

LM311 Hydraulic Valve Block

Baroness Technical Training



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株式会社 共栄社

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Top Surface Components

Relief Valve

Controls the output pressure from the gear pump to the valve block.

17.3 Mpa – 2,510 PSI

Unload Valve

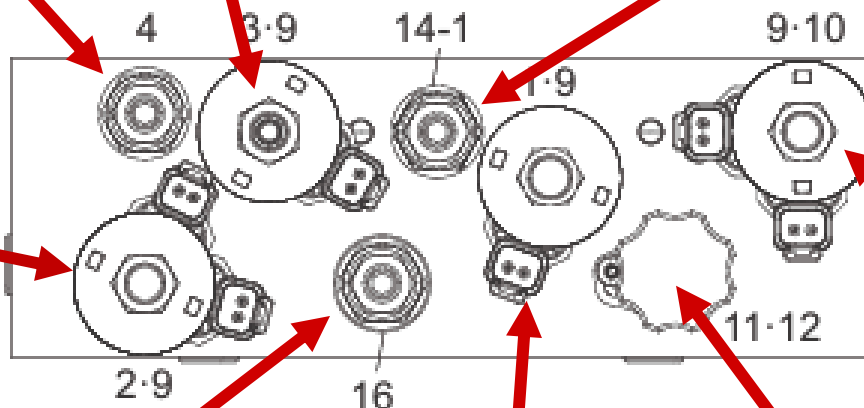
Mainly used with petrol engines. When the engine torque is low, this valve will relieve hydraulic load, especially when starting the engine.

Rear Unit Up Speed Adjusting Valve

This needle valve adjusts the speed that the centre rear cutting unit lifts. Screwing the valve in (clockwise) will increase the speed that the cutting unit lifts.

Lift/Lower Switching Valve

Controls the up/down of the cutting units. Receives input from the mower control module. The top coil selects the lift operation. The bottom coil selects the lowering operation.



Reel Direction change

Switches between forward and reverse rotation for back-lapping. The top coil selects forward rotation. The bottom coil selects reverse rotation.

Lift/Lower Pressure Relief Valve

Relieves circuit pressure to protect the system when the lift rams reach the end of their travel

5.0 Mpa – 725 PSI

Proportional Relief Valve

Varies the relief pressure according to the input current received from the ETDR controller. Protects components by reducing surge pressure when the reels start and stop rotating.

Reel Speed Adjuster

Adjusts the flow rate to the cutting reels thus changing their rotation speed.



Lower Surface Components

Rear Unit Down Speed Valve

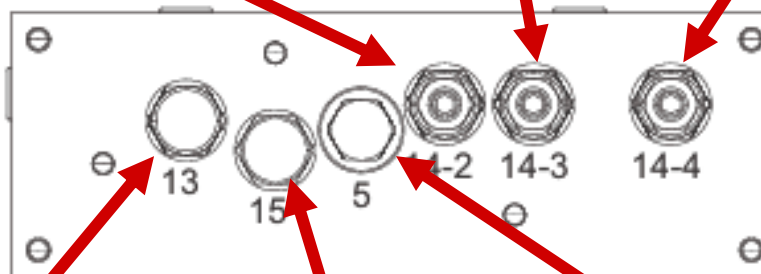
This needle valve adjusts the speed that the centre rear cutting unit descends. Screwing the valve in (clockwise) will increase the speed that the cutting unit descends.

Front right unit down speed valve

This valve adjusts the speed that the front right cutting unit descends. Screwing the valve in (clockwise) will increase the speed that the cutting unit descends.

Front left unit down speed valve

This valve adjusts the speed that the front left cutting unit descends. Screwing the valve in (clockwise) will increase the speed that the cutting unit descends.



Priority Flow Rate Control Valve

The powered steering, reel rotation and lift/lower systems share the same hydraulic pump. This valve ensures that the steering takes priority over the other two systems for safety reasons.

Pressure Compensation Valve

Divides the hydraulic oil supply between the reel rotation circuit and the lift/lower circuit giving the lift/lower circuit priority over the reel rotation circuit. When the lift/lower circuit is not being used, the reel rotation circuit receives the hydraulic supply.

Cutting Unit Anti-Fall Valve

This check-valve stops the cutting units from falling when in the raised position. This valve opens by hydraulic pressure. When the cutting units are raised the flow pressure to the lift rams opens this valve allowing the units to lift. When the lift flow is stopped, the valve closes to stop the units from falling.



Valve Block Part Numbers

1	Proportional Solenoid Relief Valve (Reel Rotation On/Off)	YZTS10-26A-0-N
9	Coil for valve 1 above	YZ4303712
2	Solenoid Switching Valve (Cutting Units Up/Down Control)	YZSV1058D0N00
9	Coil for valve 2 above	YZ4303712
	Seal Kit for valve 2 above	40078945
	Coil Nut for valve 2 above	4540560
3	Solenoid Switching Valve (Unload Valve - opens when engine torque low)	YZSV1021P0N00
9	Coil for Valve 3 above	YZ4303712
	Seal Kit for valve 3 above	40108598
	Coil Nut for valve 3 above	7004400
4	Relief Valve (main Relief Pressure)	RV1022A0N35M173
	Seak Kit for valve 4 above	40078945
	Coil Nut for valve 4 above	7004420
5	Pilot Operated Check Valve	YZPC08-30-0-N-25
	Seal Kit for valve 5 above	40078945
6	Orifice Plug	6112118
	Seal Kit for 6 above	40108448
7	Plaque	6103004
10	Solenoid Switching Valve (forward and Lap rotation direction change)	YZHSV1047D0U00
9	Coil for valve 10 above	YZ4303712
12	Flow Control Valve	FR10-39E-0-N
11	Locking plate kit for 12 above	5965000.1000A
	Seal Kit for Valve 12 above	40108419
	Valve Nut for 12 above	4553800
13	Flow Control Valve	YZFR1030F0N/M6
	Seal Kit for Valve 13 above	40108449
14	Flow Control Valve	YZFC1021A0N05
	Seal Kit for Valve 14 above	40108563
15	Pressure Compensation Valve	YZEC10420N80
	Seal Kit for Valve 15 above	40088759
16	Relief Valve (Cutting Unit Lift/Lower pressure relief)	CR08-38A-O-N-10/M50
	Seal Kit for Valve 16 above	2A1:C29A2:C29A1A1:C29



Left Side Components

Gear Pump Oil Input Port

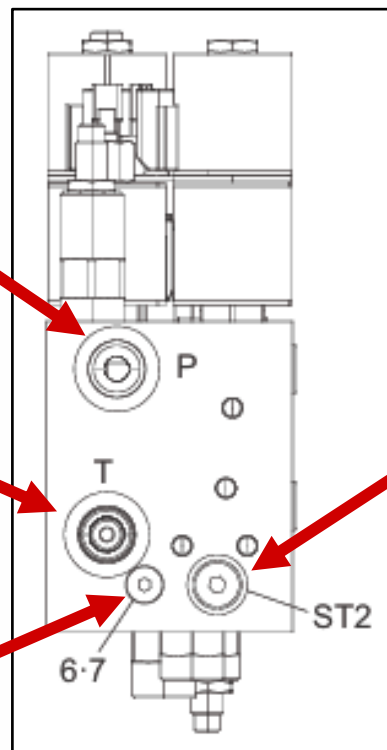
This is where the pumped hydraulic feed from the gear pump enters the valve control block.

Tank Return Port

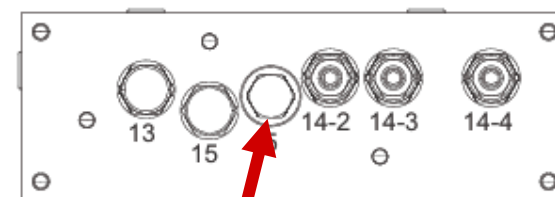
This port returns the hydraulic oil to the tank at the end of its cycle.

Orifice restrictor Access Plug

Inside this plug is located a 2.8mm diameter orifice restrictor. This restrictor regulates the hydraulic flow to the cutting reel rotation circuit in conjunction with the Pressure Compensation Valve.



Not Used





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