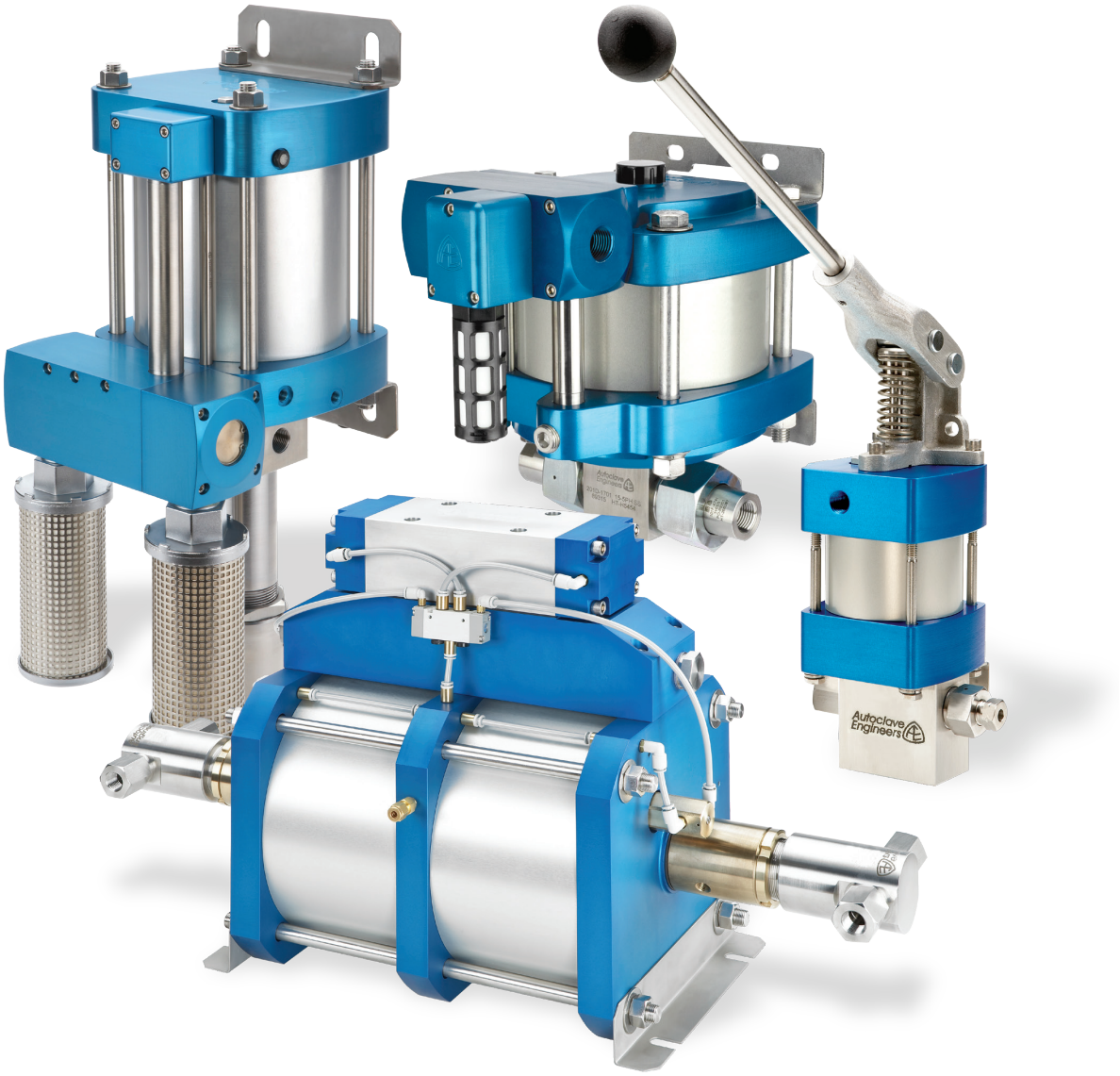

Air Driven, High Pressure Liquid Pumps

Product Catalog

Catalog: 02-9326BE

April 2022

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

Autoclave Engineers

ENGINEERING YOUR SUCCESS.

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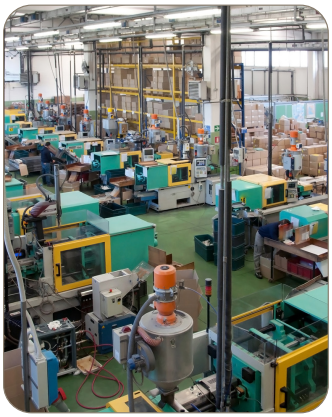
Introduction

Parker Autoclave Engineers has always been a large user of Air-over-Liquid pump technology and has a lifetime of experience using all variety of pumps in many different configurations. We have used this experience to develop a best-in-breed line of air-driven, high pressure pumps that are efficient to operate, simple in design, and will stand the test of time. Compared to other types of hydraulic pumps, they provide cost effective and energy saving benefits for many applications in the Oil and Gas, Chemical, Industrial and Research industries.

These pumps convert simple air pressure into high and ultra-high liquid pressures by utilizing a large area piston on the air side to move a small area plunger to compress the liquid into very high hydraulic pressures - as high as 60,000 psi (4137 bar). Some designs are for economy, some for manual use, some for low-flow & high pressure, some for high flow & medium pressure. Pumps like these are perfect for product testing, valve actuation, chemical injection and other applications that require intense pressure. When used in conjunction with a Hydraulic Intensifier (another PAE product) pressures to 150,000 psi (10,000 bar) are normal.

Parker Autoclave Engineers has been making pressure and corrosion test systems as well as high pressure laboratory reaction vessels for over 70 years.



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Pump Series Models

ASL Series:

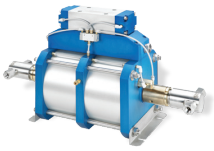
- Standard Liquid Pump
- Pressures up to 60,000 psi (4137 bar)
- 6 inches in diameter air piston
- Broad range of ratios
- Single and Double Piston

ACHL Series:

- ACL Series Pump with hand lever - Air or Manually Driven
- Pressures up to 31,900 psi (2199 bar)
- Precise Pressure control operation, pump is spring returned
- 3 inches in diameter air piston

AFL Series:

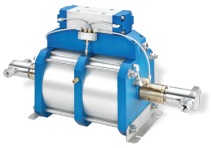
- High Flow, High Pressure
- Pressures up to 5,000 psi (1035 bar)
- Flow up to 6.8 gpm (25 lpm)
- Dual Acting



AHL Series:

- High Flow up to 7.6 gpm (29 lpm)
- Pressures up to 22,500 psi (917 bar)
- Approximately 10 inch diameter air piston
- Dual Acting

Drive Types

Pump Model				
Catalog Number Suffix	**-01**	**-02**	**-1D**	**-2D**
Description	Single Acting Single Piston	Single Acting Double Piston	Double Acting Single Piston	Double Acting Double Piston

Catalog Number Example: ASL150-**01**

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Quick Reference Guide

Pump Type	Catalog Number	Pressure Ratio	Maximum Rated Outlet Pressure PSI (bar)	Displacement Per Cycle .in³ (cm³)	Max. Flow GPM	Liquid Connections	
						Inlet	Outlet
ASL Series - Air Driven Standard Size Liquid Pumps							
Prefill/Flushing	ASL10-01	1:11	1,600 (110)	5.22 (85.5)	5.0	1" FNPT	1/2" FNPT
Low Pressure	ASL25-01	1:28	4,000 (276)	2.10 (34.4)	2.3	1/2" FNPT	1/2" FNPT
Low Pressure	ASL35-01	1:39	5,600 (386)	1.50 (24.64)	1.3	1/2" FNPT	1/2" FNPT
Test Pump	ASL60-01	1:70	10,000 (689)	0.84 (13.8)	.79	1/2" FNPT	1/2" FNPT
Test Pump	ASL100-01	1:113	15,000 (1,034)	0.52 (8.5)	.48	1/2" FNPT	1/2" FNPT
Test Pump	ASL150-01	1:150	21,500 (1,482)	0.39 (6.4)	.36	1/2" FNPT	1/4" F250C
Test Pump	ASL250-01	1:265	38,400 (2,648)	0.22 (3.6)	.21	1/2" FNPT	1/4" F250C
Test Pump	ASL400-01	1:398	57,700 (3,978)	0.14 (2.3)	.14	1/2" FNPT	1/4" F250C
Test Pump	ASL35-02	1:78	11,200 (772)	1.50 (24.64)	1.05	1/2" FNPT	1/2" FNPT
Test Pump	ASL60-02	1:140	20,000 (1,379)	0.84 (13.8)	.63	1/2" FNPT	9/16" SF562CX
Test Pump	ASL100-02	1:226	31,000 (2,137)	0.52 (8.5)	.37	1/2" FNPT	1/4" F250C
Test Pump	ASL150-02	1:300	43,000 (2,965)	0.39 (6.4)	.28	1/2" FNPT	1/4" F250C
Test Pump	ASL400-02	1:796	60,000 (4,137)	0.14 (2.3)	.11	1/2" FNPT	1/4" F250C
ACHL Series							
Compact/ Manual Pumps	ACHL72-01	1:84	12,500 (862)	0.09 (1.47)	.17	3/8" FNPT	1/4" F250C
	ACHL189-01	1:213	31,900 (2,1990)	0.035 (0.57)	.19	3/8" FNPT	1/4" F250C
AHL Series							
Chemical Injection	AHL33-2D	1:67	6,700 (462)	15.3 (250.7)	7.6	1" FNPT	1/2" FNPT
	AHL66-2D	1:133	13,300 (917)	7.8 (127.8)	3.6	1/2" FNPT	1/2" FNPT
	AHL118-2D	1:239	22,500 (1551)	4.4 (72.1)	2.3	1/2" FNPT	9/16" SF562CX
AFL Series							
High Flow Pumps	AFL35-1D	1:39	5,600 (386)	6.02 (98.7)	6.9	1" FNPT	9/16" SF562CX
	AFL60-1D	1:70	10,000 (690)	3.40 (55.7)	3.9	1" FNPT	9/16" SF562CX
	AFL100-1D	1:113	15,000 (1034)	2.30 (37.7)	2.9	1" FNPT	9/16" SF562CX

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Pump Operation

Piston to Plunger Ratio

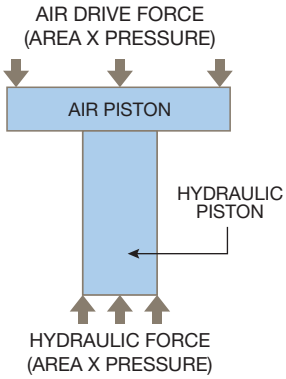
- Compressed air is used to produce hydraulic pressure
- Works on differential surface area between the large air piston and smaller hydraulic plunger
- Differential is represented by the pressure ratio of the pump

Pressure Ratio = Area of Air Piston ÷ Area of Hydraulic Plunger

- The higher the pressure ratio, the higher the output hydraulic pressure

Pressure Output = Pressure Ratio x Air Drive Pressure

- When air is applied to the pump it will cycle until the forces on the air piston equals the forces on the hydraulic plunger. This is the stall pressure.
- Pump will automatically restart if there is a drop in hydraulic pressure or an increase in air drive pressure.
- Double air pistons available which will double the pressure ratio because you have twice the air piston area acting on the same hydraulic plunger area.

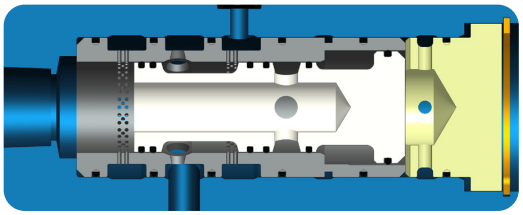


Air Drive Section

- Compressed air is used to produce hydraulic pressure
- Works on differential surface area between the large air piston and smaller hydraulic plunger
- Differential is represented by the pressure ratio of the pump

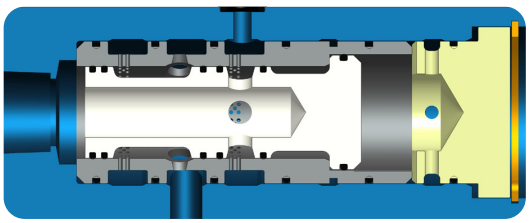
Section 1

- Air pilot operated spool provides automatic cycling of air from one side of the piston to the other
- At the end of each stroke, the air piston activates a pilot valve that will cause the spool to shift



Section 2

- The spool shifting will supply air to one side of the piston while venting the other side of the piston
- This alternating action continues until the pump reaches its stall pressure



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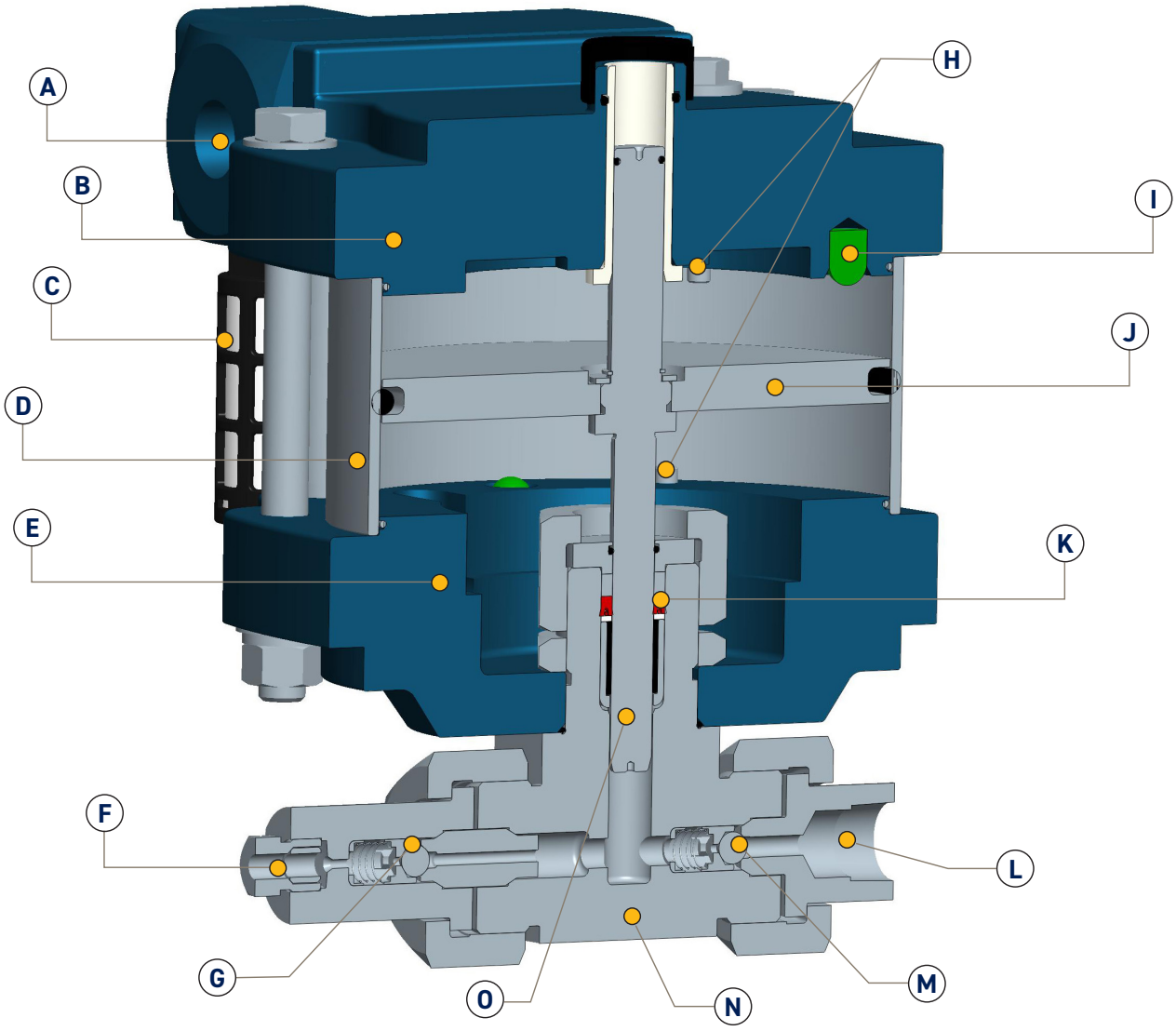
Typical Pump Cut-Away



	Description
A	Air Inlet
B	Top End Cap
C	Air Muffler
D	Air Cylinder
E	Bottom End Cap
F	High Pressure Outlet Connection
G	Outlet Check Valve
H	Pilot Valve

	Description
I	Air Piston Bumper
J	Air Piston
K	High Pressure Seal Assembly
L	Liquid Inlet Connection
M	Inlet Check Valve
N	Pump Head Body
O	Hydraulic Plunger

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Pump Special Features & Benefits

- All Aluminum parts machined from high quality bar stock, not cast aluminum components
- Anodizing with special sealing technique to provide better protection from harsh environments
- Muffler specified to give a great combination of high flow and low noise
- Rubber bumpers in end caps to reduce noise of operation
- Latest lubrication technology provides long seal service life and improves pump efficiency and performance
- No lubricator required for air drive source
- Stainless steel tie-rods and hardware
- Stainless plunger coated with a proprietary multi-layer carbon based coating with diamond like carbon exterior layer:
  - High hardness (3 times harder than Stellite)
  - Inert, it has superior chemical compatibility and corrosion resistance
  - Low friction that limits seal wear and increases efficiency (coefficient of friction equal to or less than PTFE)
  - Tough coating that provides long plunger cycle life.
- Pressure head specially designed and engineered for high cycle life
- Spring energized U-cup seal provides better sealing performance at wide ranges of pressures
- Extended service life check valves with Ceramic balls for high pressure applications

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ASL SERIES Single-Acting, Single or Double Piston Air Drive

Features:

- Pressure Ranges from 1,600 to 60,000 psi (110 to 4100 bar) max
- Operating Temperature Range: 0˚ to 140˚F (-18˚ to 60˚C)
- Pressure Head Material: 15-5 PH Stainless Steel
- Plunger: Stainless Steel, coated with proprietary multi-layer carbon for long life
- Liquid Side Material: All Stainless Steel Construction
- Air Side Material: Anodized Aluminum

Technical Data:

- Liquid Connections: Side Inlet Only – see chart (page 9)
- Isolation Chamber: Only available on ASL400-02 pump
- Displacement per stroke: See chart (page 9)
- Liquid Seals:

  ASL10 to ASL35 = UHMWPE U-Cup and FKM Orings (PV option)
  ASL60 to ASL400 – UHMWPE U-Cup w/Elgiloy Spring Energizer
- Air Drive Pressure Range: 15-150 psi (1-10 bar) * See Note
- Main Air Inlet: ½" FNPT (Regulated)
- Pilot Air Inlet: 1/8" FNPT (unregulated)
- Max Air Consumption: 70 SCFM @ 90 psi (no pressure)
- Pre-Lubricated Piston at Factory
- Air Seals: Buna-N

Note: *Maximum air drive pressure is limited by maximum pressure shown in chart on Page 9.

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ASL Pump Part Number Matrix

For complete information on available pump options, contact Parker Autoclave Engineers.

Typical catalog number: **ASL25-01SNPV**

Pump Type / Size / Ratio

ASL =
- Standard Liquid High Flow, High Pressure Pump
- Air-to-Liquid Pressure Ratio:

Single Piston	Double Piston
ASL10-01 - 1:11	N/A
ASL25-01 - 1:28	N/A
ASL35-01 - 1:39	ASL35-02 - 1:78
ASL60-01 - 1:70	ASL60-02 - 1:140
ASL100-01 - 1:113	ASL100-02 - 1:226
ASL150-01 - 1:150	ASL150-02 - 1:300
ASL250-01 - 1:265	N/A
ASL400-01 - 1:398	ASL400-02 -1:796*

Liquid Inlet Location

S = Side

Isolation Chamber

N = None

***C** = Standard (ASL400-02 only)

Liquid Seal Materials

PV = UHMWPE U-Cup and FKM O-Rings (ASL10 to ASL35 Pumps Only)

P = UHMWPE U-Cup with Elgiloy Spring Energizer (All other Pump Series)

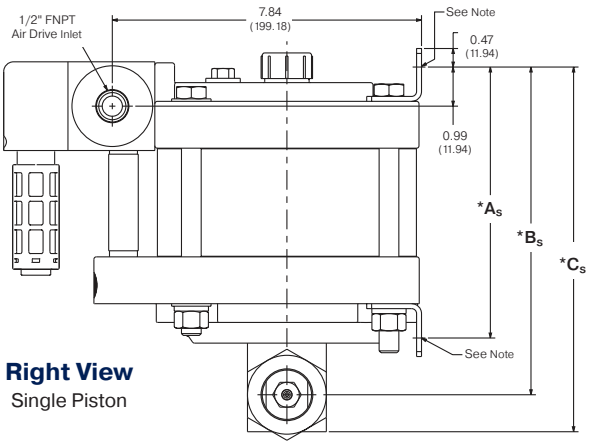
Note: Individual Pump Specifications can be found at www.Autoclave.com.

Reference Guide

Catalog Number	Pressure Ratio	Maximum Rated Outlet Pressure PSI (bar)	GPM Displacement Per Cycle .in³ (cm³)	Liquid Connections	
				Inlet	Outlet
ASL10-01SNXX	1:11	1,600 (110)	5.22 (85.5)	1" FNPT	1/2" FNPT
ASL25-01SNXX	1:28	4,000 (276)	2.10 (34.4)	1/2" FNPT	1/2" FNPT
ASL35-01SNXX	1:39	5,600 (386)	1.50 (24.64)	1/2" FNPT	1/2" FNPT
ASL60-01SNXX	1:70	10,000 (689)	0.84 (13.8)	1/2" FNPT	1/2" FNPT
ASL100-01SNXX	1:113	15,000 (1,034)	0.52 (8.5)	1/2" FNPT	1/2" FNPT
ASL150-01SNXX	1:150	21,500 (1,482)	0.39 (6.4)	1/2" FNPT	1/4" F250C
ASL250-01SNXX	1:265	38,400 (2,648)	0.22 (3.6)	1/2" FNPT	1/4" F250C
ASL400-01SCXX	1:398	57,700 (3,978)	0.14 (2.3)	1/2" FNPT	1/4" F250C
ASL35-02SNXX	1:78	11,200 (772)	1.50 (24.64)	1/2" FNPT	1/2" FNPT
ASL60-02SNXX	1:140	20,000 (1,379)	0.84 (13.8)	1/2" FNPT	9/16" SF562CX
ASL100-02SNXX	1:226	31,000 (2,137)	0.52 (8.5)	1/2" FNPT	1/4" F250C
ASL150-02SNXX	1:300	43,000 (2,965)	0.39 (6.4)	1/2" FNPT	1/4" F250C
ASL400-02SCXX	1:796	60,000 (4,137	0.14 (2.3)	1/2" FNPT	1/4" F250C

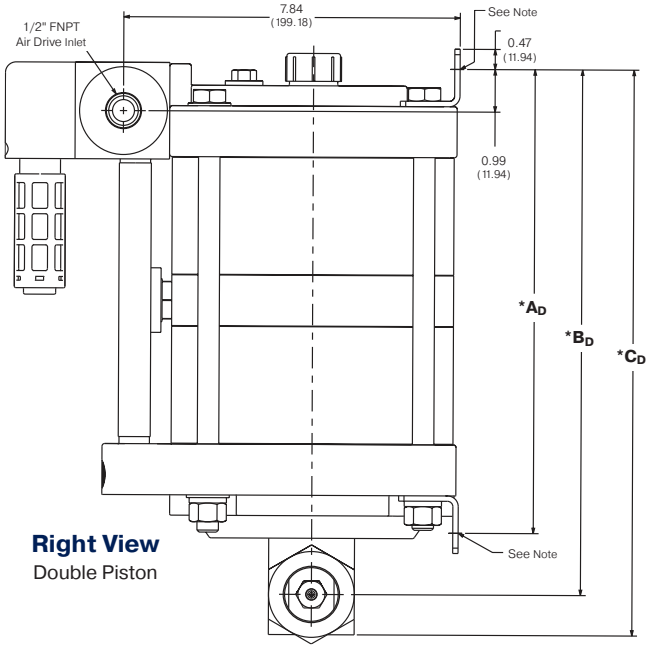
Air Drive Connection

All ASL Series Pumps have a 1/2" FNPT regulated main air drive supply connection and utilize a 1/8" FNPT pilot port connection for remote start/stop operation. It is recommended to operate the pilot port at a higher air pressure unregulated than the main air drive supply pressure for proper function.

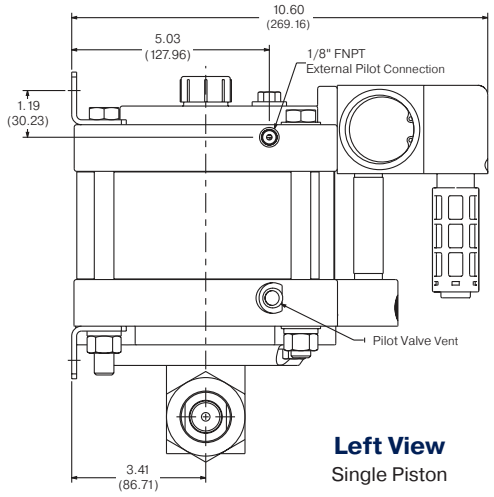


Right View
Single Piston

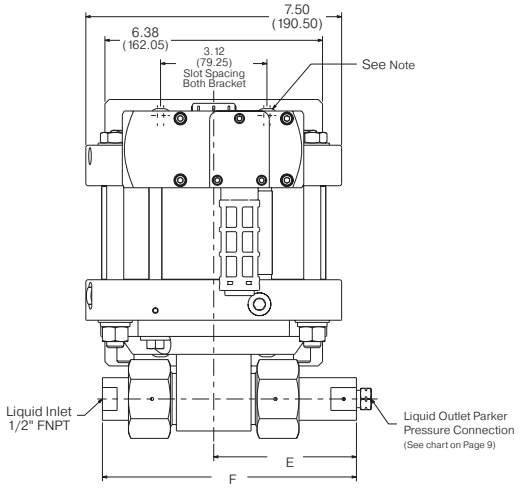
*See following page for product dimensions.



Right View
Double Piston



Left View
Single Piston



Front View
Single Piston

Note:
- Each mounting bracket includes (2) x 11/32" (8.73) slots for 5/16" bolts.
- All dimensions are for reference only and are subject to change without notice.
- Primary dimensions: Inches, Secondary Dimensions: (Millimeters)

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ASL Series: Dimensions

Catalog Number	A_S	B_S	C_S
Single Piston Air Drive			
ASL10-01	6.87 (175)	8.25 (210)	9.83 (250)
ASL25-01	6.87 (175)	8.25 (210)	9.83 (250)
ASL35-01	6.87 (175)	8.25 (210)	9.83 (250)
ASL60-01	6.87 (175)	8.31 (211)	9.25 (235)
ASL100-01	6.87 (175)	8.31 (211)	9.25 (235)
ASL150-01	6.87 (175)	8.31 (211)	9.25 (235)
ASL250-01	6.87 (175)	8.31 (211)	9.25 (235)
ASL400-01	6.87 (175)	8.37 (213)	9.39 (239)

Catalog Number	A_D	B_D	C_D
Double Piston Air Drive			
ASL35-02	10.81 (275)	12.19 (310)	13.77 (350)
ASL60-02	10.81 (275)	12.25 (311)	13.19 (335)
ASL100-02	10.81 (275)	12.25 (311)	13.19 (335)
ASL150-02	10.81 (275)	12.25 (311)	13.19 (335)
ASL400-02	10.81 (275)	12.30 (312)	13.32 (338)

Note:

Each mounting bracket includes two (2) x 13/32" (10.32) slots for 3/8" bolts. Bottom inlet pump head and side inlet pump head are mutually exclusive. All dimensions are for reference only and are subject to change without notice.

Primary Dimensions: Inches
Secondary Dimensions: (Millimeters)

Flow Rate Table: Air Drive Pressure (psi) vs. Outlet Pressure (psi)

Catalog Number	Air Drive Pressure (psi)	Outlet Pressure (psi)											
		0	500	1,500	3,000	5,000	7,500	10,000	15,000	25,000	40,000	55,000	
ASL10-01	60	1277	489										
	90	305	826										
	120	1360	925										
ASL25-01	60	508	342	127									
	90	520	387	303									
	120	543	427	360	202								
ASL35-01	60	315	273	121									
	90	322	291	211	58								
	120	328	302	250	157								
ASL60-01	60	168	155	125	79								
	90	175	161	134	106	63							
	120	182	167	140	118	94	45						
ASL100-01	60	104	99	88	70	46							
	90	108	103	92	78	65	44	11					
	120	112	106	95	83	72	60	47					
ASL150-01	60	81	79	76	66	49	19						
	90	83	82	80	75	67	53	35					
	120	84	83	82	78	73	66	55	25				
ASL250-01	60	46	45	44	42	37	26	20	2				in^3 / min.
	90	47	46	45	44	43	40	36	26				
	120	48	47	47	46	45	43	41	34	17			
ASL400-01	60	39	38	37	36	33	29	23	10				
	90	40	39	38	38	37	35	32	26	8			
	120	41	40	39	38	38	37	36	32	21			
ASL35-02	60	240	230	210	115								
	90	242	232	225	190	115							
	120	245	235	230	210	170	95						
ASL60-02	60	150	148	145	120	70	2						
	90	155	152	147	136	117	80	33					
	120	157	154	152	145	133	112	82	8				
ASL100-02	60	86	84	82	77	72	53	30					
	90	87	86	84	82	82	70	61	36				
	120	89	88	86	84	84	77	72	57	13			
ASL150-02	60	64	64	63	60	57	50	38	14				
	90	65	65	64	62	60	57	53	41	9			
	120	66	66	65	64	63	61	58	51	32			
ASL400-02	60	31	31	30	30	29	29	28	26	16			
	90	31	31	31	30	30	30	29	27	23	14	2	
	120	31	31	31	31	30	30	30	29	27	21	14	

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ACHL SERIES Single-Acting, Single Air Drive with Hand Lever

Manual Operation

Air Driven Pump includes Hand Lever for manual operation or precise pressure control, remote locations, or emergency back-up.

Features:

- Pressure Ranges from 12,500 (860 bar) or 31,900 psi (2200 bar) maximum
- Operating Temperature Range: 0° to 140°F (-18° to 60°C)
- Liquid Side Material: All Stainless Steel Construction
- Air Side Material: Anodized Aluminum

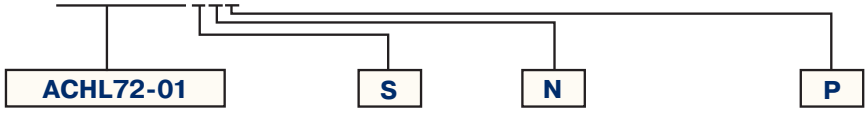
Technical Data:

- Liquid Connections: Side Inlet Only – see chart (page 14)
- Displacement per stroke: See chart (page 14)
- Liquid Seals: UHMWPE U-Cup w/Elgiloy Spring Energizer
- Air Drive Pressure Range: 15-150 psi (1-10 bar) * See Note
- Main Air Inlet: 1/4" FNPT (Regulated)
- Exhaust port (muffler removed) 1/4" FNPT
- Air Seals: Buna-N
- Pre-lubricated at Factory

Note: *Maximum air drive pressure is limited by maximum pressure, see rating show above.

ACHL Pump Part Number Matrix

Typical catalog number: **ACHL72-01SNP**



Pump Type / Size / Ratio

ACHL =
- Compact Liquid High Pressure Pump with Hand Lever
- 3" Single Piston Air Drive
- Air-to-Liquid Pressure Ratio:
  ACHL72-01 - 1:84
  ACHL189-01 - 1:213

Liquid Inlet Location

S = Side

Isolation Chamber

N = None

Liquid Seal Materials

P = UHMWPE U-Cup with Elgiloy Spring Energizer

Note: Individual Pump Specifications can be found at www.Autoclave.com.

Reference Guide

Catalog Number	Pressure Ratio	Maximum Rated Outlet Pressure PSI (bar)	Displacement Per Cycle .in³ (cm³)	Liquid Connections	
				Inlet	Outlet
ACHL72-01SNX	1:84	12,500 (862)	0.09 (1.47)	3/8" FNPT	1/4" F250C
ACHL189-01SNX	1:213	31,900 (2,199)	0.035 (0.57)	3/8" FNPT	1/4" F250C

Flow Rate Table: Air Drive Pressure (psi) vs. Outlet Pressure (psi)

Catalog Number	Air Drive Pressure (psi)	Outlet Pressure (psi)											
		0	500	1,500	3,000	5,000	7,500	10,000	15,000	25,000	40,000	55,000	
ACHL72-01SNX	60	42	32	17	9	1							in³/ min.
	90	42	34	25	18	7	1						
	120	43	35	29	24	17	7	2					
ACHL189-01SNX	60	15	15	15	15	14	13	8					
	90	15	15	15	15	15	13	11	7				
	120	15	15	15	15	15	13	12	8	1			

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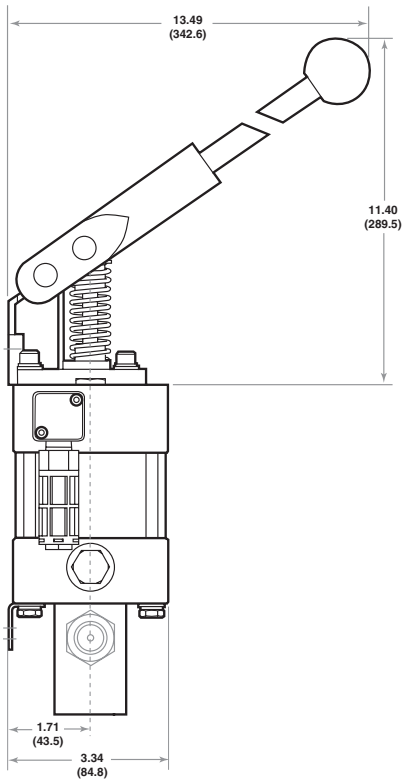
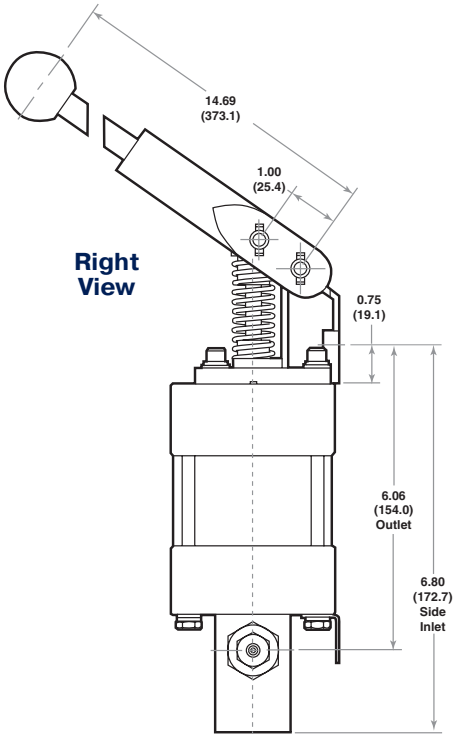
Air Drive Connection

All ACHL Series Pumps have a 1/4" FNPT regulated main air drive supply connection

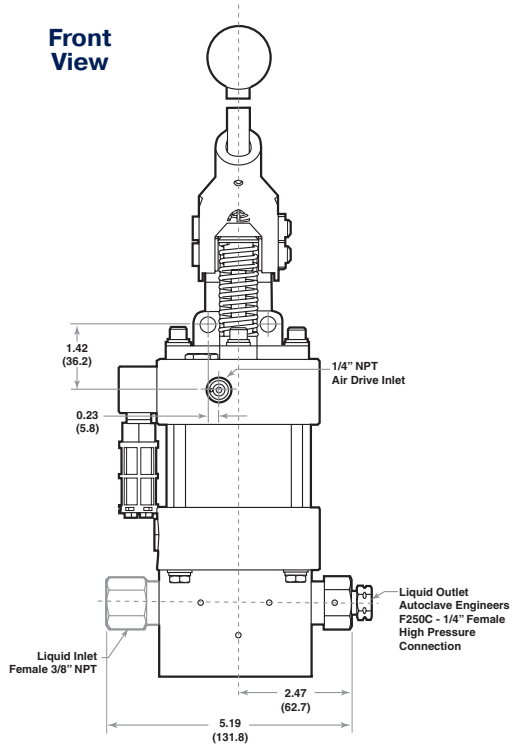
Left View



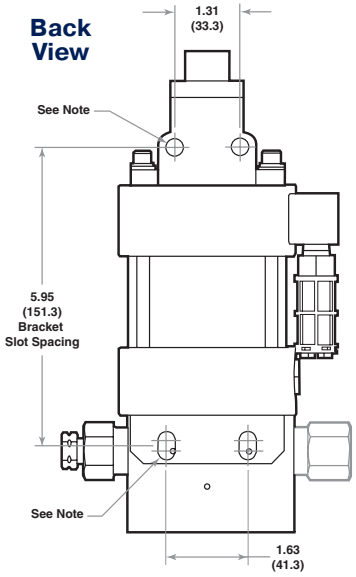
Right View



Front View



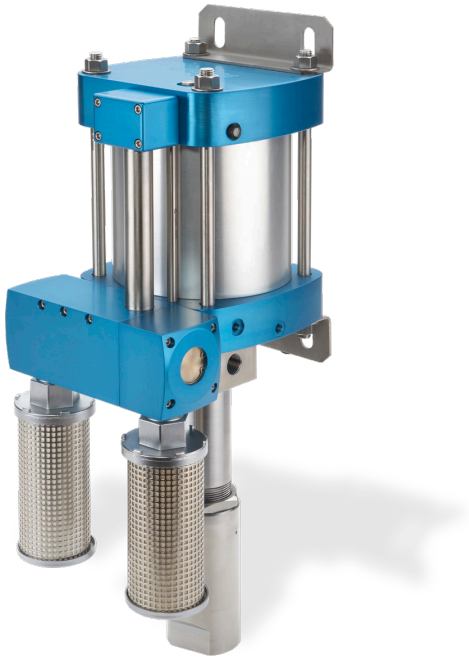
Back View



Note:

- Each Mounting Bracket includes (2) 11/32" (8.73) holes for 5/16" Bolts.
- Spool air tubing not shown for clarity.
- All dimensions are for reference only and are subject to change without notice.
- Primary Dimensions: Inches
- Secondary Dimensions: (Millimeters)

AFL SERIES Double-Acting, Single Piston Air Drive



Features:

- Pressure Ranges from 5,600 to 15,000 psi (385 to 1035 bar) max
- Operating Temperature Range: 0˚ to 140˚F (-18˚ to 60˚C)
- Pressure Head Material: 15-5 PH Stainless Steel
- Plunger: Stainless Steel, coated w/proprietary multi-layer carbon for long life
- Liquid Side Material: All Stainless-Steel Construction
- Air Side Material: Anodized Aluminum

Technical Data:

- Liquid Connections: Bottom Inlet Only – see chart (page 17)
- Isolation Chamber: Standard on all sizes
- Displacement per stroke: See chart (page 17)
- Liquid Seals: UHMWPE U-Cup w/ optional o-rings (see P/N matrix)
- Air Drive Pressure Range: 15-150 psi (1-10 bar) * See Note
- Main Air Inlet: 3/4" FNPT (Regulated)
- Pilot Air Inlet: 1/8" FNPT (unregulated)
- Exhaust Port (muffler removed) 1" FNPT
- Max Air Consumption: 167 SCFM @ 90 psi
- Pre-Lubricated Piston at Factory
- Air Seals: Buna-N

Note: *Maximum air drive pressure is limited by maximum pressure shown in chart on Page 17.

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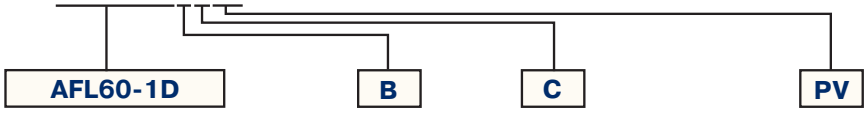
AFL Pump Part Number Matrix

Typical catalog number: **AFL60-1DBCPV**



Pump Type / Size / Ratio

AFL =
- High Flow, High Pressure Pump
- 6" Single Piston Air Drive
- Air-to-Liquid Pressure Ratio:
  AFL35-1D - 1:39
  AFL60-1D - 1:70
  AFL100-1D - 1:113

Liquid Inlet Location

B = Bottom

Isolation Chamber

C = Included

Liquid Seal Materials

PV = UHMWPE U-Cup with FKM O-Rings

PB = UHMWPE U-Cup with Buna N O-rings

PC = UHMWPE U-Cup with FFKM O-rings

Note: Individual Pump Specifications can be found at www.Autoclave.com.

Reference Guide

Catalog Number	Pressure Ratio	Maximum Rated Outlet Pressure PSI (bar)	Displacement Per Cycle in^3 (cm^3)	Liquid Connections	
				Inlet	Outlet
AFL35-1DBCXX	1:39	5,600 (386)	6.02 (98.7)	1" FNPT	9/16" SF562CX
AFL60-1DBCXX	1:70	10,000 (690)	3.40 (55.7)	1" FNPT	9/16" SF562CX
AFL100-1DBCXX	1:113	15,000 (1034)	2.30 (37.7)	1" FNPT	9/16" SF562CX

Flow Rate Table: Air Drive Pressure (psi) vs. Outlet Pressure (psi)

Catalog Number	Air Drive Pressure (psi)	Outlet Pressure (psi)								
		0	500	1,500	3,000	4,500	6,000	10,000	15,000	
AFL35	60	24	19	9						Liters / min.
	90	25	21	16	6					
	120	26	23	19	12	2				
AFL60	60	14	12	9	4					
	90	14	13	11	8	6	1			
	120	15	14	12	10	8	6			
AFL100	60	10	9	7	5	3	1			
	90	11	10	8	7	6	5	1		
	120	12	11	9	8	7	6	3		

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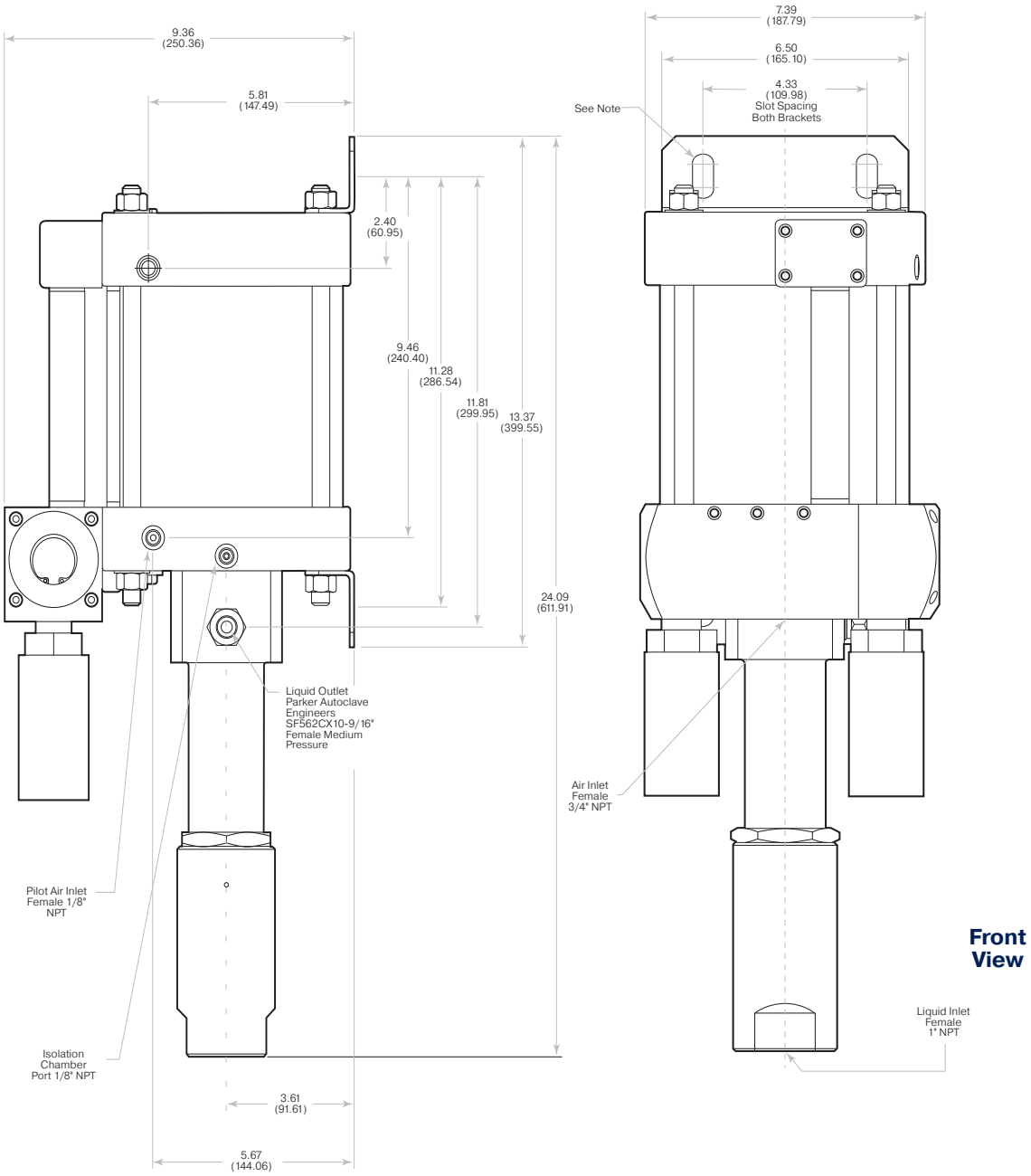
Air Drive Connection

All AFL Series Pumps have a 1/2" FNPT regulated main air drive supply connection and utilize a 1/8" FNPT unregulated pilot port connection for remote start/stop operation. It is recommended to operate the pilot port at a higher air pressure than the main air drive supply pressure for proper function.



Note:

- Each Mounting Bracket includes (2) 9/16" (14.29) holes for 1/2" Bolts.
- All dimensions are for reference only and are subject to change without notice.
- Primary Dimensions: Inches
- Secondary Dimensions: (Millimeters)

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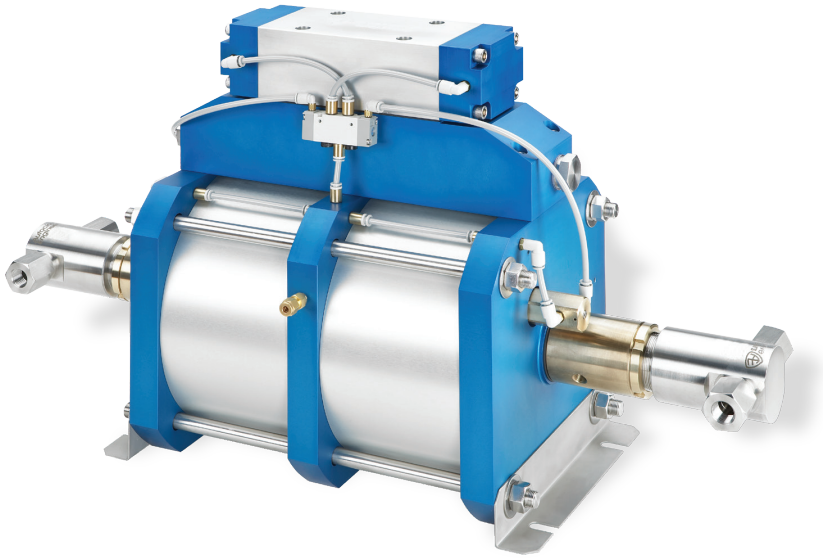
AHL SERIES Double-Acting, Double Piston Air Drive



Features:

- Pressure Ranges from 6,700 to 22,500 psi (460 to 1550 bar) max
- Operating Temperature Range: 0° to 140°F (-18° to 60°C)
- Pressure Head Material: 15-5 PH Stainless Steel
- Plunger: Stainless Steel, coated w/proprietary multi-layer carbon for long life
- Liquid Side Material: All Stainless-Steel Construction
- Air Side Material: Anodized Aluminum

Technical Data:

- Liquid Connections: Dual Side Inlet Only – see chart (page 20)
- Isolation Chamber: Standard on all sizes
- Displacement per stroke: See chart (page 20)
- Liquid Seals: Thermoplastic Polyester U-Cup w/ optional o-rings (see P/N matrix)
- Air Drive Pressure Range: 20-100 psi (1.5-7 bar) * See Note
- Main Air Inlet: 1" FNPT (Regulated)
- Pilot Air Inlet: 1/8" FNPT (unregulated)
- Exhaust Port (muffler removed) 1" BSP
- Max Air Consumption: 290 SCFM @ 50 psi (no pressure)
- Pre-Lubricated Piston at Factory
- Air Seals: Buna-N

Note: *Maximum air drive pressure is limited by maximum pressure

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AHL Pump Part Number Matrix

Typical catalog number: **AHL66-2DSCTV**

Pump Type / Size / Ratio

AHL =
- High Flow, Liquid High Pressure Pump
- 10" Dual Piston Air Drive
- Air-to-Liquid Pressure Ratio:
  AHL33-2D - 1:67
  AFL66-2D - 1:133
  AFL118-2D - 1:239

Liquid Inlet Location

S = Side

Isolation Chamber

C = Included

Liquid Seal Materials

TV = Thermoplastic Polyester U-Cup and FKM O-Rings

TB = Thermoplastic Polyester U-Cup and Buna-N O-Rings

TC = Thermoplastic Polyester U-Cup and Perfluoroelastomer FFKM O-Rings

Note: Individual Pump Specifications can be found at www.Autoclave.com.

Reference Guide

Catalog Number	Pressure Ratio	Maximum Rated Outlet Pressure PSI (bar)	Displacement Per Cycle .in³ (cm³)	Liquid Connections	
				Inlet	Outlet
AHL33-2DSCXX	1:67	6,700 (462)	15.3 (250.7)	1" FNPT	1/2" FNPT
AHL66-2DSCXX	1:133	13,300 (917)	7.8 (127.8)	1/2" FNPT	1/2" FNPT
AHL118-2DSCXX	1:239	22,500 (1551)	4.4 (72.1)	1/2" FNPT	SF562CX

Liquid Flow Rate vs. Outlet Pressure: AHL33-2DSC Series

Approximate Air Drive Pressure: 100 psi			
Pressure (PSI)	Pressure (bar)	Flow (gpm)	Flow (liter/min)
0	0	7.6* (see note 2)	28.8* (see note 2)
1000	69	6.1	23.0
2000	138	5.7	21.5
3000	207	4.9	18.4
4000	276	4.0	15.2
5000	345	3.2	12.3
6000	414	1.8	6.9

Nominal Liquid Pressure (Stalled)			
Air Drive Pressure		Liquid Pressure	
PSI	bar	PSI	bar
20	1.4	1340	92.4
30	2.1	2010	138.6
40	2.8	2680	184.8
50	3.4	3350	231.0
60	4.1	4020	277.2
70	4.8	4690	323.4
80	5.5	5360	369.6
90	6.2	6030	415.8
100	6.9	6700	461.9

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Liquid Flow Rate vs. Outlet Pressure: AHL66-2DSC Series

Approximate Air Drive Pressure: 100 psi			
Pressure (PSI)	Pressure (bar)	Flow (gpm)	Flow (liter/min)
0	0	3.6* (see note 2)	13.7* (see note 2)
1000	69	3.4	12.9
2000	138	3.1	12.0
3000	207	2.9	11.2
4000	276	2.7	10.3
5000	345	2.5	9.5
6000	414	2.3	8.7
7000	483	2.2	8.2
8000	552	2.0	7.7
9000	621	1.8	6.7
10000	690	1.5	5.7
11000	759	1.3	4.8
12000	828	1.0	3.9

Nominal Liquid Pressure (Stalled)			
Air Drive Pressure		Liquid Pressure	
PSI	bar	PSI	bar
20	1.4	2660	183.4
30	2.1	3990	275.2
40	2.8	5320	366.9
50	3.4	6650	458.6
60	4.1	7980	550.3
70	4.8	9310	642.1
80	5.5	10640	733.8
90	6.2	11970	825.5
100	6.9	13300	917.2

Liquid Flow Rate vs. Outlet Pressure: AHL118-2DSC Series

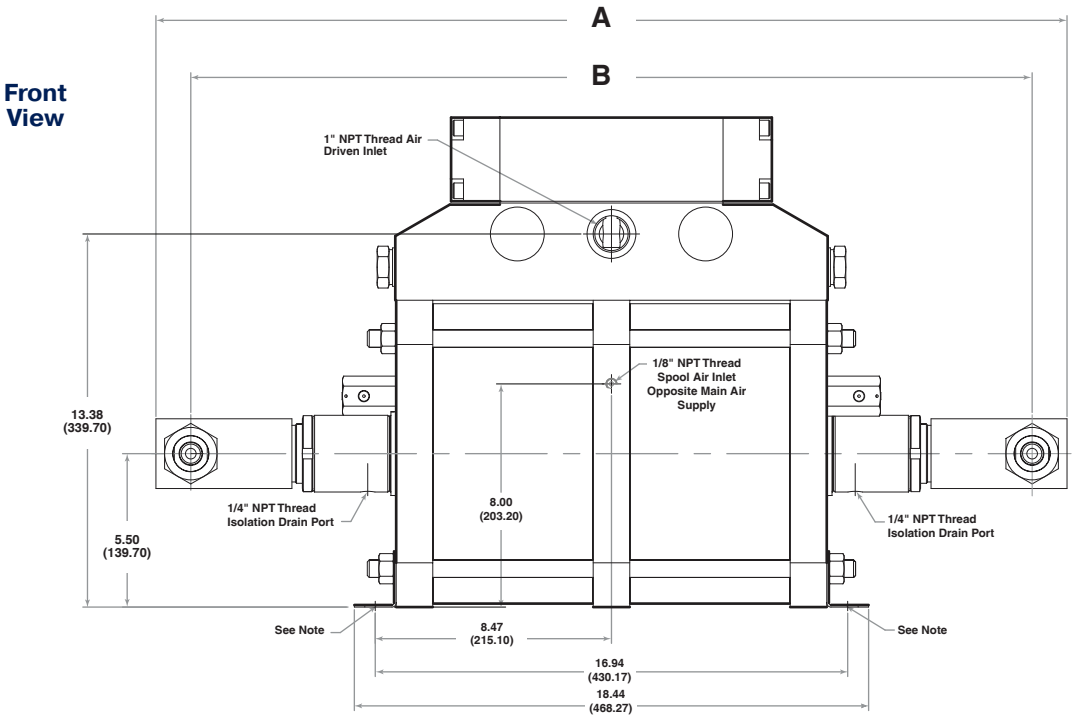
Approximate Air Drive Pressure: 100 psi			
Pressure (PSI)	Pressure (bar)	Flow (gpm)	Flow (liter/min)
0	0	2.0	7.7
2000	138	1.8	6.9
4000	276	2.0	6.3
6000	414	1.5	5.8
8000	552	1.4	5.4
10000	689	1.3	5.1
12000	827	1.2	4.7
14000	965	1.1	4.3
16000	1103	1.0	3.8
18000	1241	0.8	3.1
20000	1379	0.6	2.3
22500	1551	0.2	0.8

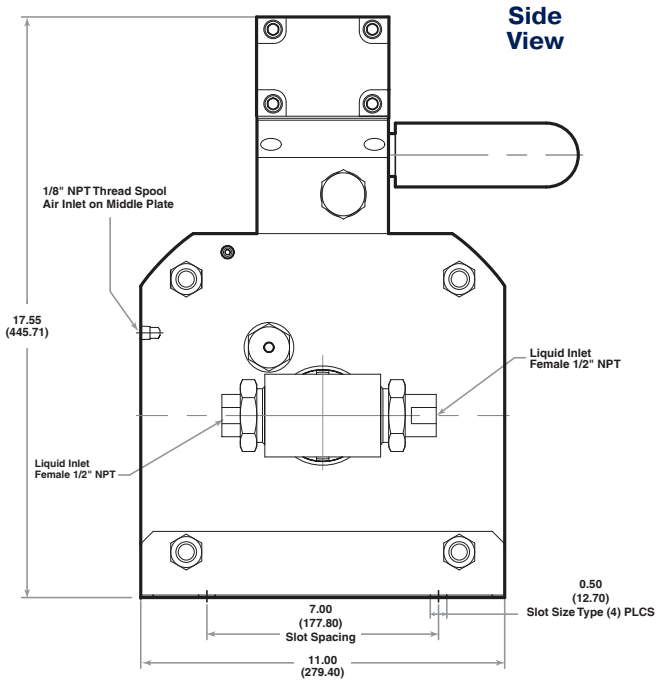
Nominal Liquid Pressure (Stalled)			
Air Drive Pressure		Liquid Pressure	
PSI	bar	PSI	bar
20	1.4	4780	329.6
30	2.1	7170	494.4
40	2.8	9560	659.1
50	3.4	11950	823.9
60	4.1	14340	988.7
70	4.8	16730	1153.5
80	5.5	19120	1318.3
90	6.2	21510	1483.1
95	6.6	22500	1551.3

Note:
1. Actual flow rates will vary depending on air flow capacity, downstream flow restrictions, and fluid type.
2. Flow valve at approximately 50 psi air drive pressure.

Air Drive Connection

All AHL series pumps have a 1" FNPT regulated main air drive supply connection and utilize a 1/8" FNPT unregulated pilot port connection for remote start/stop operation. It is recommended to operate the pilot port at a higher air pressure than the main air drive supply pressure for proper function.





Model	A	B
AHL33	32.41 (823.21)	30.42 (772.41)
AHL66	32.66 (829.61)	30.16 (766.11)
AHL118	32.66 (829.61)	30.16 (766.11)

Note:

- Each Mounting Bracket includes (2) 9/16" (14.29) holes for 1/2" Bolts.
- All dimensions are for reference only and are subject to change without notice.
- Primary Dimensions: Inches
- Secondary Dimensions: (Millimeters)

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! CAUTION !

Do not mix or interchange component parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

Parker Autoclave Engineers Valves, Fittings, and Tools are not designed to interface with common commercial instrument tubing and are designed to only connect with tubing manufactured to Parker Autoclave Engineers AES specifications. Failure to do so is unsafe and will void warranty.

WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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