4490, 4690
Tractor

Service Manual

8-21453

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ENGINE SPECIFICATION DETAILS

Cylinder Sleeves

	U.S. Value	Metric Value
Type	Wet, Can Be Replaced	
Material	Cast Iron	
ID of Sleeve	4.6250 to 4.6263"	117.475 to 117.508 mm
Maximum Service Limit	4.6283"	117.559 mm
Sleeve Out of Round (Installed in Block)	0.001"	0.0254 mm
Maximum Service Limit	0.002"	0.0508 mm
Taper (Installed in Block)	0.001"	0.0254 mm
Maximum Service Limit	0.002"	0.0508 mm
Clearance at Bottom of Piston, 90 Degrees to Piston Pin	0.0052 to 0.0075"	0.1321 to 0.1905 mm
Maximum Service Limit	0.0100"	0.2540 mm

Piston

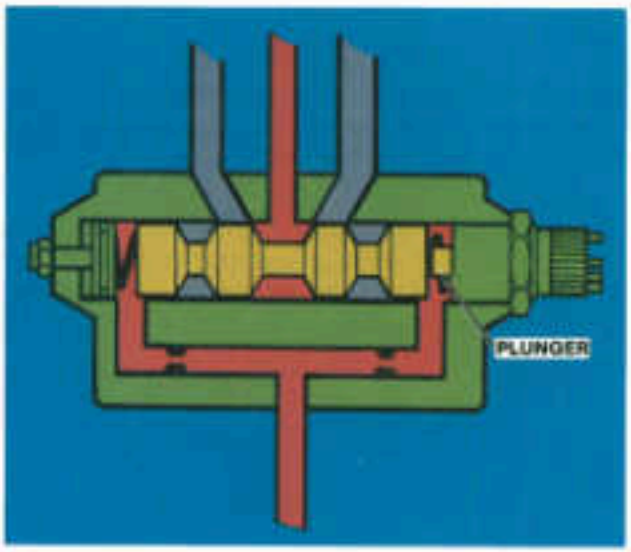
Type	Cam Ground	
Material	Aluminum Alloy	
OD At Bottom, 90 Degrees to Piston Pin	4.6188 to 4.6198"	117.3175 to 117.3429 mm
Minimum Service Limit	4.6178"	117.2921 mm
ID of Piston Pin Bore	1.8001 to 1.8005"	41.723 to 45.733 mm
Maximum Service Limit	1.8010"	45.745 mm
Width of 1st Ring Groove	Can Not Be Measured	
Width of 2nd Ring Groove	Can Not Be Measured	
Width of 3rd Ring Groove	0.188 to 0.189"	4.775 to 4.801 mm
Maximum Service Limit	0.1895"	4.813 mm

Piston Rings

Number One Compression (Top)	Keystone Type With Chrome Face	
End Gap in 4.625" (117.475 mm) ID Sleeve	0.015 to 0.025"	0.381 to 0.635 mm
Maximum Service Limit	0.030"	0.762 mm
Number Two Compression (Intermediate)	Keystone Type With Tapered Face	
End Gap in 4.625" (117.475 mm) ID Sleeve	0.015 to 0.025"	0.381 to 0.635 mm
Maximum Service Limit	0.0350"	0.762 mm
Number Three Oil Control Ring (Bottom)	Two Piece	
Width	0.1860 to 0.1865"	4.7244 to 4.7371 mm
End Gap in 4.625" (117.475 mm) ID Sleeve	0.016 to 0.026"	0.406 to 0.660 mm
Maximum Service Limit	0.031"	0.787 mm
Side Clearance	0.0015 to 0.003"	0.038 to 0.076 mm
Maximum Service Limit	0.0035"	0.089 mm

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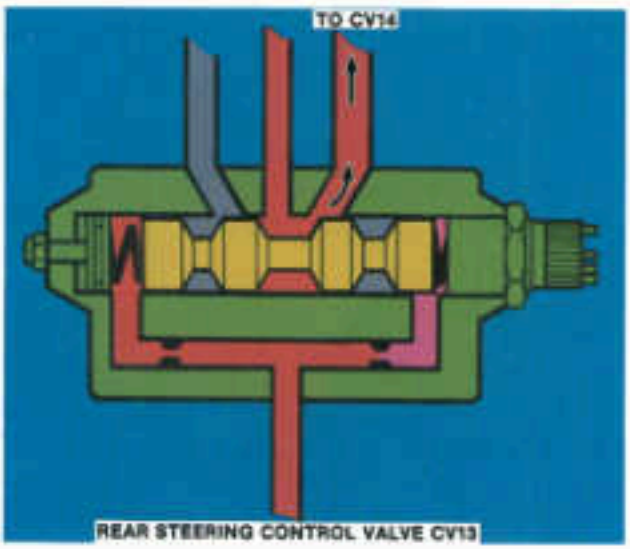
A plunger will respond by moving either in or out depending upon which coil is activated. The more voltage applied to the coil the farther the plunger will travel.



Now, let's get back to the hydraulics.

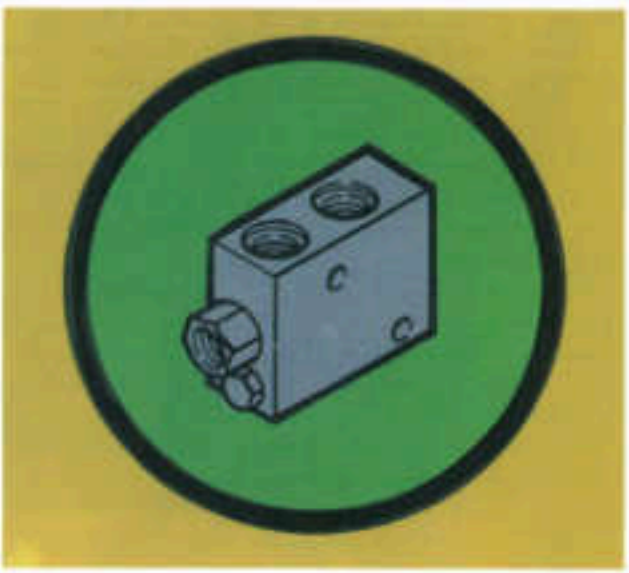
A constant hydraulic pressure is applied to both ends of the steering valve spool holding it in a centered position. When the steering control box applies voltage to a coil, the plunger will move upsetting the hydraulic pressure balance to move the spool.

Oil from the FD1 valve can then flow around the unblocked spool and out to the rear steering check valve assembly, CV14.



Now, let's briefly study this CV14 valve and observe its function in the rear steering hydraulic circuit.

The main function of the CV14 valve is to hold the rear wheels in position, and to prevent any mechanically induced rear wheel drift - caused by "hydraulic - back - pressure building forces" which you may encounter during field operation, (such as ruts or hillside forces).



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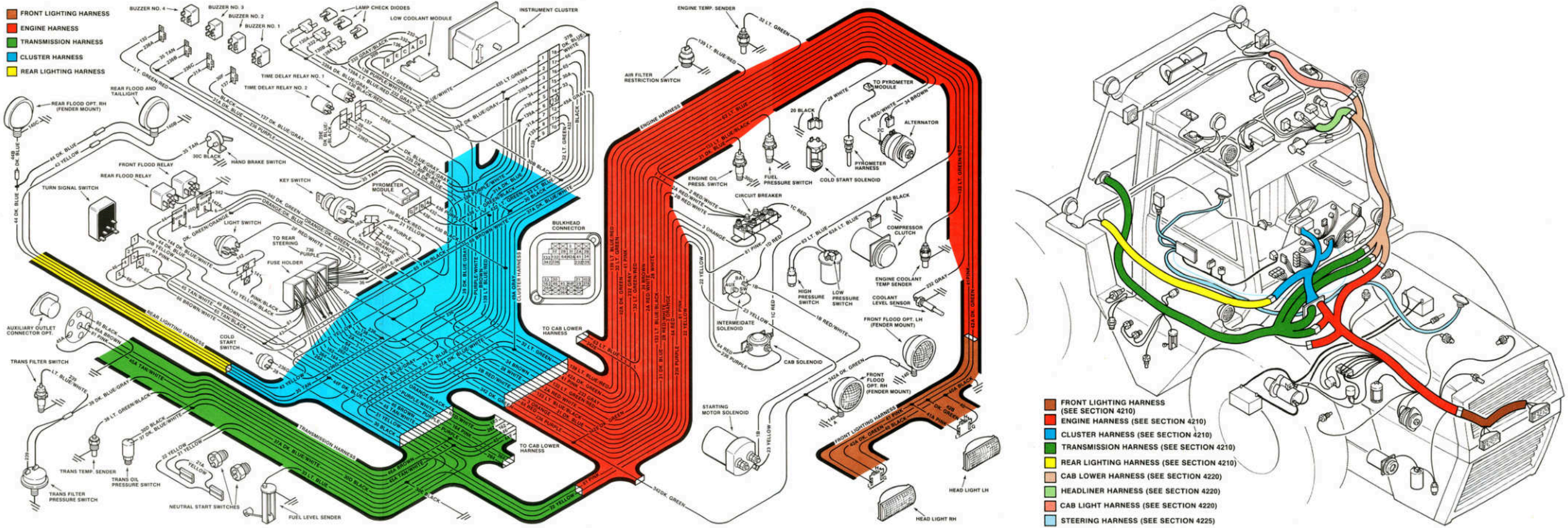


When the wheels are positioned straight ahead, the voltage is directed through one half of the resistor. The original voltage is cut in half.



Steering the tractor wheels one way, directs the voltage through less of the resistor.

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