

November 1, 2012



Cylinders, Valves, Motors & Accessories



P. Prince



INDEX

Accessories

Pressure GaugesPage 1

Cylinders

2500 PSI Tie-rod Cylinders (2" & 2 ½")Page 2

2500 PSI Tie-rod Cylinders (3", 3 ½" & 4")Page 3

Valves

MB Mono-Block Directional Control ValvesPage 4

MB Mono-Block Directional Control Valve Assemblies & PartsPage 4

MB Mono-Block Directional Control Valve Specification.....Page 5

MB Mono-Block Directional Control Valve Dimensional DataPage 5

WVS Mono-Block Directional Control Valves.....Page 6

WVS Mono-Block Directional Control Valve Assemblies & PartsPage 6

WVS Mono-Block Directional Control Valve Specifications.....Page 7

WVS Mono-Block Directional Control Valve Dimensional DataPage 7

Log Splitter ValvesPage 8

Adjustable Flow Control Valves.....Page 9

In-Line Flow Control Valves.....Page 10

In-Line Check ValvesPage 11

In-Line Needle Valves.....Page 12

Ball Valves.....Page 13

Pilot ControlsPage 14

Pumps

Hand PumpsPage 15

Motors

Model CMM Motors.....Page 18

Model CMM Motors Performance Data.....Page 19

Sales Staff

QUALITY

Prince Manufacturing Corporation's Wolverine Line is our new brand of quality hydraulic components. Prince understands customers want choices, so we have introduced the Wolverine Line of products to target a different segment of the market.

This line takes advantage of global sourcing of complete hydraulic components, resulting in more competitively priced products.

Product testing and evaluation is done at Prince's own R & D test lab before any new product is added to the Wolverine Line. This has resulted in numerous product improvements that were implemented before the products were placed on our warehouse shelves.

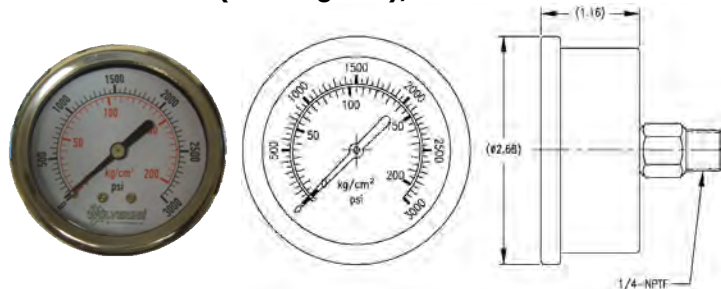
The goal of this effort is to ensure these products meet their stated specifications and help ensure consistent quality.

NOTE ALL PRICES ARE LIST

Pressure Gauges

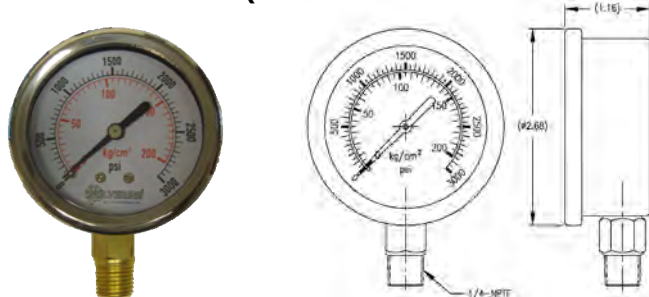
	MODEL NO.	DESCRIPTION	LIST PRICE
	PM-HG-3	2 ½" ROUND FACE 5,000 PSI, ¼" NPT	11.00
	PM-HG-4	4" ROUND FACE 5,000 PSI, ¼" NPT	15.00

2 ½" Round Face, stainless body, ¼ NPT (male brass fitting), dual scale (PSI & kg/cm²), center back mount



MODEL NO.	PSI	LIST PRICE
WLGC-600	0 - 600 PSI	14.00
WLGC-1000	0 - 1000 PSI	14.00
WLGC-2000	0 - 2000 PSI	14.00
WLGC-3000	0 - 3000 PSI	14.00
WLGC-5000	0 - 5000 PSI	14.00

2 ½" Round Face, stainless body, ¼ NPT (male brass fitting), dual scale (PSI & kg/cm²), stem mount



MODEL NO.	PSI	LIST PRICE
WLGS-600	0 - 600 PSI	14.00
WLGS-1000	0 - 1000 PSI	14.00
WLGS-2000	0 - 2000 PSI	14.00
WLGS-3000	0 - 3000 PSI	14.00
WLGS-5000	0 - 5000 PSI	14.00



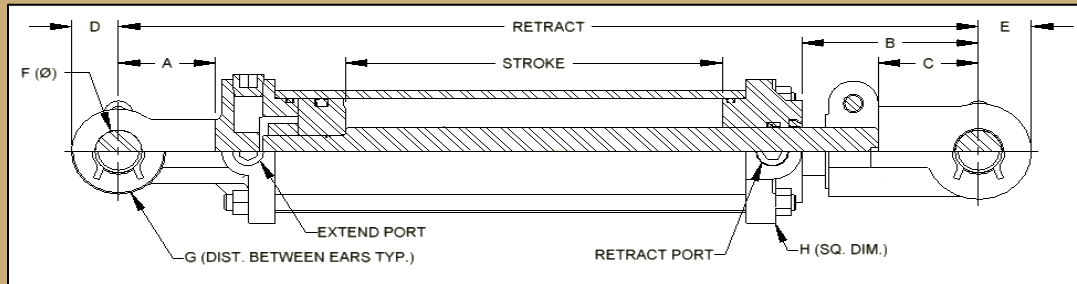
C Y L I N D E R S

Standard 2500 PSI Tie-rod Cylinders



FEATURES:

- Durable black powder coat paint
- Steel rod clevis & base clevis
- 100% tested
- Clevis meets ASAE specs
- Seals from North America
- Individually bagged & boxed
- Side port configuration
- Plated tie-rods & powder coat allows coverage under the tie-rods
- SAE ports available, please consult your sales manager



MODEL	BORE	EXTEND PORT	RETRACT PORT	A	B	C	D	E	F	G	H
W200000	2.0	3/8 NPTF	3/8 NPTF	2.00	3.75	2.13	.97	1.03	1.00	1.13	2.82
W250000	2.5	3/8 NPTF	3/8 NPTF	2.00	3.75	2.13	.97	1.13	1.00	1.13	3.38
W300000	3.0	1/2 NPTF	1/2 NPTF	2.00	3.75	2.13	1.00	1.13	1.00	1.13	3.90
W350000	3.5	1/2 NPTF	1/2 NPTF	2.00	3.75	2.13	1.13	1.13	1.00	1.13	4.62
W400000	4.0	1/2 NPTF	1/2 NPTF	2.00	3.75	2.13	1.13	1.25	1.00	1.13	4.75

MODEL	BORE x STROKE			RETRACT	ROD DIAMETER	COLUMN LOAD (LBS) / PSI *	WT	LIST PRICE
W200040	2	X	4	14.25	1.125	FULL PSI	16	96.00
W200060	2	X	6	16.25	1.125	FULL PSI	17	100.70
W200080	2	X	8	18.25	1.125	FULL PSI	17	105.15
W200080	2	X	8	20.25	1.125	FULL PSI	18	107.50
W200100	2	X	10	20.25	1.125	FULL PSI	20	114.50
W200120	2	X	12	22.25	1.125	FULL PSI	21	119.00
W200140	2	X	14	24.25	1.125	FULL PSI	22	126.80
W200160	2	X	16	26.25	1.125	FULL PSI	23	132.80
W200160	2	X	16	31.50	1.125	7,750 LB / 2,470 PSI*	24	131.90
W200180	2	X	18	28.25	1.125	7,850 LB / 2,490 PSI*	24	137.00
W200200	2	X	20	30.25	1.125	7,500 LB / 2,390 PSI*	25	144.70
W200240	2	X	24	34.25	1.125	5,500 LB / 1,770 PSI*	27	151.50
W200300	2	X	30	40.25	1.125	3,800 LB / 1,220 PSI*	35	167.40
W200360	2	X	36	46.25	1.125	2,750 LB / 875 PSI*	40	182.10

W250040	2.5	X	4	14.25	1.125	FULL PSI	18	110.00
W250060	2.5	X	6	16.25	1.125	FULL PSI	19	114.60
W250080	2.5	X	8	18.25	1.125	FULL PSI	20	119.90
W250080	2.5	X	8	20.25	1.125	FULL PSI	21	122.00
W250100	2.5	X	10	20.25	1.125	FULL PSI	22	125.70
W250120	2.5	X	12	22.25	1.125	FULL PSI	24	131.30
W250140	2.5	X	14	24.25	1.125	FULL PSI	25	143.90
W250160	2.5	X	16	26.25	1.125	11,050 LB / 2,250 PSI*	27	149.80
W250180	2.5	X	18	28.25	1.250	FULL PSI	28	159.10
W250200	2.5	X	20	30.25	1.250	FULL PSI	30	165.30
W250240	2.5	X	24	34.25	1.250	8,650 LB / 1,760 PSI*	33	176.80
W250300	2.5	X	30	40.25	1.250	5,900 LB / 1,200 PSI*	45	202.60
W250360	2.5	X	36	46.25	1.250	4,300 LB / 875 PSI*	56	215.70



C Y L I N D E R S

Standard 2500 PSI Tie-rod Cylinders

MODEL	BORE x STROKE	RETRACT	ROD DIAMETER	COLUMN LOAD (LBS)/PSI *	WT	LIST PRICE
W300040	3 X 4	14.25	1.25	FULL PSI	20	118.20
W300060	3 X 6	16.25	1.25	FULL PSI	25	125.40
W300080	3 X 8	18.25	1.25	FULL PSI	25	130.90
V300080	3 X 8	20.25	1.25	FULL PSI	25	132.60
W300100	3 X 10	20.25	1.25	FULL PSI	30	144.60
W300120	3 X 12	22.25	1.25	FULL PSI	28	152.30
W300140	3 X 14	24.25	1.25	FULL PSI	30	156.10
W300160	3 X 16	26.25	1.25	FULL PSI	33	170.90
V300160	3 X 16	31.50	1.5	FULL PSI	35	174.30
W300180	3 X 18	28.25	1.5	FULL PSI	35	180.30
W300200	3 X 20	30.25	1.5	FULL PSI	37	192.10
W300240	3 X 24	34.25	1.5	FULL PSI	42	206.20
W300300	3 X 30	40.25	1.5	12,150 LB / 1,720 PSI*	59	263.00
W300360	3 X 36	46.25	1.5	12,150 LB / 1,720 PSI*	63	292.50

V350080	3.5 X 8	20.25	1.25	FULL PSI	29	174.80
W350100	3.5 X 10	20.25	1.25	FULL PSI	30	178.20
W350120	3.5 X 12	22.25	1.25	FULL PSI	33	191.70
W350140	3.5 X 14	24.25	1.25	FULL PSI	35	201.00
W350160	3.5 X 16	26.25	1.25	17,000 LB / 1,760 PSI*	37	210.60
V350160	3.5 X 16	31.50	1.5	FULL PSI	39	215.80
W350180	3.5 X 18	28.25	1.25	14,000 LB / 1,450 PSI*	40	221.00
W350200	3.5 X 20	30.25	1.5	FULL PSI	42	230.40
W350240	3.5 X 24	34.25	1.5	18,000 LB / 1,870 PSI*	51	292.10
W350300	3.5 X 30	40.25	1.5	12,000 LB / 1,250 PSI*	59	324.30

W400040	4.0 X 4	14.25	1.5	FULL PSI	30	174.50
V400080	4.0 X 8	20.25	1.5	FULL PSI	36	201.10
W400100	4.0 X 10	20.25	1.5	FULL PSI	37	208.00
W400120	4.0 X 12	22.25	1.5	FULL PSI	40	218.90
W400140	4.0 X 14	24.25	1.5	FULL PSI	42	229.10
W400160	4.0 X 16	26.25	1.5	FULL PSI	48	241.20
V400160	4.0 X 16	31.50	2	FULL PSI	64	265.20
W400180	4.0 X 18	28.25	1.5	30,000 LB / 2,380 PSI*	51	265.80
W400200	4.0 X 20	30.25	1.5	25,000 LB / 1,990 PSI*	53	275.70
W400240	4.0 X 24	34.25	2	FULL PSI	70	331.10
W400300	4.0 X 30	40.25	2	FULL PSI	87	390.50
W400360	4.0 X 36	46.25	2	27,000 LB / 2,150 PSI*	98	440.50

PMCK-W200000	Packing Kit 2"				1	26.00
PMCK-W250000	Packing Kit 2.5"				1	42.00
PMCK-W300000	Packing Kit 3"				1	46.75
PMCK-W350000	Packing Kit 3.5"				1	51.00
PMCK-W400000	Packing Kit 4"				1	62.75

* These models have a column load restriction that limits the maximum push load that the cylinder can safely operate at.

➤ NOTE: V models are built to ASAE retract dimensions.

The "B" dimension shown in the chart will be 2.00 inches longer for 8.0 inch stroke V models and will be 5.25 inches longer for 16.0 inch stroke V models. Also, Model V300160, V3500160, & V400160 will have a 1.25 pin.



V A L V E S

Mono-Block Directional Control Valves



FEATURES:

- 1-6 spool mono-block
- 3500 PSI rating
- #8 SAE O-ring in/out Ports
- #8 SAE O-ring work ports
- Interchangeable motor spool
- Load check
- Adjustable relief
- Enclosed handle design
- Open center – field convertible to power beyond and closed center
- Low spool leakage (3 cc/min @ 1500 PSI)
- Hardened steel spools

MB Mono-Block Directional Control Valve Assemblies

VALVE MODEL NO.	NO. OF SPOOLS	SPOOL TYPE, ACTION	WEIGHT (POUNDS)	LIST PRICE
MB11B5C1	1	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	6.9	146.30
MB11C5C1	1	4 WAY 3 POSITION MOTOR, 3 POSITION DETENT, ALL SPOOLS	7.2	184.15
MB11G5C1	1	4 WAY 4 POSITION FLOAT, SPRING CENTER W/FLOAT DETENT	7.2	305.00
MB21BB5C1	2	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	9.7	231.70
MB21GB5C1	2	4 WAY 4 POSITION FLOAT, SPRING CENTER W/FLOAT DETENT, 1 ST SPOOL 4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, 2 ND SPOOL	10.2	378.05
MB31BBB5C1	3	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	12.8	365.85
MB41BBBB5C1	4	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	16.1	421.90
MB51BBBBB5C1	5	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	19.2	516.55
MB61BBBBBB5C1	6	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	22.2	611.60

MB Mono-Block Directional Control Valve Parts

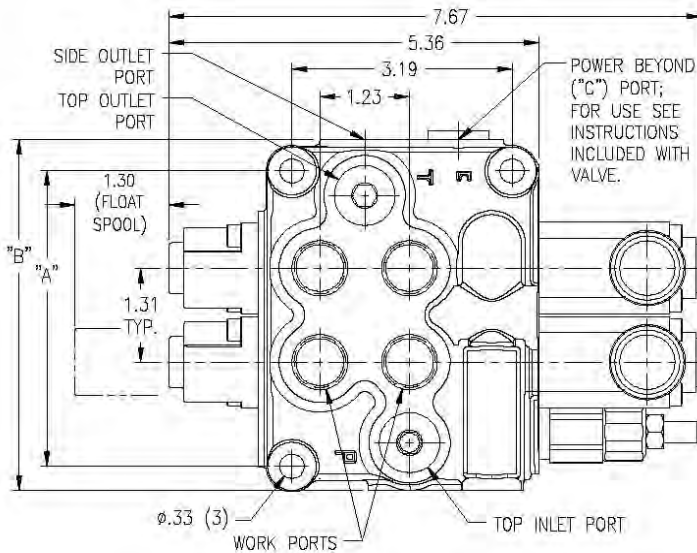
PART NO.	DESCRIPTION	LIST PRICE
671400306	ALUMINUM END CAP WITH SCREWS	10.50
671400307	GLASS FILLED NYLON END CAP WITH SCREWS	5.85
660170060	ALUMINUM ENCLOSED HANDLE HOUSING	28.50
660170055	HANDLE WITH KNOB	10.25
660170061	JOYSTICK KIT (field installable)	178.80
612100001	MOTOR SPOOL	46.25
671900122	POWER BEYOND PLUG	3.50
660570003	SEAL KIT	44.00
660170058	THREE POSITION DETENT KIT	44.00
660170057	SPRING CENTER KIT	13.00
660270005	RELIEF VALVE (2000-3500)	54.50
660270006	RELIEF VALVE PLUG	20.00
660170056	GLASS FILLED NYLON ENCLOSED HANDLE HOUSING	20.50
670400111	HANDLE KNOB	4.00
612000001	3 WAY TANDEM SPOOL (single acting)	46.75

V A L V E S

Model MB Specifications and Dimensional Data

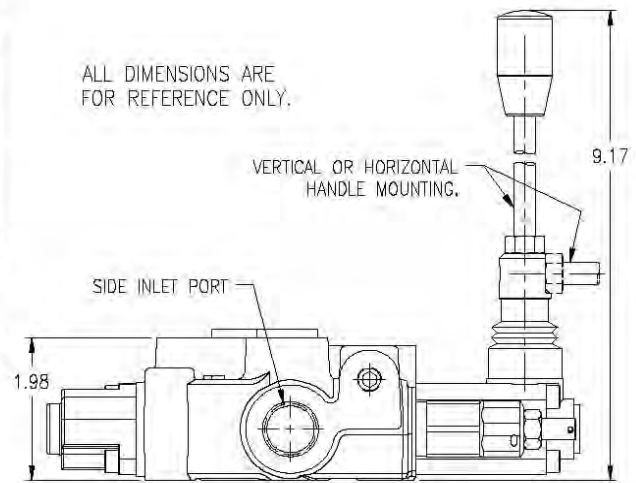
MAXIMUM OPERATING PRESSURE	3500 PSI
MAXIMUM POWER BEYOND PRESSURE	3000 PSI
MAXIMUM TANK PRESSURE	500 PSI
NOMINAL FLOW RATING	8 GPM
MAXIMUM OPERATING TEMPERATURE	180° F

STRAIGHT HANDLE LENGTH: 5.8 INCHES
 FILTRATION RECOMMENDATIONS: ISO 4406 19 / 17 / 14
 SPOOL SEALS IN INTERNAL O-RING GROOVES
 HIGH PRESSURE ADJUSTABLE RELIEF ADJUSTMENT RANGE
 2000-3500 PSI (PRESET TO 2500 PSI @ 6 GPM)



INLET AND OUTLET PORTS: #8 SAE/ORB (3/4-16UNF-2B)
 ALL WORK PORTS: #8 SAE/ORB (3/4-16UNF-2B)
 POWER BEYOND PORT: #8 SAE/ORB (3/4-16UNF-2B)

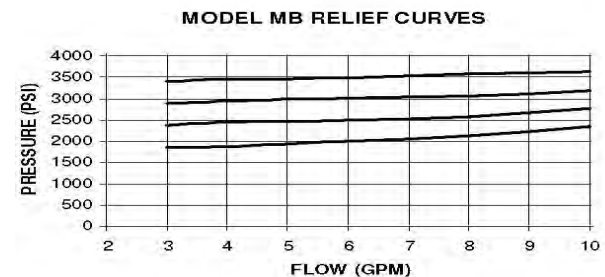
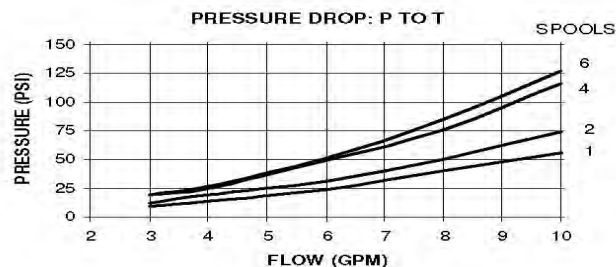
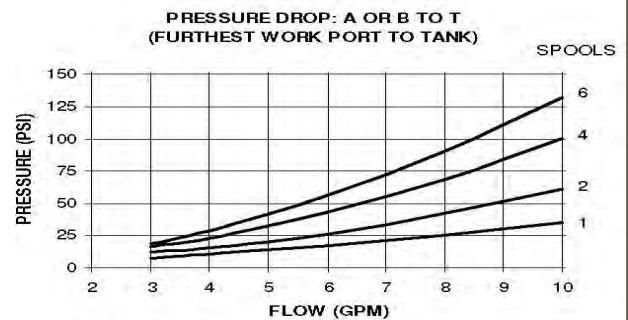
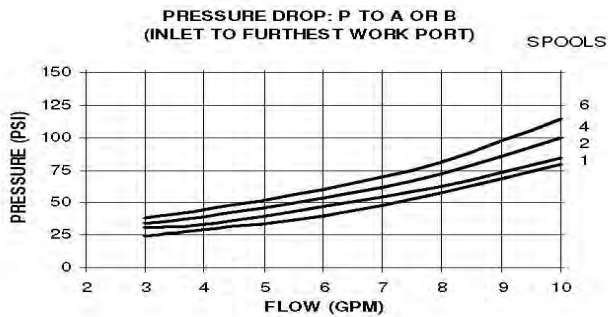
ALL DIMENSIONS ARE FOR REFERENCE ONLY.



NUMBER OF SPOOLS:

	1	2	3	4	5	6
"A"	2.87	4.33	5.79	7.24	8.70	10.16
"B"	3.78	5.16	6.62	8.07	9.53	10.99

Performance Curves





V A L V E S

WVS Mono-Block Directional Control Valves



FEATURES:

- 1-6 spool mono-block
- 4000 PSI rating
- #8 SAE O-ring in/out Ports
- #8 SAE O-ring work ports
- Interchangeable motor spool
- Load check
- Adjustable relief
- Enclosed handle design
- Open center – field convertible to power beyond and closed center
- Low spool leakage (3 cc/min @ 1500 PSI)
- Nominal Flow 14 GPM

WVS Mono-Block Directional Control Valve Assemblies

VALVE MODEL NO.	NO. OF SPOOLS	SPOOL TYPE, ACTION	WEIGHT (POUNDS)	LIST PRICE
WVS11B5C1	1	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	6.2	196.86
WVS11C5C1	1	4 WAY 3 POSITION MOTOR, 3 POSITION DETENT, ALL SPOOLS	6.5	234.60
WVS21BB5C1	2	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	9.9	323.34
WVS31BBB5C1	3	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	13.9	432.99
WVS41BBBB5C1	4	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	17.6	547.33
WVS51BBBBB5C1	5	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	21.3	641.84
WVS61BBBBBB5C1	6	4 WAY 3 POSITION, SPRING CENTER TO NEUTRAL, ALL SPOOLS	25.1	758.88

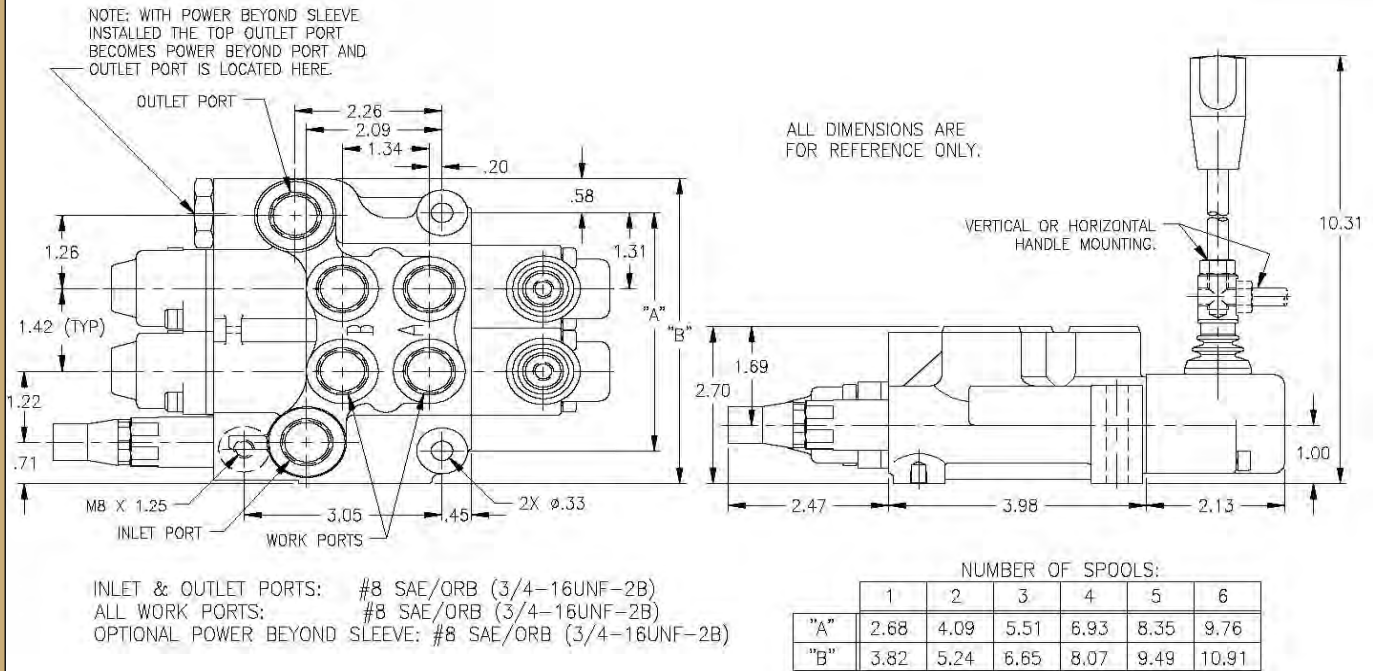
WVS Directional Control Valve Parts

PART NO.	DESCRIPTION	LIST PRICE
612104080	DOUBLE ACTING SPOOL	39.90
612104081	MOTOR SPOOL	39.90
612104082	FLOAT SPOOL PLUS DETENT POSITIONER (CAN BE USED ON ANY SPOOL LOCATION)	99.93
660370002	POWER BEYOND PLUG	29.85
660270007	RELIEF VALVE (750–1100) (51–75)	47.39
660270008	RELIEF VALVE (1100–2200) (76–150)	47.39
660270009	RELIEF VALVE (2200–3200) (151–220)	47.39
660270010	RELIEF VALVE (3200–4785) (221–330)	47.39
660170066	HANDLE WITH KNOB	9.70
660370003	HANDLE HOUSING	29.85
660370004	JOYSTICK KIT (FIELD INSTALLABLE) (HANDLE INCLUDED)	199.90
660170067	JOYSTICK HANDLE WITH KNOB	39.70
660570005	SEAL KIT (COMPLETE FOR UP TO 6 SECTIONS INCLUDING OR SEAL FOR MAIL RELIEF VALVE)	45.50
660170069	SPRING CENTER KIT	44.65
660170068	3 POSITION DETENT KIT (DETENT IN POSITION 1, 0, AND 2)	63.32

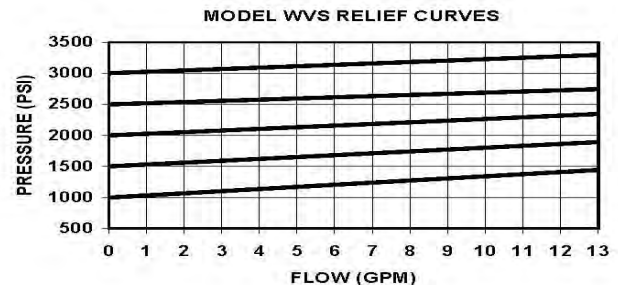
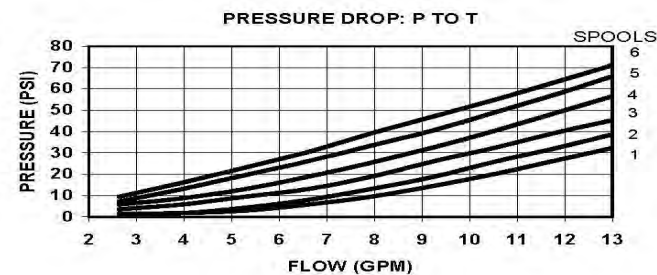
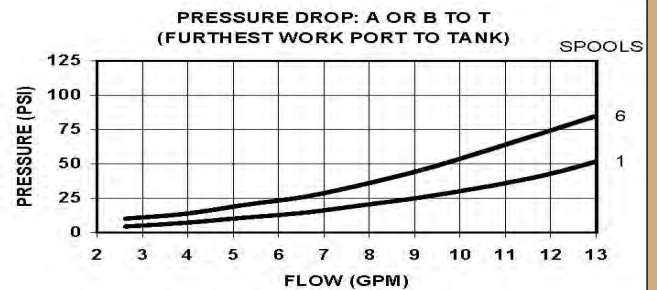
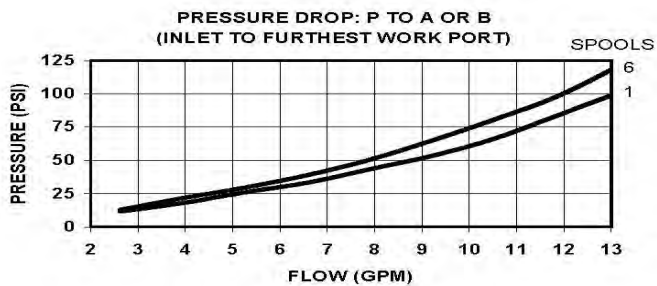
Model WVS Specifications and Dimensional Data

MAXIMUM OPERATING PRESSURE 4000 PSI
 MAXIMUM TANK PRESSURE 300 PSI
 NOMINAL FLOW RATING 14 GPM
 MAXIMUM OPERATING TEMPERATURE 180° F

STRAIGHT HANDLE LENGTH: 7.1 INCHES
 FILTRATION RECOMMENDATIONS: ISO 4406 19 / 17 / 14
 SPOOL SEALS IN INTERNAL O-RING GROOVES
 HIGH PRESSURE ADJUSTABLE RELIEF ADJUSTMENT RANGE
 2200-3200 PSI (PRESET TO 2500 PSI)



Performance Curves



Log Splitter Valves

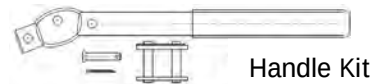
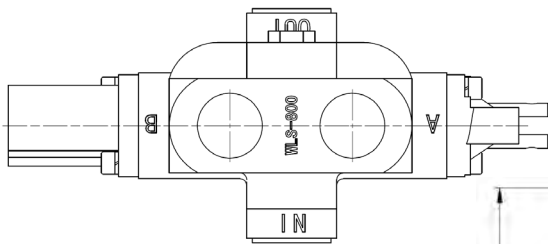


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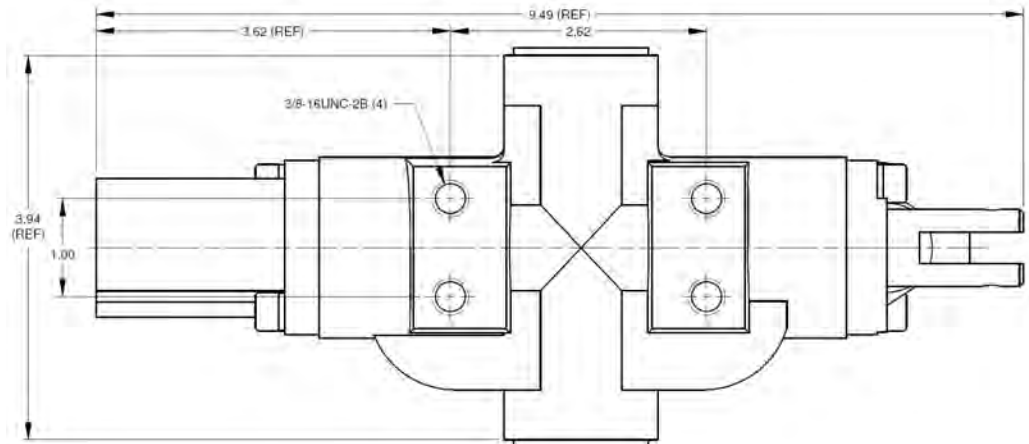
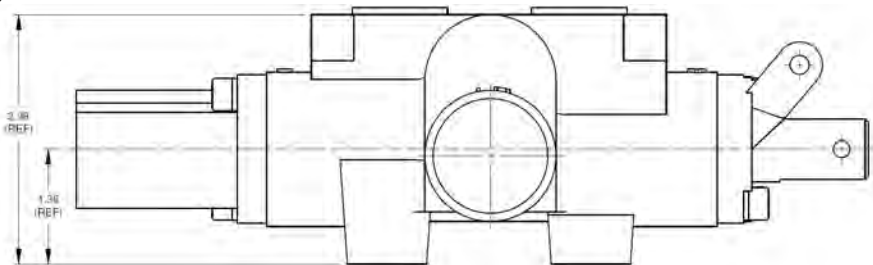
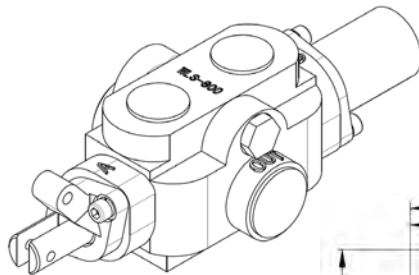
- Pressure release detent at end of retract stroke
- Relief set to 2,250 PSI
- Max tank port pressure 500 PSI
- Max operating temperature 180° F

Model Log Splitter Valves

MODEL No.	DESCRIPTION	PORT SIZE WORK / IN-OUT	MAX PSI	MAX FLOW	SHIPPING WEIGHT	LIST PRICE
WLS-800	Log Splitter Valve	½"NPTF / ¾"NPTF	3,265 PSI	30 GPM	10	112.00
660170077	Detent Kit				1	21.00
660170078	Relief Kit (in/out ports)				1	12.00
660170079	Handle Kit				1	13.00
660170080	Seal Kit				1	20.50



Handle Kit





V A L V E S

Adjustable Flow Control Valves



The PRINCE valve model W-1900 is a pressure compensated adjustable flow control valve. By rotating the handle, the flow out the "CF" or controlled flow port can be varied within the range given in the chart below. Any remaining flow is bypassed to the "EF" or excess flow port. This flow can be used to power another circuit or can be returned to tank. Once the controlled flow is set, it will remain nearly constant with variations in pressure on either the controlled or excess flow ports. Please note, if during operation the controlled flow port is blocked, the valve will compensate in such a way as to shut off flow to the excess port.

This valve can also be used as a restrictive flow control by plugging the excess flow port.

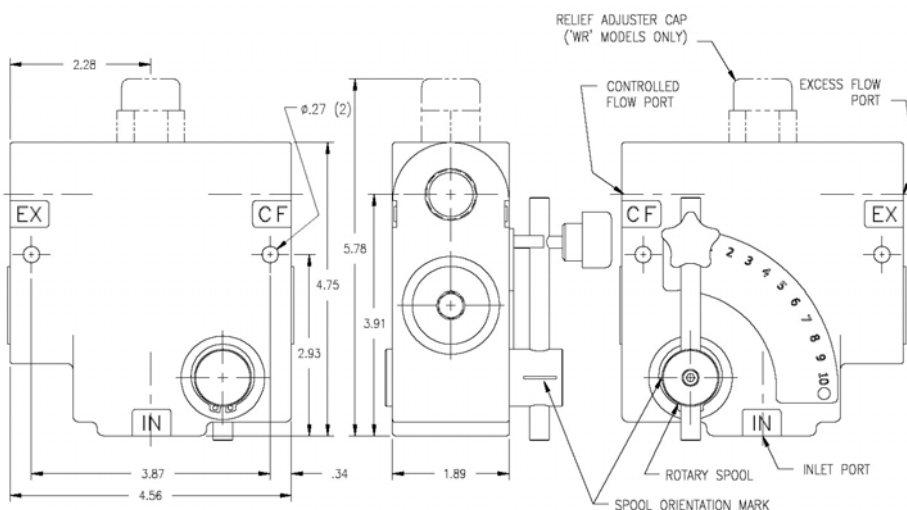
The PRINCE valve model WR-1900 has a built in adjustable pressure relief. For this model, the excess flow port **must** be connected to tank. It should be noted that whenever these or any valve is used to bypass or restrict flow, heat will be generated. Steps may be required to keep oil temperature from becoming too high.

Model W/WR Adjustable Flow Control Valves

MODEL No.	DESCRIPTION	CROSS REF.	WEIGHT (POUNDS)	LIST PRICE
W-1950-8	½-NPTF PORTS (0-8 GPM CF SPOOL)	FC51-½ 37	9	89.00
W-1908-8	#8 SAE/ORB PORTS (0-8 GPM CF SPOOL)	FC51-8	9	89.00
W-1950-16	½-NPTF PORTS (0-16 GPM CF SPOOL)	FC51-½	9	89.00
W-1975-30	¾-NPTF PORTS (0-30 GPM CF SPOOL)	FC51-3/4	9	89.00
W-1912-30	#12 SAE/ORB PORTS (0-30 GPM CF SPOOL)	FC51-12	9	89.00
WR-1950-16	½-NPTF PORTS (0-16 GPM W/RELIEF)	FCR51-½	9	96.50
WR-1975-30	¾ NPTF PORTS (0-30 GPM W/RELIEF)	FCR51-¾	9	96.50

RELIEF PRESSURE INFORMATION:

Inlet relief protection available on "WR" models. Relief pressure preset at 1500 PSI. To adjust, remove acorn nut, turn adjusting screw clockwise to increase pressure, counterclockwise to reduce pressure. Reinstall acorn nut after adjusting. Use a pressure gauge when making adjustments.



NOTE: ALL DIMENSIONS ARE
FOR REFERENCE ONLY.

VALVE SPECIFICATIONS

- 30 GPM max flow
- 3000 PSI max
- 180° F max temp
- Filtration 17/14/19
- For use with mineral based hydraulic fluid
- Side port configuration
- 100% Tested
- External seals on rotary spool prevent contamination from locking up spool

KITS

PART NO.	DESCRIPTION	LIST
660170064	HANDLE KIT	7.60
660570004	SEAL KIT	4.90

In-Line Flow Control Valves



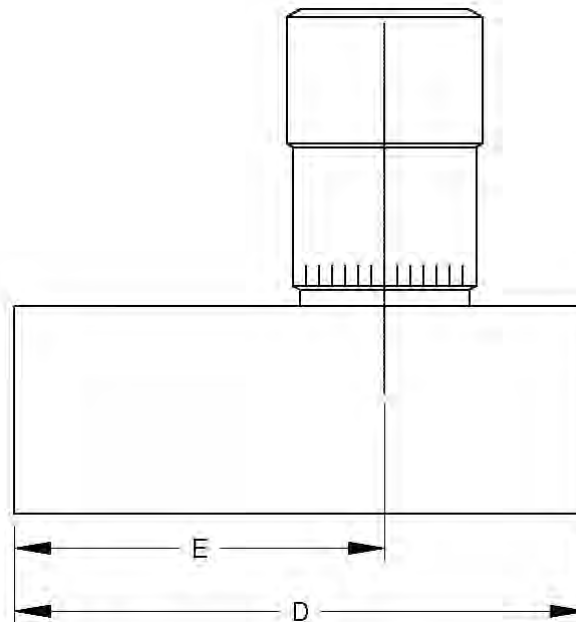
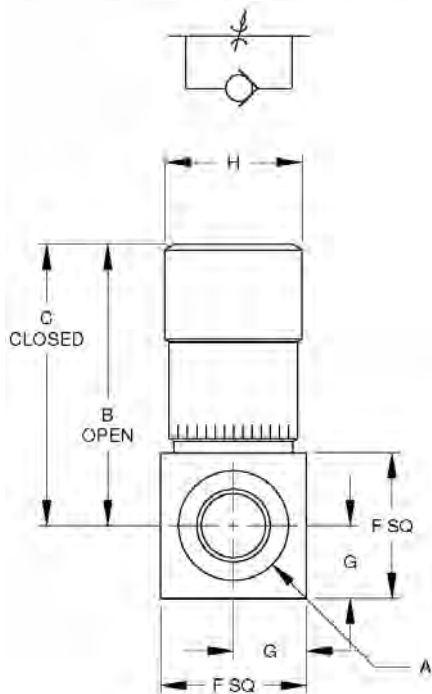
FEATURES:

- Carbon steel body
- Designed to provide precision flow control & shut off in one flow direction & provide free flow in the opposite direction
- Color bands allow fast return to a previous setting
- Set screw locks valve to any setting
- Operating temp range -20°F through 210°F

Model In-Line Flow Control Valves

MODEL No.	PORT SIZE	MAX PSI	MAX FLOW	SHIPPING WEIGHT	LIST PRICE
WFC-400	¼" NPTF	5,000 PSI	5 GPM	0.5	35.74
WFC-600	⅜" NPTF	5,000 PSI	8 GPM	0.9	38.45
WFC-800	½" NPTF	5,000 PSI	15 GPM	1.5	47.65
WFC-1200	¾" NPTF	3,000 PSI	25 GPM	2.5	92.60
WFC-1600	1" NPTF	3,000 PSI	40 GPM	3.5	225.26

MODEL NO.	MAX FLOW	A	B	C	D	E	F	G	H
WFC-400	19	1/4 NPTF	1.79	1.59	2.62	1.66	.81	.41	.811
WFC-600	30	3/8 NPTF	2.18	1.94	2.75	1.75	1	.5	1
WFC-800	57	1/2 NPTF	2.70	2.42	3.44	2.23	1.25	.63	1.19
WFC-1200	95	3/4 NPTF	3.38	2.81	3.88	2.58	1.5	.75	1.38
WFC-1600	151	1 NPTF	4.87	4.21	5	3.22	1.75	.88	1.88



V A L V E S

In-Line Check Valves



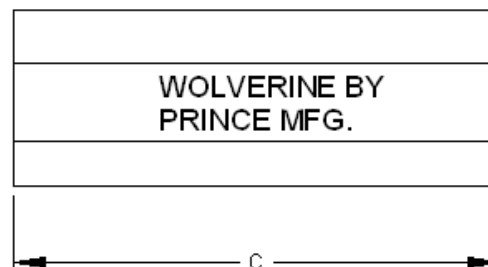
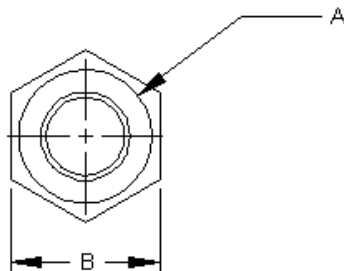
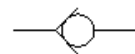
FEATURES:

- Carbon steel body
- Designed to provide flow in one direction
- Operating temp range -20°F through 210°F

Model In-Line Check Valves

MODEL No.	PORT SIZE	MAX PSI	MAX FLOW	SHIPPING WEIGHT	LIST PRICE
WCV-400	¼" NPTF	5,000 PSI	5 GPM	0.3	37.67
WCV-600	⅜" NPTF	5,000 PSI	8 GPM	0.5	40.26
WCV-800	½" NPTF	5,000 PSI	15 GPM	0.7	49.35
WCV-1200	¾" NPTF	3,000 PSI	25 GPM	1.5	83.12
WCV-1600	1" NPTF	3,000 PSI	40 GPM	2.5	103.90

MODEL NO.	MAX FLOW	MAX PSI	A	B	C
WCV-400	5 GPM	5000	1/4 NPTF	.78	2.18
WCV-600	8 GPM	5000	3/8 NPTF	1	2.56
WCV-800	15 GPM	5000	1/2 NPTF	1.13	2.88
WCV-1200	25 GPM	3000	3/4 NPTF	1.5	3.5
WCV-1600	40 GPM	3000	1 NPTF	1.81	5



In-Line Needle Valves



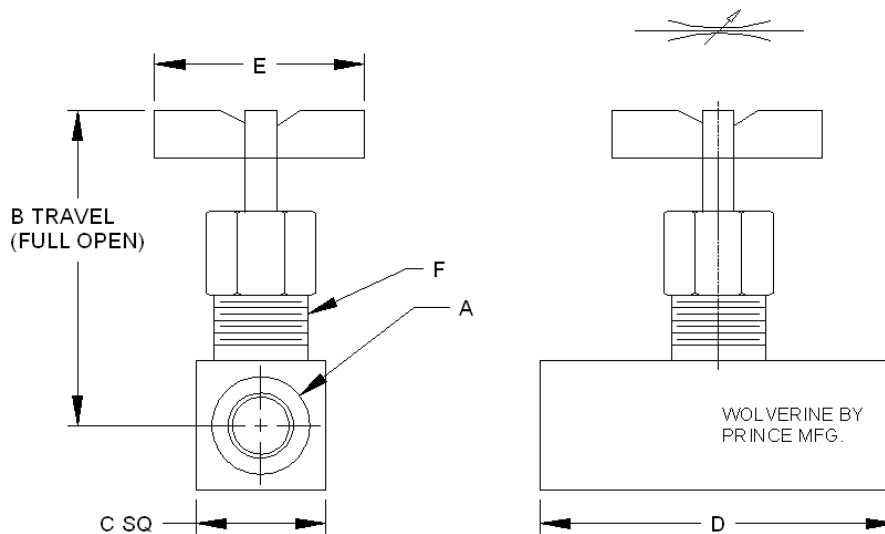
FEATURES:

- Carbon steel body
- Designed to provide precision flow control
- Operating temp range -20°F through 210°F

Model In-Line Needle Valves

MODEL No.	PORT SIZE	MAX PSI	MAX FLOW	SHIPPING WEIGHT	LIST PRICE
WNV-400	¼" NPTF	5,000 PSI	5 GPM	0.6	30.29
WNV-600	⅜" NPTF	5,000 PSI	8 GPM	1.0	40.82
WNV-800	½" NPTF	5,000 PSI	16 GPM	1.8	51.36
WNV-1200	¾" NPTF	3,000 PSI	25 GPM	3.0	92.20
WNV-1600	1" NPTF	3,000 PSI	40 GPM	4.2	223.91

MODEL NO.	MAX FLOW	MAX PSI	A	B	C	D	E	F
WNV-400	5 GPM	5000	1/4 NPTF	2.6	0.75	2	2	M18-1.8
WNV-600	8 GPM	5000	3/8 NPTF	4.2	1	2.5	2.5	M22-1.5
WNV-800	16 GPM	5000	1/2 NPTF	5.1	1.25	2.62	3.25	M28-1.5
WNV-1200	25 GPM	3000	3/4 NPTF	5.6	1.5	3.25	3.88	M33-1.5
WNV-1600	40 GPM	3000	1 NPTF	5.8	1.75	4.25	3.88	M35-2.0



Ball Valves for Hydraulic Use

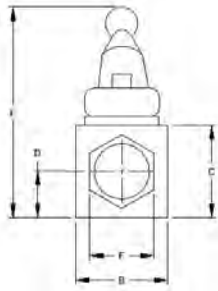
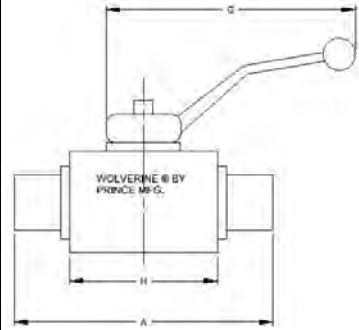


FEATURES:

- 1/4", 3/8", 1/2" sizes 7,250 PSI (CWP)
- 3/4", 1" sizes 4,500 PSI (CWP)
- Carbon Steel Body Zinc Plated
- Hard Chrome Plated Steel Ball, POM Seat
- 3 way valves are "L" Type
- Operating Temp -20° to 175° F
- Not Recommended for Steam, Gas, or Water Service

2 Way High Pressure Ball Valves

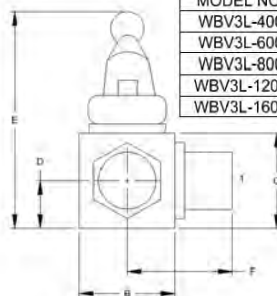
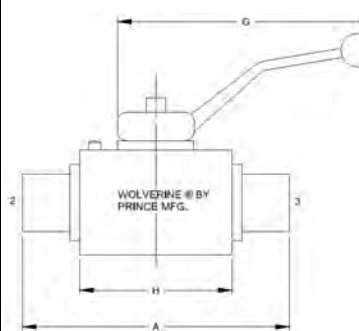
MODEL No.	PORT SIZE	MAX PSI	SHIPPING WEIGHT	LIST PRICE
WBV2-400	1/4" NPTF	7,250 PSI	1.0	21.95
WBV2-600	3/8" NPTF	7,250 PSI	1.5	25.00
WBV2-800	1/2" NPTF	7,250 PSI	2.0	30.49
WBV2-1200	3/4" NPTF	4,500 PSI	4.0	50.00
WBV2-1600	1" NPTF	4,500 PSI	6.0	64.02
WBV2-SAE4	SAE4	7,250 PSI	1.0	21.95
WBV2-SAE6	SAE6	7,250 PSI	1.5	25.00
WBV2-SAE8	SAE8	7,250 PSI	2.0	30.49
WBV2-SAE12	SAE12	4,500 PSI	4.0	50.00
WBV2-SAE16	SAE16	4,500 PSI	6.0	64.02



MODEL NO.	A	B	C	D	E	F	G	H
WBV2-400	2.72	1.02	1.30	.53	2.83	.86	4.31	1.57
WBV2-600	2.83	1.25	1.42	.63	2.87	1.06	4.72	1.65
WBV2-800	3.27	1.38	1.50	.70	2.95	1.18	4.72	1.85
WBV2-1200	3.74	1.89	2.16	.98	3.70	1.61	6.61	2.36
WBV2-1600	4.45	2.25	2.52	1.12	4.05	1.96	6.61	2.56
WBV2-SAE4	2.72	1.02	1.30	.53	2.83	.86	4.31	1.57
WBV2-SAE6	2.83	1.25	1.42	.63	2.87	1.06	4.72	1.65
WBV2-SAE8	3.27	1.38	1.50	.70	2.95	1.18	4.72	1.85
WBV2-SAE12	3.74	1.89	2.16	.98	3.70	1.61	6.61	2.36
WBV2-SAE16	4.45	2.25	2.52	1.12	4.05	1.96	6.61	2.56

3 Way High Pressure Ball Valves (L-Bore)

WBV3L-400	1/4" NPTF	7,250 PSI	1.5	29.88
WBV3L-600	3/8" NPTF	7,250 PSI	2.0	34.15
WBV3L-800	1/2" NPTF	7,250 PSI	2.5	46.95
WBV3L-1200	3/4" NPTF	4,500 PSI	4.5	71.95
WBV3L-1600	1" NPTF	4,500 PSI	6.5	89.02



MODEL NO.	A	B	C	D	E	F	G	H
WBV3L-400	2.72	1.02	1.30	.53	2.83	1.87	4.31	1.57
WBV3L-600	2.83	1.25	1.42	.63	2.87	2.05	4.72	1.65
WBV3L-800	3.27	1.38	1.5	.70	2.95	2.26	4.72	1.85
WBV3L-1200	3.74	1.89	2.16	.98	3.70	2.87	6.61	2.36
WBV3L-1600	4.45	2.25	2.52	1.12	4.05	3.45	6.61	2.56



PILOT CONTROLS

Hydraulic Pilot Controls

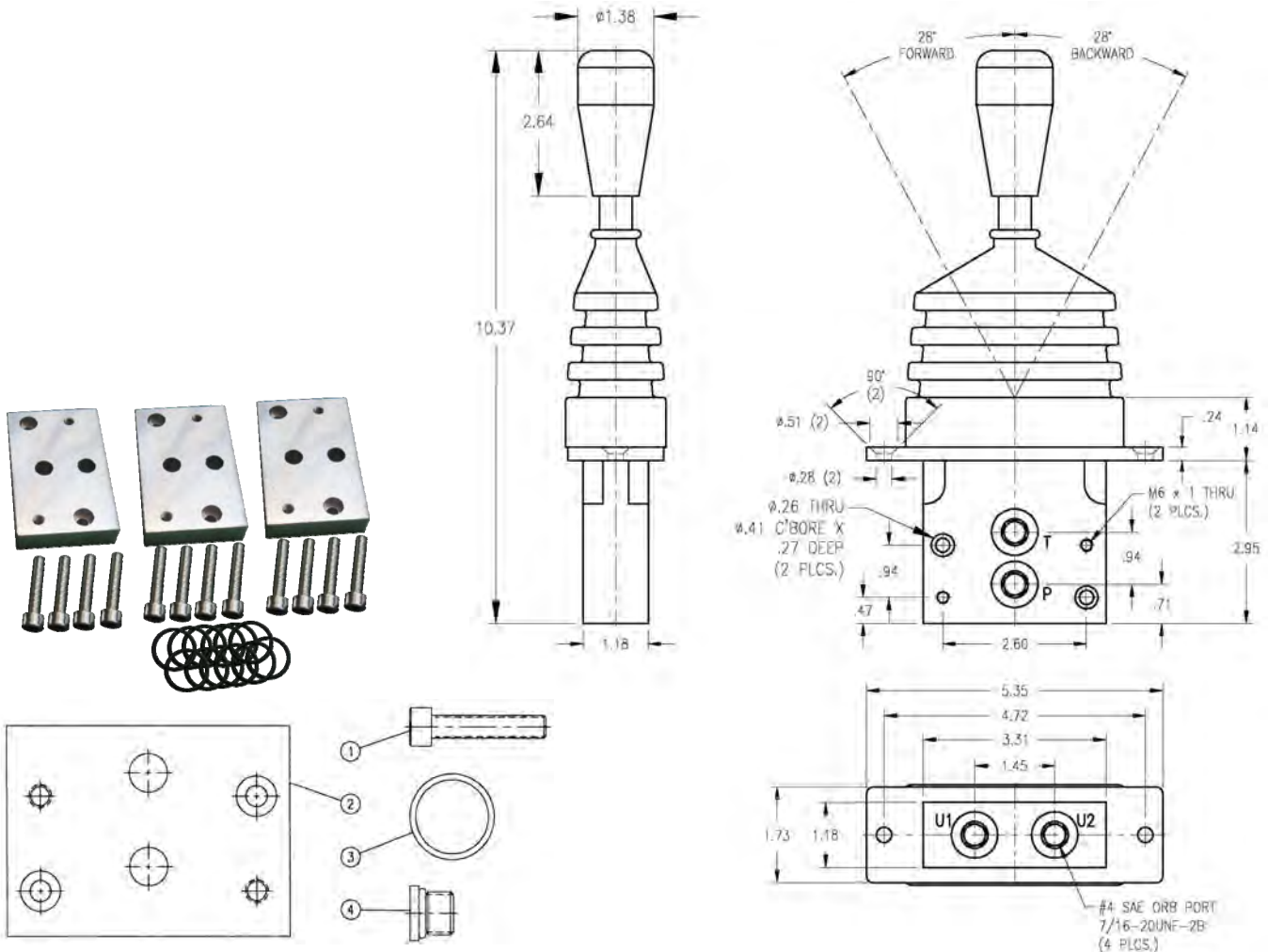


FEATURES:

- Low effort remote control
- Isolates operator from high temperature components
- Compact and light weight aluminum body
- Maximum inlet pressure 700 PSI
- Units can be coupled together (please consult factory)
- Coupler kits available

Model Hydraulic Pilot Controls

MODEL No.	DESCRIPTION	SHIPPING WEIGHT (pounds)	LIST PRICE
WHPC-HS1	Port Size #4 SAE (ORB)	3.0	502.00
660170083	To Couple 2 Units	.5	88.00
660170084	To Couple 3 Units	1	155.00
660170085	To Couple 4 Units	1.5	225.00



HAND PUMPS



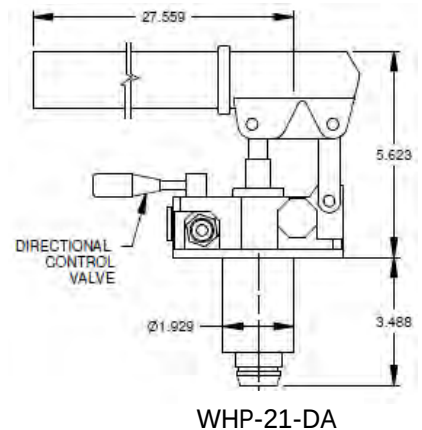
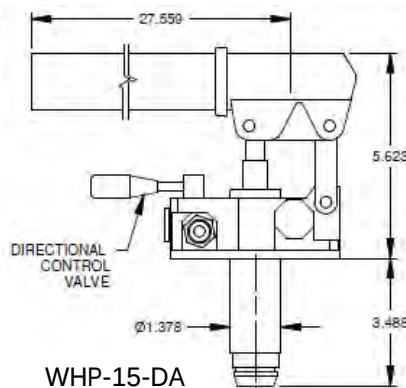
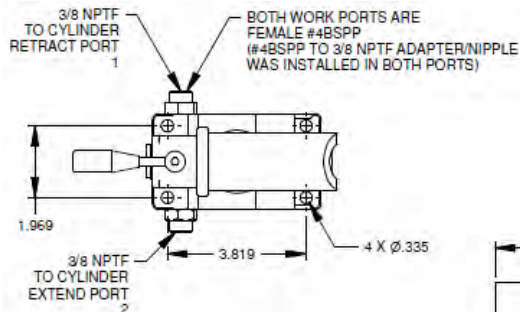
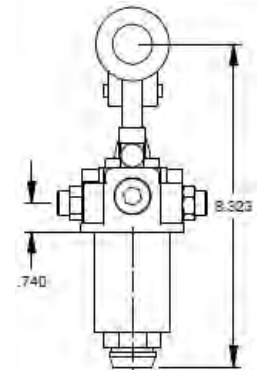
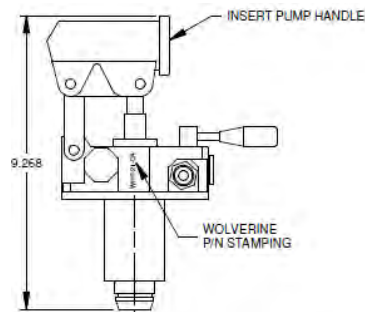
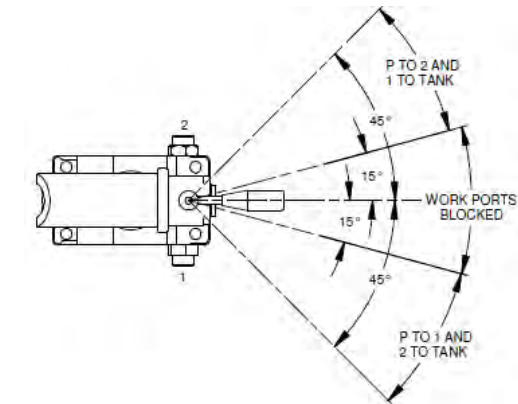
FEATURES:

- Up to 3500 PSI Working Pressure
- "SA" Series is Single Acting
- "DA" Series have a built in Directional Control Valve
- 1.5 and 2.1 Cubic Inch Per Cycle (one up and one down)



Model Hand Pumps – Double Acting Heads

MODEL No.	DESCRIPTION	SHIPPING WEIGHT (pounds)	LIST PRICE
WHP-15-DA	1.5 CUBIC INCH DOUBLE ACTING HEAD	10	195.00
WHP-21-DA	2.1 CUBIC INCH DOUBLE ACTING HEAD	10	200.00



H A N D P U M P S



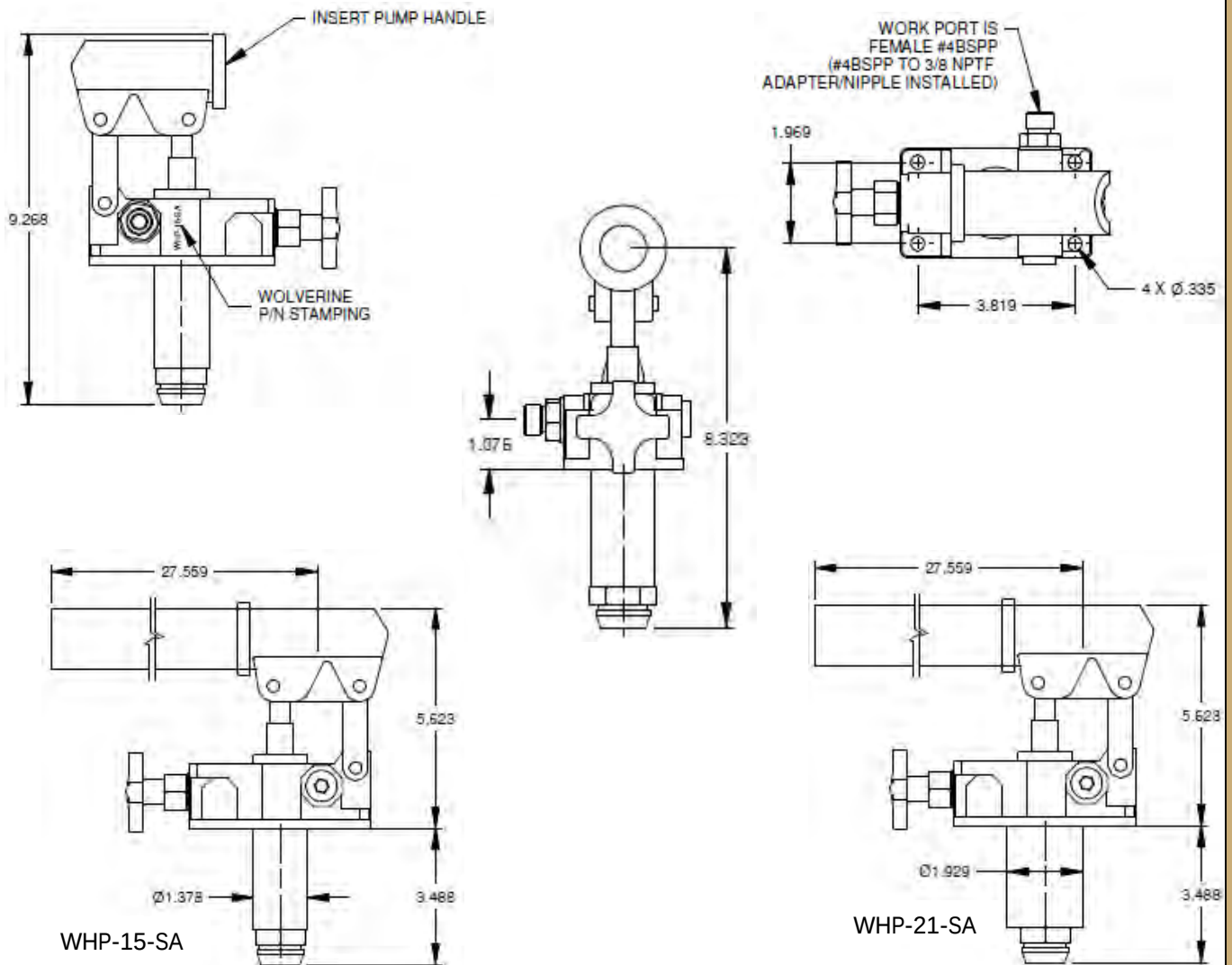
FEATURES:

- Up to 3500 PSI Working Pressure
- "SA" Series is Single Acting
- "DA" Series have a built in Directional Control Valve
- 1.5 and 2.1 Cubic Inch Per Cycle (one up and one down)



Model Hand Pumps – Single Acting Heads

MODEL No.	DESCRIPTION	SHIPPING WEIGHT (pounds)	LIST PRICE
WHP-15-SA	1.5 CUBIC INCH SINGLE ACTING HEAD	10	180.00
WHP-21-SA	2.1 CUBIC INCH SINGLE ACTING HEAD	10	200.00



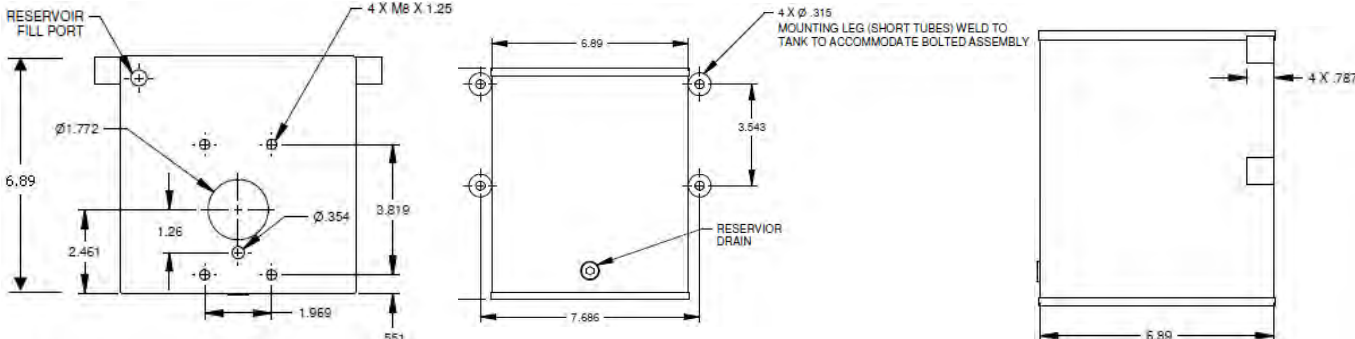
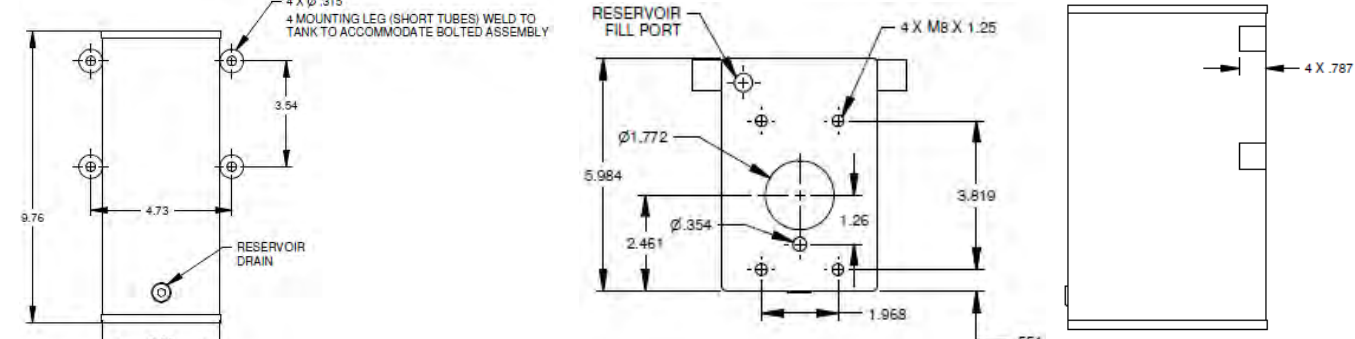
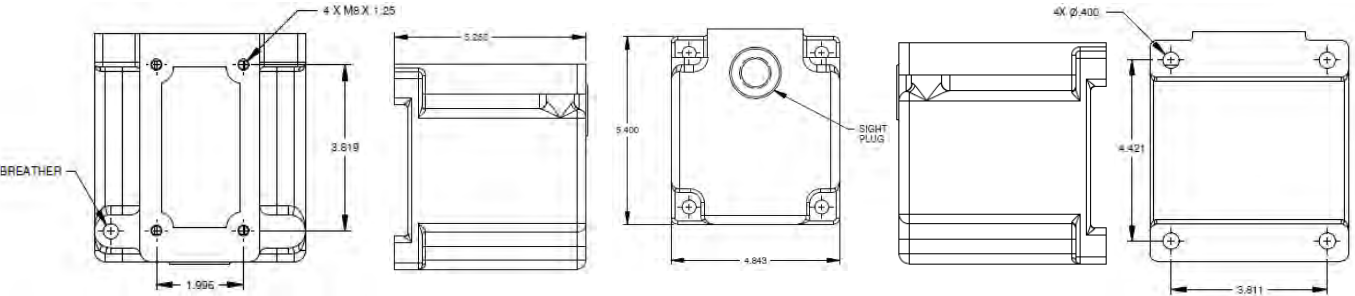
HAND PUMPS



FEATURES:

- Steel tanks available in 0.8 and 1.3 gallon
- Aluminum tank available in 0.25 gallon
- Mounting brackets standard feature
- Steel tanks painted black

Model Hand Pump Tanks

MODEL No.	DESCRIPTION	SHIPPING WEIGHT (pounds)	LIST PRICE
WHP-T-300	STEEL TANK, 300 CU IN. 1.3 GAL	7	78.00
 RESERVOIR FILL PORT 4 X M8 X 1.25 6.89 Ø1.772 2.461 1.26 Ø.354 3.819 1.969 .551 5.89 3.543 4 X Ø.315 MOUNTING LEG (SHORT TUBES) WELD TO TANK TO ACCOMMODATE BOLTED ASSEMBLY RESERVOIR DRAIN 7.686 6.89 4 X .787			
WHP-T-180	STEEL TANK, 180 CU IN. 0.8 GAL	5	60.00
 4 X Ø.315 MOUNTING LEG (SHORT TUBES) WELD TO TANK TO ACCOMMODATE BOLTED ASSEMBLY 3.54 9.76 4.73 RESERVOIR DRAIN 3.94 RESERVOIR FILL PORT 4 X M8 X 1.25 Ø1.772 5.984 2.461 Ø.354 1.26 3.819 1.968 .551 4 X .787			
WHP-T-60	ALUMINUM TANK, 60 CU IN. 0.25 GAL	4	50.00
 4 X M8 X 1.25 5.265 3.819 1.995 BREATHING 5.400 4.843 SIGHT PLUG 4 X Ø.400 4.421 3.811			

Standard Gerotor Motors – Low Speed – High Torque



FEATURES:

- High-torque, low speed with gerotor
- Instantly reversible by reversing the flow
- Cross-over for many popular models in the market
- 1.0" keyed shaft
- 4 Bolt flange
- ½ NPTF ports

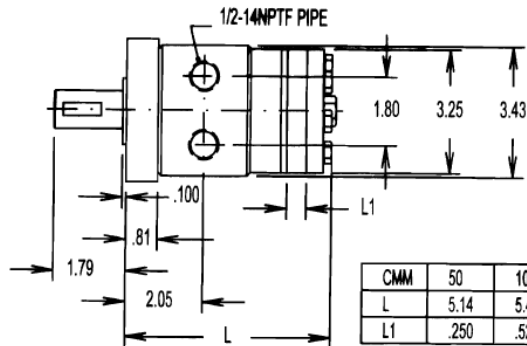
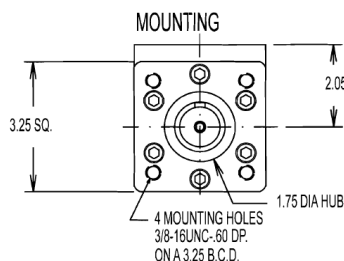
APPLICATIONS:

Use the CMM Series for light to medium duty applications such as grain augers and elevators, salt and sand spreaders, car wash and sweeper brushes, conveyors, winches, scissor lifts, and many others. To assure optimum motor life, run motor for approximately one hour at 30% of rated pressure before application of full load.

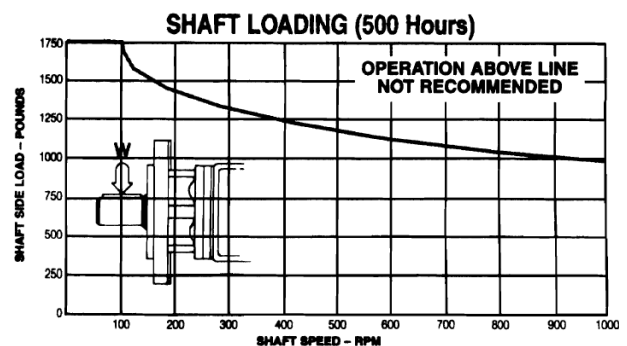
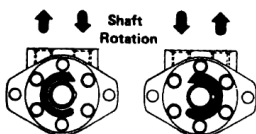
MODEL CMM MOTORS

MODEL NUMBER	DISPLACEMENT IN ³ /REV	MAXIMUM PRESSURE PSI		MAXIMUM SPEED RPM		WT LBS.	LIST PRICE
		CONTINUOUS	INTERMITTANT	CONTINUOUS	INTERMITTENT		
CMM50-4RP	3.0	1400	2200	800	1000	12.8	193.00
CMM100-4RP	6.1	1300	2000	600	750	13.4	200.00
CMM200-4RP	12.2	1200	1800	300	400	14.5	225.00
CMM300-4RP	17.9	1000	1600	200	250	15.5	235.00
CMM400-4RP	24.4	900	1300	125	160	16.7	242.00

It is not recommended to operate at a condition requiring both maximum torque and speed. Intermittent operation is 10% of any minute. Normal operating temperature 80°F to 140°F, max temperature 185°F. Max inlet pressure 2500 psi for motors in series. Max back pressure 1000 psi. For use with mineral based hydraulic fluid 100-200 SUS @ operating PSI. Maximum axial thrust load on shaft 1000 lbs. Oil filtration 10 micron on fine, oil cleanliness per ISO code level 17/14.



1.00 DIA. X 1/4 WIDE
STD. WOODRUFF KEY





MOTORS

Standard Gerotor Motor – Low Speed – High Torque

Performance Data

346 Bold number on top = TORQUE (in lbs.)
280 Number on bottom – SPEED (RPM)

GREATEST EFFICIENCY
HIGH EFFICIENCY

CMM 50 3.0 Cu. In. REV		Δ PSI						Peak
		200	400	600	800	1000	1200	1400
G P M	2	69	139	209	279	349	419	489
		149	143	137	131	125	119	113
	4	66	136	206	276	346	416	486
		304	298	292	286	280	274	268
	6	62	132	202	272	342	412	482
		459	453	447	441	435	429	423
	8	55	125	195	265	335	405	475
		614	608	602	596	590	584	578
	10	47	117	187	257	327	397	467
		769	763	757	751	745	739	733
	12	37	107	177	247	317	387	457
		924	918	912	906	900	894	888
								839

CMM 300 17.9 Cu. In. REV		Δ PSI				Peak
		200	400	600	800	
G P M	2	426	856	1286	1716	
		23	21	18	16	
	4	413	843	1273	1703	2890
		49	46	44	41	27
	6	392	822	1252	1682	2865
		75	72	70	67	53
	8	362	791	1222	1652	2830
		101	98	95	93	79
	10	324	754	1184	1614	2785
		126	124	121	119	105
	12	277	707	1137	1567	2735
		152	150	147	144	131
	14	222	652	1082	1512	2680
		178	175	173	170	157

CMM 100 6.07 Cu. In. REV		Δ PSI					Peak
		200	400	600	800	1000	1200
G P M	2	144	292	440	588	736	884
		72	68	64	60	56	52
	4	138	286	434	582	730	878
		147	143	139	135	131	127
	6	130	278	426	574	722	870
		222	219	216	213	210	207
	8	119	267	415	563	711	859
		300	297	294	291	288	285
	10	104	252	400	548	696	844
		375	372	369	366	363	360
	12	85	233	381	529	677	825
		452	449	446	443	440	437
	14	64	212	360	508	656	804
		528	525	522	519	516	513
							491

CMM 400 24.4 Cu. In. REV		Δ PSI				Peak
		200	400	600	800	
G P M	2	565	1136	1707	2279	
		16	14	12	10	
	4	549	1120	1691	2262	3392
		36	33	31	29	20
	6	520	1091	1663	2229	3371
		55	53	51	48	39
	8	481	1053	1624	2195	3335
		74	73	70	68	59
	10	430	1002	1573	2144	3274
		94	91	89	86	77
	12	368	939	1511	2082	3213
		113	110	108	106	97
	14	296	867	1438	2009	3147
		132	130	127	125	116

CMM 200 12.15 Cu. In. REV		Δ PSI				Peak
		200	400	600	800	1000
G P M	2	283	563	843	1123	1403
		35	32	29	26	23
	4	273	553	833	1113	1393
		74	71	68	65	62
	6	258	538	818	1098	1378
		112	109	106	103	100
	8	237	517	797	1077	1357
		149	146	143	140	137
	10	209	489	769	1049	1329
		187	184	181	178	175
	12	180	460	640	920	1200
		225	223	220	217	214
	14	136	416	696	976	1256
		264	261	258	255	252
						235

Δ PSI – is the actual pressure difference between the inlet and outlet ports.

A SITUATION OF SIMULTANEOUS PEAK TORQUE AND MAXIMUM RPM SHOULD NOT BE ALLOWED TO OCCUR.

Operating motors at both low RPM (10-20 depending on disp.) and low torque may result in RPM fluctuations during operation.

To calculate horsepower from chart data use formula:
HP (out) = $\frac{\text{RPM} \times \text{TORQUE (in-lbs.)}}{63025}$

MOTOR CROSS REFERENCE

	SHAFT	PORTS	MOTOR BRAND	DISPLACEMENT CU. IN./REV.				
				2.9	6.1	11.7	17.5	23.4
4 Bolt Flange Mounting	Woodruff Keyed	½" NPT	Prince Charlyn H Danfoss DH	CMM50-4RP 101-1001 151-2121	CMM100-4RP 101-1003 151-2123	CMM200-4RP 101-1005 151-2126	CMM300-4RP 101-1007 151-2128	CMM400-4RP 101-1008 151-2129

NOTE: THE CROSS REFERENCE INFORMATION IN THIS CHART IS TO BE USED ONLY AS A REFERENCE FOR GUIDELINE PURPOSES ONLY. AFTER SELECTING A MODEL FROM ABOVE, REVIEW THE MOTOR SPECIFICATIONS TO DETERMINE COMPATIBILITY WITH SPECIFIC APPLICATION.

Quality

Prince Manufacturing Corporation's Wolverine Line is our new brand of quality hydraulic components. Prince understands customers want choices, so we have introduced the Wolverine Line of products to target a different segment of the market.

This line takes advantage of global sourcing of complete hydraulic components, resulting in more competitively priced products.

Product testing and evaluation is done at Prince's own R & D test lab before any new product is added to the Wolverine Line. This has resulted in numerous product improvements that were implemented before the products were placed on our warehouse shelves.

The goal of this effort is to ensure these products meet their stated specifications and help ensure consistent quality.



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