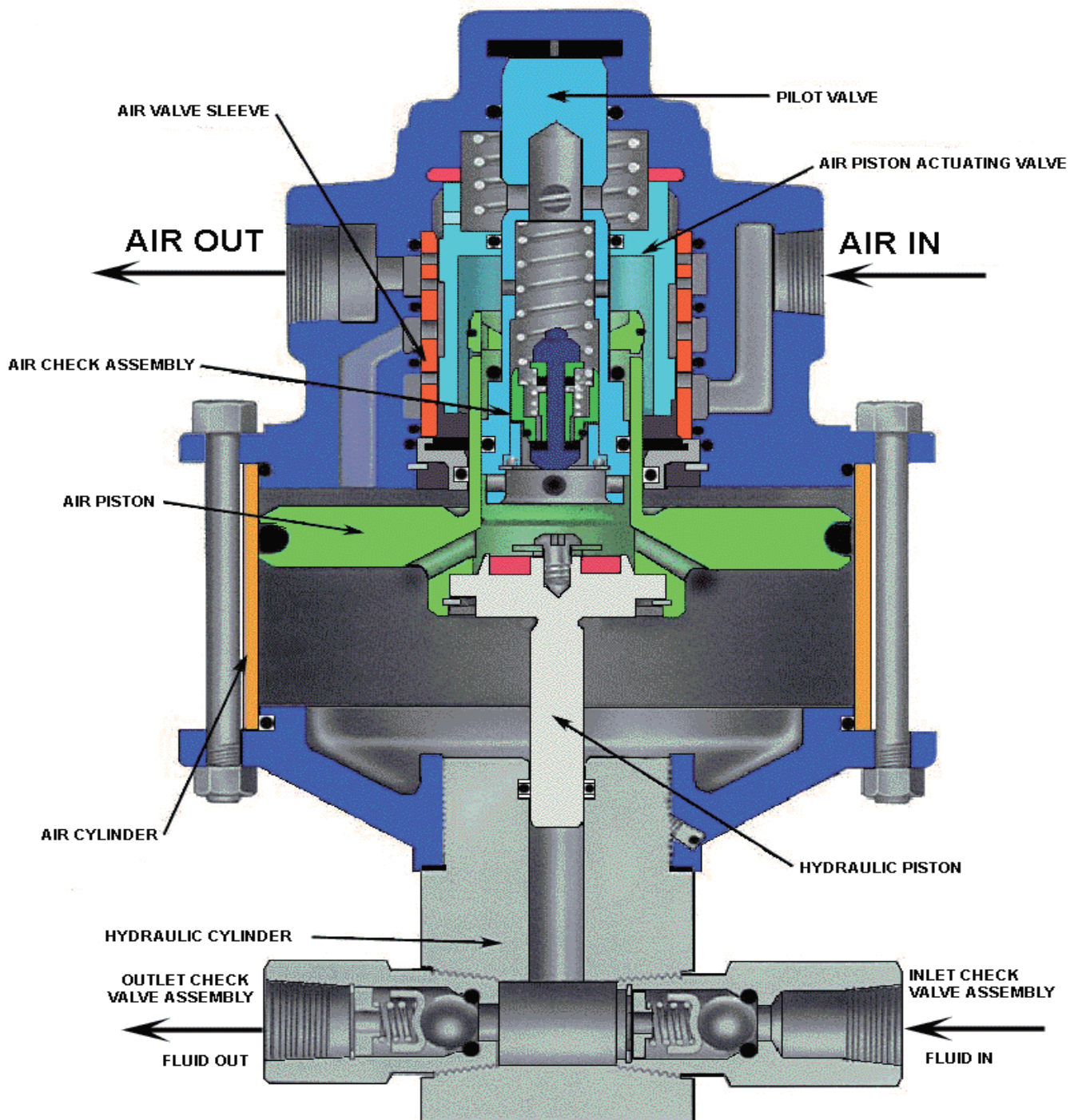
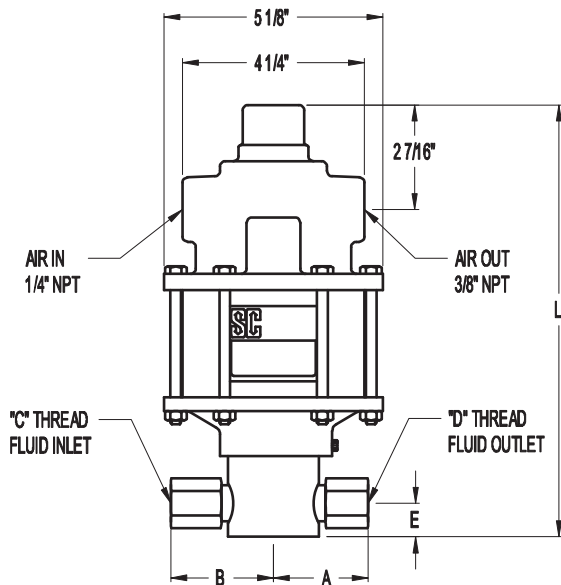


# Liquid Pump Cut-a-way



Manufactured in the United States

# 10-4 SERIES



10-4 Series pumps have a 4" diameter air piston and a 1 1/4" stroke. Nine models are available with pressures up to 22,000 psig.

When operating from 0 to rated hydraulic pressure, air consumption will be approximately 14 scfm of free air at 100 psi output. At lower air pressures and higher hydraulic pressures, air consumption will be reduced proportionately to flow rates indicated.

Mounting may be in any position, vertical preferred. When mounting in an inverted position, a drain cock should be provided to drain off any liquid that may accumulate in the pilot valve air chamber.

**Mounting Dimensions in Inches**

10-4 Series Model	L	A	B	NPT (Standard)		E	F
				C Thread	D Thread		
-003	11.375	2.438	3.000	1/2"	3/8"	.813	1.500
-005	11.188	2.438	3.000	1/2"	3/8"	.813	1.500
-010 thru -015	11.063	2.438	2.438	3/8"	3/8"	.813	1.500
-020 thru -030	10.063	2.438	2.438	3/8"	3/8"	.813	1.500
-050 thru -125	10.500	2.375	2.313	3/8"	3/8"	.813	1.500

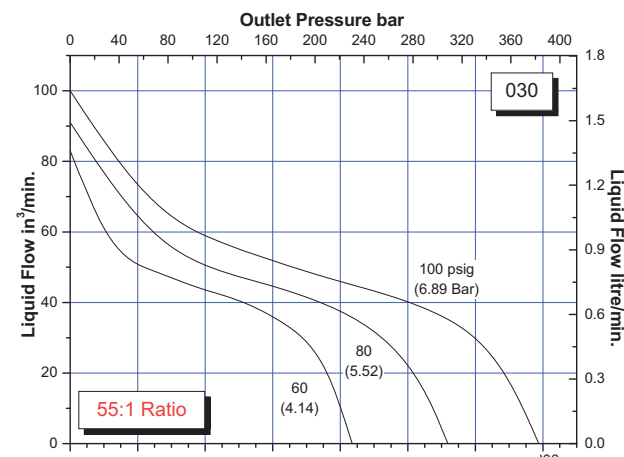
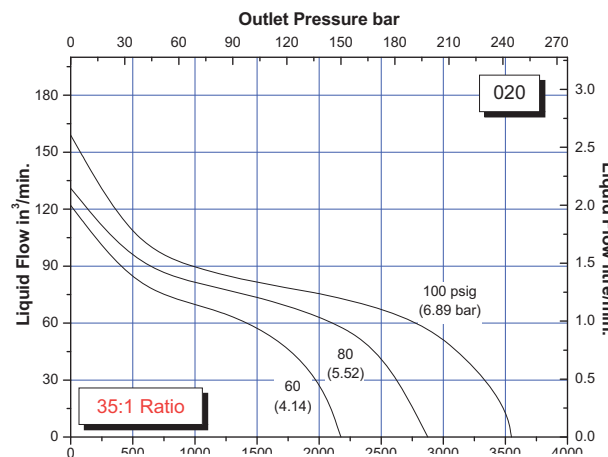
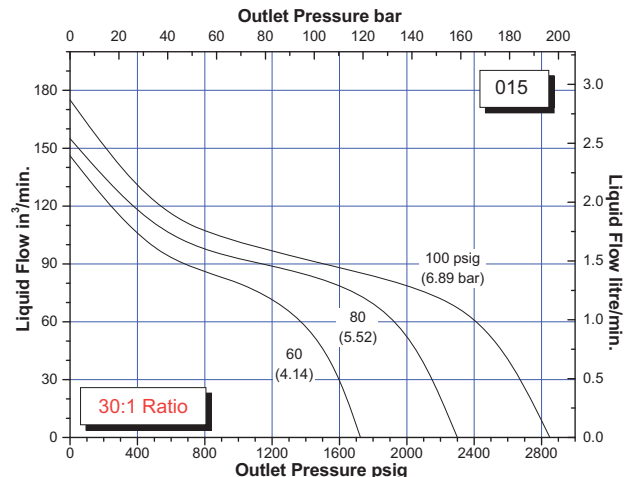
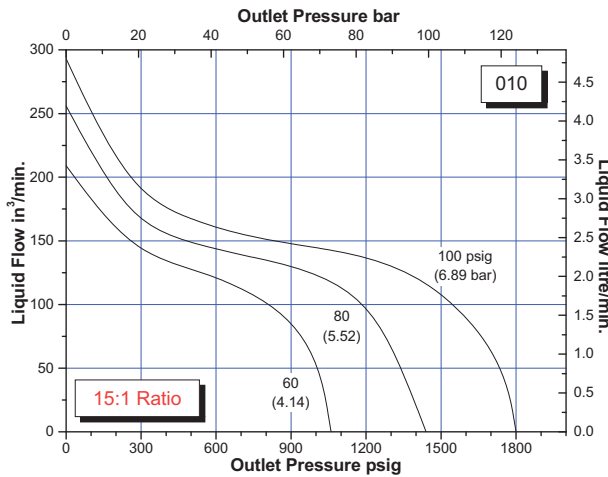
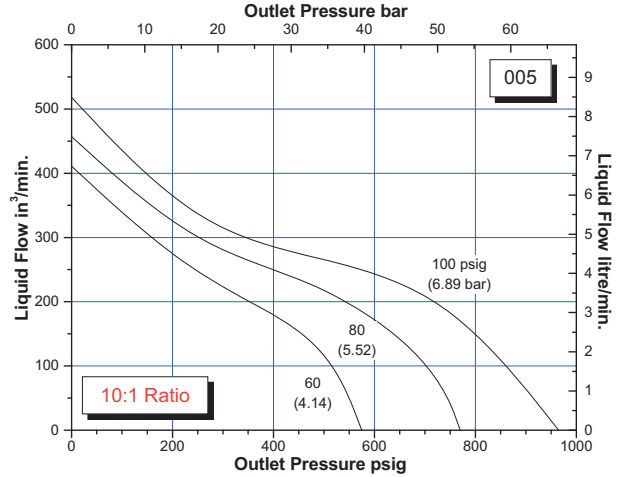
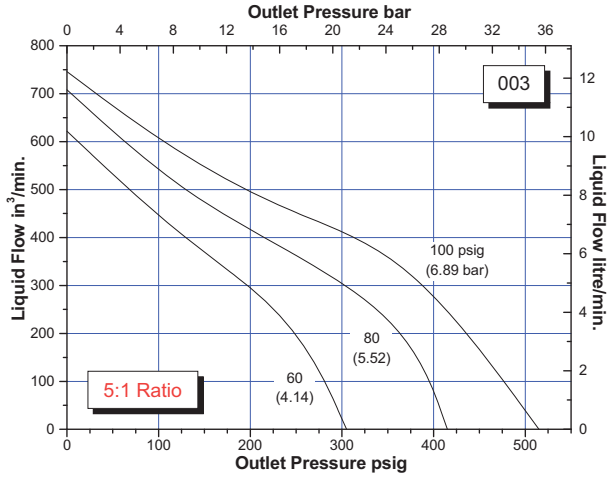
**Measurements & Approximate Air to Hydraulic Pressure Ratios – Static Conditions**

10-4 Series Model	Ratio	Hydraulic Piston Diameter (in)	Hydraulic Piston Area (in <sup>2</sup> )	Volume per Stroke (in <sup>3</sup> )	Air Pressure (PSI)									
					10	20	30	40	50	60	70	80	90	100
-003	5	1.6250	2.070	2.590	35	90	145	200	250	305	360	415	465	515
-005	10	1.1875	1.110	1.390	80	180	280	375	475	575	675	770	870	965
-010	15	0.8750	0.601	0.751	160	340	520	700	880	1060	1240	1440	1600	1800
-015	30	0.6875	0.371	0.464	250	550	850	1150	1425	1725	2000	2300	2575	2850
-020	35	0.6250	0.307	0.384	300	675	1050	1450	1800	2175	2525	2875	3225	3550
-030	55	0.5000	0.196	0.245	500	1040	1620	2200	2750	3340	3850	4475	5000	5550
-050	100	0.3750	0.110	0.138	950	1850	2900	3800	4850	5900	6875	7900	8900	9900
-080	140	0.3125	0.077	0.096	1300	2700	4150	5700	7100	8600	9900	11200	12600	14000
-125	220	0.2500	0.049	0.061	2100	4400	6750	8750	11250	13250	15250	17500	19750	22000

Manufactured in the United States

# 10-4 SERIES

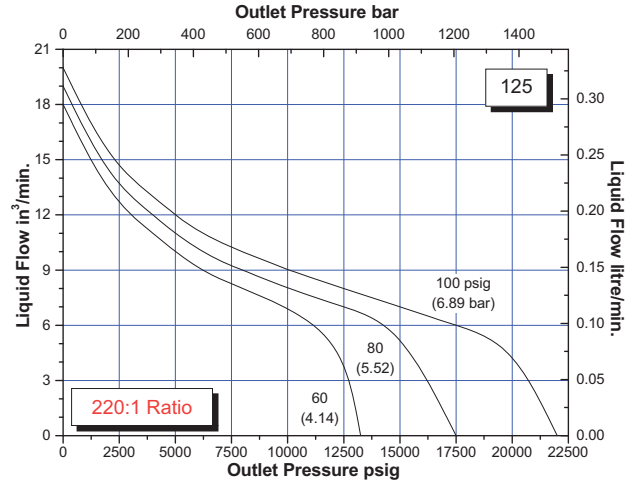
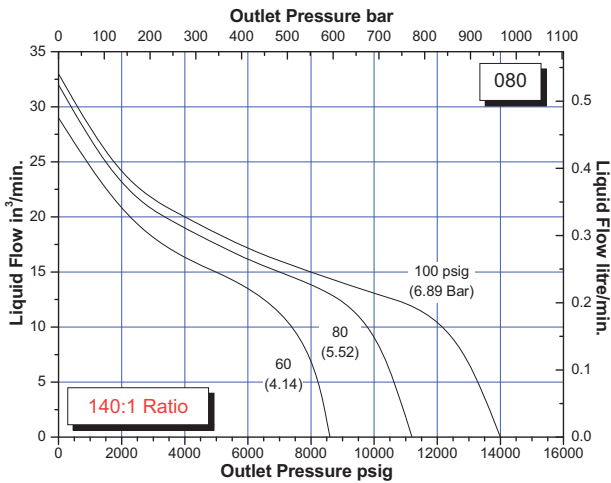
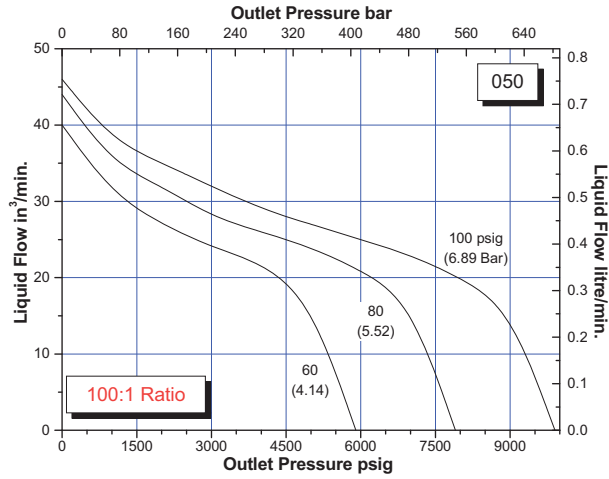
## APPROXIMATE RATE OF DISCHARGE



Manufactured in the United States

# 10-4 SERIES

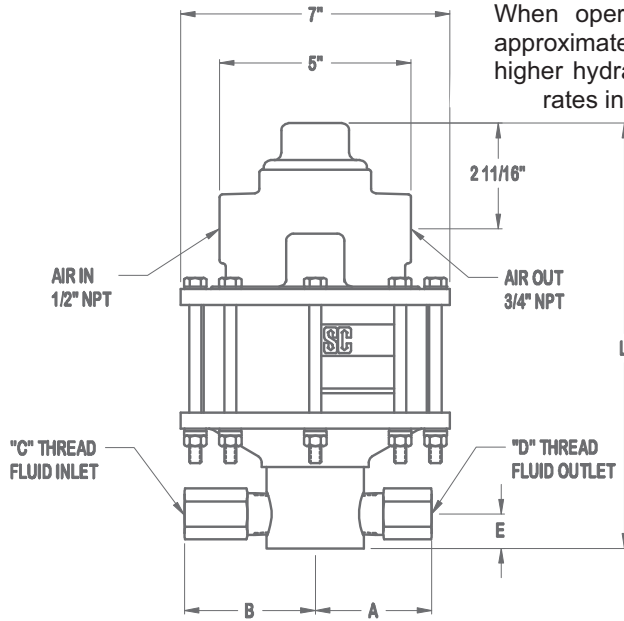
## APPROXIMATE RATE OF DISCHARGE



Manufactured in the United States

# 10-5 & 10-5L SERIES

10-5 & 10-5L Series pumps have a 5 1/2" diameter air piston and a 1 1/4" stroke. Sixteen models are available with pressures up to 55,000 psig.



When operating from 0 to rated hydraulic pressure, air consumption will be approximately 28 scfm of free air at 100 psi output. At lower air pressures and higher hydraulic pressures air consumption will be reduced proportionately to flow rates indicated.

Mounting may be in any position, vertical preferred. When mounting in an inverted position, a drain cock should be provided to drain off any liquid that may accumulate in the pilot valve air chamber.

The 10-5 series "Non lube" and 10-5L series "Lube" pumps are identical except the 10-5 series is pre-lubricated at factory and therefore does not require a lubricator in the air drive supply line. The 10-5L series "Lube" pump part number requires the addition of the letter "L" as a suffix to denote the pump requires a lubricator in the air drive supply line.

**Mounting Dimensions in Inches**

Pressure Ratio	10-5 & 10-5L Series Model	L	A	B	NPT/HF4 (Std)		SAE/HF4 (Optional)		E	F	G
					C Thread	D Thread	C Thread	D Thread			
5	-003	13.125	3.500	4.750	1"	1/2"	-	-10 SAE	1.125	2.375	3.125
10 thru 20	-005 thru -010	12.313	3.000	4.000	1"	1/2"	-	-10 SAE	1.000	1.750	2.500
25 thru 105	-015 thru -060	10.875	3.000	3.375	1/2"	1/2"	-10 SAE	-10 SAE	0.875	1.750	2.500
140 thru 440	-080 thru -250	11.250	2.500	2.313	3/8"	3/8"	-	9/16-18 *	0.875	1.750	2.500
555	-350	11.188	3.750	2.313	3/8"	9/16-18 *	-	-	.0875	1.750	2.500

\*Coned and Threaded High Pressure Connection for 1/4" O.D. Tubing

**Measurements & Approximate Air to Hydraulic Pressure Ratios – Static Conditions**

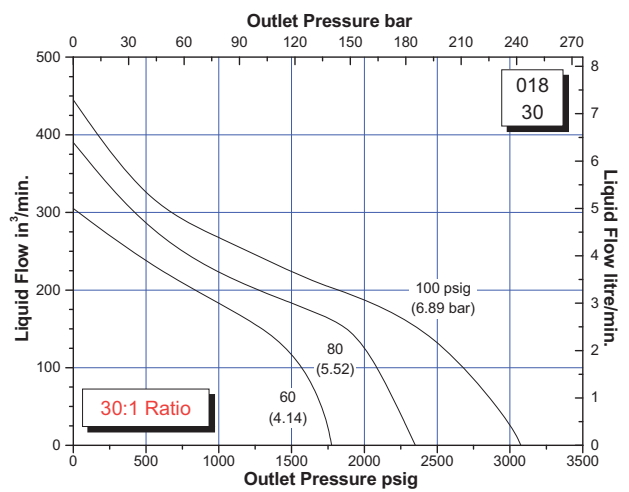
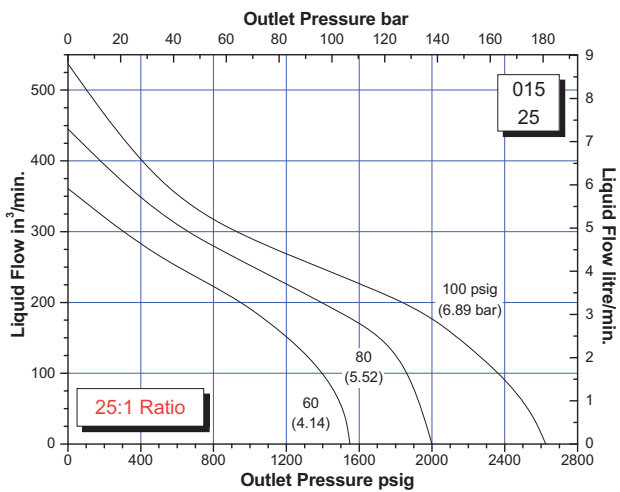
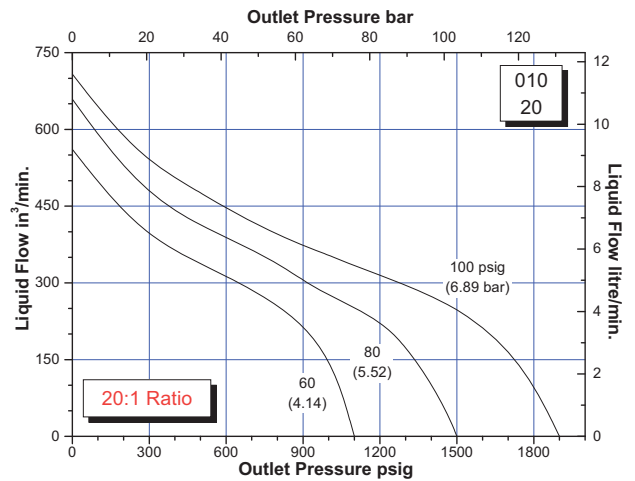
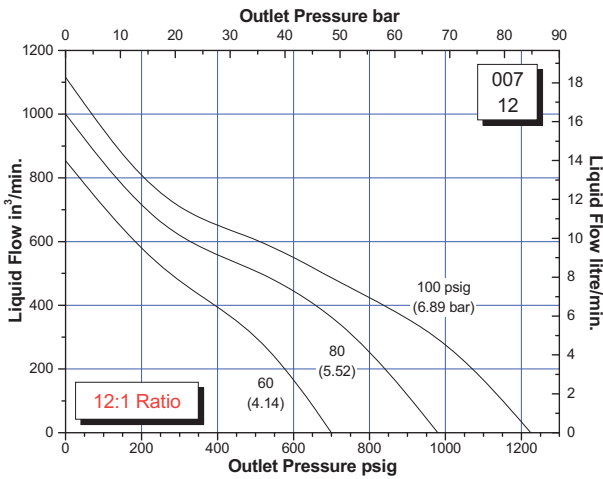
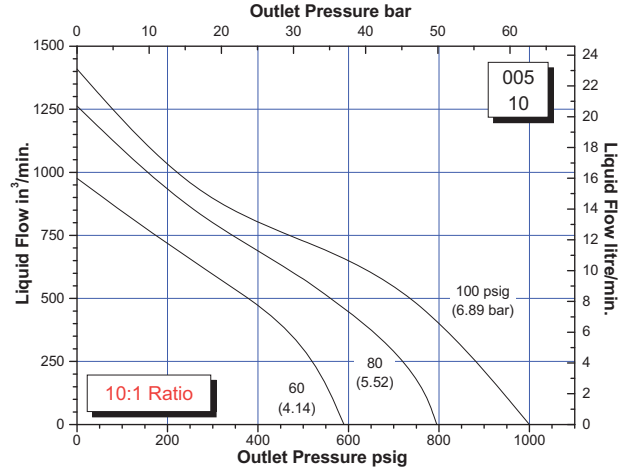
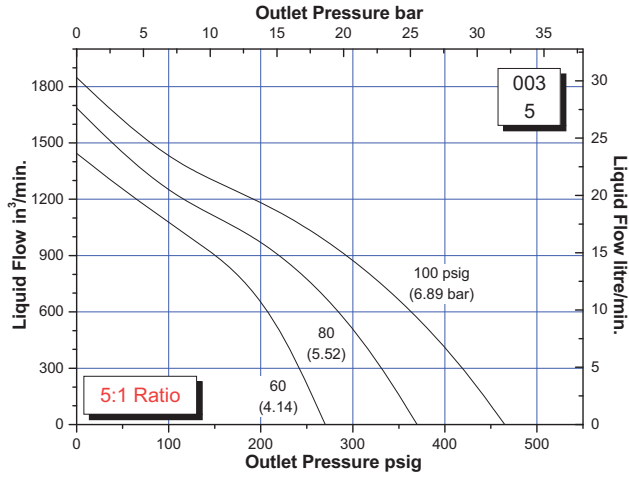
Pressure Ratio	10-5 & 10-5L Series Model	Hydraulic Piston Diameter (in)	Hydraulic Piston Area (in <sup>2</sup> )	Volume per Stroke (in <sup>3</sup> )	Air Pressure (PSI)									
					10	20	30	40	50	60	70	80	90	100
5	-003	2.3750	4.430	5.540	30	75	130	175	220	270	320	370	415	465
10	-005	1.6250	2.070	2.590	80	180	285	385	490	590	690	795	900	1000
12	-007	1.5000	1.770	2.210	90	200	340	450	560	700	850	980	1100	1225
20	-010	1.1875	1.110	1.390	145	330	525	700	925	1100	1300	1500	1700	1900
25	-015	1.0000	0.785	0.981	200	475	750	1000	1300	1550	1800	2000	2350	2625
30	-018	0.9375	0.689	0.861	225	525	875	1150	1500	1775	2050	2350	2700	3075
35	-020	0.8750	0.601	0.751	250	600	1000	1400	1775	2125	2475	2825	3200	3625
55	-030	0.6875	0.371	0.464	400	1000	1700	2200	2900	3400	4000	4600	5200	5800
70	-040	0.6250	0.307	0.384	500	1175	1950	2600	3350	4100	4900	5600	6350	7000
85	-045	0.5625	0.248	0.310	800	1700	2600	3400	4400	5100	6000	6900	7800	8600
105	-060	0.5000	0.196	0.245	900	2000	3150	4200	5400	6400	7450	8500	9700	10700
140	-080	0.4375	0.150	0.188	1100	2400	3900	5400	6900	8300	9800	11200	12600	14000
195	-100	0.3750	0.110	0.138	1400	3250	5250	7250	9250	11250	13250	15000	17000	18750
280	-160	0.3125	0.077	0.096	2250	4000	7750	10500	13500	16250	18750	21500	24500	27500
440**	-250**	0.2500	0.049	0.061	5000	8000	12500	16500	21000	25500	30000	34000	38000	42500
555**	-350**	0.2187	0.038	0.048	6250	12500	18750	25000	31250	37500	43750	47500	51250	55000

\*\* Recommended for continuous duty at pressures up to 30,000 psi. Intermittent duty above 30,000 psi.

Manufactured in the United States

# 10-5 & 10-5L SERIES

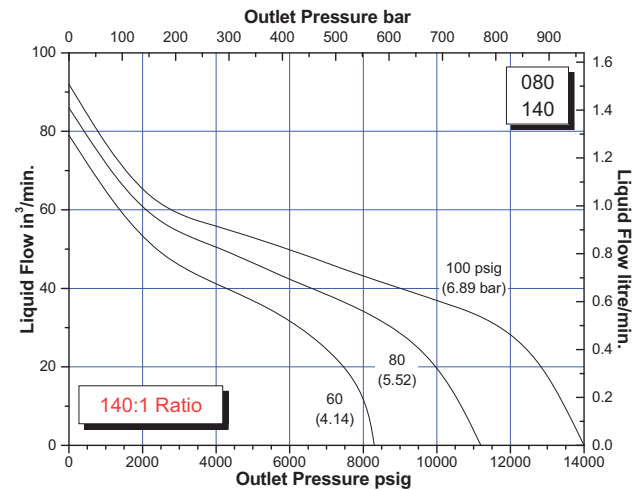
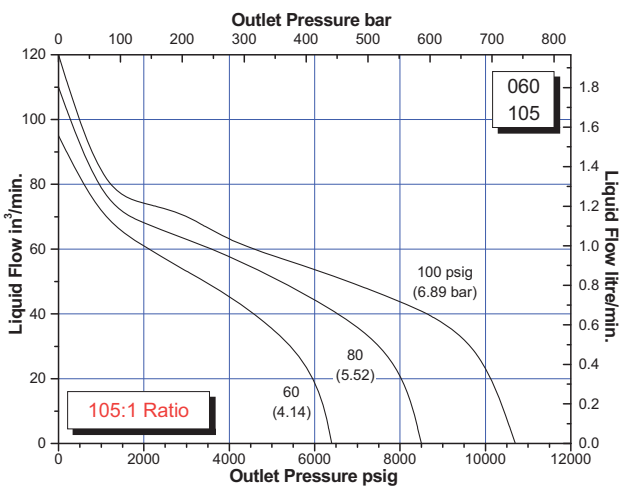
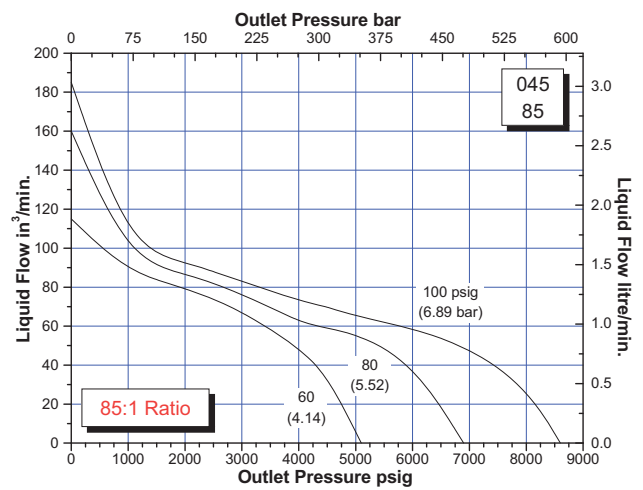
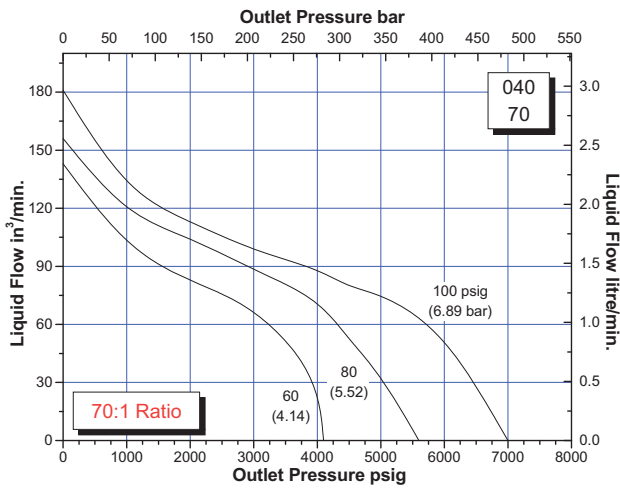
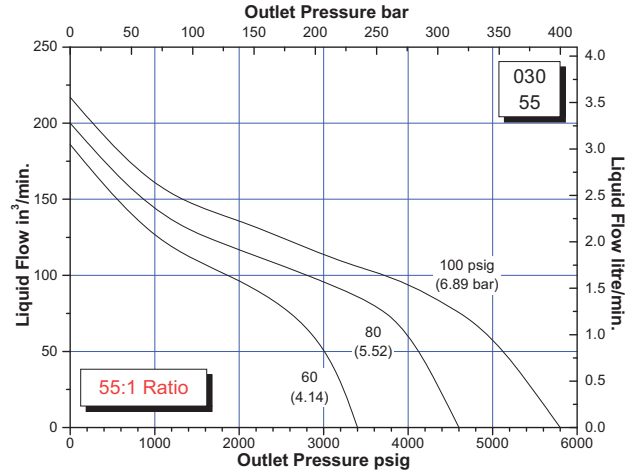
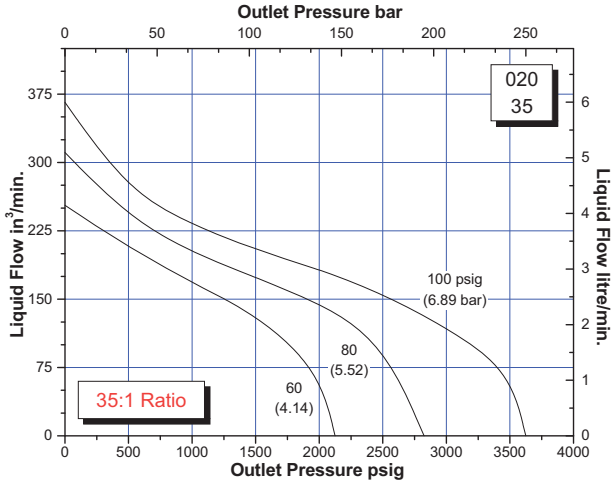
## APPROXIMATE RATE OF DISCHARGE



Manufactured in the United States

# 10-5 & 10-5L SERIES

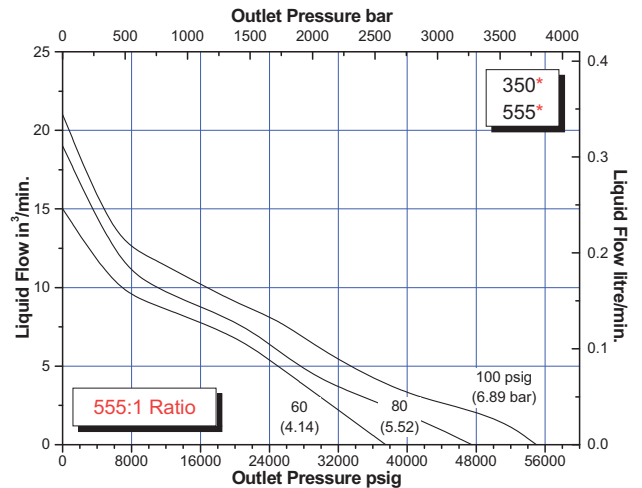
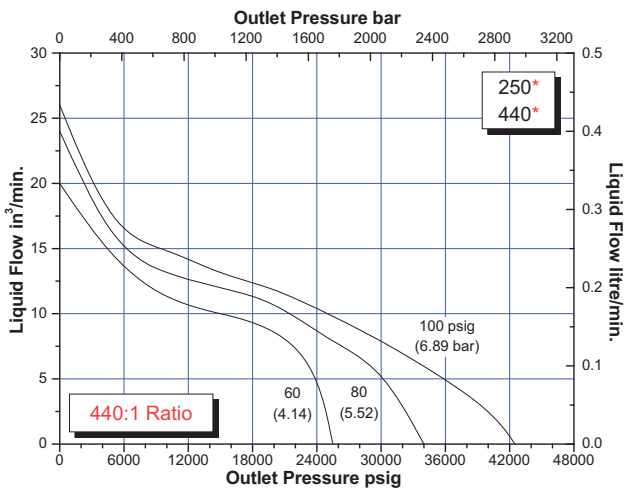
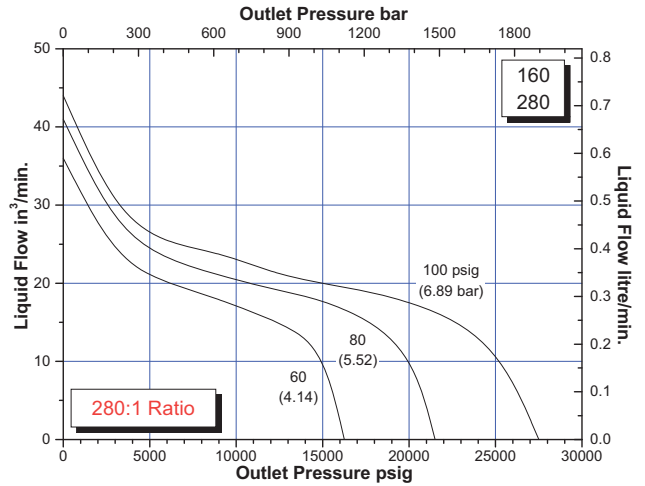
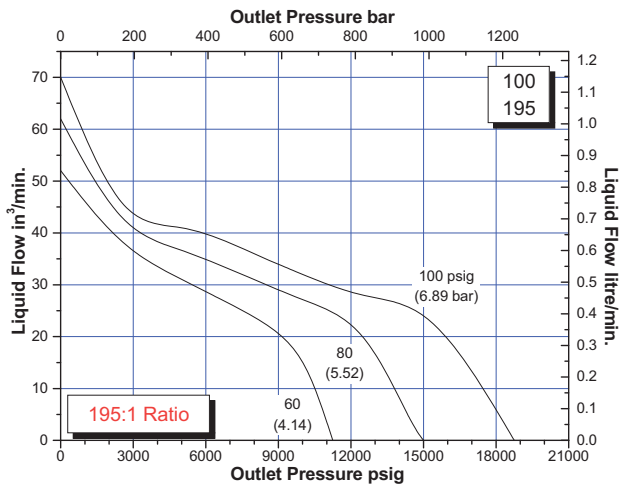
## APPROXIMATE RATE OF DISCHARGE



Manufactured in the United States

# 10-5 & 10-5L SERIES

## APPROXIMATE RATE OF DISCHARGE



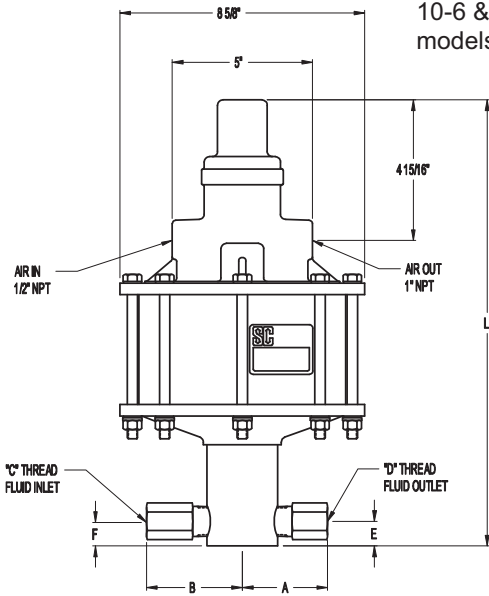
\* Recommended for continuous duty at pressure up to 30,000 psi. Intermittent duty above 30,000 psi.

Manufactured in the United States



# 10-6 & 10-6L SERIES

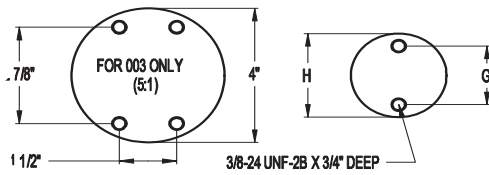
10-6 & 10-6L Series pumps have a 7" diameter air piston and a 2 1/2" stroke. Thirteen models are available with pressures up to 65,000 psig.



When operating from 0 to rated hydraulic pressure, air consumption will be approximately 56 scfm of free air at 100 psi output. At lower air pressures and higher hydraulic pressures air consumption will be reduced proportionately to flow rates indicated.

Mounting may be in any position, vertical preferred. When mounting in an inverted position, a drain cock should be provided to drain off any liquid that may accumulate in the pilot valve air chamber.

The 10-6 series "Non lube" and 10-6L series "Lube" pumps are identical except the 10-6 series is pre-lubricated at factory and therefore does not require a lubricator in the air drive supply line. The 10-6L series "Lube" pump part number requires the addition of the letter "L" as a suffix to denote the pump requires a lubricator in the air drive supply line.



## Mounting Dimensions in Inches

Pressure Ratio	10-6 & 10-6L Series Model	L	A	B	NPT/HF4 (Std)		SAE/HF4 (Optional)		E	F	G	H
					C Thread	D Thread	C Thread	D Thread				
5	-003	19.625	4.875	2.375	1 1/4"	1"	-	-	1.500	2.500	---	4.000
10	-005	18.625	4.750	4.375	1"	1"	-	-	1.375	1.375	2.375	3.000
20 thru 35	-010 thru -020	17.063	3.000	4.000	1"	1/2"	-	-10 SAE	1.000	1.000	1.750	2.500
55 thru 180	-030 thru -100	15.750	3.000	3.375	1/2"	1/2"	-10 SAE	-10 SAE	0.875	0.875	1.750	2.500
240 thru 330	-151 thru -201	16.000	2.500	2.313	3/8"	3/8"	-	9/16-18 *	0.875	0.875	1.750	2.500
460	-301	16.000	3.750	2.313	3/8"	9/16-18 *	-	-	0.875	0.875	1.750	2.500
740	-402	16.250	4.250	2.313	3/8"	9/16-18 *	-	-	1.125	1.125	2.375	3.000

\*Coned and Threaded High Pressure Connection for 1/4" O.D.

## Measurements & Approximate Air to Hydraulic Pressure

Pressure Ratio	10-6 & 10-6L Series Model	Hydraulic Piston Diameter (in)	Hydraulic Piston Area (in <sup>2</sup> )	Volume per Stroke (in <sup>3</sup> )	Air Pressure (PSI)									
					10	20	30	40	50	60	70	80	90	100
5	003	3.000	7.070	17.70	50	100	150	200	250	300	350	400	450	500
10	005	2.125	3.560	8.900	85	185	285	390	490	590	690	795	900	1000
20	010	1.438	1.620	4.050	165	425	650	875	1075	1300	1550	1750	1950	2150
25	015	1.315	1.350	3.380	180	450	725	1000	1300	1550	1850	2125	2400	2700
35	020	1.125	0.994	2.490	250	625	1025	1400	1800	2150	2500	2850	3250	3600
55	030	0.875	0.601	1.500	450	1050	1700	2275	2900	3500	4100	4650	5200	6000
95	050	0.688	0.371	0.928	750	1750	2800	3700	4750	5900	6875	7700	8750	9700
145	080	0.563	0.249	0.623	1100	2600	4200	5550	7100	8500	10000	11500	12950	14400
180	100	0.500	0.196	0.490	1500	3200	5200	7100	9000	10800	12500	14500	16300	18000
240	151	0.438	0.150	0.375	1900	4400	6900	9100	11600	14000	16400	18800	21300	23700
330 **	201 **	0.375	0.110	0.275	3000	6000	9500	12600	16000	19100	22300	25600	29000	32300
460 **	301 **	0.313	0.077	0.193	4000	8800	13700	18000	22500	27000	31500	36500	41400	45800
740 **	402 **	0.250	0.049	0.123	8000	15000	23000	29700	37200	45000	52500	59200	66500	***

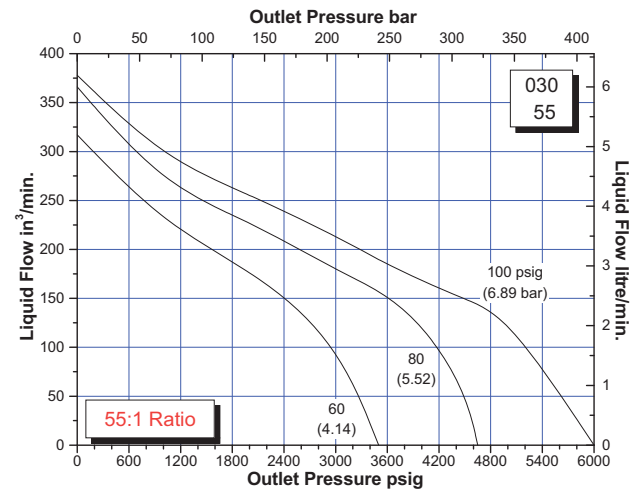
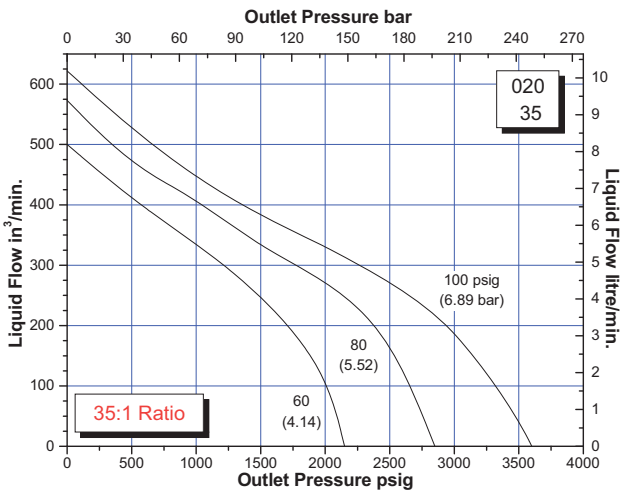
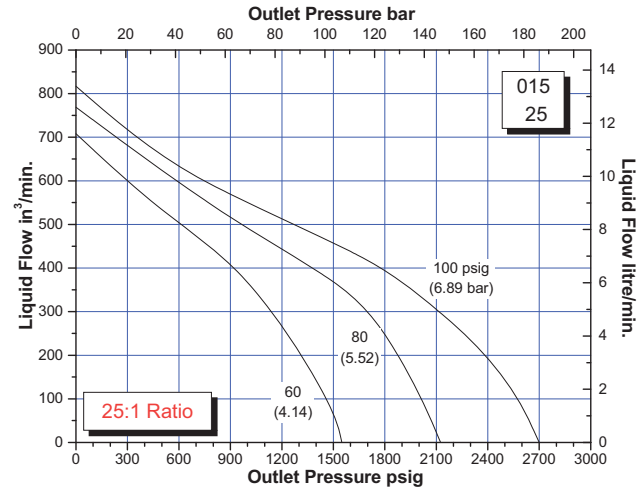
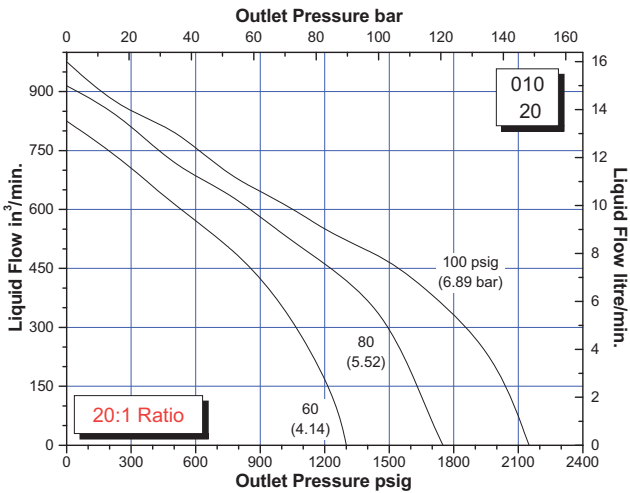
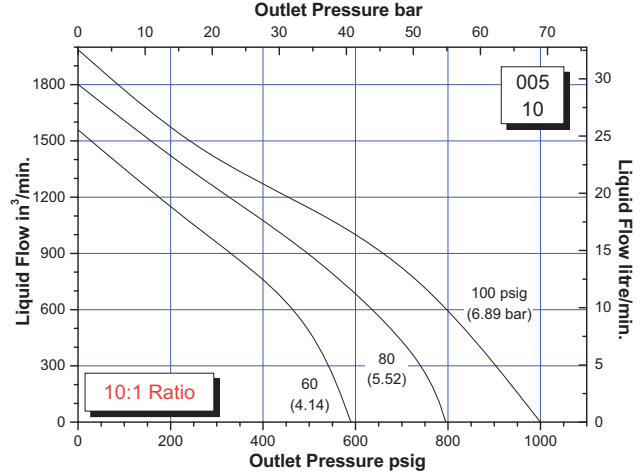
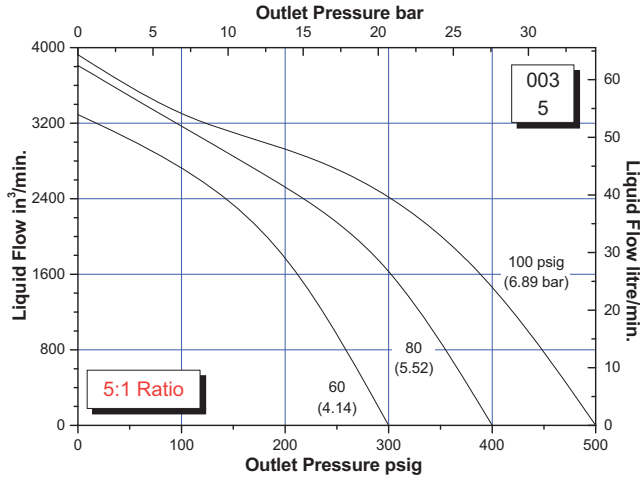
\*\* Recommended for continuous duty at pressures up to 30,000 psi. Intermittent duty above 30,000 psi.

\*\*\* 10-6\_402 pump maximum air drive pressure is 90-psi, maximum outlet pressure is 66,500-psi.

Manufactured in the United States

# 10-6 & 10-6L SERIES

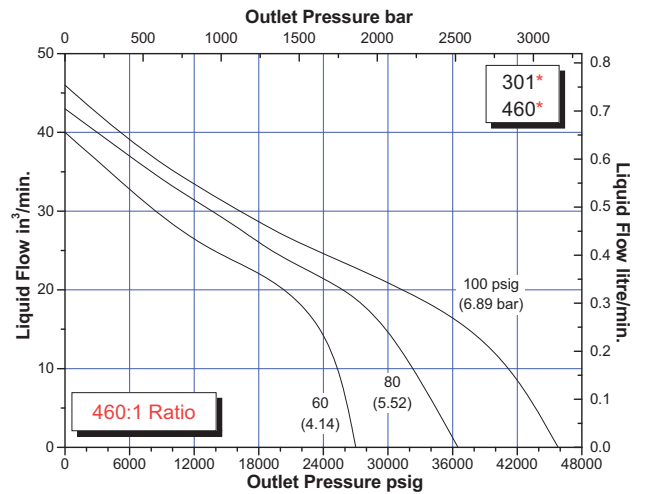
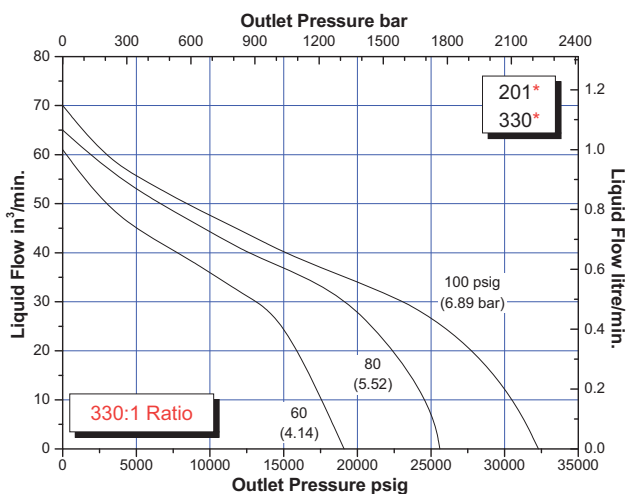
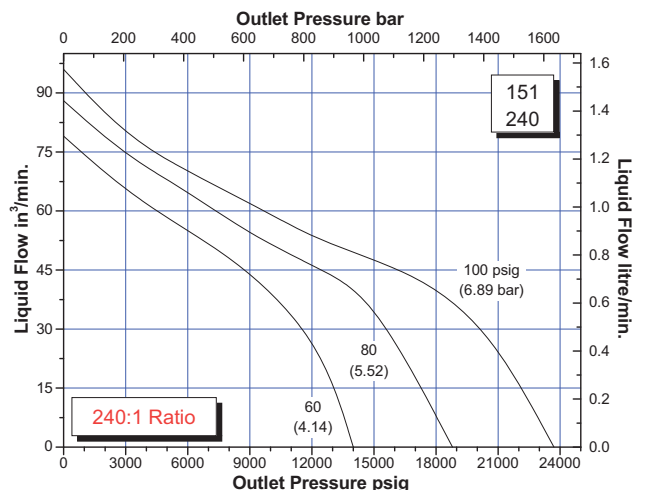
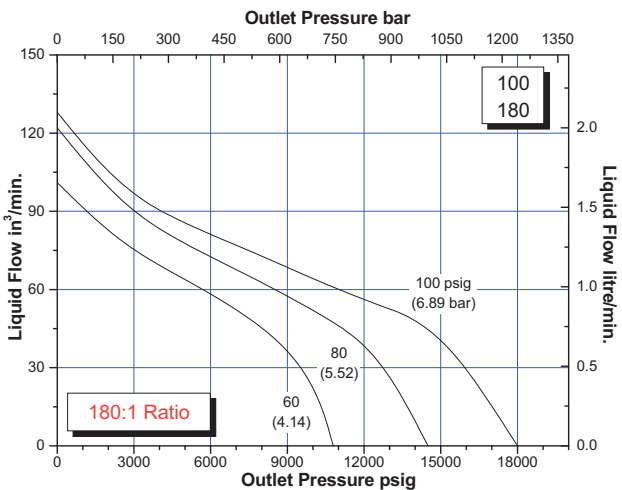
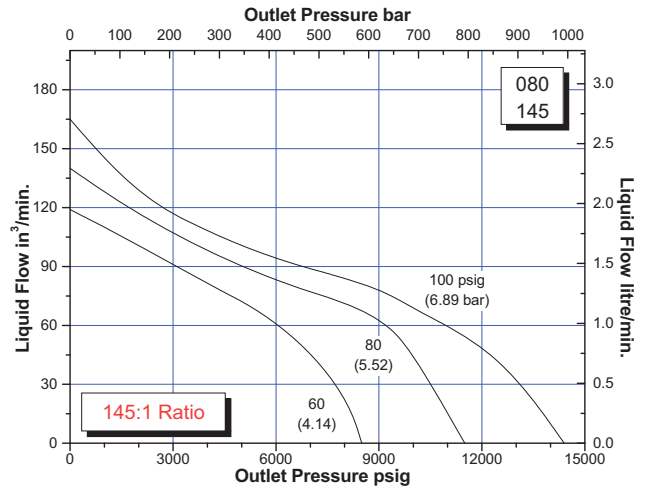
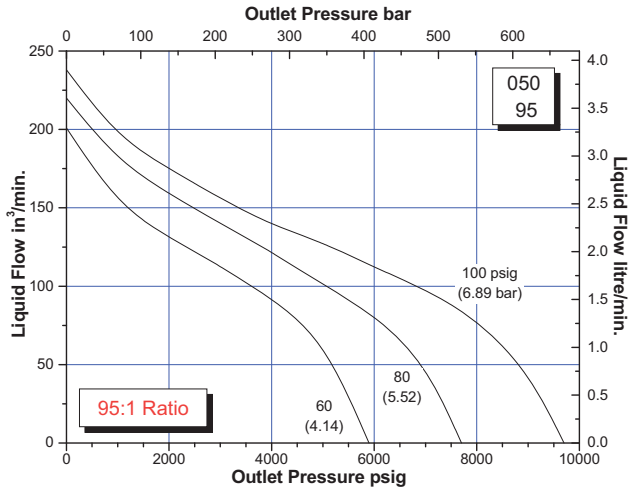
## APPROXIMATE RATE OF DISCHARGE



Manufactured in the United States

# 10-6 & 10-6L SERIES

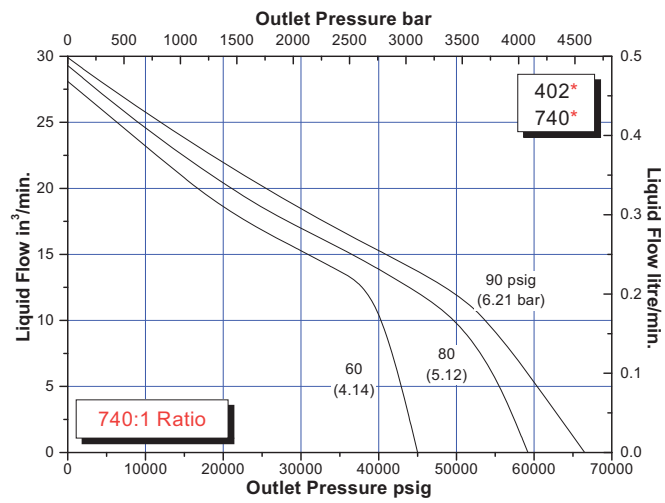
## APPROXIMATE RATE OF DISCHARGE



Manufactured in the United States

# 10-6 & 10-6L SERIES

## APPROXIMATE RATE OF DISCHARGE



Manufactured in the United States

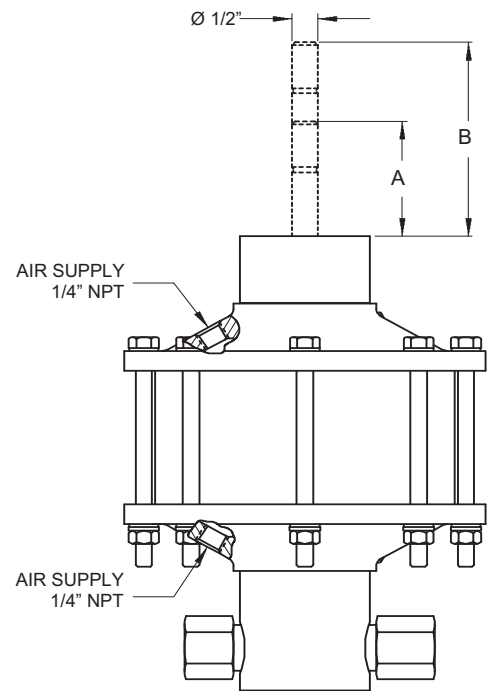
# 80-5 & 80-6 SERIES INTENSIFIERS

SC Hydraulic Engineering 80-5 and 80-6 Intensifiers operate on the same principle as our air operated liquid pumps with one distinctive difference — the air motor is modified so that it operates as a double-acting cylinder. Instead of automatically reciprocating until the stall pressure is reached, the 80 Series Intensifiers require an external four-way air valve to operate the unit.

POSITION ROD INDICATOR		
MODEL	"A" RETRACT	"B" EXTEND
80-5	1.188	3.937
80-6	2.362	3.987

The end caps have 1/4" NPT air supply port connections and the unit can be supplied with a position indicator rod at the top of the intensifier if required. All ratios and options available on the intensifiers are the same as on our 10-5/10-5L and 10-6/10-6L Series pumps. The units can be mounted in any position however upright is preferred. The air cylinder does not require lubrication.

Refer to the "How to Order" and performance data sheets of the 10-5/10-5L and 10-6/10-6L Series pumps for additional information.

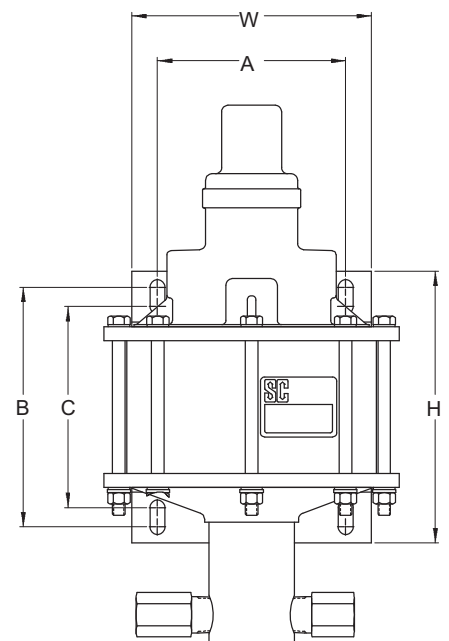


# 10-5/10-5L & 10-6/10-6L SERIES MOUNTING BRACKETS

MOUNTING BRACKET DIMENSIONS						
Pump	Part No.	W	H	A	B	C
10-5/10-5L	11-5216S000	6.75	6.83	5.50	5.89	4.77
10-6/10-6L	11-6172S000	6.75	7.94	5.50	7.00	5.88

Mounting brackets can be ordered with a pump by adding an "M105" modification as a suffix on the model number for the 10-5/10-5L or 10-6/10-6L pumps. If ordered as separate parts use the numbers above. One or two brackets can be used for each pump depending on the application.

The brackets are installed by removing the three bolts for the bracket position and loosening the remaining tie rod bolts. The tie rod bolts should then be drawn up gradually in a cross sequence for uniform tightening to 15-17 ft-lb. Refer to the "Servicing Instructions" for additional information.



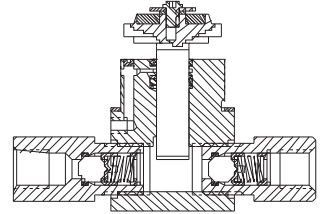
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# PUMP MODIFICATIONS

A combination of any of the modifications shown can be supplied upon request. Consult factory for additional information and dimensional data if required.

## **“A” Modification** – Available on all models

This modification utilizes dual seals in the hydraulic assembly with a bleed-off between the seals to atmosphere, thus providing a visual indication of hydraulic seal leakage. Used where contamination of the air motor from the hydraulic fluid being pumped is objectionable



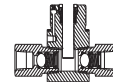
## **”K” Modification** – Available on 10-5/10-5L and 10-6/10-6L

This modification utilizes a special air piston in the air motor assembly which decreases the stroke of the pump, thus minimizing the internal forces and increasing air motor life. Used in applications exhibiting rapid pressure losses, such as burst testing.



## **“B” Models** – Available on 10-5/10-5L and 10-6/10-6L

The “B” models have a bottom inlet connection for convenient tank top installation or alternate mounting configuration.

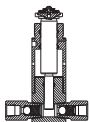


## **“H” Models** – Available on 10-5/10-5L and 10-6/10-6L

The “H” Models utilize special packing in the hydraulic assembly for maximum performance where hydraulic fluid media is contaminated with foreign matter, thus providing for a much greater life expectancy from the hydraulic seals than with standard o-ring seals. The “A” modification is included on all “H” models and the check valves have PTFE o-rings

## **“C” Models** – Available on 10-5/10-5L and 10-6/10-6L

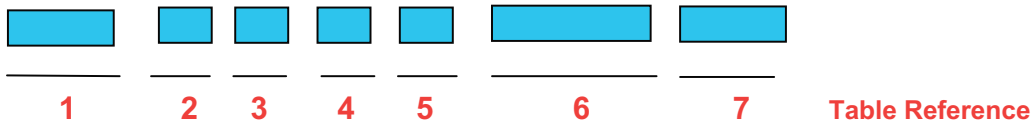
The “C” Models utilize PTFE chevron packing in the hydraulic assembly for ultimate performance when other packing material is not compatible with the fluid used or because of extreme temperature conditions. The “A” modification is included on all “C” models and the check valves have PTFE o-rings.



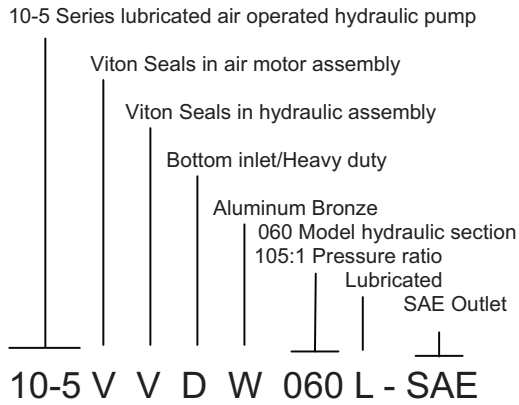
**“R” Modification** – Available on 10-5/10-5L and 10-6/10-6L. The “R” Models are furnished with an isolator attachment which prevents the hydraulic piston retracting into the air motor during operation, thus providing for 100% non-contamination of the hydraulic assembly from the air motor. The isolator also acts as a heat barrier.

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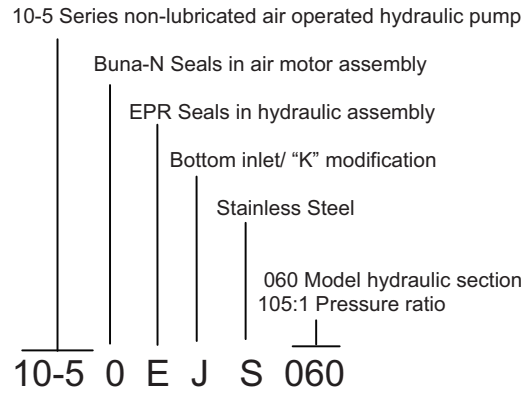
# HOW TO ORDER TABLE



## Example #1 Pump Selection



## Example #2 Pump Selection



**TABLE 1** <sup>(4)</sup> **Pump Series Designation**

<b>10-4</b>	Series Lubricated Pump
<b>10-5_L</b>	Series Lubricated Pump <sup>(5)</sup>
<b>10-5</b>	Series Non-lubricated Pump
<b>10-6_L</b>	Series Lubricated Pump <sup>(5)</sup>
<b>10-6</b>	Series Non-lubricated Pump
<b>80-5</b>	5 1/2" Bore Intensifier
<b>83-5</b>	5 1/2" Intensifier with Position Indicator Rod
<b>80-6</b>	7" Bore Intensifier
<b>83-6</b>	7" Intensifier with Position Indicator Rod

**TABLE 2** **Seal Compound - Air Motor**

<b>0</b>	Buna-N (standard)
<b>V</b>	Viton

**TABLE 3** **Seal Compound – Hydraulic Section**

<b>0</b>	Buna-N nitrile (standard)
<b>E</b>	EPR - ethylene propylene
<b>V</b>	Fluorocarbon
<b>*</b>	Consult factory for special compounds

**TABLE 4** **Modifications**

<b>0</b>	Standard pump
<b>A</b>	"A" modification
<b>B</b>	Bottom inlet <sup>(1)</sup>
<b>C</b>	Chevron Seals
<b>D</b>	Bottom inlet – heavy duty <sup>(1,3)</sup>
<b>E</b>	Bottom inlet – "A" modification <sup>(1)</sup>
<b>F</b>	Isolator – Chevron Seals <sup>(1,3)</sup>
<b>G</b>	Isolator – heavy duty <sup>(1,3)</sup>
<b>H</b>	Heavy duty <sup>(1)</sup>
<b>J</b>	Bottom inlet – "K" modification <sup>(1)</sup>
<b>K</b>	"K" modification <sup>(1)</sup>
<b>M</b>	Bottom inlet – "A" and "K" modification <sup>(1)</sup>

**TABLE 4** **Modifications**  
(continued)

<b>N</b>	Isolator – "A" modification <sup>(1)</sup>
<b>P</b>	Isolator – "K" modification <sup>(1)</sup>
<b>Q</b>	Isolator – "A" and "K" modification <sup>(1)</sup>
<b>R</b>	Isolator <sup>(1)</sup>
<b>S</b>	Heavy duty – "K" modification <sup>(1,3)</sup>
<b>U</b>	Heavy duty – bottom inlet – "K" mod. <sup>(1,3)</sup>
<b>V</b>	Heavy duty – isolator – "K" modification <sup>(1,3)</sup>

**TABLE 5** **Material of Construction – Hyd. Section**

<b>W</b>	Aluminum bronze & stainless steel (10-4, 10-5, 10-6 Series) standard
<b>S</b>	All stainless steel
<b>C</b>	Cad plate carbon steel, stainless steel <sup>(2)</sup>

**TABLE 6** **Model designation –Pressure ratio**

Refer to pressure ratio charts for proper selection

**TABLE 7** **Port option**

<b>Blank</b>	Standard
<b>SAE</b>	Straight thread as indicated on chart
<b>HF4</b>	9/16-18 x 1/4" OD tube 60K psi

**Additional Special Modifications may be included with an "M" suffix at the end of the model number.**

**Notes:**

- (1) Not available for 10-4 Series.
- (2) 25 piece minimum order.
- (3) "A" modification included with all Chevron and Heavy Duty seal modifications.
- (4) Do not fill gap on a two digit description. Refer to Example #2.
- (5) Add letter "L" after model designation number in Table 6. Refer to example #1.

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