



Bulletin HY14-2000/US

Distributor Valve Program

Effective: June 1, 2003
Supersedes: DL101 dated 10/00



DVG18

DVA20

DVG20

DVA35

DVG35

DVG80

DVA / DVG Accessories

In-Line Accessories

Hand Pumps

Hydraulic Remote Controls

Pneumatic Remote Controls

Hydraulic Overspeed Control

 **WARNING**

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catalog.p65, dd



Notes

Valve Assembly Form

Inlet

Model _____

Main R/V

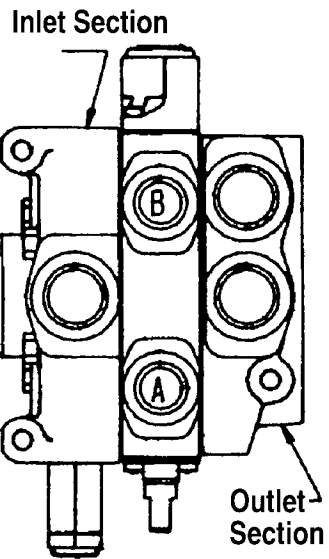
Yes No

Set at _____ psi
@ _____ gpm

Porting
Note Thread & Size

TOP
High Press _____
Low Press _____

SIDE
High Press _____
Low Press _____



Clevis at Port A
Left Hand

Clevis at Port B
Rt Hand

HANDLES

None
 Bracket
 Vertical

KA18 Only

Horizontal
Mechanical Joystick
 Left Hand Rt Hand

On Section #s _____

Section Information and Description

Circuit		Stacking Order					
		1	2	3	4	5	6
<input type="checkbox"/> Parallel							
<input type="checkbox"/> Series	S.A. Port B						
<input type="checkbox"/> Tandem	D.A. Cylinder						
	D.A. Motor						
	4way/4pos Float (DTT)						
	Other _____						
A & B							
Port Size _____	SAE <input type="checkbox"/> NPT <input type="checkbox"/>						
Spool	Spring Return						
Actuator	3-Pos Detent						
	Hyd Remote Meter						
	Hyd Pilot On/Off						
	Air Remote						
	Solenoid 12 Vdc						
	Other _____						
Port	None A or B						
Accessory	A						
	A/C B						
R/V + A/C	_____ psi @ A						
Setting	_____ psi @ B						
R/V	_____ psi @ A						
Setting	_____ psi @ B						
Plug	A						
	B						
Restrict Out	A						
	B						
Restrict In	A						
	B						
Restrict Fix	A						
	B						
D.A. Lock	A						
	B						
S.A. Lock							
	Split Flow						
Mid-Section	Comb Flow						
Inlets	Main R/V						
	Main R/V Plug						
Port Size	SAE <input type="checkbox"/> NPT <input type="checkbox"/>						

Outlet

Type

Tank Ret'n

Press Beyond

Porting
Note Thread & Size

TOP
High Press _____
Low Press _____

SIDE
High Press _____
Low Press _____

Customer _____

Model No. _____

Customer No. _____

City _____ State _____ Zip _____ Phone () _____

Application _____

Comments _____

Assembly _____

Brief Circuit Descriptions

Series Circuit

Available in DVA20 sections only.

If a machine's work cycle requires simultaneous as well as separate operation of individual hydraulic work functions, a series circuit is right for the job.

As with the other circuits, the oil flows through the open center when all spools are in neutral. There is no parallel passage in standard series sections because they feed directly from the open center passage. If more than one spool is operated, pump flow goes first to the section closest to the inlet. Return flow from the first section is fed back into the open center for use by downstream sections.

Downstream sections can be series, parallel or tandem and will operate in series with the upstream section.

In series circuits, operating pressure is cumulative. Therefore, the sum of the pressures in the circuits can not exceed the circuit or main relief valve setting.

Parallel Circuits

Parallel circuits are the most common on mobile equipment because more than one function can be operated simultaneously and at random. If two or more functions are fully operated at the same time, the one with the lightest load will assert priority because the fluid will take the path of least resistance. However, the operator can divide the flow between functions by metering the spools.

Movement of the spool meters or shuts off the flow of oil thru the open center passage and pressurizes the parallel passage. Oil is then available, at the operator's discretion, to all work ports connected to the parallel passage.

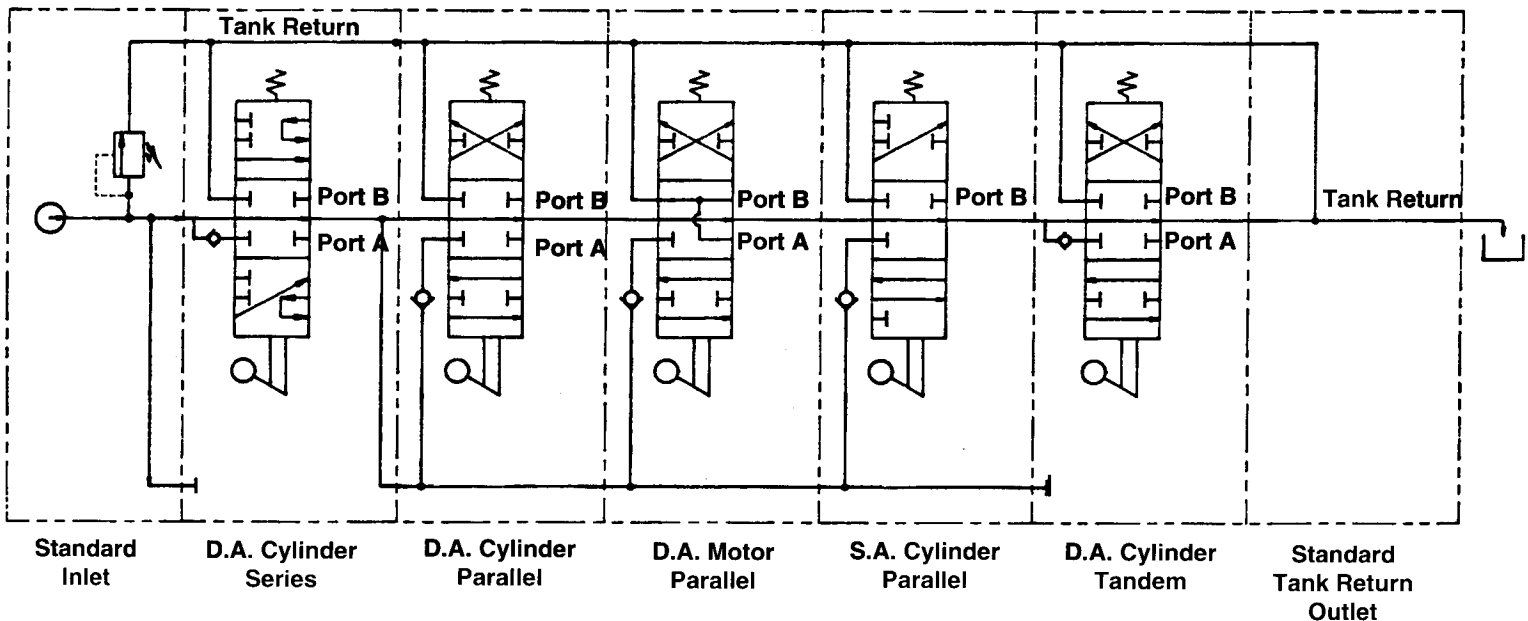
Tandem Circuits

(Not available in the program)

Tandem circuits are sometimes called priority or standard circuits by other manufacturers. Tandem sections feed from the open center passage like series sections but the return flow is directed to the tank return passage and is not available downstream.

If a tandem section is followed by a series or tandem section, operating the tandem section nearest the inlet will assert priority and downstream sections will not function.

Typical Work Section Schematics



Contents

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Section D.....	DVA35 • 70 gpm • 2500 psi	18 thru 23
Section E.....	DVG35 • 70 gpm • 3500 psi.....	25 thru 27
Section F.....	DVG80 • 120 gpm • 3500 psi.....	28 thru 30
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Section H.....	In-Line Accessories	35 thru 36 <i>(Selector Valves & In-line Relief Valves)</i>
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Code Prefix Explanation

Code Used in:

DV20..... DVA20 & DVG20 Valves

DV35..... DVA35 & DVG35 Valves

DV80..... DVG80 Valves

DVG18

DVA20

DVG20

DVA35

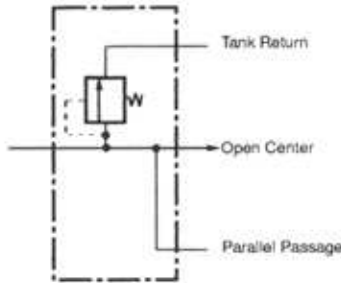
DVG35

DVG80

 **Can be used in respective series designation only**

Combination Inlet-Outlet

This standard inlet includes a tank return outlet port which is used with the "TRB" outlet cover.



Schematic shown with main R/V

Inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs.

Code	Top Port		End Port	
	HP	LP	HP	LP
DVG18-A0055	SAE-10 Plugged	SAE-10 Plugged	SAE-12	SAE-12
DVG18-A0088	1/2"NPT Plugged	1/2"NPT Plugged	3/4"NPT	3/4"NPT
DVG18-A0550	SAE-10 Plugged	SAE-12	SAE-12	None
DVG18-A5005	SAE-12	SAE-12 Plugged	None	SAE-12
DVG18-A5500	SAE-12	SAE-12	None	None
DVG18-A7008	1/2"NPT	1/2"NPT Plugged	None	3/4"NPT
DVG18-A7700	1/2"NPT	1/2"NPT	None	None
DVG18-A3333	SAE-8	SAE-8	SAE-8	SAE-8
DVG18-A4444	SAE-10	SAE-10	SAE-10	SAE-10
DVG18-A7777	1/2"NPT	1/2"NPT	1/2"NPT	1/2"NPT
DVG18-A0000	Not Ported			

Mid-section Inlets

Split Flow

Code	Top Port Size HP & LP
DVG18-SFA88	3/4" NPT
DVG18-SFA55	SAE-12
DVG18-SFA00	NO PORTS

Combined Flow

DVG18-CFA88	3/4" NPT
DVG18-CFA55	SAE-12
DVG18-CFA00	NO PORTS
Combined flow with backflow check	
DVG18-CFAC88	3/4" NPT

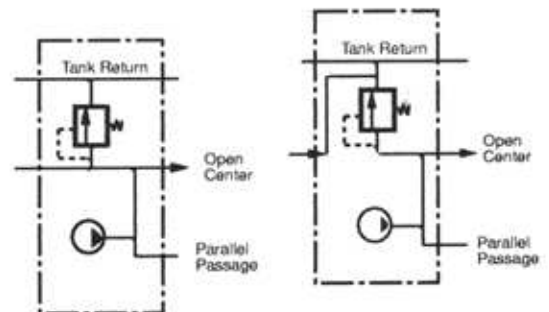
Flow Control

Pressure Compensated - Adjustable	
DVG18-MFC	No Ports

Mid-section inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs.

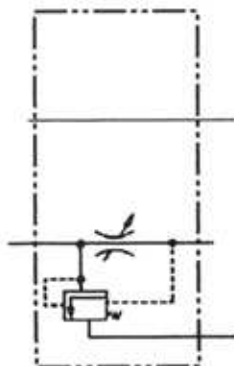
Separates primary and secondary pump flows which allows one valve bank to operate like two.

Split Flow



Combined Flow

Combines primary and secondary pump flows for faster operating speed of downstream functions





Adjustable R/V Cartridges For Inlets and Mid-section Inlets

Inlet Codes
 DVG18-MRV-1 Main R/V range 500 to 1450 psi. Factory set @ 1000 psi @ 15 gpm
 DVG18-MRV-2 Main R/V range 1450 to 3500 psi. Factory set @ 2500 psi @ 15 gpm.
 DVG18-MRVP Main Relief Valve Plug



Mid-Inlet Codes
 DVG18-MMRV-1 Main R/V range 500 to 1450 psi. Factory set @ 1000 psi @ 15 gpm
 DVG18-MMRV-2 Main R/V range 1450 to 3500 psi. Factory set @ 2500 psi @ 15 gpm.
 DVG18-MMRVP Main Relief Valve Plug

Outlets

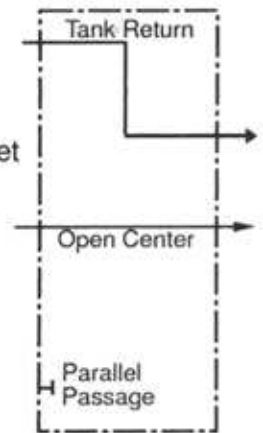
Code	End Port		Top Port
	HP	LP	LP
DVG18-TRC087		3/4 NPT	1/2 NPT
DVG18-TRC055		SAE-12	SAE-12
DVG18-TRC000	Unported Outlet		
DVG18-TRB	Outlet Cover ONLY. For use with combination Inlet/Outlet		
DVG18-PBS10	SAE-10	Pressure beyond sleeves convert tank return outlets to pressure beyond	
DVG18-PBS75	3/4" NPT		

All TRC outlets are machined to accept PBS sleeves.



TRC055 Tank Return Outlet Shown with DVG18-PBS10 Pressure Beyond Sleeve

Pressure Beyond Outlet



Stud Kits TORQUE TO 240 INCH POUNDS

Code	Number of Sections Between Inlet and Outlet							
	1	2	3	4	5	6	7	8
DVG18-	SK-1	SK-2	SK-3	SK-4	SK-5	SK-6	SK-7	SK-8



Work Sections with Additional Features

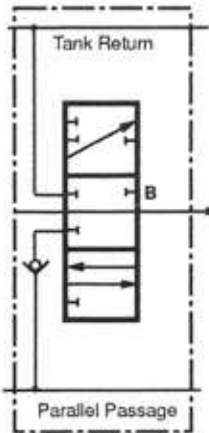
Code	Product Description
Parallel Circuits	
DVG18-HK455	4-Way, 3-Position, Hold in Neutral, Double ended 12VDC Solenoid Operated. SAE 10 Ports with port relief valve machining.
DVG18-HKR455	4-Way, 3-Position, Hold in Neutral, Kickout Release Valve SAE-10 Ports with port relief valve machining.
DCG18-HV400	4-Way, 3-Position, Hold in Neutral, Air actuated SAE-10 Ports without port relief valve machining.
DVG18-HV455	4-Way, 3-Position, Hold in Neutral, Air Actuated SAE-10 Ports with port relief valve machining.
DVG18-HV755	4-way, 3-Position, Hold in Neutral, Air Actuated. 1/2" NPT Ports with port relief valve machining.
DVG18-HX400	4-Way, 3-Position, Hold in Neutral, Metered hydraulic Remote control. SAE-10 Ports without port relief valve machining.
DVG18-HX455	4-Way, 3-Position, Hold in Neutral, Metered hydraulic Remote control. SAE-10 Ports with port relief valve machining.
DVG18-HX755	4-Way, 3-Position, Hold in Neutral, Metered hydraulic Remote control. 1/2" NPT Ports with port relief valve machining.
DVG18-JLA405	3-Way, 3-Position, Float in Neutral, Spring Return. SAE-10 Ports with port relief valve machining.
DVG18-JLA705	3-Way, 3-Position, Float in Neutral, Spring Return. 1/2" NPT Ports with port relief valve machining.
DVG18-JLB405	3-Way, 3-Position, Float in Neutral, with 3-Position Detent. SAE-10 Ports with port relief valve machining.
DVG18-JLB705	3-Way, 3-Position, Float in Neutral, with 3-Position Detent. 1/2" NPT Ports with port relief valve machining.
DVG18-JLA505	Same as JLA705 except work port is machined for Lock Valve.
DVG18-LK455	4-Way, 3-Position, Float in Neutral, Double ended 12 vDC Solenoid Operated. SAE 10 Ports with port relief valve machining.
DVG18-LX455	4-Way, 3-Position, Float in Neutral, Metered hydraulic Remote control. SAE-10 Ports with port relief valve machining.
DVG18-LX755	4-Way, 3-Position, Float in Neutral, Metered hydraulic Remote control. 1/2" NPT Ports with port relief valve machining.
Tandem Circuits	
DVG18-HKRT455	4-Way, 3-Position, Hold in Neutral, Double ended 12VDC Solenoid Operated. SAE 10 Ports with port relief valve machining.
DVG18-QHA455	4-Way, 3-Position, Hold in Neutral, Spring Return SAE-10 Ports with port relief valve machining
DVG18-QHA755	4-Way, 3-Position, Hold in Neutral, Spring Return 1/2" NPT Ports with port relief valve machining

Many of the above work sections can be made from codes on page A4 and kits on page A7

Work Sections -- Parallel Circuit (3500 psi)

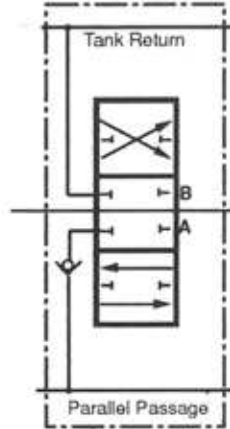
Sections with port relief valve machining are furnished with plastic closures

CODE	4-Way 3-Pos Hold In Neutral	3-Way 3-Pos Hold In Neutral	4-Way 3-Pos Float In Neutral	4-Way 4-Pos Float Pos Detented	1/2" NPT Ports	SAE-8 Ports	SAE-10 Ports	Work Port NOT Machined	Spring Return	3-Pos Detent	Female Clevis Spool	Port R/V Machined
DVG18-HA000	.							.	.			
DVG18-HA055	.							.	.			.
DVG18-HA300	.					.			.			
DVG18-HA355	.					.			.			.
DVG18-HA400	.						.		.			
DVG18-HA400-FCL	.						.		.		.
DVG18-HA455	.						.		.			.
DVG18-HA455-FCL	.						.		.		.	.
DVG18-HA700	.				.				.			
DVG18-HA700-FCL	.				.				.		.
DVG18-HA755	.				.				.			.
DVG18-HA755-FCL	.				.				.		.	.
DVG18-JA000		.						.	.			
DVG18-JA005		.						.	.			.
DVG18-JA300		.				.			.			
DVG18-JA300-FCL		.				.			.		.
DVG18-JA305		.				.			.			.
DVG18-JA400		.					.		.			.
DVG18-JA405		.					.		.			.
DVG18-JA405-FCL		.					.		.		.	.
DVG18-JA700		.			.				.			
DVG18-JA705		.			.				.			.
DVG18-JA705-FCL		.			.				.		.	.
DVG18-JB305		.				.			.	.		.
DVG18-LA000			.					.	.			
DVG18-LA055			.					.	.			.
DVG18-LA300			.			.			.			
DVG18-LA355			.			.			.			.
DVG18-LA400			.				.		.			
DVG18-LA400-FCL			.				.		.		.
DVG18-LA455			.				.		.			.
DVG18-LA455-FCL			.				.		.		.	.
DVG18-LA700			.		.				.			
DVG18-LA700-FCL			.		.				.		.
DVG18-LA755			.		.				.			.
DVG18-LA755-FCL			.		.				.		.	.
DVG18-HB355	.					.			.	.		.
DVG18-HB455	.						.		.	.		.
DVG18-HB755	.				.				.	.		.
DVG18-LB400			.				.		.	.
DVG18-LB700			.		.				.	.
DVG18-LB355			.			.			.	.		.
DVG18-LB455			.				.		.	.		.
DVG18-LB755			.		.				.	.		.
DVG18-GC355				.		.			.	.		.
DVG18-GC455				.			.		.	.		.
DVG18-GC755				.	.				.	.		.
DVG18-LA555	SAME AS LA755 EXCEPT WORK PORTS ARE MACHINED FOR LOCK VALVE											
DVG18-LA555-FCL	SAME AS LA555 EXCEPT WITH FEMALE CLEVIS SPOOL											



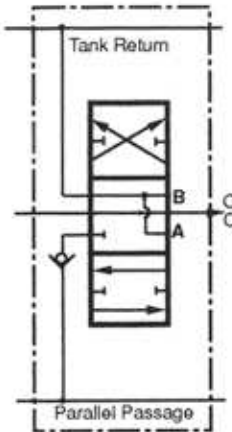
JA405

Single-Acting Section
3-Way, 3-Position, Hold in Neutral
Cylinder Spool



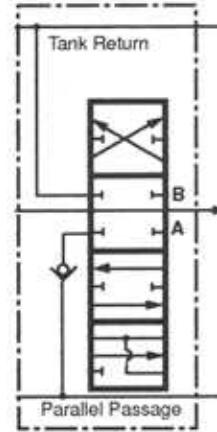
HA400

Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



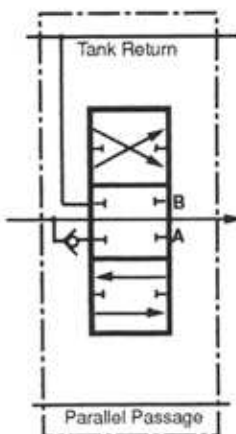
LA400

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



GC455

Double-Acting Float Section
4-Way, 4-Position, Detent in Float
Hold in Neutral, Float in 4th Position



QHA455

Double-Acting Tandem Section
4-Way, 4-Position, Spring Return.
Hold in Neutral



R/v, A/C and Plugs

NOTE: All port relief valves are FULL-FLOW. See inlet section for main relief valve codes.

Screw Adjusted Port Relief Valve With A/C

Code	500-1450 psi	1450-4000 psi
DVG18-	*PRVAC-1	**PRVAC-2



NOTE: *Factory set @ 1000 psi @ 10 gpm ** Factory set @ 2000 psi @ 10 gpm

Screw Adjusted Port Relief Valve Without A/C

Code	500-1450 psi	1450-4000 psi
DVG18-	*PRV-1	**PRV-2



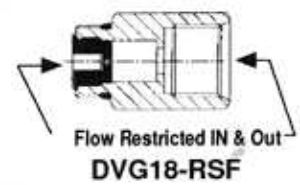
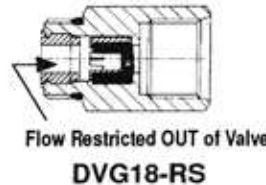
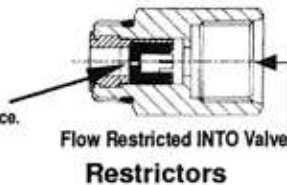
Port Relief Valve Plug
DVG18-PRVP



Anti-cavitation Check
DVG18-AC



Restrictors furnished without orifice. See Chart for Orifice drill Size.



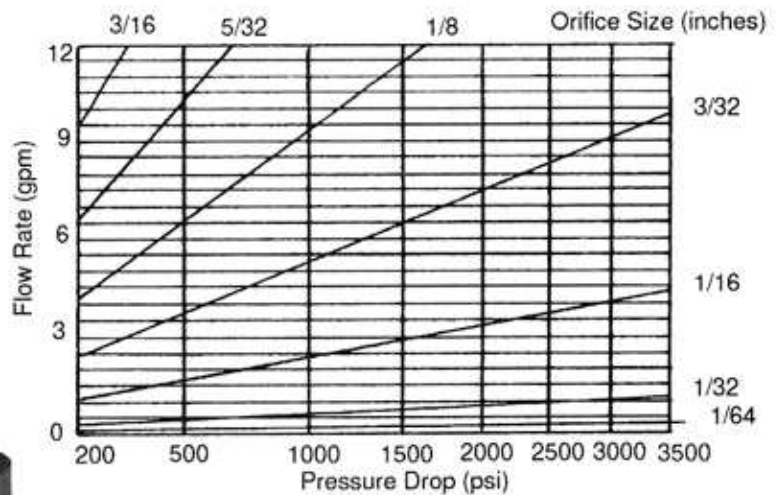
Work Port Restrictors and Lock Valves

DVG18 Lock Valve

Single-Acting DVG18-LVSA
use with JLA505 code



Double-Acting DVG18-LVDA
Use with LA555 codes



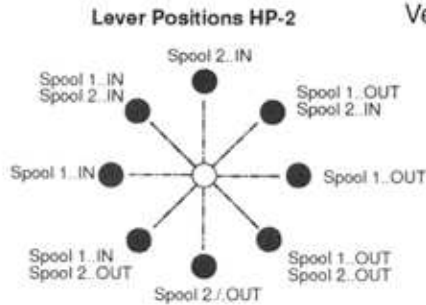
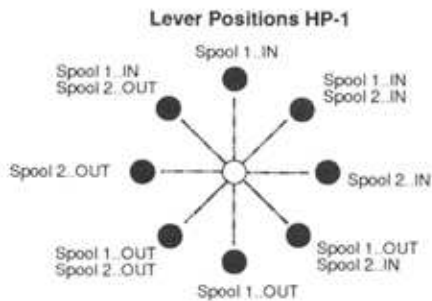
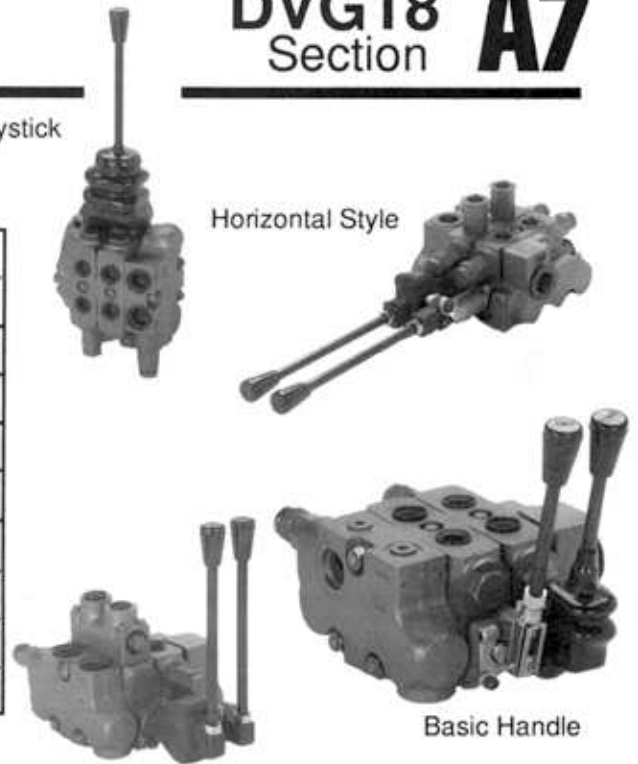
This graph is based on this formula: $Q = 24.12 \times A \times \sqrt{\Delta P}$
 Q = Gallons per minute
 A = Orifice area in inches squared
 ΔP = Pounds per sq. inch

DVG18 Section A7

Handle Assemblies

Mechanical Joystick
WITH BOOT

Code			Description
Approximate Lever Length			
8 1/4"	10 3/4"	13"	
HH-1	HH-2	HH-3	DVG18 Horizontal (Industrial)
HV-1	HV-2	HV-3	DVG18 Vertical (Industrial)
HIB			DVG18 Boot (Industrial)
HDL			DVG18 Basic Handle
HDLB			DVG18 Basic Handle w/Boot
HP-1 Left Hand			DVG18 Mechanical Joystick
HP-2 Right Hand			DVG18 Mechanical Joystick
HPB			DVG18 Boot for Joystick



Work Section -- Spool Actuation Kits

Code	Spring Return	3-Pos Detent	Air Shift	Detent In Spr Ret'n Out	Detent Out Spr Ret'n In	Metered Remt Cont	Double-Ended Solenoid 12V	Rotary Control	Dbl Clevis End Cap	Microswitch Cap
DVG18	K-300	K-301	K-303	K-307	K-308	K-309	K-310	K-311	K-312	K-314

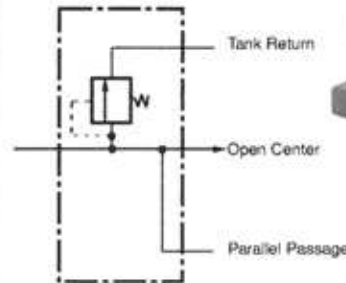
Seal Kits

	Work Section Assembly Kit	Work Section Repair Kit
Code	DVG18-K-1	DVG18-K-2
KIT CONTAINS:	SECTION SEALS	SECTION, SPOOL, and CHECK SEALS

Inlets (2500 psi)

NOTE: Inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs

Code	End Port HP	Top Port HP	End Port LP	Top Port LP
DVA20-A440	1" NPT	1" NPT	N/A	N/A
DVA20-A880	SAE-16	SAE-16	N/A	N/A
DVA20-A000	NON-PORTED HOUSING			
Combination Inlet - Outlet				
DVA20-N4444	1" NPT	1" NPT	1" NPT	1" NPT
DVA20-N8888	SAE-16	SAE-16	SAE-16	SAE-16
DVA20-N0000	NON-PORTED HOUSING			



Schematic shown with main R/V



NOTE: For inlet with solenoid section pilot supply port machining, see DVG20 inlet sections, page C1.

Mid-section Inlets

Split Flow

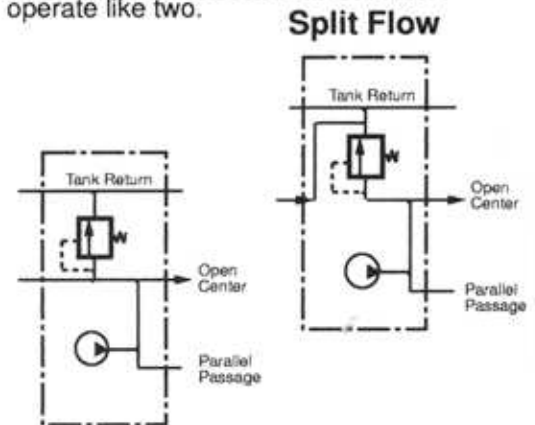
Code	Top Port
DVA20-SFA30	3/4" NPT
DVA20-SFA70	SAE-12
DVA20-SFA00	Non-Ported

Combined Flow

DVA20-CFA30	3/4" NPT
DVA20-CFA70	SAE-12
DVA20-CFA00	Non-Ported

NOTE: Mid-section inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs

Separates primary and secondary pump flows which allows one valve bank to operate like two.



Combined Flow

Combines primary and secondary pump flows for faster operating speed of downstream functions

Schematics shown with main R/V

Adjustable Relief Valve Cartridges

For Inlets and Mid-section Inlets

Code	Description
DVA20-MRV	Main R/V pressure range 800-2500 psi. Factory set @ 2000 psi @ 30 gpm
DVA20-MRVP	Main relief valve plug



For Code N Combination Inlet / Outlets

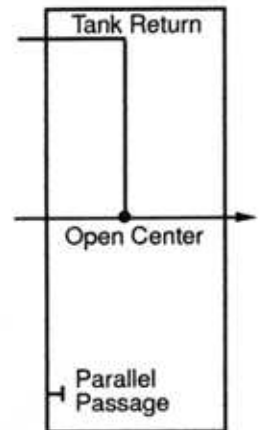
DV-PRVAC	Main R/V, Screw Adj., 500 to 2500 psi
DV-PRV-1	Main R/V, Slug Adj., 500 to 1000 psi
DV-PRV-2	Main R/V, Slug Adj., 1000 to 2500 psi
DV-PRVP	Main R/V, Plug

Outlets

Tank Return Type

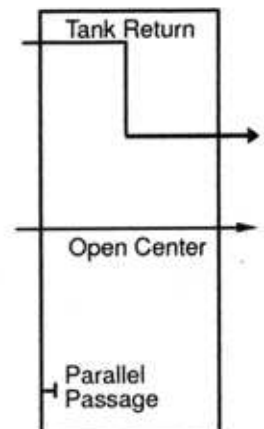
Code	End Port	Top Port
DVA20-TR44	1" NPT	1" NPT
DVA20-TR88	SAE-16	SAE-16
DVA20-TR00	NON-PORTED HOUSING	

See section G, Page32 for port plugs



Pressure Beyond Type

	End Port LP	End Port HP	Top Port LP	Top Port HP
DVA20-PB44	1" NPT	1" NPT	1" NPT	1" NPT
DVA20-PB80	SAE-16	SAE-16		
DVA20-PB08			SAE-16	SAE-16
DVA20-PB00	Non-Ported Housing			



Stud Kits

Torque to 350 inch pounds

Number of Sections Between Inlet and Outlet

Code	1	2	3	4	5	6	7	8
DVA20-	SK-1	SK-2	SK-3	SK-4	SK-5	SK-6	SK-7	SK-8
Code N - Combination Inlet / Outlet Studs								
DVA20-	NSK-1	NSK-2	NSK-3	NSK-4	NSK-5	NSK-6	NSK-7	NSK-8

Lo-Boy Work Sections -- Parallel Circuits

Code	4-Way 3-Position Hold In Neutral	3-Way 3-Position Hold In Neutral	4-Way 3-Position Float In Neutral	4-Way 4-Position Float Position Detented	Port Size	Work Port NOT Machined	Spring Return	3-Position Detent	Metered Hydraulic Remote Control	Solenoid Operated	Air Shift		
DVA20-DAO	•					•	•						
DVA20-DA3	•				3/4" NPT		•						
DVA20-DA7	•				SAE-12		•						
DVA20-SAO		•				•	•						
DVA20-SA3		•			3/4" NPT		•						
DVA20-SA7		•			SAE-12		•						
DVA20-MAO			•			•	•						
DVA20-MA3			•		3/4" NPT		•						
DVA20-MB3			•		3/4" NPT			•					
DVA20-MA7			•		SAE-12		•						
DVA20-MB7			•		SAE-12			•					
DVA20-FC3				•	3/4" NPT		•						
DVA20-FC7				•	SAE-12		•						
DVA20-DK7-12V	•				SAE-12					• 12VDC			
DVA20-DK7-24V	•				SAE-12					• 24 VDC			
DVA20-DX3	•				3/4" NPT				•				
DVA20-DX7	•				SAE-12				•				
DVA20-DV3	•				3/4" NPT						•		
DVA20-DV7	•				SAE-12						•		
DVA20-MX3			•		3/4" NPT				•				
DVA20-MX7			•		SAE-12				•				
DVA20-DB3	•				3/4" NPT				•				
DVA20-DB7	•				SAE-12				•				
DVA20-WDA7	Series •				SAE-12		•						
DVA20-WMA7			• Series		SAE-12		•						

Note: See Section G, Page 33 for section seal kits.

Codes outside of the shaded area may require increased lead time.

Most codes outside the shaded area can be made from codes inside the area and kits on page 33.

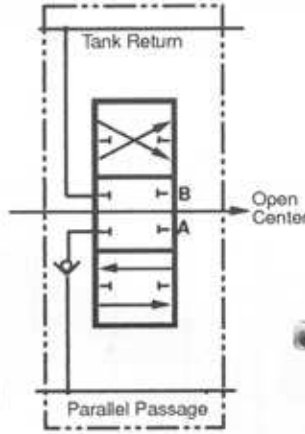
Solenoids are furnished with spade connectors

Machining instructions for standard housings are included in solenoid kits.



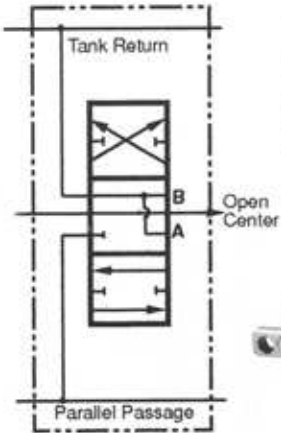
SA7

Single-Acting Section
3-Way, 3-Position, Hold in Neutral
Cylinder Spool



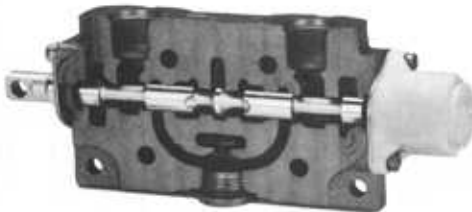
DA7

Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



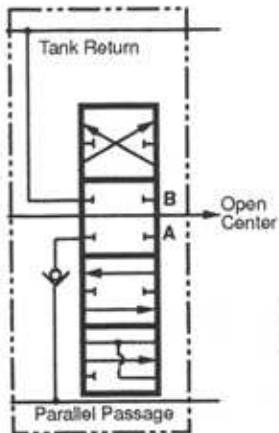
MA7

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



WDA7

Double-Acting Section
Series Circuit
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



FC7

Double-Acting Float Section
4-Way, 4-Position, Detent in Float
Hold in Neutral, Float in 4th Position

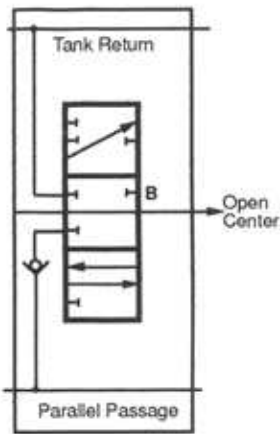


Hi-Boy Work Sections -- Parallel Circuit

Sections with port relief valve machining are furnished with plastic closures

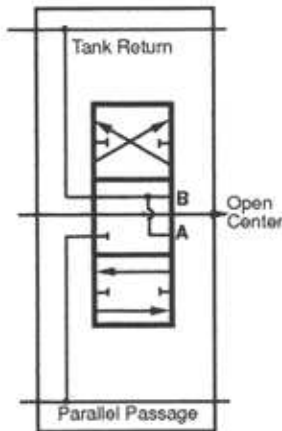
CODE	4-Way 3-Pos Hold In Neutral	3-Way 3-Pos Hold In Neutral	4-Way 3-Pos Float In Neutral	Port Size	Work Port NOT Machined	Spring Return	3-Pos Detent	Metered Hydraulic Remote Control	Solenoid Operated	Air Shift	Port R/V Machined
DVA20-HA000	*				*	*					
DVA20-HA055	*				*	*					*
DVA20-HA355	*			3/4"NPT		*					*
DVA20-HA755	*			SAE-12		*					*
DVA20-HA300	*			3/4"NPT		*					
DVA20-HA700	*			SAE-12		*					
DVA20-JA005		*			*	*					*
DVA20-JA305		*		3/4"NPT		*					*
DVA20-JA705		*		SAE-12		*					*
DVA20-LA000			*		*	*					
DVA20-LA055			*		*	*					*
DVA20-LA355			*	3/4"NPT		*					*
DVA20-LA755			*	SAE-12		*					*
DVA20-LA300			*	3/4"NPT		*					
DVA20-LA700			*	SAE-12		*					
DVA20-LB300			*	3/4"NPT			*				
DVA20-LB700			*	SAE-12			*				
DVA20-LV755			*	SAE-12						*	*
DVA20-LX755			*	SAE-12				*			*
DVA20-HK755-12V	*			SAE-12					*12VDC		*
DVA20-HK755-24V	*			SAE-12					*24VDC		*
DVA20-HX355	*			3/4"NPT				*			*
DVA20-HX755	*			SAE-12				*			*
DVA20-HV355	*			3/4"NPT						*	*
DVA20-HV755	*			SAE-12						*	*
DVA20-HB355	*			3/4"NPT			*				*
DVA20-HB755	*			SAE-12			*				*
DVA20-JV700		*		SAE-12						*	
DVA20-JB700		*		SAE-12			*				
DVA20-JV705		*		SAE-12						*	*
DVA20-JB305		*		3/4"NPT			*				*
DVA20-JB705		*		SAE-12			*				*

Note: See section G, pages 32 and 33, for section seal kits and R/V port accessories.
 Codes outside the shaded area may require longer lead time.
 Most codes outside the shaded area can be made from codes inside the area and the kits on page 33.
 Solenoids are furnished with spade connectors.
 Machining instructions for standard housings are included in solenoid kits.



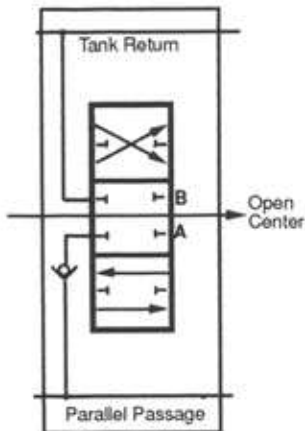
JA705

Single-Acting Section
3-Way, 3-Position, Hold in Neutral
Cylinder Spool



LA755

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



HA755

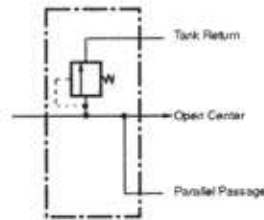
Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



Inlets (3500 psi)

Code	End Port	Top Port
DVG20-A770	SAE-12	SAE-12
DVG20-A770-SM	SAE-12	SAE-12 Machined for solenoid sections pilot supply SAE-6 pilot Port
DVG20-A000	NON-PORTED	

Note: Inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs



Schematic shown has main R/V

Mid-section Inlets

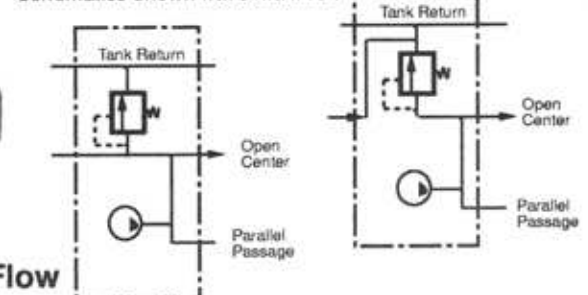
Split Flow

Code	Top Port
DVG20-SFA70	SAE-12
DVG20-SFA00	NON-PORTED



Separates primary and secondary pump flows which allows one valve bank to operate like two.

Schematics shown have main R/V



Combined Flow

Combines primary and secondary pump flows for faster operating speed of downstream functions

Combined Flow

Code	Top Port
DVG20-CFA70	SAE-12
DVG20-CFA00	NON-PORTED

Adjustable Relief Valves

Code DVG20-HMRV	Screw - adjusted main relief valve Pressure range 2800 - 3500 psi Factory set @ 3000 psi @ 30 gpm
DVA20-MRVP	Main relief valve plug



Outlets (Thru Stud Type)

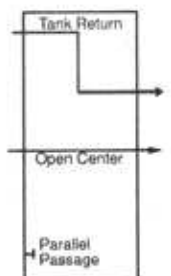
Tank Return Type

Code	End Port	Top Port
DVG20-TTR88	SAE-16	SAE-16
DVG20-TTR00	NON-PORTED	



Pressure Beyond Type

Code	End Port LP	Top Port HP
DVG20-TPB80	SAE-16	SAE-16
DVG20-TPB00	NON-PORTED	



Parallel Circuits (3500 psi) Low-boy Work Sections

CODE	4-Way 3-Pos Hold In Neutral	3-Way 3-Pos Hold In Neutral	4-Way 3-Pos Float In Neutral	Port Size	Work Port NOT Machined	Spring Return	3-Pos Detent	Metered Hydraulic Remote Control	Solenoid Operated	Air Shift
DVG20-DA0	•				•	•				
DVG20-DA7	•			SAE-12		•				
DVG20-DB7	•			SAE-12			•			
DVG20-MA7			•	SAE-12		•				
DVG20-MB7			•	SAE-12			•			
DVG20-SA7		•		SAE-12		•				
DVG20-DX7	•			SAE-12				•		
DVG20-MX7			•	SAE-12				•		
DVG20-DK7	•			SAE-12					• 12vDC	
DVG20-MK7			•	SAE-12					• 12vDC	
DVG20-DV7	•			SAE-12						•

Hi-boy Work Sections

CODE	4-Way 3-Pos Hold In Neutral	3-Way 3-Pos Hold In Neutral	4-Way 3-Pos Float In Neutral	Port Size	Work Port NOT Machined	Spring Return	3-Pos Detent	Metered Hydraulic Remote Control	Solenoid Operated	Air Shift	Port R/V Machined
DVG20-HA055	•				•	•					•
DVG20-HA755	•			SAE-12		•					•
DVG20-HB755	•			SAE-12			•				•
DVG20-LA755			•	SAE-12		•					•
DVG20-LB755			•	SAE-12			•				•
DVG20-JA705		•		SAE-12		•					•
DVG20-HX755	•			SAE-12				•			•
DVG20-LX755			•	SAE-12				•			•
DVG20-HK755	•			SAE-12					• 12vDC		•
DVG20-LK755			•	SAE-12					• 12vDC		•
DVG20-HV755	•			SAE-12						•	•

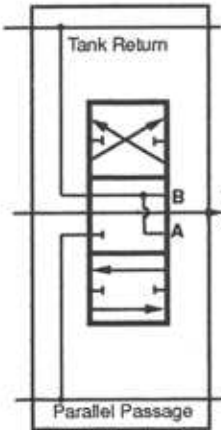
Note: See section G, pages 32 and 33, for section seal kits and R/V port accessories.

Codes outside the shaded area may require longer lead time.

Most codes outside the shaded area can be made from codes inside the area and the kits on page 33.

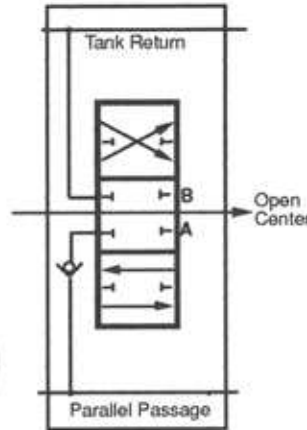
Solenoids are furnished with spade connectors.

Machining instructions for standard housings are included in solenoid kits.



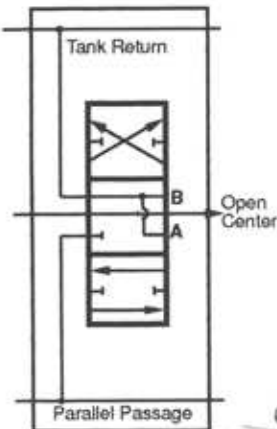
MA7

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



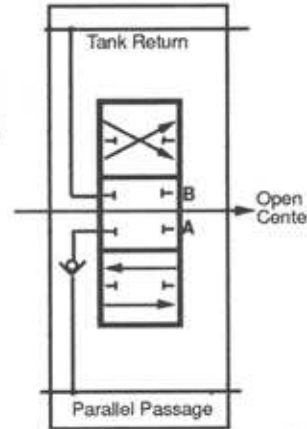
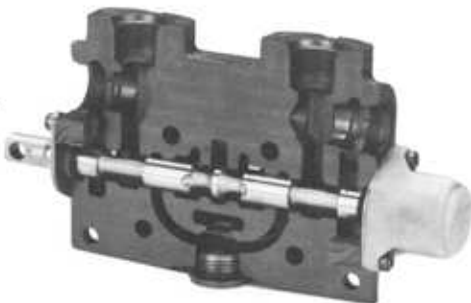
DA7

Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



LA755

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



HA755

Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



Stud Kits for Thru-Stud Outlets

Code	Number of Sections Between Inlet and Outlet							
	1	2	3	4	5	6	7	8
DVG20-	TSK-1	TSK-2	TSK-3	TSK-4	TSK-5	TSK-6	TSK-7	TSK-8

Torque to 500 inch pounds

Stud Specifications are Grade 8

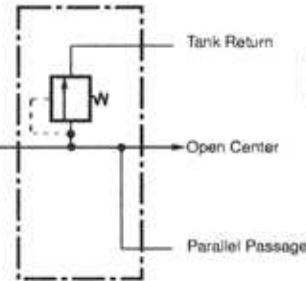


Inlets (2500 psi)

End Inlet

Code	End Port	Top Port
DVA35-A440	1" NPT	1" NPT
DVA35-A880	SAE-16	SAE-16
DVA35-A980	SAE-20	SAE-16
DVA35-A000	NON-PORTED HOUSING	

NOTE: Inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs



Note: For inlets with solenoid section pilot supply machining, see DVG35 inlet section E1

Schematic shown with main R/V

Mid-section Inlets

Split Flow

Code	Top Port
DVA35-SFA40	1" NPT
DVA35-SFA80	SAE-16
DVA35-SFA00	Non-Ported

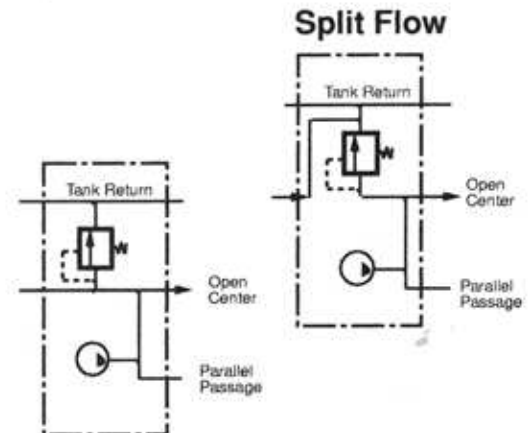
Combined Flow

Code	Top Port
DVA35-CFA40	1" NPT
DVA35-CFA80	SAE-16
DVA35-CFA00	Non-Ported

NOTE: Mid-section inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs



Separates primary and secondary pump flows which allows one valve bank to operate like two.



Combined Flow

Combines primary and secondary pump flows for faster operating speed of downstream functions

Schematics shown with main R/V

Adjustable Relief Valve Cartridges

For Inlets and Mid-section Inlets

Code	Description
DVA35-MRV-1	Main R/V pressure range 800-2000 psi. Factory set @ 1500 psi @ 50 gpm
DVA35-MRV-2	Main R/V pressure range 2001-2500 psi. Factory set @2500 psi @ 50 gpm.
DVA35-MRVP	Main relief valve plug

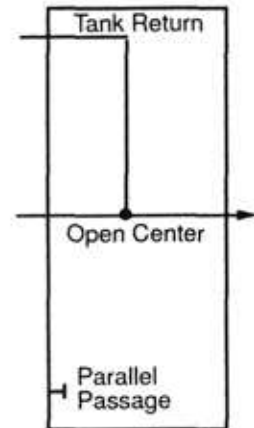


Outlets

Tank Return Type

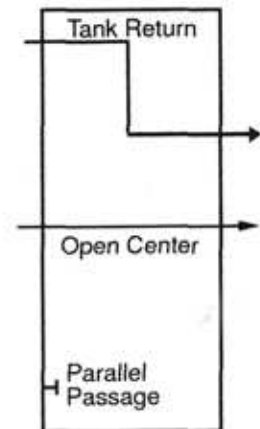
Code	End Port	Top Port
DVA35-TR55	1 1/4" NPT	1 1/4" NPT
DVA35-TR99	SAE-20	SAE-20
DVA35-TR00	NON-PORTED HOUSING	

NOTE: See Section G, Page 32 for Port Plugs



Pressure Beyond Type

	End Port LP	End Port HP	Top Port LP	Top Port HP
DVA35-PB55	1 1/4" NPT	1 1/4" NPT	1 1/4" NPT	1 1/4" NPT
DVA35-PB90	SAE-20	SAE-20		
DVA35-PB09			SAE-20	SAE-20
DVA35-PB00	NON-PORTED HOUSING			



Stud Kits

Number of Sections Between Inlet and Outlet

Code	1	2	3	4	5	6	7	8
DVA35-	SK-1	SK-2	SK-3	SK-4	SK-5	SK-6	SK-7	SK-8

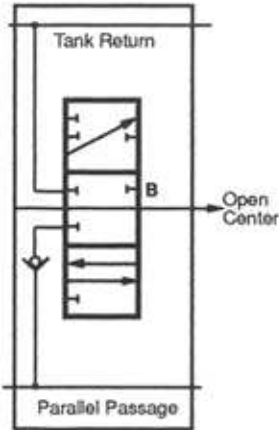
Torque to 400 inch pounds



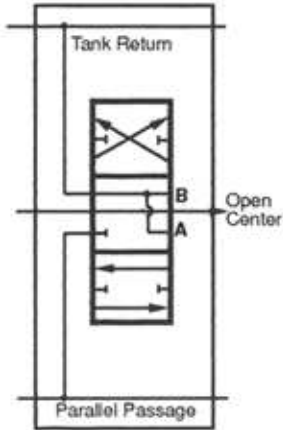
Lo-Boy Work Sections -- Parallel Circuits

Code	4-Way 3-Position Hold In Neutral	3-Way 3-Position Hold In Neutral	4-Way 3-Position Float In Neutral	4-Way 4-Position Float Position Detented	Port Size	Work Port NOT Machined	Spring Return	3-Position Detent	Metered Hydraulic Remote Control	Solenoid Operated	Air Shift		
DVA35-DAO	•					•	•						
DVA35-DA4	•				1" NPT		•						
DVA35-DA8	•				SAE-16		•						
DVA35-SAO		•				•	•						
DVA35-SA4		•			1" NPT		•						
DVA35-SA8		•			SAE-16		•						
DVA35-MA0			•			•	•						
DVA35-MA4			•		1" NPT		•						
DVA35-MA8			•		SAE-16		•						
DVA35-DK8-12V	•				SAE-16					12 VDC			
DVA35-DK8-24V	•				SAE-16					24 VDC			
DVA35-DX4	•				1" NPT			•					
DVA35-DX8	•				SAE-16			•					
DVA35-DV4	•				1" NPT						•		
DVA35-DV8	•				SAE-16						•		
DVA35-MX4			•		1" NPT			•					
DVA35-MX8			•		SAE-16			•					
DVA35-DB4	•				1" NPT			•					
DVA35-DB8	•				SAE-16			•					
DVA35-SB4		•			1" NPT			•					

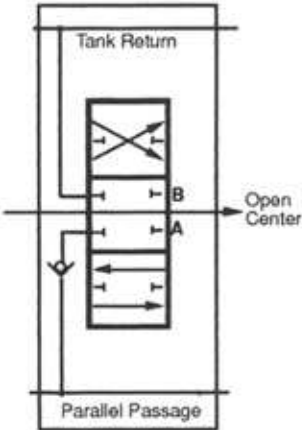
Note: See Section G, Page 33 for section seal kits.
 Codes outside of the shaded area may require increased lead time.
 Most codes outside the shaded area can be made from codes inside the area and kits on page 33.
 Solenoids are furnished with spade connectors
 Machining instructions for standard housings are included in solenoid kits.



SA8
Single-Acting Section
3-Way, 3-Position, Hold in Neutral
Cylinder Spool



MA8
Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



DA8
Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



Hi-Boy Work Sections -- Parallel Circuit

Sections with port relief valve machining are furnished with plastic closures

CODE	4-Way 3-Pos Hold In Neutral	3-Way 3-Pos Hold In Neutral	4-Way 3-Pos Float In Neutral	4-Way 4-Pos Float Pos Detented	Port Size	Work Port NOT Machined	Spring Return	3-Pos Detent	Metered Hydraulic Remote Control	Solenoid Operated	Air Shift	Port R/V Machined
DVA35-HA000	*					*	*					
DVA35-HA055	*					*	*					*
DVA35-HA455	*				1"NPT		*					*
DVA35-HA400	*				1"NPT		*					
DVA35-HA855	*				SAE-16		*					*
DVA35-HA800	*				SAE-16		*					
DVA35-HB800	*				SAE-16			*				
DVA35-HB455	*				1"NPT			*				*
DVA35-HB855	*				SAE-16			*				*
DVA35-JA005		*				*	*					*
DVA35-JA405		*			1"NPT		*					*
DVA35-JA805		*			SAE-16		*					*
DVA35-JB405		*			1"NPT			*				*
DVA35-JB805		*			SAE-16			*				*
DVA35-LA055			*			*	*					*
DVA35-LA455			*		1"NPT		*					*
DVA35-LA855			*		SAE-16		*					*
DVA35-LB400			*		1"NPT			*				
DVA35-LB800			*		SAE-16			*				
DVA35-GC455				*	1"NPT		*					*
DVA35-GC855				*	SAE-16		*					*
DVA35-HK855-12V	*				SAE-16					*12vDC		*
DVA35-HK855-24V	*				SAE-16					*24vDC		*
DVA35-HX455	*				1"NPT			*				*
DVA35-HX800	*				SAE-16			*				
DVA35-HX855	*				SAE-16			*				*
DVA35-HV455	*				1"NPT						*	*
DVA35-HV855	*				SAE-16						*	*
DVA35-LV400			*		1"NPT						*	
DVA35-LV800			*		SAE-16						*	
DVA35-LV855			*		SAE-16						*	*
DVA35-LX800			*		SAE-16			*				
DVA35-LX855			*		SAE-16			*				*

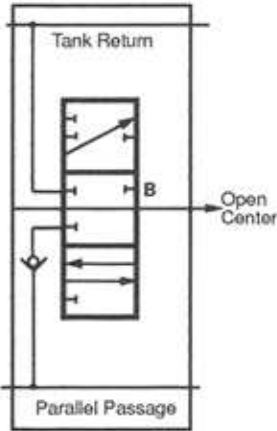
Note: See section G, pages 32 and 33, for section seal kits and R/V port accessories.

Codes outside the shaded area may require longer lead time.

Most codes outside the shaded area can be made from codes inside the area and the kits on page 33.

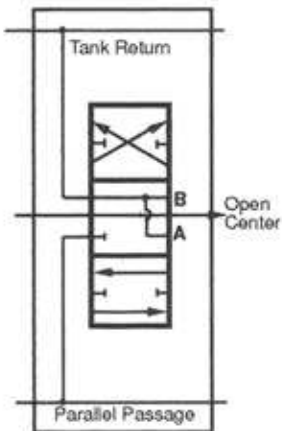
Solenoids are furnished with spade connectors.

Machining instructions for standard housings are included in solenoid kits.



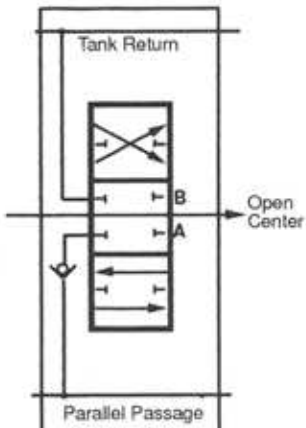
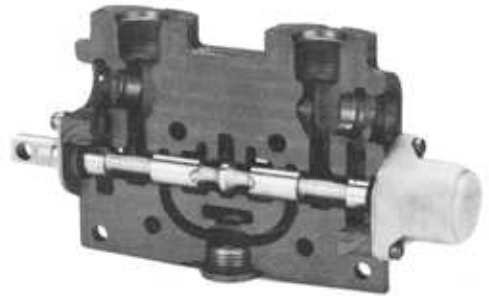
JA805

Single-Acting Section
3-Way, 3-Position, Hold in Neutral
Cylinder Spool



LA855

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



HA855

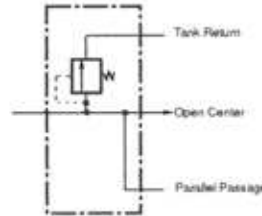
Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



Inlets (3500 psi)

Code	End Port	Top Port
DVG35-A880	SAE-16	SAE-16
DVG35-A880-SM	SAE-16 Machined for solenoid sections pilot supply. SAE-6 pilot port.	SAE-16
DVG35-A980	SAE-20	SAE-16
DVG35-A990	SAE-20	SAE-16
DVG35-A000	NON-PORTED	SAE-20

Note: Inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs



Sections shown have main R/V

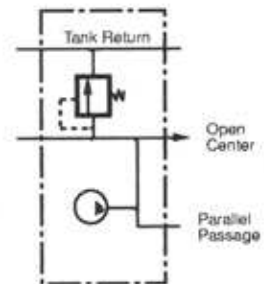
Mid-section Inlets

Split Flow

Code	Top Port
DVG35-SFA80	SAE-16
DVG35-SFA00	NON-PORTED

Separates primary and secondary pump flows which allows one valve bank to operate like two.

Note: Mid-section inlets are machined for a main R/V or R/V plug and are furnished with plastic closures. See Section G, Page 32 for inlet port plugs



Adjustable Relief Valves

Code DVG35-HMRV	Screw - adjusted main relief valve Pressure range 2800 - 3500 psi Factory set @ 3000 psi @ 30 gpm
DVA35-MRVP	Main relief valve plug



Outlets (Thru Stud Type)

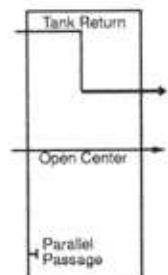
Tank Return Type

Code	End Port	Top Port
DVG35-TTR99	SAE-20	SAE-20
DVG35-TTR00	NON-PORTED	



Pressure Beyond Type

Code	End Port LP	Top Port HP
DVG35-TPB99	SAE-20	SAE-20
DVG35-TPB00	NON-PORTED	



See Section G, Page 32 for Outlet plugs

Parallel Circuits (3500 psi)

Low-boy Work Sections

CODE	4-Way 3-Pos Hold In Neutral	3-Way 3-Pos Hold In Neutral	4-Way 3-Pos Float In Neutral	Port Size	Work Port NOT Machined	Spring Return	3-Pos Detent	Metered Hydraulic Remote Control	Solenoid Operated	
DVG35-DA0	•				•	•				
DVG35-DA8	•			SAE-16		•				
DVG35-MA8			•	SAE-16		•				
DVG35-DX8	•			SAE-16				•		
DVG35-DK8	•			SAE-16					•	
DVG35-SA8		•		SAE-16		•				

Hi-boy Work Sections

CODE	4-Way 3-Pos Hold In Neutral	3-Way 3-Pos Hold In Neutral	4-Way 3-Pos Float In Neutral	Port Size	Work Port NOT Machined	Spring Return	3-Pos Detent	Metered Hydraulic Remote Control	Solenoid Operated	Air Shift	Port R/V Machined
DVG35-HA055	•				•	•					•
DVG35-LA055			•		•	•					•
DVG35-HA855	•			SAE-16		•					•
DVG35-HB855	•			SAE-16			•				•
DVG35-LA855			•	SAE-16		•					•
DVG35-LB855			•	SAE-16			•				•
DVG35-JA805		•		SAE-16		•					•
DVG35-HX855	•			SAE-16				•			•
DVG35-LX855			•	SAE-16				•			•
DVG35-HK855	•			SAE-16					• 12vDC		•
DVG35-LK855			•	SAE-16					• 12vDC		•
DVG35-HV855	•			SAE-16						•	•
DVG35-LV855			•	SAE-16						•	•

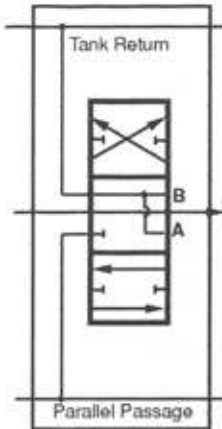
Note: See section G, pages 32 and 33, for section seal kits and R/V port accessories.

Codes outside the shaded area may require longer lead time.

Most codes outside the shaded area can be made from codes inside the area and the kits on page 33.

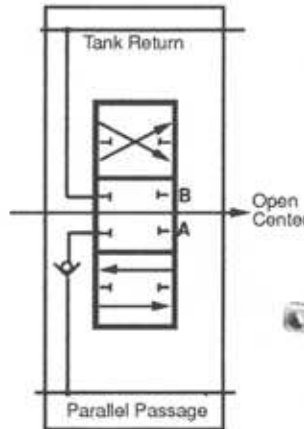
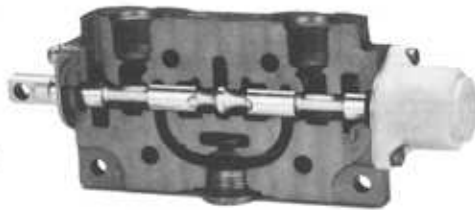
Solenoids are furnished with spade connectors.

Machining instructions for standard housings are included in solenoid kits.



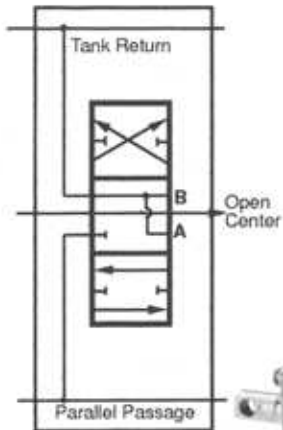
MA8

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



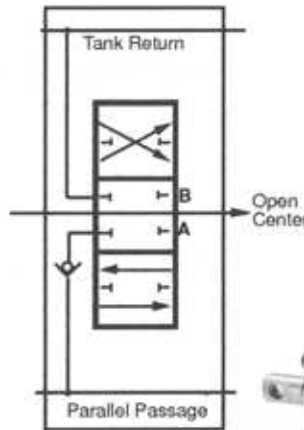
DA8

Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



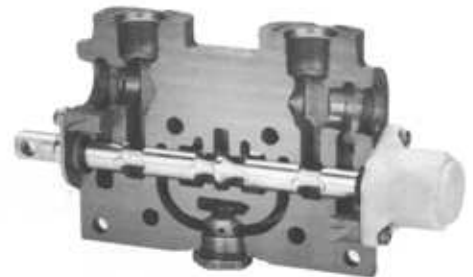
LA855

Double-Acting Section
4-Way, 3-Position, Float in Neutral
Motor Spool



HA855

Double-Acting Section
4-Way, 3-Position, Hold in Neutral
Cylinder Spool



Stud Kits for Thru-Stud Outlets

Code	Number of Sections Between Inlet and Outlet							
	1	2	3	4	5	6	7	8
DVG35-	TSK-1	TSK-2	TSK-3	TSK-4	TSK-5	TSK-6	TSK-7	TSK-8

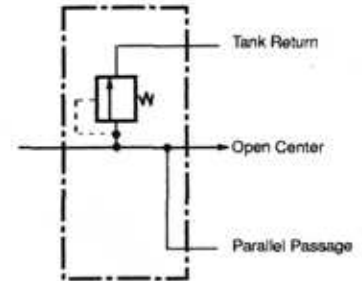
Torque to 900 inch pounds

Stud Specifications are Grade 8



Inlets (3500 psi)

Code	End Port HP	Top Port HP	End Port LP	Top Port LP
DVG80-A0404	NONE	1 1/2"SF	NONE	1 1/2"SF
DVG80-A0808	NONE	SAE-24	NONE	SAE-24
DVG80-A4040	1 1/2"SF	NONE	1 1/2"SF	NONE
DVG80-A8080	SAE-24	NONE	SAE-24	NONE
DVG80-A0000	NON-PORTED HOUSING			



Schematic shown has main R/V

NOTE: Inlets are machined for a main R/V or R/V plug and are furnished with plastic closures

See Section G for inlet port plugs... Page 32



Adjustable Relief Valves

Code	Description
DVG80-MRV	Main R/V pressure range 500-3500 psi. Factory set @ 2000 psi @ 80 gpm
DVG80-MRVP	Main relief valve plug

Outlet Sections

Code	End Port LP	Top Port LP	End Port HP	Top Port HP
DVG80-TRC0404	NONE	1 1/2"SF	NONE	1 1/2"SF
DVG80-TRC0808	NONE	SAE-24	NONE	SAE-24
DVG80-TRC4040	1 1/2"SF	NONE	1 1/2"SF	NONE
DVG80-TRC8080	SAE24	NONE	SAE-24	NONE
DVG80-TRC0000	Non-Ported housing			
DVG80-PBS	PRESSURE BEYOND SLEEVE			

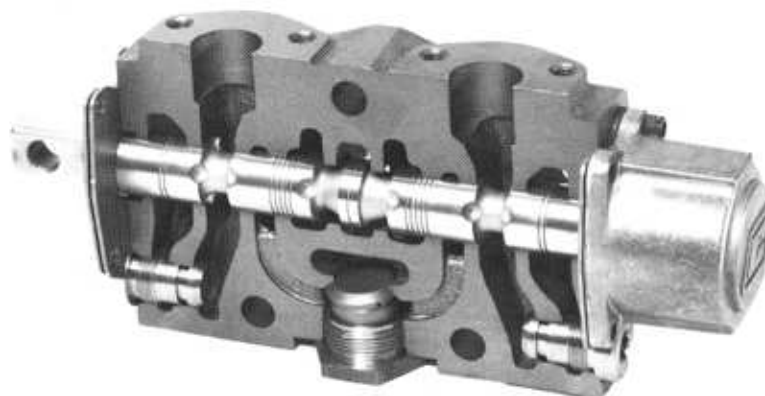
Note: The PBS Sleeve converts a tank return outlet to pressure beyond.
All TRC outlets are machined to accept PBS sleeves.

Hi-Boy Work Sections -- Parallel Circuits

Sections have port relief valve machining.
Furnished with plastic closures

Code	4-Way 3-Position Hold In Neutral	3-Way 3-Position Hold In Neutral	4-Way 3-Position Float In Neutral	Port Size SAE-20	Port Size 1" SF	Port Size 1 1/4" SF	Work Port NOT Machined	Spring Return	3-Position Detent	Metered Hydraulic Remote Control
DVG80-HA055	•						•	•		
DVG80-HA255	•				•			•		
DVG80-HA355	•					•		•		
DVG80-HA755	•			•				•		
DVG80-HB755	•			•					•	
DVG80-HX355	•					•				•
DVG80-HX755	•			•						•
DVG80-LA055			•				•	•		
DVG80-LA255			•		•			•		
DVG80-LA355			•			•		•		
DVG80-LA755			•	•				•		
DVG80-LB755			•	•					•	
DVG80-LX355			•			•				•
DVG80-LX755			•	•						•
DVG80-JA205		•			•			•		
DVG80-JA305		•				•		•		
DVG80-JA705		•		•				•		

DVG80
Manually controlled
Spring returned section
4-Way – 3-Position
Hold in neutral



Port Relief Valves

Code	Screw Adjustable Port R/V With A/C	A/C Only	Plug
DV	-PRVAC	-AC	-PRVP



Stud Kits

Code	Number of sections between inlet and outlet					
	1	2	3	4	5	6
DVG80-	SK-1	SK-2	SK-3	SK-4	SK-5	SK-6

Torque to 1800 inch pounds

Stud Specifications are Grade 8



Work Section Spool Actuator Kits

Code	Spring Return	3-Position Detent	Metered Hydraulic Remote Control
DV80-	K-300	K-301	K-309

Seal Kits

Code	Work Section Assembly Kit	Work Section Repair Kit	Main RV Repair Kit
DV80-	K-21	K-22	K-24
Kit Contains	Section Seals	Section, Spool and Check Seals	All Replaceable Seals

Relief Valves For DVA20/35 and DVG20/35

Code	Screw Adjustable Port Relief Valve With A/C 500 to 5000 psi	Slug Adjustable Port Relief Valve Without A/C		
		500 to 1000	1000 to 2500	2500 to 3500
DV-	*** PRVAC	*PRV-1	**PRV-2	***PRV-3
DV-	---	PRV-SK Shim Kit for Above		

All relief valves are full-flow
See inlet sections for main relief valve codes
Port relief valves are factory set at 10 gpm and:

- * 1000 psi
- ** 2000 psi
- *** 2500 psi



Accessories For DVA20/35 and DVG20/35

Code	Anti-Cavitation Check	Port Relief Valve Plug
DV-	AC	PRVP

Valve Work Port Plugs For all valve series

Code	NPT Plugs					SAE Plugs					
	1/2"	3/4"	1"	1 1/4"	1 1/2"	SAE-8	SAE-10	SAE-12	SAE-16	SAE-20	SAE-24
DV-DPL-	50	75	100	125	150	8	10	12	16	20	24

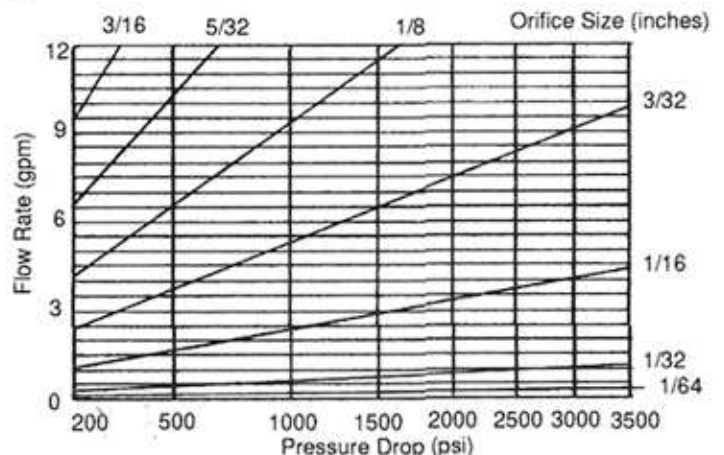
SAE PLUGS INCLUDE "O" RING



Work Port Restrictors

Code	Description
DV-PRT-8	For SAE-8 Work Port
DV-PRT-10	For SAE-10 Work Port
DV-PRT-12	For SAE-12 Work Port
DV-PRT-16	For SAE-16 Work Port

Restrictors are furnished without orifices.
See chart for orifice drill size.



Handle Assembly

For DVA20/35 and DVG20/35

A=Old Style Handle W/ VA Linkage
VA=New Style Handle W/ VA Linkage



Lever Length	6"		8"		10"		Linkage Kits Handle to Valve			
	A	VA	A	VA	A	VA	A to VA	VA to A	VA to VA	A to A
Code										
DV20-	H-3	H-6	H-4	H-8	H-5	H-10	HK-1	HK-2	HK-5	HK-7
DV35-	H-3	H-6	H-4	H-8	H-5	H-10	HK-3	HK-4	HK-6	HK-8

Work Section -- Spool Actuation Kits

For DVA20/35 and DVG20/35

Code	Spring Return	3-Position Detent	Rotary Control	Air Shift	Metering Hydraulic Remote Control	On / Off Pilot Operated	Single-Ended D. A. Solenoid 12 VDC	Double-Ended D. A. Solenoid 12VDC	Detent IN Spring Ret'n OUT	Detent OUT Spring Ret' IN	Single Ended DA Solenoid 24 v
DV20-	K-100	K-101	K-102	K-113	K-109	K-110	K-106	K-111	K-107	K-108	K112
DV35-	K-200	K-201	K-202	K-213	K-209	K-210	K-206	K-211	N/A	N/A	K212

These kits are for LH assemblies ONLY. RH kits are NOT AVAILABLE

Seal Kits

For DVA20/35 and DVG20/35

Code	Work Section Assembly Kit	Work Section Repair Kit	Port R/V Without A/C Seal Kit	Port R/V With A/C Seal Kit	Main R/V Repair Kit	Main R/V Seal Kit
DV20-	K-1	K-2	K-3	K-3-1	K-4	K-5
DV35-	K-11	K-12	K-3	K-3-1	K-14	K-15
Kit Contains	Section Seals	Section, Spool and Check Seals	All Replaceable Seals	All Replaceable Seals	All Replaceable Seals & Cartridge Body	All Replaceable Seals

Spools

For DVA20/35, DVG20/35 and DVG18

Code	Description
DV20-SPL-1	4-Way 3-Position Hold in neutral Standard
DV20-SPL-3	4-Way 3-position Float in neutral Standard
DV20-SPL-5	3-Way 3-Position Hold in neutral Standard
DV20-SSPL-1	4-Way 3-Position Hold in neutral Standard (MARINE)
DV20-SSPL-3	4-Way 3-Position Float in neutral Standard (MARINE)
DV35-SPL-11	4-Way 3-Position Hold in neutral Standard
DV35-SPL-13	4-Way 3-position Float in neutral Standard
DV35-SPL-15	3-Way 3-Position Hold in neutral Standard
DV35-SSPL-11	4-Way 3-Position Hold in neutral Standard (MARINE)
DV35-SSPL-13	4-Way 3-Position Float in neutral Standard (MARINE)
DVG18-SPL-21	4-Way 3-Position Hold in neutral Standard
DVG18-SPL-23	4-Way 3-position Float in neutral Standard
DVG18-SPL-25	3-Way 3-Position Hold in neutral Standard
DVG18-SPL-26	3-Way 3-Position Float in neutral Standard
DVG18-SSPL-21	4-Way 3-Position Hold in neutral Standard (MARINE)
DVG18-SSPL-23	4-Way 3-Position Float in neutral Standard (MARINE)
DVG18-LFSPL-21	4-Way 3-Position Hold in neutral Low Flow
DVG18-LFSPL-23	4-Way 3-position Float in neutral Low Flow
DVG18-LFSPL-25	3-Way 3-Position Hold in neutral Low Flow

DV35-SPL-11



DV35-SPL-13



DV20-SPL-3



DVD In-Line Accessories **H1**

Section

Diversion Valves

Single and Double Type



Code DVD -S61

40 gpm 2000 psi

Code	Type		Porting	Spring Return	Detent	Spool End	
	Single	Double				Ball	Lug
DVD-S31	•		3/4" NPT		•		•
DVD-S32	•		3/4" NPT		•	•	
DVD-S33	•		SAE-12		•	•	
DVD-S34	•		SAE-12		•		•



Code DVD -S32

60 gpm 2000 psi

Code	Type		Porting	Spring Return	Detent	Spool End	
	Single	Double				Ball	Lug
DVD-S61	•		SAE-16		•		•
DVD-S62	•		1" NPT		•		•
DVD-S63	•		1" NPT		•	•	
DVD-D61		•	1" NPT	•			•
DVD-D62		•	SAE-16	•			•
DVD-D63		•	SAE-16		•		•

85 gpm 2000 psi

Code	Type		Porting	Spring Return	Detent	Spool End	
	Single	Double				Ball	Lug
DVD-S81	•		1 1/4" SF		•		•
DVD-S82	•		SAE-20		•		•

In-Line Relief Valves

Rated @ 30 gpm

Code	Description
DVLR-31	3/4" NPT ports • 250 to 900 psi adjustment range • Factory set @ 500 psi @ 10 gpm
DVLR-32	3/4" NPT Ports • 500 to 1500 psi adjustment range • Factory set @ 1000 psi @ 10 gpm
DVLR-33	3/4" NPT Ports • 1500 to 2500 psi adjustment range • Factory set @ 2000 psi @ 10 gpm

DVLR-115



DVLR-64

Rated @ 60 gpm

Code	Description
DVLR-61	1" NPT Ports • 800 to 2000 psi adj. range • Slug adj • Factory set @ 1000 psi @ 10 gpm
DVLR-62	1" NPT Ports • 2000 to 2500 psi adj range • Slug adj • factory set @ 2000 psi @ 10 gpm
DVLR-63	1" NPT Ports • 800 to 2000 psi adj. range • Screw adj. • Factory set @ 1000 psi @ 10 gpm
DVLR-64	1" NPT Ports • 2000 to 2500 psi adj. range • Screw adj. • Factory set @ 2000 psi @ 10 gpm
DVLR-115	Inlet SAE-16, Outlet SAE-20 • 500 to 5000 psi adj range, Screw Adj. • Factory set @ 2000 psi @ 40 gpm

Crossover Relief Valve

Rated @ 60 gpm

Code	Description
DVLR-C61	SAE-16 Ports • 800 to 2000 psi adj. range • Factory set @ 2000 psi @ 10 gpm
DVLR-C62	SAE-16 Ports • 2000 to 2800 psi adj range • Factory set @ 2000 psi @ 10 gpm

Deceleration Valve

Rated @ 40 gpm @ 3000 psi

Code	Description
DDCV-N75	3/4 NPT Ports • Max Drain Pressure 50 psi
DDCV-S75	SAE-12 Ports • Max Drain Pressure 50 psi

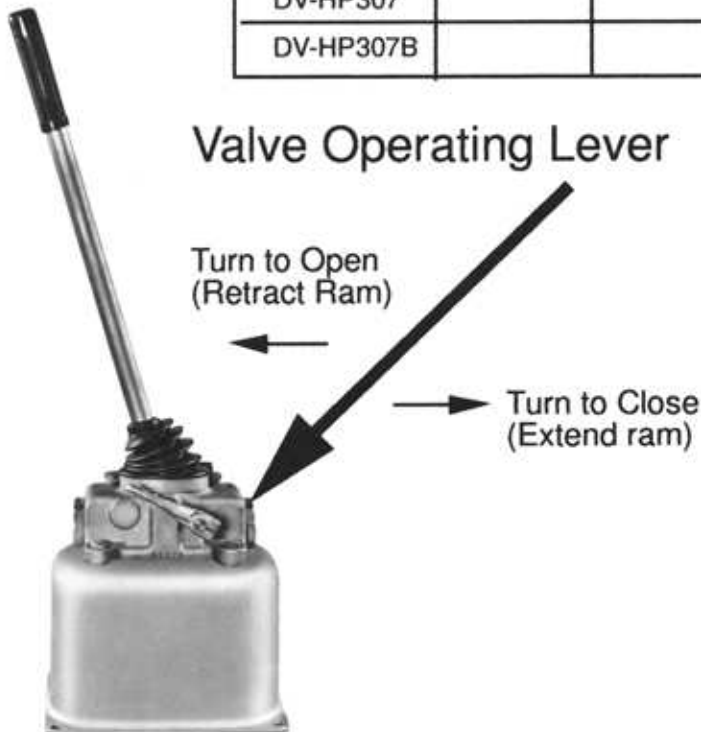
Cylinders moving at high speeds must frequently be decelerated to a slow smooth stop. Connecting a cam operated, 2-way, deceleration valve in the cylinder's output line will bring it to a smooth gradual stop by slowly closing off the return oil flow,



DDVC-N75

Hand Pumps 5000 psi (Including dust boot)

CODE	Output in cubic inches per stroke			Boot	With 1- Gallon Tank	Remote Tank Piping
	.202	.386	.604			
DV-HP301	•			•	•	
DV-HP301B	•			•		•
DV-HP304		•		•	•	
DV-HP304B		•		•		•
DV-HP307			•	•	•	
DV-HP307B			•	•		•



Operation:

Replace shipping filler plug with vented cap plug. Connect flexible hose or tubing (minimum 8000 psi burst strength) to ports; if only one port is used, insert a solid plug in the unused port. Fill reservoir with enough oil to fully extend the ram plus a sufficient reserve to assure that the suction pipe is always submerged. Be careful not to contaminate the oil with dirt or water.

NEVER USE HYDRAULIC BRAKE FLUID.

Bleed lines before connecting to ram. Swivel connections will help prevent kinks and twists.

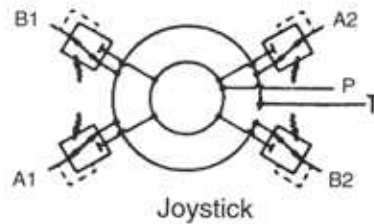
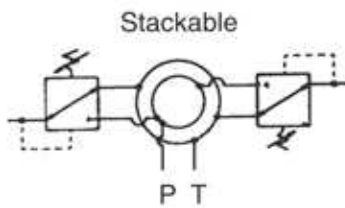
Place valve operating lever in closed position and stroke the handle back and forth to extend the ram. **CAUTION;** Moving the valve operating lever to the open position releases oil from the ram to the reservoir so that the ram retracts. A heavily loaded ram retracts rapidly and could cause injury or damage. Control the retracting speed with the operating lever.

Model	301	304	307
Piston Diameter	.56"	.75"	.94"
Output/stroke (cu. in.)	.202	.385	.604
Force (lbs) req'd on 19.5" handle for various output.	1000 psi	16	28
	1500 psi	24	42
	2000 psi	32	56
	3000 psi	48	84
	4000 psi	64	
Strokes req'd to extend cylinder 1"	1" cyl	3.9	2
	1.5" cyl	8.8	4.6
	1.75" cyl	11.9	6.2
	2" cyl	15.6	8.2
	2.5" cyl	24.2	12.7

Hydraulic Remote Controls

3 to 5 gpm • 500 psi • SAE-6 Ports

Code	Single-Function Stackable	Dual-Function Joystick	Single-Function Foot Pedal	V/A-V/G 20/35 100 to 300 psi	D-Line and VG80 50 to 200 psi	Ball Handle	Handle with Electric Switch	Marine Version
DVHRC-DD		•			•	•		
DVHRC-AD		•		•		•		
DVHRC-DS	•				•	•		
DVHRC-AS	•			•		•		
DVHRC-DDE		•			•		•	
DVHRC-ADE		•		•			•	
DVHRC-DSM	•				•	•		•
DVHRC-ASM	•			•		•		•
DVHRC-DDM		•			•	•		•
DVHRC-ADM		•		•		•		•
DVHRC-DF			•		•			
DVHRC-AF			•	•				



Stackable Unit



Joystick with Electric Switch

Joystick with Ball Handle

Kits

Code	Description
DVHRC-KS2	Seal kit for single-function Stackable codes DVHRC-AS & DS
DVHRC-KD2	Seal Kit for dual-function Joystick codes DVHRC-AD • DD • ADE • DDE
DVHRC-KSM	Marine Conversion Kit for Stackable codes DVHRC-AS • DS
DVHRC-KDM	Marine Conversion Kit for Joystick codes DVHRC-AD • DD • ADE • DDE
DVHRC-KD	Conversion Kit VA to D-Line. 1-req'd for stackable, 2-req'd for joystick
DVHRC-KA	Conversion Kit D-Line to VA. 1-req'd for stackable, 2-req'd for joystick
DVHRC-KSE	Single-function Stackable Handle with Electric Switch
DVHRC-KDE	Dual-function Joystick Handle with Electric Switch
DVHRC-MB	Mounting bracket for stackable controllers
DVHRC-MBM	Marine mounting bracket for stackable controllers.



Foot Pedal

Stud Kits Torque to 100 inch pounds Number of Stackable Controllers

Code	1	2	3	4	5	6	7	8
DVHRC	RSK-1	RSK-2	RSK-3	RSK-4	RSK-5	RSK-6	RSK-7	RSK-8

Pneumatic Remote Controls

11.7 SCFM @ 100 PSIG / 140 psi Maximum
1/8" - 27 NPT Ports

* See Handle Kit chart for handles

Code	Dual (one) Function	Quad (two) Function	Handle	Neutral Detent	25/32 Spacer
DVPC-DC	•		*		
DVPC-QC		•	•		
DVPC-DCD	•		•	•	
DVPC-SB					•



Handle Kits for DVPC-DC

Code	Degree of Bend	FEATURES
DVPC-H1	Vertical	Std Handle
DVPC-H1LK	Vertical	Handle W/ Light
DVPC-H2	18°	Std Handle
DVPC-H3	35°	Std Handle
DVPC-H4	46°	Std Handle
DVPC-H5	55°	Std Handle
DVPC-HLK	—	Handle light kit



DVPC-QC



DVPC-DCD



Controller Repair Kits

Code	Description
DVPC-SR	Seal Repair Kit
DVPC-CR	Complete Repair Kit
DVPC-RR	Rocker Kit for Dual Controller
DVPC-QHK	Quad Controller Handle Kit
DVPC-BQ	Quad Controller Boot
DVPC-BDC	Dual Controller Boot

Bank Assembly Kits

Code	Description
DVPC-AK-1	For ONE dual controller
DVPC-AK-2	For TWO dual controllers
DVPC-AK-3	For THREE dual controllers
DVPC-AK-4	For FOUR dual controllers
DVPC-AK-5	For FIVE dual controllers
DVPC-AK-6	For SIX dual controllers
DVPC-AK-7	For SEVEN dual controllers

Torque to 60 inch pounds.

Control Valve Air Shift Cap & Seal Kits

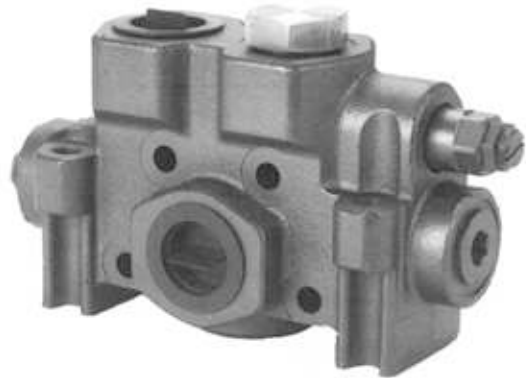
Code	Description
DV20-K-113	VA and VG20 Air Cap Kit
DV35-K-213	VA and VG35 Air Cap Kit
DV20-K-6	VA and VG20 Cap Seal Kit
DV35-K-16	VA and VG35 Cap Seal Kit
DV-K-7	VA & VG 20 and 35 Cap Seal Kit

Unloader Inlet

Code	End Port H.P.	Top Port H.P.	Bottom Port	Top Port L.P.
DVA35-AUL9909	SAE-20	SAE-20	N/A	SAE-20

Flow Control

CODE	Flow Control Range (gpm)
DVHOC-FCBL	Flow Control Block
DVHOC-FCOR-40	40 - 44 Orifice
DVHOC-FCOR-45	45 - 49 Orifice
DVHOC-FCOR-50	50 - 54 Orifice
DVHOC-FCOR-55	55 - 60 Orifice



Note: FCBL Block is furnished without orifice. Order the FCOR orifice to complete flow Control assembly

By-Pass Block

Code	Porting
DVHOC-BPB-2-12	2" Split Flange X SAE-12

Stud Kits

Number of Sections between inlet and outlet

Code	0	1	2	3	4	5	6	7
DVHOC-	USK-0	USK-1	USK-2	USK-3	USK-4	USK-5	USK-6	USK-7

Torque to 400 inch pounds

Note: Use stud kits DVHOC-USK-0 for in-line unloader assembly

Offer of Sale

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2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

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7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges

paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property, Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights. If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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