



**BVA**<sup>®</sup>  
HYDRAULICS



Industrial Hydraulic Equipment

***BUILT TO LAST***

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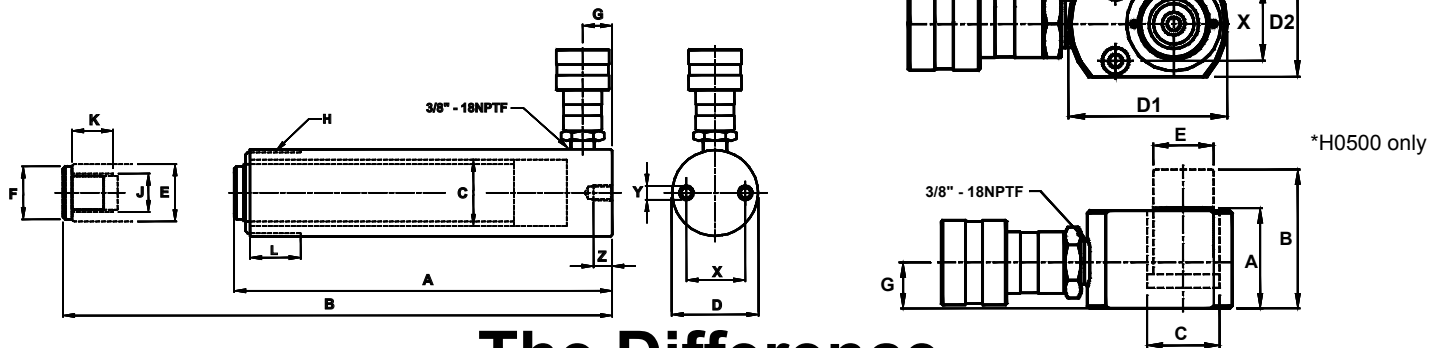
## **BUILT TO LAST**

Information in this catalog is subject to change without prior notice

## SINGLE ACTING CYLINDERS



- 41 Models
- Rod wiper seals out dirt and contamination
- Collar fixture threads
- Two base mounting holes on most models
- High strength steel construction from gun drilled solid bar
- Collar thread protector
- One piece high grade alloy bearing for side load protection and long life
- Polyurethane cup seal provides for optimum performance
- Industrial hard chrome plated ram helps prevent rust and corrosion
- Solid steel cylinder body
- Heavy duty return spring provides quicker retraction
- Ideal for lifting and pressing
- Maximum working pressure: 10,000 psi / 700 bar
- All cylinders\* come with 3/8" NPTF High flow couplers (CH38F) except H0203



### The Difference

Heavy duty, heat treated, grooved saddle provides better surface traction during operation

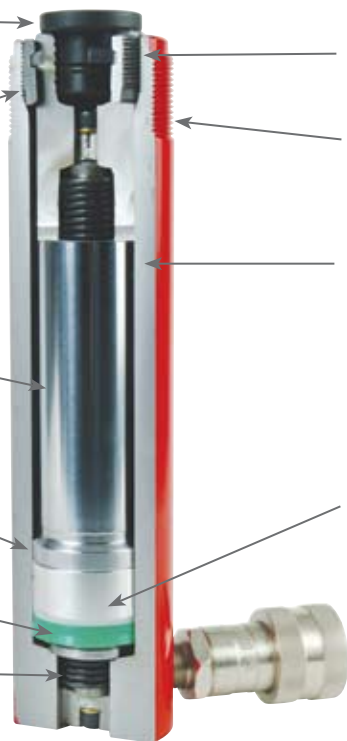
Rod wiper seals out dirt and contamination

Industrial hard chrome plated ram prevents scratching and corrosion

One piece steel ram stopper for extra strength and prevents over travel

Polyurethane cup seal provides optimum performance

Rectangular return spring design results in even distribution of the load, eliminating spring breakage and creating quicker retraction



Steel stop ring for ram over travel protection

Collar fixture threads

Cylinders are burnish rolled for a smooth precision mirror finish, which reduces scoring and prolongs seal life

One piece high grade alloy bearing for side load protection and long life

High flow ball coupler provides more flow than conventional couplers

- **Limited Lifetime Warranty**
- **All Cylinders Are Tested To Meet Industrial Standards**

# SINGLE ACTING CYLINDERS

Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Internal Pressure at Capacity (psi)	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Diameter C (in)	Outside Diameter D (in)	Plunger Diameter E (in)	Saddle Diameter F (in)
2	3.07	H0203	0.76	10,000	2.28	5.39	8.46	6.26	1.31	0.87	1.00
5	0.63	H0500	1.10	9,091	0.69	1.61	2.24	1.18	2.36 x 1.58	0.98	-
	1.00	H0501	1.00	10,000	1.00	4.58	5.58	1.13	1.50	1.00	0.98
	3.07	H0503			3.07	6.65	9.72				
	5.08	H0505			5.08	8.70	13.78				
	7.09	H0507			7.09	10.71	17.80				
9.09	H0509	9.09			12.72	21.81					
10	1.00	H1001	2.24	8,928	2.24	3.62	4.62	1.69	2.26	1.49	-
	2.01	H1002			4.50	4.84	6.85				1.38
	4.02	H1004			9.00	6.85	10.87				
	5.94	H1006			13.31	9.84	15.78				
	7.95	H1008			17.81	11.85	19.80				
	9.96	H1010			22.31	13.86	23.82				
	11.97	H1012			26.81	15.87	27.84				
	14.02	H1014			31.40	17.72	31.74				
15	0.99	H1501	3.14	9,554	3.11	4.88	5.87	2.00	2.75	1.63	1.50
	2.01	H1502			6.31	5.87	7.88				
	3.98	H1504			12.50	7.87	11.85				
	5.87	H1506			18.43	10.67	16.54				
	7.87	H1508			24.71	12.68	20.55				
	9.88	H1510			31.02	14.69	24.57				
	12.01	H1512			37.71	16.65	28.66				
	14.02	H1514			44.02	18.66	32.68				
25	1.00	H2501	5.14	9,728	5.14	5.38	6.38	2.56	3.35	2.24	1.97
	2.01	H2502			10.33	6.82	8.83				
	3.94	H2504			20.25	8.78	12.72				
	5.94	H2506			30.53	10.79	16.73				
	7.95	H2508			40.86	12.80	20.75				
	9.96	H2510			51.19	14.80	24.76				
	12.24	H2512			62.91	16.73	28.97				
	14.25	H2514			73.25	18.74	32.99				
30	8.27	H3008	6.49	9,245	53.67	15.24	23.51	2.87	4.00	2.24	2.13
55	2.01	H5502	10.99	10,009	22.09	6.93	8.94	3.74	5.00	3.15	2.76
	3.98	H5504			43.74	8.94	12.92				
	6.22	H5506			68.36	11.14	17.36				
	13.27	H5513			145.84	18.15	31.42				
75	6.14	H7506	16.10	9,317	98.85	11.22	17.36	4.53	5.79	3.74	2.76
	13.11	H7513			211.07	19.37	32.48				
100	2.01	H10002A	20.57	9,723	41.34	8.62	10.63	5.12	6.25	4.13	2.76
	6.61	H10006			135.97	14.06	20.67		6.97		
	10.24	H10010			210.64	17.68	27.92				

- Limited Lifetime Warranty
- All Cylinders Are Tested To Meet Industrial Standards

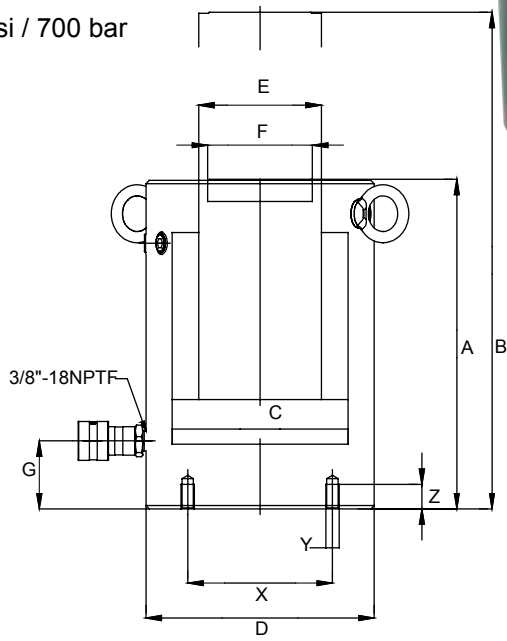


Base to Inlet Port G (in)	Collar Thread H (in)	Collar Thread Length L (in)	Plunger Internal Thread J (in)	Plunger Thread Length K (in)	Base Mounting Hole			Weight (lbs)	Model Number				
					Bolt Circle X (in)	Thread Y (in)	Thread Depth Z (in)						
0.46	1¼"-16	0.54	-	-	-			2.0	H0203				
0.75	-	-	-	-	1.10	0.2	-	2.9	H0500				
0.79	1½"-16	1.10	¾"-16UNF	0.63	1.00	¼"-20UNC	0.55	3.1	H0501				
								3.5	H0503				
								4.4	H0505				
								4.9	H0507				
								5.7	H0509				
0.77	2¼"-14	1.30	10-24UNC	0.24	1.56	5/16"-18UNC	0.55	4.0	H1001				
			1"-8UNC	0.79		5/16"-18UNC		5.1	H1002				
								6.8	H1004				
								9.5	H1006				
								11.9	H1008				
								14.1	H1010				
								15.0	H1012				
								16.6	H1014				
0.98	2¾"-16	1.18	1"-8UNC	0.98	1.88	¾"-16UNC	0.51	7.3	H1501				
								8.6	H1502				
								11.2	H1504				
								15.4	H1506				
								17.6	H1508				
								20.5	H1510				
								23.1	H1512				
28.2	H1514												
0.98	3-5/16"-12	1.93	1½"-16	1.18	2.31	½"-13UNC	0.75	13.4	H2501				
								14.6	H2502				
								19.2	H2504				
								23.2	H2506				
								27.1	H2508				
								30.9	H2510				
								33.7	H2512				
								37.7	H2514				
1.97	3-5/16"-12	1.93	1½"-16	1.18	-			40.8	H3008				
1.22	5"-12	2.17	-	-	3.75	½"-13UNC	0.75	34.2	H5502				
								42.5	H5504				
								57.5	H5506				
								86.9	H5513				
1.18	5¾" - 12	1.73	-	-	-	-	-	73.2	H7506				
								121.3	H7513				
1.57	6¼"-12	2.24	-	-	-	-	-	69.4	H10002A				
	6⅞"-12	1.73						-	5.50	¾"-10UNC	1	121.3	H10006
												157.3	H10010

- Limited Lifetime Warranty
- All Cylinders Are Tested To Meet Industrial Standards

# HIGH TONNAGE SINGLE ACTING CYLINDERS

- Cylinders are burnish rolled for a smooth precision mirror finish.
- Rod wiper seals out dirt and contamination
- Base mounting holes on most models
- High strength steel construction from gun drilled solid bar
- High flow 3/8" NPTF couplers
- Polyurethane cup seal provides for optimum performance
- Industrial hard chrome plated ram helps prevent rust and corrosion
- Solid steel cylinder body provides strength for high tonnage applications
- Maximum working pressure: 10,000 psi / 700 bar



\* Note: BVA will build any cylinder to customers exact requirements.

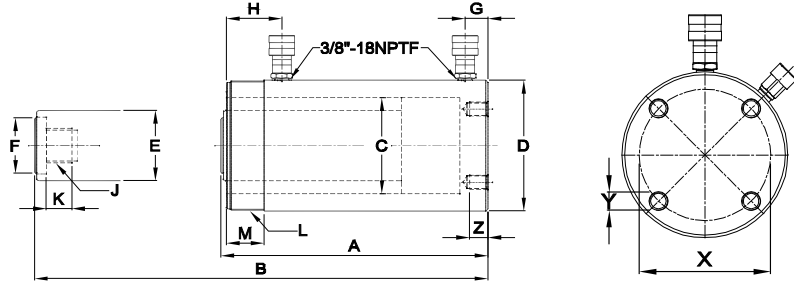
Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Internal Pressure at Capacity (psi)	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Diameter C (in)	Outside Diameter D (in)
150	5.91	HG15006	30.78	10,000	182.00	11.65	17.56	6.26	8.07
200	5.91	HG20006	41.22	10,000	244.00	12.44	18.35	7.24	9.25
	7.87	HG20008	41.22	10,000	324.00	14.41	22.28	7.24	9.25
500	5.91	HG50006	113.25	10,000	669.00	20.43	26.34	12.01	15.75
1000	11.81	HG100012	227.19	10,000	2,683.00	32.05	43.86	17.01	22.05

Plunger Diameter E (in)	Saddle Diameter F (in)	Base to Inlet Port G (in)	Base Mounting Hole			Weight (lbs)	Model Number
			Bolt Circle X (in)	Thread Y (in)	Thread Depth Z (in)		
4.49	3.70	2.40	5.12	M12	0.87	143.0	HG15006
5.24	4.45	2.62	6.50	M12	0.87	201.0	HG20006
5.24	4.45	2.62	6.50	M12	0.87	221.0	HG20008
9.76	8.98	4.49	9.84	M24	1.50	1,058.0	HG50006
13.50	12.72	6.85	14.76	M24	1.50	3,172.0	HG100012

## DOUBLE ACTING CYLINDERS



- Rod wiper seals out dirt and contamination
- High strength steel construction from gun drilled solid bar
- High flow 3/8" NPTF couplers
- One piece high grade alloy bearing for side load protection and long life
- Ideal for pushing and pulling
- Maximum working pressure: 10,000 psi / 700 bar
- Retract under hydraulic power for faster operation

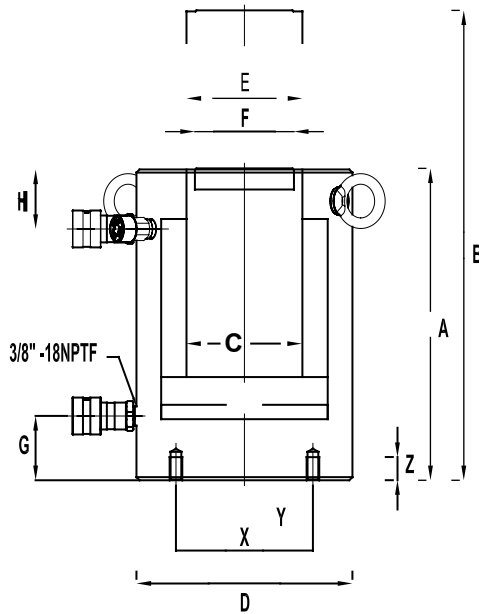


Cylinder Capacity (tons)	Stroke (in)	Model Number	Maximum Cylinder Capacity		Cylinder Effective Area		Oil Capacity		Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Dia. C (in)	Outside Dia. D (in)
			Push (ton)	Pull (ton)	Push (in <sup>2</sup> )	Pull (in <sup>2</sup> )	Push (in <sup>2</sup> )	Pull (in <sup>2</sup> )				
10	10.04	HD1010	11.40	3.80	2.23	0.74	22.41	7.47	16.14	26.18	1.69	2.87
	11.97	HD1012					26.71	8.90	18.03	30.00		
30	8.15	HD3008	32.90	16.20	6.49	3.19	52.93	26.02	15.31	23.46	2.87	3.98
	14.49	HD3014					94.09	46.26	21.65	36.14		
55	6.18	HD5506	55.70	16.20	10.99	3.19	67.93	19.74	13.03	19.21	3.74	5.00
	13.19	HD5513					144.94	42.11	20.04	33.23		
	20.12	HD5520					221.09	64.24	28.86	49.98		
75	6.10	HD7506	81.70	25.90	16.09	5.12	98.10	31.21	13.70	19.80	4.53	5.75
	13.11	HD7513					210.93	67.06	20.71	33.82		
100	6.57	HD10006	104.40	48.60	20.57	9.58	135.23	62.98	14.06	20.63	5.12	6.97
	13.11	HD10013					269.66	125.58	20.63	33.74		
	18.15	HD10018					373.31	173.86	27.05	45.20		

Model Number	Plunger Dia. E (in)	Saddle Dia. F (in)	Base to Adv. Port G (in)	Top to Return Port H (in)	Plunger Internal Thread J (in)	Plunger Thread Length K (in)	Collar Thread L (in)	Collar Thread Length M (in)	Base Mounting Hole			Weight (lbs)
									Bolt Circle X (in)	Thread Y (in)	Thread Depth Z (in)	
HD1010	1.37	1.38	1.42	2.09	1"-8	0.98	2 1/4"-14	1.02	-			26.7
HD1012												30.0
HD3008	2.13	1.97	1.65	2.91	1 1/2"-16	0.98	3-5/16"-12	1.93	-			43.0
HD3014												60.6
HD5506	3.14	2.76	1.14	2.87	1"-12	0.98	5"-12	1.73	-			70.5
HD5513			104.0									
HD5520			2.48									146.2
HD7506	3.75	2.76	1.18	2.80	1"-12	1.50	5 1/4"-12	1.50	-			93.7
HD7513												136.8
HD10006	3.75	2.95	1.22	2.95	1 1/4"-12	1.38	6 1/8"-12	1.97	5.47	3/4"-10	0.98	138.6
HD10013												193.6
HD10018			248.3									

# HIGH TONNAGE DOUBLE ACTING CYLINDERS (HDG Series)

- Cylinders are burnished rolled for a smooth precision mirror finish.
- Industrial hard chrome plated ram prevents scratching and corrosion
- Base mounting holes standard on all models
- Rod wiper seals out dirt and contamination
- High strength steel construction from gun drilled solid bar
- High flow 3/8" NPTF couplers
- Ideal for pushing and pulling
- Maximum working pressure: 10,000 psi / 700 bar



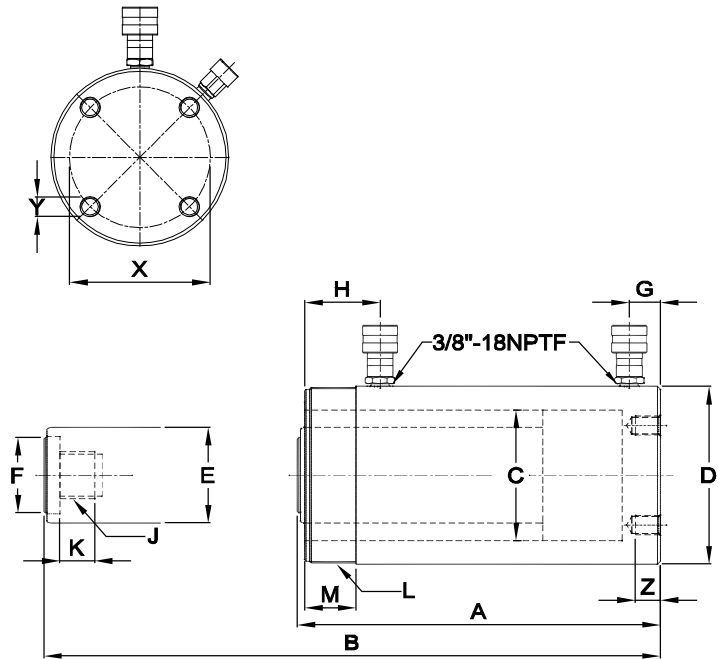
Cylinder Capacity (tons)	Stroke (in)	Model Number	Maximum Cylinder Capacity		Cylinder Effective Area		Oil Capacity		Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Dia. C (in)	Outside Dia. D (in)
			Push (ton)	Pull (ton)	Push (in <sup>2</sup> )	Pull (in <sup>2</sup> )	Push (in <sup>3</sup> )	Pull (in <sup>3</sup> )				
150	5.91	HDG15006	153.90	75.00	30.78	14.96	181.75	88.32	11.65	17.56	6.26	8.07
200	5.91	HDG20006	206.10	98.00	41.22	19.68	243.40	116.23	12.44	18.35	7.24	9.25
	11.81	HDG20012	206.10	98.00	41.22	19.68	486.79	232.46	18.35	30.16	7.24	9.25
300	5.91	HDG30006	353.60	117.00	70.71	23.46	417.56	138.55	16.22	22.13	9.49	12.20
400	11.81	HDG40012	433.90	150.00	86.79	29.99	1025.00	354.18	24.59	36.40	10.51	13.78
500	5.91	HDG50006	566.30	192.00	113.25	38.37	668.77	226.61	20.43	26.34	12.01	15.75

Model Number	Plunger Dia. E (in)	Saddle Dia. F (in)	Base to Adv. Port G (in)	Top to Return Port H (in)	Base Mounting Hole			Weight (lbs)
					Bolt Circle X (in)	Thread Y (in)	Thread Depth Z (in)	
HDG15006	4.49	3.70	2.40	2.22	5.12	M12	0.87	143
HDG20006	5.24	4.45	2.62	2.22	6.50	M12	0.87	201
HDG20012	5.24	4.45	2.62	2.22	6.50	M12	0.87	322
HDG30006	7.76	6.97	3.98	2.95	7.09	M16	1.42	511
HDG40012	8.50	7.72	4.49	4.13	8.07	M16	1.42	928
HDG50006	9.76	8.98	4.49	5.31	9.84	M24	1.50	1,058

# HIGH TONNAGE DOUBLE ACTING CYLINDERS (HD Series)



- Rod wiper seals out dirt and contamination
- High strength steel construction from gun drilled solid bar
- High flow 3/8" NPTF couplers
- One piece high grade alloy bearing for side load protection and long life
- Ideal for pushing and pulling
- Maximum working pressure: 10,000 psi / 700 bar



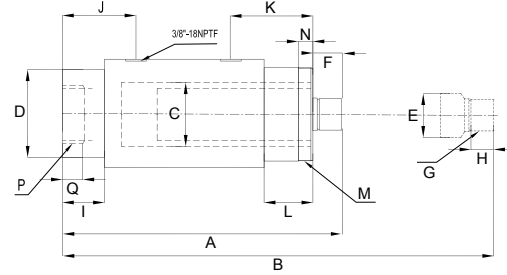
Cylinder Capacity (tons)	Stroke (in)	Model Number	Maximum Cylinder Capacity		Cylinder Effective Area		Oil Capacity		Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Dia. C (in)	Outside Dia. D (in)
			Push (ton)	Pull (ton)	Push (in <sup>2</sup> )	Pull (in <sup>2</sup> )	Push (in <sup>3</sup> )	Pull (in <sup>3</sup> )				
200	6.00	HD20006	221.00	112.50	44.21	22.50	265.28	135.00	16.94	22.94	7.50	9.75
	13.00	HD20013	221.00	112.50	44.21	22.50	574.78	293.00	23.94	36.94	7.50	9.75
	24.00	HD20024	221.00	112.50	44.21	22.50	1061.00	528.00	36.13	60.13	7.50	9.75
300	6.00	HD30006	354.60	190.00	70.93	38.00	425.56	228.00	19.13	25.13	9.50	12.25
500	6.00	HD50006	565.70	315.00	113.15	63.00	678.92	378.00	22.75	28.75	12.00	15.63

Model Number	Plunger Dia. E (in)	Saddle Dia. F (in)	Base to Adv. Port G (in)	Top to Return Port H (in)	Collar Thread L (in)	Collar Thread Length M (in)	Plunger Internal Thread J (in)	Plunger Thread Length K (in)	Base Mounting Hole			Weight (lbs)
									Bolt Circle X (in)	Thread Y (in)	Thread Depth Z (in)	
HD20006	5.25	5.25	2.25	3.81	-	-	-	-	5.00	1-8	1.00	325.00
HD20013	5.25	5.25	2.25	3.81	9/4-12	2.13	2 1/2-12	2.50	5.00	1-8	1.00	440.00
HD20024	5.25	5.25	3.38	4.00	9/4-12	2.13	2 1/2-12	2.50	5.00	1-8	1.00	616.00
HD30006	6.50	6.50	3.50	4.50	12 1/4-12	2.31	2 1/2-12	3.25	6.25	1 1/4-7	1.75	441.00
HD50006	8.00	8.00	4.75	6.00	15 5/8-8	3.13	3 1/4-12	4.25	8.00	1 3/4-5	2.12	953.00



# PRECISION DOUBLE ACTING CYLINDERS

- Provides hydraulic power on both advance and retract
- Designed for high cycling in production applications
- High strength steel construction from gun drilled solid bar
- Rod wiper seals keep dirt and contamination out
- Clevis eye attachments are available
- Maximum working pressure: 10,000 psi / 700 bar



Cylinder Capacity (tons)	Model Number	Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Dia. C (in)	Outside Dia. D (in)	Push Effective Area (in <sup>2</sup> )	Pull Effective Area (in <sup>2</sup> )	Plunger			
								Dia. E (in)	Protrusion F (in)	Thread G (in)	Thread Length H (in)
9	HPD0906	13.78	19.88	1.50	2.52	1.77	1.01	0.98	0.98	¾"-16	0.75
	HPD0910	17.80	27.91								
16	HPD1606	15.31	21.57	2.00	2.99	3.14	1.56	1.42	1.16	1½"-12	0.98
	HPD1610	19.29	29.53								

Model Number	Base to Adv. Port J (in)	Top to Return Port K (in)	Collar					Weight (lbs)
			Length L (in)	Thread M (in)	Thread Length N (in)	Int. Base Thread P (in)	Int. Base Thread Length Q (in)	
HPD0906	1.50	2.20	1.50	2"-12	0.60	1-11/16"-18	1.37	14.6
HPD0910								18.5
HPD1606	2.12	2.87	2.12	2½"-16	0.98	2-3/16"-16	1.61	22.0
HPD1610								28.2

## LOW PROFILE CYLINDER KIT

- Compact design for use in confined spaces
- Rod wiper helps seal out dirt and contamination
- Specially designed return spring ensures a quick retraction and extends the life of the spring
- Industrial hard chrome plated ram helps prevent scratching and corrosion
- Includes stackable 1", 2", and 3" aluminum adapters that conveniently snap into the base of the ram
- Includes high flow ball coupler and dust cap
- Convenient storage case to keep cylinder and adapters together

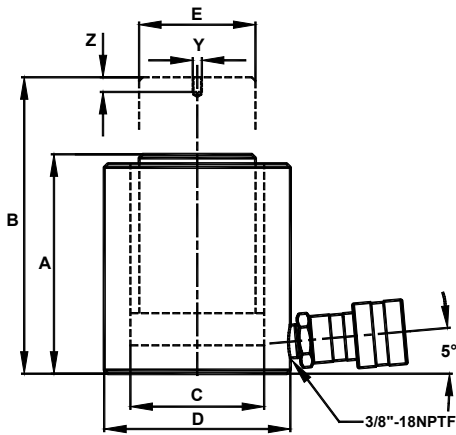


Cylinder Capacity	Model	Stroke	Cylinder Effective Area	Collapsed Height	Extended Height without adapter	Internal Pressure at Capacity	Cylinder Housing Dia.	Ram Plunger Dia.	Weight (lbs)
10 Ton	J72101	1.5"	2.35 in <sup>2</sup>	3.48"	4.98"	8,511 PSI	2.75"	1.50"	10 Lbs.

## LOW PROFILE CYLINDERS

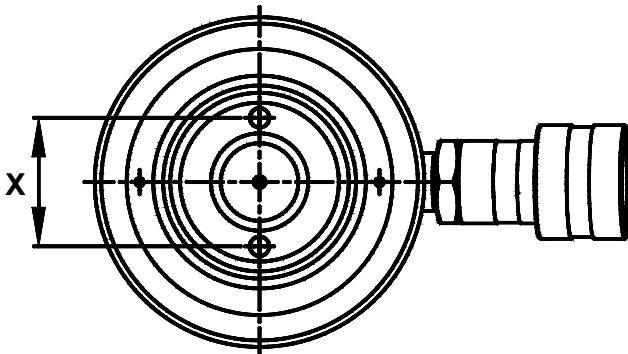


- Compact design for use in confined spaces
- Rod wiper helps seal out dirt and contamination
- Specially designed return spring ensures a quick retraction and extends the life of the spring
- Industrial hard chrome plated ram helps prevent scratching and corrosion
- Plunger end is grooved to reduce load slippage
- Includes high flow ball coupler and dust cap
- HL1001, HL2002, and HL3002 coupler is tilted upward for added clearance
- Maximum working pressure: 10,000 psi / 700 bar



Low profile cylinders are great for confined spaces

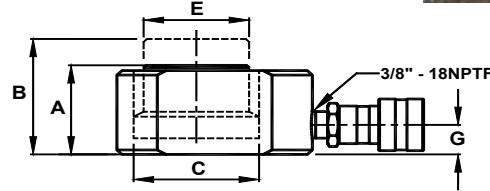
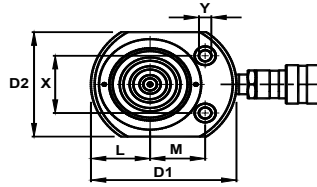
Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Internal Pressure at Capacity (psi)	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Diameter C (in)	Outside Diameter D (in)	Plunger Diameter E (in)
10	1.50	HL1001	2.35	8,511	3.53	3.48	4.98	1.73	2.75	1.50
20	1.75	HL2002	4.37	9,153	7.65	3.90	5.65	2.36	3.63	2.00
30	2.44	HL3002	6.49	9,245	15.84	4.61	7.05	2.87	4.00	2.50
50	2.36	HL5002	9.87	10,132	23.29	4.80	7.17	3.54	4.88	2.76
100	2.24	HL10002	19.64	10,183	44.07	5.55	7.80	5.00	6.50	3.54



Model Number	Plunger Mounting			Weight (lbs)
	Bolt Circle X (in)	Thread Y (mm)	Thread Depth Z (in)	
HL1001	1.03	M4	0.32	5.7
HL2002	1.56	M4		11.0
HL3002	1.56	M5		15.0
HL5002	1.56	M5	0.10	21.8
HL10002	2.19	M8		45.4

# FLAT BODY CYLINDERS

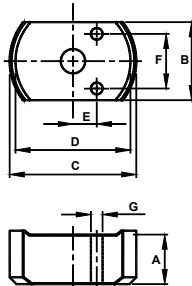
- Made of high quality steel
- Extremely low collapsed height for applications with minimal clearance at the lift point
- Maximum working pressure 10,000 psi / 700 bar
- HF0503 and HF0503B come with 3/8" regular flow coupler



Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Pressure at Capacity	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Dia. C (in)	Outside Dim. D1 x D2 (in)	Plunger Dia. E (in)	Base to Port G (in)	Plunger to Base L (in)	Plunger to Mtg. Hole M (in)
5	0.24	HF0503	1.10	9,090	0.26	1.26	1.50	1.18	2.4x1.6	0.98	0.69	0.80	0.87
10	0.43	HF1005	2.36	8,470	1.01	1.69	2.12	1.73	3.3x2.2	1.50	0.77	1.12	1.32
20	0.43	HF2005	4.38	9,130	1.88	2.01	2.44	2.36	4.0x3.0	2.00	0.75	1.54	1.56
30	0.51	HF3005	6.49	9,240	3.31	2.31	2.82	2.87	4.6x3.8	2.50	0.79	1.88	1.75
50	0.63	HF5006	9.86	10,140	6.21	2.64	3.27	3.54	4.5x4.5	2.76	0.79	2.25	2.13
75	0.63	HF7506	16.1	9,320	10.14	3.13	3.76	4.53	6.5x5.5	3.54	0.77	2.75	2.63
100	0.63	HF10006	19.64	10,180	12.37	3.37	4.00	5.00	7.0x6.0	3.54	0.79	3.00	2.94
150	0.63	HF15006	30.67	9,780	19.32	3.94	4.57	6.25	8.5x7.5	4.65	0.94	3.75	3.25

## FLAT BODY CYLINDER KITS

- Various height magnetic adapters eliminate dangerous cribbing
- Convenient carrying case



Model Number	Hole Pitch X (in)	Hole Dia. Y (in)	Counter Bore Dia. (in)	Counter Bore Depth (in)	Weight (lbs)
HF0503	1.12	0.2	0.31	0.17	1.3
HF1005	1.44	0.28	0.42	0.31	3.3
HF2005	1.94	0.40	0.59	0.39	5.9
HF3005	2.06	0.40	0.63	0.44	9.7
HF5006	2.62	0.43	0.75	0.50	14.9
HF7506	3.00	0.51	0.83	0.56	25.4
HF10006	3.00	0.51	0.83	0.56	31.5
HF15006	4.62	0.51	0.83	0.56	53.4

Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Model	Oil Capacity (in <sup>3</sup> )	Collapsed Height (in)	Adapter	Adapter Dimensions							Weight (lbs)
							A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	
5	0.24	HF0503B	HF0503	0.26	1.26	I	0.25	1.61	2.56	2.32	0.48	1.10	0.24	5.5
						II	0.5							
						III	1							
						IV	1.25							
10	0.43	HF1005B	HF1005	1.02	1.69	I	0.39	2.20	3.54	3.23	0.81	1.46	0.28	9.2
						II	0.79							
						III	1.57							
20	0.43	HF2005B	HF2005	1.90	2.01	I	0.39	2.99	4.25	3.94	1.08	1.93	0.39	15.0
						II	0.79							
						III	1.57							
30	0.51	HF3005B	HF3005	3.32	2.31	I	0.39	3.75	4.76	4.45	1.32	2.06	0.39	21.0
						II	0.79							
						III	1.57							

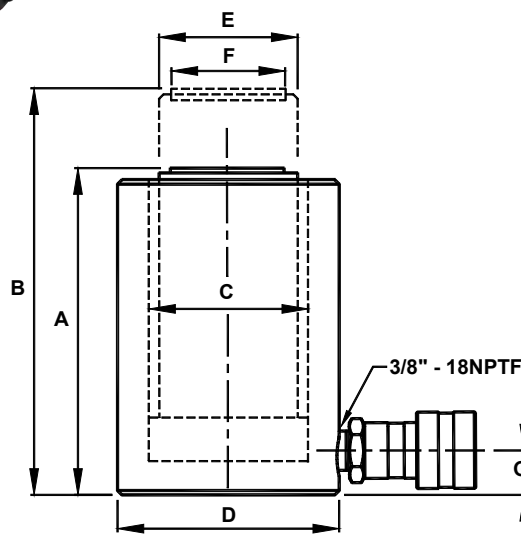
## ALUMINUM CYLINDERS



- Lightweight aluminum alloy construction
- Up to 60 percent lighter than comparable tonnage steel rams
- Convenient carry handle
- Hard anodized aluminum piston rod provides extra protection against corrosion and wear
- Maximum working pressure: 10,000 psi / 700 bar



Lightweight, yet powerful

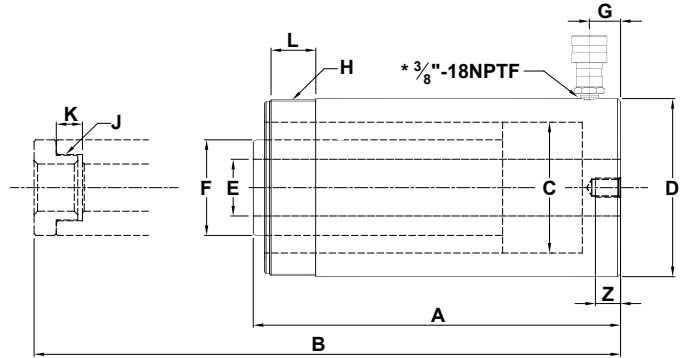


Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Internal Pressure at Capacity (psi)	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Dia. C (in)	Outside Dia. D (in)	Plunger Dia. E (in)	Saddle Dia. F (in)	Base to Inlet Port G (in)	Weight (lbs)
20	1.97	HU2002T	4.83	10,000	9.51	6.85	8.82	2.48	3.35	2.00	1.56	1.08	7.4
	3.94	HU2004T			19.02	8.82	12.76						8.5
	5.91	HU2006T			28.53	10.79	16.69						9.6
30	2.00	HU3002	6.50	9,231	13.00	6.50	8.50	2.90	4.50	2.50	2.00	1.50	11.0
	4.00	HU3004			26.00	8.50	12.50						14.0
	6.00	HU3006			39.00	10.50	16.50						17.0
50	2.00	HU5002	11.00	9,091	22.00	6.50	8.50	3.70	5.50	3.10	2.50	1.50	17.0
	4.00	HU5004			44.00	8.50	12.50						21.0
	6.00	HU5006			66.00	10.50	16.50						25.0
75	4.00	HU7504	15.00	10,000	60.00	8.50	12.50	4.40	6.50	3.90	3.00	1.50	29.0
	6.00	HU7506			90.00	10.50	16.50						35.0
100	2.00	HU10002	20.70	9,662	41.40	6.50	8.50	5.10	8.00	4.30	3.50	1.50	36.0
	4.00	HU10004			82.80	8.50	12.50						43.0
	6.00	HU10006			124.40	10.50	16.50						51.0
	10.00	HU10010			207.0	14.50	24.50						68.0

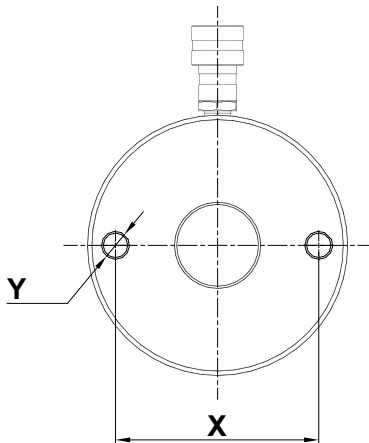


# HOLLOW HOLE CYLINDERS

- Minimum leak risk
- Ideal for pulling and pushing applications
- Heavy duty compression spring
- Dual wipers help prevent contamination
- Collar thread protector
- High flow coupler with dust cap
- XT cylinders do not come with internal plunger threads



Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Internal Pressure at Capacity (psi)	Oil Cap. (in <sup>3</sup> )	Min. Height A (in)	Max. Height B (in)	O.D. D (in)	Plunger			
									I.D. E (in)	O.D. F (in)	Internal Thread J (in)	Internal Thread Length K (in)
12	0.31	HC1201T	2.91	8,236	0.89	2.36	2.67	2.76	0.77	1.38	3/4"-16UN	0.63
	1.61	HC1202T			4.70	4.74	6.36					
	1.61	HC1202XT			4.70	4.74	6.36					
	2.99	HC1203XT			8.72	7.24	10.24					
20	2.01	HC2002T	4.90	8,167	9.83	6.38	8.39	3.92	1.06	2.15	1-9/16"-16UN	0.75
	6.06	HC2006T			29.70	12.05	18.11					
30	2.52	HC3002T	6.32	9,488	15.93	7.05	9.57	4.50	1.31	2.48	1-13/16"-16UN	0.87
	6.11	HC3006T			38.67	13.02	19.13					
60	3.00	HC6003T	13.05	9,195	39.10	9.77	12.77	6.25	2.13	3.66	2 3/4"-16UN	0.75
	6.00	HC6006T			78.25	12.76	18.76					
100	3.00	HC10003T	22.13	9,036	66.31	10.00	13.00	8.39	3.11	4.92	4"-16UN	0.98



Model Number	Collar Thread		Base to Inlet Port G (in)	Base Mounting Hole			Weight (lbs)
	Dia. H (in)	Lgth. L (in)		Bolt Circle X (in)	Thread Y (in)	Thread Depth Z (in)	
HC1201T	2 3/4"-16	1.81	0.57	2.00	5/16"-18UNC	0.35	3.3
HC1202T			0.59				6.2
HC1202XT			0.59				6.2
HC1203XT			0.75				8.6
HC2002T	3 7/8"-12	1.50	0.75	3.25	3/8"-16UNC	0.37	15.9
HC2006T			29.5				
HC3002T	4 1/2"-12	1.66	0.91	3.62	3/8"-16UNC	0.55	22.9
HC3006T			43.0				
HC6003T	6 1/4"-12	1.91	1.06	5.12	1/2"-13UNC	0.55	65.7
HC6006T			81.1				
HC10003T	8 3/8"-12	2.38	1.06	7.01	5/8"-11UNC	0.75	113.3

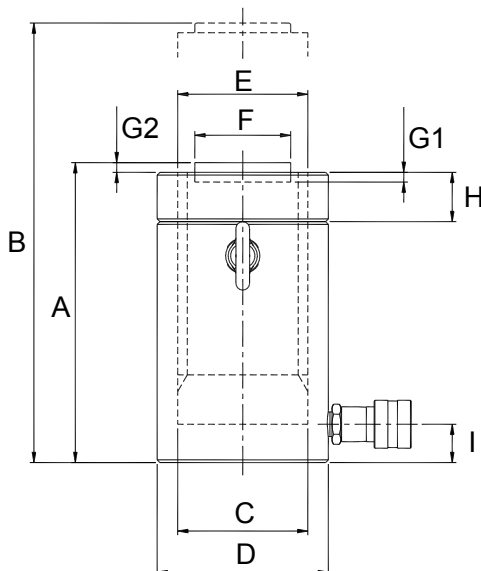


## LOCK NUT CYLINDERS



- Single acting cylinder with mechanical safety lock nut
- Designed to support load for extended periods without hydraulic pressure.
- Overflow port prevents cylinders from over travel
- Load return
- Solid steel cylinder body
- Ideal for lifting and holding loads
- Maximum working pressure: 10,000 psi / 700 bar
- Plated pistons to resist corrosion and rust

Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Cylinder Bore Diameter C (in)	Outside Diameter D (in)	Plunger Outside Thread E
55	1.97	HLN5502	10.99	21.65	6.50	8.40	3.70	4.90	Tw95-6N
	3.94	HLN5504		43.27	8.40	12.40			
	5.91	HLN5506		64.90	10.40	16.30			
	7.87	HLN5508		86.54	12.40	20.20			
	9.84	HLN5510		108.17	14.30	24.20			
	11.81	HLN5512		129.80	16.30	28.10			
100	1.97	HLN10002	20.57	40.49	7.40	9.30	5.10	6.50	Tw130-4N
	3.94	HLN10004		80.98	9.30	13.30			
	5.91	HLN10006		121.48	11.30	17.20			
	7.87	HLN10008		161.97	13.30	21.10			
	9.84	HLN10010		202.46	15.20	25.10			
	11.81	HLN10012		242.95	17.20	29.00			

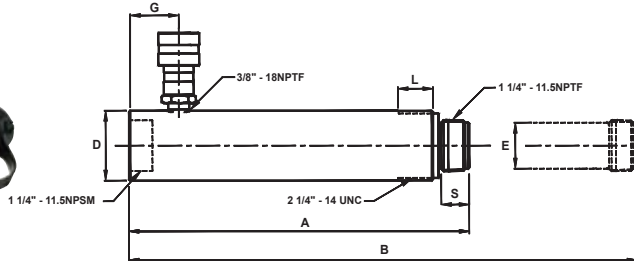


Model Number	Saddle Diameter F (in)	Depth of Plunger Hole G1 (in)	Saddle Potrusion From Plunger G2 (in)	Lock Nut Length H (in)	Base to Inlet Port I (in)	Weight (lbs)
HLN5502	2.80	0.08	0.51	1.40	1.10	34.0
HLN5504						44.5
HLN5506						55.1
HLN5508						65.9
HLN5510						76.5
HLN5512						87.1
HLN10002	2.80	0.08	0.51	1.80	1.10	67.2
HLN10004						85.8
HLN10006						104.3
HLN10008						122.6
HLN10010						141.1
HLN10012						159.6

# THREADED CYLINDERS



- High quality threaded single acting cylinders
- Removable threaded plunger adapter allows for the use of a variety of threaded attachments
- Used to attach accessories to rod end and base
- Maximum working pressure: 10,000 psi / 700 bar



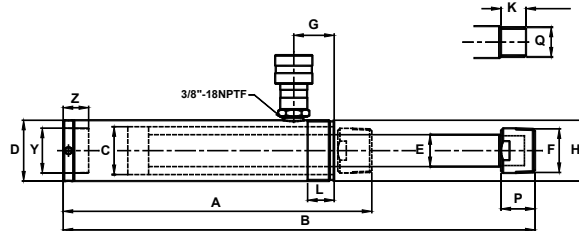
Threaded base allows for easy installation of attachments and mounting applications

Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Internal Pressure at Capacity (psi)	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Outside Dia. D (in)	Plunger Dia. E (in)	Base to Inlet Port G (in)	Collar Thread Length L (in)	Saddle Height S (in)	Weight (lbs)
4	5.07"	HT0405	1.00	10,120	5.00	10.31	15.39	1.5	1.33	1.33	0.84	1.00	5.0
10	5.95	HT1006	2.24	8,928	13.33	11.46	17.41	2.26	1.49	1.67	1.13	0.94	10.6
	9.96	HT1010			22.30	15.47	25.43						14.1
20	5.16"	HT2005	5.14	10,741	25.70	11.77	16.93	3.35	2.24	1.85	1.63	1.40	22.0

# PULL CYLINDERS



- High strength steel construction
- One piece high grade alloy bearing for side load protection and longer life
- Polyurethane cup seal helps provide for optimum performance
- External plunger threads
- Internal base threads
- Used for pulling and tensioning
- Maximum working pressure: 10,000 psi / 700 bar

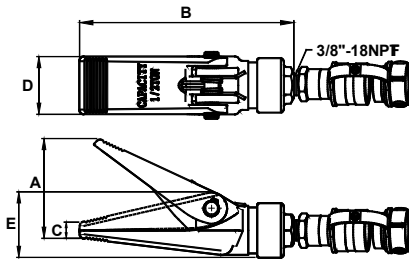


Cylinder Capacity (tons)	Stroke (in)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Internal Pressure at Capacity (psi)	Oil Capacity (in <sup>3</sup> )	Collapsed Height A (in)	Extended Height B (in)	Outside Diameter D (in)	Cylinder Bore Diameter C (in)	Top to Inlet Port G (in)	Collar	
											Thread H	Thread Length L (in)
2.5	5.00	HP0205	0.56	8,929	2.78	10.55	15.55	1.89	1.13	1.65	1½"-16	0.98
5	5.55	HP0505	1.14	8,772	6.34	11.93	17.48	2.25	1.69	1.50	2¼"-14	1.00
10	5.95	HP1006	2.44	8,197	14.48	11.75	17.70	3.35	2.17	1.50	M85x2	1.00

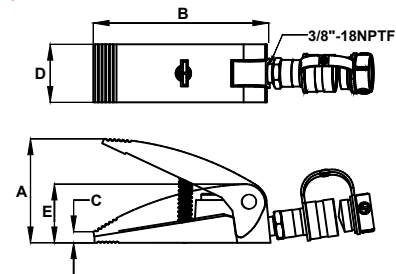
Model Number	Adapter		Plunger			Base Mounting Hole		Weight (lbs)
	Thread F (in)	Length P (in)	Dia. E (in)	Thread Length K (in)	Thread Q (mm)	Thread Y	Depth Z (in)	
HP0205	¾"-14NPTF	1.13	0.75	0.76	M16 x 1.5	¾"-14NPTF	0.72	6.4
HP0505	1¼"-11.5NPTF	1.25	1.18	0.93	M28 x 1.5	1¼"-11.5NPTF	0.95	9.3
HP1006	-	-	1.26	1.02	M30 x 2	M30x2	0.98	20.9

## SPREADERS

- Designed to work in confined working space
- Ideal for wedging, prying and opening
- High strength forged steel
- Spring return for easy operation



SR05



SR10

Cylinder Capacity (tons)	Model Number	Cylinder Effective Area (in <sup>2</sup> )	Oil Capacity (in <sup>3</sup> )	Dimensions (in)					Weight (lbs)
				A	B	C	D	E	
0.5	SR05	1.22	0.58	3.54	7.57	0.51	2.05	2.36	4.8
1	SR10	1.09	0.86	3.90	6.57	0.47	2.17	2.20	4.8

## BEAD BREAKER

- 5" opening
- Works on single rimmed wheels
- Constructed from rugged steel
- Works with any 10,000 PSI pump
- Hydraulic pressure does all the unseating
- Light weight and portable



J22910

### J22953 Bead Breaker Combo

Includes:

- J22910 Bead breaker
- PA1500 Metal air pump
- CS3838C Hydraulic hose
- CH38 Hydraulic coupler set



Capacity	Model	Maximum Ram Size	Hydraulic Oil Capacity	Product Size	Weight (lbs)
5 Ton	J22910	26"	250 mL	17-1/2" X 5-1/2" X 12"	36

# METAL AIR PUMPS



PA1500



PA2000



PA3801

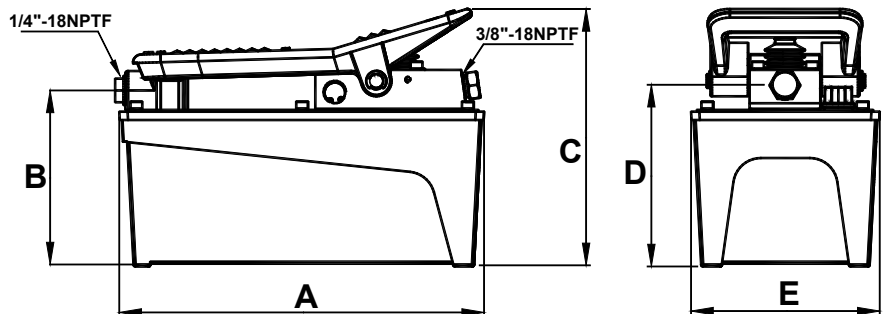
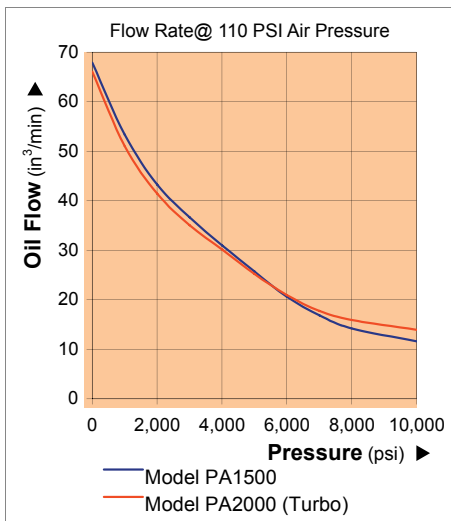


PA7550

- High strength reinforced alloy reservoir is lightweight and corrosion resistant
- Pressure relief valve for overload protection
- Suggested air pressure range: 110-175 psi / 7.5-12 bar
- Dust cover protection for the release control valve
- PA2000 offers a turbo function that features high flow at high pressure condition
- Maximum working pressure: 10,000 psi / 700 bar



Air pumps can be used in a variety of industrial settings



Used with Cylinder	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating (psi)	Oil Output Flow Rate (in <sup>3</sup> /min)		Input Air Pressure Range (psi)	Dimensions (in)					Weight (lbs)
				No Load	Load		A	B	C	D	E	
Single Acting	91.5	PA1500	10,000	66	11	110-175	10.35	5.00	7.28	5.16	5.35	18.1
	122.1	PA2000		65	12		11.57	6.02	7.91	6.18	5.98	20.1
	231.9	PA3801		65	11		12.64	5.08	7.36	5.24	7.36	27.1
	460.6	PA7550		65	11		12.64	5.398	8.31	6.14	8.43	36.0

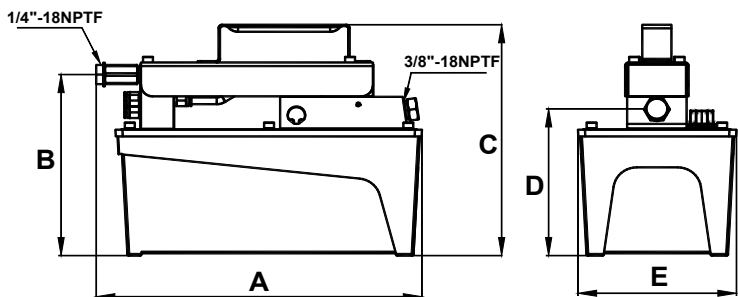


## REMOTE CONTROL AIR PUMPS

- 10 ft. hand held remote allows user to operate the air pump from a safe distance
- Air pump comes with convenient carry handle



PA380L

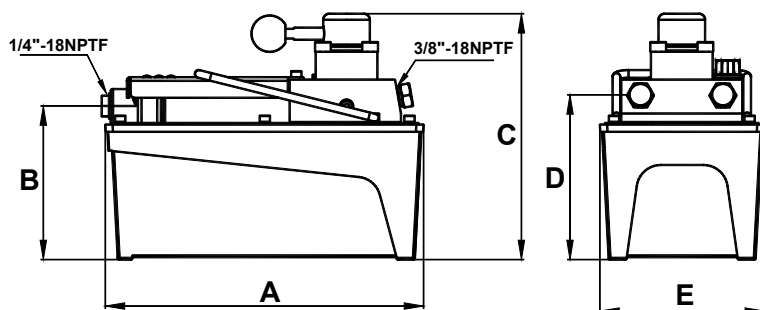


PA1500L

Used with Cylinder	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating (psi)	Oil Output Flow Rate (in <sup>3</sup> /min)		Input Air Pressure Range (psi)	Dimensions (in)					Weight (lbs)
				No Load	Load		A	B	C	D	E	
Single Acting	91.5	PA1500L	10,000	61	10	110-175	10.98	6.30	8.03	5.12	5.35	19.4
	231.9	PA3801L		61	10		12.64	6.42	8.15	5.20	7.36	

## DOUBLE ACTING AIR PUMP

- PA1500M offers a 4-way control valve for operation of double acting cylinders



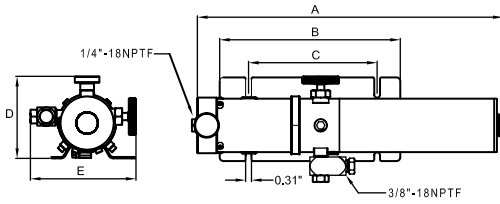
PA1500M

Used with Cylinder	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating (psi)	Oil Output Flow Rate (in <sup>3</sup> /min)		Input Air Pressure Range (psi)	Dimensions (in)					Weight (lbs)
				No Load	Load		A	B	C	D	E	
Double Acting	91.5	PA1500M	10,000	66	11	110-175	10.51	5.00	7.99	5.35	5.35	19.1



# ALL POSITION AIR PUMPS

- Pump can work in any position
- Mounting plate allows for the pump to be securely fastened
- Hydraulic port swivels for easy connection



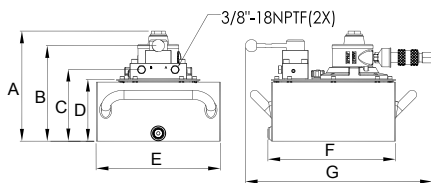
Hand Operated



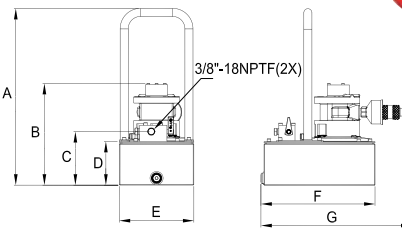
Used with Cylinder	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating (psi)	Oil Output Flow Rate (in <sup>3</sup> /min)		Input Air Pressure Range (psi)	Dimensions (in)					Weight (lbs)
				No Load	Load		A	B	C	D	E	
Single Acting	36.6	PA600	10,000	61	9	110-175	16.77	9.84	7.01	6.18	5.59	14.1
		PA600H								4.49	5.75	

# ROTARY AIR PUMPS

- Two speed operation for fast cylinder advance and improved productivity
- Models available with auto return valve
- Internal relief valves for overload protection



PAR4003, PARD4003



PAR1703, PARD1703

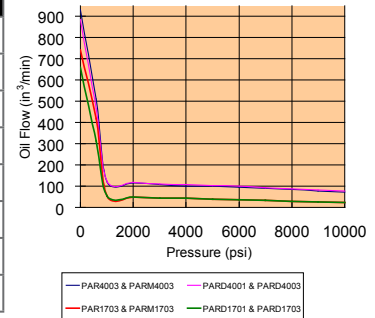


PAR4003, PARD4003

PAR1703, PARD1703

Model Number	Air Consumption (cfm)	Sound Level (dBA)	Dimensions (in)							Weight (lbs)
			A	B	C	D	E	F	G	
PARD1701	44	93	19.10	9.39	5.79	4.72	8.07	12.34	15.90	42
PARD1703	44	93	-	11.95	8.35	7.28	12.01	12.34	17.96	54
PAR1703	44	93	11.94	10.53	8.21	7.28	12.01	12.34	18.08	55
PARD4001	95	100	19.10	11	5.79	4.72	8.07	12.34	16.34	54
PARD4003	95	100	-	13.56	8.35	7.28	12.01	12.34	18.4	66
PAR4003	95	100	13.55	10.53	8.21	7.28	12.01	12.34	18.52	67
PARM1703	44	93	11.94	10.53	8.21	7.28	12.01	12.34	18.08	55
PARM4003	95	100	13.55	10.53	8.21	7.28	12.1	12.34	18.52	67

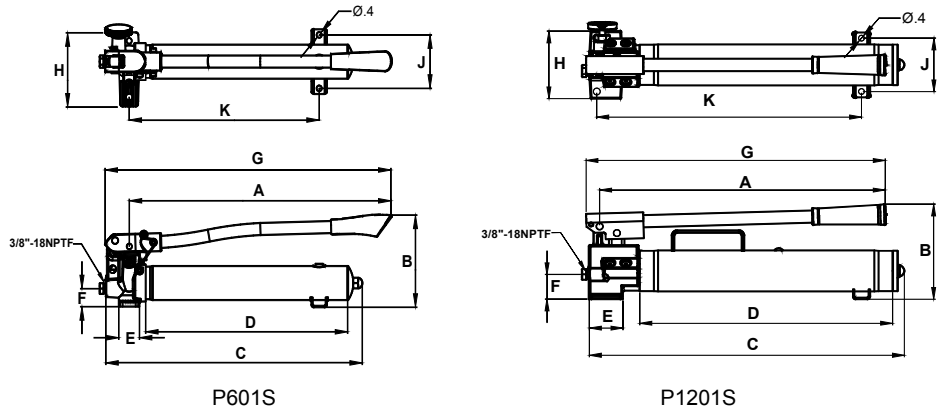
Rotary Air Pump Flow Chart



Used with Cylinder	Motor Size (hp)	Usable Oil Capacity (gal)	Model Number	Pressure Rating (psi)	Pressure Rating		Oil Output Flow Rate		Valve Type	Valve Function	Dynamic air pressure range (psi)	
					1st Stage (psi)	2nd Stage (psi)	1st Stage (in <sup>3</sup> /min)	2nd Stage (in <sup>3</sup> /min)				
Single Acting	1.7	1	PARD1701	10,000	700	10,000	313	22	Dump	Advance/Return	60 ~ 80	
			PARD1703									
			PAR1703									
	4	3	PARD4001						Dump	Advance/Return		60 ~ 100
			PARD4003									
3	PAR4003	Manual PW3	Advance/Hold/Return									
	1.7	3	PARM1703	Manual PW4	Advance/Hold/Return	60 ~ 80						
4			3				PARM4003	Manual PW4	Advance/Hold/Return	60 ~ 100		

# SINGLE SPEED METAL HAND PUMPS

- All metal reservoirs resist cracks and leaks
- Internal pressure relief valve for overload protection

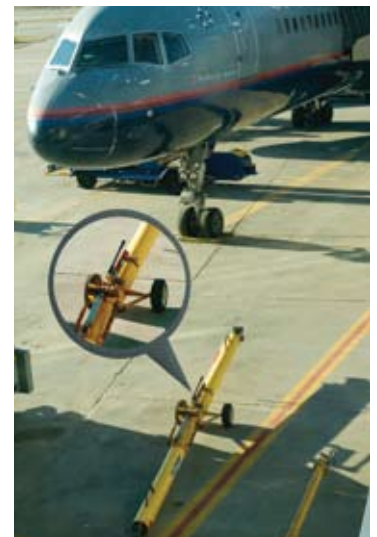
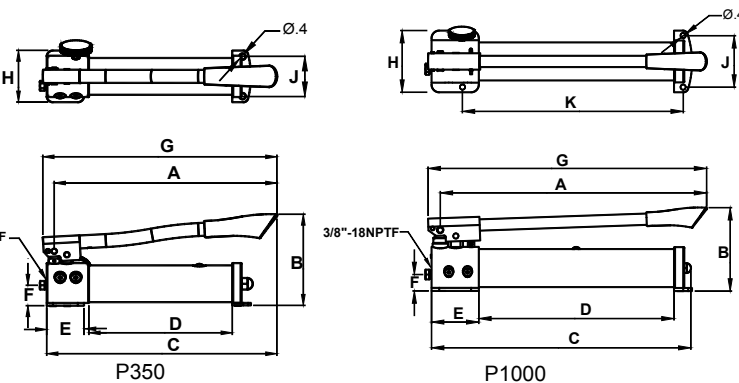


Used with Cylinder	Pump Type	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating (psi)	Oil Displacement per Stroke	Max. Operating Force (lbs)	Piston Stroke (in)	Oil Outlet Port	Weight (lbs)
Single Acting	Single Speed	36.5	P601S	10,000	0.15	109	0.79	3/8"-18NPTF	13.0
		67.0	P1201S		0.13	132	0.82		20.0

Model Number	Dimensions (in)									
	A	B	C	D	E	F	G	H	J	K
P601S	18.94	6.46	19.53	15.35	1.57	1.26	20.79	5.20	3.74	14.45
P1201S	19.75	6.64	21.95	16.63	2.36	1.73	20.71	4.72	3.74	18.27

# TWO SPEED ALUMINUM HAND PUMPS

- Lightweight aluminum alloy for easy handling
- Two speed operation increases productivity and reduces user fatigue
- Internal pressure relief valve for overload protection



Used with Cylinder	Pump Type	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating		Oil Displacement per Stroke		Max. Operating Force (lbs)	Piston Stroke (in)	Oil Outlet Port	Weight (lbs)
				1st Stage (psi)	2nd Stage (psi)	1st Stage (in <sup>3</sup> )	2nd Stage (in <sup>3</sup> )				
Single Acting	Two Speed	21.4	P350	200	10,000	0.18	0.05	88	0.38	1/4"-18NPTF	6.6
		61.0	P1000			0.81	0.14				

Model Number	Dimensions (in)									
	A	B	C	D	E	F	G	H	J	K
P350	13.43	5.91	13.89	9.09	2.36	1.34	14.13	3.35	2.56	-
P1000	19.69	6.38	19.88	14.96	3.62	1.26	20.63	4.72	3.94	16.93

# TWO SPEED METAL HAND PUMPS



P1201



P2001



P2301

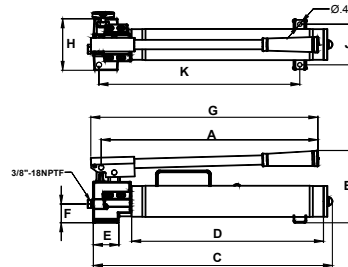


P4301

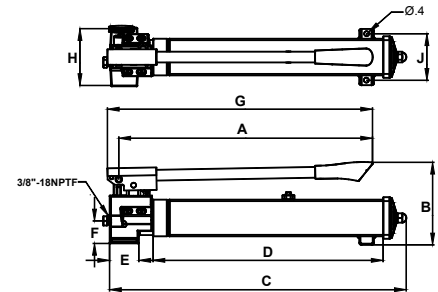


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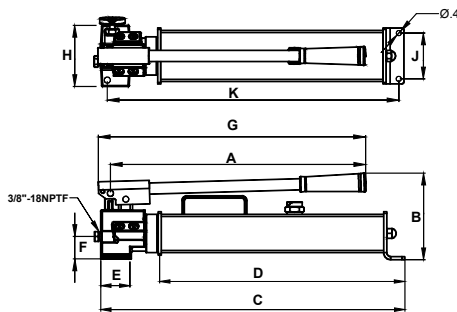
- All metal reservoirs resist cracks and leaks
- Two speed operation increases productivity and reduces user fatigue
- Internal pressure relief valve for over load protection
- Load release valve for single acting cylinder usage
- Large oil capacity to power a wide range of cylinders and tools



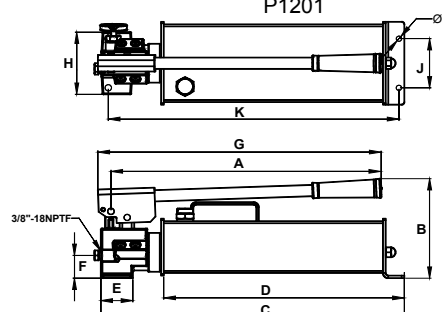
P1201



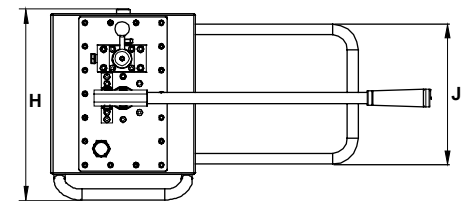
P2001



P2301



P4301



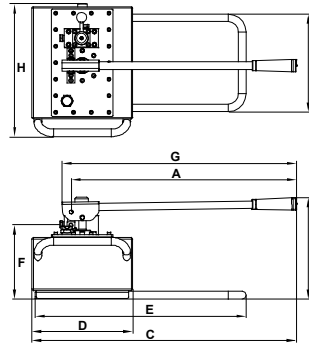
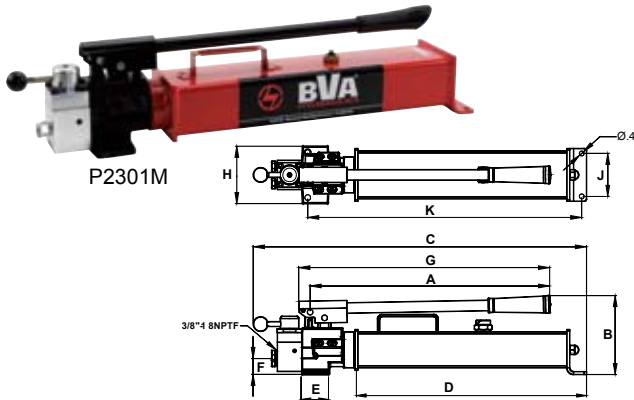
P8701

Model Number	Dimensions (in)									
	A	B	C	D	E	F	G	H	J	K
P1201	19.75	6.64	21.95	16.63	2.36	1.73	20.71	4.72	3.74	18.27
P2001	19.75	6.54	23.86	18.54	2.36	2.01	20.71	4.82	2.56	-
P2301	19.75	6.64	23.69	18.37	2.36	1.73	20.71	4.72	3.54	22.56
P4301	19.91	7.56	22.62	17.30	2.36	1.73	20.87	4.72	3.74	21.46
P8701	25.79	11.61	30.35	11.54	24.17	8.25	26.94	15.24	11.18	-

Used with Cylinder	Pump Type	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating		Oil Displacement per Stroke		Max. Operating Force (lbs)	Piston Stroke (in)	Oil Outlet Port	Weight (lbs)
				1st Stage (psi)	2nd Stage (psi)	1st Stage (in <sup>3</sup> )	2nd Stage (in <sup>3</sup> )				
Single Acting	Two Speed	67.0	P1201	200	10,000	0.81	0.14	132	0.82	3/8"-18NPTF	20.3
		122.0	P2001								20.9
		128.0	P2301								27.5
		250.0	P4301								32.2
		476.0	P8701	290	7.71	0.29	143	1.69	90.8		

## DOUBLE ACTING HAND PUMPS

- A 4-way control valve for operation of double acting cylinders
- Large oil capacities to power a wide range of cylinders and tools
- Two speed operation increases productivity and reduces user fatigue

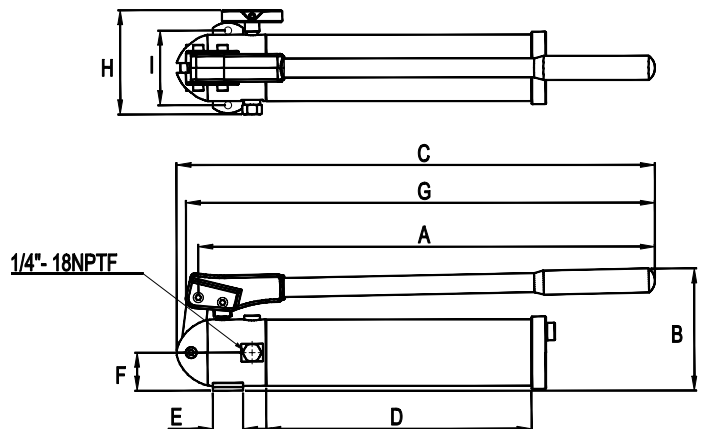


Used with Cylinder	Pump Type	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating		Oil Displacement per Stroke		Max. Operating Force (lbs)	Piston Stroke (in)	Oil Outlet Port	Weight (lbs)
				1st Stage (psi)	2nd Stage (psi)	1st Stage (in <sup>3</sup> )	2nd Stage (in <sup>3</sup> )				
Double Acting	Two Speed	128.0	P2301M	200	10,000	0.81	0.14	132	0.82	3/8"-18NPTF	32.2
		476.0	P8701M	290		7.31	0.29	143	1.67		77.4

Model Number	Dimensions (in)									
	A	B	C	D	E	F	G	H	J	K
P2301M	19.75	6.64	23.69	18.37	2.36	1.73	20.71	4.72	3.54	22.56
P8701M	25.79	11.61	30.35	11.54	24.17	8.25	26.94	15.24	11.18	-

## LOW PRESSURE HAND PUMP

- Lightweight and portable for use with punch drivers
- Rugged steel pump with chrome handle
- Single speed
- Mounting bracket for easy, permanent mounting
- Maximum working pressure 7,200 psi



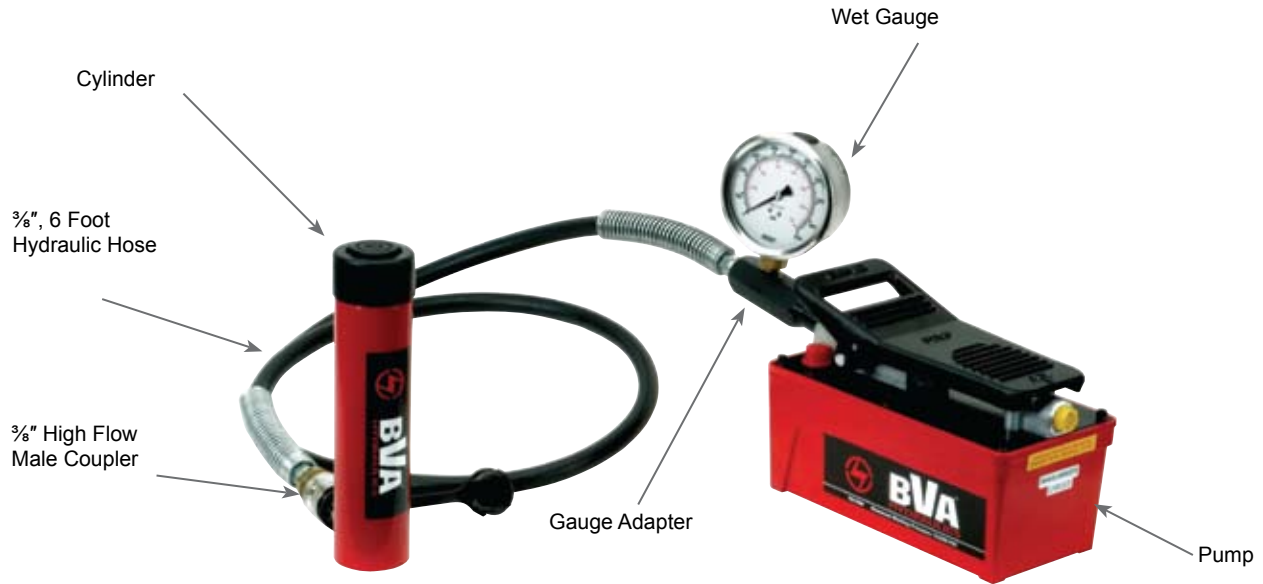
Used with Cylinder	Pump Type	Usable Oil Capacity (in <sup>3</sup> )	Model Number	Pressure Rating (psi.)	Oil Displacement per Stroke (in <sup>3</sup> )	Max. Operating Force (lbs)	Piston Stroke (in)	Oil Outlet Port	Weight (lbs)
Single Acting	Low Pressure Single Speed	14.7	P240L	7,200	0.09	55.7	0.63	1/4" - 18 NPTF	9.02

Model Number	Dimensions (in)									
	A	B	C	D	E	F	G	H	J	
P240L	16.57	12.01	24.78	12.28	13.21	15.53	4.53	12.32	2.43	

# PUMP/CYLINDER COMBO

- Matched sets provide a combination of components for single acting cylinder applications
- Ordering is as easy as 1, 2, 3
  1. Select the cylinder you want
  2. Select the pump you want
  3. Choose the set number

- Each Set Includes:
- 3/8", 6 Foot Hydraulic Hose
  - Gauge Adapter
  - 4" Wet Gauge
  - 3/8" High Flow Male Coupler
  - Cylinder
  - Pump



Type	Combo Capacity (ton)	Cylinder			Combo Model Number						
		Model	Stroke (in)	Collapsed Height (in)	with Hand Pump			with Air Pump			
					Model P350	Model P1000	Model P2001	Model PA1500	Model PA1500L	Model PA3801	
Single Acting Cylinders	5	H0505	5.08	8.70	SP3-0505						
	10	H1002	2.01	4.84		SP10-1002			SA15-1002		
		H1006	5.94	9.84		SP10-1006			SA15-1006	SAL15-1006	
		H1010	9.96	13.86		SP10-1010			SA15-1010	SAL15-1010	
		HT1006	5.95	11.46		SP10-1006T			SA15-1006T	SAL15-1006T	
		HT1010	9.96	15.47		SP10-1010T			SA15-1010T	SAL15-1010T	
	15	H1504	3.86	8.66		SP10-1504			SA15-1504		
		H1506	5.87	10.67		SP10-1506			SA15-1506		
	25	H2502	2.01	6.82		SP10-2502			SA15-2502		
		H2504	3.94	8.78		SP10-2504			SA15-2504		
		H2506	5.94	10.79		SP10-2506			SA15-2506		
H2508		7.95	12.80			SP20-2508		SA15-2508			
55	H5506	6.25	11.13			SP20-5506		SA15-5506			
100	H10006	6.63	13.25							SA38-10006	
Single Acting Aluminum Cylinders	30	HU3002	2.00	6.50		SP10-3002U			SA15-3002U		
		HU3006	6.00	10.50		SP10-3006U			SA15-3006U		
	50	HU5006	6.00	10.50			SP20-5006U		SA15-5006U		
100	HU10006	6.00	10.50							SA38-10006U	
Single Acting Low Profile Cylinder	10	HL1001	1.50	3.48	SP3-1001L				SA15-1001L		
	20	HL2002	1.75	3.90	SP3-2002L				SA15-2002L		
	30	HL3002	2.44	4.61		SP10-3002L			SA15-3002L		



## ELECTRIC PUMPS

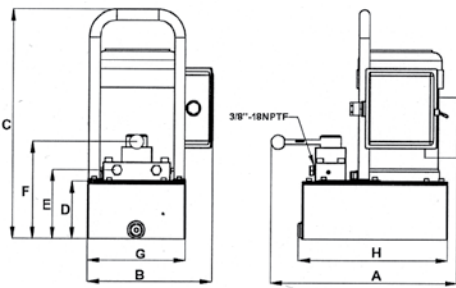
- Quiet operation meets OSHA regulations (80dBA)
- 2 speed operation allows for faster cylinder advance
- Full load starting capacities
- Internal filter keeps contamination from damaging pump
- Rugged durable design meets the demands of industrial applications
- Precision components to minimize wear and improve overall dependability
- All pumps are single phase



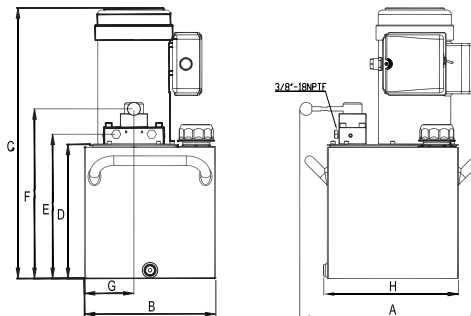
PE1503T



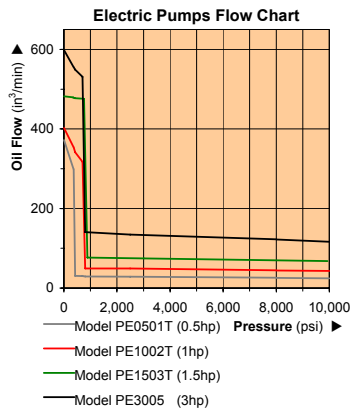
PE1002T



PE0501T & PEM0501T only



PE & PEM Series

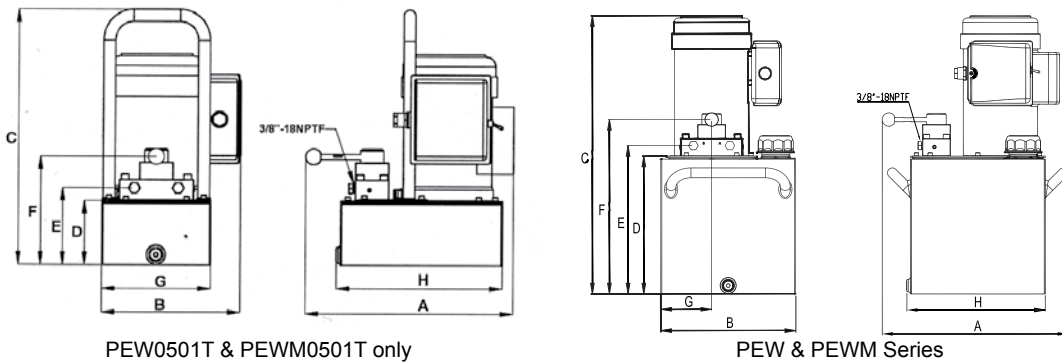


Model Number	Dimensions (in)							
	A	B	C	D	E	F	G	H
PE0501T	14.92	10.28	19.09	4.72	5.67	7.99	8.07	12.36
PE1002T	16.65	12.01	17.83	5.94	6.89	9.21	4.53	12.36
PE1503T	16.65	12.01	19.72	7.24	8.19	10.51	4.53	12.36
PE1505T	16.57	12.01	24.78	12.28	13.21	15.53	4.53	12.32
PE3005	16.54	12.01	26.54	12.28	13.23	15.51	4.53	12.36
PEM0501T	14.92	10.28	19.09	4.72	5.67	7.99	8.07	12.36
PEM1002T	16.65	12.01	17.83	5.94	6.89	9.21	4.53	12.36
PEM1503T	16.65	12.01	19.72	7.24	8.19	10.51	4.53	12.36
PEM1505T	16.57	12.01	24.78	12.28	13.21	15.53	4.53	12.32
PEM3005	16.54	12.01	26.54	12.28	13.23	15.51	4.53	12.36

Use with Cylinder	Motor Size (hp)	Usable Oil Capacity (gal)	Model Number	Pressure Rating		Oil Output Flow Rate		Valve Type	Valve Function	Current Draw (amps)	Motor Voltage (volts)	Weight (lbs)
				1st Stage (psi)	2nd Stage (psi)	1st Stage (in³/min)	2nd Stage (in³/min)					
Single Acting	0.5	1.0	PE0501T	350	10,000	293	18	3-way, 3-position	Advance/ Hold/ Return	9	115	59.5
	1.0	2.0	PE1002T	700		397	37			12		70.5
	1.5	3.0	PE1503T			476	61			17		88.5
		5	PE1505T			476	61					94.0
	3.0	5.0	PE3005			592	110			230		101.0
Double Acting	0.5	1.0	PEM0501T			350	293	18		4-way, 3-position	9	115
	1.0	2.0	PEM1002T	700		397	37	12			70.5	
	1.5	3.0	PEM1503T			476	61	17			88.5	
		5	PEM1505T			476	61				94.0	
	3.0	5.0	PEM3005			592	110	230			101.0	

# ELECTRIC PUMPS with PENDANT SWITCH

- Quiet operation meets OSHA regulations (80dBA)
- 2 speed operation allows for faster cylinder advance
- Full load starting capacities
- Internal filter keeps contamination from damaging pump
- 10 ft. hand held pendant switch allows user to turn on/off motor
- All pumps are single phase



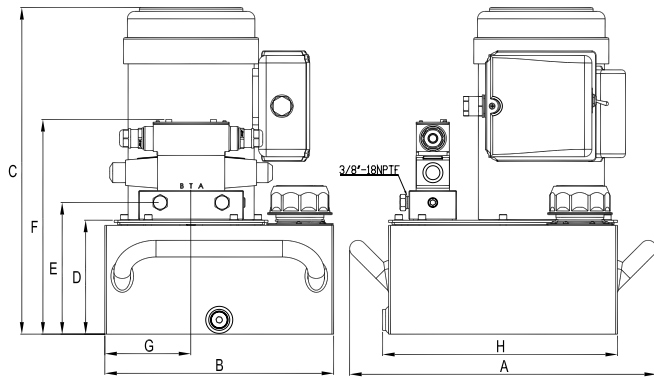
Electric pumps can be used in a variety of industrial settings

Model Number	Dimensions (in)							
	A	B	C	D	E	F	G	H
PEW0501T	14.92	10.28	19.09	4.72	5.67	7.99	8.07	12.36
PEW1002T	16.65	12.01	17.83	5.94	6.89	9.21	4.53	12.36
PEW1503T	16.65	12.01	19.72	7.24	8.19	10.51	4.53	12.36
PEW1505T	16.57	12.01	24.78	12.28	13.21	15.53	4.53	12.32
PEW3005	16.54	12.01	26.54	12.28	13.23	15.51	4.53	12.36
PEWM0501T	14.92	10.28	19.09	4.72	5.67	7.99	8.07	12.36
PEWM1002T	16.65	12.01	17.83	5.94	6.89	9.21	4.53	12.36
PEWM1503T	16.65	12.01	19.72	7.24	8.19	10.51	4.53	12.36
PEWM1505T	16.57	12.01	24.78	12.28	13.21	15.53	4.53	12.32
PEWM3005	16.54	12.01	26.54	12.28	13.23	15.51	4.53	12.36

Use with Cylinder	Motor Size (hp)	Usable Oil Capacity (gal)	Model Number	Pressure Rating		Oil Output Flow Rate		Valve Type	Valve Function	Current Draw (amps)	Motor Voltage (volts)	Weight (lbs)	
				1st Stage (psi)	2nd Stage (psi)	1st Stage (in <sup>3</sup> /min)	2nd Stage (in <sup>3</sup> /min)						
Single Acting	0.5	1.0	PEW0501T	350	10,000	700	293	18	3-way, 3-position	Advance/ Hold/ Return	9	115	59.5
	1.0	2.0	PEW1002T				397	37			12		70.5
	1.5	3.0	PEW1503T				476	61			17		88.5
		5	PEW1505T				476	61					94.0
	3.0	5.0	PEW3005				592	110			230	101.0	
Double Acting	0.5	1.0	PEWM0501T	350	10,000	700	293	18	4-way, 3-position	Advance/ Hold/ Return	9	115	59.5
	1.0	2.0	PEWM1002T				397	37			12		70.5
	1.5	3.0	PEWM1503T				476	61			17		88.5
		5	PEWM1505T				476	61					94.0
	3.0	5.0	PEWM3005				592	110			230	101.0	

## ELECTRIC PUMPS with SOLENOID VALVE

- Quiet operation meets OSHA regulations (80dBA)
- Ideal for applications where a remote control is required
- 2 speed operations allows for faster cylinder advance
- Full load starting capabilities
- Internal filter keeps contamination from damaging pump
- 10 ft. hand held remote controls the solenoid valve

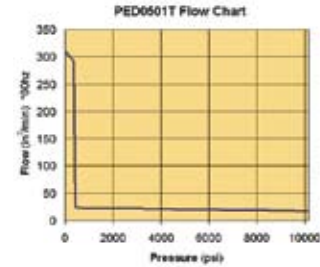
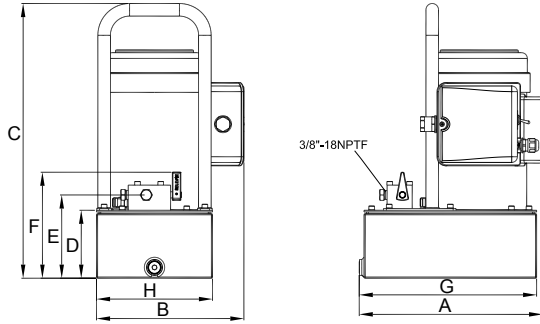


Model Number	Dimensions (in)							
	A	B	C	D	E	F	G	H
PES0501T	12.74	10.26	19.10	4.72	5.65	10.00	8.07	12.32
PES0502T	12.74	10.26	19.10	4.72	5.65	10.00	8.07	12.32
PES1002T	17.88	12.01	17.88	5.98	6.90	11.26	4.51	12.32
PES1503T	17.88	12.01	17.88	5.98	6.90	11.26	4.51	12.32
PES1505T	16.10	12.01	17.13	5.98	6.90	11.26	4.51	12.32
PESM0501T	16.10	12.01	17.13	5.98	6.90	11.26	4.51	12.32
PESM0502T	16.10	12.01	19.78	7.28	8.20	12.56	4.51	12.32
PESM1002T	16.10	12.01	19.78	7.28	8.20	12.56	4.51	12.32
PESM1503T	16.10	12.01	24.78	12.28	13.20	17.56	4.51	12.32
PESM1505T	16.10	12.01	24.78	12.28	13.20	17.56	4.51	12.32

Use with Cylinder	Motor Size (hp)	Usable Oil Capacity (gal)	Model Number	Pressure Rating		Oil Output Flow Rate		Valve Type	Valve Function	Current Draw (amps)	Motor Voltage (volts)	Weight (lbs)
				1st Stage (psi)	2nd Stage (psi)	1st Stage (in <sup>3</sup> /min)	2nd Stage (in <sup>3</sup> /min)					
Single Acting	0.5	1	PES0501T	350	10,000	293	18	3-way, 3-position	Advance/ Hold/ Return	9	115	61.5
		2	PES0502T									
	1	2	PES1002T	700		311	37			12		90.4
		3	PES1503T									
	1.5	5	PES1505T	700		470	61			17		98
5		PESM1505T	98.0									
Double Acting	0.5	1		PESM0501T	350	10,000	293	18	4-way, 3-position	Advance/ Hold/ Return	9	115
		2	PESM0502T	72.6								
	1	2	PESM1002T		700		311	37			12	
		3	PESM1503T	98.0								
	1.5	5	PESM1505T		700		470	61			17	
5		PESM1505T	98.0									

# ELECTRIC PUMP with AUTO RETURN VALVE

- Quiet operation meets OSHA regulations (80dBA)
- Best suited for punching, crimping, and cutting applications
- 2 speed operation allows for faster cylinder advance
- Full load starting capabilities
- Internal filter keeps contamination from damaging pump
- Rugged durable design meets the demands of industrial applications
- 10 ft. remote pendant switch to control motor on/off



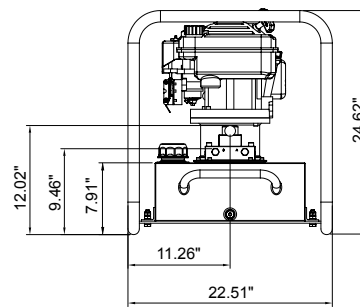
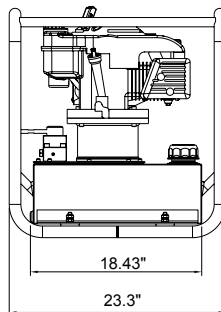
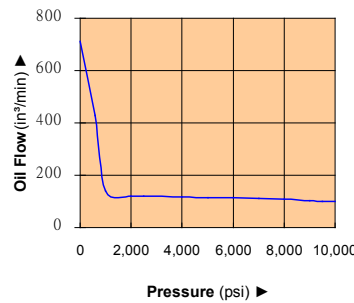
Model Number	Dimensions (in)						
	A	B	C	D	E	F	G
PED0501T	12.76	10.28	19.09	4.72	5.79	7.36	12.36

Motor Size (hp)	Usable Oil Capacity (gal)	Model Number	Pressure Rating		Oil Output Flow Rate		Valve Type	Valve Function	Current Draw (amps)	Motor Voltage (volts)	Sound Level (dBA)	Weight (lbs)
			1st Stage (psi)	2nd Stage (psi)	1st Stage (in³/min)	2nd Stage (in³/min)						
0.5	1.0	PED0501T	350	10,000	233	18	2-way, 2-position	Advance/Return	9	115	80	66.2

# GAS PUMP with HONDA ENGINE

- Gas engine pump will provide 10,000 psi hydraulic force at remote locations
- Industrial grade 5.5 hp Honda gas engine
- Manual control valve for use with single or double acting cylinders or tools
- Two speed pump designed for rapid cylinder advance
- Gas pump features a sturdy protective roll cage for use in the toughest environments

PG5505 Flow Chart



Motor Size (hp)	Usable Oil Capacity (gal)	Model Number	Max. Pressure Output (psi)	Pressure Rating (psi)		Oil Output Flow Rate (in³/min)		Valve Type	Valve Function	Rotation Speed (rpm)	Sound Level (dBA)	Weight (lbs)
				1st Stage	2nd Stage	1st Stage	2nd Stage					
5.5	5	PG5505	10,000	700	10,000	427	100	Manual	Advance/ Hold/ Return	3,600	93	121.2



## MAINTENANCE KITS

- Sets are portable for easy use in the plant or on the job site
- Custom fitted, rugged blow molded storage case
- 10 ton set has wheel for easy movement
- Designed for applications of pushing, spreading, pressing, and more



J50040



J50200

Capacity (tons)	Pump Capacity (psi)	Model Number	Ram			Number of attachments	Weight (lbs)
			Collapsed Height (in <sup>2</sup> )	Extended Height (in <sup>2</sup> )	Effective Area (in <sup>2</sup> )		
4	8,000	J50040	11.00	15.75	0.998	14	46.0
10	10,000	J50100	13.63	19.75	2.411	13	81.0
20	10,000	J50200	11.77	16.93	5.14	16	206.0

\*When extension tubes and/or offset attachments are used, the capacity is reduced.



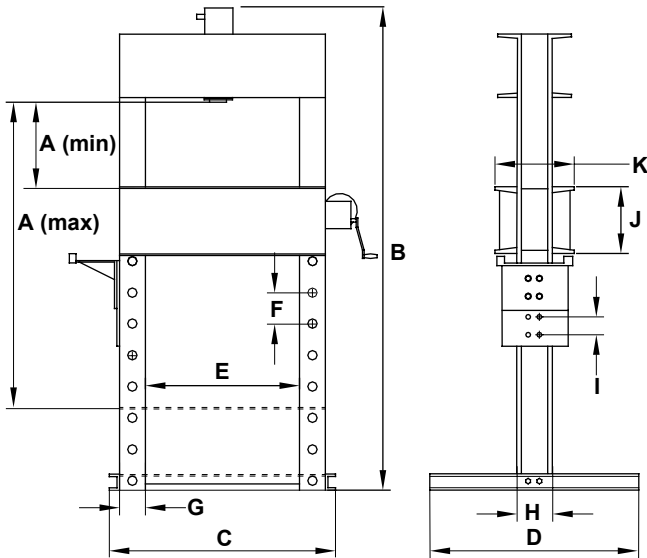
J50100

Contents of Kit	Part Number					
	Model J50040	Model J50100	Model J50200			
Hand Pump	J0401	J1001	J65421			
Ram	J0402	J1002	J65740			
Hose	J0403	J1003	J65593			
Case	J0404	J1004	J65073			
Hydraulic Spreader (1000lbs. capacity)	J0405	J1005	-			
Combination Head (90 degrees)	J0406	J1006	-			
Rubber Head	J0407	J1007	-			
Ram Toe (offset)	J0408	J1008	J65774			
Plunger Toe (offset)	J0409	J1009	-			
Flat Base	J0410	J1010	J65778			
Serrated Saddle	J0411	J1011	J65771 (2)			
Wedge Head (offset)	J0412	J1012	J65773			
Male Connector	J0413	J1013	J65770			
Hose Coupler	CRZ14M	CRZ14M	CH38M			
Ram Coupler	CRZ14F	CRZ14F	CH38F			
Chain Pull Plate	Note: J50040 and J50100 come with 1/4" regular flow coupler					
V Head						
Threaded Coupling						
8' Chain w/ hook						
Ram Base						
Extension Tube					3"	J0414
	6 1/2"	J0415	10"	J1015	5"	J65762
	8 1/2"	J0416	18"	J1016	10"	J65764
	16 1/2"	J0417	27"	J1017	18"	J65766
	19 1/2"	J0418			24"	J65768



# 25/55/100 TON SHOP PRESSES

- Heavy steel welded construction
- Multi-position bed for work height adjustment
- Ideal for the removal or installation of gears, universal joints, pulleys, wrist pins, and other press jobs
- Excellent for bending, bonding or straightening applications



Model Number	Dimensions (in)											Weight (lbs)	
	A (Min.)	A (Max.)	B	C	D	E	F	G	H	I	J		K
IMP2506	4.5	47.25	71	48	28	30	6	3	6.5	3	6	11.5	560
IAP2506													
IAP5506	14.0	55.5	79	56	30	35.4	6	4	9	3	10	14.8	760
IEP5506													
IMP5506													
IAP5513													
IEP5513	11.3	51.0	89	63	30	35.5	8	-	10	-	12	16.0	1550
IEP10010													

Capacity (tons)	Model Number	Pump Type	Pump Model	Cylinder Model	Bed Position	Cylinder Stroke (in)	Product Size (H X L X W)	Working Space (A Min. / A Max.) (in)
25	IMP2506	Manual	P1000	H2506	8	6	71"X 48"X 28"	4½" ~ 47¼"
	IAP2506	Air	PA1500	H2506				
55	IAP5506	Air	PA1500	H5506	9	13	79"X 56" X 30"	14" ~ 55½"
	IEP5506	Electric	PEW0501T					
	IMP5506	Manual	P2301	H5513				
	IAP5513	Air	PA3801					
100	IEP10010	Electric	PEW1002T	H10010	8	10	89"X 63"X 30"	11¼" ~ 51"



AP100 • Arbor plates (in pairs)

## 25 TON SHOP PRESS ACCESSORIES

CS25 includes:

- 300-002-229 • Ram forcing cap
- 300-002-807 • V push adapter
- 300-002-953 • Threaded adapter
- 300-002-510 • ¾" push adapter
- 300-002-511 • 1" push adapter
- AP25 • Arbor plates (in pairs)



## 55 TON SHOP PRESS ACCESSORIES

CS55 includes:

- 400-002-230 • Ram forcing cap
- 400-002-368 • Threaded adapter
- 400-002-757 • 1½" push adapter
- 400-002-756 • 1¼" push adapter
- 400-002-808 • V push adapter
- AP55 • Arbor plates (in pairs)





## MANUAL BOTTLE JACKS

- Hydraulic system is protected from internal damage by a patented by-pass mechanism
- Machined and polished cylinders with die-cut threads provide non-abrasive leak-free, durable performance
- Fabricated from hard-cast steel with heat-treated critical stress areas
- Unique cross-type forged release valve assures positive load control
- A wide, rugged base provides stability and strength

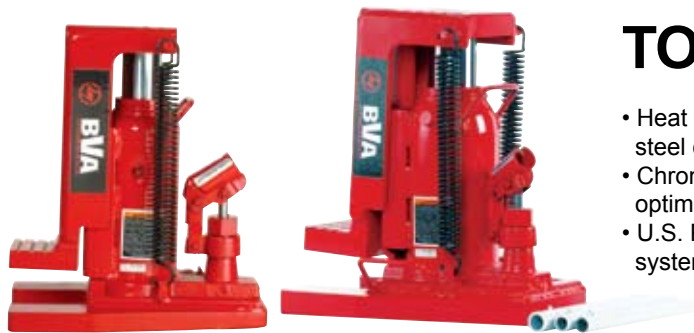
Capacity (ton)	Model Number	Min. Height (in)	Max. Height (in)	Hydraulic Lifting (in)	Extension Screw (in)	Base Size Length (in)	Base Size Width (in)	Weight (lbs)
12	J10125	9½	18½	6	3½	5¼	5½	17.5
	J10129	6	10½	3	1½			14.9
20	J10205	9½	18½	6	3½	6¼	5½	27.5
	J10209	6½	11¼	3½	1½			21.8
30	J10300	11	18	7	-	8½	6¾	53.5
50	J10500	12	19	7	-	10¾	7-¾	96.4



## AIR/MANUAL BOTTLE JACKS

- Effortless air operation will greatly reduce operator fatigue and speed up the efficiency of industrial work
- A compact yet powerful air turbo motor U.S. Patent No. 5,341,723 is equipped to raise the load to the desired height efficiently, effortlessly, and safely
- Versatile "Quick Connector" design provides for easy removal of air hose from air motor allowing compact storage or remote operation
- All air bottle jacks have chrome plated rams

Capacity (ton)	Model Number	Min. Height (in)	Max. Height (in)	Hydraulic Lifting (in)	Extension Screw (in)	Base Size Length (in)	Base Size Width (in)	Input Air Pressure Range (psi)	Weight (lbs)
12	J18122	9½	18½	5½	3½	7½	6½	110-175	28.6
20	J18202	9¾	18¾	5½	3¾	8¼	7¼		37.4
30	J18302	11	18	7	-	10¼	8¼		60.5
50	J18502	12	19	7		10¾	7-¾		128.5
100	J18992		18½	6½	12½	9-¾	205.9		



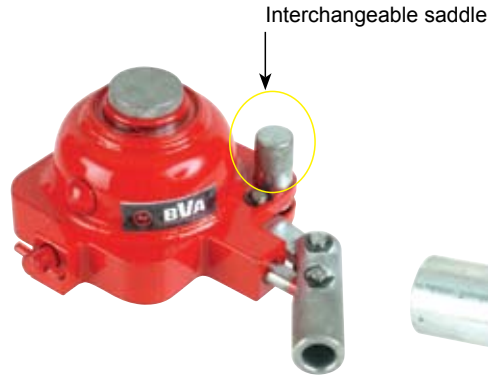
## TOE JACKS

- Heat treated and chrome plated medium-carbon steel cylinder
- Chrome plated ram promotes longer seal life and optimum performance
- U.S. Patented by-pass device protects hydraulic system from over traveling damage

Capacity (tons)	Model Number	Toe Saddle		Head Saddle		Hydraulic Lifting (in)	Base Size (L x W) (in)	Weight (lbs)
		Min. Height (in)	Max. Height (in)	Min. Height (in)	Max. Height (in)			
3	J13060	0.62	5.75	9.0	14.12	5.12	6.00 x 4.37	36.1
6	J13120	0.88	6.00	10.50	15.63	5.13	11.00 x 7.50	55.0
10	J13200	1.13	6.25	11.00	16.13		11.63 x 9.00	84.0

# MINI JACKS

- Low profile mini jack
- Pocket size and lightweight
- Convenient for storage



Capacity (tons)	Model Number	Minimum Height (in)	Maximum Height (in)	Hydraulic Lifting (in)	Base Size (L x W) (in)	Weight (lbs)
5	J11050	2.37	3.13	0.76	4.13 x 4.00	4.6
5	J11055	3.37	4.88	1.51		5.3
10	J11100	4.75	6.25	1.63	4.88 x 4.38	12.5
20	J11200	5.13	6.75	1.63	5.38 x 4.75	16.7

# HYDRAULIC BENCH VISE



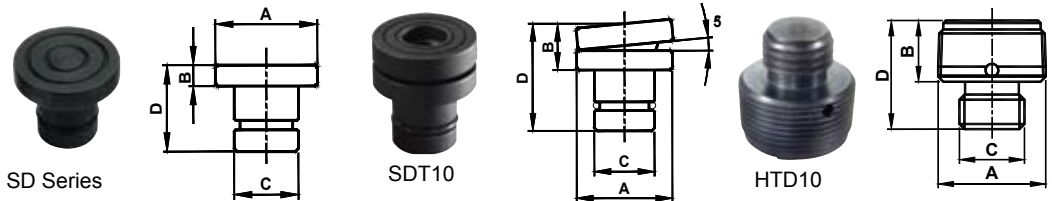
- 5 Tons of clamping power
- Hands free operation with foot pump control
- Air control valve for variable speed and added safety
- Cast steel construction 52,600 psi tensile strength
- Operates horizontally or vertically
- Jaws open 8 inches
- Replaceable jaw plates
- Hydraulic pressure closes jaws
- Spring return opens jaws

- Model BV859A includes:
- 5 Ton hydraulic vise
  - Air over hydraulic 10,000 psi foot pump with air control valve
  - 10,000 psi gauge
  - Gauge adapter
  - 10 foot hydraulic hose
  - Set of POSI LOCK® Hold-Et's (magnetic vise clips)



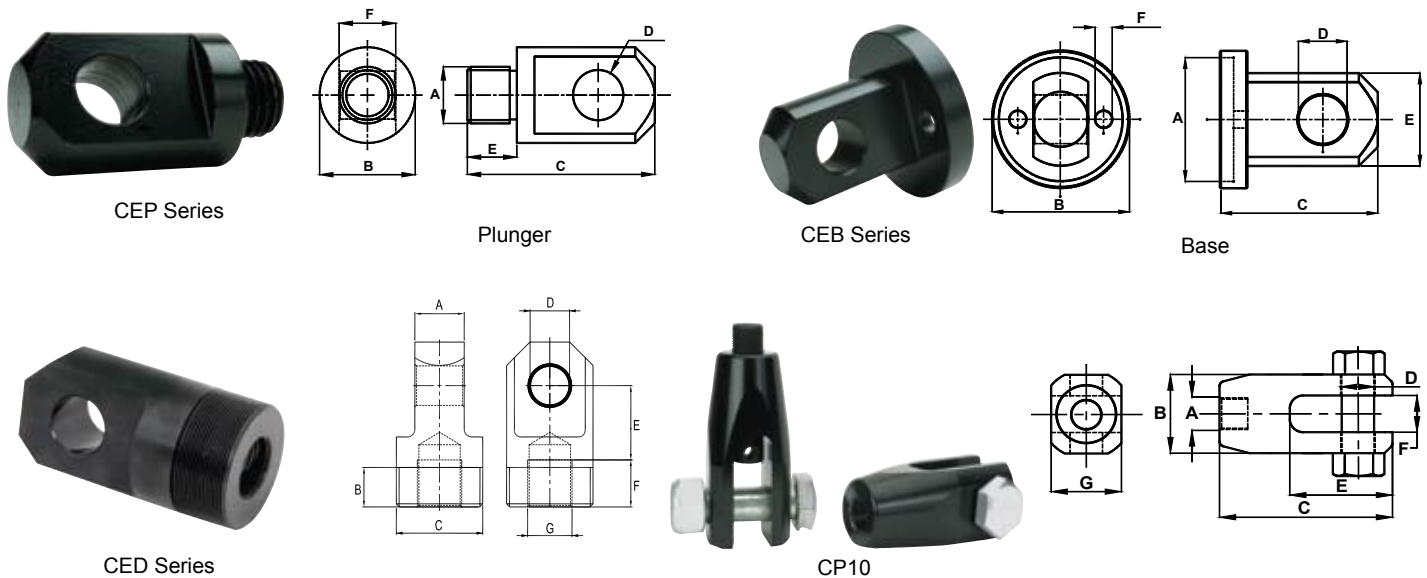
Model Number	Capacity (tons)	Dimension (in)											Weight (lbs)
		Closed Overall Length	Exterior Side Width	Jaw Width	Extended Overall Length	Body Height	Base Width	Base to Cylinder Length	Base to Top of Jaw Height	Interior Slide Height	Jaw Clearance	Jaw Opening	
BV859A	5	18.78	2.75	8.00	26.78	5.94	9.66	15.58	7.94	2.50	3.50	8.00	70

## SADDLES



Saddle Type	Model Number	For use with Cylinder Capacity (ton)	Dimensions (in)			
			A	B	C	D
Grooved	SD05	5	0.98	0.24	0.67	0.81
	SD10	10	1.38		0.87	1.06
	SD15	15	1.50	0.28	0.87	1.18
	SD25	25	1.97		1.42	1.14
Tilt	SDT05	5	0.98	0.67	0.67	1.22
	SDT10	10	1.38	0.63	0.87	1.50
	SDT15	15	1.5	0.74	0.87	1.57
	SDT25	25	1.97	0.73	1.4	1.6
	SDT55	55	2.76	1.29	2.8	-
Threaded	HTD10	10	1 1/4"-11.5NPTF	0.95	1"-8UNC	1.77

## CLEVIS EYES



Clevis Type	For use with Cylinder Capacity (tons)	Model Number	Dimensions (in)						
			A	B	C	D	E	F	G
Plunger	5	CEP05	3/4"-16UNF	1.13	2.25	0.63	0.62	0.56	-
	10	CEP10	1"-8UNC	1.69	3.31	0.88	0.75	1.00	-
	15	CEP15		2.25	3.81	1.25	0.87	1.50	-
	25	CEP25	1 1/2"-16	2.25	3.81	1.25	0.87	1.50	-
Base	5	CEB05	1.52	1.75	2.13	0.63	0.26	1.13	-
	10	CEB10	2.28	2.50	2.87	0.88	1.69	0.32	-
	15	CEB15	2.77	3.00	2.87	0.88	1.69	0.38	-
	25	CEB25	3.40	3.75	3.37	1.25	2.25	0.56	-
Plunger & Base	9	CED09	1	1	1-11/16"-18	0.75	1.31	0.94	3/4"-16
	16	CED16	1.25	1	2-3/16"-16	1	1.88	1.19	1 1/8"-12
	HP1006 only	CP10*	M30x2	2.95	6.30	1.18	3.74	1.38	2.56

\* 2-pc set with an adapter

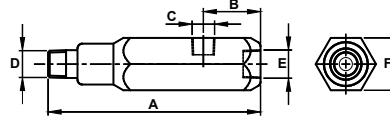


# HYDRAULIC PRESSURE GAUGES



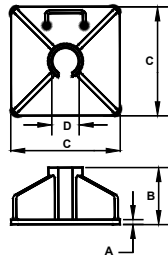
Gauge Type	Model Number	Face Diameter (in)	Thread (in)	Pressure Range		Graduation			
				(psi)	(bar)	Major Graduation (psi)	Minor Graduation (psi)	Major Graduation (bar)	Minor Graduation (bar)
Dry	GD2514	2.50	1/4"-18NPTF	0-10,000	0-700	1,000	100	100	10
	GD4014	4.00				2,000	200		
Wet	GW2514	2.50				1,000	100		
	GW4014	4.00				2,000	200		

## GAUGE ADAPTER



Model Number	Dimensions (in)					
	A	B	C	D	E	F
CF3814	5.12	1.38	1/4"-18NPTF	3/8"-18NPTF	3/8"-18NPTF	1.25

## BASES



For use with Cylinder Capacity (tons)	Model Number	Dimensions (in)			
		A	B	C	D
5	CB05	0.32	4.65	7.87	1.54
10	CB10	0.39	4.72	9.06	2.28
15	CB15	0.47	4.80	10.00	2.76
25	CB25	0.63	4.96	11.02	3.41

## PLATES FOR ALUMINUM CYLINDERS



For use with Cylinder Capacity (tons)	Model Number	Dimensions (in)		
		Length	Width	Thickness
30	Z030	6.00	6.00	0.50
50	Z050	7.50	7.50	0.50

## HYDRAULIC HOSES



Hose I.D. (in)	Model Number	Hose End Fittings	Operating Pressure (psi)	Hose Length (ft)	Weight (lbs)
1/4"	CS1414	1/4"-18NPTF	10,000	6	2.5
	CS3814	3/8"-18NPTF		6	3.0
	CS3814A			2	2.0
	CS3814B			3	2.2
	CS3814C			10	5.0
CS3814D	20			10.5	
3/8"	CS1438	1/4"-18NPTF		6	3.2
	CS3838	3/8"-18NPTF		6	3.5
	CS3838C			10	6.5
	CS3838D			20	13.5

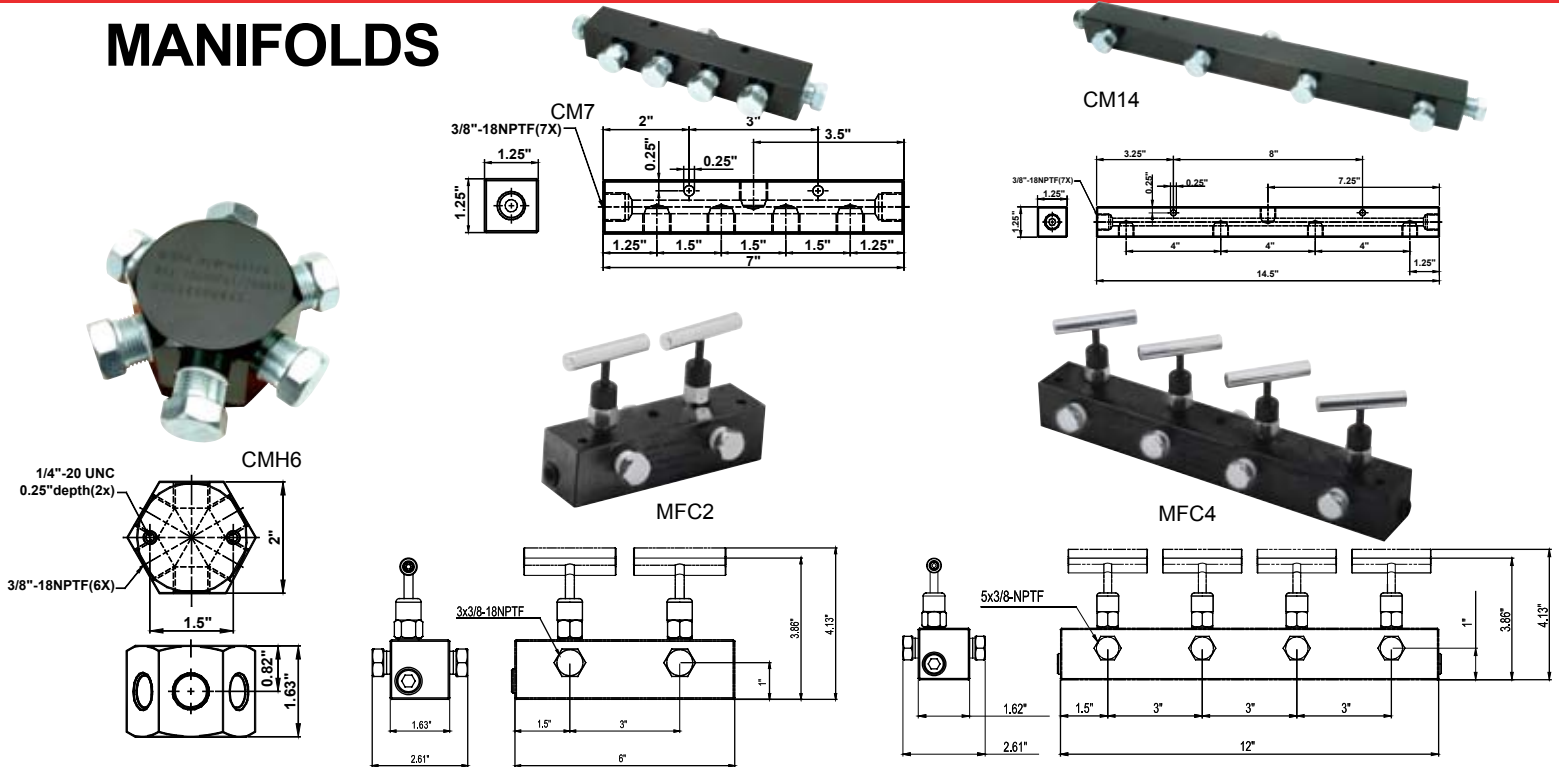
## HYDRAULIC OIL



Volume (gal)	Model Number	Viscosity Index (min)	Viscosity @ 100°F (S.U.S.)	Viscosity @ 210°F (S.U.S.)	ASTM Grade	Flash Point (°F)	Pour Point (°F)	API Gravity
1	F01	144	234	53	215	403	-33	30.8



## MANIFOLDS



Manifold Type	Model Number	Number of Ports	Port Size	Mounting Hole
6-Port Hexagon Manifold	CMH6	6	3/8"-18NPTF	1/4"-20UNC
7" Long Manifold	CM7	7		
14" Long Manifold	CM14	7		
Manifold with Two Needle Valves	MFC2	3		4.4
Manifold with Four Needle Valves	MFC4	5		10.1

## PRESSURE SWITCH

- Automatically shuts off electric pump when predetermined system pressure is reached

Model Number	Adjustable Pressure Range	Electrical Rating	Port Size	Weight (lbs)
CVS1	1,000~10,150 psi	15 amp @ 250V max	1/4"-18NPTF	1.32



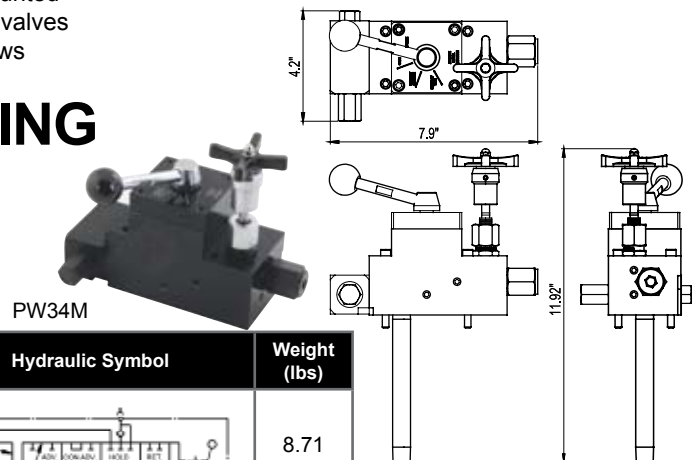
## PUMP MOUNTED MANIFOLD BLOCK



- Converts BVA pumps with pump mounted valves for use with remote mounted valves
- Comes with 4 pieces mounting screws

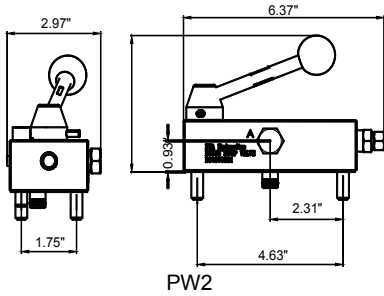
## PRESSURE COMPENSATING FLOW CONTROL VALVE

- Primarily used in material compression and tensile testing such as soil, rock, concrete, asphalt, and others

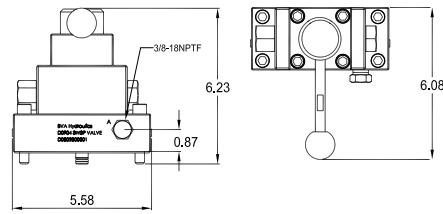


Model Number	Valve Operation	Valve Type	Use with Cylinder	Hydraulic Symbol	Weight (lbs)
PW34M	Manual	3-way 4-position, Tandem Center	Single Acting		8.71

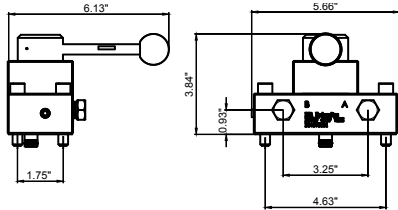
# PUMP MOUNTED VALVES



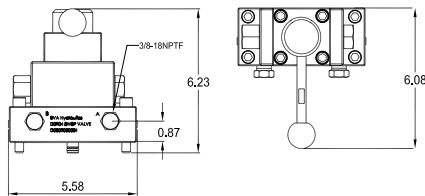
PW2



PW33L



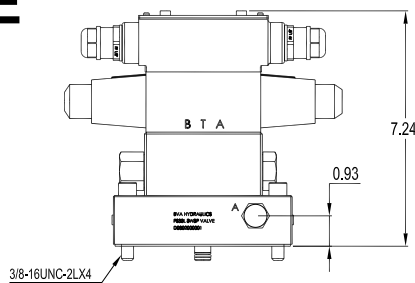
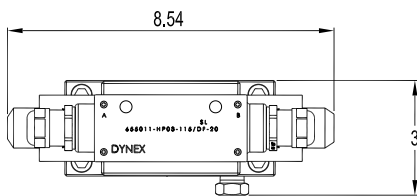
PW3 & PW4



PW43L

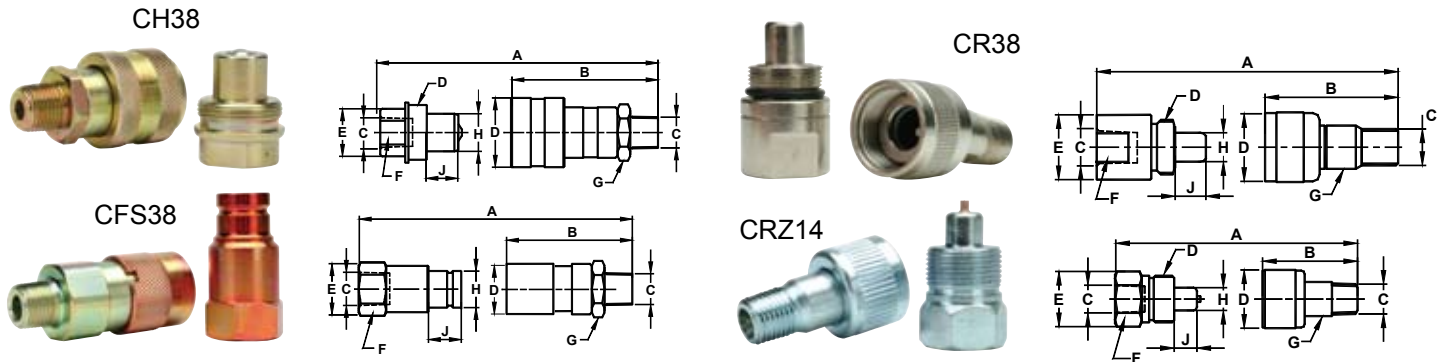
Valve Operation	Valve Type	Use with Cylinder	Model Number	Hydraulic Symbol	Schematic Flow path			Weight (lbs)
Manual	3-way, 2-position	Single Acting	PW2				-	4
	3-way, 3-position, Tandem Center		PW3					4
	4-way, 3-position, Tandem Center	Double Acting	PW4					3
	3-way, 3-position, Tandem Center Locking	Single Acting	PW33L					5.95
	4-way, 3-position, Tandem Center, Locking	Double Acting	PW43L					5.95

# SOLENOID VALVE



Use With Cylinder	Model Number	Valve Type	Valve Function	Hydraulic Symbol	Schematic Flow path			Weight (lbs)
Single Acting	PS33L	Solenoid 115VAC	Advance/ Hold/ Return					7.0

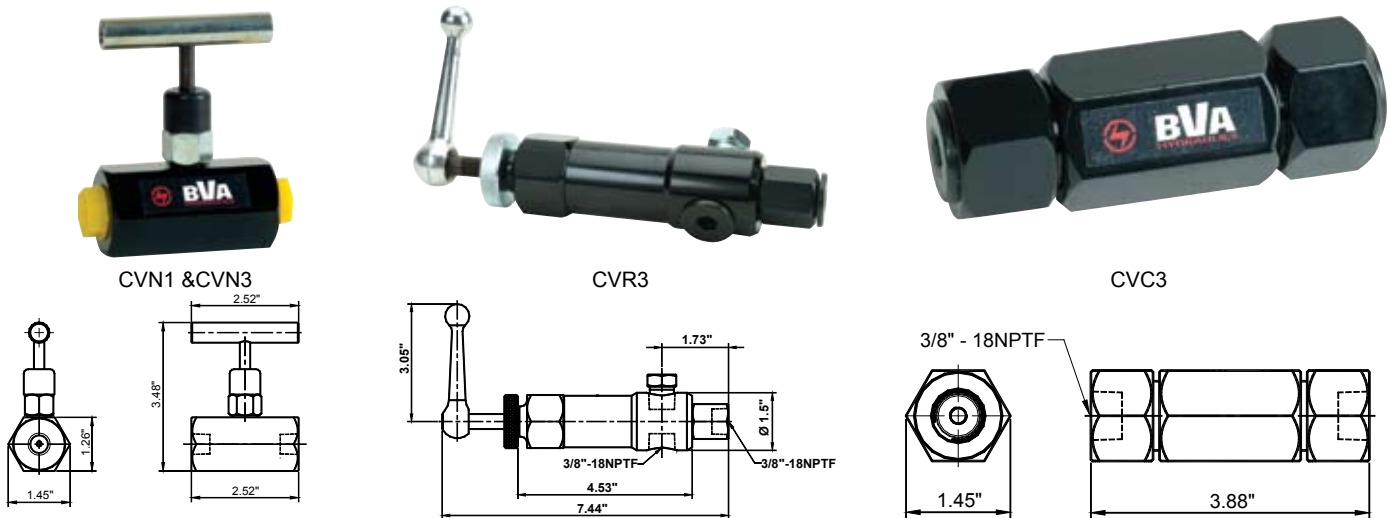
## HYDRAULIC COUPLERS



Coupler Type	Model Number			Dimensions (in)								
	Complete Set	Male Half	Female Half	A*	B	C	D	E	F	G	H	J
High-Flow Coupler	CH38	CH38M	CH38F	3.35	2.84	3/8"-18NPTF	1-3/16"-16	1.10	0.94	1.00	0.75	0.63
Flush-Face Coupler	CFS38	CFS38M	CFS38F	4.36	2.85	3/8"-18NPTF	1.19	1.21	1.06	1.12	0.79	0.63
Regular-Flow Coupler	CR38	CR38M	CR38F	3.15	2.20	3/8"-18NPTF	15/16"-20	1.04	0.94	0.73	0.50	0.53
Zinc Coupler	CRZ14	CRZ14M	CRZ14F	2.42	1.67	1/4"-18NPTF	13/16"-20	0.95	0.83	0.58	0.39	0.35

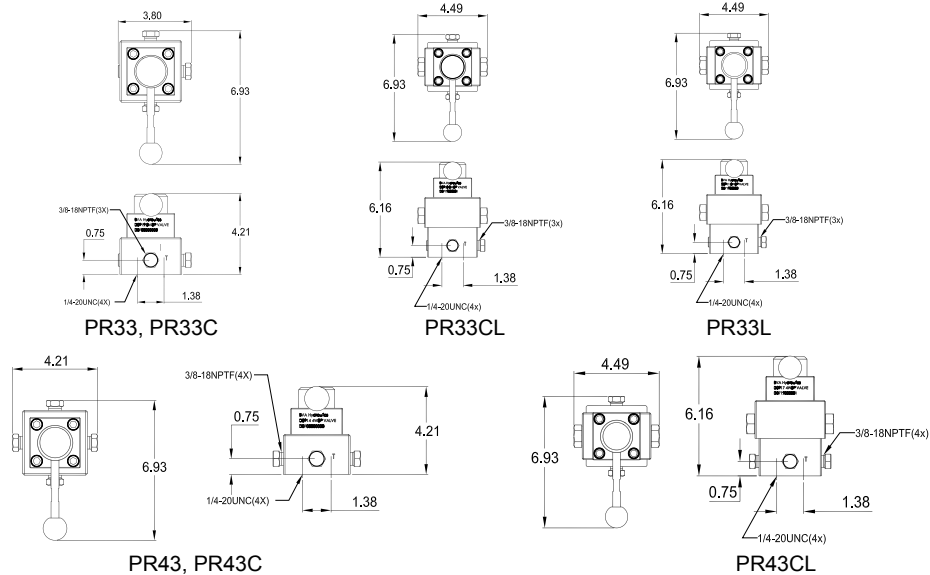
\* Value A is total length when male and female couplers are connected.

## FLOW CONTROL VALVES




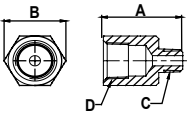

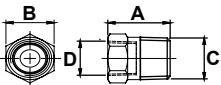

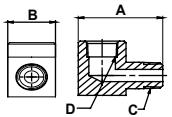

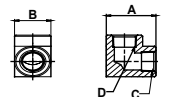

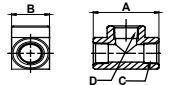

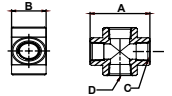

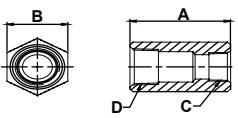

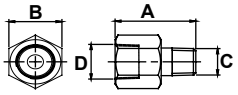

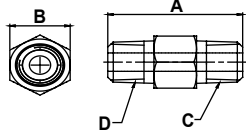
Valve Type	Model Number	Ports	Application	Hydraulic Symbol
Needle Valve	CVN1	1/4"-18NPTF	Controls cylinder speed and acts as temporary shut-off valve for load holding	
	CVN3	3/8"-18NPTF		
Check Valve	CVC3	3/8"-18NPTF	Allows flow in one direction only	
Pressure Relief Valve	CVR3	3/8"-18NPTF	Controls pressure developed by the pump in hydraulic loop. By-pass occurs when pre-set pressure is reached. Turns clockwise to increase pressure, counter clockwise to decrease	

# REMOTE MOUNTED DIRECTIONAL CONTROL VALVES



Valve Operation	Valve Type	Use With Cylinder	Model Number	Hydraulic Symbol	Schematic Flow path			Weight (lbs)
Manual	3-way, 3 position, Tandem center	Single Acting	PR33					3.53
	3-way, 3 position, Closed center		PR33C					3.53
	3-way, 3 position, Tandem center, Locking		PR33L					5.73
	3-way, 3 position, Closed center, Locking		PR33CL					5.73
	4-Way, 3 position, Tandem center	Double Acting	PR43					3.53
	4-Way, 3 position, Tandem center, Locking		PR43L					5.73
	4-Way, 3 position, Closed center		PR43C					3.53
	4-way, 3 position, Tandem, Closed center, Locking		PR43CL					5.73

## FITTINGS

Fitting Type		Model Number	Dimension				
			A (in)	B (in)	C	D	
<b>Adaptor</b>							
	Adaptor 1/2"-14 Female 3/8"-18 Male - NPTF	FT108	1.69	1.14	Female 1/2"-14NPTF	Male 3/8"-18NPTF	
	Adaptor 1/2"-14 Female 1/4"-18 Male - NPTF	FT118	1.69	1.14	Male 1/4"-18NPTF	Female 1/2"-14NPTF	
<b>Bushings</b>							
	Bushing	CB1438	0.87	0.67	Male 3/8"-18NPTF	Female 1/4"-18NPTF	
	Bushing	CB1412	1.10	0.87	Male 1/2"-18NPTF	Female 1/4"-18NPTF	
<b>Connectors</b>							
	2 way 90° Connector Street Elbow, 3/8" to 3/8"-NPTF	FT101	1.81	1.02	Female 3/8"-18NPTF	Male 3/8"-18NPTF	
	2 way 90° Connector Elbow, 3/8" to 3/8" - NPTF	FT107	1.40	1.02	Female 3/8"-18NPTF	Female 3/8"-18NPTF	
	3 Way Connector 3/8" to 3/8" - NPTF	FT106	1.77	1.02	Female 3/8"-18NPTF	Female 3/8"-18NPTF	
	4 Way Connector Cross, 3/8" to 3/8" - NPTF	FT105	1.77	1.02	Female 3/8"-18NPTF	Female 3/8"-18NPTF	
<b>Couplings</b>							
	Coupling Reducing Connector, 3/8" to 1/4"-NPTF	FT102	1.18	1.02	Female 1/4"-18NPTF	Female 3/8"-18NPTF	
	Coupling Reducing Connector, 1/2" to 3/8" - NPTF	FT112	1.89	1.14	Female 1/2"-14NPTF	Female 3/8"-18NPTF	
	Coupling 3/8" to 3/8" - NPTF	FT103	1.18	1.02	Female 3/8"-18NPTF	Female 3/8"-18NPTF	
<b>Fitting</b>							
	Fitting	CA3814	1.38	0.91	Male 1/4"-18NPTF	Female 3/8"-18NPTF	
<b>Male Connectors</b>							
	Male Connector Hex Nipple, 1/4" to 1/4" - NPTF	FT104	1.50	0.67	Male 1/4"-18NPTF	Male 1/4"-18NPTF	
	Male Connector Hex Nipple, 3/8" to 3/8" - NPTF	FT114	1.50	0.75	Male 3/8"-18NPTF	Male 3/8"-18NPTF	
	Male Connector Hex Nipple, 1/4" to 3/8" - NPTF	FT124	1.45	0.75	Male 1/4"-18NPTF	Male 3/8"-14NPTF	



# BVA CROSS REFERENCE CHART

Ton	BVA	ENERPAC	Power Team	Simplex
<b>Single Acting Cylinders</b>				
5	H0500	RC-50	NA	R50
	H0501	RC-51	C51C	R51
	H0503	RC-53	C53C	R53
	H0505	RC-55	C55C	R55
	H0507	RC-57	C57C	R57
	H0509	RC-59	C59C	R59
10	H1001	RC-101	C101C	R101
	H1002	RC-102	C102C	R102
	H1004	RC-104	C104C	R104
	H1006	RC-106	C106C	R106
	H1008	RC-108	C108C	R108
	H1010	RC-1010	C1010C	R1010
	H1012	RC-1012	C1012C	R1012
	H1014	RC-1014	C1014C	R1014
15	H1501	RC-151	C151C	NA
	H1502	RC-152	C152C	R152
	H1504	RC-154	C154C	R154
	H1506	RC-156	C156C	R156
	H1508	RC-158	C158C	NA
	H1510	RC-1510	C1510C	R1510
	H1512	RC-1512	C1512C	NA
	H1514	RC-1514	C1514C	R1514
25	H2501	RC-251	C251C	R251
	H2502	RC-252	C252C	R252
	H2504	RC-254	C254C	R254
	H2506	RC-256	C256C	R256
	H2508	RC-258	C258C	R258
	H2510	RC-2510	C2510C	R2510
	H2512	RC-2512	C2512C	R2512
	H2514	RC-2514	C2514C	R2514
30	H3008	RC-308	NA	R308
55	H5502	RC-502	C552C	R552
	H5504	RC-504	C554C	R554
	H5506	RC-506	C556C	R556
	H5513	RC-5013	C5513C	R5513
75	H7506	RC-756	C756C	R756
	H7513	RC-7513	C7513C	R7513
100	H10006	RC-1006	C1006C	R1006
	H10010	RC-10010	C10010C	R10010

Ton	BVA	ENERPAC	Power Team	Simplex
<b>Threaded Cylinders</b>				
10	HT1006	NA	C106CBT	NA
	HT1010	NA	C1010CBT	NA
<b>Aluminum Cylinders</b>				
30	HU3002	RAC-302	RA302	NA
	HU3004	RAC-304	RA304	NA
	HU3006	RAC-306	RA306	RAS306B
	HU5002	RAC-502	RA552	RAS502A
50	HU5004	RAC-504	RA554	NA
	HU5006	RAC-506	RA556	RAS508A
	HU5010	RAC-5010	RA5510	NA
75	HU7504	NA	NA	NA
	HU7506	NA	NA	NA
100	HU10002	RAC-1002	RA1002	RAS1002A
	HU10006	RAC-1006	RA1006	RAS1008A
	HU10010	RAC-10010	NA	NA
<b>Low Profile Cylinders</b>				
10	HL1001	RCS-101	RSS101	RLS101
20	HL2002	RCS-201	RSS202	RLS201
30	HL3002	RCS-302	RSS302	RLS302
50	HL5002	RCS-502	RSS502	RLS502
100	HL10002	RCS-1002	RSS1002	RLS1002
<b>Flat Body Cylinders</b>				
5	HF0503	RSM-50	RLS50	NA
	HF0503B kit	NA	NA	NA
10	HF1005	RSM-100	RLS100	RFS10
	HF1005B kit	NA	NA	NA
20	HF2005	RSM-200	RLS200	RFS20
	HF2005B kit	NA	NA	NA
30	HF3005	RSM-300	RLS300	RFS30
	HF3005B kit	NA	NA	NA
50	HF5006	RSM-500	RLS500S	RFS50
75	HF7506	RSM-750	RLS750S	RFS75
100	HF10006	RSM-1000	RLS1000S	RFS100
150	HF15006	RSM-1500	RLS1500S	RFS150
<b>Pull Cylinders</b>				
2	HP0205	BRC-25	RP25	RP25
5	HP0505	BRC-46	RP55	RP55
10	HP1006	BRC-106	NA	NA

Ton	BVA	ENERPAC	Power Team	Simplex
<b>Hollow Hole Cylinders</b>				
12	HC1201T	RCH-120	RH120	RC120
	HC1202T	RCH-121	RH121	RC121
	HC1202XT	RCH-1211	RH121T	RC1211
	HC1203XT	RCH-123	RH123	RC123
20	HC2002T	RCH-202	RH202	RC202
	HC2006T	RCH-206	RH206	RC206
30	HC3002T	RCH-302	RH302	RC302
	HC3006T	RCH-306	RH306	RC306
60	HC6003T	RCH-603	RH603	RC603
	HC6006T	RCH-606	RH606	RC606
100	HC10003T	RCH-1003	RH1003	RC1003
<b>Lock Nut Cylinders</b>				
55	HLN5502	CLL-502	R552L	RLN502
	HLN5504	CLL-504	-	NA
	HLN5506	CLL-506	R556L	RLN506
	HLN5508	CLL-508	-	NA
	HLN5510	CLL-5010	R5510L	RLN5010
	HLN5512	CLL-5012	-	NA
100	HLN10002	CLL-1002	R1002L	RLN1002
	HLN10004	CLL-1004	-	NA
	HLN10006	CLL-1006	R1006L	RLN1006
	HLN10008	CLL-1008	-	NA
	HLN10010	CLL-10010	R10010L	RLN10010
	HLN10012	CLL-10012	-	NA
<b>Double Acting Cylinders</b>				
10	HD1010	RR-1010	RD106	RDA1010
	HD1012	RR-1012	RD1010	NA
30	HD3008	RR-308	RD256	RDA308
	HD3014	RR-3014	RD2514	RDA3014
55	HD5506	RR-506	RD556	RDA556
	HD5513	RR-5013	RD5513	RDA5512
	HD5520	RR-5020	RD5518	RDA5523
75	HD7506	RR-756	RD8013	NA
	HD7513	RR-7513	-	NA
100	HD10006	RR-1006	RD1006	RDA1006
	HD10013	RR-10013	RD10013	RDA10012

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For comparison purposes only. Products are not identical.

# BVA CROSS REFERENCE CHART

BVA	ENERPAC	Power Team	Simplex
<b>Hand Pumps</b>			
P601S	P-39	P23	P41
P1201S	P-391	NA	NA
P350	P-142	P19	P42
P1000	P-202 P-392	P59	P42 P82
P2001	P-84 P-80	P157	P140 P82
P2301	P-80	P159	P82
P4301	P-801	P300	P230
P8701	P-462	P460	P461
P2301M	P-84	P157D	P230D
P8701M	P-464	P460D	P461D
P240L	P-18	P23	P20
<b>Air Pumps</b>			
PA600	PA-133	PA9	-
PA600H	NA	PA9H	-
PA1500	PATG-1102N	PA6	PA91
PA1500L	PARG-1102N	PA6R	-
PA1500M	NA	PA6DM	PA91D
PA2000	PATG-1102N	NA	-
PA3801	PATG-1105N	PA6	PA91-1 PA95-1
PA3801L	NA	NA	PA91-1R
PARD1701	NA	PA172	NA
PARD1703	NA	PA174	NA
<b>Electric Pumps</b>			
PE0501	PEM-1301B PUJ-1401B	PE304	PEM1041 PEM2031 PEM2041
PE1002	PEM2042	PE304-2 PE303-2	PEM3032 PEM3042
PE1503	GPEM-3210B	Custom Order PE55 Series	PEM4032 PEM4042
PE1505	GPEM-3320B	Custom Order PE55 Series	PEM4045
PE3005	GPEM-5320G	Custom Order PE120 Series	PEM5035 PEM5045
<b>Electric Pumps with Pendant Switch</b>			
PEW0501	PUJ-1401B PUD-1301B	PE183 PE174	PPM1041 PPM2031 PPM2041
PEW1002	PUJ-3309B PUJ-3409B	PE304R PE184-2	PPM3032 PPM3042
PEW1503	GPEM-3310B	PE462 PE464	PPM4032 PPM4042
PEW3005	GPEM-5320G	Custom Order PE120 Series	PPM5035 PPM5045
<b>Electric Pumps with Solenoid Valve (Sing-Acting)</b>			
PES0501T	-	PE172S	PES2031
PES0502T	PER-1301B	-	PES2032
PES1002T	-	PE302S-2	PES3032
PES1503T	ZU4308SB	PE462S	PES4032
PES1505T	-	-	PES4035

BVA	ENERPAC	Power Team	Simplex
<b>Electric Pumps with Solenoid Valve (Double-Acting)</b>			
PESM0501T	-	-	PES2041
PESM0502T	PER-1401B	-	PES2042
PESM1002T	-	-	PES3042
PESM1503T	ZU4408SB	PE464S	PES4042
PESM1505T	ZU4420SB	PED254S	PES4065
<b>Rotary Air Pumps (Single-Acting)</b>			
PARD1701	ZA4204MX	-	-
PARD1703	ZA4208MX	-	-
PAR1703	-	-	PAM4032
PARD4001	-	-	-
PARD4003	-	PA464RA	-
PAR4003	-	PA554	-
<b>Rotary Air Pumps (Double-Acting)</b>			
PARM1703	ZA4410MX	-	PAM4032
PARM4003	-	PA554	-
<b>Gas Pump</b>			
PG5505	PGM-5320R	PG1203	PGM4045
<b>Control Valves</b>			
PW33L	VM33L	9520	VPL3
PW43L	VM43L	9506	VPL4
PR33	VC-3	-	VR3
PR33C	VC-15	-	VR3CC
PR33L	VC-3L	-	-
PR33CL	VC-15L	-	-
PR43	VC-4	9509	VR4
PR43C	VC-20	9508	VR4CC
PR43CL	VC-20L	-	-
<b>Shop Presses</b>			
IMP2506	IPH-2531	SPM2514	IMS256
IAP2506	IPA-2520	SPA2514	IAS256
IAP5506	IPA-5021	SPA556	-
IEP5506	IPE-5005	SPE556	IES556
IMP5506	IPH-5031	SPM556	IMS556
IAP5513	IPA-5073	-	-
IEP5513	IPE-5060	SPE5513	IES5513
IEP10010	IPE-10010	SPE10010	IES10010
<b>Fittings</b>			
FT101	FZ-1616	9681	F9
FT102	FZ-1615	9685	-
FT112	FZ-1625	-	-
FT103	FZ-1614	9680	F13
FT104	FZ-1608	9684	-
FT114	FZ-1617	9683	F1
FT105	FZ-1613	9698	F15
FT106	FZ-1612	9695	F11
FT107	FZ-1610	9686	F7

BVA	ENERPAC	Power Team	Simplex
FT108	FZ-1634	-	-
FT118	FZ-1633	-	-
<b>Spreaders</b>			
SR05	NA	HS2000	S2000
SR10	WR-5	NA	NA
<b>Hoses</b>			
CS1414	H-9206Q	-	-
CS3814	H-9206Q	9756	H6
CS3814A	H-9202	-	-
CS3814B	H-9203	9755	H3
CS3814C	H-9210	9758	H10
CS3814D	H-9220	9760	H20
CS1438	-	-	-
CS3838	H-9306	9776	HD6
CS3838C	H-9310	9777	HD10
CS3838D	H-9320	9778	HD20
<b>Hydraulic Couplers</b>			
CH38	C-604	9795	C209
CFS38	F-604	9794	C509
CR38	A-604	-	-
CRZ14	A-630	-	CT200
<b>Gauges</b>			
GD2514	-	9041	-
GD4014	-	9040	-
GW2514	G2535L	9051	G5
GW4014	G4088L	9052	G7
<b>Clevis Eyes</b>			
CEP05	REP-5	350095	BCR5
CEP10	REP-10	350094	BCR10
CEP15	REP-10	350094	BCR15
CEP25	REP-25	420059	BCR25
CEB5	REB-5	350096	NA
CEB10	REB-10	350097	BC10
CEB15	REB-15	350098	BC15
CEB25	REB-25	420061	BC25
<b>Saddles</b>			
SD05	A-53G	25746	NA
SD10	A-102G	31772	MK10
SD15	A-152G	31772	-
SD25	A-252G	31776	85525
SDT10	CAT-10	-	ATS10
HTD10	A-102F	202179	-

To view complete cross over list go to [www.bvahydraulics.com](http://www.bvahydraulics.com)

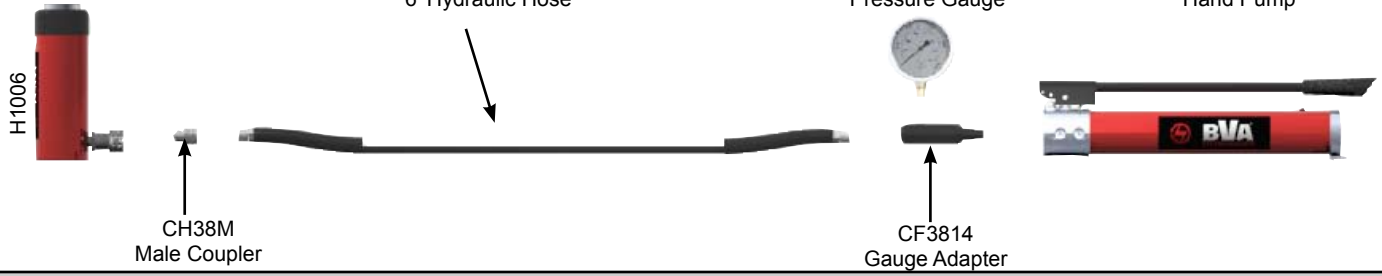
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# BASIC SYSTEM SET-UPS

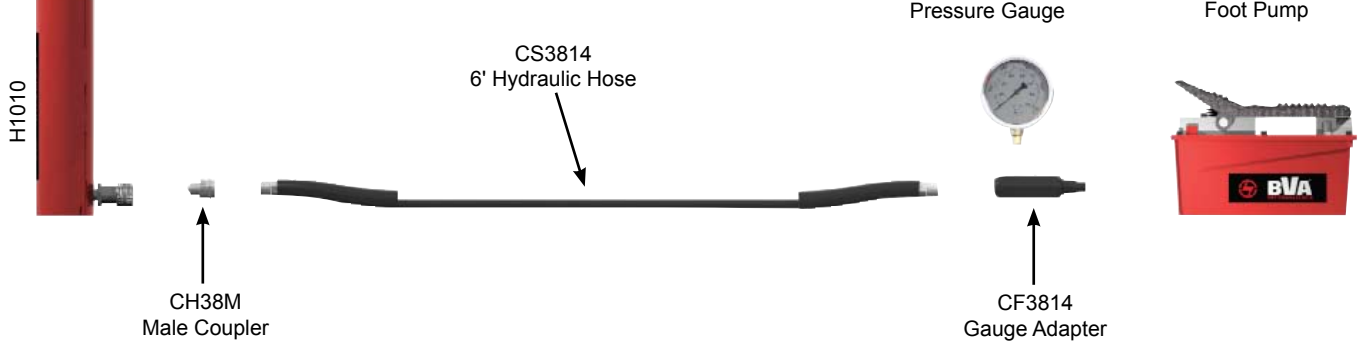
## Single Push Application

Single Acting Cylinder

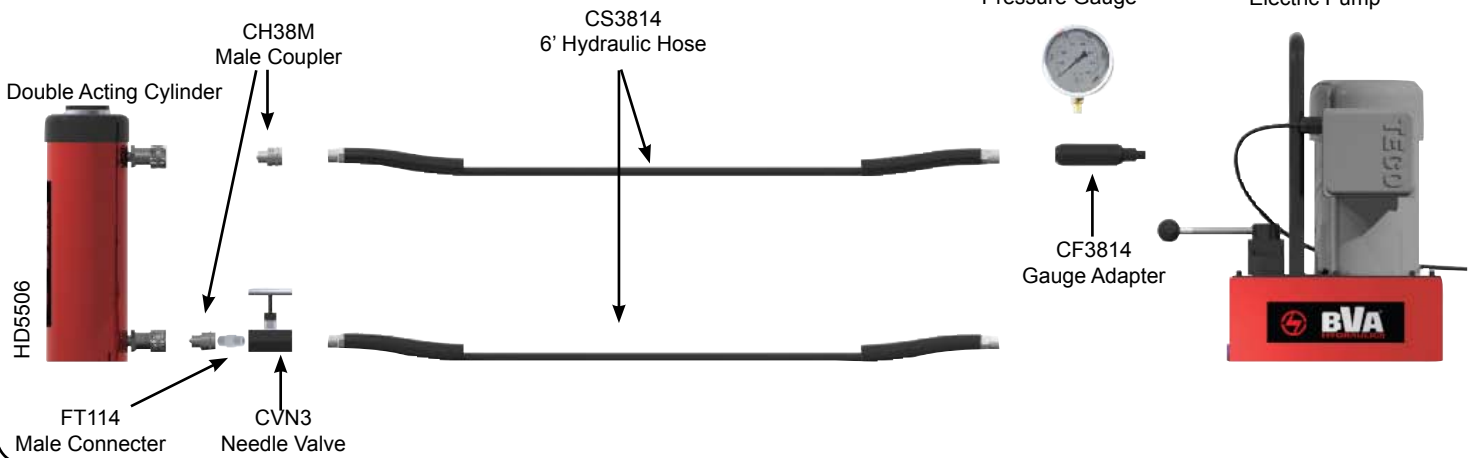


## Single Acting Cylinder with longer strokes

Single Acting Cylinder



## Double Acting Cylinder Set-up



### Cylinder Plunger Speed

Formula  $V = A / Q$

$$\text{Cylinder Plunger Speed (sec/in)} = \frac{\text{Cylinder Effective Area (in}^2\text{)}}{\text{Oil Output Flow Rate (in}^3\text{/min)}} \times \frac{60 \text{ (sec)}}{1 \text{ (min)}}$$

### Force

Formula  $F = P \times A$

$$\text{Force (lbs)} = \text{Hydraulic Working Pressure (lb/in}^2\text{)} \times \text{Cylinder Effective Area (in}^2\text{)}$$

### Cylinder Oil Capacity

$$\text{Oil Capacity (in}^3\text{)} = \text{Cylinder Effective Area (in}^2\text{)} \times \text{Cylinder Stroke (in)}$$

### Cylinder Effective Area

$$\text{Cylinder Effective Area} = \pi \times \frac{(\text{Cylinder Bore Diameter})^2}{4}$$

where,  $\pi = 3.14159$

### Key to measurements

Weight:		Other measurements:	
1 pound (lb.)	=0.4536 kg	1 in	=25.4 mm
1 kg	=2.205 lbs	1mm	=0.039 in
1 ton (short, US)	=2000 lbs	1 in <sup>2</sup>	=6.452 cm <sup>2</sup>
1 ton (metric)	=2205 lbs	1 cm <sup>2</sup>	=0.155 in <sup>2</sup>
Volume:		Pressure:	
1 in <sup>3</sup>	=16.387 cm <sup>3</sup>	1 psi (lb/in <sup>2</sup> )	=0.69 bar
1 cm <sup>3</sup>	=0.061 in <sup>3</sup>	1 bar	=14.5 psi
1 liter	=61.02 in <sup>3</sup>	1 kPa	=0.145 psi
	=0.264 gal (US)		
1 gal (US, liquid)	=3.785 liter	Temperature:	
		231 in <sup>3</sup>	0°F = (0°C x 1.8) + 32
		=3785 cm <sup>3</sup>	0°C = (0°F - 32) + 1.8



## CONFIDENCE BUILT ON QUALITY

### • ISO 9001

BVA products are manufactured through an International Quality Assurance System, ISO 9001 which involves consistent observation of administration, management, manufacturing, and production control. Under this system, the related operations are monitored on all aspects of the production of BVA products from the purchase order, the assembly line, to shipping the order from the distribution center.

### **BVA Products comply with the following industry standards**

### • ASME B30.1

The cylinders comply with load testing requirements and / or the safety factor for material yield strength, while still functioning properly and without oil leakage. (Except HPD and HLN series)

### • ANSI B40.1

Under ANSI standards, BVA pressure gauges meet criteria for grade A

### • SAE 100

BVA hydraulic hoses comply with the Material Handling Institute's specification of minimum life cycles and minimum burst pressure rating.



Kansas City, MO  
Sales, Marketing, Engineering, and Distribution

### **Limited Lifetime Warranty**

BVA Hydraulics warrants this product to be free from defects in material and workmanship for the life of the product. This warranty applies to the original purchaser (end user) only and is not transferable. Damaged components, including bent rams, dented or crushed cylinder walls, broken welds, couplers as well as worn out seals, O-rings and springs are the result of misuse, misapplication or a combination of both. As well, normal wear shall not constitute a defect and shall not be considered for warranty credit. We have complete confidence that the BVA Hydraulics product you purchase will meet or exceed your performance requirement. However, in the unlikely event that a BVA Hydraulics product fails due to material or workmanship defect you may contact SFA Companies for disposition. Except where such limitations and exclusions are specifically prohibited by law, the consumer's sole and exclusive remedy shall be the repair or replacement of the defective product. BVA Hydraulics shall not be liable for any consequential or incidental damage or loss whatsoever. Any and all expressed and implied warranties, including without limitation, any warranties of merchantability and fitness for a particular purpose, are limited to the original purchaser. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.



# Global Locations



## USA , Canada, Mexico , Central & South America

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