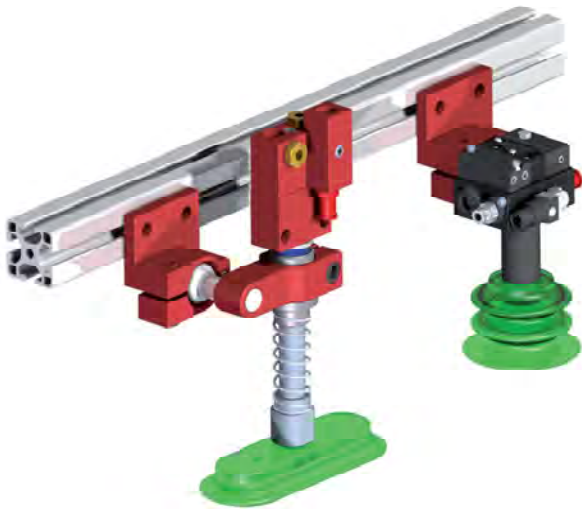
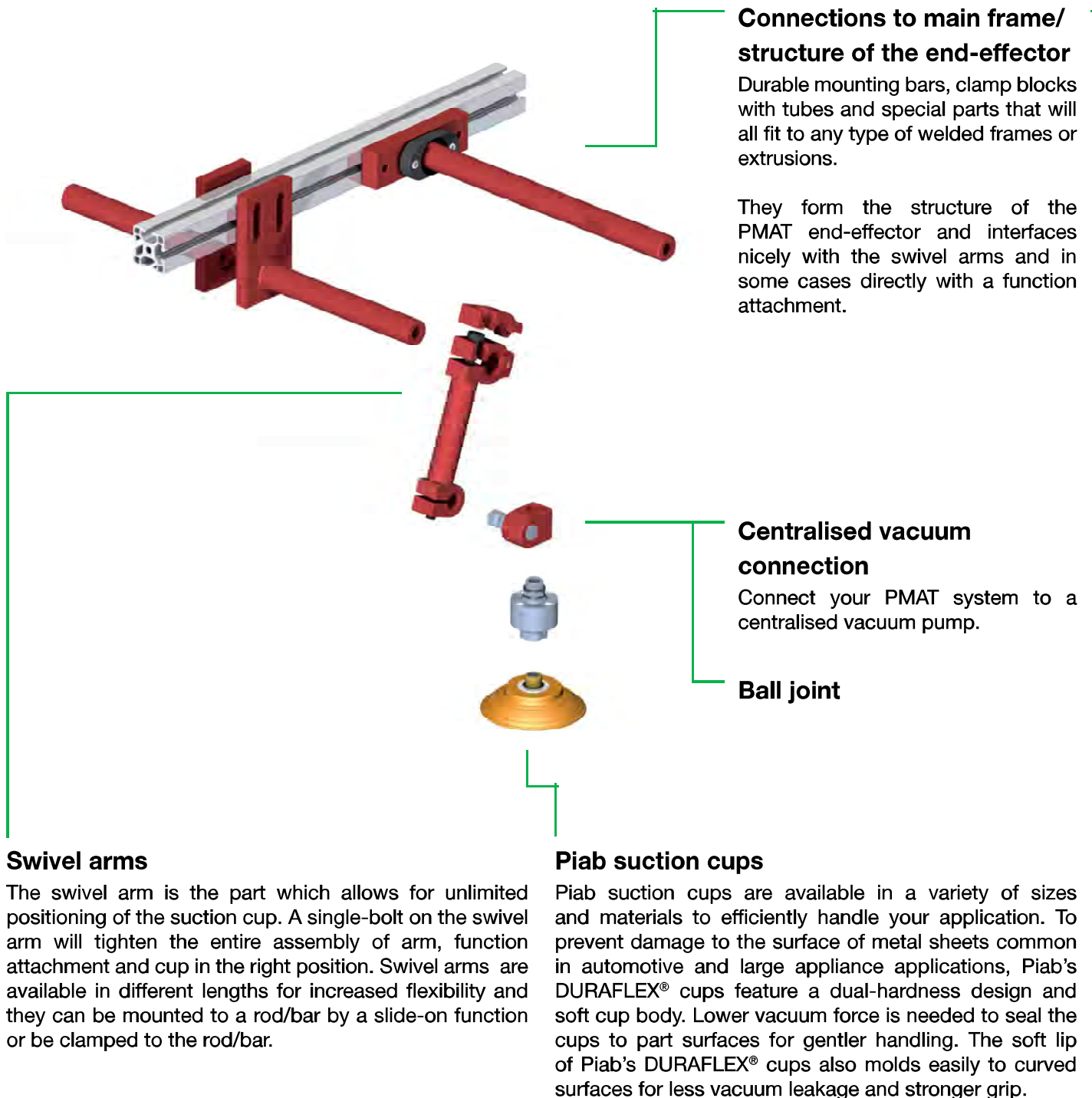


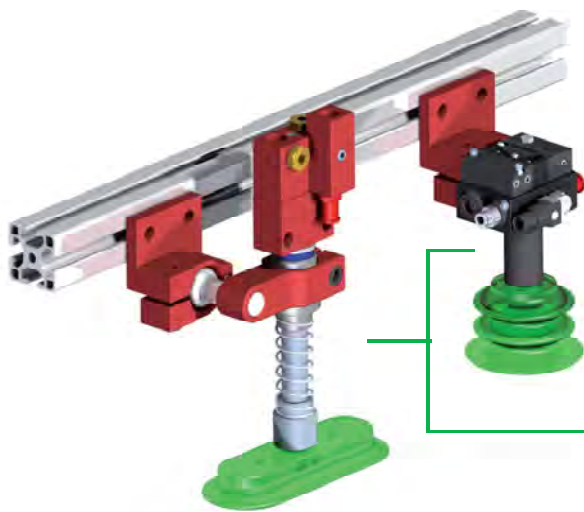
PMAT – Piab Modular Automation Tooling



Piab Modular Automation Tooling
Connections to main frame of the end-effector
Swivel arms
Function attachments
Accessories
PMAT configurable products

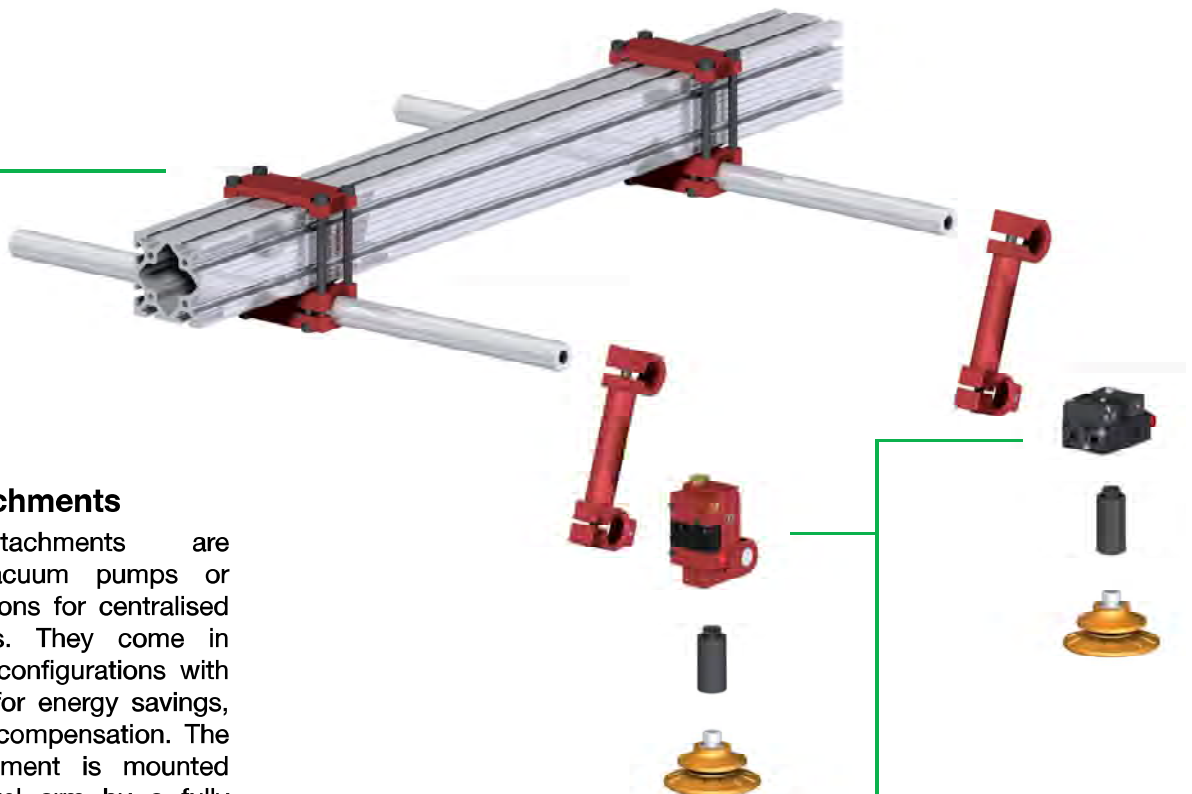
PMAT – Piab Modular Automation Tooling





Accessories for suction cups

The PMAT offers a wide range of suction cup accessories to optimize and facilitate the installation. For instance, the accessories can help to avoid bending stress on the suction cup when lifting heavy objects, extend the cup to reach areas in cramped spaces or simply height adjust the cup to the right level.



Function attachments

Functional attachments are decentralised vacuum pumps or vacuum connections for centralised vacuum systems. They come in several different configurations with special features for energy savings, safety and level compensation. The functional attachment is mounted to a PMAT swivel arm by a fully flexible ball joint or a more rigid and rotating lock-pin. The suction cup or the suction cup accessory have a matching interface for the function attachment.

Connections to main frame of the end-effector



Mounting bar – welded

- Rigid mounting with low deflection.
- Slotted mounting for adjustability.
- 100–600 mm (4”-24”) lengths.



Profile mount ball clamp

- Fits on standard size extrusion.
- Used with any Ball joint style function attachment.

Technical Data

Description	Torsional twist	Load, vertical, max.	Load, torque, max.
Mounting bar welded L=100	1 °	–	–
Mounting bar welded L=150	1.2 °	–	–
Mounting bar welded L=200	1.6 °	–	–
Mounting bar welded L=300	2.5 °	–	–
Mounting bar welded L=600	4.6 °	–	–
Profile mount ball clamp, left hand	–	800 N	40 Nm
Profile mount ball clamp, right hand	–	800 N	40 Nm

Ordering information

For a complete list of available PMAT products visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register and get full access to all resources available.

Swivel arms



Swivel arm – clamp on

- Standard mounting to 25 mm and 1" bars, easily removable connection.
- Easy single screw adjustment.
- Available in lock pin 16, 19 or ball joint mountings, industry standard.



Swivel arm – slide on

- Standard mounting to 25 mm or 1" bars.
- Easy single screw adjustment.
- Available in lock pin 16, 19 or ball joint mountings, industry standard.

Technical Data

Description	Load, vertical, max.	Load, torque, max.
Swivel arm – clamp on	400 N	40 Nm
Swivel arm – slide on	400 N	40 Nm

Ordering information

For a complete list of available PMAT products visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register and get full access to all resources available.

Function attachments



Centralized vacuum connection

- Connects centralized vacuum to suction cup.
- Available in lock pin 16, 19 or ball joint mountings, industry standard.
- Available with level compensator to compensate for differences in level of object.



Vacuum Check Valve VT-1H

- Check valve that traps vacuum in sealed applications for safe operation.
- Built-in blow off check valve for fast release of object.
- Available in lock pin 16, 19 or ball joint mountings, industry standard.
- Available with level compensator to compensate for differences in level of object.

Ordering information

For a complete list of available PMAT products visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register and get full access to all resources available.



Vacuum Check Valve VT-1H with COAX®

- Two-stage COAX® cartridge MINI Pi12-2 integrated.
- Check valve that traps vacuum in sealed applications for safe operation.
- Built-in blow off check valve for fast release of object.
- Available in lock pin 16, 19 or ball joint mountings, industry standard.
- Available with level compensator to compensate for differences in level of object.



Vacuum Check Valve VT-1H Vacustat with COAX®

- Two-stage COAX® cartridge MINI Pi12-2 integrated.
- Check valve that traps vacuum in sealed applications for safe operation.
- Built-in blow off check valve for fast release of object.
- Integrated energy-saving device, Vacustat results in virtually no air consumption in sealed applications.
- Available in lock pin 16, 19 or ball joint mountings, industry standard.
- Available with level compensator to compensate for differences in level of object.

Technical Data

Description	Vacuum flow, max.
Vacuum Check Valve VT-1H	0.68 NI/s
Vacuum Check Valve VT-1H with COAX®	0.68 NI/s
Vacuum Check Valve VT-1H Vacustat with COAX®	0.68 NI/s

Ordering information

For a complete list of available PMAT products visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register and get full access to all resources available.

Accessories



Cross connector

- Connects 25 mm bars at any angle.
- Can be used with a Suction cup extension.



Level compensator – profile mount

- Compensates for differences in height.
- Provides certain degree of shock absorption.
- Fits on standard size extrusion.



Proximity mounting bracket

- For mounting of sensors or visions systems.
- Multiple interfaces.

Technical Data

Description	Load, vertical, max.	Load, torque, max.	Load, horizontal, max.
Cross connector 25-25/65	400 N	120 Nm	–
Level compensator – profile mount	698 N	–	698 N

Ordering information

For a complete list of available PMAT products visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register and get full access to all resources available.

PMAT Configurable Products

Facilitate the selection of our great assortment of function attachments and swivel arm options by using the combined swivel arm and function attachment code configurator. Note that all function attachments are not presented in the code.

Select rod extension	PMAT code
Rod extension 50	AA
Rod extension 100	AB
Rod extension 150	AC

Bar mounting style	PMAT code
Bar clamp, clamp-on 25	00
Bar clamp, slide-on 25	01
Bar clamp, slide-on 1", pin 16	02
Bar clamp, slide-on 1", pin 19	14
Bar clamp, slide-on 1", ball joint	04

Swivel style	PMAT code
Swivel style pin 16	P
Swivel style pin 19	C
Swivel style ball joint	I

Function attachment	PMAT code			
No attachment	00			
	Left hand		Right hand	
		LCS *		LCS *
Centralised vacuum connection, G	XX1	XX2	XX1RH	XX2RH
Centralised vacuum connection, NPT	X1	X2	X1RH	X2RH
Vacuum Check Valve VT-1H, G	XAB	XAM	XABRH	XAMRH
Vacuum Check Valve VT-1H, NPT	AB	AM	ABRH	AMRH
Vacuum Check Valve VT-1H COAX® cartridge MINI Pi12-2, G	XAA	XAL	XAARH	XALRH
Vacuum Check Valve VT-1H COAX® cartridge MINI Pi12-2, NPT	AA	AL	AARH	ALRH
Vacuum Check Valve VT-1H Vacustat COAX® cartridge MINI Pi12-2, G	XEA	XBTF	XEARH	XBTRH
Vacuum Check Valve VT-1H Vacustat COAX® cartridge MINI Pi12-2, NPT	EA	BTF	EARH	BTRH

* With level compensator, LCS.

AID TO SELECTION

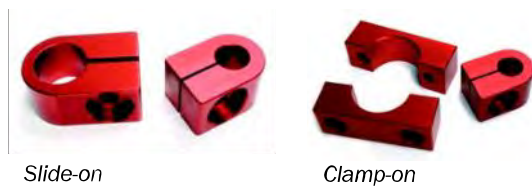
1.

Choose the length of the Rod Extension.



Available in 2", 4" or 6" lengths. (additional lengths available*)

2.



Slide-on

Clamp-on

a. Choose the Mounting Style of the PMAT tool to your assembly (Clamp-on/Slide-on). The standard mounting style is the Slide-on style that allows quick and easy adjustability. With safety always being an important issue, the Clamp-on style restricts adjustments once mounted in place for a permanent installation.



Lock Pin

Apple Core

Ball Joint

b. Choose the method (Lock Pin/Apple Core/Ball Joint) for mounting the Function Attachment to the PMAT tool. The Lock Pin method produces a rigid, non-moving Function Attachment while the Ball Joint allows for some vertical movement in the Function Attachment.

3.

Choose the Function Attachment either with or without Level Compensation based on your method for mounting (Lock Pin/Apple Core/Ball Joint).



Ball Joint

Lock Pin

Apple Core

Ball Joint w/Level Comp

Lock Pin w/Level Comp

Apple Core w/Level Comp

4.

Choose your Suction Cup. See page 9 for part numbers and technical information on the suction cups. (Please order the suction cup separately from the PMAT tooling. The suction cup will be attached to the tooling at the factory.)



*if you need a modification to any part in this brochure,
please call PIAB Customer Service at 1-800-321-7422.
Specials are welcome.

Specifications subject to change without notice.

EXPLANATION OF FUNCTION ATTACHMENTS

Level Compensation-

Level Compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. When a suction cup is used with PMAT, a level compensator is often used since it places less demand on exact vertical positioning. The level compensator also provides a certain degree of shock absorption.



Vacuum Connection-

Use this when you already have an existing vacuum system or you want to use PIAB's COAX® vacuum cartridge. This unit comes complete with connections for vacuum and blow-off.



Vacuum Connection Low Profile -



This is used if there is an issue with the height of the tooling. The height of this part is 1 1/8" shorter than the standard Vacuum Connection.

Vactrap™-

The Vactrap™ with COAX® pump cartridge provides both vacuum pressure and a connection for blow-off air pressure. It should be used in a leak-free system. The Vactrap™ holds vacuum pressure in the event of a system interruption or failure, thus preventing the handled part from dropping. You can also use the Vactrap™ without COAX® pump cartridge if you have an existing vacuum system.



Vactrap™ Cross-Drilled- This is used when you have your own existing vacuum system and are using the same line (into VAC port) for both vacuum and blow-off thereby eliminating the need for a second inlet for the blow-off.

COAX®-

Energy is put to maximum use with the COAX® ejector technology. The vacuum pump/cartridge consumes less air than conventional sources. A COAX® vacuum cartridge is up to twice as fast and has three times more flow than a typical conventional ejector with the same air consumption. COAX® is also designed for low and fluctuating feed pressures (25-90 psi) with sustained vacuum performance for maximum reliability.



Vacustat-

The Vacustat is a vacuum-controlled valve with an adjustable vacuum switch. The Vacustat minimizes the consumption of compressed air by controlling the incoming air to the vacuum pump. The valve shuts off the flow of compressed air when the pre-set vacuum level is reached. If there is leakage in the system, the vacuum switch senses this condition and the valve opens to allow compressed air to flow to regain the pre-set vacuum level.



T-Slot Housing-

This is used when you need a quick access to the suction cup for fast changeover. Please note that the suction cup must have a T-slot fitting.



Ball Joint-

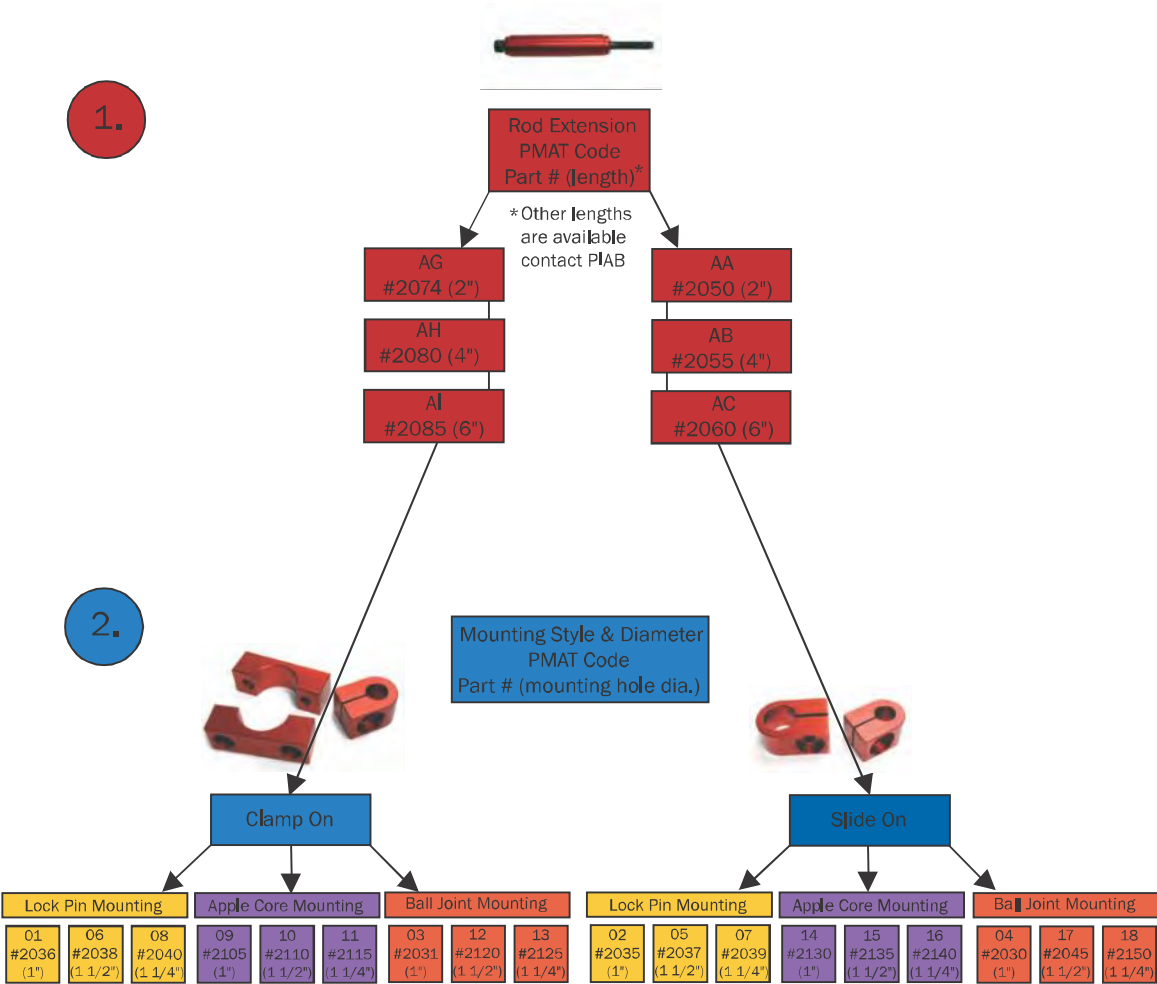
To avoid bending stress on the suction cup when lifting heavy objects, the ball joint can adapt to the varying angles. Has locking feature.

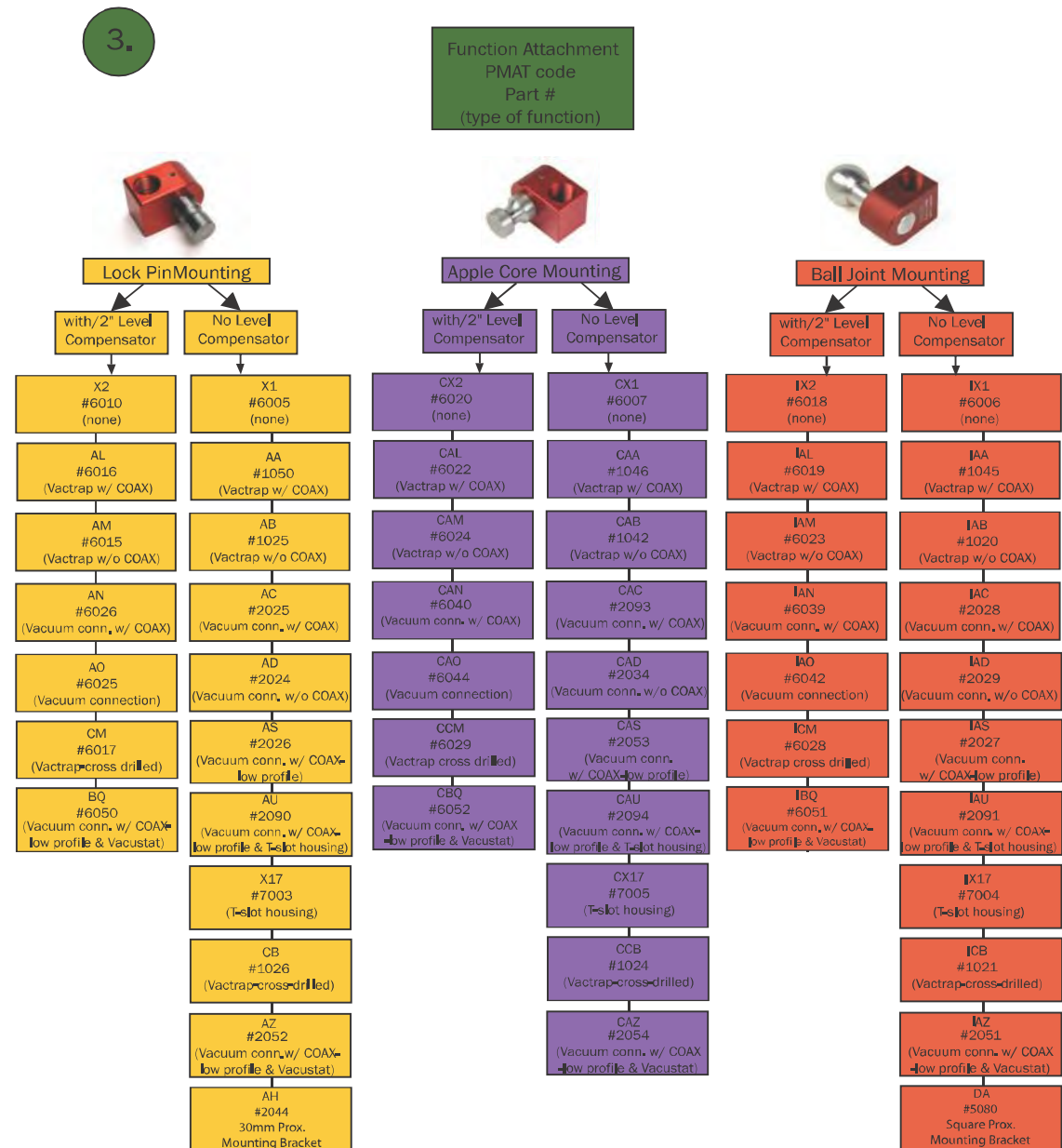


**If you have existing tooling that has "Apple Core" mounting, you can keep the tool setup and install a PIAB Function Attachment as a retrofit.

See pages 5-6 for ordering information.

PMAT.XX.XX.XX





4. Choose your suction cup (see page 9).

Note:

2" is standard Level Compensator length. Other lengths are available from 1"-8".

All Function Attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part number & code number, I.E. 1050RH (Code AARH)

Specifications subject to change without notice.

EXAMPLES OF PMAT (WITH SUCTION CUP)



6" Swivel Arm Assembly for an existing vacuum system with no check valve

Part no. PMAT.AC.02.X1

- 1.6" swivel arm length (AC)
- 2.Slide-on mounting (02)
- 3.No function attachment (X1)



4" Swivel Arm Assembly for an existing vacuum system with check valve (Vactrap™)

Part no. PMAT.AH.01.AB

- 1.4" swivel arm length (AH)
- 2.Clamp-on mounting (01)
- 3.Vactrap™ without COAX® pump cartridge (AB)



2" Swivel Arm Assembly with COAX® pump cartridge, check valve (Vactrap™) & level compensation

Part no. PMAT.AG.01.AL

- 1.2" swivel arm length (AG)
- 2.Clamp-on mounting (01)
- 3.Vactrap™ with COAX® pump cartridge and level compensation (AL)

4" Swivel Arm Assembly with COAX® pump cartridge



Part no. PMAT.AB.02.AC

- 1.4" swivel arm length (AB)
- 2.Slide-on mounting (02)
- 3.Vacuum connection unit with COAX® pump cartridge (AC)

PMAT.AI.06.AZ-THE ULTIMATE PMAT FOR ENERGY SAVINGS



Reduces leakage at cup so pump runs more efficiently.

PMAT.AA.02.AA-THE ULTIMATE PMAT FOR SAFETY



TECHNICAL DATA PIAB SUCTION CUPS

MATERIAL PROPERTIES

Material	Color	Working Temperature	Wear Resistance	Oil Resistance	Weather & Ozone Resistance
DURAFLEX PU 30	Yellow	+50 to +122 F	Excellent	Excellent	Excellent
DURAFLEX PU 40	Red	+50 to +122 F	Excellent	Excellent	Excellent
DURAFLEX PU 50	Blue	+50 to +122 F	Excellent	Excellent	Excellent
DURAFLEX PU 60	Green	+50 to +122 F	Excellent	Excellent	Excellent
Nitrile NBR 50	Black	+20 to +225 F	Excellent	Excellent	Fair
Nitrile NPV 50	Black	+32 to +194 F	Excellent	Excellent	Good
Therban HNBR 75	Grey-Blue	-22 to +284 F	Excellent	Excellent	Excellent

MODELS

B - Short Bellows	Handle objects with height differences and varying shapes.
BF - Bellows/Flat	Handle objects with height differences and varying shapes with good stability.
F - Flat	Suitable for flat objects. Cup has good stability and very little movement.
FC - Flat, Concave	Designed for flat and curved surfaces.
OC - Oval, Concave	Designed for flat and curved surfaces for oblong objects.
OF - Oval, Flat	Designed for flat surfaces for oblong objects. Cup has good stability and very little movement.

DIMENSIONAL DATA/LIFTING POWER

Suction cup model, size material & durometer	Part Number	Fitting Size & Type	Outer Dia. in	Perpendicular lifting power, at vacuum level (lbf)			Parallel (shear) lifting power at vacuum level (lbf)			Volume in³	Min. curve radius in	Max. vertical movement in	Weight with fitting oz.
				6 - inHg	18 - inHg	27 - inHg	6 - inHg	18 - inHg	27 - inHg				
B75 - NPV 50	B75.30.07UB	3/8" NPSF	3.07	16.6	37.5	50.8	-	-	-	6.70	1.60	0.94	3.79
B75 - HNBR 75	B75.37.07NE	3/8" NPSF	3.07	16.6	37.5	50.8	-	-	-	6.70	1.60	0.94	3.63
B75P - PU 60	B75P.4E.07NE	3/8" NPSF	3.11	18.7	44.1	57.3	27.2	49.5	67.0	6.71	1.77	0.79	5.01
BF80P - PU 60	BF80P.4E.08UB	3/8" NPSF	3.31	22.0	50.6	66.1	15.3	28.6	37.3	2.44	5.20	0.63	1.87
BF110P - PU 60	BF110P.5E.N40W	3/8" NPSF	4.53	36.2	75.1	65.9	27.7	51.9	68.6	6.71	2.76	0.94	3.88
B110 - NPV 50	B110.30.11NB	3/8" NPSF	4.53	30.8	77.1	104	-	-	-	19.0	2.40	1.40	12.7
B110 - HNBR 75	B110.37.11NB	3/8" NPSF	4.53	30.8	77.1	104	-	-	-	19.0	2.40	1.40	12.7
B150 - NPV 50	B150.30.15UA	G 1/2	6.10	66.1	154	199	-	-	-	40.0	3.00	1.77	19.4
F75 - NPV 50	F75.30.07NE	3/8" NPSF	3.03	18.0	45.0	60.7	13.5	24.7	31.5	1.20	5.91	0.12	3.37
F75 - HNBR 75	F75.37.07NE	3/8" NPSF	3.03	18.0	45.0	60.7	13.5	24.7	31.5	1.20	5.91	0.12	3.37
F110 - NPV 50	F110.30.11NB	3/8" NPSF	4.41	31.5	94.4	126	31.5	56.2	67.4	4.30	9.84	0.16	7.14
F110 - HNBR 75	F110.37.11NB	3/8" NPSF	4.41	31.5	94.4	126	31.5	56.2	67.4	4.30	9.84	0.16	7.1
F150 - NPV 50	F150.30.15UA	G 1/2	5.98	67.4	191	247	56.2	135	180	9.80	19.7	0.24	16.8
FC50P - PU 40	FC50P.4C.05UB	G 3/8"/1/8" NPSF	1.97	6.29	17.3	23.2	11.0	18.4	22.5	0.61	2.09	0.20	0.99
FC50P - PU 60	FC50P.4E.05UB	G 3/8"/1/8" NPSF	1.97	6.29	17.3	23.4	11.7	20.9	25.0	0.61	2.09	0.20	0.99
FC75P - PU 40	FC75P.5C.N40W	3/8" NPSF	2.95	16.4	37.3	50.6	20.9	50.6	57.3	1.83	3.07	0.26	1.59
FC75P - PU 60	FC75P.5E.N40W	3/8" NPSF	2.95	16.4	37.3	50.6	20.9	50.6	57.3	1.83	3.07	0.26	1.59
FC100P - PU 40	FC100P.5C.N40W	3/8" NPSF	3.94	30.8	63.8	84.8	40	71.5	94.4	4.88	4.33	0.40	10.7
FC100P - PU 60	FC100P.5E.N40W	3/8" NPSF	3.94	34.2	73.7	100	25.2	59.3	85.9	4.88	4.33	0.40	10.7
FC150P - PU 40	FC150P.4C.11NB	3/8" NPSF	5.91	61.6	161	210	77.1	172	203	15.3	6.50	0.56	16.0
FC150P - PU 60	FC150P.4E.11NB	3/8" NPSF	5.91	63.8	145	207	48.3	128	194	15.3	6.50	0.56	16.0
OC35X90P - PU40	OC35X90P.4C.39UB	3/8" NPSF	1.46X3.70	11.0	26.3	38.4	11.9	25.2	33.0	1.22	-	0.12	0.95
OC35X90P - PU60	OC35X90P.4E.39UB	3/8" NPSF	1.46X3.70	11.0	29.7	38.4	15.3	36.2	46.3	1.22	-	0.12	0.95
OC60X140 - NBR 50	OC60X140.35.61UA	3/8" NPT	2.40X5.43	29.7	83.9	117	41.8	83.9	115	3.17	7.87	0.30	5.64
OF25X70P - PU 40	OF25X70P.4C.27UF	G 3/8"/1/8" NPSF	1.07X2.85	5.40	14.8	24.1	10.3	20.2	23.6	0.37	1.97	0.07	0.67
OF25X70P - PU 60	OF25X70P.4E.27UF	G 3/8"/1/8" NPSF	1.07X2.85	5.40	17.3	26.5	9.44	28.6	36.2	0.37	1.97	0.07	0.67
OF40X110P - PU 40	OF40X110P.5C.N40W	3/8" NPSF	1.69X4.45	15.5	45.6	65.9	27.0	51.7	66.5	1.28	3.03	0.12	2.96
OF40X110P - PU 60	OF40X110P.5E.N40W	3/8" NPSF	1.69X4.45	16.6	45.0	68.1	22.0	51.3	92.2	1.28	3.03	0.12	2.96
OF55X150P - PU 40	OF55X150P.5C.N40W	3/8" NPSF	2.32X6.06	29.4	82.3	118	34.8	78.7	102	2.26	5.91	0.12	5.18
OF55X150P - PU 60	OF55X150P.5E.N40W	3/8" NPSF	2.32X6.06	30.1	84.5	125	28.8	76.0	107	2.26	5.91	0.12	5.18
OF70X175P - PU 40	OF70X175P.5C.N40W	3/8" NPSF	2.95X7.09	42.7	119	176	38.2	98.9	142	4.88	5.12	0.22	8.11
OF70X175P - PU 60	OF70X175P.5E.N40W	3/8" NPSF	2.95X7.09	40.5	128	193	45.0	125	169	4.88	5.12	0.22	8.11

Please order the PIAB suction cup part number separately from the PIAB Modular Automation Tooling.

The suction cup will be assembled to the tooling at the factory.

This is not a complete listing, please contact PIAB if you need a suction cup not listed.

PMAT ROD EXTENSION



ROD EXTENSION



- ▶ Standard lengths are 2', 4" or 6"
- ▶ Other lengths are available-contact PIAB

TECHNICAL DATA

Description	Unit	Value
Working temperature	°F	-20-150
Material		AL, Steel

ORDERING INFORMATION

Description	Part No.	Code No.
2" rod extension for clamp-on mounting style	2074	AG
4" rod extension for clamp-on mounting style	2080	AH
6" rod extension for clamp-on mounting style	2085	AI
2" rod extension for slide-on mounting style	2050	AA
4" rod extension for slide-on mounting style	2055	AB
6" rod extension for slide-on mounting style	2060	AC

PMAT
Rod Extension

Specifications subject to change without notice.

PMAT MOUNTING STYLE



CLAMP-ON MOUNTING STYLE



- ▶ Safe way of mounting.
- ▶ Restricted adjustments.
- ▶ Tamper-proof installation.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

TECHNICAL DATA

Description	Unit	Value
Working temperature	°F	-20-150
Material		AL, Steel

ORDERING INFORMATION

	Description	Part No.	Code No.
A	Lock pin mounting 1" diameter for clamp-on mounting	2036	01
A	Lock pin mounting 1 1/4" diameter for clamp-on mounting	2040	08
A	Lock pin mounting 1 1/2" diameter for clamp-on mounting	2038	06
B	Apple core mounting 1" diameter for clamp-on mounting	2105	09
B	Apple core mounting 1 1/4" diameter for clamp-on mounting	2115	11
B	Apple core mounting 1 1/2" diameter for clamp-on mounting	2110	10
C	Ball joint mounting 1" diameter for clamp-on mounting	2031	03
C	Ball joint mounting 1 1/4" diameter for clamp-on mounting	2125	13
C	Ball joint mounting 1 1/2" diameter for clamp-on mounting	2120	12



A

B



C



Specifications subject to change without notice.

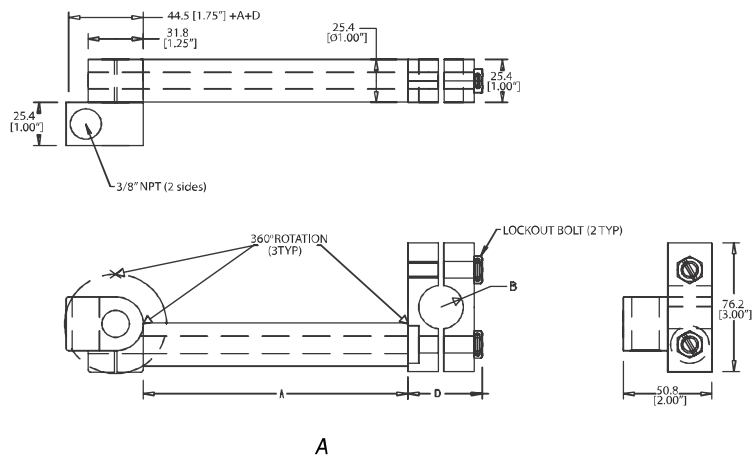
PMAT MOUNTING STYLE



ORDERING INFORMATION FOR ASSEMBLIES WITHOUT FUNCTION ATTACHMENTS

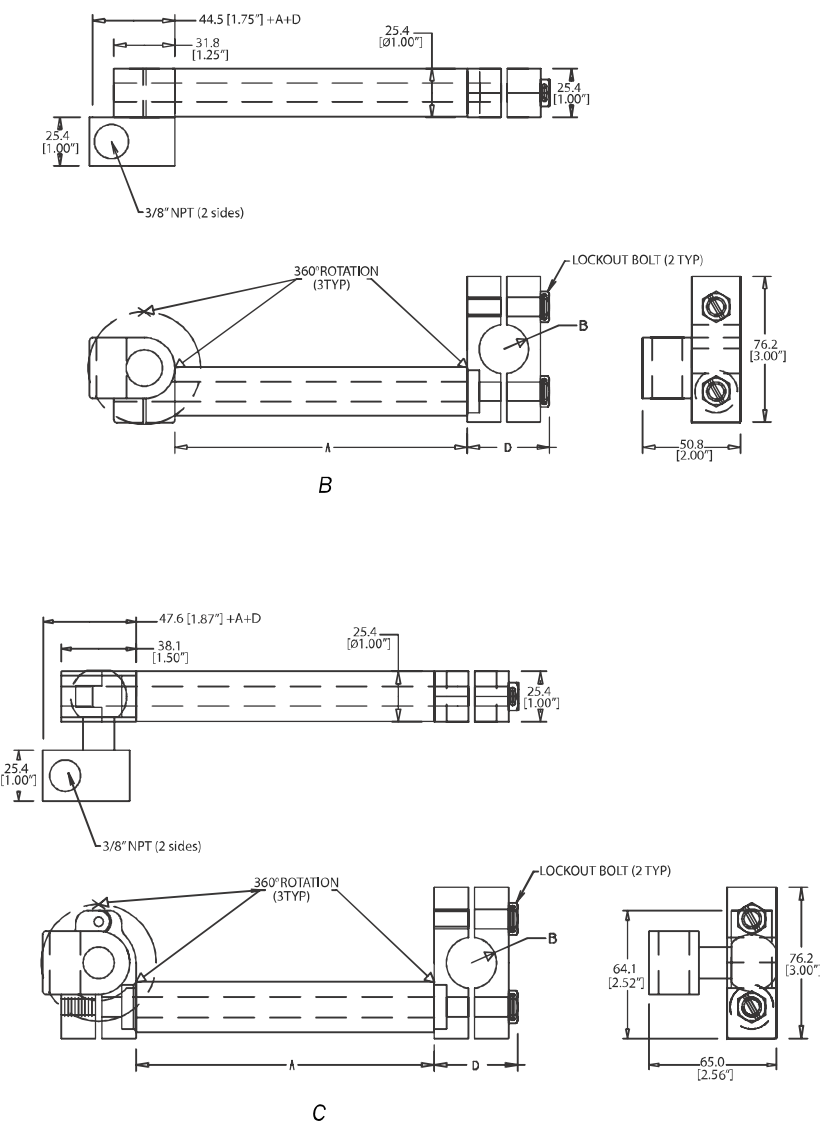
	Description w/rod extension length (A)	B Dia Ø in	D in	Wt. (lb)	Part No.
A	Clamp-on assembly with lock-pin mounting - 2" rod extension	1.00	1.69	1.06	PMAT.AG.01.X1
A	Clamp-on assembly with lock-pin mounting - 2" rod extension	1.25	2.00	1.06	PMAT.AG.08.X1
A	Clamp-on assembly with lock-pin mounting - 2" rod extension	1.50	2.00	1.06	PMAT.AG.06.X1
A	Clamp-on assembly with lock-pin mounting - 4" rod extension	1.00	1.69	1.28	PMAT.AH.01.X1
A	Clamp-on assembly with lock-pin mounting - 4" rod extension	1.25	2.00	1.28	PMAT.AH.08.X1
A	Clamp-on assembly with lock-pin mounting - 4" rod extension	1.50	2.00	1.28	PMAT.AH.06.X1
A	Clamp-on assembly with lock-pin mounting - 6" rod extension	1.00	1.69	1.46	PMAT.AI.01.X1
A	Clamp-on assembly with lock-pin mounting - 6" rod extension	1.25	2.00	1.46	PMAT.AI.08.X1
A	Clamp-on assembly with lock-pin mounting - 6" rod extension	1.50	2.00	1.46	PMAT.AI.06.X1
B	Clamp-on assembly with apple core mounting - 2" rod extension	1.00	1.69	1.06	PMAT.AG.09.CX1
B	Clamp-on assembly with apple core mounting - 2" rod extension	1.25	2.00	1.06	PMAT.AG.11.CX1
B	Clamp-on assembly with apple core mounting - 2" rod extension	1.50	2.00	1.06	PMAT.AG.10.CX1
B	Clamp-on assembly with apple core mounting - 4" rod extension	1.00	1.69	1.28	PMAT.AH.09.CX1
B	Clamp-on assembly with apple core mounting - 4" rod extension	1.25	2.00	1.28	PMAT.AH.11.CX1
B	Clamp-on assembly with apple core mounting - 4" rod extension	1.50	2.00	1.28	PMAT.AH.10.CX1
B	Clamp-on assembly with apple core mounting - 6" rod extension	1.00	1.69	1.46	PMAT.AI.09.CX1
B	Clamp-on assembly with apple core mounting - 6" rod extension	1.25	2.00	1.46	PMAT.AI.11.CX1
B	Clamp-on assembly with apple core mounting - 6" rod extension	1.50	2.00	1.46	PMAT.AI.10.CX1
C	Clamp-on assembly with ball joint mounting - 2" rod extension	1.00	1.69	1.06	PMAT.AG.13.IX1
C	Clamp-on assembly with ball joint mounting - 2" rod extension	1.50	2.00	1.06	PMAT.AG.12.IX1
C	Clamp-on assembly with ball joint mounting - 4" rod extension	1.00	1.69	1.28	PMAT.AH.03.IX1
C	Clamp-on assembly with ball joint mounting - 4" rod extension	1.25	2.00	1.28	PMAT.AH.13.IX1
C	Clamp-on assembly with ball joint mounting - 4" rod extension	1.50	2.00	1.28	PMAT.AH.12.IX1
C	Clamp-on assembly with ball joint mounting - 6" rod extension	1.00	1.69	1.46	PMAT.AI.03.IX1
C	Clamp-on assembly with ball joint mounting - 6" rod extension	1.25	2.00	1.46	PMAT.AI.13.IX1
C	Clamp-on assembly with ball joint mounting - 6" rod extension	1.50	2.00	1.46	PMAT.AI.12.IX1

PMAT
Mounting Style



Specifications subject to change without notice.

PMAT MOUNTING STYLE



Specifications subject to change without notice.

PMAT MOUNTING STYLE



SLIDE-ON MOUNTING STYLE



- ▶ Standard mounting.
- ▶ Quick and easy adjustments.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

TECHNICAL DATA

Description	Unit	Value
Working temperature	°F	-20-150
Material		AL, Steel

ORDERING INFORMATION

	Description	Part No.	Code No.
A	Lock pin mounting 1" diameter for slide-on mounting	2035	02
A	Lock pin mounting 1 1/4" diameter for slide-on mounting	2039	07
A	Lock pin mounting 1 1/2" diameter for slide-on mounting	2037	05
B	Apple core mounting 1" diameter for slide-on mounting	2130	14
B	Apple core mounting 1 1/4" diameter for slide-on mounting	2140	16
B	Apple core mounting 1 1/2" diameter for slide-on mounting	2135	15
C	Ball joint mounting 1" diameter for slide-on mounting	2030	04
C	Ball joint mounting 1 1/4" diameter for slide-on mounting	2150	18
C	Ball joint mounting 1 1/2" diameter for slide-on mounting	2045	17

PMAT
Mounting Style



A



B



C

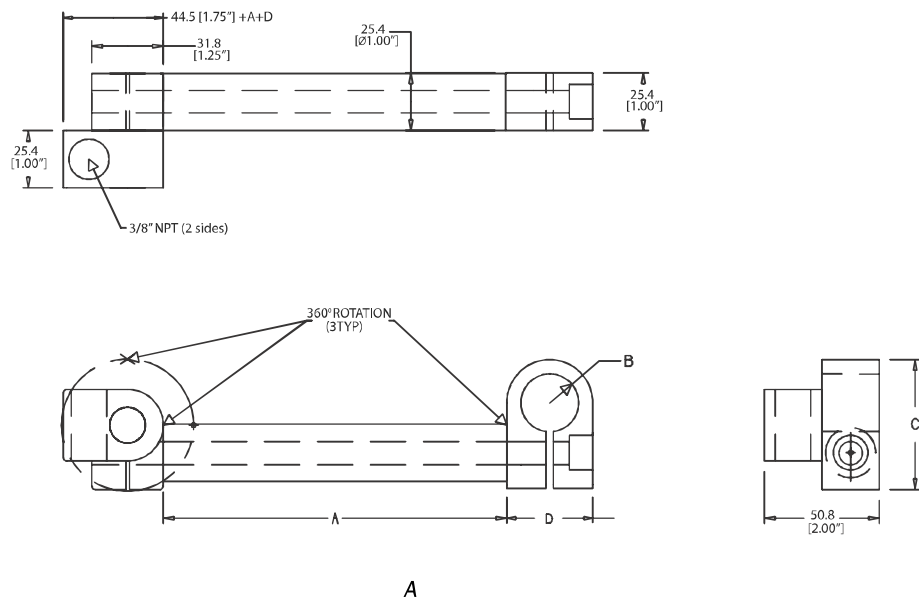
Specifications subject to change without notice.

PMAT MOUNTING STYLE



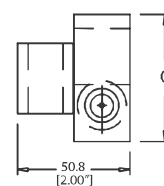
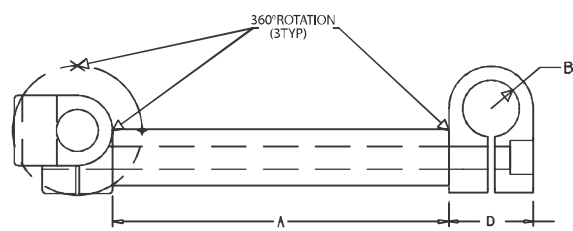
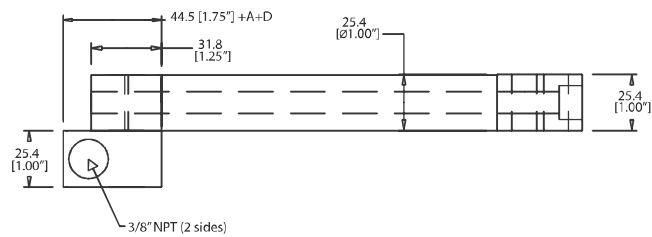
ORDERING INFORMATION FOR ASSEMBLIES WITHOUT FUNCTION ATTACHMENTS

	Description with rod extension length (A)	B Dia Ø in	C in	D in	Wt. (lb)	Part No.
A	Slide-on assembly with lock-pin mounting - 2" rod extension	1.00	2.25	1.50	0.90	PMAT.AA.02.X1
A	Slide-on assembly with lock-pin mounting - 2" rod extension	1.25	2.50	1.75	0.90	PMAT.AA.07.X1
A	Slide-on assembly with lock-pin mounting - 2" rod extension	1.50	2.75	2.00	0.90	PMAT.AA.05.X1
A	Slide-on assembly with lock-pin mounting - 4" rod extension	1.00	2.25	1.50	1.10	PMAT.AB.02.X1
A	Slide-on assembly with lock-pin mounting - 4" rod extension	1.25	2.50	1.75	1.10	PMAT.AB.07.X1
A	Slide-on assembly with lock-pin mounting - 4" rod extension	1.50	2.75	2.00	1.10	PMAT.AB.05.X1
A	Slide-on assembly with lock-pin mounting - 6" rod extension	1.00	2.25	1.50	1.30	PMAT.AC.02.X1
A	Slide-on assembly with lock-pin mounting - 6" rod extension	1.25	2.50	1.75	1.30	PMAT.AC.07.X1
A	Slide-on assembly with lock-pin mounting - 6" rod extension	1.50	2.75	2.00	1.30	PMAT.AC.05.X1
B	Slide-on assembly with apple core mounting - 2" rod extension	1.00	2.25	1.50	0.92	PMAT.AA.14.CX1
B	Slide-on assembly with apple core mounting - 2" rod extension	1.25	2.50	1.75	0.92	PMAT.AA.16.CX1
B	Slide-on assembly with apple core mounting - 2" rod extension	1.50	2.75	2.00	0.92	PMAT.AA.15.CX1
B	Slide-on assembly with apple core mounting - 4" rod extension	1.00	2.25	1.50	1.12	PMAT.AB.14.CX1
B	Slide-on assembly with apple core mounting - 4" rod extension	1.25	2.50	1.75	1.12	PMAT.AB.16.CX1
B	Slide-on assembly with apple core mounting - 4" rod extension	1.50	2.75	2.00	1.12	PMAT.AB.15.CX1
B	Slide-on assembly with apple core mounting - 6" rod extension	1.00	2.25	1.50	1.32	PMAT.AC.14.CX1
B	Slide-on assembly with apple core mounting - 6" rod extension	1.25	2.50	1.75	1.32	PMAT.AC.16.CX1
B	Slide-on assembly with apple core mounting - 6" rod extension	1.50	2.75	2.00	1.32	PMAT.AC.15.CX1
C	Slide-on assembly with ball joint mounting - 2" rod extension	1.00	2.25	1.50	0.90	PMAT.AA.18.IX1
C	Slide-on assembly with ball joint mounting - 2" rod extension	1.25	2.50	1.75	0.90	PMAT.AA.17.IX1
C	Slide-on assembly with ball joint mounting - 4" rod extension	1.00	2.25	1.50	1.10	PMAT.AB.04.IX1
C	Slide-on assembly with ball joint mounting - 4" rod extension	1.25	2.50	1.75	1.10	PMAT.AB.18.IX1
C	Slide-on assembly with ball joint mounting - 4" rod extension	1.50	2.75	2.00	1.10	PMAT.AB.17.IX1
C	Slide-on assembly with ball joint mounting - 6" rod extension	1.00	2.25	1.50	1.30	PMAT.AC.04.IX1
C	Slide-on assembly with ball joint mounting - 6" rod extension	1.25	2.50	1.75	1.30	PMAT.AC.18.IX1
C	Slide-on assembly with ball joint mounting - 6" rod extension	1.50	2.75	2.00	1.30	PMAT.AC.17.IX1

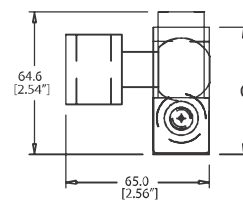
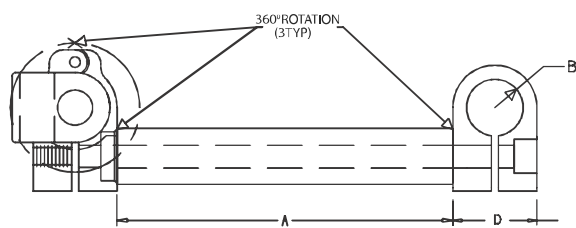
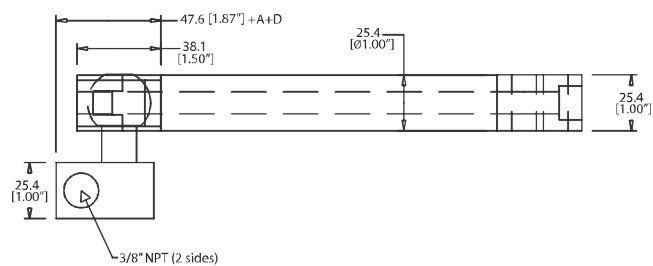


Specifications subject to change without notice.

PMAT MOUNTING STYLE



B



C

PMAT
Mounting Style

PMAT FUNCTION ATTACHMENT



NO FUNCTION ATTACHMENT



- Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

TECHNICAL DATA

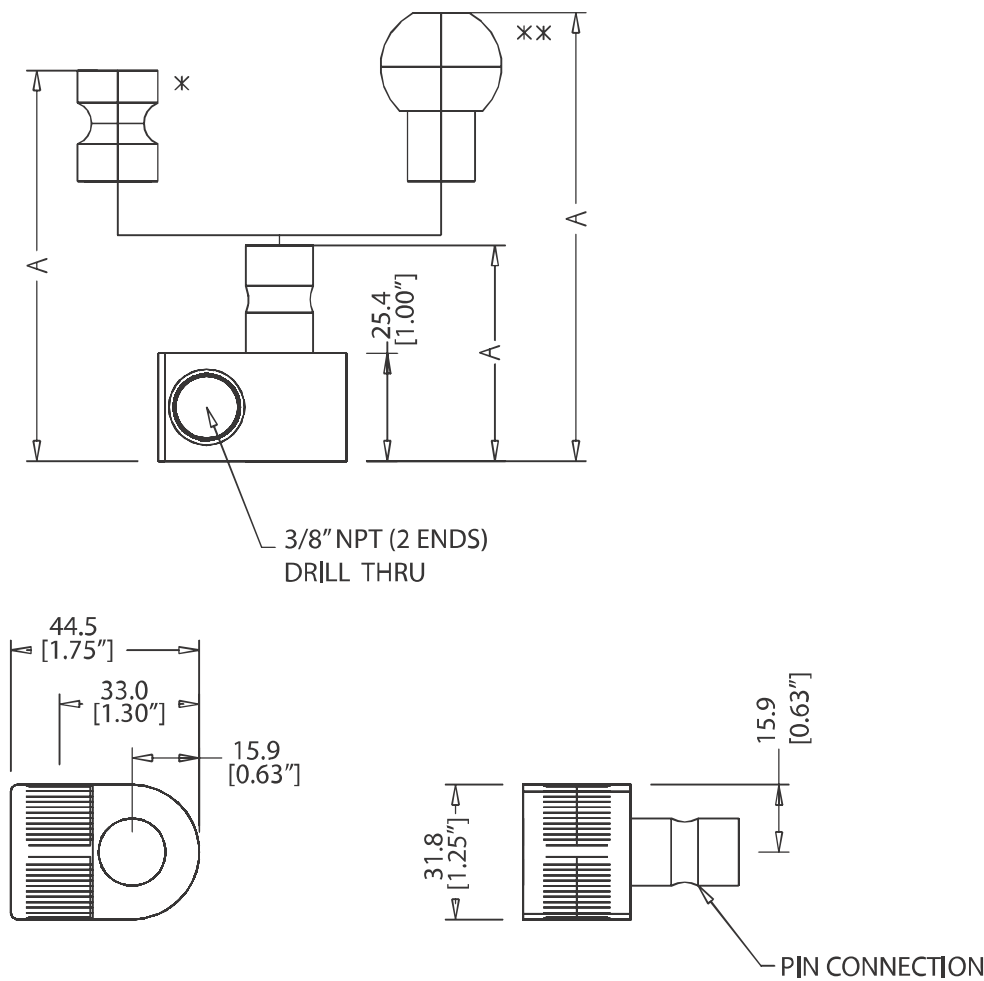
Description	Unit	Value
Temperature range	°F	-20-150
Material		AL, SS, Steel, Brass

ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	2.00	4.80	6005	X1
Ball joint mounting	2.56	4.00	6006	IX1
Apple core mounting	2.03	5.12	6007	CX1

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6005RH (Code X1RH).

PMAT FUNCTION ATTACHMENT



PMAT
Function
Attachment

*Apple Core **Ball Joint

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT

PIAB

NO FUNCTION ATTACHMENT & LEVEL COMPENSATION



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		AL, SS, Steel, Brass

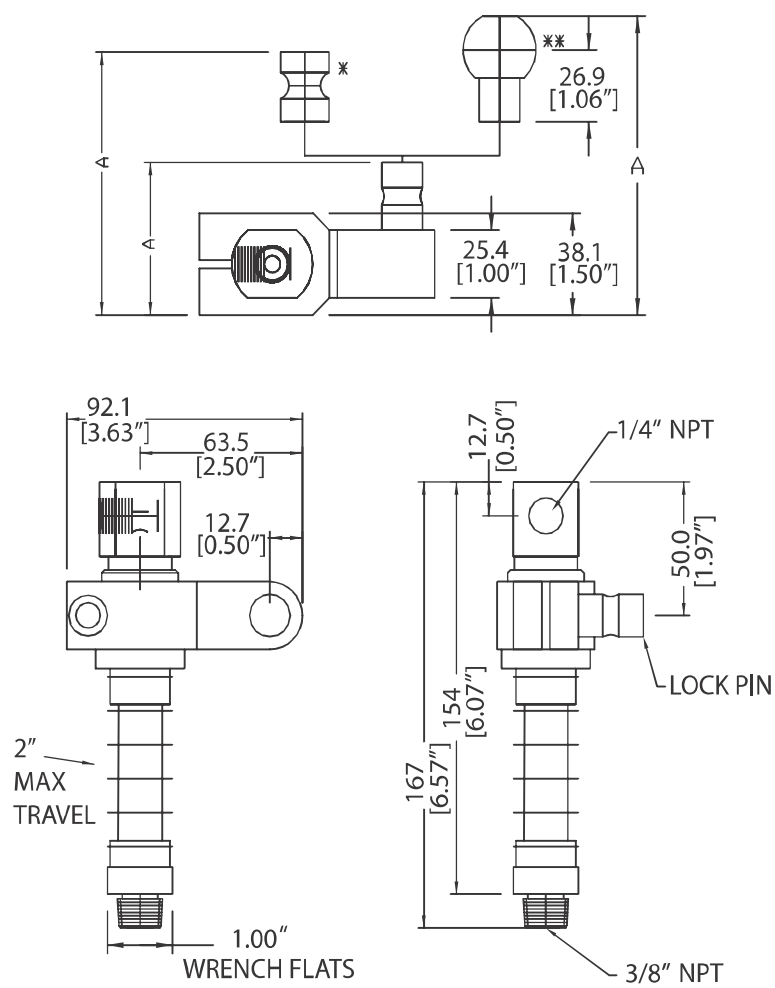
ORDERING INFORMATION

Description	A in	Weight lb	Part No.	Code No.
Lock pin mounting	2.25	1.31	6010	X2
Ball joint mounting	2.81	1.27	6018	IX2
Apple core mounting	2.28	1.34	6020	CX2

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6010RH (Code X2RH).

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



PMAT
Function
Attachment

*Apple Core **Ball Joint

Specifications subject to change without notice.

VACTRAP™



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, max., blow-off	psi	101.5
Feed pressure, min., breakaway blow-off	psi	36.25
Material		AL, Steel, Ceramic, Brass, NBR
Temperature range	F°	-20-150
Vacuum flow, max.	scfm	1.44

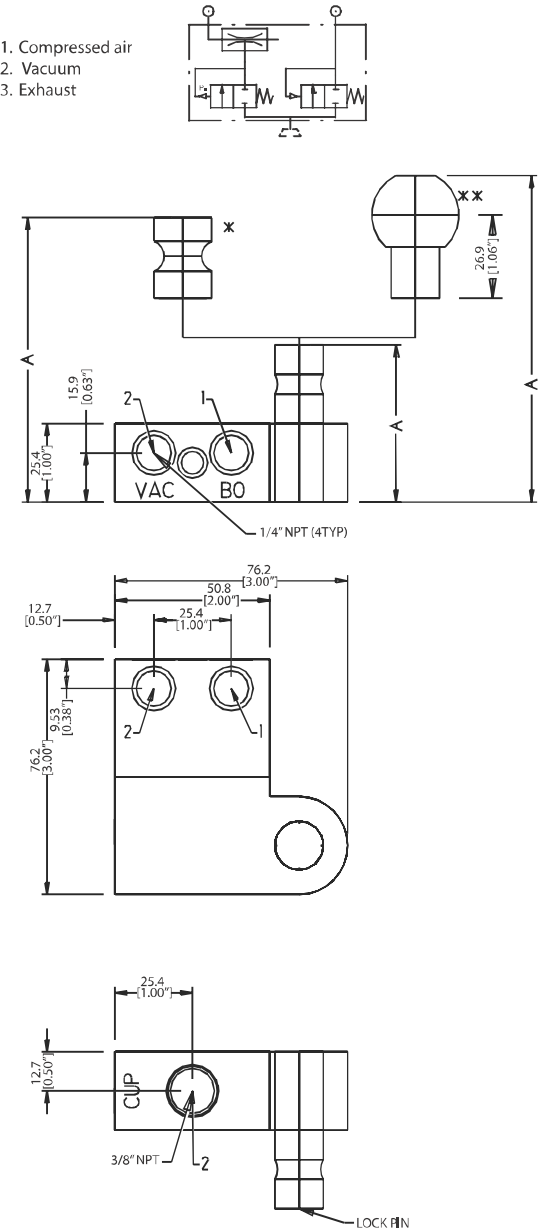
PMAT FUNCTION ATTACHMENT



ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	2.00	12.3	1025	AB
Ball joint mounting	2.56	11.5	1020	IAB
Apple core mounting	2.03	12.8	1042	CAB

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 1025RH (Code ABRH).



PMAT
Function
Attachment

*Apple Core **Ball Joint

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



VACTRAP™ WITH COAX® CARTRIDGE



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption.
- ▶ Reliable even at low operating feed pressure.
- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, Steel, Ceramic, Brass, NBR
Vacuum flow, max.	scfm	1.44

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	0	3	6	9	12	15	18	21	24	27	27.0
		1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	3	6	9	12	15	18	21	24	27		27.0
		4.82	9.07	16.4	31.2	51.0	76.5	113	181	—		

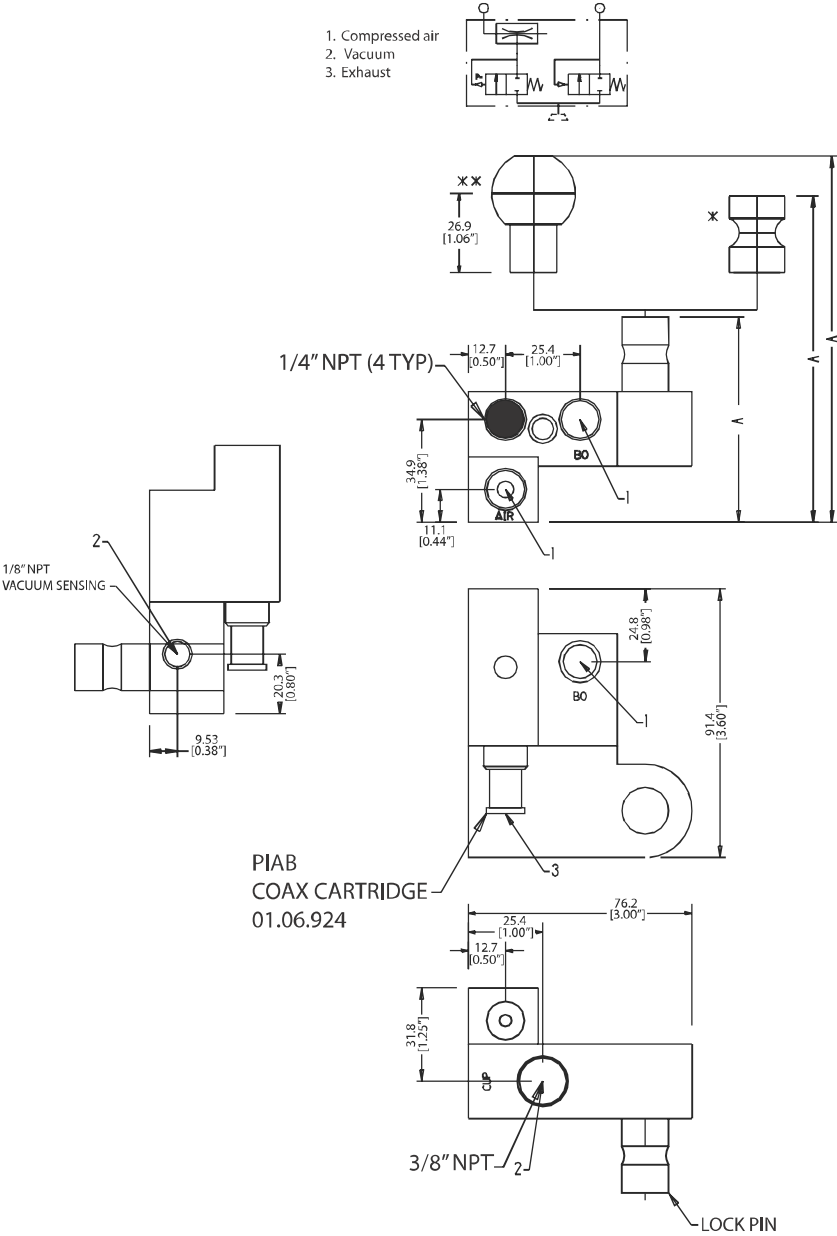
ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	2.75	14.7	1050	AA
Ball joint mounting	3.31	13.9	1045	IAA
Apple core mounting	2.78	15.0	1046	CAA

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 1050RH (Code AARH).

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



PMAT
Function
Attachment

*Apple Core **Ball Joint

VACTRAP™ CROSS-DRILLED



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ This is used when you have your own existing vacuum system and are using the same line (into VAC port) for both vacuum and blow-off thereby eliminating the need for a second inlet for the blow-off.
- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ The vacuum pump and blow-off connections are interconnected (x-drilled), making it suitable for ejectors with integrated blow-off valve, such as PIAB's AVM™ models.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

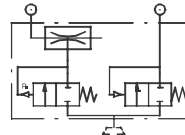
TECHNICAL DATA

Description	Unit	Value
Feed pressure, max., blow-off	psi	101.5
Feed pressure, min., breakaway blow-off	psi	36.25
Material		AL, SS, Steel, Ceramic, Brass, NBR
Temperature range	°F	-20-150
Vacuum flow, max.	scfm	1.44

PIAB

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	2.00	12.3	1026	CB
Ball joint mounting	2.56	11.5	1021	ICB
Apple core mounting	2.03	12.8	1024	CCB

1. Compressed air
2. Vacuum
3. Exhaust



Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



VACTRAP™ WITH LEVEL COMPENSATOR



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Temperature range	°F	-20-150
Material		AL, Steel, Ceramic, Brass, NBR
Vacuum flow, max.	scfm	1.44

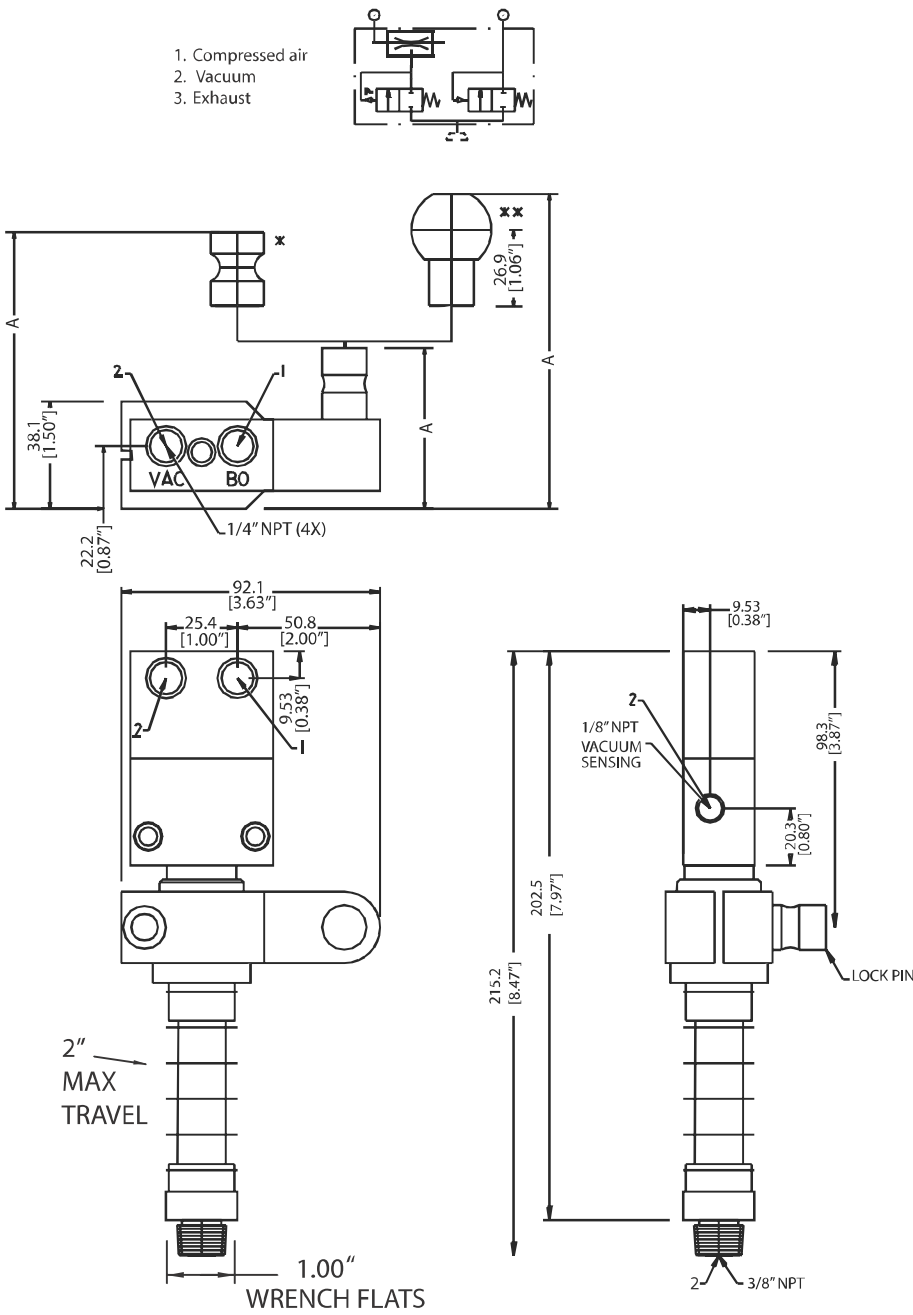
ORDERING INFORMATION

Description	A in	Weight lb	Part No.	Code No.
Lock pin mounting	2.25	1.70	6015	AM
Ball joint mounting	2.81	1.65	6023	IAM
Apple core mounting	2.28	1.72	6024	CAM

2" is standard level compensator length. Other lengths are available from 1"-8". All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6015RH (Code AMRH).

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



PMAT
Function
Attachment

*Apple Core **Ball Joint

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



VACTRAP™ WITH COAX® CARTRIDGE & LEVEL COMPENSATOR



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption.
- ▶ Reliable even at low operating feed pressure.
- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, Steel, Ceramic, Brass, NBR
Vacuum flow, max.	scfm	1.44

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	0	3	6	9	12	15	18	21	24	27	27.0
		1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	3	6	9	12	15	18	21	24	27		27.0
		4.82	9.07	16.4	31.2	51.0	76.5	113	181	—		

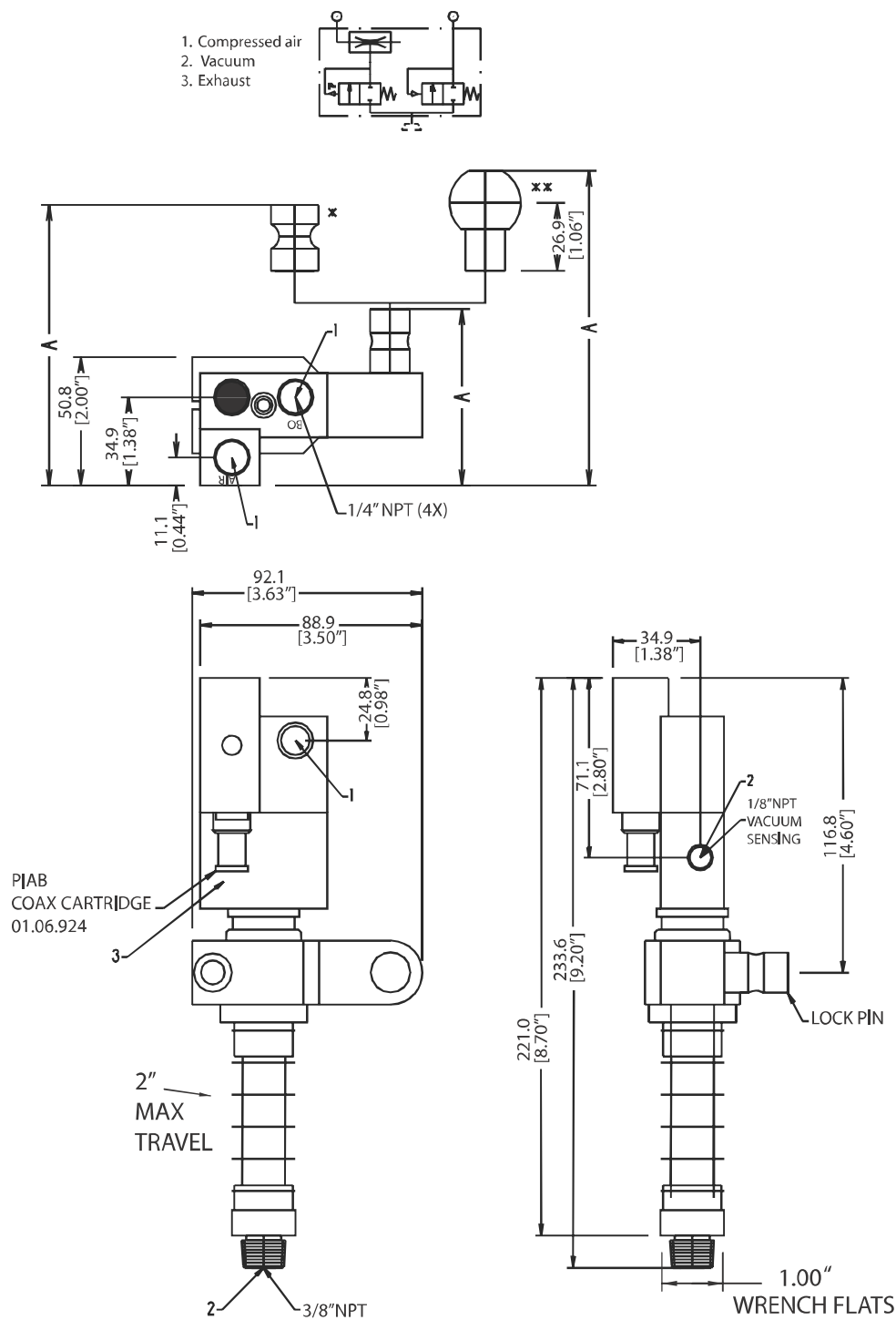
ORDERING INFORMATION

Description	A in	Weight lb	Part No.	Code No.
Lock pin mounting	2.75	1.80	6016	AL
Ball joint mounting	3.31	1.75	6019	IAL
Apple core mounting	2.78	1.82	6022	CAL

2" is standard level compensator length. Other lengths are available from 1"-8". All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6016RH (Code ALRH).

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



PMAT
 Function
 Attachment

*Apple Core **Ball Joint

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



VACTRAP™ CROSS-DRILLED & LEVEL COMPENSATOR



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ This is used when you have your own existing vacuum system and are using the same line (into VAC port) for both vacuum and blow-off thereby eliminating the need for a second inlet for the blow-off.
- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ The vacuum pump and blow-off connections are interconnected (x-drilled), making it suitable for ejectors with integrated blow-off valve, such as PIAB's AVM™ models.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Temperature range	°F	-20-150
Material		AL, Steel, Ceramic, Brass, NBR
Vacuum flow, max.	scfm	1.44

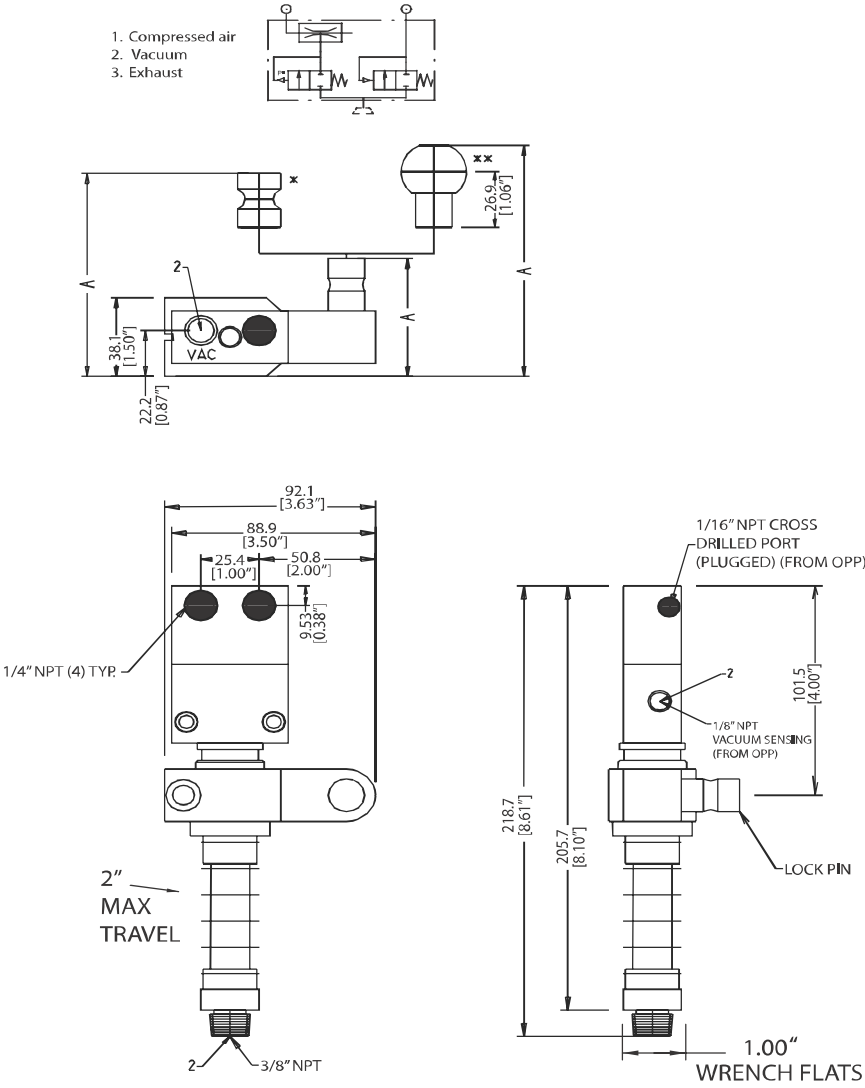
ORDERING INFORMATION

Description	A in	Weight lb	Part No.	Code No.
Lock pin mounting	2.25	1.70	6017	CM
Ball joint mounting	2.81	1.65	6028	ICM
Apple core mounting	2.28	1.72	6029	CCM

2" is standard level compensator length. Other lengths are available from 1"-8". All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6017RH (Code CMRH).

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



PMAT
 Function
 Attachment

*Apple Core **Ball Joint

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



VACUUM CONNECTION



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ Suitable for an existing vacuum system or to use with COAX® vacuum cartridge.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Temperature range	°F	-20-150
Material		AL, SS, Steel, Brass

ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	1.88	7.68	2024	AD
Ball joint mounting	2.44	6.88	2029	IAD
Apple core mounting	1.90	8.00	2034	CAD

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 2024RH (Code ADRH).

PMAT FUNCTION ATTACHMENT



VACUUM CONNECTION WITH COAX® CARTRIDGE



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption.
- ▶ Reliable even at low operating feed pressure.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, Steel, Ceramic, Brass, NBR

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	0	3	6	9	12	15	18	21	24	27	27.0
		1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	

EVACUATION TIME

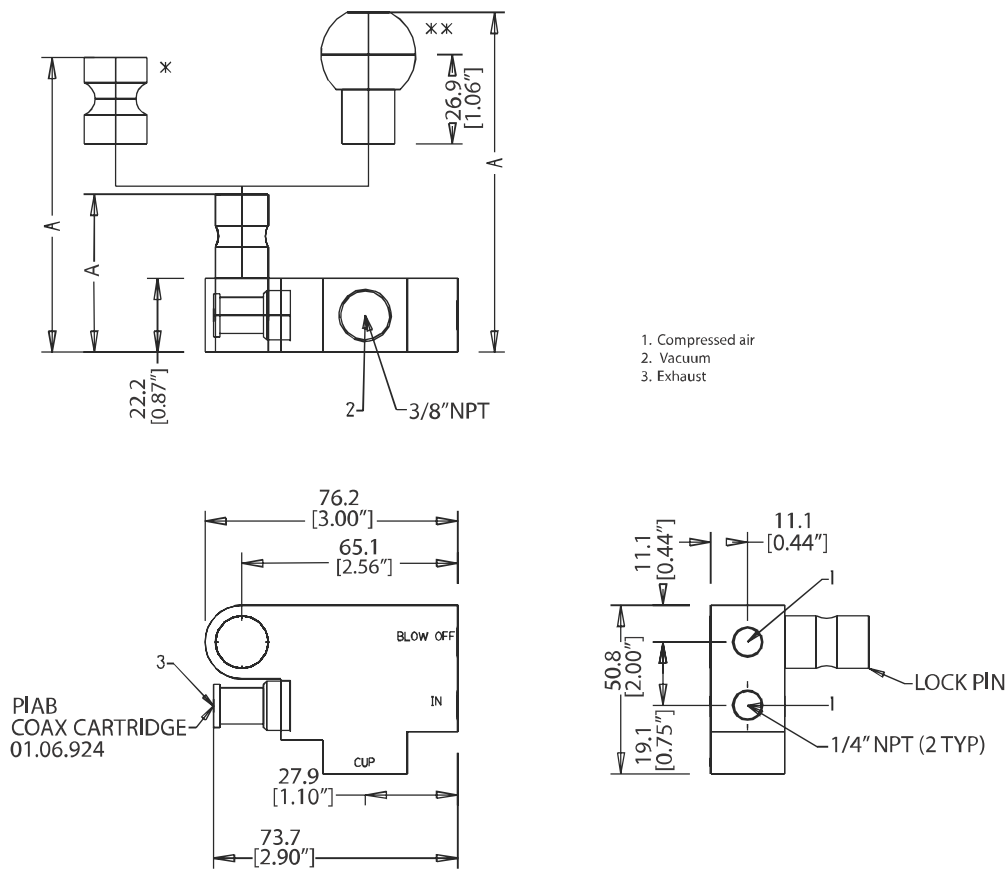
Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	3	6	9	12	15	18	21	24	27		27.0
		4.82	9.07	16.4	31.2	51.0	76.5	113	181	—		

ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	1.88	7.84	2025	AC
Ball joint mounting	2.44	7.04	2028	IAC
Apple core mounting	1.90	8.16	2093	CAC

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 2025RH (Code ACRH).

PMAT FUNCTION ATTACHMENT



PMAT
 Function
 Attachment

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



VACUUM CONNECTION & LEVEL COMPENSATOR



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ Suitable for an existing vacuum system or to use with COAX® vacuum cartridge.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

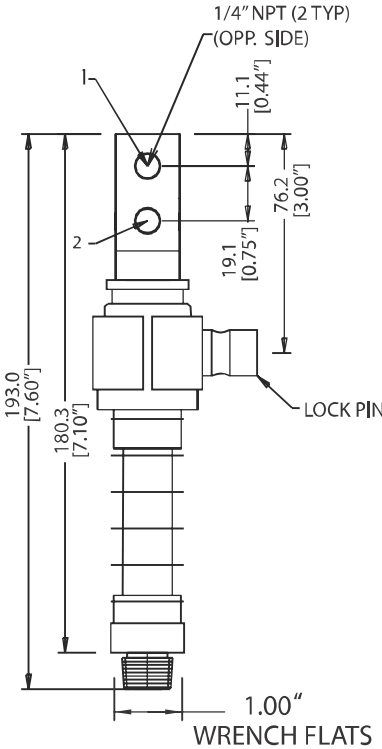
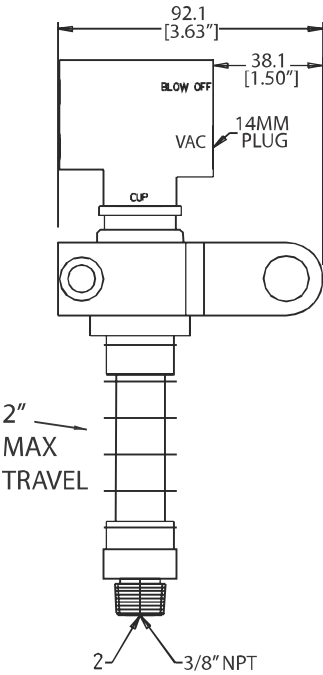
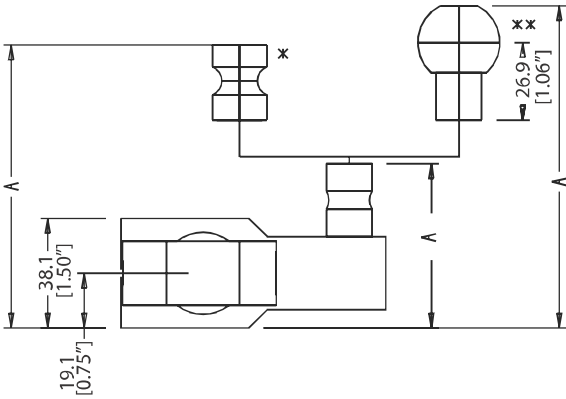
Description	Unit	Value
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Temperature range	°F	-20-150
Material		AL, SS, Steel, Ceramic

ORDERING INFORMATION

Description	A in	Weight lb	Part No.	Code No.
Lock pin mounting	2.25	1.31	6025	AO
Ball joint mounting	2.28	1.26	6042	IAO
Apple core mounting	2.81	1.33	6044	CAO

2" is standard level compensator length. Other lengths are available from 1"-8". All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6025RH (Code AORH).

PMAT FUNCTION ATTACHMENT



PMAT
Function
Attachment

*Apple Core ** Ball Joint

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



VACUUM CONNECTION WITH COAX® CARTRIDGE & LEVEL COMPENSATOR



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption.
- ▶ Reliable even at low operating feed pressure.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, Steel, Ceramic, NBR

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	0	3	6	9	12	15	18	21	24	27	27.0
		1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	3	6	9	12	15	18	21	24	27		27.0
		4.82	9.07	16.4	31.2	51.0	76.5	113	181	—		

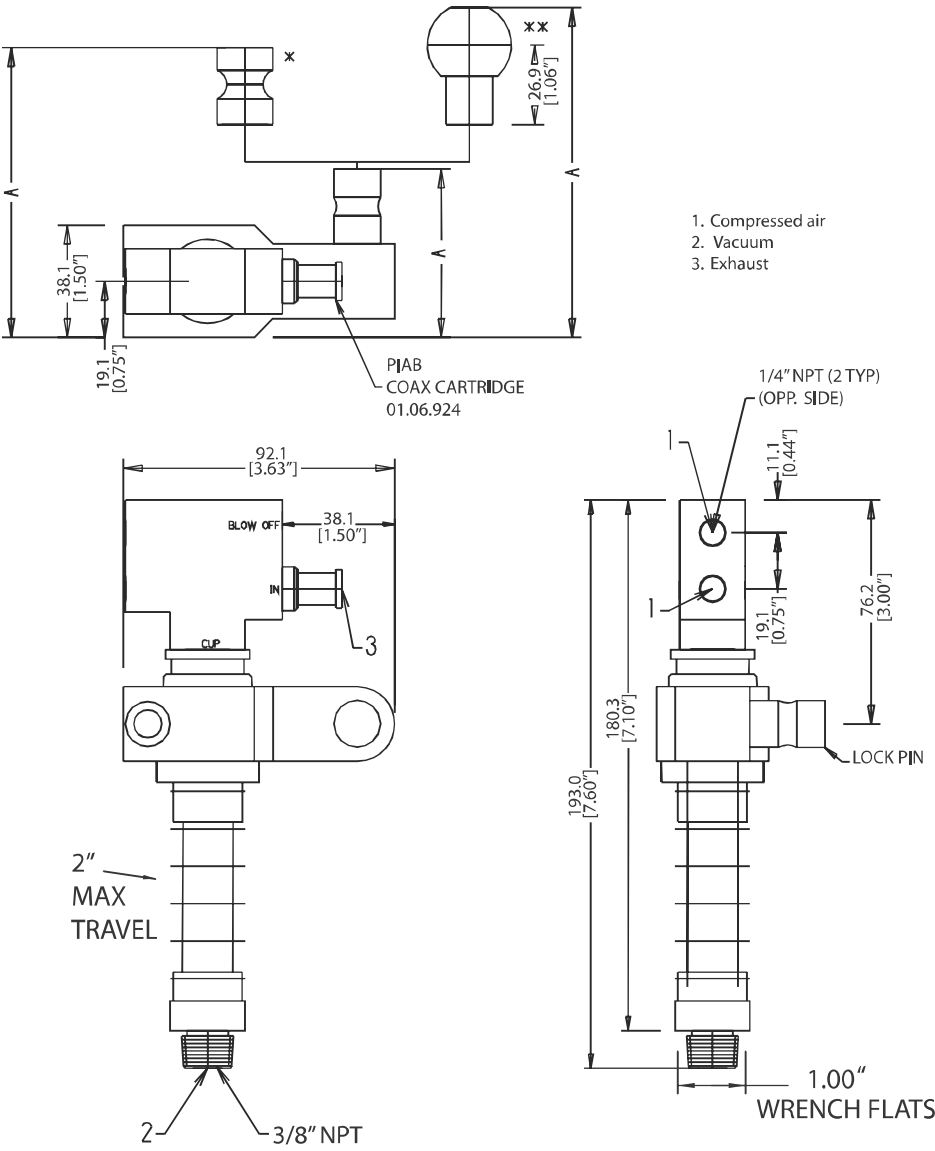
ORDERING INFORMATION

Description	A in	Weight lb	Part No.	Code No.
Lock pin mounting	2.25	1.41	6026	AN
Ball joint mounting	2.81	1.36	6039	IAN
Apple core mounting	2.28	1.43	6040	CAN

2" is standard level compensator length. Other lengths are available from 1"-8". All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6026RH (Code ANRH).

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



PMAT
Function
Attachment

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



LOW PROFILE VACUUM CONNECTION WITH COAX® CARTRIDGE



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption.
- ▶ Reliable even at low operating feed pressure.
- ▶ Low height.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Noise level	dBA	66-68
Temperature range	°F	14-122
Weight	oz	7.68-8.80
Material		PP, PA, NBR, AL, SS, Steel, Ceramic, Brass, NBR

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	0	3	6	9	12	15	18	21	24	27	27.0
		1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)										Max vacuum -inHg
45	1.00	3	6	9	12	15	18	21	24	27		27.0
		4.82	9.07	16.4	31.2	51.0	76.5	113	181	—		

ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	3.00	8.48	2026	AS
Ball joint mounting	3.56	7.68	2027	IAS
Apple core mounting	3.03	8.80	2053	CAS

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 2026RH (Code ASRH).

Specifications subject to change without notice.

PIAB

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



LOW PROFILE VACUUM CONNECTION WITH COAX® CARTRIDGE & VACUSTAT



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption.
- ▶ Reliable at even low operating feed pressure.
- ▶ Low height.
- ▶ Integrated energy-saving device, the vacustat, means virtually no compressed air consumption in sealed and decentralized applications, such as sheet metal handling.
- ▶ The air-saving function is activated at a fixed setting of 20 -inHg.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards
- ▶ Reduce your energy consumption up to 98%, case story on page 70.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Signal Range	-inHg	20.0±2.5
Hysteresis	-inHg	0.60
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, Steel, Ceramic, Brass, NBR

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
		0	3	6	9	12	15	18	21	24	27	
45	1.00	1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	27.0

EVACUATION TIME

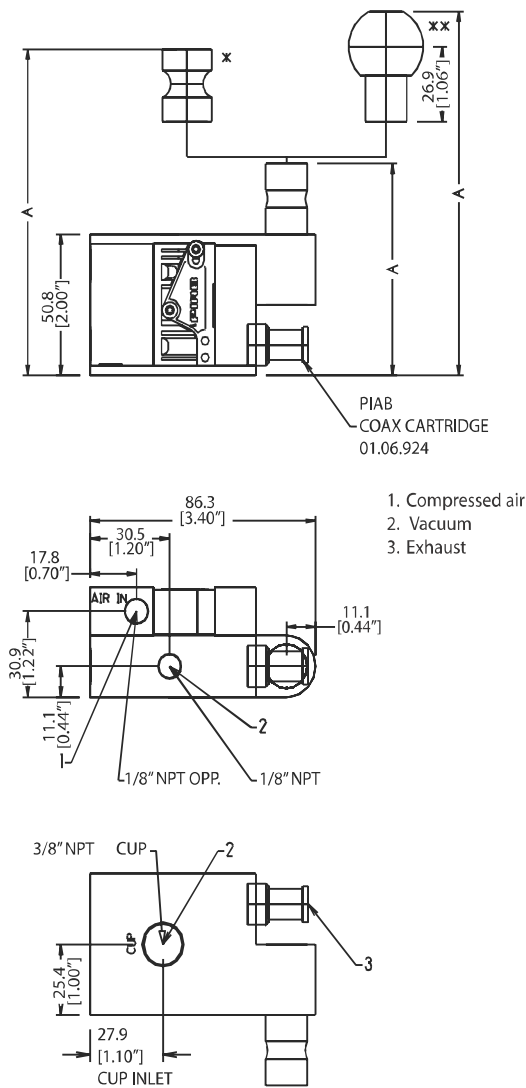
Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)									Max vacuum -inHg
		3	6	9	12	15	18	21	24	27	
45	1.00	4.82	9.07	16.4	31.2	51.0	76.5	113	181	—	27.0

ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	3.00	11.4	2052	AZ
Ball joint mounting	3.56	10.6	2051	IAZ
Apple core mounting	3.03	11.7	2054	CAZ

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 2052RH (Code AZRH).

Specifications subject to change without notice.



PMAT
Function
Attachment

*Apple Core ** Ball Joint

For more info about VACUSTAT, see separate data sheet in ACCESSORIES chapter.

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



LOW PROFILE VACUUM CONNECTION WITH COAX® CARTRIDGE, VACUSTAT & LEVEL COMPENSATOR



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption.
- ▶ Reliable even at low operating feed pressure.
- ▶ Low height.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.
- ▶ Integrated energy-saving device, the vacustat, means virtually no compressed air consumption in sealed and decentralized applications, such as sheet metal handling.
- ▶ The air-saving function is activated at a fixed setting of 20 -inHg.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards
- ▶ Reduce your energy consumption up to 98%, case story on page 70.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Signal range	-inHg	20.0±2.5
Hysteresis	-inHg	0.60
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, Steel, Ceramic, Brass, NBR

VACUUM FLOW

Feed pressure	Air consumption	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum
psi	scfm	0	3	6	9	12	15	18	21	24	27	-inHg
45	1.00	1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	27.0

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)									Max vacuum -inHg
		3	6	9	12	15	18	21	24	27	
45	1.00	4.82	9.07	16.4	31.2	51.0	76.5	113	181	—	27.0

Specifications subject to change without notice.

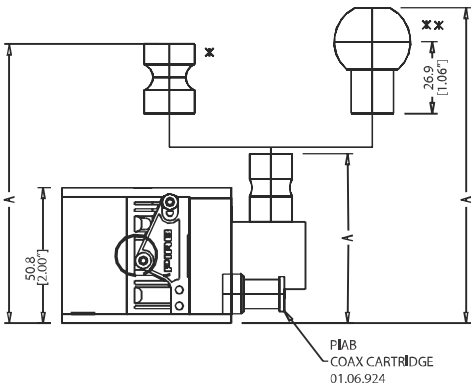
PMAT FUNCTION ATTACHMENT



ORDERING INFORMATION

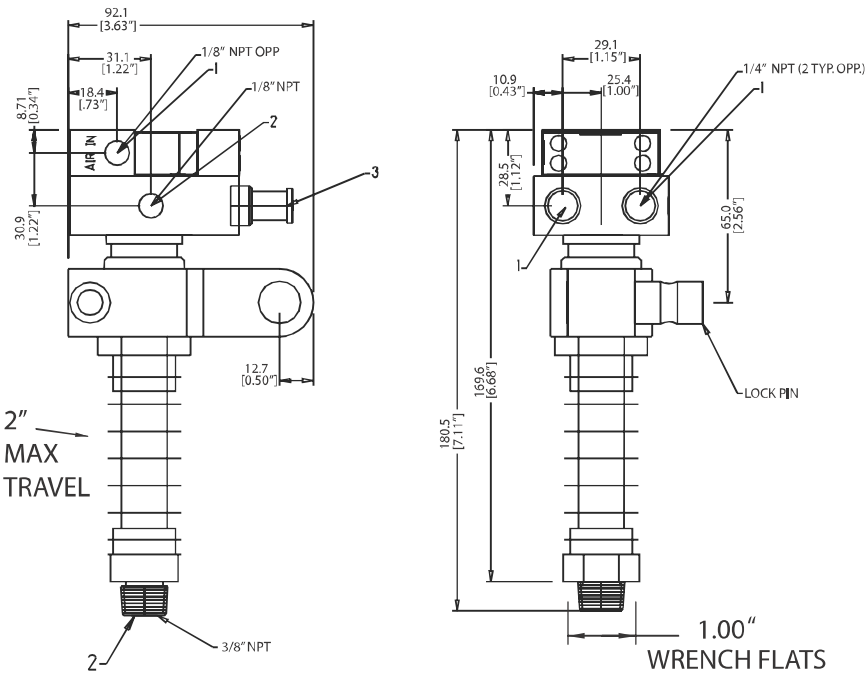
Description	A in	Weight lb	Part No.	Code No.
Lock pin mounting	2.50	1.67	6050	BQ
Ball joint mounting	3.06	1.61	6051	IBQ
Apple core mounting	2.53	1.69	6052	CBQ

2" is standard level compensator length. Other lengths are available from 1"-8". All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of part no. & code no., i.e. 6050RH (Code BQRH).



1. Compressed air
2. Vacuum
3. Exhaust

PMAT
Function
Attachment



*Apple Core ** Ball Joint

For more info about VACUSTAT, see separate data sheet in ACCESSORIES chapter.

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



LOW PROFILE VACUUM CONNECTION WITH COAX® CARTRIDGE & T-SLOT HOUSING



FOR DECENTRALIZED VACUUM SOLUTIONS*

- ▶ COAX® patented technology means faster response and lower energy consumption
- ▶ Reliable even at low operating feed pressure.
- ▶ Low height.
- ▶ For quick access to suction cup for fast changeover.
- ▶ The suction cup must have a T-slot fitting.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards.

* See page 2 for complete details.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, maximum	psi	101.5
Feed pressure, min. breakaway blow-off	psi	36.25
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, Steel, Ceramic, Brass, NBR

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
		0	3	6	9	12	15	18	21	24	27	
45	1.00	1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	27.0

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)										Max vacuum -inHg
		3	6	9	12	15	18	21	24	27		
45	1.00	4.82	9.07	16.4	31.2	51.0	76.5	113	181	—		27.0

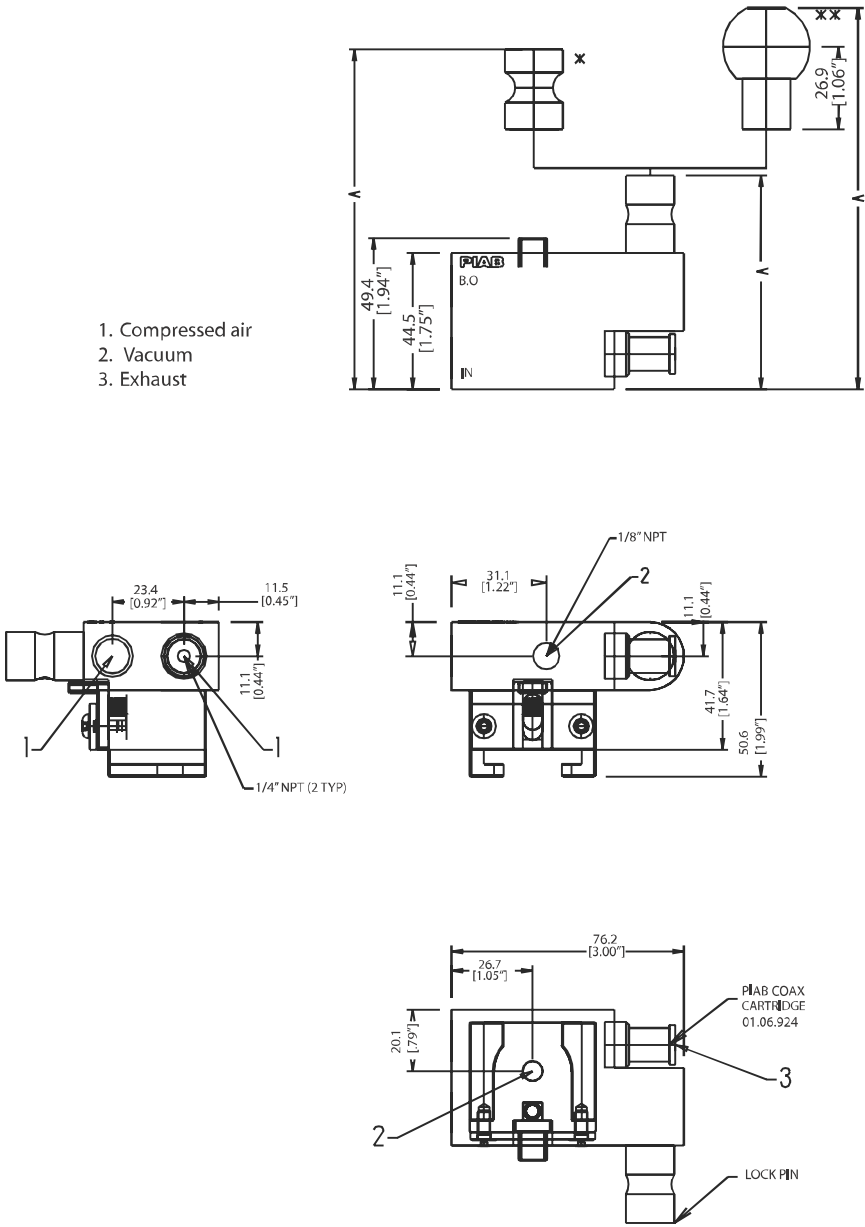
ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	2.75	10.9	2090	AU
Ball joint mounting	3.31	10.1	2091	IAU
Apple core mounting	2.78	11.4	2094	CAU

All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of Part No. & Code No., i.e. 2090RH (Code AURH).

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



PMAT
 Function
 Attachment

Specifications subject to change without notice.

PMAT FUNCTION ATTACHMENT



T-SLOT HOUSING



FOR CENTRALIZED VACUUM SOLUTIONS*

- ▶ For quick access to suction cup for fast changeover
- ▶ The suction cup must have a T-slot fitting.
- ▶ Available in lock pin, ball joint or apple core mounting in accordance with industry standards

* See page 2 for complete details.

TECHNICAL DATA

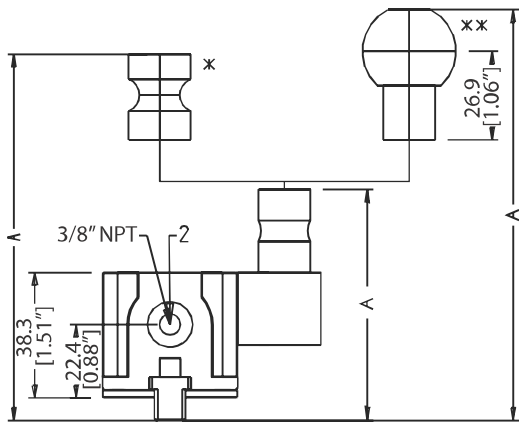
Description	Unit	Value
Working temperature	°F	-20-150
Weight	oz	5.92-7.04
Material		Al, Steel, SS

ORDERING INFORMATION

Description	A in	Weight oz	Part No.	Code No.
Lock pin mounting	2.78	6.72	7003	X17
Ball joint mounting	3.34	5.92	7004	IX17
Apple core mounting	2.81	7.04	7005	CX17

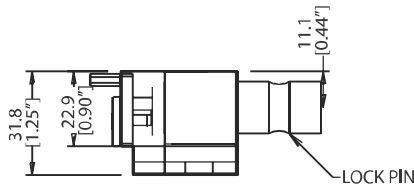
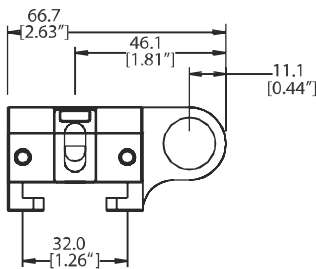
All function attachments are considered left-handed tooling. If you need right-handed tooling, please add "RH" to end of Part No. & Code No., i.e. 7003RH (Code X17RH).

PMAT FUNCTION ATTACHMENT



1. Compressed air
2. Vacuum
3. Exhaust

PMAT
Function
Attachment



*Apple Core **Ball Joint

PMAT FUNCTION ATTACHMENT



PROXIMITY MOUNTING BRACKETS



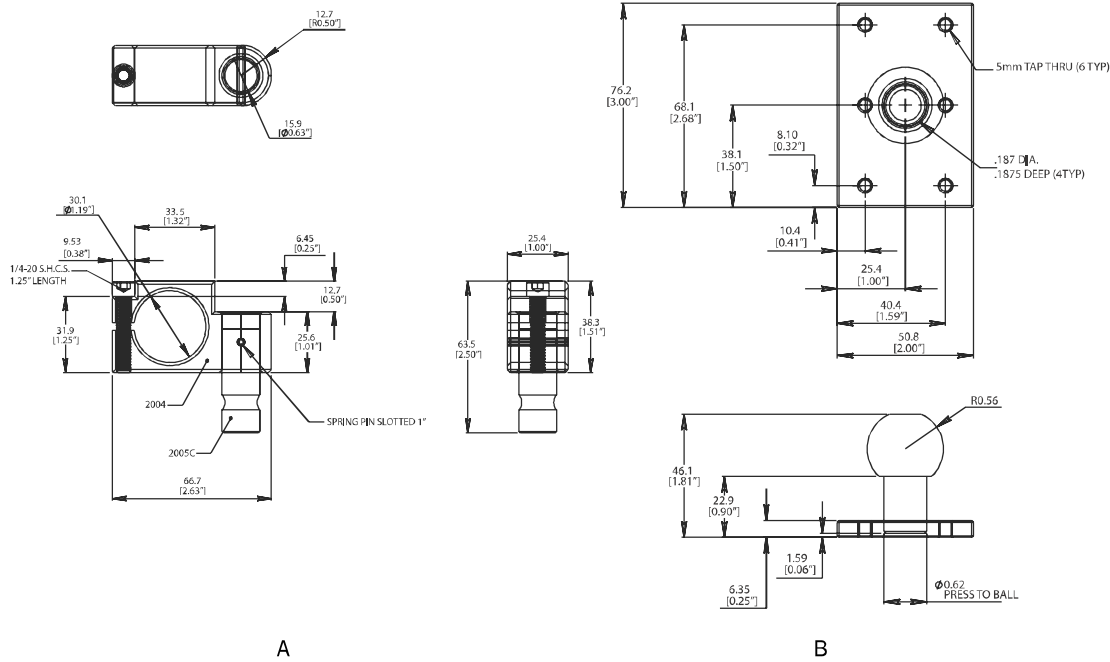
► Other sizes available, contact PIAB.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		AL, SS

ORDERING INFORMATION

	Description	Weight oz	Part No.	Code
A	Lock pin mounting-30 mm prox.	5.76	2044	AH
B	Ball joint mounting-square prox.	3.68	5080	DA



Specifications subject to change without notice.

COAX® PUMP CARTRIDGE



- ▶ COAX® patented technology
- ▶ Low operating feed pressure
- ▶ Fast cycle times
- ▶ In-line design

TECHNICAL DATA

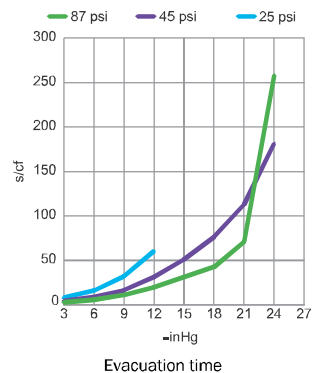
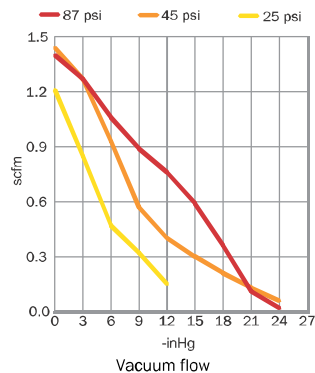
Description	Unit	Value
Feed pressure, optimum	psi	45
Feed pressure, max.	psi	101.5
Noise level	dBA	66-68
Temperature range	°F	14-122
Material		PP, PA, AL, SS, NBR

VACUUM FLOW

Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)											Max vacuum -inHg
		0	3	6	9	12	15	18	21	24	27		
87	1.67	1.40	1.27	1.06	0.89	0.76	0.59	0.36	0.11	0.02	-		24.9
45	1.00	1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	-		27.0
25	0.64	1.21	0.85	0.47	0.32	0.15	-	-	-	-	-		14.7

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)										Max vacuum -inHg
		3	6	9	12	15	18	21	24	24		
87	1.67	2.83	5.66	11.3	19.8	31.2	42.5	70.8	258	-		24.9
45	1.00	4.82	9.07	16.4	31.2	51.0	76.5	113	181	-		27.0
25	0.64	7.93	15.9	32.0	60.3	-	-	-	-	-		14.7



ORDERING INFORMATION

Description	Part No.
COAX® pump cartridge Pi12-2 with mounting holder	01.06.924

3RD AXIS CONNECTOR



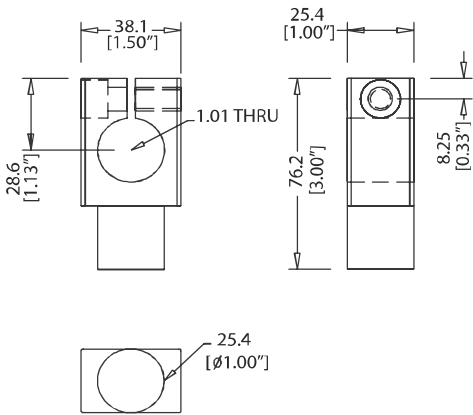
- Provides three-axis rotation for the Level Compensator part no. 3020.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Weight	oz	4.16
Material		AL, SS

ORDERING INFORMATION

Description	Part No.
3rd axis connector	3010



CLAMP BLOCKS



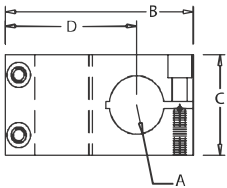
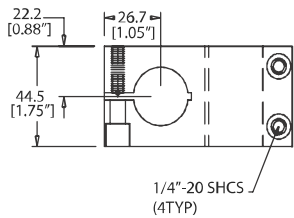
Used with Tubing Bar Stock as a connector.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		AL, SS

ORDERING INFORMATION

Description	Weight oz	A Dia Ø in	B in	C in	D in	Part No.
Clamp block-1.0x1.0	11.8	1.01	3.50	1.75	2.45	8002
Clamp block-1.0x1.5	12.8	1.51	3.90	2.25	2.70	8010



Specifications subject to change without notice.

EXTRUSION MOUNTED LEVEL COMPENSATORS



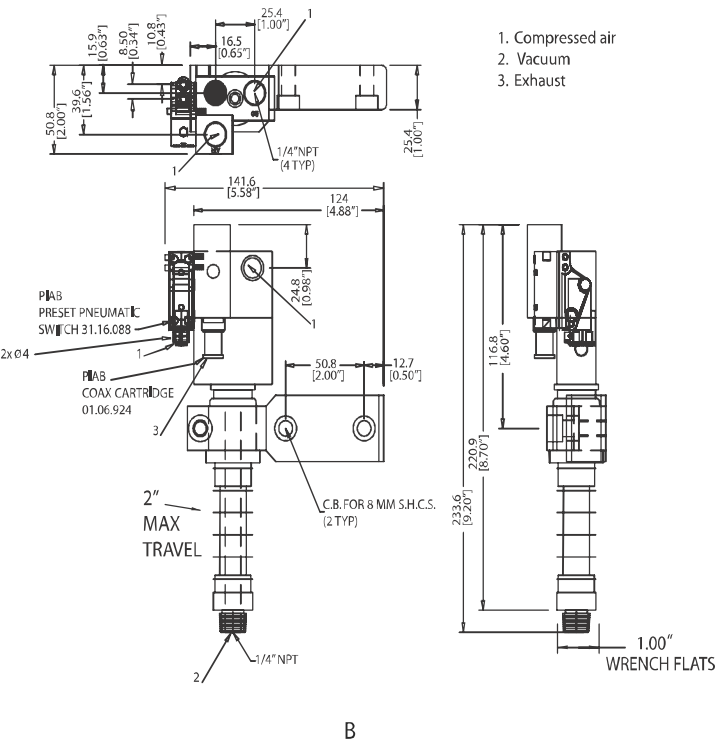
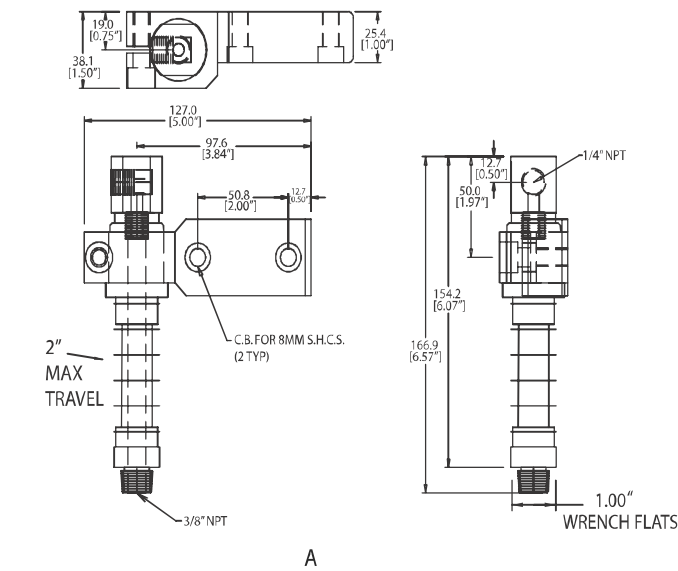
- ▶ Four different styles.
- ▶ Fits on standard size extrusion.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.

TECHNICAL DATA

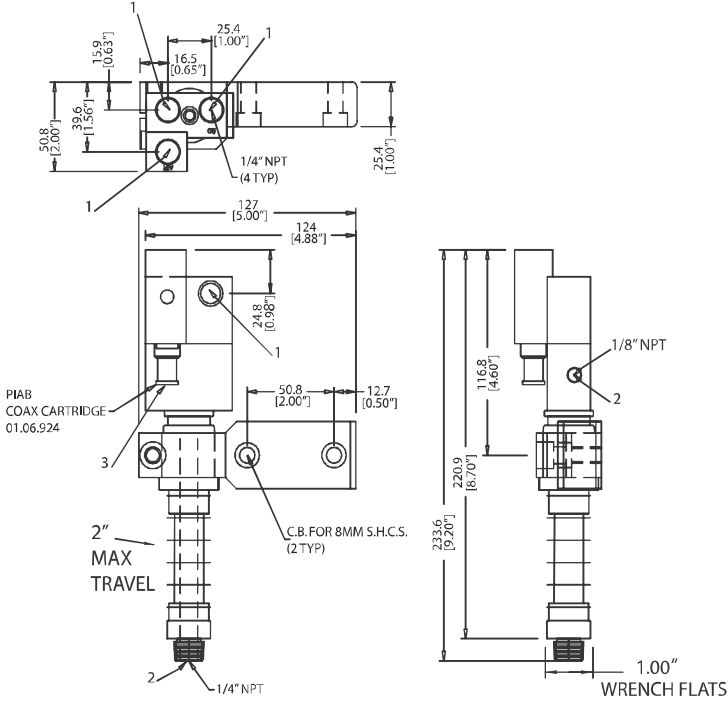
Description	Unit	Value			
		3027	3033	3037	3039
Feed pressure, optimum	psi		45	45	45
Feed pressure, maximum	psi		101.5	101.5	101.5
Feed pressure, min. breakaway blow-off	psi		36.25	36.25	
Vacuum switch signal range	-inHg		21.0±3.0		
Hysteresis	-inHg		3.50		
Function output			NC		
Noise level	dBA		66-68	66-68	66-68
Temperature range	°F	-20-150	14-122	14-122	14-122
Material		AL, SS, NBR	PP, AL, SS, NBR, Steel, Ceramic, Brass, PA, POM, CuZn	PP, PA, AL, SS, NBR, Steel, Ceramic, Brass	PP, PA AL, SS, NBR, Steel, Ceramic, Brass
Vacuum flow, max.			1.44	1.44	1.44

ORDERING INFORMATION

	Description	Part No.
A	Ext Mount Level Comp-No function attachment	3027
B	Ext Mount Level Comp-Vactrap® with COAX® cartridge & pneumatic vacuum switch	3033
C	Ext Mount Level Comp-Vactrap® with COAX® cartridge	3037
D	Ext Mount Level Comp-Vacuum connection with COAX® cartridge	3039

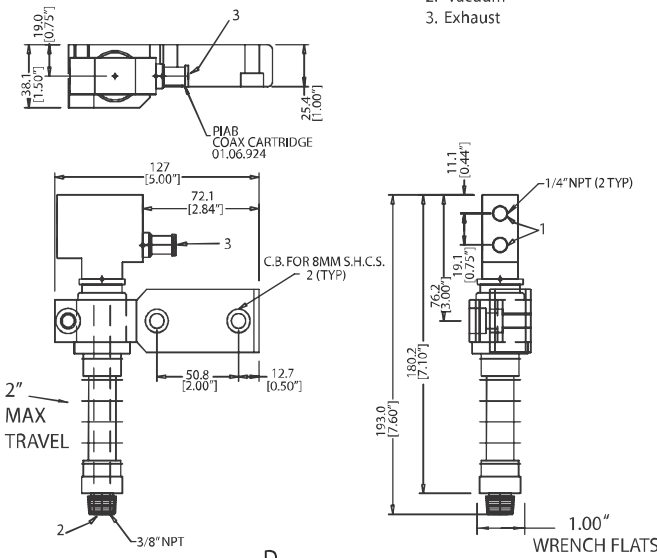


Specifications subject to change without notice.



C

- 1. Compressed air
- 2. Vacuum
- 3. Exhaust



D

HEIGHT ADJUSTERS



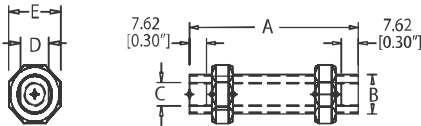
- ▶ Provides a height extension between the tooling and the suction cup.
- ▶ Available in 1" - 8" lengths.
- ▶ Available in either 1/8" NPT or 3/8" NPT.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		Zinc plated carbon steel

ORDERING INFORMATION

Description	Part no.	Weight oz	A in	B	C	D in	E in
Height adjuster-1"	3000-1.0L	2.08	1.00	5/8"-18	1/8" NPT	0.50	0.94
Height adjuster-2"	3000-2.0L	2.88	2.00	5/8"-18	1/8" NPT	0.50	0.94
Height adjuster-3"	3000	3.68	3.00	5/8"-18	1/8" NPT	0.50	0.94
Height adjuster-4 1/2"	3000-4.5L	4.96	4.50	5/8"-18	1/8" NPT	0.50	0.94
Height adjuster-6"	3000-6.0L	6.08	6.00	5/8"-18	1/8" NPT	0.50	0.94
Height adjuster-8"	3000-8.0L	8.16	8.00	5/8"-18	1/8" NPT	0.50	0.94
Height adjuster-3"	3005	7.04	3.00	7/8"-14	3/8" NPT	0.75	1.30
Height adjuster-8"	3005-8.0L	13.4	8.00	7/8"-14	3/8" NPT	0.75	1.30



Specifications subject to change without notice.

INLINE CHECK VALVE



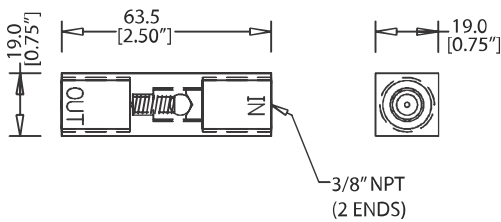
- ▶ Prevents vacuum from being pulled through the entire system.
- ▶ 3/8" NPT

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Weight	oz	1.44
Material		AL, Steel, Brass, Neoprene

ORDERING INFORMATION

Description	Part No.
Inline check valve	1035



LEVEL COMPENSATOR



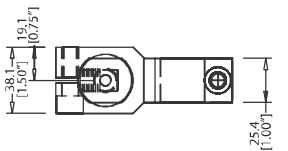
- ▶ 2" of travel.
- ▶ Level compensation is used to adjust differences in levels, particularly on a lifting device with several suction cups. It also provides a certain degree of shock absorption.

TECHNICAL DATA

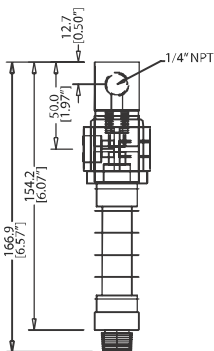
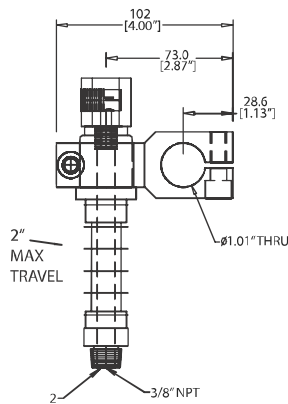
Description	Unit	Value
Temperature range	°F	-20-150
Weight	lb	1.38
Material		AL, SS, NBR

ORDERING INFORMATION

Description	Part No.
Level compensator	3020

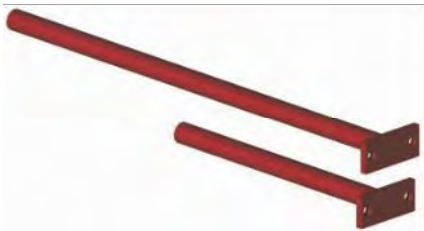


1. Compressed air
2. Vacuum
3. Exhaust



Specifications subject to change without notice.

MOUNTING BARS



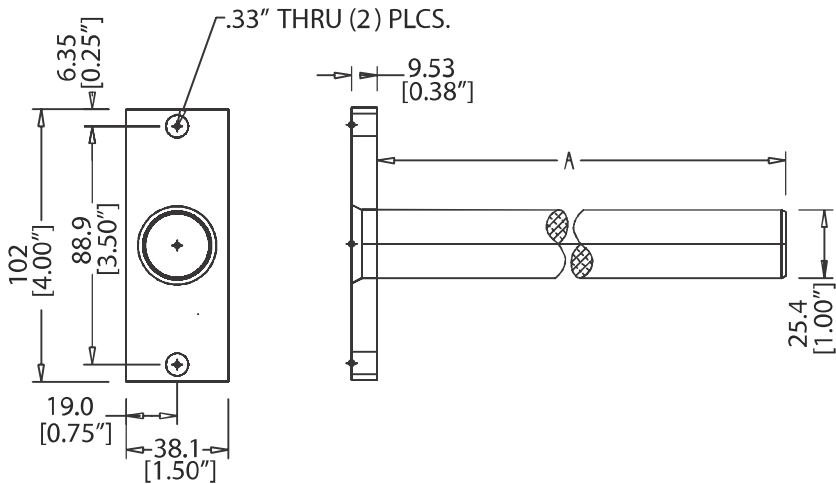
- ▶ Rigid mounting with low deflection.
- ▶ Hardware included.
- ▶ 12" - 36" lengths.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		AL

ORDERING INFORMATION

Description	Weight lb	A in	Part No.
Mounting bar-12"	1.15	12.0	4000
Mounting bar-20"	1.76	20.0	4050
Mounting bar-24"	2.06	24.0	4005
Mounting bar-36"	3.00	36.0	4010



MOUNTING BARS - FLEXIBLE



- ▶ Locks into straight 90° or adjustable to ±20°.
- ▶ Positive lock position.
- ▶ Rigid mounting with low deflection.
- ▶ Hardware included.
- ▶ 4" - 30" lengths.

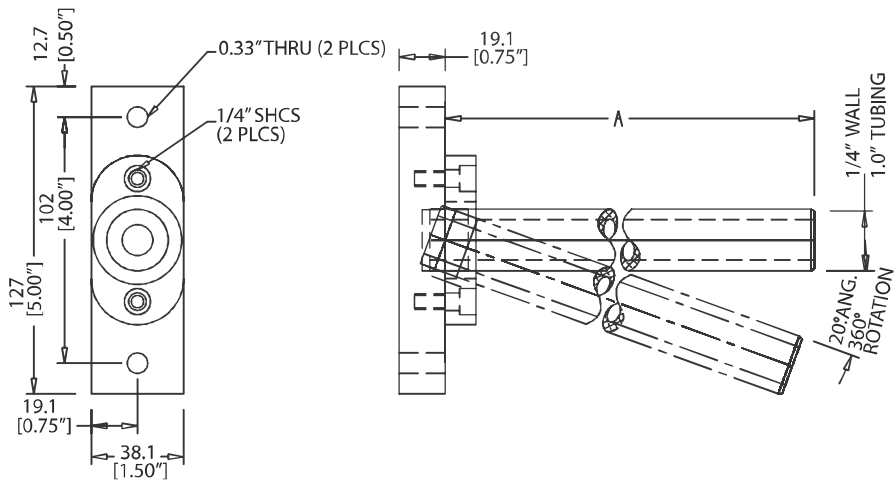
TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		AL

ORDERING INFORMATION

Description	Weight lb	A in	Part No..
Flexible mounting bar-4"	1.12	4.00	4040
Flexible mounting bar-6"	1.18	6.00	4015
Flexible mounting bar-8"	1.23	8.00	4045
Flexible mounting bar-12"	1.34	12.0	4020
Flexible mounting bar-18"	1.50	18.0	4025
Flexible mounting bar-20"	1.56	20.0	4026
Flexible mounting bar-24"	1.67	24.0	4030
Flexible mounting bar-30"	1.83	30.0	4035

PMAT
ACCESSORIES



Specifications subject to change without notice.

T-SLOT CONNECTIONS



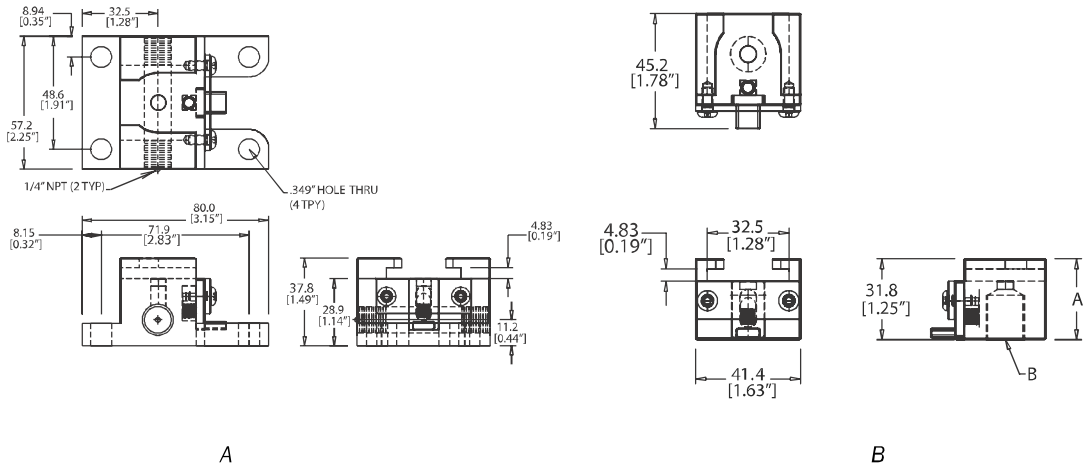
- ▶ For quick access to suction cup for fast changeover.
- ▶ The suction cup must have a T-slot fitting.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		AL, Steel, SS

ORDERING INFORMATION

	Description	Weight oz	A in	B	Part No.
A	T-slot connection-1/4" NPT (2 typ)	21.1	-	-	7001-4
B	T-slot connection-3/8" NPT	3.68	1.25	3/8" NPT	7001-1
B	T-slot connection-1/2" NPT	3.68	1.25	1/2" NPT	7001-2
B	T-slot connection-1/4" NPT	3.20	1.00	1/4" NPT	7001-3



Specifications subject to change without notice.

TUBING BAR STOCK



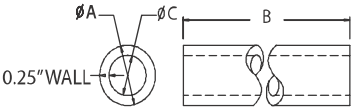
▶ 1" diameter and 1 1/2" diameter available.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		AL

ORDERING INFORMATION

Description	Weight lb	A O.D. in	B in	C I.D. in	Part No.
Tubing bar stock - 24"	1.32	Ø 1.00	24.0	Ø 0.50	8020
Tubing bar stock - 36"	1.98	Ø 1.00	36.0	Ø 0.50	8022
Tubing bar stock - 48"	2.64	Ø 1.00	48.0	Ø 0.50	8024
Tubing bar stock - 60"	3.30	Ø 1.00	60.0	Ø 0.50	8026
Tubing bar stock - 72"	3.96	Ø 1.00	72.0	Ø 0.50	8028
Tubing bar stock - 36"	3.27	Ø 1.50	36.0	Ø 1.00	8030
Tubing bar stock - 48"	4.36	Ø 1.50	48.0	Ø 1.00	8032
Tubing bar stock - 60"	5.46	Ø 1.50	60.0	Ø 1.00	8034
Tubing bar stock - 72"	6.55	Ø 1.50	72.0	Ø 1.00	8036



Specifications subject to change without notice.

VACTRAP™



- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.
- ▶ Available in a special version in which the vacuum pump and blow-off connections are interconnected (x-drilled), making it suitable for ejectors with integrated blow-off valve, such as PIAB's AVM™ models.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, max., blow-off	psi	101.5
Feed pressure, min., breakaway blow-off	psi	36.25
Material		AL, Steel, Ceramic, Brass, NBR

TECHNICAL DATA, SPECIFIC

Description	Unit	Part Number/Value					
		1000	1002	1005	1015	1016	1030
Temperature range	°F	-20-150	14-302	-20-150	-20-150	-20-150	-20-150
Weight	oz	8.29	8.29	8.29	8.22	8.11	3.88
Extra		—	—	—	x-drilled vacuum/blow-off	x-drilled vacuum/blow-off	—
Vacuum flow, max.	scfm	1.48	1.48	1.48	1.48	1.48	1.06
Sealing material		NBR	Viton			NBR	

VACTRAP™ WITH COAX® CARTRIDGE



- ▶ "COAX® patented technology" means faster response and lower energy consumption.
- ▶ Reliable even at low operating feed pressure.
- ▶ Check valve that "traps" the vacuum pressure in vacuum systems for an indefinite period of time in sealed applications, such as when handling sheet metal or glass with suction cups.
- ▶ The object can be handled with an extremely high degree of safety even if the supply of compressed air should be cut off, if a pump failure should occur or if the emergency stop should be activated, thus preventing the object from being dropped.
- ▶ Equipped with a built-in blow-off check valve to provide quick release of the object with compressed air supplied from the outside.

TECHNICAL DATA

Description	Unit	Value
Feed pressure, max.	psi	101.5
Feed pressure, min., breakaway blow-off	psi	36.25
Feed pressure, optimum COAX®	psi	45
Air consumption, 45 psi	scfm	1.00
Vacuum, 45 psi	-inHg	27.0
Noise level, with load	dBA	65
Noise level, without load	dBA	74
Weight	oz	10.4
Material	PP, PA, AL, Steel, Ceramic, Brass, NBR	
Temperature range	°F	14-122
Vacuum flow, max.	scfm	1.44

VACUUM FLOW

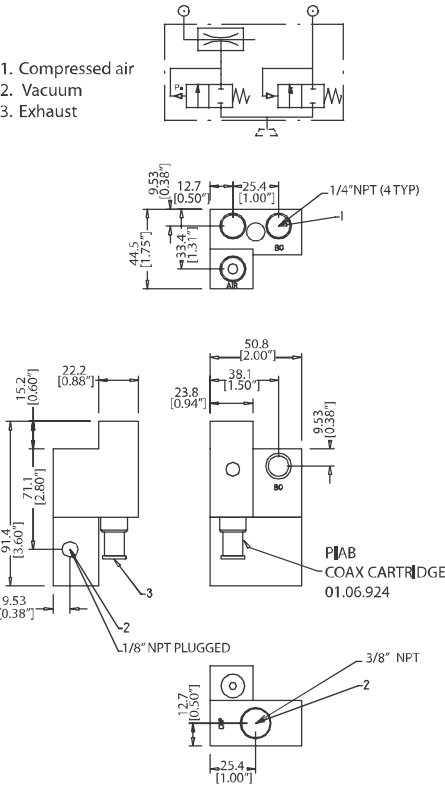
Feed pressure psi	Air consumption scfm	Vacuum flow (scfm) at different vacuum levels (-inHg)										Max vacuum -inHg
		0	3	6	9	12	15	18	21	24	27	
45	1.00	1.44	1.27	0.93	0.57	0.40	0.30	0.21	0.13	0.06	—	27.0

EVACUATION TIME

Feed pressure psi	Air consumption scfm	Evacuation time (s/cf) to reach different vacuum levels (-inHg)									Max vacuum -inHg
		3	6	9	12	15	18	21	24	27	
45	1.00	4.82	9.07	16.4	31.2	51.0	76.5	113	181	—	27.0

ORDERING INFORMATION

Description	Part No.
Vactrap™ VT1-AS COAX® PI12-2	1041



PMAT
ACCESSORIES

BALL JOINT



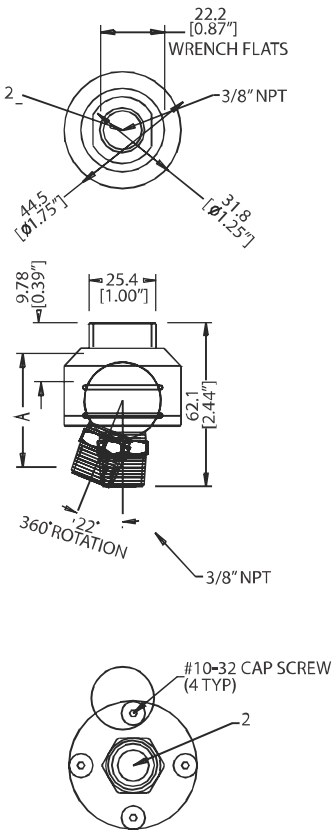
- ▶ Ball joint fitting could be used when lifting sheet metal with a device using several suction cups.
- ▶ To avoid bending stress, a suction cup can be fitted with a ball joint.
- ▶ Available in a loose-fit and a locking version.

TECHNICAL DATA

Description	Unit	Value
Temperature range	°F	-20-150
Material		Steel, Zinc, Brass, NBR

ORDERING INFORMATION

Description	Weight oz	A in	Part No.
Ball joint 3/8" NPT - loose-fit	11.8	1.55	7016
Ball joint 3/8" NPT - locking	11.5	1.50	7018



Specifications subject to change without notice.

98% energy consumption reduction in sheet metal handling applications

DaimlerChrysler Corporation was interested in reducing the cost of its sheet metal handling processes used in stamping applications at one of its manufacturing facilities in Michigan, United States. The company was searching for a compact vacuum solution that consumed less energy, operated at lower noise levels and was easier to maintain.

OUTPERFORMING THE COMPETITION

A recent comparative vacuum technology study performed by Dr. Kingman E. Yee, as part of a DaimlerChrysler Summer Intern Professors Program, found that air consumption could be reduced by 98% when equipping a robot's end-of-arm-tooling with a PIAB COAX® and Vacustat. Additionally, if DaimlerChrysler were to replace its older, outdated vacuum systems, the study estimated annual savings of \$418,300 per stamping plant (based on the use of 2,000 suction cups.)



SUPERIOR VACUUM FLOW

The multi-stage design of the COAX® ejectors enhances material handling performance by producing superior vacuum flow and responding almost immediately when compressed air is applied. The COAX® ejectors can achieve an evacuation flow rate and holding force that is more than 25% higher than the competitive solutions.

FASTER PROCESS CYCLE TIME

The quicker response and better vacuum flow means the suction cups grab quicker and hold stronger, resulting in a "faster process cycle time, and higher productivity," said Yee.

SHORTER DOWNTIME, QUICKER REPAIR AND MAINTENANCE

As a result of the study, DaimlerChrysler has installed several vacuum systems using PIAB COAX® technology and operators are extremely impressed with the performance, especially the shorter downtime for repairs.

SIGNIFICANT COST SAVINGS AND SEVERAL LARGE ORDERS ISSUED

Because of the numerous advantages and significant cost savings in air consumption offered by the PIAB vacuum system, Yee has recommended that PIAB COAX® technology be incorporated into the Company's metal stamping plants. DaimlerChrysler is considering additional usage, based on further evaluation of the above systems.

