

HYDRAFORCE & STEED CARTRIDGE VALVES



Make	Model
Hydraforce	Check Valves
Hydraforce	Flow Control Valves
Hydraforce	Relief Valves
Hydraforce	Pressure Reducing Valves
Hydraforce	Sequence Valves
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HYDRAFORCE & STEED CARTRIDGE VALVES



Check Valves

Guided Ball Type

Part Number	Schematic	Flow Rate	Cavity	Cracking Pressure bar (psi)
CV04-20-0-N-05		5 lpm / 1.5 gpm	VC04-2	0.34 (5)
CV08-20-0-N-04		30 lpm / 8 gpm	VC08-2	0.34 (5)
CV08-20-0-N-40		30 lpm / 8 gpm	VC08-2	2.8 (40)
CV08-20-0-N-60		30 lpm / 8 gpm	VC08-2	4.1 (60)
CV08-20-0-N-100		30 lpm / 8 gpm	VC08-2	6.9 (100)
CV08-20-0-N-270		30 lpm / 8 gpm	VC08-2	18.3 (270)
CV10-20-0-N-05		76 lpm / 20 gpm	VC10-2	0.34 (5)
CV10-20-0-N-30		76 lpm / 20 gpm	VC10-2	2.1 (30)
CV10-20-0-N-100		76 lpm / 20 gpm	VC10-2	6.9 (100)
CV12-20-0-N-25		95 lpm / 25 gpm	VC12-2	1.7 (25)
CV12-20-0-N-60		95 lpm / 25 gpm	VC12-2	4.1 (60)
CV16-20-0-N-05		151 lpm / 40 gpm	VC16-2	0.34 (5)
CV50-20-0-P-05		76 lpm / 20 gpm	VC10-2	0.34 (5)

Reverse Flow Direction

Part Number	Schematic	Flow Rate	Cavity	Cracking Pressure bar (psi)
CV08-21-0-N-30		30 lpm / 8 gpm	VC08-2	2.07 (30)
CV12-21-0-N-06		114 lpm / 30 gpm	VC12-2	0.4 (6)
CV10-23-0-N-05		49 lpm / 13 gpm	VC10-2	0.34 (5)
CV10-23-0-N-55		49 lpm / 13 gpm	VC10-2	3.8 (55)

Pilot Operated - Pilot to Open

Part Number	Schematic	Flow Rate	Cavity	Cracking Pressure bar (psi)
PC08-30-0-N		18 lpm / 5 gpm	VC08-3	1.72 (25)
PC08-30-0-NS-90		18 lpm / 5 gpm	VC08-3	6.2 (90)
PC10-30-0-N		22 lpm / 6 gpm	VC10-3	2.07 (30)

Double Pilot Operated

Part Number	Schematic	Flow Rate	Port Size	Cracking Pressure bar (psi)
DCV08-6T-N		22 lpm / 6 gpm	9/16" UNO	1.7 (25)

HYDRAFORCE & STEED CARTRIDGE VALVES



Flow Control Valves

Needle Valve

Part Number	Schematic	Flow Rate	Cavity	Adjustment Type / Flow Settings
NV08-20A-0-N		5 lpm / 1.5 gpm	VC08-2	0.34 (5)
NV10-20A-0-N		30 lpm / 8 gpm	VC10-2	0.34 (5)
NV12-20A-0-N		30 lpm / 8 gpm	VC12-2	4.1 (60)

Needle Valve - Fine Adjustment

Part Number	Schematic	Flow Rate	Cavity	Adjustment Type / Flow Settings
NV10-21E-0-N		56 lpm / 15 gpm	VC10-2	Plastic Knob
NV10-21T-0-N		56 lpm / 15 gpm	VC10-2	No Handle

Needle Valve - Reverse Free Flow

Part Number	Schematic	Flow Rate	Cavity	Adjustment Type / Flow Settings
FC10-20A-0-N		45 lpm / 12 gpm	VC10-2	Allen Key

Flow Regulator - Pressure Compensated

Part Number	Schematic	Flow Rate	Cavity	Adjustment Type / Flow Settings
FR08-20F-0-N-M0.2		7.5 lpm / 2 gpm	VC08-2	Preset at 0.2 lpm
FR08-20F-0-N-M0.5		7.5 lpm / 2 gpm	VC08-2	Preset at 0.5 lpm
FR08-20F-0-N-M2		7.5 lpm / 2 gpm	VC08-2	Preset at 2 lpm
FR08-20F-0-N/M0.3		7.5 lpm / 2 gpm	VC08-2	Preset at 0.3 lpm
FR08-20F-0-N/M0.6		7.5 lpm / 2 gpm	VC08-2	Preset at 0.6 lpm
FR08-20F-0-N/M0.9		7.5 lpm / 2 gpm	VC08-2	Preset at 0.9 lpm
FR10-20F-0-N-6.0		22.7 lpm / 6 gpm	VC10-2	Preset at 22.7 lpm

Flow Regulator - Pressure Compensated

Part Number	Schematic	Flow Rate	Cavity	Adjustment Type / Flow Settings
FR10-33A-0-N		13 lpm / 3 gpm	VC10-3	Allen Key
FR10-39A-0-N-0		38 lpm / 10 gpm	VC10-3	Allen Key

Flow Divider / Combiner

Part Number	Schematic	Flow Rate	Cavity	Adjustment Type / Flow Settings
FD50-45-0-N-33		45 lpm / 12 gpm	VC10-4	50:50 @ 26.7 lpm
FD50-45-0-N-44		45 lpm / 12 gpm	VC10-4	50:50 @ 34.1 lpm
FD50-45-0-N-88		45 lpm / 12 gpm	VC10-4	50:50 @ 56 lpm
FD56-45-0-N-44		197 lpm / 52 gpm	VC16-4	50:50 @ 98.4 lpm

Shuttle Valve Ball Type

Part Number	Schematic	Flow Rate	Cavity / Port Size	Max. Pressure (bar)
LS08-30-0-N		19 lpm / 5 gpm	VC08-3	240
LS10-50-0-N		1.89 lpm / 0.5 gpm	VC10-5	240
LSV1-6T-N		28 lpm / 8 gpm	SAE-6	240

HYDRAFORCE & STEED CARTRIDGE VALVES



Relief Valves

Direct Acting - Poppet

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)	
RV08-20A-0-N-09		22 lpm / 6 gpm	VC08-2	7-76 (100-1100)	
RV08-20A-0-N-33		22 lpm / 6 gpm	VC08-2	17-248 (250-3600)	
RV08-22H-0-N-13/06		22 lpm / 6 gpm	VC08-2	41 (600)	
RV08-20F-0-N-33/20		22 lpm / 6 gpm	VC08-2	140 (2000)	
RV58-20A-0-N-46		22 lpm / 6 gpm	VC08-2	28-317 (400-4600)	
RV10-20A-0-N-06		38 lpm / 10 gpm	VC10-2	3-41 (50-600)	
RV10-20A-0-N-12		38 lpm / 10 gpm	VC10-2	10-82 (150-1200)	
RV10-20A-0-N-23		38 lpm / 10 gpm	VC10-2	17-158 (250-2300)	
RV10-20A-0-N-33		38 lpm / 10 gpm	VC10-2	17-227 (250-2300)	

Differential Area - Poppet Type

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)	
RV08-22A-0-N-26		30 lpm / 8 gpm	VC08-2	17-220 (250-3200)	
RV10-22A-0-N-06		114 lpm / 30 gpm	VC10-2	6.9-41.4 (100-600)	
RV10-22A-0-N-13		114 lpm / 30 gpm	VC10-2	10.3-89.6 (150-1300)	\$
RV10-22A-0-N-25		114 lpm / 30 gpm	VC10-2	17-165 (250-2400)	
RV10-22A-0-N-35		114 lpm / 30 gpm	VC10-2	17-241 (250-3500)	
RV10-22A-0-NC-35		114 lpm / 30 gpm	VC10-2	17-241 (250-3500)	
RV10-22H-0-N-35		114 lpm / 30 gpm	VC10-2	17-241 (250-3500)	

Pilot Operated, Spool

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)	
RV10-26A-0-N-04		114 lpm / 30 gpm	VC10-2	6.9-27.6 (100-400)	
RV10-26A-0-N-15		114 lpm / 30 gpm	VC10-2	10.3-103.4 (150-1500)	
RV10-26A-0-N-30		114 lpm / 30 gpm	VC10-2	27-207 (400-3000)	
RV10-26A-0-NC-30		114 lpm / 30 gpm	VC10-2	27-207 (400-3000)	
RV50-26A-0-P-50		114 lpm / 30 gpm	VC10-2	20-344 (300-5000)	\$
RV12-26A-0-N-04		170 lpm / 45 gpm	VC12-2	7-28 (100-400)	
RV12-26A-0-N-35		170 lpm / 45 gpm	VC12-2	20-241 (300-3500)	

Pilot Operated, Spool w / Reverse Check

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)	
RV10-28A-0-N-35		113.6 lpm / 30 gpm	VC10-2	51.8-241.3 (751-3500)	

HYDRAFORCE & STEED CARTRIDGE VALVES



Pressure Reducing / Relieving Valves

Pressure Reducing / Relieving

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)	
PR08-32A-0-N-03		11 lpm / 3 gpm	VC08-3	3.4-20.7 (50-300)	
PR08-32A-0-N-06		11 lpm / 3 gpm	VC08-3	7-41 (100-600)	
PR08-32A-0-N-12		11 lpm / 3 gpm	VC08-3	21-83 (300-1200)	
PR08-32A-0-N-22		11 lpm / 3 gpm	VC08-3	34-151 (500-2200)	
PR10-32A-0-N-04		30 lpm / 8 gpm	VC10-3	6-28 (80-400)	
PR10-32A-0-N-08		30 lpm / 8 gpm	VC10-3	14-55 (200-800)	
PR10-32A-0-N-21		30 lpm / 8 gpm	VC10-3	28-145 (400-2100)	

Pilot Operated Pressure Reducing / Relieving

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)	
PR10-36A-0-N-04		56 lpm / 15 gpm	VC10-3	7-28 (100-400)	\$
PR10-36A-0-N-15		56 lpm / 15 gpm	VC10-3	10-103 (150-1500)	
PR10-36A-0-N-30		56 lpm / 15 gpm	VC10-3	28-207 (400-3000)	
PR10-36F-0-N-15/M63		56 lpm / 15 gpm	VC10-3	63 (912)	
PR12-36A-0-N-30		189 lpm / 50 gpm	VC12-3	20.7-207 (300-3000)	

HYDRAFORCE & STEED CARTRIDGE VALVES



Sequence Valves

Internal Pilot & Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PS08-30C-0-N-24		22.7 lpm / 6 gpm	VC08-3	31.0-165.5 (450-2400)

External Pilot & Internal Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PS08-30C-0-N-24		22.7 lpm / 6 gpm	VC08-3	31.0-165.5 (450-2400)

External Pilot & Internal Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PS10-35A-0-20		38 lpm / 10 gpm	VC10-3	7-138 (100-2000)

Pilot Operated, Internal Pilot & External Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PS10-36A-0-N-04		57 lpm / 15 gpm	VC10-3	4.1-27.6 (60-400)
PS10-36A-0-N-30		57 lpm / 15 gpm	VC10-3	28-207 (400-3000)

Normally Closed, External Pilot & Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PS10-40A-0-N-22		30 lpm / 8 gpm	VC10-4	15-152 (220 - 2200)

Normally Open, External Pilot & Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PS10-41A-0-N-04		30 lpm / 8 gpm	VC10-4	3-28 (40 - 400)

External Pilot & Internal Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PS10-43A-0-N-22		30 lpm / 8 gpm	VC10-4	15-152 (220-2200)

HYDRAFORCE & STEED CARTRIDGE VALVES



Directional Valves

Pilot Two Way Spool - Normally Open

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD10-30-0-N-40		37.9 lpm / 10 gpm	VC10-3	2.8 (40)
PD10-30-0-N-60		37.9 lpm / 10 gpm	VC10-3	4.1 (60)
PD10-30-0-N-110		37.9 lpm / 10 gpm	VC10-3	7.6 (110)
PD12-30-0-N-110		114 lpm / 30 gpm	VC12-3	7.6 (110)

Pilot Two Way Spool - Normally Closed

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD10-34-0-N-60		37.9 lpm / 10 gpm	VC10-3	4.1 (60)
PD12-34-0-N-110		114 lpm / 30 gpm	VC12-3	7.6 (110)

Pilot Two Way Spool - Normally Open

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD10-35-NS-170		37.9 lpm / 10 gpm	VC10-3	11.7 (170)

Pilot Three Way Spool - External Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD10-40-0-NS-110		30 lpm / 8 gpm	VC10-4	7.6 (110)
PD12-40-0-NS-110		114 lpm / 30 gpm	VC12-4	7.6 (110)
PD16-40-0-N-110		170 lpm / 45 gpm	VC16-4	7.6 (110)

Pilot Three Way Spool - Internal Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD10-41-0-N-110		45 lpm / 12 gpm	VC10-4	7.6 (110)

Pilot Three Way Spool - Internal Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD10-42-0-NS-110		38 lpm / 10 gpm	VC10-4	7.6 (110)

Pilot Three Way Spool - Internal Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD10-44-0-N-60		38 lpm / 10 gpm	VC10-4	4.1 (60)

HYDRAFORCE & STEED CARTRIDGE VALVES



Directional Valves (continued)

Pilot Two Way Spool - Ported Drain

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
PD16-44-0-N-170		170 lpm / 45 gpm	VC16-4	11.7 (170)

Drained Spool Type - Logic Element

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
EV10-S34-0-N-110		76 lpm / 20 gpm	VC10-S3	7.6 (110)

Manual Valve - Pull to Shift - Spring Return

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
MP08-30D-0-N		25 lpm / 6.5 gpm	VC08-3	Black Plastic Knob

Manual Valve - Pull to Shift - Spring Return

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
MP10-40D-0-V		23 lpm / 6 gpm	VC10-4	Black Plastic Knob

Manual Valve - Pull to Shift - Spring Return

Part Number	Schematic	Flow Rate	Cavity	Pressure Range bar (psi)
MP10-42J-0-N		33 lpm / 9 gpm	VC10-4	Red Plastic Knob
MP10-42K-0-N		33 lpm / 9 gpm	VC10-4	Black Plastic Knob

Manual Rotary Flow Control

Part Number	Schematic	Flow Rate	Cavity	Comment
MR10-20A-0-N		49 lpm / 13 gpm	VC10-2	Handle Not Included
MR10-31-0-N		26.5 lpm / 7 gpm	VC10-3	Handle Not Included
MR10-40-0-N		11.4 lpm / 3 gpm	VC10-4	Handle Not Included
MR10-47D-0-N		23 lpm / 6 gpm	VC10-4	Handle Not Included

HYDRAFORCE & STEED CARTRIDGE VALVES



Solenoid Directional Valves

Poppet Type - Two Way Normally Closed

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-20-0-N-0		23 lpm / 6 gpm	VC08-2	
SV08-20M-0-N-0		23 lpm / 6 gpm	VC08-2	Manual Override
SV10-20-0-N-0		45 lpm / 12 gpm	VC10-2	
SV10-20M-0-N-0		45 lpm / 12 gpm	VC10-2	Manual Override
SV12-20-0-N-0		114 lpm / 30 gpm	VC12-2	
SV16-20-0-N-0		132 lpm / 35 gpm	VC16-2	

Poppet Type - Two Way Normally Open

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-21-0-N-0		30 lpm / 8 gpm	VC08-2	
SV08-21K-0-N-0		30 lpm / 8 gpm	VC08-2	Manual Override
SV08-21-0-P-0		30 lpm / 8 gpm	VC08-2	Polyurethane seal
SV10-21-0-N-0		68 lpm / 18 gpm	VC10-2	
SV10-21K-0-N-0		68 lpm / 18 gpm	VC10-2	Manual Override
SV12-21-0-N-0		114 lpm / 30 gpm	VC12-2	
SV16-21-0-N-0	114 lpm / 30 gpm	VC16-2		

Poppet Type - Two Way Normally Closed with Reverse Flow Energised

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-22-0-N-0		26 lpm / 7 gpm	VC08-2	
SV08-22M-0-N-0		26 lpm / 7 gpm	VC08-2	Manual Override
SV10-22-0-N-0		57 lpm / 15 gpm	VC10-2	
SV10-22M-0-N-0		57 lpm / 15 gpm	VC10-2	Manual Override
SV12-22-0-N-0		114 lpm / 30 gpm	VC12-2	
SV16-22-0-N-0		132 lpm / 35 gpm	VC16-2	

Poppet Type - Two Way Normally Open with Reverse Flow De-Energised

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-23-0-N-0		30 lpm / 8 gpm	VC08-2	
SV10-23-0-N-0		68 lpm / 18 gpm	VC10-2	
SV10-23K-0-N-0		68 lpm / 18 gpm	VC10-2	Manual Override
SV12-23K-0-N-0		114 lpm / 30 gpm	VC12-2	

Spool Type - Two Way Normally Closed

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-24-0-N-0		22 lpm / 6 gpm	VC08-2	
SV08-24M-0-N-0		22 lpm / 6 gpm	VC08-2	Manual Override
SV10-24-0-N-0		38 lpm / 10 gpm	VC10-2	
SV10-24M-0-N-0		38 lpm / 10 gpm	VC10-2	Manual Override

HYDRAFORCE & STEED CARTRIDGE VALVES



Solenoid Directional Valves (continued)

Spool Type - Two Way Normally Open

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-25-0-N-0		9 lpm / 2.5 gpm	VC08-2	
SV08-25M-0-N-0		9 lpm / 2.5 gpm	VC08-2	Manual Override
SV10-25-0-N-0		22 lpm / 6 gpm	VC10-2	
SV12-25-0-N-0		76 lpm / 20 gpm	VC12-2	

Poppet Type - 2 Way Normally Closed - Blocking / Low Flow

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-26-0-N-0		1.9 lpm / 0.5 gpm	VC08-2	
SV08-26M-0-N-0		1.9 lpm / 0.5 gpm	VC08-2	Manual Override

Poppet Type - 2 Way Normally Closed - Bi-directional Blocking

Part Number	Schematic	Flow Rate	Cavity	Comment
SV10-28-0-N-0		75.7 lpm / 20 gpm	VC10-2	
SV12-28-0-N-0		113.6 lpm / 30 gpm	VC12-2	

Poppet Type - 2 Way Normally Open - Bi-directional Blocking

Part Number	Schematic	Flow Rate	Cavity	Comment
SV10-29-0-N-0		75.7 lpm / 20 gpm	VC10-2	

Spool Type - Three Way

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-30-0-N-0		15 lpm / 4 gpm	VC08-3	
SV08-30M-0-N-0		15 lpm / 4 gpm	VC08-3	Manual Override
SV58-30-0-P-0		15 lpm / 4 gpm	VC10-3	

Spool Type - Three Way

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-31-0-N-0		11 lpm / 3 gpm	VC08-3	
SV10-31-0-N-0		22 lpm / 6 gpm	VC10-3	
SV10-31M-0-N-0		22 lpm / 6 gpm	VC10-3	Manual Override

HYDRAFORCE & STEED CARTRIDGE VALVES



Solenoid Directional Valves (continued)

Spool Type - Three Way

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-33-0-N-0		11 lpm / 3 gpm	VC08-3	
SV08-33M-0-N-0		11 lpm / 3 gpm	VC08-3	Manual Override
SV10-33-0-N-0		18.9 lpm / 5 gpm	VC10-3	
SV10-33M-0-N-0		18.9 lpm / 5 gpm	VC10-3	Manual Override

Spool Type - Three Way

Part Number	Schematic	Flow Rate	Cavity	Comment
SV10-34-0-N-0		22 lpm / 6 gpm	VC10-3	
SV10-34M-0-N-0		22 lpm / 6 gpm	VC10-3	Manual Override
SV12-34-0-N-0		60 lpm / 16 gpm	VC12-3	

Spool Type Four Way Two Position

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-40-0-N-0		11 lpm / 3 gpm	VC08-4	
SV08-40M-0-N-0		11 lpm / 3 gpm	VC08-4	Manual Override
SV10-40-0-N-0		22 lpm / 6 gpm	VC10-4	

Spool Type Four Way Two Position

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-41-0-N-0		13 lpm / 3.5 gpm	VC08-4	
SV10-41-0-N-0		26 lpm / 7 gpm	VC10-4	

Spool Type Four Way Two Position

Part Number	Schematic	Flow Rate	Cavity	Comment
SV10-42-0-N-0		22 lpm / 6 gpm	VC10-4	

Spool Type Four Way Two Position

Part Number	Schematic	Flow Rate	Cavity	Comment
SV10-43-0-N-0		22 lpm / 6 gpm	VC10-4	

HYDRAFORCE & STEED CARTRIDGE VALVES



Solenoid Directional Valves (continued)

Spool Type Four Way Two Position

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-44-0-N-0		11 lpm / 3 gpm	VC08-4	

Spool Type, Four Way, Three Position Tandem Centre

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-47A-0-N-0		11 lpm / 3 gpm	VC08-4	
SV10-47A-0-N-0		19 lpm / 5 gpm	VC10-4	

Spool Type, Four Way, Three Position Open Centre

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-47B-0-N-0		11 lpm / 3 gpm	VC08-4	
SV10-47B-0-N-0		18.5 lpm / 5 gpm	VC10-4	
SV10-47BM-0-N-0		18.5 lpm / 5 gpm	VC10-4	Manual Override

Spool Type, Four Way, Three Position Closed Centre

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-47C-0-N-0		11 lpm / 3 gpm	VC08-4	
SV10-47C-0-N-0		22 lpm / 6 gpm	VC10-4	
SV10-47CM-0-N-0		22 lpm / 6 gpm	VC10-4	Manual Override

Spool Type, Four Way, Three Position Motor Centre

Part Number	Schematic	Flow Rate	Cavity	Comment
SV08-47D-0-N-0		11 lpm / 3 gpm	VC08-4	
SV08-47DM-0-N-0		11 lpm / 3 gpm	VC08-4	Manual Override
SV10-47D-0-N-0		22 lpm / 6 gpm	VC10-4	
SV10-47DM-0-N-0		22 lpm / 6 gpm	VC10-4	Manual Override

HyPerformance Poppet Type, Two Way, Normally Closed

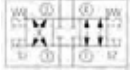
Part Number	Schematic	Flow Rate	Cavity	Comment
HSV10-22-0-N-0		76 lpm / 20 gpm	HVC10-2	
HSV10-28-0-U-0		76 lpm / 20 gpm	HVC10-2	Manual Override

HYDRAFORCE & STEED CARTRIDGE VALVES

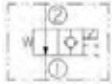


Solenoid Directional Valves (continued)

HyPerformance Poppet Type, Four Port, 3 Position,

Part Number	Schematic	Flow Rate	Cavity	Comment
HSV10-47C-0-U-0		37.9 lpm / 10 gpm	HVC10-4	

HyPerformance Poppet Type, Two way, Normally Open

Part Number	Schematic	Flow Rate	Cavity	Comment
HSV12-21-0-U-0		114 lpm / 30 gpm	HVC12-2	

HYDRAFORCE & STEED CARTRIDGE VALVES



Proportional Directional Control Valves

Spool Type, Four Way, Three Position Closed Centre

Part Number	Schematic	Flow Rate	Cavity	
SP08-47C-0-N-0		11 lpm / 3 gpm	VC08-4	
SP10-47C-0-N-0		22 lpm / 6 gpm	VC10-4	

Spool Type, Four Way, Three Position Motor Centre

Part Number	Schematic	Flow Rate	Cavity	
SP08-47D-0-N-0		11 lpm / 3 gpm	VC08-4	
SP10-47D-0-N-0		22 lpm / 6 gpm	VC10-4	

HYDRAFORCE & STEED CARTRIDGE VALVES



Proportional Flow Control Valves

Flow Control, Normally Closed

Part Number	Schematic	Flow Rate	Cavity
PV70-30AM-0-N-0		30 lpm / 8 gpm	VC10-3
PV72-30BM-0-N-0		17 lpm / 4.5 gpm	VC12-3
PV72-30AM-0-N-0		64 lpm / 17 gpm	VC12-3
PV72-30BM-0-N-0		38 lpm / 10 gpm	VC12-3
PV70-33AM-0-N-0		45 lpm / 14 gpm	VC10-3
PV72-33BM-0-N-0		38 lpm / 10 gpm	VC12-3
PV72-30BM-0-N-0		76 lpm / 10 gpm	VC12-3

Flow Control, Normally Closed

Part Number	Schematic	Flow Rate	Cavity
PV76-30AG-0-N-0		95 lpm / 25 gpm	VC16-3
PV76-30AM-0-N-0		95 lpm / 25 gpm	VC16-3

Poppet Type - Two Way Normally Closed

Part Number	Schematic	Flow Rate	Cavity
SP08-20-0-N-0		23 lpm / 6 gpm	VC08-2
SP10-20-0-N-0		45 lpm / 12 gpm	VC10-2

Poppet Type - Two Way Normally Open

Part Number	Schematic	Flow Rate	Cavity
SP08-21-0-N-0		30 lpm / 8 gpm	VC08-2
SP10-21-0-N-0		68 lpm / 18 gpm	VC10-2

Poppet Type - Two Way Normally Closed with Reverse Flow Energised

Part Number	Schematic	Flow Rate	Cavity
SP08-22-0-N-0		26 lpm / 7 gpm	VC08-2

Spool Type - Two Way Normally Closed

Part Number	Schematic	Flow Rate	Cavity
SP08-24-0-N-0		22 lpm / 6 gpm	VC08-2
SP10-24-0-N-0		38 lpm / 10 gpm	VC10-2

HYDRAFORCE & STEED CARTRIDGE VALVES



Flow Control Valves

Pressure Control, Internal Pilot Operated

Part Number	Schematic	Flow Rate	Cavity	Max. Pressure (bar)
TS98-30-0-V-0		30 lpm / 8 gpm	VC98-3	138
TS90-31-0-N-0		38 lpm / 10 gpm	VC98-3	207
TS10-36A-0-N-0		60 lpm / 16 gpm	VC10-3	241

Proportional Pressure Relief Valves

Increasing Pressure with Increasing Current

Part Number	Schematic	Flow Rate	Cavity	Max. Relief Pressure (bar)
TS38-20A-0-N-0		12 lpm / 3.2 gpm	VC08-2	207
TS10-26A-0-N-0		95 lpm / 25 gpm	VC10-2	207

Proportional Pressure Relief Valves

Decreasing Pressure with Increasing Current

Part Number	Schematic	Flow Rate	Cavity	Max. Relief Pressure (bar)
TS38-21A-0-N-0		12 lpm / 3.2 gpm	VC08-2	207
TS10-27A-0-N-0		76 lpm / 20 gpm	VC10-2	207

HYDRAFORCE & STEED CARTRIDGE VALVES



Spare Parts

Standard Coils - Din Connectors

Voltage	Size 08		Sizes 10, 12, 16, 38, 58		Size 70 Proportional	
	Part Number		Part Number		Part Number	
12VDC	6306012-DG		6356012-DG		6507612-DG	
24VDC	6306024-DG		6356024-DG		6507624-DG	
115VAC	6316115-AG		6366115-AG		-	
230VAC	6316230-AG		6366230-AG		-	

Environmental E-Coils (Heavy Duty) - Din Connectors

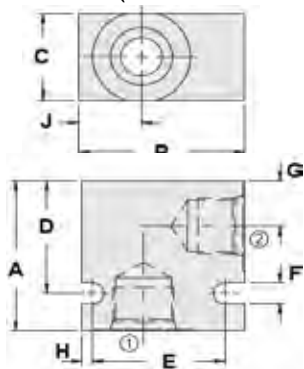
Voltage	Size 08		Sizes 10, 12, 16, 38, 58		Size 70 Proportional	
	Part Number		Part Number		Part Number	
12VDC	4305862-EDG		4305882-EDG		6956012-EG	
24VDC	4305864-EDG		4305884-EDG		6956024-EG	

HYDRAFORCE & STEED CARTRIDGE VALVES

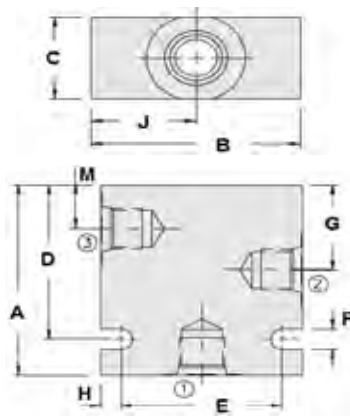


Aluminium Bodies

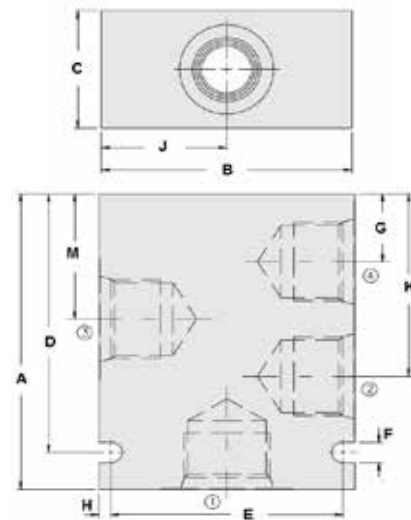
2 Way Housings



3 Way Housings



4 Way Housings



Standard 2 Way Aluminium Bodies

Part Number	Cavity	Port Sizes			All Dimensions								
		1	2		A	B	C	D	E	F	G	H	J
7024660	VC08-2	9/16" UNO			50.8	50.8	28.7	38.1	41.4	7.1	15.2	3.3	19.1
7024280	VC10-2	3/4" UNO			50.8	50.8	31.8	38.1	41.4	7.1	19.1	3.3	19.1
7022250	VC12-2	1-1/16" UNO			76.2	76.2	50.8	57.2	65.0	8.7	26.2	4.1	28.7
7023240	VC16-2	1-5/16" UNO			76.2	76.2	50.8	57.2	65.0	8.7	25.4	4.1	28.7

Standard 3 Way Aluminium Bodies

Part Number	Cavity	Port Sizes			All Dimensions									
		1	2	3	A	B	C	D	E	F	G	H	J	M
7024760	VC08-3	9/16" UNO			66.5	63.5	28.7	53.8	50.8	7.1	29.7	6.4	31.8	15.2
7024380	VC10-3	3/4" UNO			66.5	63.5	31.8	53.8	50.8	7.1	34.5	6.4	31.8	18.8
7022340	VC12-3	1-1/16" UNO			102	102	50.8	82.6	92.1	8.7	29.2	4.8	50.8	54
7022650	VC16-3	1-5/16" UNO			127	102	50.8	82.6	92.1	8.7	25.4	4.8	50.8	54

3 Way Short Aluminium Bodies (Refer to Standard 3 Way Picture)

Part Number	Cavity	Port Sizes			All Dimensions									
		1	2	3	A	B	C	D	E	F	G	H	J	M
7026530	VC10-S3	7/8" UNO	9/16" UNO		66.5	63.5	31.8	53.8	50.8	7.1	34.5	6.4	31.8	18.8

Standard 4 Way Aluminium Bodies

Part Number	Cavity	Port Sizes				All Dimensions									
		1	2	3	4	A	B	C	D	E	F	G	H	J	M
7024860	VC08-4	9/16" UNO				82.6	63.5	28.7	72.1	50.8	7.1	43.9	6	31.8	15.2
7024480	VC10-4	3/4" UNO				82.6	63.5	31.8	72.1	50.8	7.1	50.5	6	31.8	18.8

HYDRAFORCE & STEED CARTRIDGE VALVES



Check Valves

Free Flow Port 1 to Port 2

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
CX2A-X		80	T-13A	350	CXDA-X
CX3A-X		160	T-5A	350	CXFA-X
CX6A-X		320	T-16A	350	CXHA-X
CX8A-X		640	T-18A	350	CXJA-X

Reverse Flow Direction

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
CX2D-X		60	T-13A	350	CXCD-X
CX3D-X		120	T-5A	350	CXED-X
CX6D-X		240	T-16A	350	CXGD-X
CX8D-X		480	T-18A	350	CXID-X

Pilot to Open

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
CK2B-X		60	T-11A	350	CKCB-X
CK3B-X		120	T-2A	350	CKEB-X
CK6B-X		240	T-17A	350	CKGB-X
CK8B-L		480	T-19A	350	CKIB-L

Pilot to Close

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
CO3A-X		160	T-2A	350	COFA-X

HYDRAFORCE & STEED CARTRIDGE VALVES



Flow Control Valves

Pressure Compensated Fully Adjustable Flow Control Valve (with Free Flow Check Valve)

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
FD2A-L		23	T-13A	350	FDBA-L
FD3B-L		45	T-5A	350	FDCB-L
FD6A-L		95	T-16A	350	FDEA-L
FD8A-L		200	T-18A	350	FDFA-L

Fully Adjustable Needle Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
NF2C-L		25	T-13A	350	NFCC-L
NF3C-L		50	T-5A	350	NFDC-L

Fully Adjustable and High Capacity Needle Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
NF3D-L		160	T-5A	350	NFDD-L

Pilot Operated Sequence Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
RS2C-L		60	T-11A	350	RSDC-L

Shuttle Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
CS2D-X		5	T-11A	350	CSAD-X

HYDRAFORCE & STEED CARTRIDGE VALVES



Relief Valves

Direct-Acting Relief Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
RD2A-L		95	T-10A	350	RDDA-L
RD3A-L		200	T-3A	350	RDFA-L
RD6A-L		380	T-16A	350	RDHA-L

Pilot Operated Relief Valve with Vent

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
RV2A-L		60	T-11A	350	RVCA-L
RV3A-L		120	T-2A	350	RVEA-L

Pilot Operated Relief Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
RP2C-L		95	T-10A	350	RPEC-L
RP3C-L		200	T-3A	350	RPGC-L
RP6C-L		380	T-16A	350	RPIC-L
RP8C-L		760	T-18A	350	RPKC-L

HYDRAFORCE & STEED CARTRIDGE VALVES



Pressure Reducing / Relieving Valves

Pilot Operated Reducing Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
PB2B-L		40	T-11A	350	PBDB-L
PB3B-L		80	T-2A	350	PBFB-L
PB6B-L		160	T-17A	350	PBHB-L

Pilot Operated Reducing / Relieving Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
PP2B-L		40	T-11A	350	PPDB-L

Direct-Acting Pressure Reducing / Relieving Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
PR2B-L		40	T-11A	350	PRDB-L

HYDRAFORCE & STEED CARTRIDGE VALVES



Counterbalance Valves

Counterbalance Pilot Ratio External Pilot Non-Vented Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Pilot Ratio	Interchangeable with Sun Cartridge
CB2A-L		60	T-11A	350	3:1	CBCA-L
CB3A-L		120	T-2A	350	3:1	CBEA-L
CB6A-L		240	T-17A	350	3:1	CBGA-L
CB8A-L		480	T-19A	350	3:1	CBIA-L
CB2G-L		60	T-11A	350	4.5:1	CBCG-L
CB3G-L		120	T-2A	350	4.5:1	CBEG-L
CB6G-L		240	T-17A	350	4.5:1	CBGG-L
CB2H-L		60	T-11A	350	10:1	CBCH-L
CB3H-L		120	T-2A	350	10:1	CBEH-L

Semi-Restrictive Counterbalance Valve

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Pilot Ratio	Interchangeable with Sun Cartridge
CB2F-L		15	T-11A	350	4.5:1	CBBG-L

Restrictive Counterbalance Valve

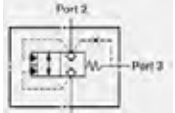
Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Pilot Ratio	Interchangeable with Sun Cartridge
CB2D-L		40	T-11A	350	4.5:1	CBBD-L

HYDRAFORCE & STEED CARTRIDGE VALVES

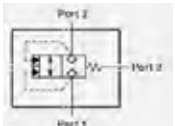


Logic Elements

Vent to Open

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
LO2B-X		80	T-11A	350	LODB-X

Vent to Close

Part Number	Schematic	Rated Flow (lpm)	Cavity	Max Pressure (bar)	Interchangeable with Sun Cartridge
LO3C-X		160	T-2A	350	LOFC-X