

Series PA Clamps

*Ideal for a wide variety of automated part holding
and transfer applications*



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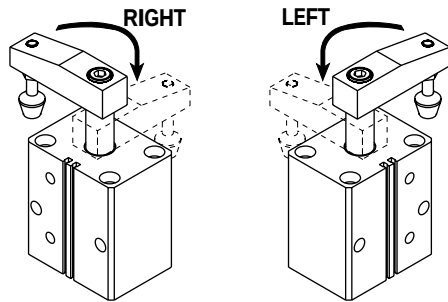
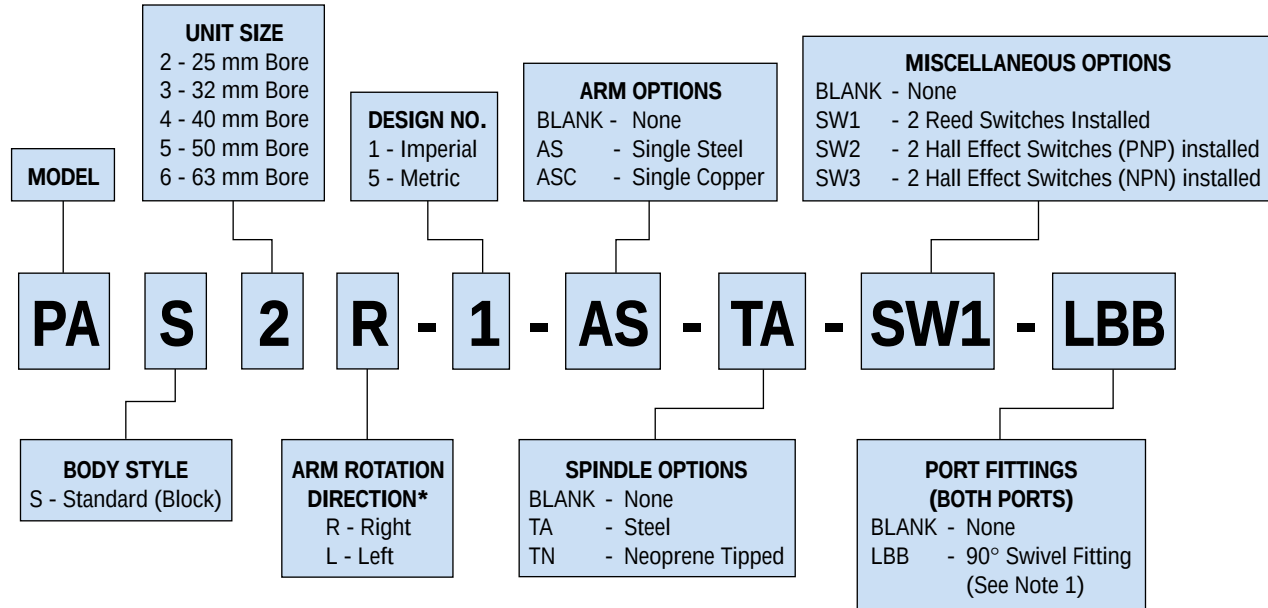
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TO ORDER SPECIFY:

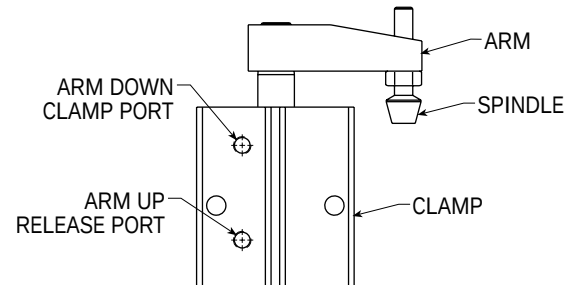
Model, Body Style, Unit Size, Arm Rotation Direction, Design No., and Additional Options if desired.



***NOTE:** Rotation is the direction the arm rotates when clamping and looking down at rod end.

NOTE:

1) 90° Swivel fittings not available on size 2 units.



BENEFITS: SERIES PA CLAMPS

- Simple design, compact size, low weight, long life, and high clamp force make these clamps ideal for part holding or transfer.
- Series PA are available in five sizes for application to a wide variety of tasks.
- Mounting patterns on three surfaces of the rectangular bodies provide flexibility in design and clamp mounting.
- Clamps are available in left and right rotations to fit within the space allowed.
- Steel and copper arms are supplied for standard and welding applications.
- Reed and Hall Effect Switches are available for easy interfacing to electronic controls and logic systems.
- Steel and Neoprene-tipped spindles are available for clamping rugged or show finishes.
- Lowest cost of ownership
- 24 hour delivery
- Switch ready
- All metric construction



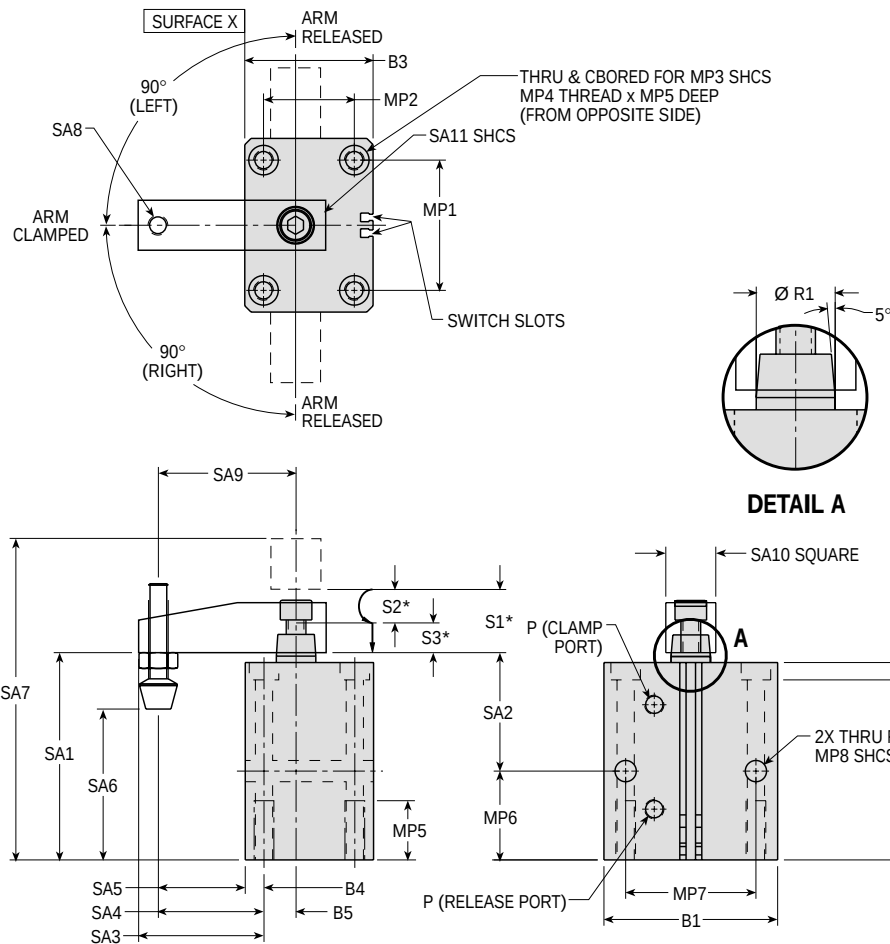
Copper Arm



Switches Installed

SPECIFICATIONS	SERIES PA
WORKING PRESSURE	40 psi min. - 100 psi max. 2.9 bar min. - 7 bar max.
BODY	Hardcoated Aluminum
PISTON ROD	Chrome Plated Steel
SEALS	Urethane Wiper and Rod Seal Nitrile Pistons and Static Seals
LUBRICATION	Permanent for Non-Lube Air

DIMENSIONS: SERIES PA CLAMPS



* NOTE: S1 = TOTAL STROKE S2 = ROTARY STROKE S3 = CLAMP STROKE

LETTER DIM	MODEL NUMBER									
	PAS2x		PAS3x		PAS4x		PAS5x		PAS6x	
	in	mm	in	mm	in	mm	in	mm	in	mm
B1	2.165	55.0	2.362	60.0	2.756	70.0	3.346	85.0	3.937	100.0
B2	3.071	78.0	3.543	90.0	3.543	90.0	3.937	100.0	3.937	100.0
B3	1.378	35.0	1.772	45.0	2.165	55.0	2.559	65.0	3.150	80.0
B4	.295	7.5	.295	7.5	.354	9.0	.374	9.5	.394	10.0
B5	.295	7.5	.492	12.5	.610	15.5	.846	21.5	1.083	27.5
MP1	1.575	40.0	1.772	45.0	2.047	52.0	2.598	66.0	3.150	80.0
MP2	.787	20.0	1.181	30.0	1.457	37.0	1.811	46.0	2.362	60.0
MP3	M6		M6		M8		M8		M10	
MP4	M8 x 1.25		M8 x 1.25		M10 x 1.5		M10 x 1.5		M12 x 1.75	
MP5	.787	20.0	.787	20.0	.984	25.0	1.181	30.0	1.181	30.0
MP6	1.260	32.0	1.693	43.0	1.575	40.0	1.772	45.0	1.417	36.0
MP7	1.575	40.0	1.772	45.0	2.047	52.0	2.598	66.0	3.150	80.0
MP8	M8		M8		M8		M10		M10	
MP9	2.795	71.0	3.268	83.0	3.189	81.0	3.583	91.0	3.504	89.0
P	10-32	M5	1/8 NPT 1/8 BSPP		1/8 NPT 1/8 BSPP		1/8 NPT 1/8 BSPP		1/8 NPT 1/8 BSPP	
R1	.551	14.0	.630	16.0	.630	16.0	.787	20.0	.787	20.0
S1*	1.043	26.5	1.181	30.0	1.181	30.0	1.161	29.5	1.181	30.0
S2*	.394	10.0	.551	14.0	.512	13.0	.571	14.5	.512	13.0
S3*	.650	16.5	.630	16.0	.669	17.0	.591	15.0	.669	17.0
SA1	3.209	81.5	3.780	96.0	3.740	95.0	4.193	106.5	4.193	106.5
SA2	1.969	50.0	2.047	52.0	2.165	55.0	2.362	60.0	2.717	69.0
SA3	1.969	50.0	2.283	58.0	2.520	64.0	2.756	70.0	2.913	74.0
SA4	1.673	42.5	1.870	47.5	2.146	54.5	2.303	58.5	2.461	62.5
SA5	1.378	35.0	1.575	40.0	1.791	45.5	1.929	49.0	2.067	52.5
SA6	2.24-2.56	57.0-65.0	2.36-2.87	60.0-73.0	2.36-2.87	60.0-73.0	2.17-2.95	55.0-75.0	2.17-2.95	55.0-75.0
SA7	4.882	124.0	5.709	145.0	5.670	144.0	6.339	161.0	6.358	161.5
SA8	M6 x 1.25 thru		M6 x 1.25 thru		M8 x 1.25 thru		M12 x 1.75 thru		M12 x 1.75 thru	
SA9	1.969	50.0	2.362	60.0	2.756	70.0	3.150	80.0	3.543	90.0
SA10	.630	16.0	.748	19.0	.748	19.0	.984	25.0	.984	25.0
SA11	M8		M8		M8		M10		M10	

ENGINEERING DATA: SERIES PA CLAMPS

SPECIFICATIONS

MODEL SIZE	THEORETICAL									
	CLAMPING FORCE			TOTAL STROKE mm	ROTARY STROKE mm	CLAMP STROKE mm	STROKE TOLERANCE mm	ROTARY TOLERANCE including backlash deg	CLAMP WEIGHT	
	BORE mm	SINGLE ARM AT 87 psi (6 bar)							lb	g
		lb	N							
PAx2	25	46	204	26.5	10	16.5	- 0 mm, + 2 mm	± 3 deg	0.88	400
PAx3	32	82	365	30	14	16			1.45	600
PAx4	40	143	636	30	13	17			1.94	880
PAx5	50	223	992	29.5	14.5	15			3.48	1580
PAx6	63	378	1682	30	13	17			4.84	2200

SEALS AND FLUIDS

Urethane and Nitrile seals are standard on all Series PA Clamps. Piston seals are long life Nitrile and rod seals are lip type. Both are compatible with standard paraffin-based lubrication oils used for pneumatic cylinders. For compatibility with other fluids, consult PHD.

TEMPERATURE LIMITS

Seals and clamp mechanism are designed for use in temperatures from -20° to 180°F [-30° to 82°C]. For higher temperatures, consult PHD.

LIFE EXPECTANCY

All units with urethane and Nitrile seals have been designed for 5 million cycles with minimal seal wear and minimal backlash.

LUBRICATION

Seals and clamp mechanism are prelubricated at the factory for service under normal operating conditions.

MATERIAL

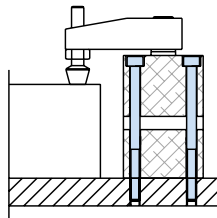
Clamp body is made of hard-coated aluminum. Rod and operating mechanism are manufactured from hardened steel.

SPECIAL CLAMPS

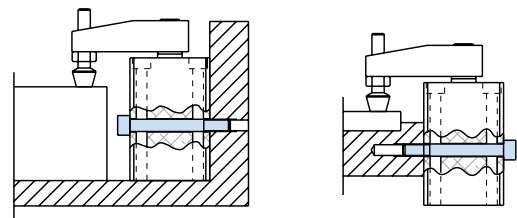
Clamps for special applications, severe duty, or constructed of special materials are available. Consult PHD.

CLAMP MOUNTING KITS

End mounting kit includes four alloy socket head cap screws for end mounting.



Side mounting kit includes two alloy socket head cap screws for side mounting.



DESCRIPTION	KIT NUMBER				
	PAS2x	PAS3x	PAS4x	PAS5x	PAS6x
END MOUNTING KIT - INCLUDES 4 SCREWS	71110-02 M6 x 90 mm LG SHCS	71110-03 M6 x 100 mm LG SHCS	71110-04 M8 x 100 mm LG SHCS	71110-05 M8 x 110 mm LG SHCS	71110-06 M10 x 110 mm LG SHCS
SIDE MOUNTING KIT - INCLUDES 2 SCREWS	71111-02 M8 x 50 mm LG SHCS	71111-03 M8 x 60 mm LG SHCS	71111-04 M8 x 70 mm LG SHCS	71111-05 M10 x 90 mm LG SHCS	71111-06 M10 x 100 mm LG SHCS

OPTIONS & KITS: SERIES PA CLAMPS

AS

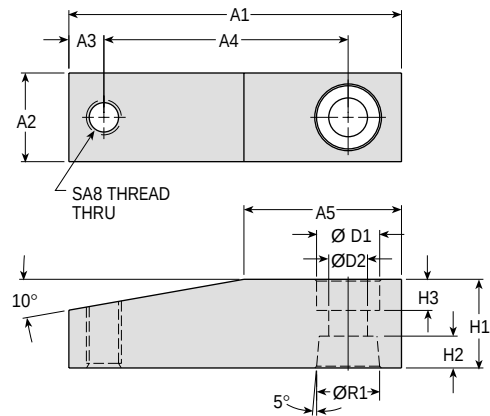
SINGLE ARM - STEEL

ASC

SINGLE ARM - COPPER

Single arms are made of steel or copper, one alloy socket head cap screw included.

LETTER DIM	MODEL NUMBER									
	PAx2x		PAx3x		PAx4x		PAx5x		PAx6x	
	in	mm	in	mm	in	mm	in	mm	in	mm
A1	2.598	66.0	3.150	80.0	3.543	90.0	4.134	105.0	4.528	115.0
A2	.630	16.0	.748	19.0	.748	19.0	.984	25.0	.984	25.0
A3	.236	6.0	.354	9.0	.354	9.0	.394	10.0	.394	10.0
A4	1.969	50.0	2.362	60.0	2.756	70.0	3.150	80.0	3.543	90.0
A5	.787	20.0	.984	25.0	1.378	35.0	1.378	35.0	1.772	45.0
D1	.551	14.0	.551	14.0	.551	14.0	.669	17.0	.669	17.0
D2	.335	8.5	.335	8.5	.335	8.5	.413	10.5	.413	10.5
H1	.630	16.0	.748	19.0	.748	19.0	.984	25.0	.984	25.0
H2	.236	6.0	.354	9.0	.354	9.0	.472	12.0	.472	12.0
H3	.236	6.0	.276	7.0	.276	7.0	.354	9.0	.354	9.0
R1	.551	14.0	.630	16.0	.630	16.0	.787	20.0	.787	20.0
SA8	M6 x 1.0		M8 x 1.25		M8 x 1.25		M12 x 1.75		M12 x 1.75	
KIT NO.	AS-PAS2-1		AS-PAS3-1		AS-PAS4-1		AS-PAS5-1		AS-PAS6-1	
STEEL	AS-PAS2-1		AS-PAS3-1		AS-PAS4-1		AS-PAS5-1		AS-PAS6-1	
COPPER	ASC-PAS2-1		ASC-PAS3-1		ASC-PAS4-1		ASC-PAS5-1		ASC-PAS6-1	



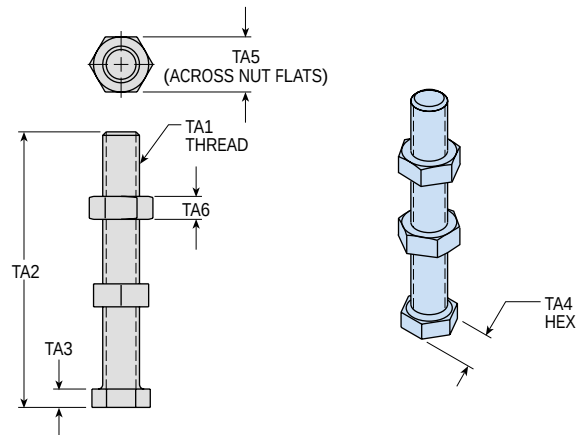
WEIGHT	MODEL NUMBER									
	PAx2x		PAx3x		PAx4x		PAx5x		PAx6x	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
STEEL	.20	.090	.34	.153	.43	.193	.85	.387	.91	.414
COPPER	.22	.100	.37	.170	.47	.215	.95	.430	1.01	.460

TA

STEEL SPINDLE

Steel spindles are plated steel with two hex nuts included.

LETTER DIM	MODEL NUMBER					
	PAx2x		PAx3x & PAx4x		PAx5x & PAx6x	
	in	mm	in	mm	in	mm
TA1	M6 x 1.0		M8 x 1.25		M12 x 1.75	
TA2	2.362	60.0	2.953	75.0	3.937	100.0
TA3	.157	4.0	.236	6.0	.315	8.0
TA4	.433	11.0	.591	15.0	.866	22.0
TA5	.394	10.0	.472	12.0	.748	19.0
TA6	.197	5.0	.217	5.5	.394	10.0
KIT NO.	71200-02		71200-03		71200-05	

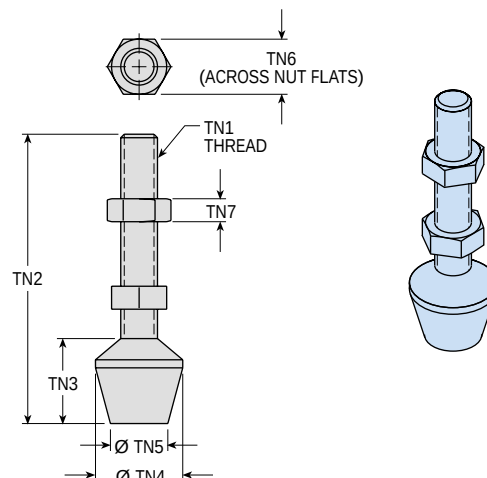


TN

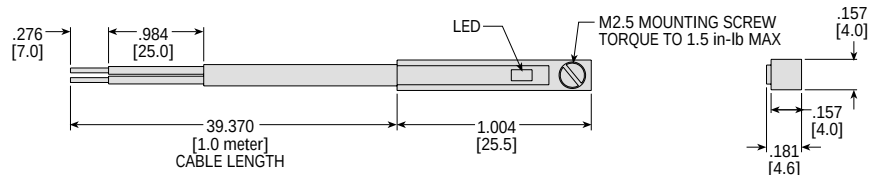
NEOPRENE TIPPED SPINDLE

Neoprene tipped spindles are plated threaded steel with 65 Durometer Neoprene molded onto the end. Two hex nuts are included.

LETTER DIM	MODEL NUMBER					
	PAx2x		PAx3x & PAx4x		PAx5x & PAx6x	
	in	mm	in	mm	in	mm
TN1	M6 x 1.0		M8 x 1.25		M12 x 1.75	
TN2	2.008	51.0	2.480	63.0	3.937	100.0
TN3	.551	14.0	.728	18.5	1.339	34.0
TN4	.630	16.0	.748	19.0	1.260	32.0
TN5	.394	10.0	.492	12.5	.866	22.0
TN6	.394	10.0	.512	13.0	.748	19.0
TN7	.197	5.0	.256	6.5	.394	10.0
KIT NO.	71100-02		71100-03		71100-05	



OPTIONS & KITS: SERIES PA CLAMPS

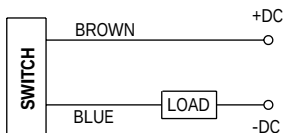


SW1 REED SWITCHES INSTALLED

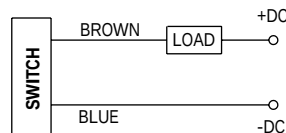
PART NO.	DESCRIPTION
71115-01-01	NPN (Sink) or PNP (Source), 5 - 120 VAC/VDC 1 meter cable

SPECIFICATIONS	KIT NO. 71115-01-01
ACTUATED BY	Moving Magnet
POWER CAPACITY	6 Watt Max.
OUTPUT STATE	Normally Open
OPERATING PRINCIPLE	Magnetic Reed
OUTPUT TYPE	SPST Contact Closure
OPERATING VOLTAGE	5 - 120 VAC/VDC
CURRENT RATING (RESISTIVE)	50 mA Max.
BURDEN CURRENT	—
VOLTAGE DROP	2.5 V Max.
CIRCUIT PROTECTION	None
LED COLOR	Red
OPERATING TEMPERATURE	-10° to +70° C
ENVIRONMENTAL	IP67
CABLE TYPE	PVC

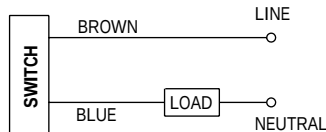
DC PNP (SOURCING)



DC NPN (SINKING)



AC



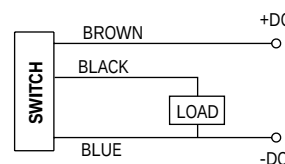
SW2 HALL EFFECT SWITCHES (PNP) INSTALLED

SW3 HALL EFFECT SWITCHES (NPN) INSTALLED

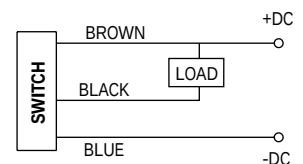
PART NO.	DESCRIPTION
71125-01-01	PNP (Source), 5 - 28 VDC, 1 meter cable
71125-02-01	NPN (Sink), 5 - 28 VDC, 1 meter cable

SPECIFICATIONS	71125-01-01	71125-02-01
ACTUATED BY	Moving Magnet	
POWER CAPACITY	6 Watt Max.	
OUTPUT STATE	Normally Open	
OPERATING PRINCIPLE	Magnetic Hall Effect	
OUTPUT TYPE	Solid State PNP	Solid State NPN
OPERATING VOLTAGE	5 - 28 VDC	
CURRENT RATING (RES.)	200 mA Max.	
BURDEN CURRENT	20 mA Max. @ 24 VDC (Switch Active)	
VOLTAGE DROP	0.5 V @ 200 mA Max.	
CIRCUIT PROTECTION	Power Source Reverse, Surge Suppression	
LED COLOR	Green	Red
OPERATING TEMP.	-10° to +70° C	
ENVIRONMENTAL	IP67	
CABLE TYPE	PVC	

DC PNP (SOURCING)



DC NPN (SINKING)

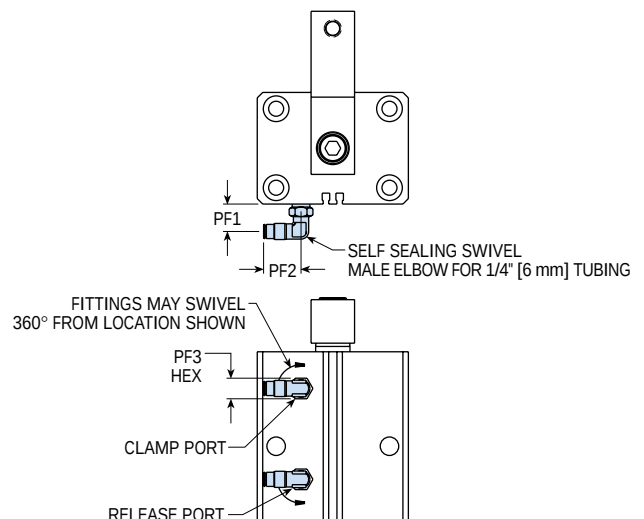


LBB PORT FITTINGS

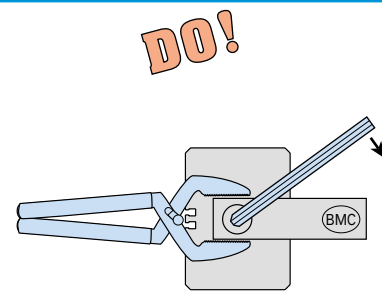
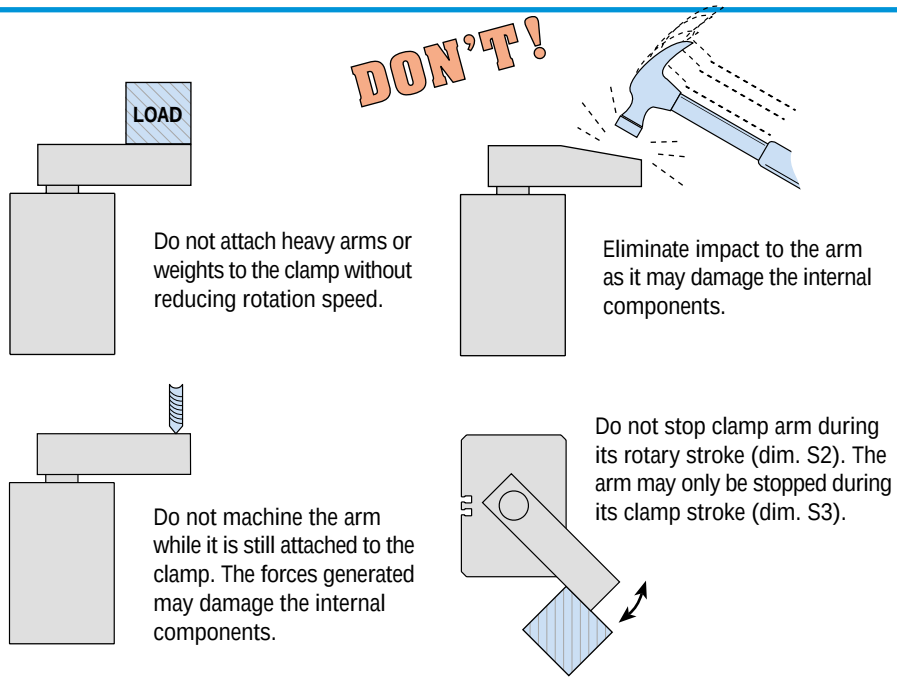
Port fitting not available on size 2

LETTER DIMENSION	PORT FITTING OPTION	
	in	mm
PF1 (MIN)	.629	12.0
PF1 (MAX)	.748	16.0
PF2	.885	20.0
PF3	.472	12.0

To order fittings separately:
Part No. 71120-001 - Imperial
Part No. 71121-001 - Metric



APPLICATION CONCERNS



Hold the arm (not the clamp body) when loosening or tightening the arm mounting screw.

NOTES

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