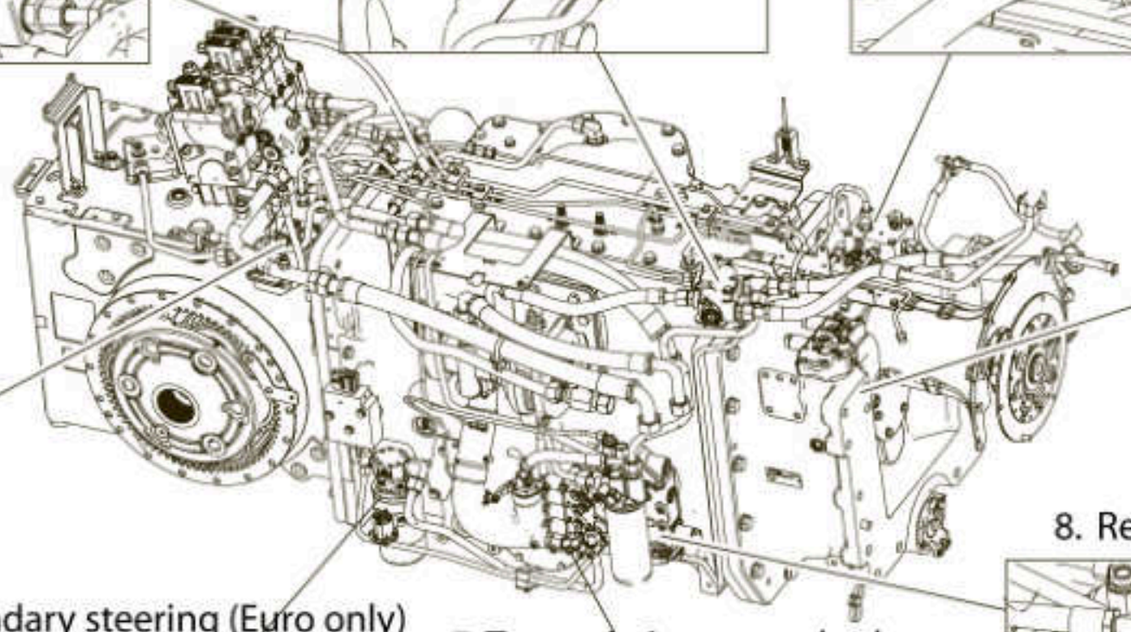


3. Secondary steering valve (Euro only)

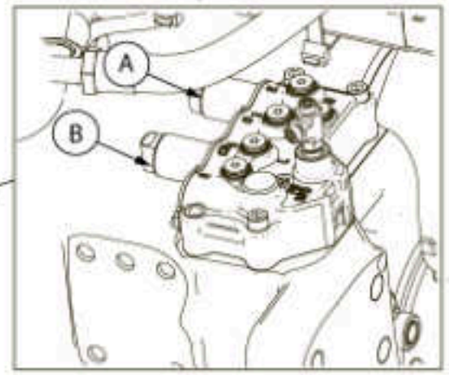


4. Rear PTO brake
MFD Differential lock

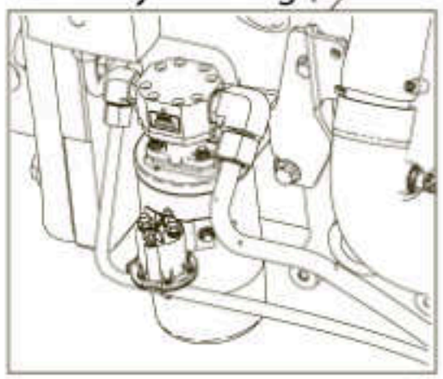




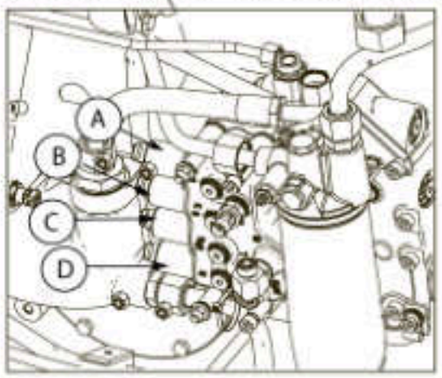
5. Forward/Reverse valve



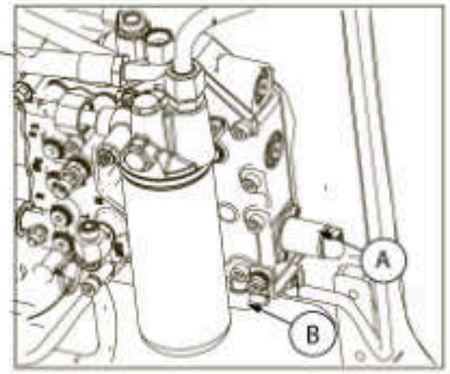
6. Secondary steering (Euro only)



7. Transmission control valve



8. Regulator valve



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