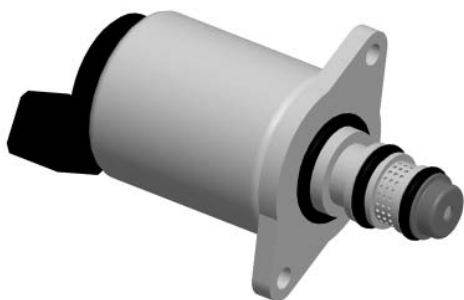


General Description

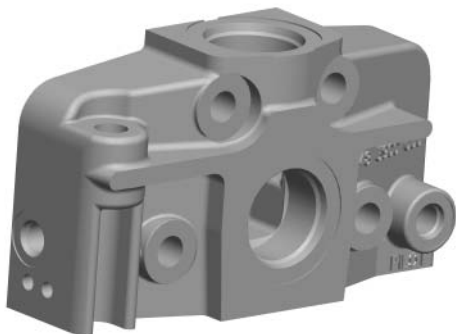
The VG35 has been a strong and reliable player in the 170-246 LPM (45-65 GPM) open-center, directional control valve market for many years. Now it has a new, electrohydraulic package designed for open-center systems and for those customers wanting to take machine control to the next level.

The offering consists of the following:

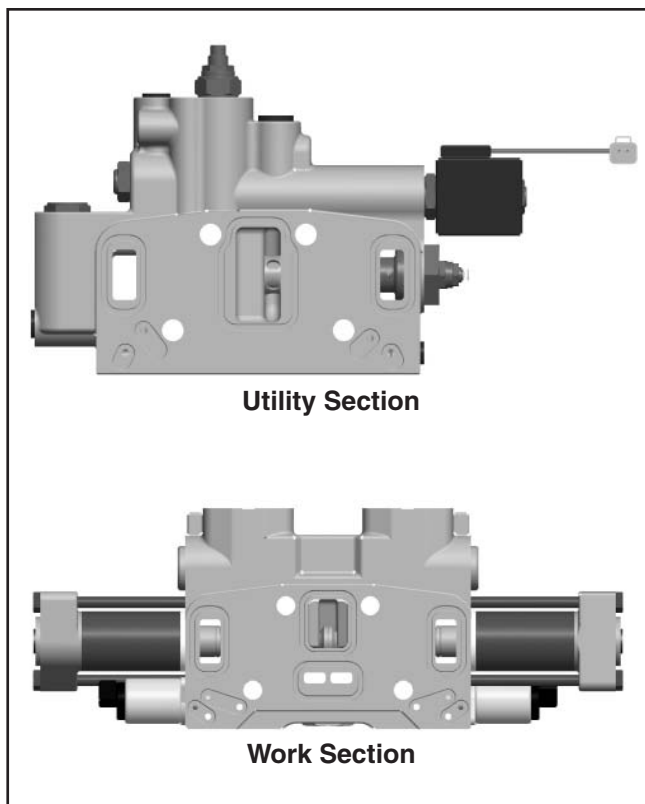
- A global solenoid (pwm) that can be used for proportional or on/off control. The connector options are Amp Jr., Deutsch and Weather Pak.
- Work sections rated to 275 Bar (4000 PSI): 4-way, 3-position; and 3-way, 3-position.
- A pilot generating/regulating section that is referred to as a “utility section”. The purpose of this section is to generate and regulate pilot pressure in an open-center circuit. This section is positioned adjacent to the inlet.
- An outlet that can accept an external regulated signal. This is an option, when a pilot generating/regulating or “utility” section is not required.



Solenoid



Outlet



Operation

Open-center valves that are operated by either hydraulic-remote or electrohydraulic require a way to generate and regulate the pilot pressure. For hydraulic-remote operation, the regulated pilot pressure is needed for the pilot controllers. For electrohydraulic operation, the regulated pilot pressure is required for the work section solenoids. Generation and regulation of the pilot signal can be accomplished externally with an in-line solution, however, this approach requires extra plumbing.

The VG35 has an integrated section that selectively generates and regulates the pilot pressure to be sent to the hydraulic-remote controllers, or the solenoids installed in the work section.

When an operator selects a spool, a signal is sent to a normally open solenoid in the “utility” section. Pressure will then build until it reaches the setting of relief valve. This is sufficient pressure to move the main spool, so that it can be connected to the load pressure. At that point, the inlet of the valve will see system pressure, and the pressure-reducing valve in the “utility section” will regulate the pilot pressure to the hydraulic-remote controllers or the work section solenoids.

For electrohydraulic operation, optimizing machine control is achieved by having a dedicated drain for the work section solenoids. Therefore, the VG35EH package isolates the solenoid within the control valve, and the solenoid drain port is located in the “utility section”.

Specifications

Pressures	Pump Inlet Ports: 275 Bar (4000 PSI) Service Ports: 45 Bar (5000 PSI) Pilot: 35 Bar (508 PSI) (input or internal supply) Tank Return Ports: 15 Bar (220 PSI) Solenoid Drain: 2 Bar (29 PSI)
Flow Rates (maximum recommended)	246 LPM (65 GPM)
Leakage Performance	With mineral oil, 100 SUS@ 49°C (120° F) at 75.9 Bar (1100 PSI) differential Workport w/Steel Plug of no accessory: 30cc/min max. Workport w/RV or RV+AC: 35cc/min max.
Hydraulic Fluid	Mineral Base oil For other fluids consult factory Viscosity, working range: 15-380mm ² /s (15-380 cSt)
Hydraulic Oil Temperature	Recommended Operating Range without Solenoid Operation: -30° to 90°C (-22 to 194°F) Recommended Operating Range with Solenoid Operation: -20° to 80°C (-4 to 176°F)
Filtration (ISO4406)	20/18/14 in Main Flow Paths 18/16/13 Pilot Supply

Weights

Inlet with relief	7.2 kg (15.8 lbs)
Work section – manual spring return	8.4 kg (18.4 lbs)
Work section – hydraulic remote	10.4 kg (22.8 lbs)
Work section – solenoid operated	10.8 kg (23.8 lbs)
Work section – pilot generation	9.6 kg (21.1 lbs)
Add for port relief	0.3 kg (0.65 lbs)
Outlet	4.8 kg (10.6 lbs)

Solenoid Specifications

Voltage	12 or 24 VDC
Frequency	100 ±10 Hz
Pilot	35 Bar (508 PSI) 15-23 LPM (4-6 GPM)
Current Input (I)	1.5A for 12 VDC 0.75A for 24 VDC
Current (mA) for Spool Shift	12V 24V
Start Shift	550 225
Full Shift	150 575
Insulation Material	Class H
Duty Cycle	100%
R20 Ohm	5.3 (±5%) for 12 VDC 21.2 (±5%) for 24 VDC
Fluid Cleanliness	17/14 per ISO 4406
Ambient Temperature	-30° to 80°C (-22 to 176°F)
Fluid Temperature	-20° to 80°C (-4 to 194°F)

Connections

O-ring boss ports SAE-J1926-1
 BSPP ports ISO 1179-1

Description	SAE#	Thread Size	
		O-ring boss	BSPP
Inlet port, Top or Side	16	1-5/16"-12 UNF	1"-11
Inlet port, Top or Side	20	1-5/8"-12 UNF	1-1/4"-11
Outlet port, Top or Side	16	1-5/16"-12 UNF	1"-11
Outlet port, Top or Side	20	1-5/8"-12 UNF	1-1/4"-11
Work Ports	16	1-5/16"-12 UNF	1"-11
Work Ports	12	1-1/16"-12 UNF	3/4"-14



VG35EH Inlet Covers

Product Code	Part Number	SAE-16 Top	SAE-16 Side	SAE-20 Top	SAE-20 Side	Blocked Pilots
DVG35-A990	348 9175 009			X	X	
DVG35-A880	348 9175 008	X	X			
VG35-A990-BP	348 9155 034			X	X	X

- NOTES:**
1. VG35-A990-BP is required when a pilot generation utility section is NOT used.
 2. This inlet has face machining that terminates the internal pilot and drain galleries.



VG35EH Main Relief Options

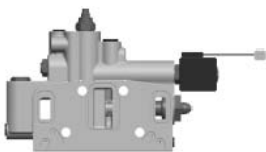
Product Code	Part Number	800-2000 PSI	2000-2500 PSI	2500-3500 PSI	No R/V Option
DVA35-MRV-1	391 1873 003	X			
DVA35-MRV-2	391 1873 004		X		
DVG35-HMRV	391 1873 137			X	
DV-MRVP	391 1873 005				X



VG35EH Outlet Covers

Product Code	Part Number	SAE-20 Side	SAE-20 Top	SAE-24 Side	No Machined Ports	Ext Pilot & Drain SAE-6
VG35-ZT99000	348 9106 285	X	X			
VG35-ZT99022	348 9106 287	X	X			X
VG35-ZT100000	348 9106 304			X		
VG35-ZT100022	348 9106 305			X		X
VG35-ZT00000	348 9106 306				X	

- NOTES:**
1. External pilot and drain ports are required to bring an outside pilot supply into the valve stack.
 2. The external pilot and drain ports are NOT required when using a pilot generation utility section.



VG35EH Pilot Generating Utility Sections

Product Code	Part Number	12V	24V	Deutsch
VG35EH-PGP2DA	348 9159 001	X		X
SOL-12V-DUMP	DSL103AD012LWD6R	X		X
SOL-24V-CONVT	S10LWD6RD024		X	X

- NOTES:**
1. SOL-12V-DUMP can be added to the Utility section. This allows for selective operation of VG35 work sections.
 2. SOL-24V-CONVT coil will convert the Utility section from 12 volt to 24 volt.
 3. Solenoids have 6" leadwires terminated with Deutsch DT04-2P receptacle with pin terminals.



VG35EH Stud Assembly Kits

Product Code	Part Number	No of Sections
DVG35-TSK-1	391 1873 138	1
DVG35-TSK-2	391 1873 139	2
DVG35-TSK-3	391 1873 140	3
DVG35-TSK-4	391 1873 141	4
DVG35-TSK-5	391 1873 142	5
DVG35-TSK-6	391 1873 143	6
DVG35-TSK-7	391 1873 144	7
DVG35-TSK-8	391 1873 145	8

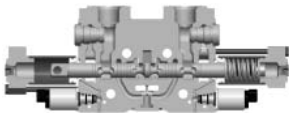
NOTE: Remember to count pilot generating section as one section when ordering studs.



VG35EH Power Beyond Outlet Covers

Product Code	Part Number	SAE-20 Top	SAE-20 Side	Non Ported
DVG35-TPB99	348 9176 008	X	X	
DVG35-TPB00	348 9176 011			X

- NOTES:**
1. Power Beyond Outlets have application limitations.
 2. An outside pilot supply cannot be fed into them.
 3. Additionally, a last in-line work section is required.
 4. Consult factory for these special part numbers.



VG35EH Work Sections

Product Code	Part Number	12 Volt 4-Way 3-Pos Hold in Neutral	12 Volt 4-Way 3-Pos Float in Neutral	12 Volt 3-Way 3-Pos Hold in Neutral	24 Volt 4-Way 3-Pos Hold in Neutral	24 Volt 4-Way 3-Pos Float in Neutral	24 Volt 3-Way 3-Pos Hold in Neutral	Solenoid Push Pin Override
VG35-HP2AS899	348 9152 161	X						
VG35-LP2AS899	348 9152 162		X					
VG35-JP2AS809	348 9151 020			X				
VG35-HP4AS899	348 9152 164				X			
VG35-LP4AS899	348 9152 165					X		
VG35-JP4AS809	348 9151 021						X	
VG35-HP2AOS899	348 9152 033	X						X
VG35-LP2AOS899	348 9152 062		X					X
VG35-JP2AOS809	348 9151 012			X				X
VG35-HP4AOS899	348 9152 127				X			X
VG35-LP4AOS899	348 9152 128					X		X
VG35-JP4AOS809	348 9151 022						X	X
Solenoid connector	391 1823 417	Pre-terminated AMP Jr. then 6" leadwires then Packard.						

- NOTES:**
1. Port Accessories are same as DVA/DVG from Distributor Valve Program Bulletin HY14-2000/US.
 2. Work sections listed have SAE-16 workports.
 3. Work sections listed use "AMP Junior Power Timer" connectors.
 4. Use adapter kit 391 1823 417 to convert from AMP Jr. to Packard, or AMP Jr. to leadwires.
 5. Series circuit work sections are not available at this time.