Magnum™ 250
Magnum™ 280
Magnum™ 310
Magnum™ 340
Magnum™ 380
Continuously Variable Transmission (CVT)
Tractor

PIN ZERF08100 and above

SERVICE MANUAL

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1st edition English
November 2014
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CASE IH AGRICULTURE

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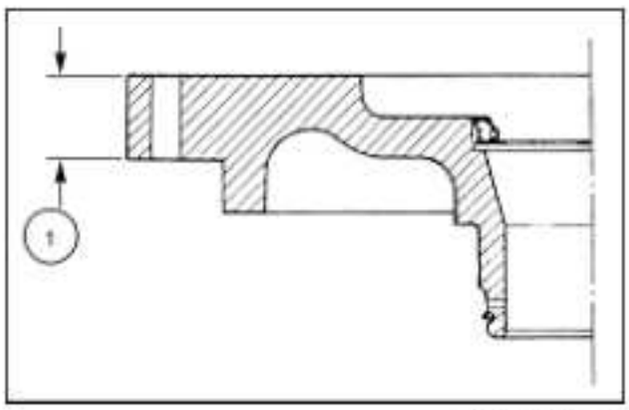
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Differential - Backlash

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Magnum™ 280 696110734 CVT TIER 4B [ZERF08100 -]	WE
Magnum™ 310 696110744 CVT TIER 4B [ZERF08100 -]	WE
Magnum™ 340 696110754 CVT TIER 4b [ZERF08100 -]	WE

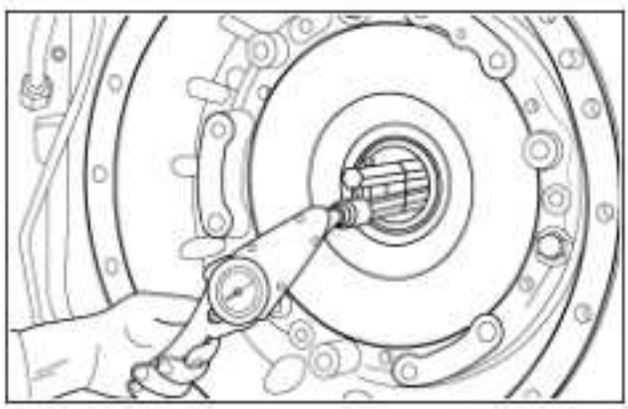
Prior operation:
Differential - Preload (27.106)

1. Determine required shim pack thickness for the bearing retainers:
   A. Measure the thickness of the right hand bearing retainer at the machined surfaces **(1)**.
   B. Subtract this dimension from the average dimension obtained when measuring the retainer face to the rear frame.
   C. The difference between the two values is the thickness for the shim pack.
   D. Remove the bearing retainers, and split the shim pack equally between the two bearing retainers.

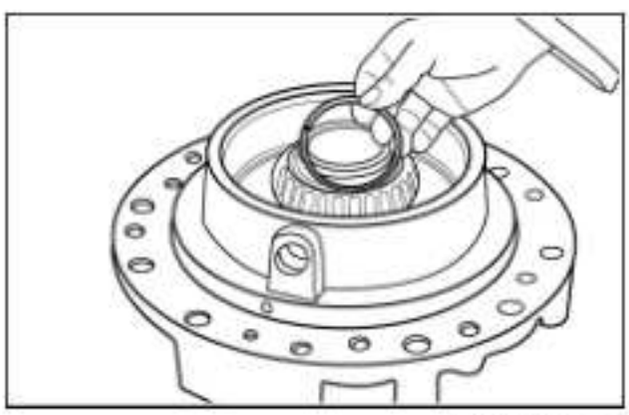


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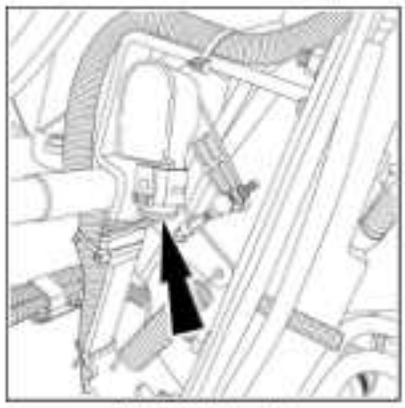
2. Reinstall the bearing retainers as follows:
   A. After installing the new shim pack, install the bearing carriers.
   B. Tighten and then torque the bearing carrier bolts to **221 - 250 Nm** (**163 - 184 lb ft**) while rotating the differential.
   C. Rolling torque of the differential must be **4.5 - 9.0 Nm** (**40 - 80 lb in**) for new bearings and **2.0 - 4.0 Nm** (**20 - 35 lb in**) for old bearings (used for more than 200 hours). The desired setting is in the upper half of the ranges.
   D. To increase rolling torque, remove approximately **0.05 mm** (**0.002 in**) of shim material from the right-hand bearing retainer.
   E. To decrease rolling torque, add approximately **0.05 mm** (**0.002 in**) of shim material from the right-hand bearing retainer.


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3. Install the seal rings on both the left hand and right hand bearing retainer. The ends of the ring must lock together.


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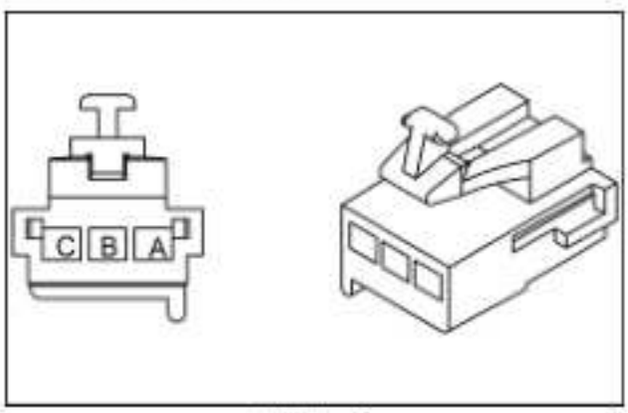
RAE12TR00582AA 10

Pin	From	Wire	Description	Color-Size	Frame
2	**X-010 (Male) pin BC8** TO CAB HARNESS	CB-944A	FOOT THROTTLE SIGNAL	YE - 0.8	**Wiring harnesses - Electrical schematic sheet 38 - Transmission control lever (FNRP), foot throttle (55.100)**
3	**X-164 pin 3** FOOT THROTTLE	CB-143B	FOOT THROTTLE B+ (12V)	OR - 0.8	**Wiring harnesses - Electrical schematic sheet 06 - Power distribution - Fuse block X-045, X-260 (55.100)**
4	**X-010 (Male) pin BB1** TO CAB HARNESS	CB-563C	FOOT THROTTLE 5V	PK - 0.8	**Wiring harnesses - Electrical schematic sheet 38 - Transmission control lever (FNRP), foot throttle (55.100)**
6	**X-010 (Male) pin BD4** TO CAB HARNESS	CB-945A	FOOT THROTTLE SW #1 (NO)	YE - 0.8	
7	SP-553-P-X	CB-176K	FOOT THROTTLE GND	BK - 0.8	
8	SP-563-P-X	CB-559C	FOOT THROTTLE SEN GND	BL - 0.8	

X-165 - BUSINESS BAND RADIO (Female)

Pin	From	Wire	Description	Color-Size	Frame
A	**X-013 (Male) pin W** TO ROOF HARNESS	CR-870B	BUSINESS BAND B+	OR - 1.0	**Wiring harnesses - Electrical schematic sheet 29 - Lighting, dome, auxiliary power and radio (55.100)**
B	**X-013 pin T** TO ROOF HARNESS	CR-189L	BUSINESS BAND RADIO GND	BK - 1.0	**Wiring harnesses - Electrical schematic sheet 09 - Grounding system (55.100)**

X-165A - AUX POWER (A-POST) (87697646) (Female)



87697646 11

87697646

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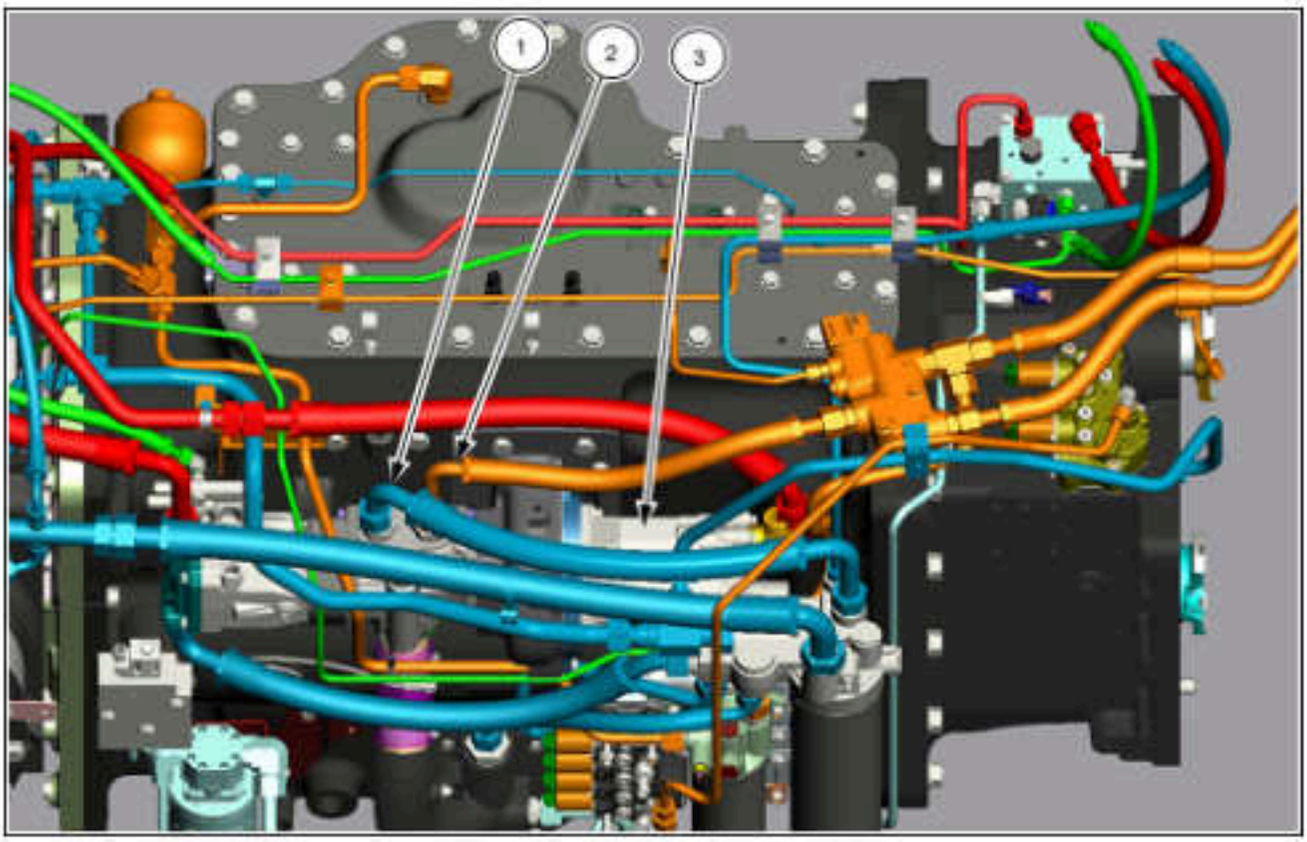
A. Fault code re-displays. Reinstall the original ATC module. Submit a concern to ASIST.

B. Fault code does not re-displays. Write the fault code on the failed controller. Return unit to field operation.

Wiring harnesses - Electrical schematic sheet 21 - Heating, Ventilation, Air Conditioning (HVAC) control (55.100.DP-C.20.E.21)

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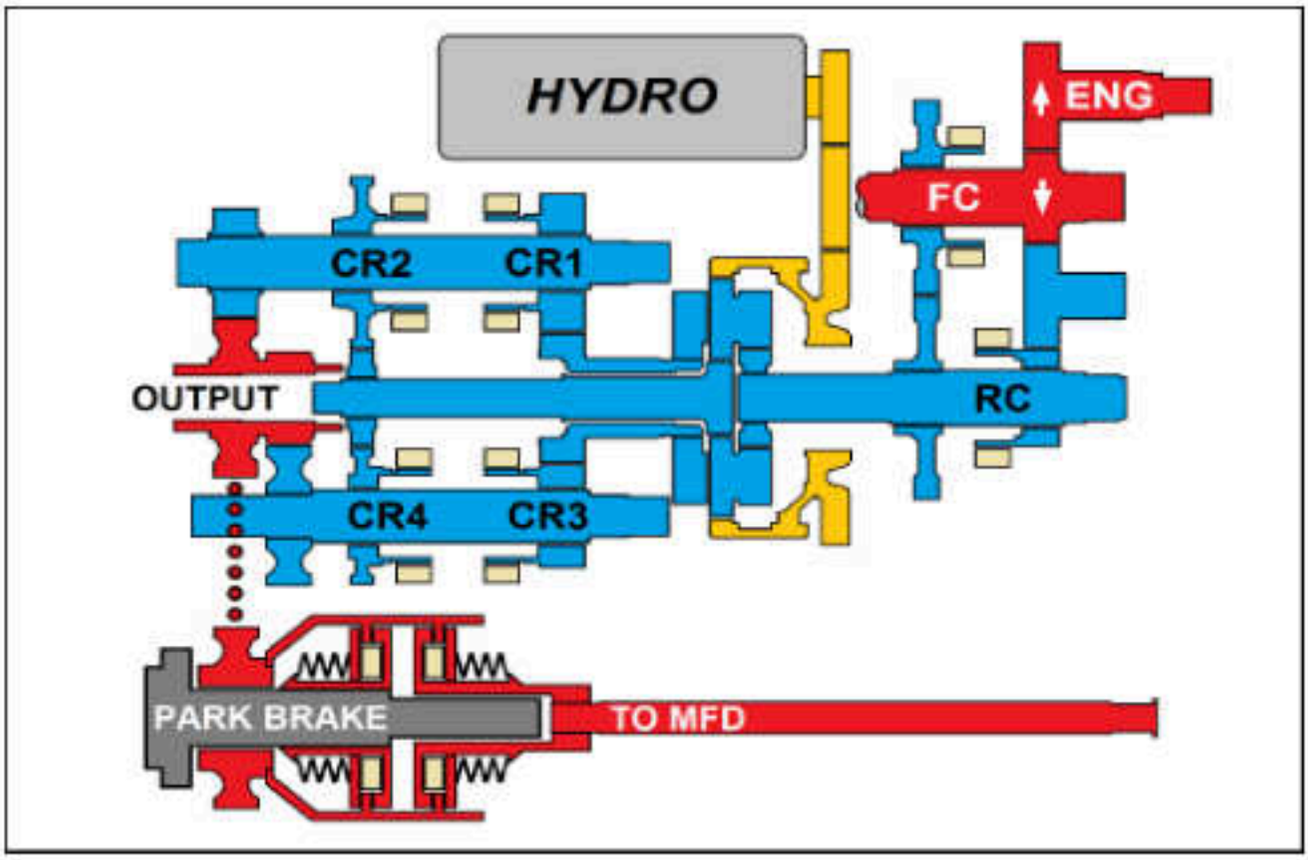
High flow pressure/flow compensating pump — Component identification



RAIL13TR002746A 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.

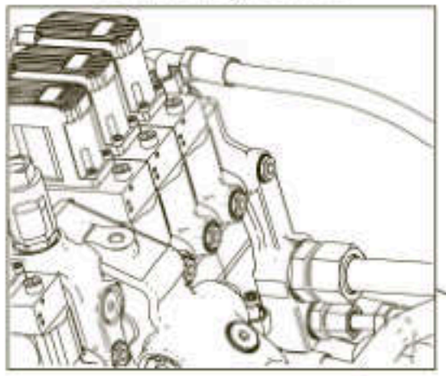
The HSU motor drives the large compound planetary ring gear. By varying the speed of the ring gear, the output speed of the planetary system is varied. The engine drives the input sun in the planetary system through the forward or reverse clutch.

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.

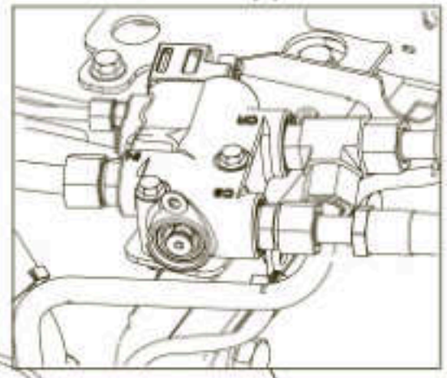
As the vehicle speed increases, the clutches alternate between the planetary outputs and range shafts to ensure seamless shifts and constant transmission output speed increase. The pump swashes back and forth as the clutches are shifted. The TCU calculates when the off-going and the on-coming clutches 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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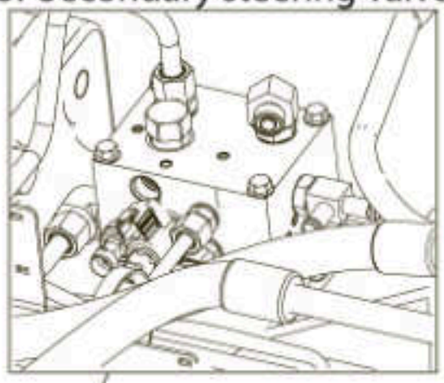
1. Priority valve



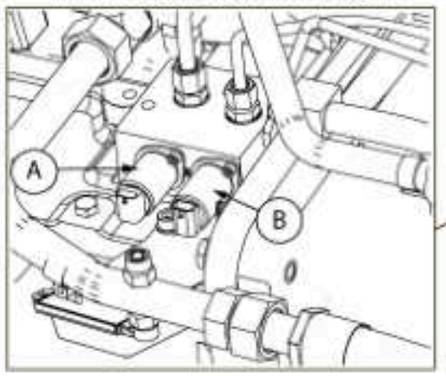
2. Oil cooler bypass valve

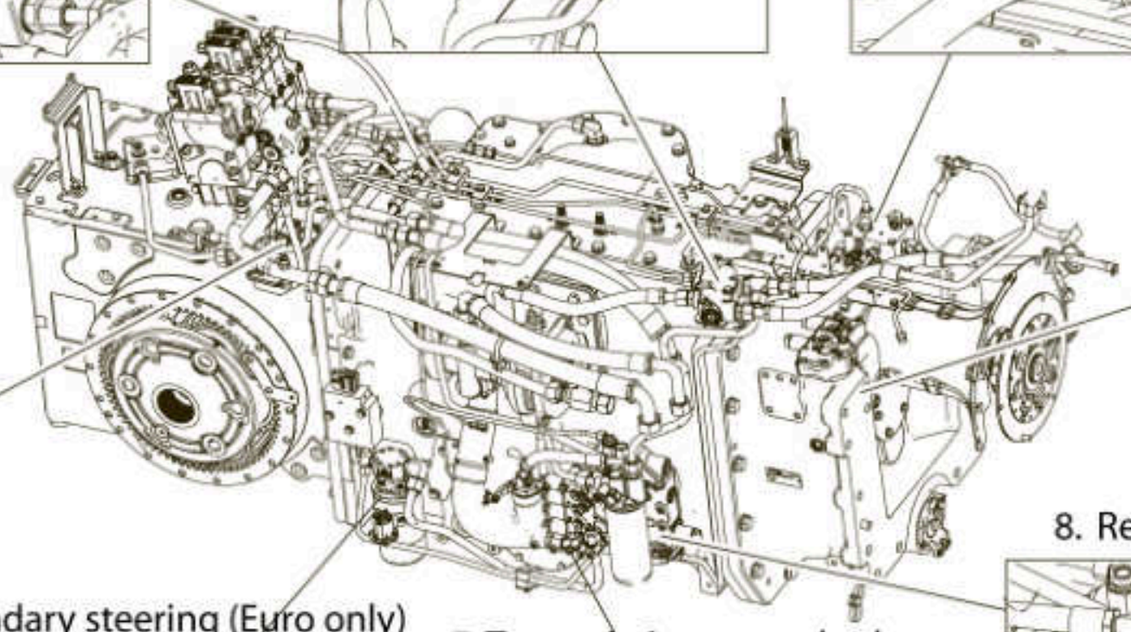


3. Secondary steering valve (Euro only)

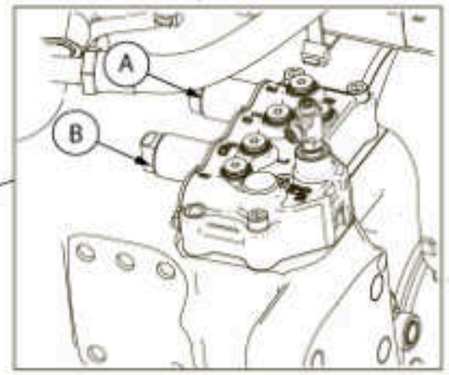


4. Rear PTO brake
MFD Differential lock

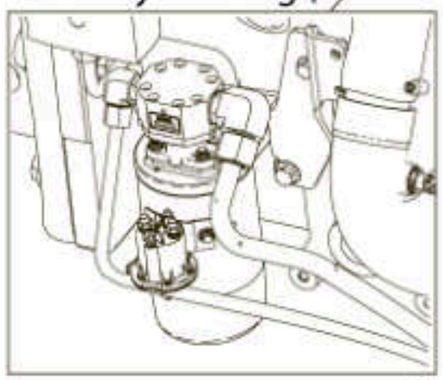




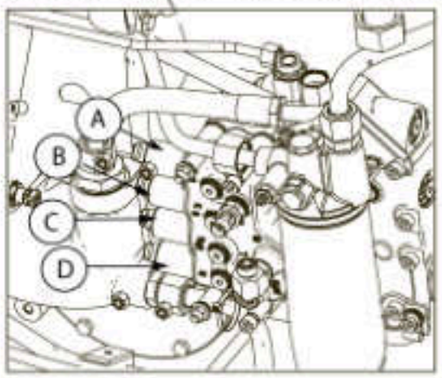
5. Forward/Reverse valve



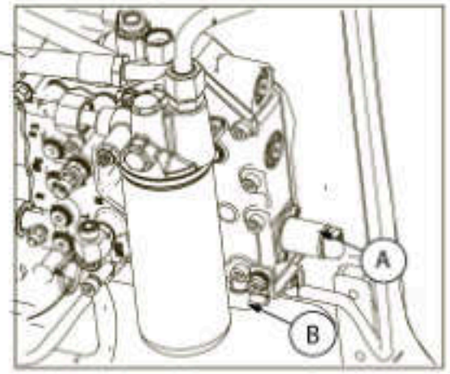
6. Secondary steering (Euro only)



7. Transmission control valve



8. Regulator valve



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