ALLENAIR CORP.

AIR OPERATED STAINLESS STEEL PISTON PUMPS CAN TRANSFER CIP CLEAN IN PLACE SOLUTIONS FROM IBC, CARBOYS, 5 AND 55 GALLON DRUMS OR ANY CONTAINERS

Allenair Manufactures Dispensing & Transfer Pumps

- For the pumping and transfer of most liquids.
- Accurately dispense various food products and chemicals.
- Pumps can be made in a number of variations, which can include different seal and pump materials depending on application requirements.

CALL FOR APPLICATION ASSISTANCE

ALLENAIR CORP. **QUALITY FIRST...TODAY**

ALLENAIR CORP.

AIR OPERATED PISTON TRANSFER PUMP

TRANSFER PUMPS ARE DESIGNED SPECIFICALLY TO TRANSFER BULK LIQUIDS, OILS, HYDRAULIC FLUIDS AND MANY OTHER TYPES OF LIQUIDS

Description:

The Allenair air driven pumps are designed around our tandem cylinder design joining two cylinders together with a common head and rod. The total pump unit is divided into two sections; the drive section and the pump section. By utilizing a four-way valve to operate the drive cylinder, the common rod and pump piston will move in unison, creating suction on the up stroke and pressure on the down stroke. An example of this action is that of a syringe.

CORROSIVE LIQUID PUMPING .

Used to pump deionized water, the photograph to the right depicts an **EVTP** model pump with an all stainless steel pump chamber, utilizing a **VCR** automatic reciprocating Valve-in-Head® drive cylinder.

EVTP 2 X 6 VCR CS

FOOD SERVICE PUMPS DISPENSING FOOD PRODUCTS

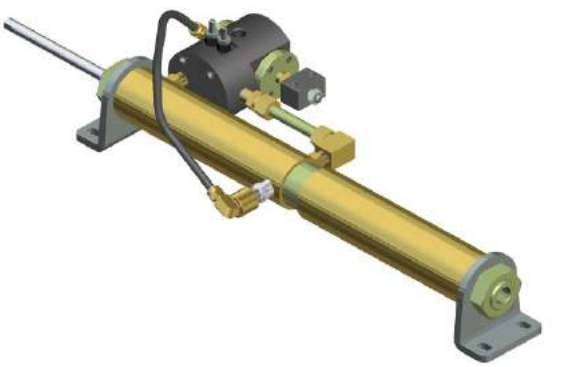
Used to dispense lard or high viscosity liquids the photograph to the right depicts an **ALL** 300 Series Stainless Steel **SSETP** model pump. This pump utilizes an **SA** adjustment rod to produce a variable displacement chamber, with exceptional repeatability.

ETP 2-1/2 X 3 J2 SA CS

DISPENSING PETROLEUM BASED PRODUCTS AUTOMATIC LUBRICATION

Used to dispense lubricating oil, the photograph to the right depicts an **EVTP** model pump. This pump utilizes a **VSAT** valve option to dispense a fixed volume of oil while maintaining the ability to adjust that volume using the **SA** adjustment rod.

EVTP 1-1/2 X 3 1/4 VSAT J2 CS



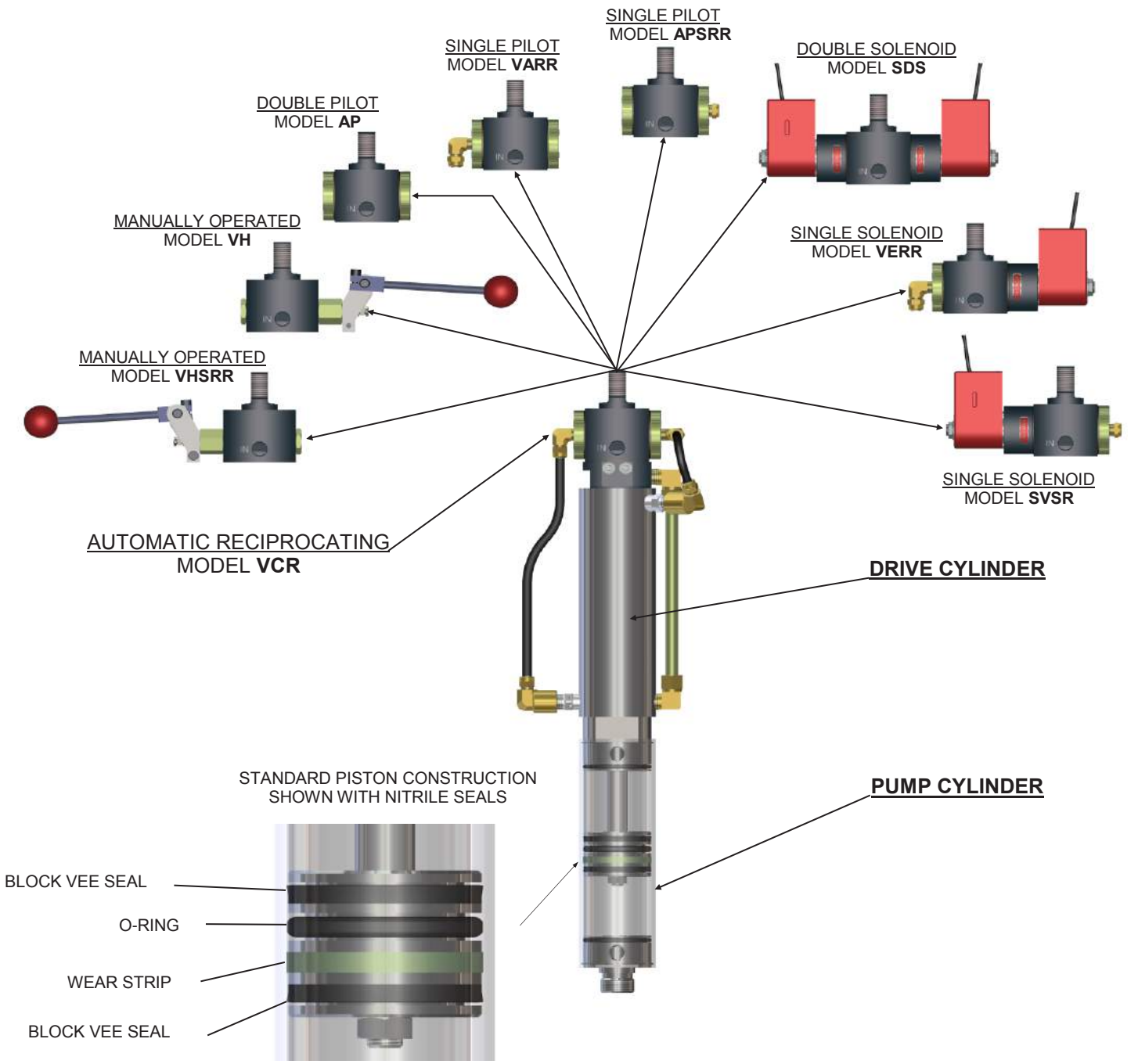
TRANSFER PUMPS

Pneumatic Powered Pumps

Self priming, positive displacement design perfect for pumping high and low viscosity liquids

EVTP
VALVE OPTIONS

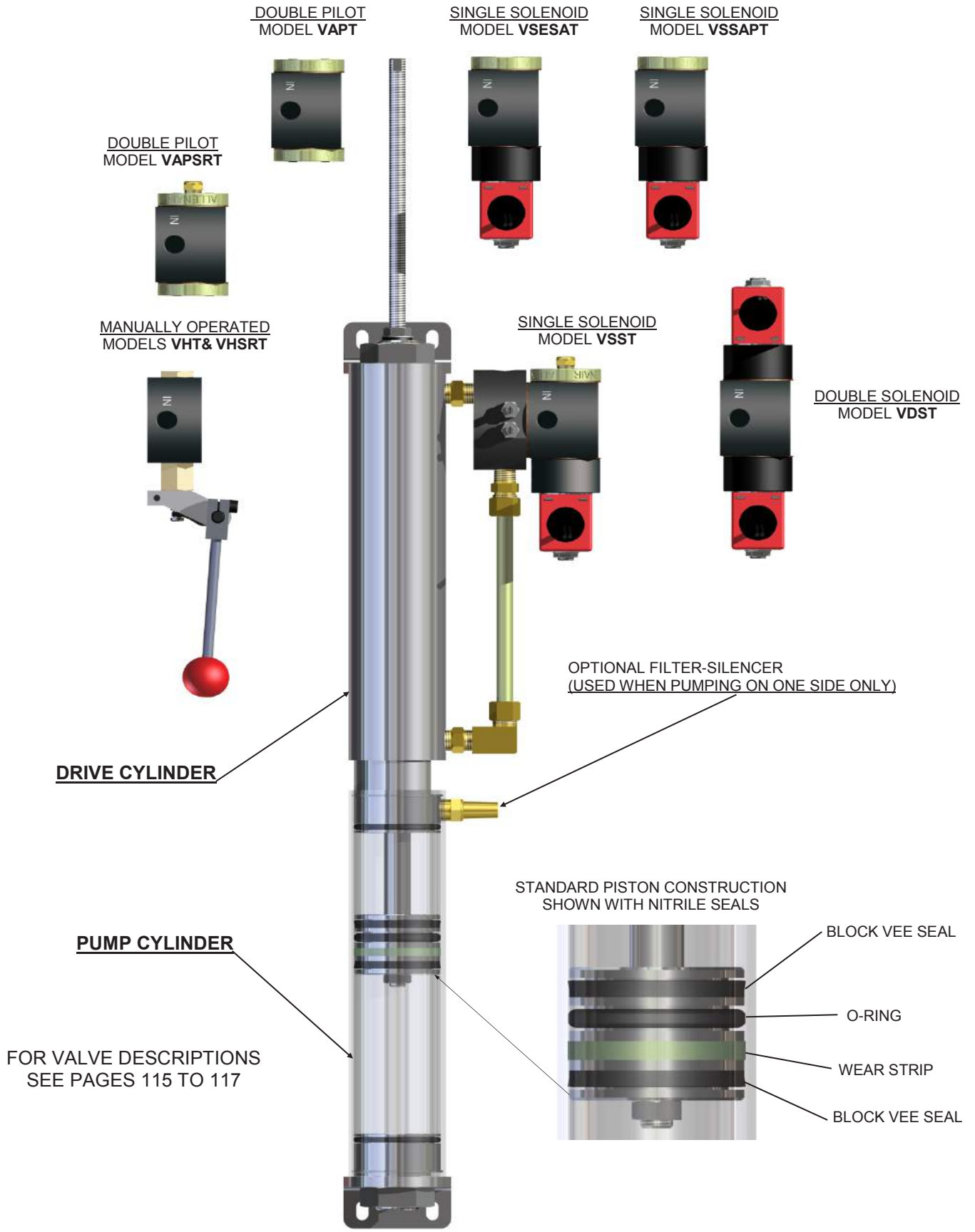
DRIVE CYLINDER VALVES



FOR VALVE DESCRIPTIONS
SEE PAGES 115 TO 117

“SA” ADJUSTABLE PUMP VOLUME

EVTP VALVE OPTIONS



FOR VALVE DESCRIPTIONS
SEE PAGES 115 TO 117

DRIVE CYLINDER VALVES

SINGLE SOLENOID
MODEL SVSR / VSST

This model incorporates a 4-way Single Solenoid Pilot Valve, air return. A maintained electrical contact is required to move the piston its full stroke. Breaking the electrical contact returns the piston to its original position.
This Model is supplied with the piston normally retracted (electrical contact to extend piston)
The standard solenoid operator is the AAS splice box housing.
Voltages: 12, 24,120 & 240/60 AC and 6, 12 & 24VDC are standard.

SHOWN WITH NEMA 4 HOUSING
ORDERING CODE (JIC)

SINGLE SOLENOID
MODEL VERR / VSESAT (AUTOMATIC RETURN)

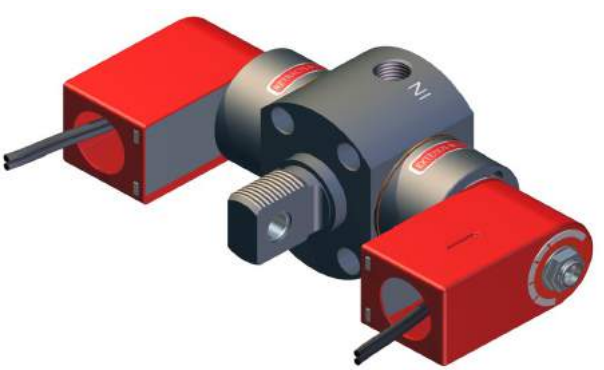
This model incorporates a 4-way Single Solenoid Doubled Bleed Pilot Valve. A momentary (NOT continuous) electrical contact is required to move the piston its full stroke. Upon reaching its FULL stroke, the piston will automatically return to its original position.
This model is supplied with the piston normally retracted (electrical contact will extend the piston)
The standard solenoid operator is the AAS splice box housing.
Due to internal construction and application requirements, there can be a loss of approximately 1/8” to 1/4” of stroke.
Voltages: 12,24,120 & 240/60 and 6,12 & 24VDC are standard.

SHOWN WITH EXPLOSION-PROOF HOUSING
ORDERING CODE (AAX)

DOUBLE SOLENOID
MODEL SDS / VDST

This model incorporates a 4-way Double Solenoid Pressure Pilot Valve. A momentary or maintained electrical contact applied to one solenoid will move the piston its full stroke. The piston will remain there under pressure until the other solenoid is energized, which will cause the piston to return to its original position. If a maintained contact is employed, the first solenoid must be de-energized before the other is energized. The standard solenoid operator, as shown is the AAS splice box housing.
Voltages: 12, 24,120 & 240/60 AC and 6, 12 & 24VDC are standard.

SHOWN WITH SPLICE BOX HOUSING
ORDERING CODE (AAS)



DRIVE CYLINDER VALVES
CONTINUED

SINGLE PILOT
MODEL APSRR / VAPSRT

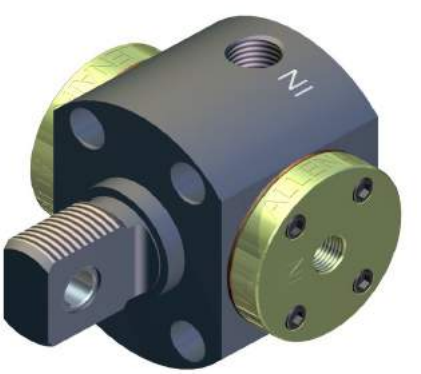
This model incorporates a 4-way Single Pressure Pilot Valve. A continuous pilot pressure applied to “IN” side of valve will move the piston its full stroke. When the pilot pressure is released, the piston will return to its original position. Pilot pressure is normally supplied through a 3-way N.C. Valve.
Model is supplied with the rod normally retracted (pilot pressure to extend rod) pilot pressure must be at least 75% of the operating pressure.

SINGLE PILOT
MODEL VARR / VSAT (AUTOMATIC RETURN)

This model incorporates a 4-way Double Bleed Pilot Valve. A momentary (NOT continuous) actuation of a Bleeder Valve is required to move the piston Its full stroke. Upon reaching its FULL stroke, the piston will automatically return to its original position.
This model is supplied with the rod normally retracted (manual bleed to extend rod)
Due to internal construction and application requirements, there can be a loss of approximately 1/8” to 1/4” of stroke. Bleeder Valve Model BV100 is supplied on these models

DOUBLE PILOT
MODEL AP / VAPT

This model incorporates a 4-way Double Pressure Pilot Valve. A momentary or maintained pilot pressure applied to one side of the valve will move the rod its full stroke. The piston will remain in that position under pressure until a pilot pressure is released and applied to the other side, which will cause the piston to return to its original position.
If a maintained pilot pressure is applied, it must be released before the other pilot pressure is applied. Pilot pressure must be at least 25% of the operating pressure.



DRIVE CYLINDER VALVES
CONTINUED

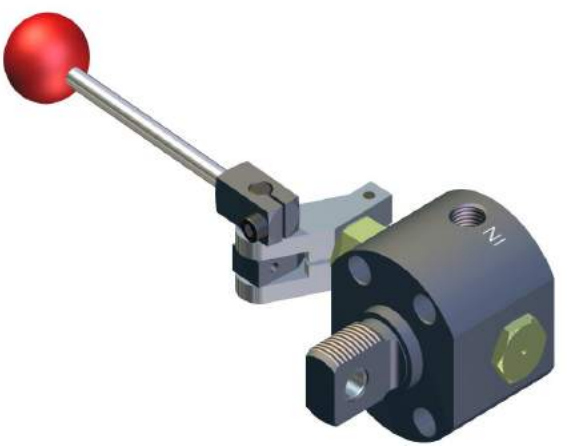
AUTOMATIC RECIPROCATING

MODEL VCR (NOT AVAILABLE WITH "SA" OPTION**)**
This model incorporates a 4-way Double Bleed Pilot Valve. By means of Built-in Bleeder Valves and internal Cam Bosses.
This unit will automatically reciprocate as soon as air pressure is applied. It is recommended that a shut-off valve be mounted in the inlet line. Due to internal construction and application requirements, there can be a loss of approximately 1/4" to 1/2" of stroke. Minimum stroke available is 1"

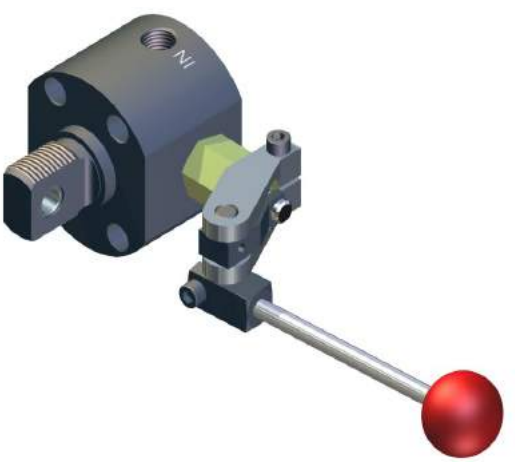
MANUALLY OPERATED

The following 2 models incorporate a 4-way Manual Valve.

MODEL VH / VHT
This model requires manual operation of the lever to both extend and retract the piston.



MODEL VHSRR / VHSRT:
This model is lever operated to extend the normally retracted piston. The valve is equipped with a built-in spring return which automatically returns the rod when lever is released.



PUMP ACCESSORIES

HALL EFFECT SWITCHES (CSA "NRTL/C" Listed): ALLENAIR Hall Effect switches are designed to be used with our 1-1/2" thru 4" bore Pumps. The Pumps must be ordered with the "RM" option. All switches have an LED indicator light, nine (9) foot leads, a mounting bracket P/N RMB2 and an operating temperature range of - 22°F to +176°F.

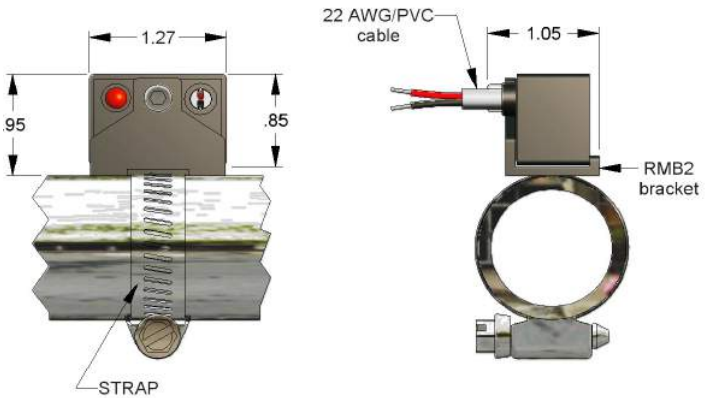
TECHNICAL DATA						
MODEL	FUNCTION	SWITCHING VOLTAGE	SWITCHING CURRENT	SWITCHING POWER	SWITCHING SPEED	VOLTAGE DROP
HO1	NORMALLY OPEN PNP Output	6-24/DC	1 Amp max.	24 watts max.	1.5 µs operate 0.5 µs release	0.5 Volts
HO2	NORMALLY OPEN NPN Output	6-24/DC	1 Amp max.	24 watts max.	1.5 µs operate 0.5 µs release	0.5 Volts
HO3	NORMALLY OPEN TRIAC output	12-24-50/60	0.6 Amp max. 5 Amp inrush	15 watts max.	1.5 µs operate 0.5 µs release	1 Volt
HO4	NORMALLY OPEN TRIAC output	120-50/60	0.6 Amp max. 5 Amp inrush	72 watts max.	1.5 µs operate 0.5 µs release	1 Volt

MODELS H01-H04

NOTES:

1) PNP output is Sourcing

2) NPN output is Sinking
   All models require a mounting strap purchased as a separate item based on the pump bore size.



REED SWITCHES (CSA "NRTL/C" Listed)
ALLENAIR Reed switches are designed to be used with our 1-1/2" thru 4" bore Pumps. The Pumps must be ordered with the "RM" option. All switches have nine (9) foot hook up cable. Operating temperature range is - 22°F to +176°F. Models R02, R04 and R05 have an LED indicator light. Models R02, R03, R04 and R05 have MOV surge suppression.

TECHNICAL DATA						
MODEL	FUNCTION	SWITCHING VOLTAGE	SWITCHING CURRENT	SWITCHING POWER	SWITCHING SPEED	VOLTAGE DROP
RO1	NORMALLY OPEN SPST	0-240/DC 0-240-50/60	1 Amp max.	30 watts max.	0.6 ms operate 0.05 ms release	0 Volts
RO2	NORMALLY OPEN SPST	5-240/DC 5-240-50/60	1 Amp max. .005 Amp min.	30 watts max.	0.6 ms operate 0.05 ms release	3 Volts
RO3	NORMALLY OPEN TRIAC output	10-240-50/60	4 Amp max. 50 Amp Inrush	100 watts max.	0.6 ms operate 0.05 ms release	1 Volt
RO4	NORMALLY OPEN TRIAC output	24-240-50/60	4 Amp max. 50 Amp Inrush 0.005 Amp min.	100 watts max.	0.6 ms operate 0.05 ms release	1 Volt
RO5	NORMALLY OPEN SPST	5-120/DC 5-120-50/60	0.5 Amp max. 0.005 Amp min.	10 watts max.	0.5 ms operate 0.1 ms release	3.5 Volts

Models R01 - R04 include mounting bracket P/N RMB2.
Order mounting strap based on cylinder bore size as shown below.
Model R05 supplied with a universal mounting bracket and strap covering all bore sizes (1-1/2 thru 4") P/N RMB1

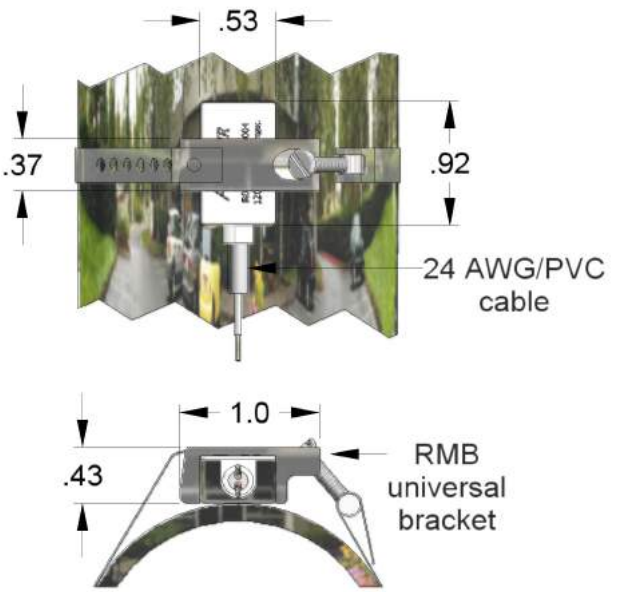
PUMP BORE SIZE	1-1/2"	2" & 2-1/2"	3"	4"
STRAP PART NO.	RMS1	RMS2	RMS3	RMS4

PUMP ACCESSORIES

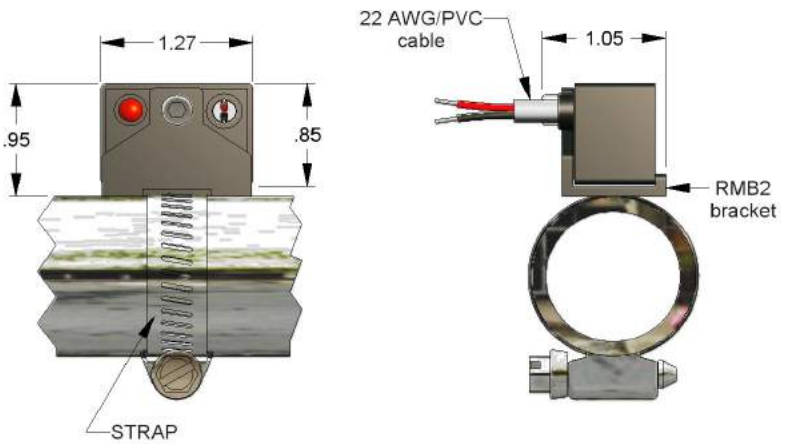
REED SWITCHES (Models R01 Thru R04)

Model R05 supplied with a universal mounting bracket and strap covering all bore sizes (1-1/2 thru 4") P/N RMB1

MODEL R05

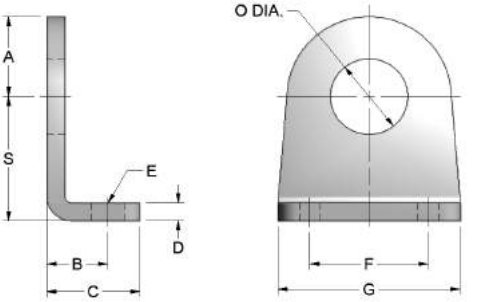


MODELS R01- R04



MOUNTING BRACKET DIMENSIONS

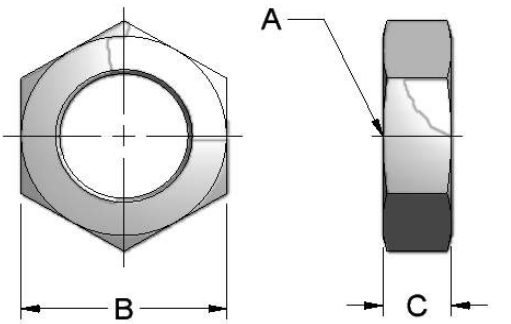
CYL. BORE SIZES	PART NUMBERS	A	B	C	D	E	F	G	O	S
1 -1 / 2"	*A -232	1 -1 / 8	7 / 8	1 -9 / 32	1 / 4	9 / 32	1 -5 / 8	2 -1 / 2	1 -1 / 16	1 -3 / 4
2"	*A -232	1 -1 / 8	7 / 8	1 -9 / 32	1 / 4	9 / 32	1 -5 / 8	2 -1 / 2	1 -1 / 16	1 -3 / 4
2 -1 / 2"	*A -332	1 -3 / 8	1 -1 / 4	1 -29 / 32	5 / 16	13 / 32	2 -1 / 4	3 -1 / 2	1 -3 / 8	2 -3 / 8
3"	*A -332	1 -3 / 8	1 -1 / 4	1 -29 / 32	5 / 16	13 / 32	2 -1 / 4	3 -1 / 2	1 -3 / 8	2 -3 / 8
4"	*A -432	1 -7 / 8	1 -3 / 4	2 -17 / 32	1 / 2	15 / 32	3 -1 / 4	5"	1 -3 / 4	3 -3 / 16



*ADD SS TO THE PART No. FOR STAINLESS STEEL
EXAMPLE: SSA-232

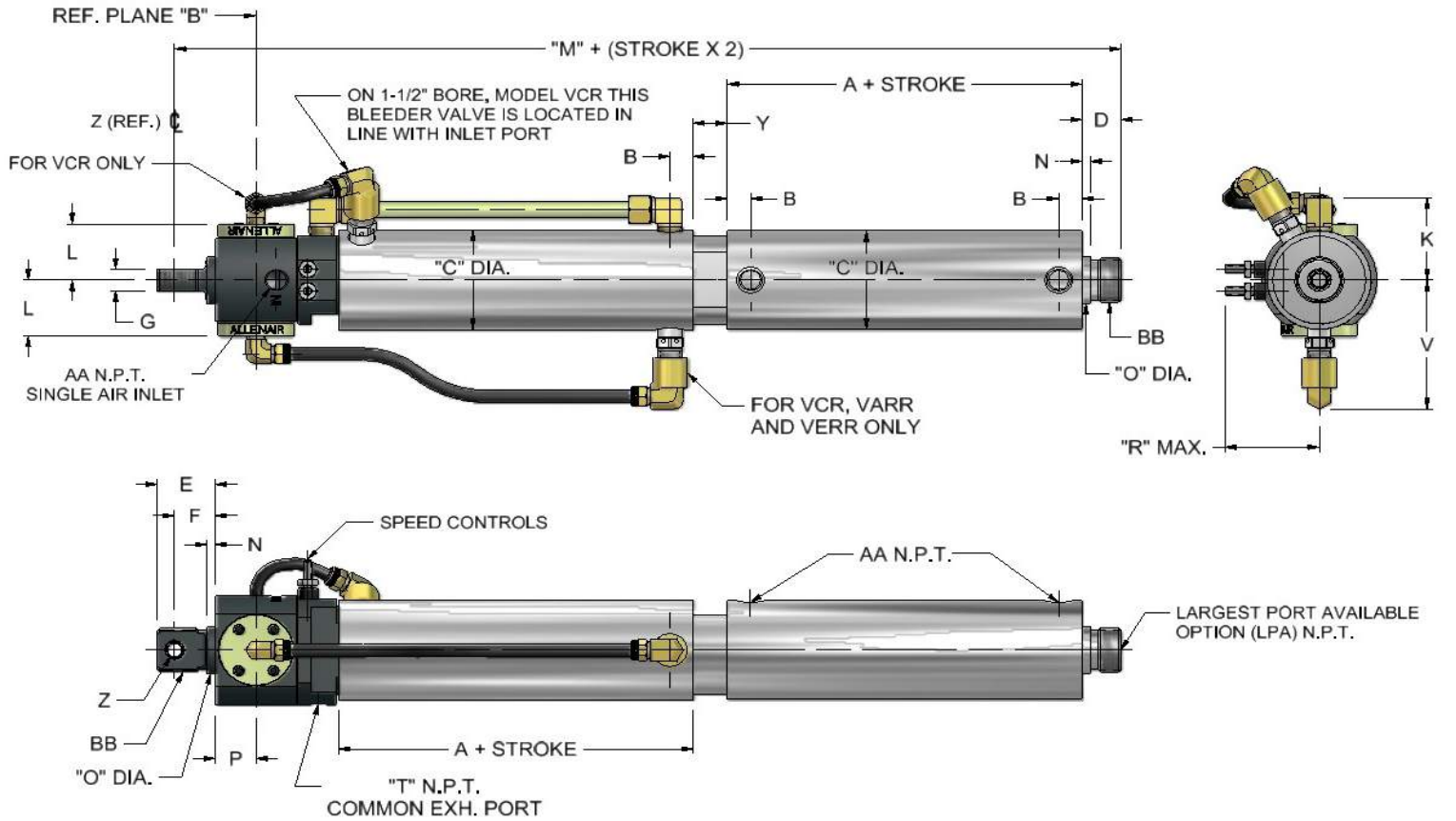
MOUNTING NUTS Mounting Nuts are supplied with the Foot Mounts and are included in the price of the Mounts. However, they may be purchased as a separate item.

CYL. BORE SIZES	PART NUMBERS	A	B	C
1 -1 / 2"	*A -214	1" -14	1 -1 / 2	1 / 2
2"	*A -214	1" -14	1 -1 / 2	1 / 2
2 -1 / 2"	*A -314	1 -3 / 8 -12	1 -3 / 4	5 / 8
3"	*A -314	1 -3 / 8 -12	1 -3 / 4	5 / 8
4"	*A -414	1 -3 / 4 -12	2 -1 / 4	3 / 4



*ADD SS TO THE PART No. FOR STAINLESS STEEL
EXAMPLE: SSA-214

DIMENSIONS
EVTP



CYL. BORE SIZES	A	B	C	D	E	F	G	K	L	M	N	O	P	R	T	V
1-1/2"	3-5/8	1/2	1-11/16	7/8	1-1/4	7/8	1/2	1-15/16	1-1/4	12-3/8	3/16	1-1/16	7/8	2-1/32	1/4	2-5/8
2"	3-5/8	1/2	2-3/16	7/8	1-1/4	7/8	1/2	2"	1-1/4	12-3/8	3/16	1-1/16	7/8	2-1/32	1/4	2-7/8
2-1/2"	3-7/8	9/16	2-11/16	1"	2"	1-3/8	5/8	2-1/4	1-1/4	14"	1/4	1-3/8	7/8	2-1/32	1/4	3-1/8
3"	3-7/8	9/16	3-3/16	1"	2"	1-3/8	5/8	2-5/8	1-1/4	14"	1/4	1-3/8	7/8	2-1/32	1/4	3-3/8
4"	5-1/8	13/16	4-3/8	1-1/8	2-3/16	1-7/16	3/4	3-7/16	1-19/32	17-5/16	3/16	1-3/4	13/16	2-7/16	1/2	3-15/16

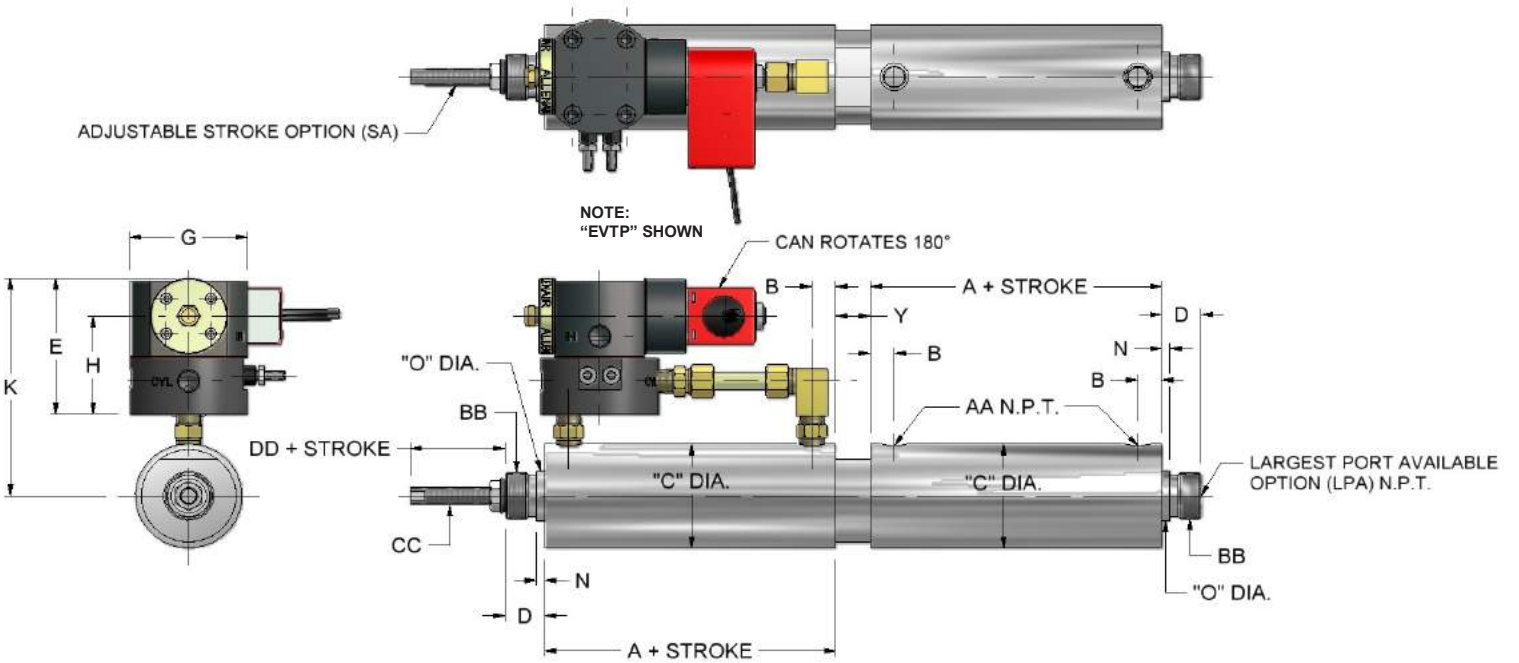
CYL. BORE SIZES	AA	BB	Y	Z	LPA (N.P.T.)
1-1/2"	1/4	1"-14	3/4	5/16	*3/8
2"	1/4	1"-14	3/4	5/16	*3/8
2-1/2"	3/8	1-3/8-12	1-1/8	7/16	3/4
3"	3/8	1-3/8-12	1-1/8	7/16	3/4
4"	1/2	1-3/4-12	1-1/8	1/2	1"

* LARGEST PORT AVAILABLE (LPA)
1/2 N.P.T. WITH STAINLESS STEEL HEADS
** BRASS "BU" TUBING INCREASE "C" DIM BY 1/16"

DIMENSIONS

ETP & EVTP PUMPS

“SA” ADJUSTABLE STROKE



CYL. BORE SIZES	A	B	C	D	E	G	H	K	N
1 -1 / 2"	3 -5 / 8	1 / 2	1 -11 / 16	7 / 8	3 -1 / 8	2 -1 / 2	2 -3 / 8	4 -1 / 2	3 / 16
2"	3 -5 / 8	1 / 2	2 -3 / 16	7 / 8	3 -1 / 8	2 -1 / 2	2 -3 / 8	4 -3 / 4	3 / 16
2 -1 / 2"	3 -7 / 8	9 / 16	2 -11 / 16	1"	3 -1 / 8	2 -1 / 2	2 -3 / 8	5"	1 / 4
3"	3 -7 / 8	9 / 16	3 -3 / 16	1"	3 -1 / 8	2 -1 / 2	2 -3 / 8	5 -1 / 4	1 / 4
4"	5 -1 / 8	13 / 16	4 -3 / 8	1 -1 / 8	3 -1 / 2	3"	2 -11 / 16	6 -1 / 8	3 / 16

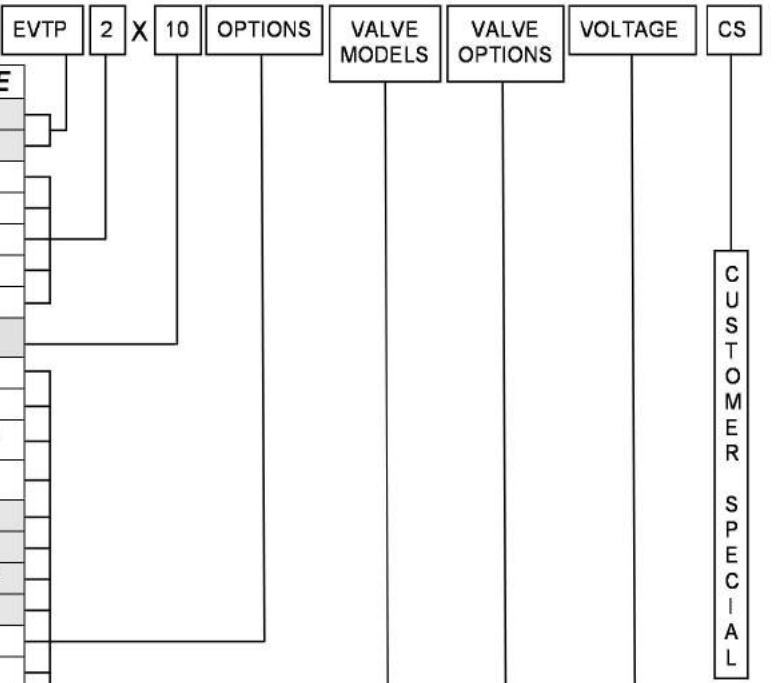
CYL. BORE SIZES	O	Y	AA	BB	CC	DD	LPA (N.P.T.)
1 -1 / 2"	1 -1 / 16	3 / 4	1 / 4	1" -14	3/8-16	1-1/4	* 3 / 8
2"	1 -1 / 16	3 / 4	1 / 4	1" -14	3/8-16	1-1/4	* 3 / 8
2 -1 / 2"	1 -3 / 8	1 -1 / 8	3 / 8	1 -3 / 8 -12	1/2-13	1-1/8	3 / 4
3"	1 -3 / 8	1 -1 / 8	3 / 8	1 -3 / 8 -12	1/2-13	1-1/8	3 / 4
4"	1 -3 / 4	1 -1 / 8	1 / 2	1 -3 / 4 -12	1/2-13	1-5/8	1"

* LARGEST PORT AVAILABLE (LPA)
1/2 N.P.T. WITH STAINLESS STEEL HEADS
** BRASS “BU” TUBING INCREASE “C” DIM BY 1/16”

ORDERING PROCEDURE

FEATURE	DESCRIPTION		CODE
STYLE	STANDARD PUMP		ETP
	VALVE-IN HEAD PUMP		EVTP
BORE	1-1/2"		1-1/2
	2"		2
	2-1/2"		2-1/2
	3"		3
	4"		4
* STROKE	* SPECIFY IN INCHES (1/8" TO 50")		-
DRIVE OPTIONS	STROKE ADJUSTMENT		SA
	MAGNET (ONLY ON DRIVE CYLINDER)		RM
	STAINLESS STEEL MATERIAL FOR PARTS ON DRIVE CYLINDER		SSMD
	STANDARD MATERIAL FOR PARTS ON DRIVE CYLINDER		-
DRIVE SEAL OPTIONS	VITON SEALS		HTPD
	NITRILE SEALS (STD.)		-
	TEFLON SEALS		PTFED
	ETHYLENE PROPYLENE SEALS		EPSD
PUMP SEAL OPTIONS	VITON SEALS		HTPP
	NITRILE SEALS (STD.)		-
	TEFLON SELAS		PTFEP
	ETHYLENE PROPYLENE SEALS		EPSP
PUMP CYLINDER OPTIONS	STAINLESS STEEL MATERIAL FOR PARTS ON PUMP CYLINDER		SSMP
	STANDARD MATERIAL FOR PARTS ON PUMP CYLINDER		-
	LARGEST PORT AVAILABLE (IN FRONT PUMP HEAD)		LPA
MOUNTING	FOOT MOUNT BRACKETS (INSTALLED WITH UNIT)		FMB
DRIVE MODELS VALVE IN HEAD	ENERGIZE SOLENOID TO EXTEND PISTON, DE-ENERGIZE SOLENOID TO RETRACT PISTON		SVSR
	ENERGIZE SOLENOID TO EXTEND PISTON AND RETRACT AUTOMATICALLY		VERR
	ENERGIZE ONE SOLENOID TO EXTEND PISTON, OTHER SOLENOID TO RETRACT PISTON		SDS
	SINGLE PILOT (PISTON NORMALLY RETRACTED)		APSRR
	SINGLE PILOT AUTOMATIC RETURN (PISTON NORMALLY RETRACTED)		VARR
	DOUBLE PRESSURE PILOT VALVE		AP
	MANUALLY OPERATED (FOR BOTH EXTEND AND RETRACT THE PISTON)		VH
	MANUALLY OPERATED (FOR EXTEND THE PISTON) PISTON NORMALLY RETRACTED		VHSRR
	AUTOMATIC RECIPROCATING		VCR
DRIVE MODELS VALVE IN HEAD (WITH "SA" OPTION)	ENERGIZE SOLENOID TO EXTEND PISTON, DE-ENERGIZE SOLENOID TO RETRACT PISTON		VSST
	ENERGIZE SOLENOID TO EXTEND PISTON AND RETRACT AUTOMATICALLY		VSESAT
	ENERGIZE ONE SOLENOID TO EXTEND PISTON, OTHER SOLENOID TO RETRACT PISTON		VDST
	SINGLE PILOT (PISTON NORMALLY RETRACTED)		VAPSRT
	SINGLE PILOT AUTOMATIC RETURN (PISTON NORMALLY RETRACTED)		VSAT
	DOUBLE PRESSURE PILOT VALVE		VAPT
	MANUALLY OPERATED (FOR BOTH EXTEND AND RETRACT THE PISTON)		VHT
	MANUALLY OPERATED (FOR EXTEND THE PISTON) PISTON NORMALLY RETRACTED		VHSRT
DRIVE VALVE OPTIONS (VALVE IN HEAD)	MANUAL OVER-RIDE LEVER		OR
	SOLENOID OPERATORS	CONDUIT HOUSING	AAC
		DIN-type HOUSING	AAD
		GROMMET HOUSING	AAG
		SPLICE BOX HOUSING	AAS
		EXPLOSION PROOF	AAX
		SPADE TERMINALS	AAY
		NEMA 4	JIC
SOLENOID OPERATORS VOLTAGE	SPECIFY VOLTAGE (A wide range of non-standard voltages are available)		12/60 24/60 120/60 240/60 6VDC 12VDC 24VDC

EXAMPLE



ONLY WITH "EVTP" STYLE PUMPS

ONLY WITH "EVTP" STYLE PUMPS

ONLY WITH "EVTP" STYLE PUMPS

* WHEN ORDERING A VALVE-IN HEAD PUMP WITH STROKE ADJUSTMENT, STROKE MUST BE WITH A MINIMUM OF 2-1/2 STROKE & FOR 4" BORE MINIMUM OF 2" STROKE

MISCELLANEOUS INFORMATION

ALLENAIR PUMP DISPLACEMENT VOLUMES

BORE SIZE		cu in. per inch of stroke	gal. per inch of stroke	cc's. per inch of stroke	liters per 10mm of stroke
INCHES	MM				
1-1/2	(38)	1.77	0.008	28.949	(.011)
2"	(50)	3.14	0.014	51.465	(.020)
2-1/2	(63)	4.91	0.021	80.413	(.032)
3"	(76)	7.07	0.031	115.795	(.046)
4"	(101)	12.56	0.054	205.858	(.081)

Drive Cylinder Air Consumption

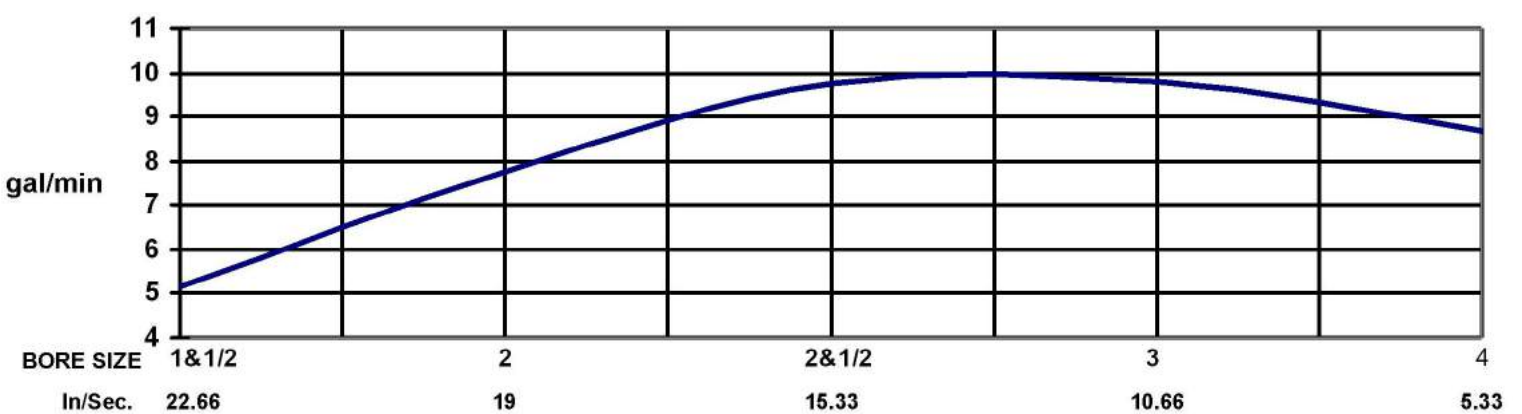
This chart is used for calculating the air consumption of the pump drive cylinder to determine the total volume of air required to meet a given cycle rate. The values shown are for 100 P.S.I.

CYLINDER	AREA OF CYLINDER		SCFM
SIZE (I.D.)	(sq. in)	(sq. cm)	(per 1" stroke at 100 psi)
1 1/2	1.77	20.27	0.008
2	3.14	31.67	0.0142
2 1/2	4.91	45.61	0.0222
3	7.07	81.08	0.0319
4	12.56	182.43	0.0567

Example:

Total air consumption of a 2" bore drive cylinder with a 6" stroke operating at 10 cycles per minute (20 strokes per minute):
6" Stroke x 0. 0142 (SCFM Inch Stroke) = 0.0852 SUM
0.0852 SCFM Stroke x 20 Strokes Per Min. = 1.704 SCFM

PUMP CURVE AT MAXIMUM PISTON VELOCITY



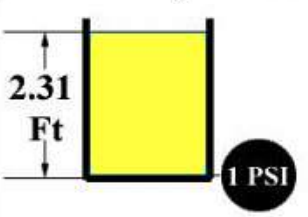
These figures are based on the maximum piston velocity the drive cylinder may achieve pumping on one side only with a no load condition operating at 100 P.S.I for one minute at the Maximum cycle rate for the VCR cylinder model.

General Properties of Allenair's Seal Materials

Temperature ratings and chemical compatibilities shown below are for general comparisons. See specific O-ring presentations for exact specifications. NR=Not recommended.

	Buna-N	Viton	Silicone	EPS	Neoprene	Poly-urethane	PTFE	Kalrez	FEP	Aflas	Fluoro-silicone
Approx. Low Temp.	-20° F	0° F	-60° F	-40° F	-40° F	-20° F	-80° F	+32° F	-15° F	+25° F	-75° F
Approx. High Temp.	+212° F	+392° F	+400° F	+212° F	+212° F	+180° F	+500° F	+600° F	+400° F	+400° F	+400° F
Compression Set*	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Good	Good
Resistance to:	Buna-N	Viton	Silicone	EPDM	Neoprene	Poly-urethane	PTFE	Kalrez	FEP	Aflas	Fluoro-silicone
Abrasion	Good	Fair	Poor	Good	Good	Excel.	Excel.	Good	Fair	Good	Poor
Acids	Fair	Good	Fair	Poor	Fair	Poor	Excel.	Excel.	Excel.	Excel.	Excel.
Alcohol	NR	Poor	Fair	Fair	Good	Good	Excel.	Excel.	Excel.	Excel.	Excel.
Alkalies	Poor	Fair	Fair	Poor	Good	Poor	Excel.	Excel.	Excel.	Excel.	Excel.
Anilines	Good	Good	Poor	NR	Fair	Poor	Excel.	Excel.	Excel.	Good	Poor
Animal/ Vegeta-ble Oils	Good	Excel.	Fair	Fair	Good	Good	Excel.	Excel.	Excel.	NR	Excel.
Detergents	Good	NR	Excel.	Excel.	Poor	Poor	Excel.	Excel.	Excel.	Good	NR
Gasoline	Good	Excel.	Poor	Poor	Fair	Good	Excel.	Excel.	Excel.	Poor	Excel.
Hydraulic Fluid	Good	Good	Poor	NR	Fair	Poor	Excel.	Excel.	Excel.	Excel.	Poor
Hydrocarbons	Fair	Good	NR	NR	Poor	Fair	Excel.	Excel.	Excel.	Excel.	Excel.
Ketones	NR	Poor	NR	Fair	Poor	Poor	Excel.	Excel.	Excel.	Fair	Excel.
Ozone	NR	Excel.	Excel.	Excel.	Fair	Excel.	Excel.	Excel.	Excel.	Excel.	Excel.
Refrigerants	NR	Poor	NR	NR	Good	Fair	Excel.	NR	Excel.	NR	Poor
Salt Water	Good	Good	Excel.	Excel.	Good	Poor	Excel.	Excel.	Excel.	Good	Good
Steam	Poor	NR	Poor	Good	Fair	Poor	Excel.	Poor	Excel.	Good	Poor
Synthetic Lubri-cants	Good	Excel.	NR	NR	Poor	Poor	Excel.	Excel.	Excel.	Excel.	NR
Tearing	Fair	Fair	Poor	Good	Fair	Excel.	Excel.	Excel.	Good	Excel.	Poor
Water	Good	Fair	Fair	Excel.	Good	Poor	Excel.	Excel.	Excel.	Good	Excel.
Weather	NR	Excel.	Excel.	Excel.	Excel.	Good	Excel.	Excel.	Excel.	Excel.	Excel.

* Refers to a material's ability to return to its original size and shape after it's been compressed.



Pressure to Head Conversion formula

Liquids have specific gravities typically ranging from 0.5 to 1.8. Water is the benchmark with a specific gravity of 1.0. this benchmark and the resultant calculations are considered to be in "feet absolute." Head (ft) = Pressure (PSI) X 2.31/ Specific Gravity (sg) .This formula is based on the fact that one foot of water exerts .4333 lbs of pressure at one foot. This converts to one lb. of pressure at 2.31 ft.

VISCOSITY CHART

Approximate Viscosities of of Common Materials(AT 70°F)	
Material	Viscosity in Centipoise
Water	1 cps
Milk	3 cps
SAE 10 Motor Oil	85-140 cps
SAE 20 Motor Oil	140-420 cps
SAE 30 Motor Oil	420-650 cps
SAE 40 Motor Oil	650-900 cps
Castrol Oil	1,000 cps
Karo Syrup	5,000 cps
Honey	10,000 cps
Chocolate	25,000 cps
Ketchup	50,000 cps
Mustard	70,000 cps
Sour Cream	100,000 cps
Peanut Butter	250,000 cps

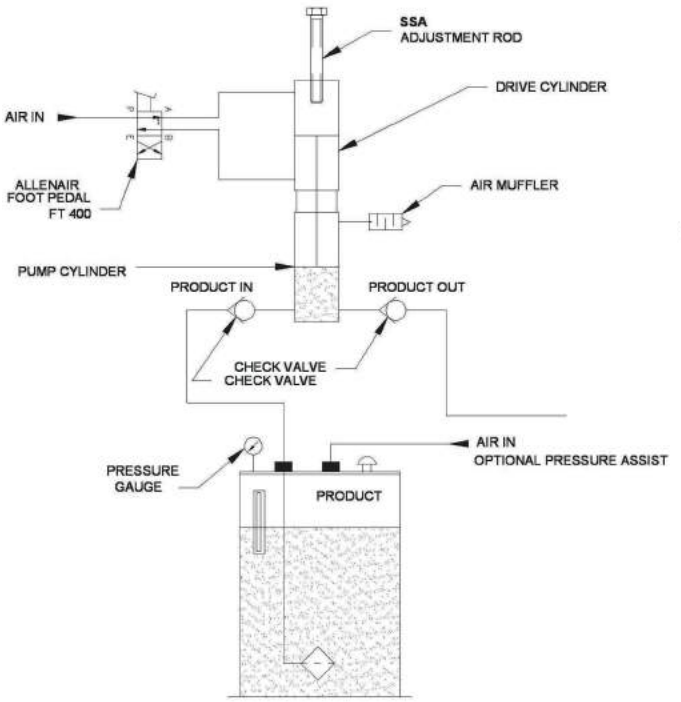
- sg. = specific gravity
- pressure = pounds per square inch
- head = feet

$$\text{Pressure} = \frac{\text{head} \times \text{sg.}}{2.31}$$

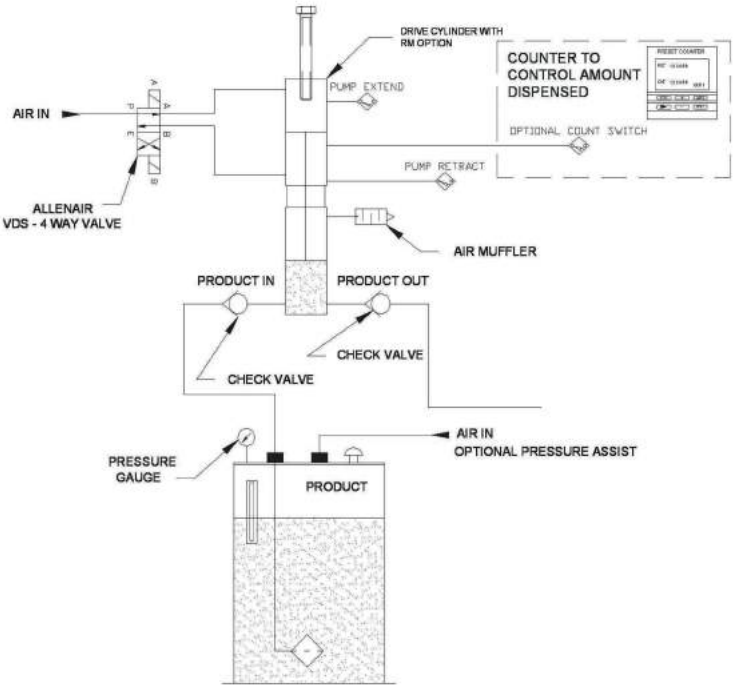
$$\text{Head} = \frac{\text{pressure} \times 2.31}{\text{sg}}$$

TYPICAL PUMP CIRCUITS

MANUAL



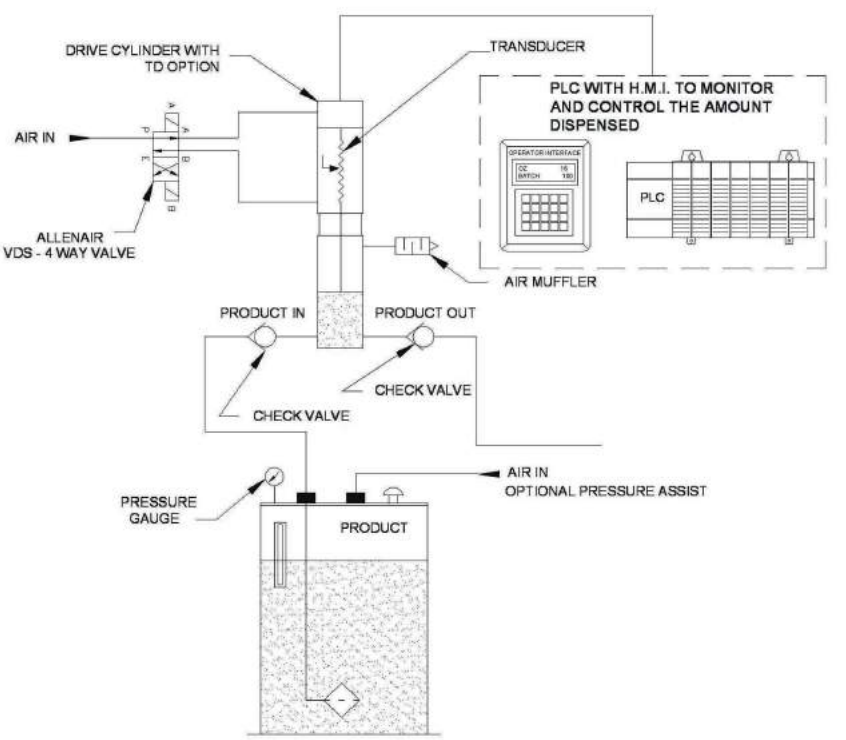
ELECTRICALLY OPERATED



Allenair pumps may be used as an
Alternative For many of these pumps types.

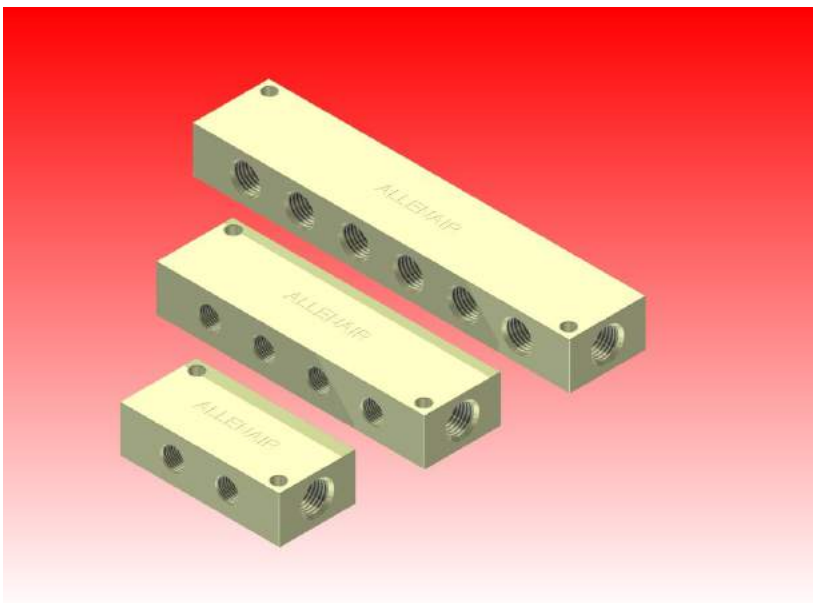
- Air Operated Pumps
- Direct-Acting Pumps
- Dosing Pumps
- Metering Pumps
- Piston Pumps
- Plunger Pumps
- Pneumatic Pumps
- Positive Displacement Pumps
- Reciprocating Pumps
- Simplex Plunger Pumps
- Syringe Pumps
- Viscous Liquid Pumps
- Volume Metric Pumps
- Industrial Dispensing Pumps
- Sanitary Pumps
- Self-Priming Pumps
- Power Pumps
- Precision Dispensing Pumps
- Diaphragm Pumps

POSITION FEED BACK



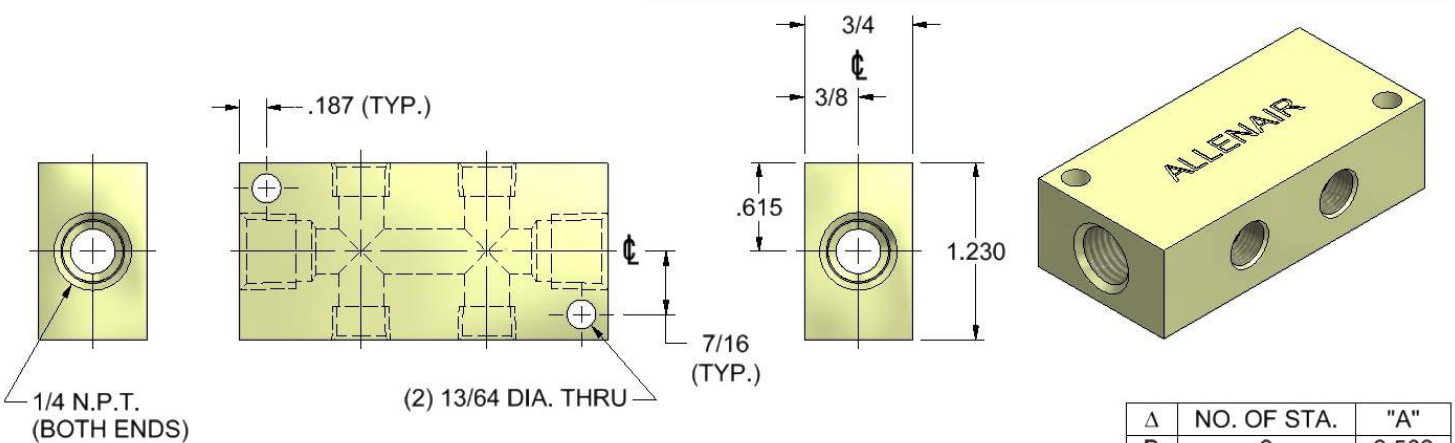
MANIFOLDS

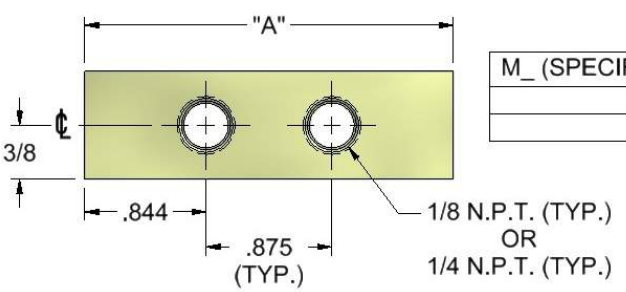
Keep your air lines organized by creating a “distribution center” with these manifolds. Also known as headers, just thread in your tube fittings using the configuration that best suits your needs, and you’ll have multiple outlets from one incoming supply source. All have two inlets (one at each end) and two mounting holes. All connections are NPT.



Features

- 4 to 26 ports
- Inline Manifold, Two sets of ports set 180° apart. 7/8” center-to-center spacing
- Two output port sizes available





M_ (SPECIFY PORT SIZE)	PORT SIZE
4	1/4 N.P.T.
8	1/8 N.P.T.

Δ	NO. OF STA.	"A"
B	2	2.562
C	3	3.437
D	4	4.312
E	5	5.187
F	6	6.062
G	7	6.937
H	8	7.812
I	9	8.687
J	10	9.562
K	11	10.437
L	12	11.312
M	13	12.187

ADD 7/8” FOR EACH ADDITIONAL STATION

ORDERING PROCEDURE

MODEL	PORT SIZE 1/8, 1/4 SEE TABLE ABOVE	STATIONS SEE TABLE ABOVE

EXAMPLE: **MMA - M4 - F**

* Two station manifold shown

ALLENAIR UNIVERSAL PACKING KITS

PACKING KITS BELOW INCLUDE SEALS, WIPERS, AND BEARINGS.

FOR PART #	
A-7/8, 1-1/8, 1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
AC & ACL	ADD SUFFIX "P"
AD-7/8, 1-1/8, 1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
AV-1-1/8, 1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
AVSA & AVSM	ADD SUFFIX "P"
C-7/8, 1-1/8, 1-1/2, 2, 2-1/2 & 3	ADD SUFFIX "P"
CD-7/8, 1-1/8, 1-1/2, 2, 2-1/2 & 3	ADD SUFFIX "P"
CH	ADD SUFFIX "P"
CV-1-1/8, 1-1/2, 2, 2-1/2 & 3	ADD SUFFIX "P"
E-7/8, 1-1/8, 1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
E/ED-5	ADD SUFFIX "P"
ED-7/8, 1-1/8, 1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
EV-1-1/8, 1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
EVT-1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
RG-7/8, 1-1/8, 1-1/2, 2, 2-1/2, 3 & 4	ADD SUFFIX "P"
SM	ADD SUFFIX "P"
V-1/4-3/8 & 1/2	ADD SUFFIX "P"
4V	ADD SUFFIX "P"
725 & 11	ADD SUFFIX "P"

UNIVERSAL PACKING KITS
All universal packing kits are designated using a fractional number for the bore size.
Example: **A 1-1/2 P**

HIGH TEMPERATURE PACKING KITS
High temperature packing kits **"HTP"** will only be supplied as individual packing kits (decimal form).
Example: **A 1.5 HTP P**

CUSTOMER SPECIALS
Any unit labeled with **"CS" or "H"** may in many cases require a special packing kit.
Consult the factory.
Cylinder Example: **E 1-1/2 X 6 CS**

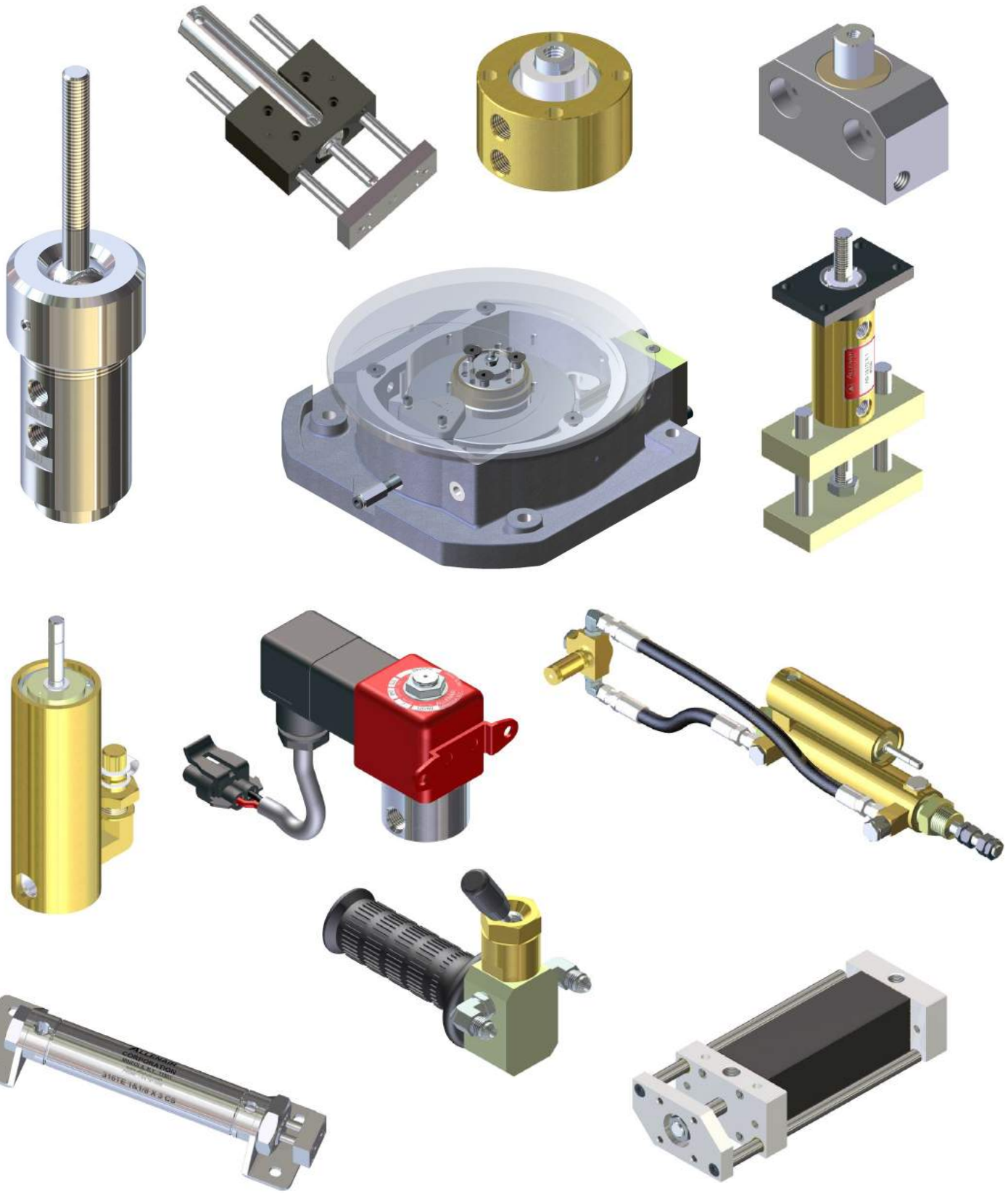
WR
Any unit labeled with **"WR"** has a Teflon wiper ring.
Cylinder Example: **SSE 1-1/2 X 6 OS WR**
Kit Example: **E 1-1/2 WR P**

POLYURETHANE BUMPERS
Any unit labeled with **"PUB"** has a polyurethane bumper and is to be ordered as a separate line item.
Cylinder Example: **SSE 1-1/2 X 6 OS PUBB**
Kit Example: **E 1-1/2 P**
Bumper Example: **A 1513**
BUMPER (Qty).
PUBF: 1
PUBR: 1
PUBB: 2

CUSTOMER SPECIAL “CS”

Over the years Allenair has been able to help our customer achieve their goals with special designs.

PLEASE CONSULT FACTORY ON SPECIALS DESIGNS.



ALLENAIR'S WARRANTY POLICY

Allenair Corp. warrants it's products to be free of defects in material and workmanship for a period of one year from the date of original shipment. Allenair provides no other warranty or guarantee, expressed or implied.

Allenair Corp. will repair or replace, at it's option, any product determined by our inspection to be defective. The product must be returned to Allenair Corp. prepaid with proof of purchase date, "RGA" number and a completely filled out "Request for warranty repair" form.

Products which have been subject to misuse, negligence, accidents, misapplication or tampering in any way are exempt from this warranty. Allenair Corp. shall in no event be liable for indirect or consequential damages.

Allenair Corp. services all products long after the warranty has expired. All customers are encouraged to contact us for any problems involving performance and or marginal service of any product.

Allenair Corp. monitors, to the best of our ability, repair part usage throughout the product line to determine if any problem areas are developing.

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