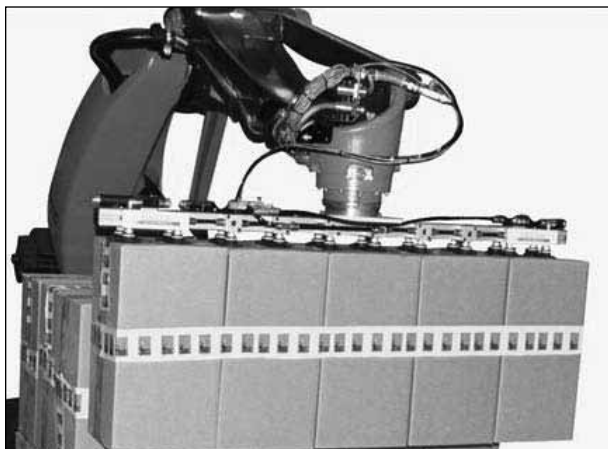


# Vaccon End-of-Arm Tooling

All VEOAT products are compatible with 1" [25mm] and 1.5" [40mm] extrusions



*Vaccon designed, assembled, tested and shipped this new EOAT tool for a Kuka Robot in one day.*

Vaccon's new, modular End-of-Arm Tooling components offer everything you need to create a complete "wrist-down" EAOT for your material handling operations.

The VEOAT innovative component design is modular, lightweight, compact, and easy-to-connect. Using VEOAT, you can integrate vacuum pumps, suction cups, spring levelers, fittings, and manifolds using simple erector-set connectivity in minimum design time.

## VEOAT Components or Complete VEOAT Solutions

You can order VEOAT products separately and build your own tooling, or purchase a complete pre-built VEOAT solution—fully configured, plumbed, and tested. VEOAT solutions ship assembled using one robot-to-VEOAT connection for easy, out-of-the-box installation.



*Picking and placing packaged rolls, CDF 375H-ST6BX EOAT handles flexible, uneven objects.*



*Multi-port pump EOAT with multiple manifold blocks and cups for food packaging operation.*



*VP80-200H-MP and VP20-100H EOAT handle melons in fruit packing plant.*

## Eliminate the Guesswork: Contact Us!

Vacuum technology isn't an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

To download a complete set of drawings in 13 different CAD formats, please visit our website at [www.vaccon.com](http://www.vaccon.com)

For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

## Ideal Applications:

- Automotive
- Packaging
- Palletizing
- Runners from molds
- Conveying systems
- Fruit packing
- Mold removal – Picking parts
- Work holding device
- Stamping press transfer
- Packaged food & bakery
- Medical

## Features/Benefits:

- T-Slot fraction or metric compatible components – Attaches to our framework or yours
- Minimal design time – pre-designed modular components, streamlined systems
- Easy set-up and fast installation – order out of the box complete or assemble on site
- Lightweight components – faster speeds with less stress on robot for longer life cycle
- Cost effective – integrates with existing plant equipment for quick tool changes, minimal downtime
- Flexible manufacturing/automation – optional accessories and adjustability
- Increased efficiency – large selection of venturi pumps to maximize productivity
- Built-in sensors – part-present signal and vacuum level

## Vaccon Designed, Built, and Tested

Vaccon engineers have years of material handling experience, in every industry from soap to electronics. We have a proven record of identifying customer needs, developing and testing End-of-Arm tools, and delivering projects on time and within budget. Take advantage of our extensive vacuum knowledge to select the proper vacuum pump/cup combination and design your tool. Vaccon will build your tool and test it using your product at our in-house Tech Center, usually within the same day.

## Modular Venturi Vacuum Pumps



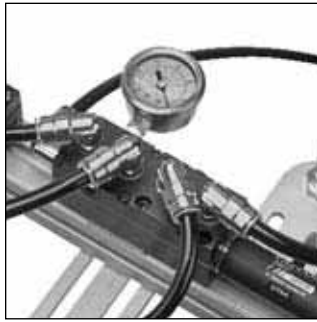
*Modular Venturi Vacuum Pumps*



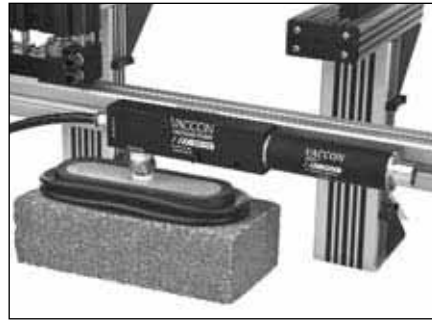
*Modular Venturi Vacuum Pumps with Pneumatic Blow-off*



*Modular Venturi Vacuum Pumps Solenoid Operated with Pneumatic Blow-off*



*Multi-port Venturi Vacuum Pumps*



*Max Series Modular Venturi Pumps*



*Venturi Vacuum Pumps with "Apple Core" style mount & clamp*

## Vacuum Cups



*Bellow Cups*



*Oval Cups*



*Flat Cups*



*Deep Cups*

## Extrusions and End Caps



*1" [25mm] extrusion fits 1/4" [6.5mm] T-slot  
- 3 sizes*



*1.5" [40mm] extrusion fits 5/16" [10mm] T-slot  
- 2 sizes*



*End caps for all size extrusions*

## Mounting Brackets for 1" [25mm] Extrusion fits 1/4" [6.5mm] T-slot



*Universal Bracket (Fixed) with optional mounting hardware*



*Universal Bracket (Adjustable) with optional mounting hardware*



*Angled Universal Bracket with optional mounting hardware*

## Mounting Brackets for 1.5" [40mm] Extrusion fits 5/16" [10mm] T-slot



*Universal Bracket (Fixed) with optional mounting hardware*



*Universal Bracket (Adjustable) with optional mounting hardware*



*Angled Universal Bracket with optional mounting hardware*

## Vacuum Cup Mount/Manifold



**MB18-25**  
*For 1" Extrusion Only*



**MB14-40**

*All Female Ports*



*Male Face Mount MBF14-40 Series*



*Male Bottom Mount MBB14-40 Series*



*Male Bottom Mount with Oval Cup*

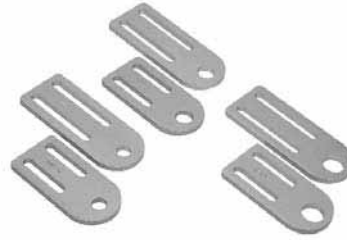
## Light Duty Spring Leveler Brackets



Spring leveler brackets and hardware for 1" [25mm] extrusions



Fits VSL1 & 2 Spring Levelers



Spring Leveler Brackets for 1.5" [40mm] extrusions (hardware not shown)



Fits VSL1, 2 & 3 Spring Levelers

## Spring Levelers/Level Compensators and Swivel Joint



Spring Levelers VSL1, 2, & 3 Series



Heavy Duty Spring Levelers SLB40-2, 3 Series



Adjustable, Fixed Extension Shaft and Bracket - FEB40-2,3 Series



Vacuum Cup Swivel Joint CSJ3 Series Shown with Bellows cup

## Push-to-Connect Fittings for Vacuum Pumps and Spring Levelers



Male Straight Fittings



Female Straight Fittings



Male Elbow Fittings



Female Elbow Fittings

## End-of-Arm Tooling Design Guide



***Call Vaccon First!***  
***We will save you time and money.***

### Here's why.

Robots and robotic tooling help you increase productivity, improve product quality, and reduce costs. The right End-of-Arm Tools (EOAT) can improve both the flexibility and cost effectiveness by working with and complementing the robot. Vaccon designs vacuum tooling using modular components that are compact, lightweight, durable, and easy to assemble. This creates flexible, streamlined End of Arm Tooling that works in harmony with the robot.

As experts in vacuum equipment design for manufacturing automation applications, Vaccon helps customers find solutions for their material handling problems by creating new tools, re-designing existing tools or re-building systems. Take advantage of our years of engineering expertise to quickly design, build, and re-tool your robotic EOAT to ensure safe part handling, extend the life of the robot, increase production, and reduce costs.

### Work in reverse, design “the tool” first before selecting the robot.

Focus on key aspects of the part to be handled (i.e. weight, porosity, travel distance, desired speed, etc.)

**For new applications**, we highly recommend that you design the EOAT before selecting the robot. Knowing the load (the combined weight of the part and the EOAT) helps you to choose the optimum robot for the job.

**For re-tooling applications** when the robot is already in place, carefully consider the load limits of the robot.

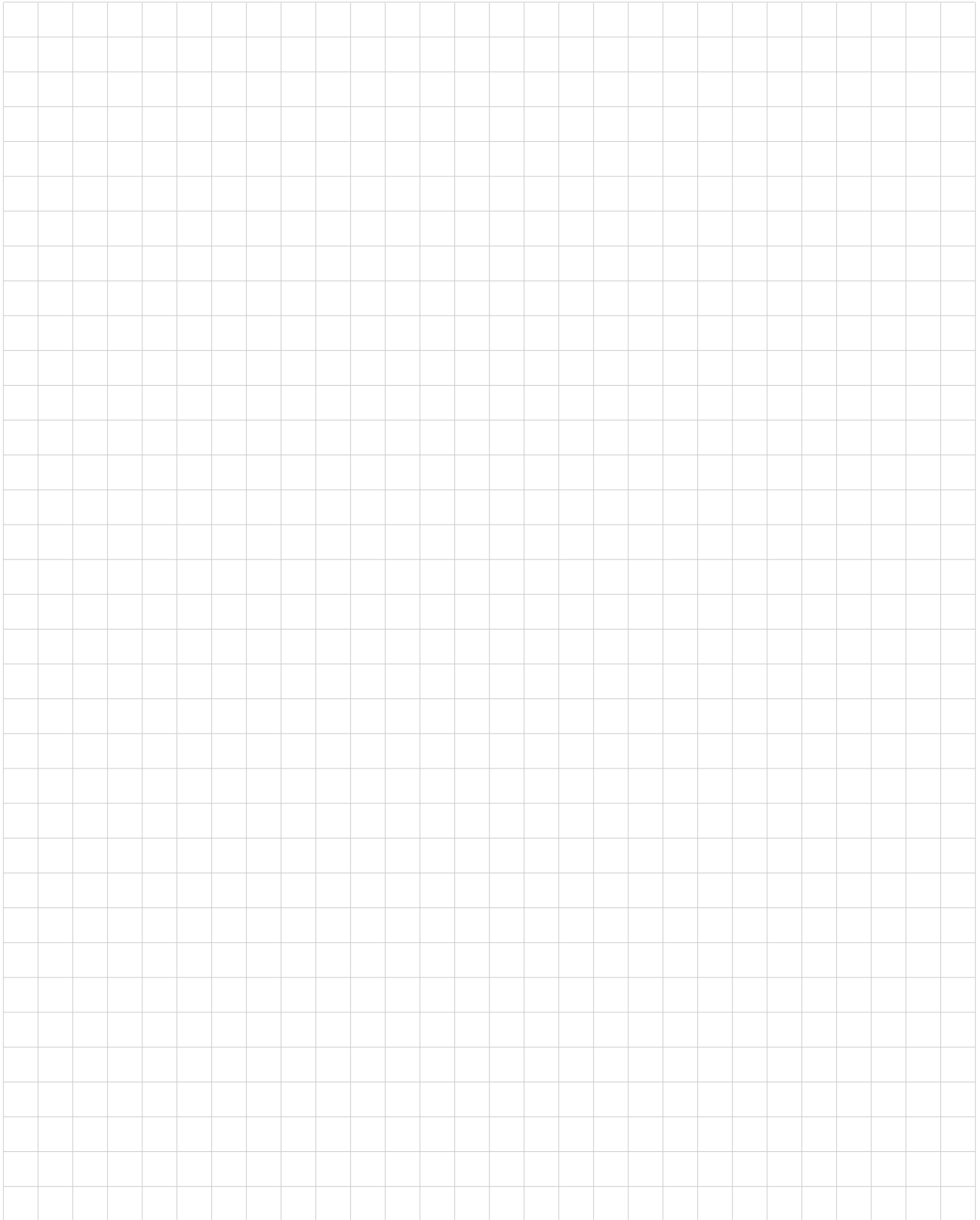
#### Optimum EOAT Design Sequence:

1. Identify the part weight, size, material porosity and surface area for cup placement on the part.
2. Select cups and/or levelers based on accepted Safety Factors (see page 242)
3. Select the vacuum pump(s) based on performance and porosity (see page 243)
4. Select the Vaccon EOAT components required for your application.
5. Assemble the EOAT *or*
6. Vaccon will design, assemble, test and ship the completed EOAT to you.

#### Vaccon EAOT Application Engineering Support

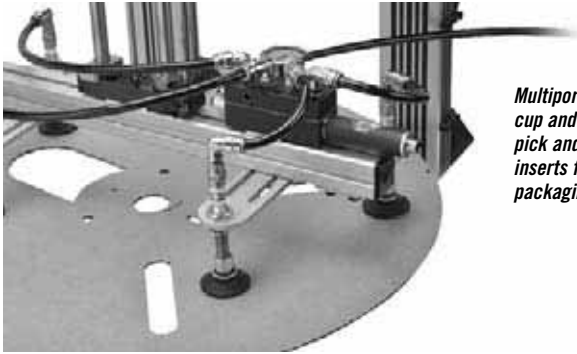
Our dedicated application engineers are ready to help you to select the right components or to design, assemble, and test the EOAT. Vaccon customer support provides:

- Experts in vacuum technology
- Experts in manufacturing
- Experts in automation applications
- Experts in pneumatic design
- Free 2D & 3D drawings of all components or build your own using Vaccon's website or CD.

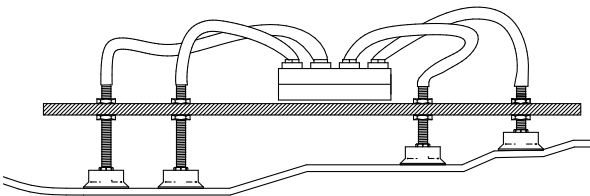


# Spring Levelers/ Level Compensators

## VSL Series (1, 2, 3)



*Multiport pump/vacuum cup and spring levelers pick and place cardboard inserts for electronic packaging operation.*



*Spring levelers handle uneven surfaces or odd shaped objects*



*Spring Leveler Mounting Bracket with VSL1 Series Spring Levelers*

When handling sensitive objects such as fruit, Vaccon Spring Levelers feature a soft touch allowing compliance for end-of-arm tools to ensure that all cups make contact. This is especially important when handling large objects such as sheets of plywood that may be warped and the tool has multiple vacuum cups that must make contact.

For design flexibility, Vaccon offers a large range of sizes and travel lengths 0.2" [5mm] to 3.6" [91mm] to accommodate the necessary over-driving by the lifting mechanism to bring all cups in contact.

Vaccon's Spring Leveler design surpasses the competition. We offer large thru-bores that allow higher vacuum flow to overcome leakage and for rapid evacuation to ensure safe handling operations.

The Series 3 Levelers have high performance bearings that prevent binding from side loading, provide a smooth operation over long strokes and prolong leveler life.

### Eliminate the Guesswork: Contact Us!

Vacuum technology isn't an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

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For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

### Ideal Applications:

- Automotive automation
- Material handling
- Robotic assembly
- Pick and place
- Sheet feeding
- Removing parts from molds

### Benefits/Features:

- Smooth operation – reduces shock to an object that is being lifted
- Lightweight – reduces stress to robotic end effectors
- High flow – maximize performance and holding force for porous objects
- Flexible mounting options for robotic end effectors/End-of-Arm Tooling
- Reduces machine indexing when picking up material from a stack

### Standard Spring Levelers:

- 3 Series
- 12 models
- Nickel plated steel shafts, stainless steel springs and brass mounting nuts

### Spring Leveler Options:

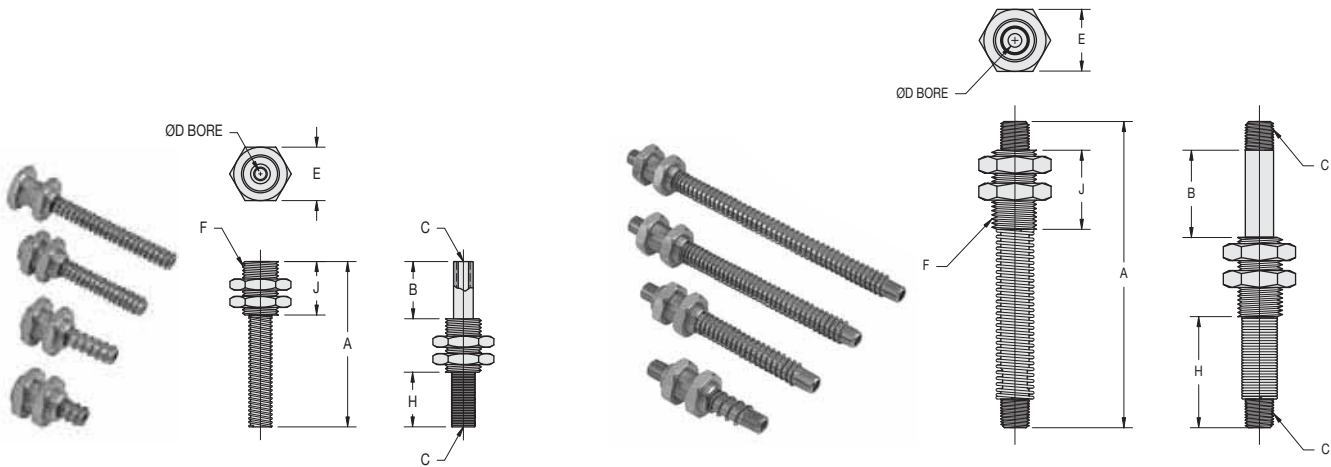
- Mounting brackets compatible with 1/4" [6.5mm] T-slot or 5/16" [10mm] T-slot extrusions
- Vacuum cups and vacuum fittings
- Custom materials (FDA approved) and sizes available – consult factory

### How to Specify:

1. When ordering spring levelers check the "B" dimension for travel range.
2. Please order spring levelers and fittings as separate line items based on part number i.e. **VSL1-20**.
3. If you would like parts factory assembled, please specify on order "factory assembled."

# Spring Levelers/Compensators

## Spring Levelers Groups 1, 2, & 3 – VSL1, VSL2 & VSL3



Spring Leveler Group 1

Spring Leveler Groups 2 & 3

Dimensions																																									
Model #		A	B-Travel	C	D	E	Thread	H	J	Thickness	Weight																														
VSL1-20	in.	1.14	0.20	10-32-F	0.15 [19.0]	0.75 [19.0]	1/2-20 UNF	0.19	0.75 [19.1]	0.43 [10.9]	1.7 oz																														
	mm	29.0	5.1					4.8			48 g																														
VSL1-40	in.	1.54	0.40					1/8" NPTM			0.24 [28.0]	0.88 [22.2]	5/8-18 UNF	0.39	1.10 [27.9]	0.72 [18.3]	1.8 oz																								
	mm	39.1	10.2											9.9			51 g																								
VSL1-80	in.	2.32	0.80											1/4" NPTM			0.31 [7.9]	1.13 [28.6]	3/4-16 UNF	0.77	1.50 [38.1]	1.02 [25.9]	1.9 oz																		
	mm	58.9	20.3																	19.6			54 g																		
VSL1-120	in.	3.11	1.20																	1/4" NPTM			0.31 [7.9]	1.13 [28.6]	3/4-16 UNF	1.16	1.50 [38.1]	1.02 [25.9]	2.1 oz												
	mm	79.0	30.5																							29.5			60 g												
VSL2-40	in.	2.70	0.40																							1/4" NPTM			0.31 [7.9]	1.13 [28.6]	3/4-16 UNF	0.80	1.50 [38.1]	1.02 [25.9]	2.6 oz						
	mm	68.6	10.1																													20.3			74 g						
VSL2-120	in.	4.27	1.20																													1/4" NPTM			0.31 [7.9]	1.13 [28.6]	3/4-16 UNF	1.57	1.50 [38.1]	1.02 [25.9]	3.2 oz
	mm	108.5	30.5																																			39.9			91 g
VSL2-200	in.	5.83	2.00	1/4" NPTM	0.31 [7.9]	1.13 [28.6]	3/4-16 UNF		2.33	1.50 [38.1]																												1.02 [25.9]			4.0 oz
	mm	148.1	50.8						59.2																																113 g
VSL2-280	in.	7.41	2.80					1/4" NPTM	0.31 [7.9]		1.13 [28.6]	3/4-16 UNF	3.11		1.50 [38.1]	1.02 [25.9]																									4.6 oz
	mm	188.2	71.1										79.0																												130 g
VSL3-120	in.	4.27	1.20										1/4" NPTM	0.31 [7.9]			1.13 [28.6]	3/4-16 UNF	1.17		1.50 [38.1]	1.02 [25.9]																			5.9 oz
	mm	108.5	30.5																29.7																						117 g
VSL3-200	in.	5.83	2.00																1/4" NPTM	0.31 [7.9]			1.13 [28.6]	3/4-16 UNF	1.93		1.50 [38.1]	1.02 [25.9]													7.3 oz
	mm	148.1	50.8																						49.0																207 g
VSL3-280	in.	7.41	2.80																						1/4" NPTM	0.31 [7.9]			1.13 [28.6]	3/4-16 UNF	2.71		1.50 [38.1]	1.02 [25.9]							8.7 oz
	mm	188.2	71.1																												68.8										247 g
VSL3-360	in.	9.00	3.60																												1/4" NPTM	0.31 [7.9]			1.13 [28.6]	3/4-16 UNF	3.50		1.50 [38.1]	1.02 [25.9]	10.1 oz
	mm	228.6	91.4																																		88.9				286 g

## Custom Vacuum Spring Levelers - VSL Series

*Ideal for OEM engineers and designers*

***Creative Engineering • Precision Manufacturing • Extensive Application Experience***

When off the shelf doesn't work, Vaccon's engineering expertise and manufacturing capabilities can provide custom solutions to your specifications.

Whether it's as simple as modifying a standard product, or more complex requiring new products with precise tolerances, or special materials, Vaccon has the solution.

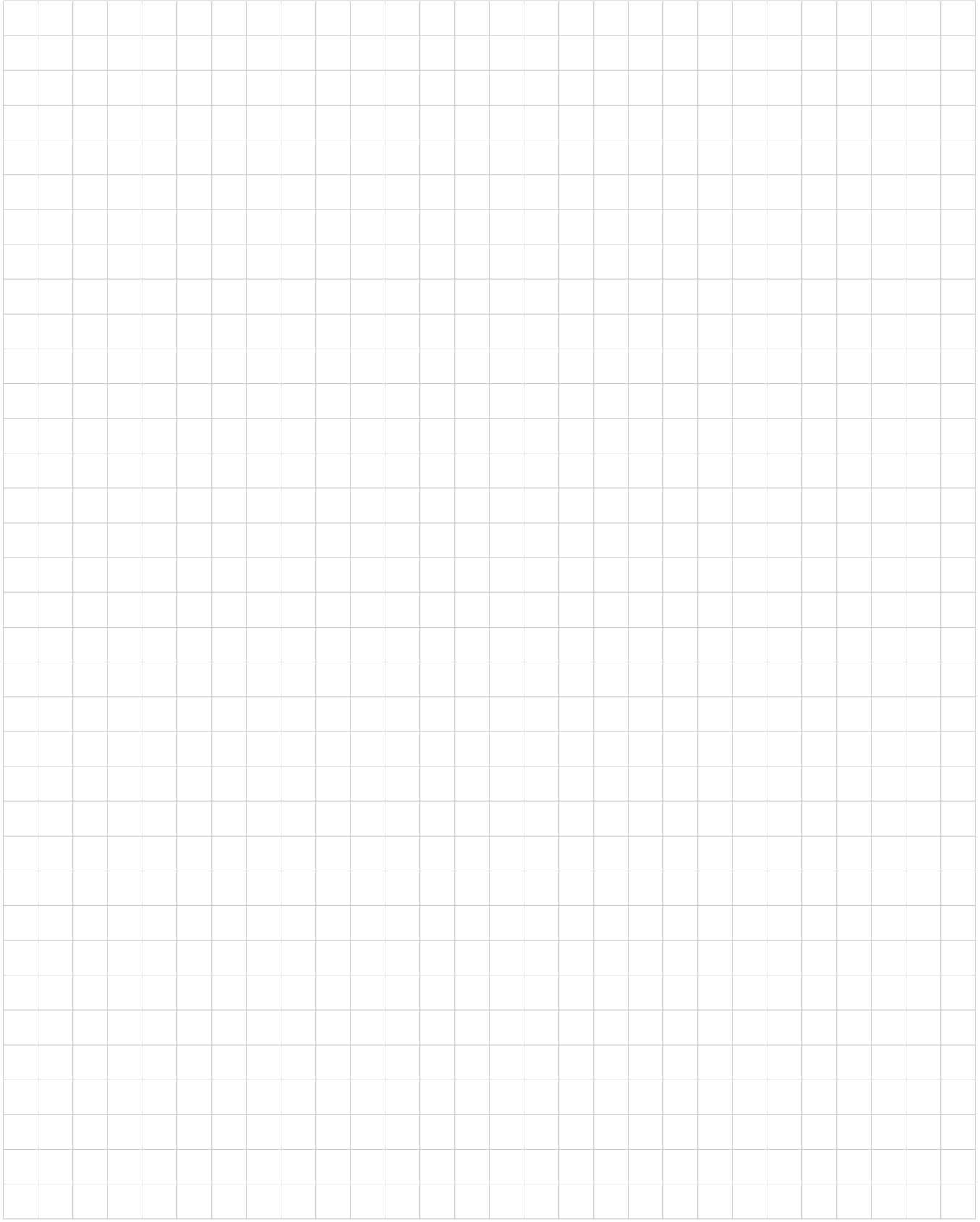


*VP1X-100H vacuum pump with pneumatic blow-off with stainless steel spring leveler.*



*Our custom made 303 stainless steel spring leveler, vacuum cup and pump assembly attaches to swivel arm (not shown) for carton erecting application in food industry.*

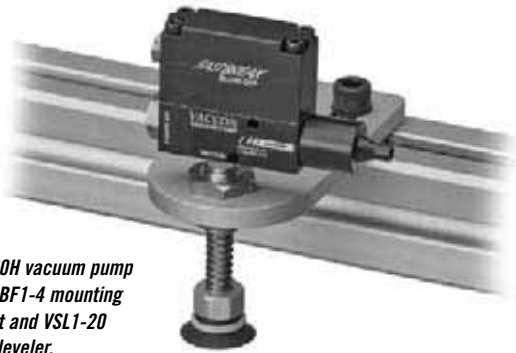
***When size, shape, material and performance matter, it's Vaccon Vacuum Pumps.***



# Light Duty Spring Leveler Mounting Brackets

**SLBS Series** – Mounting brackets for 1" [25mm] extrusions

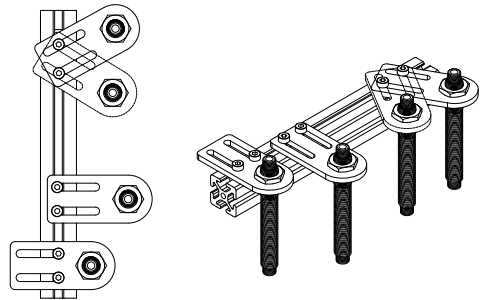
**SLBF Series** – Mounting brackets for 1.5" [40mm] extrusions



*VPOX-60H vacuum pump with SLBF1-4 mounting bracket and VSL1-20 spring leveler.*



*Quick change brackets for flexible mounting positions*



*Flexible mounting positions*

Designed for flexible manufacturing operations, SLBF and SLBS Series mounting brackets attach to the top, sides or bottom of 1" [25mm] and 1.5" [40mm] extrusions.

Easily mounted and adjusted, the Light Duty Spring Leveler Brackets readily rotate, slide or pivot for accurate part alignment. If the part size or process should change, you can re-position the brackets in a matter of seconds.

Using your extrusions or ours, SLBF and SLBS Series mounting brackets connect to our VSL Series Spring Levelers (see page 333) and a variety of our venturi vacuum pumps to create a simple, off-the-shelf End-of-Arm device.

### Eliminate the Guesswork: Contact Us!

Vacuum technology isn't an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

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For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

### Ideal Applications:

- End-of-arm-Tooling
- Robotic assembly
- Electronics
- Pick and place
- Injection Molding – parts removal

### Features/Benefits

- Simple to assemble, modular End-of-Arm Tooling component
- Lightweight – Reduces stress to robotic end effector
- Flexible mounting – Top, sides or bottom of extrusions
- Easily adjusted and repositioned in seconds

### Standard Spring Leveler Brackets:

- **3 Series:** Fits VSL1, 2, 3 spring levelers
- **4 Sizes:** 2", 3", 4" and 5" lengths
- Anodized aluminum

### Spring Leveler Bracket Options:

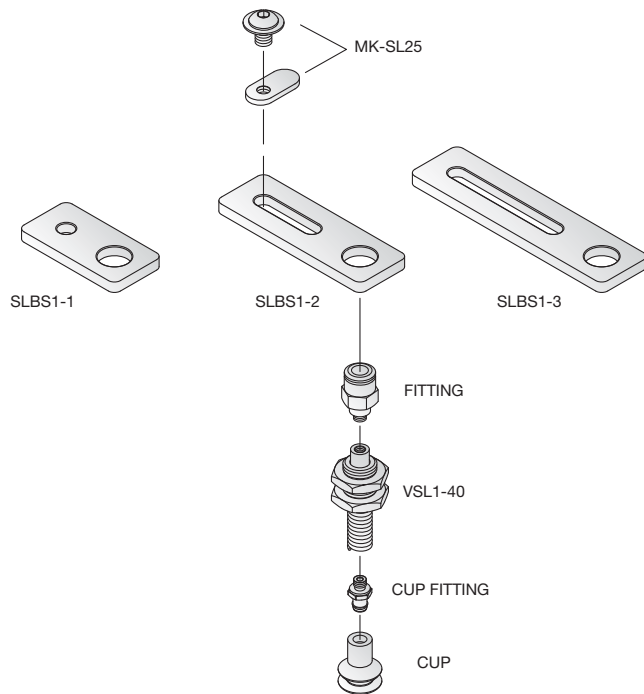
- Spring levelers, vacuum cups and vacuum fittings
- Swivel attachment – Available for Series 3 only
- Mounting hardware: 1/4" [6.5mm] T-slot compatible or 5/16" [10mm] T-slot compatible

# Light Duty Spring Leveler Brackets

## Light Duty Spring Leveler Mounting Bracket Assemblies: (Vaccon supplied or customer supplied extrusions)

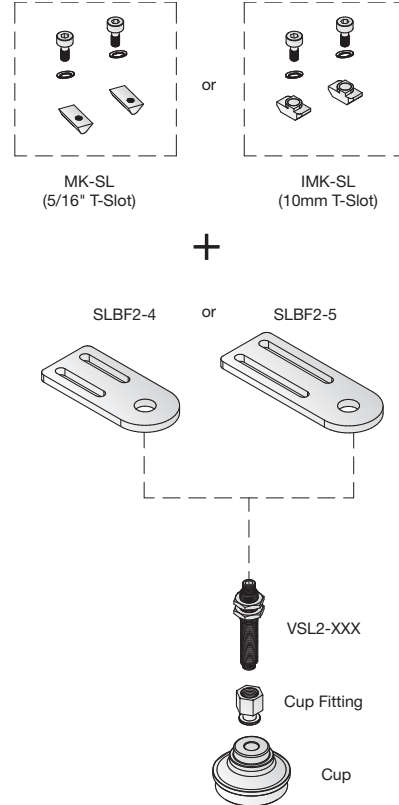
### SLBS Series

1" [25mm] extrusion,  
1/4" [6.5mm] T-slot compatible



### SLBF Series

1.5" [40mm] extrusion,  
5/16" [10mm] T-slot compatible



Bracket Model Number	Size	For use with Vaccon Spring Levelers
SLBS1-2	2"	VSL1-(20, 40, 80, 120)
SLBS1-3	3"	VSL1-(20, 40, 80, 120)
SLBS1-4	4"	VSL1-(20, 40, 80, 120)
SLBF1-4	4"	VSL1-(20, 40, 80, 120)
SLBF1-5	5"	VSL1-(20, 40, 80, 120)
SLBS2-2	2"	VSL2-(40, 120, 200, 280)
SLBS2-3	3"	VSL2-(40, 120, 200, 280)
SLBS2-4	4"	VSL2-(40, 120, 200, 280)
SLBF2-4	4"	VSL2-(40, 120, 200, 280)
SLBF2-5	5"	VSL2-(40, 120, 200, 280)
SLBF3-4	4"	VSL3-(120, 200, 280, 360)
SLBF3-5	5"	VSL3-(120, 200, 280, 360)
MK-SL25	N/A	Mounting hardware – 1/4" T-slot
MK-SL	N/A	Mounting hardware – 5/16 T-slot
IMK-SL	N/A	Mounting hardware – 10mm T-slot

### How to Specify:

#### Helpful hints:

1. Choose cup size/style based on part size & weight.
2. Choose spring leveler based on stroke length and bore size.
3. Choose bracket based on reach requirement 2", 3", 4" or 5"
4. Choose cup fitting based on thread size that matches spring leveler thread size (10-32F, 1/8" NPTM, 1/4" NPTM).

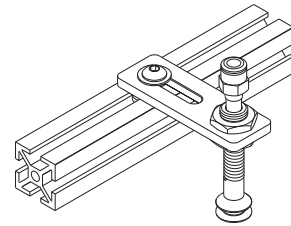
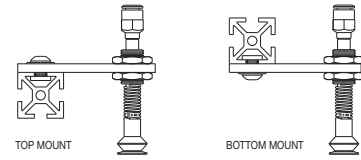
Please order Spring Level Brackets as separate line item based on part number i.e. SLBF1-4

Please order Spring Levelers as separate line item based on part number i.e. VSL1-20.

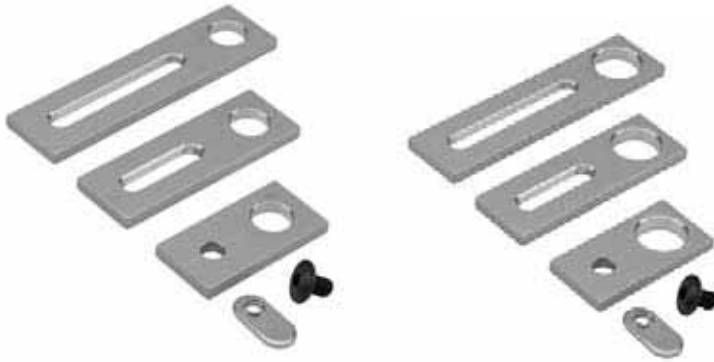
Please order Mounting Hardware as separate line item based on part number i.e. MK-SL

If you would like parts factory assembled, please specify on order "factory assembled."

## Light Duty Spring Leveler Brackets – Series SLBS Series

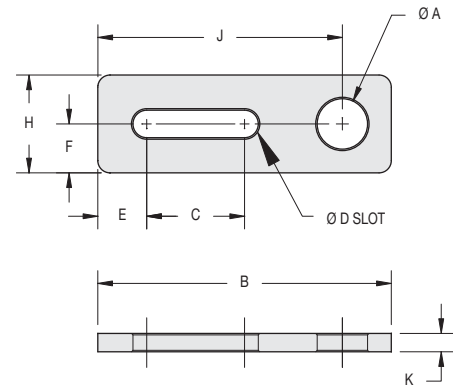


Flexible mounting positions



SLBS1- (2, 3, 4)  
with hardware

SLBS2- (2, 3, 4)  
with hardware



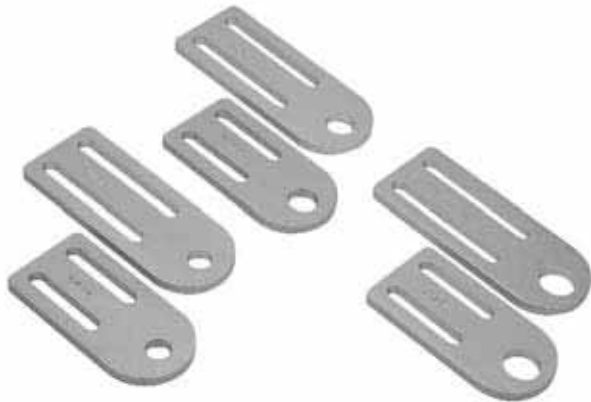
Dimensions																	
Model #		A-Dia	B	C	D	E	F	H	J	K	Weight						
SLBS1-2	in.	0.51 [13.0]	2.00	0.28	0.28 [7.1]	0.50 [12.7]	0.50 [12.7]	1.00 [25.4]	1.50	0.19 [4.8]	0.5 oz						
	mm		50.8	7.1					38.1		14.2 g						
SLBS1-3	in.		3.00	2.00					2.50		0.8 oz						
	mm		76.2	50.8					63.5		22.7 g						
SLBS1-4	in.		4.00	3.00					3.50		0.9 oz						
	mm		101.6	76.2					88.9		25.5 g						
SLBS2-2	in.		0.64 [16.3]	2.00					0.28		0.28 [7.1]	0.50 [12.7]	0.50 [12.7]	1.00 [25.4]	1.50	0.19 [4.8]	0.5 oz
	mm			50.8					7.1						38.1		14.2 g
SLBS2-3	in.	3.00		2.00	2.50	0.8 oz											
	mm	76.2		50.8	63.5	22.7 g											
SLBS2-4	in.	4.00		3.00	3.50	0.9 oz											
	mm	101.6		76.2	88.9	25.5 g											

# Light Duty Spring Leveler Brackets

## Light Duty Spring Leveler Brackets – Series SLBF Series

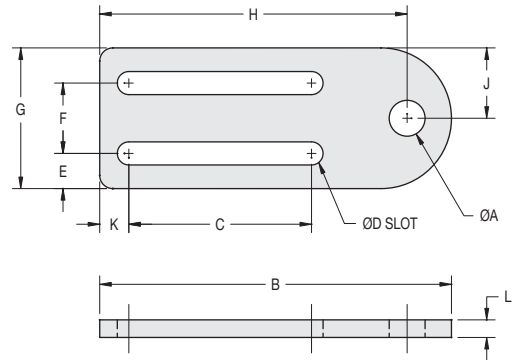


SLBF2- (4, 5)



SLBF1- (4, 5)

SLBF3- (4, 5)



Dimensions												
Model #		A-Dia	B	C	D	E	F	H	J	K	L	Weight
SLBF1-4	in.	0.51	4.00	1.60	0.33	0.50	1.00	3.37	1.00	0.41	0.25	2.8 oz
	mm	13.0	101.6	40.6				85.6				79.4 g
SLBF1-5	in.	0.51	5.00	2.60				4.37				2.9 oz
	mm	13.0	127.0	66.0				111.0				82.2 g
SLBF2-4	in.	0.64	4.00	1.60				3.37				2.8 oz
	mm	16.3	101.6	40.6				85.6				79.4 g
SLBF2-5	in.	0.64	5.00	2.60				4.37				2.8 oz
	mm	16.3	127.0	66.0				111.0				79.4 g
SLBF3-4	in.	0.89	4.00	1.60				3.37				2.3 oz
	mm	22.6	101.6	40.6				85.6				65.2 g
SLBF3-5	in.	0.89	5.00	2.60				4.37				2.8 oz
	mm	22.6	127.0	66.0				111.0				79.4 g

# Heavy Duty Spring Levelers/ Level Compensators

**SLB40 (2, 3) - Mounting brackets compatible with 1.5" [40mm] extrusions, 5/16" [10mm] T-slot**



*Heavy Duty Spring Levelers lift parts from different horizontal levels or uneven surfaces.*

When handling sensitive objects such as fruit, Vaccon Spring Levelers feature a soft touch allowing compliance for end-of-arm tools to ensure that all cups make contact. This is especially important when handling large objects such as sheets of plywood that may be warped and the tool has multiple vacuum cups that must make contact.

Vaccon's Spring Leveler design surpasses the competition. We offer large thru-bores that allow higher vacuum flow to overcome leakage and for rapid evacuation to ensure safe handling operations

For design flexibility, Vaccon offers a large range of sizes and travel lengths 0.2" [5mm] to 3.6" [91mm] to accommodate the necessary over-driving by the lifting mechanism to bring all cups in contact.

Recommended for applications which require lifting heavy loads without deflection, Vaccon Heavy Duty Spring Levelers include a rigid mounting bracket for a strong, solid connection to 1.5" [40mm] extrusions.

## Eliminate the Guesswork: Contact Us!

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For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

## Ideal Applications:

- End-of-Arm Tooling
- Press load and unload automotive automation
- Robotic assembly
- Pick and place
- Sheet feeding
- Stamping press transfer

## Features/Benefits

- Easy to assemble, modular End-of-Arm Tooling components – Minimal design time required
- Durable – Rigid mounting design for heavy, high impact loads
- Smooth operation – Reduces shock to an object that is being lifted
- Lightweight – To maximize robot payload and increase robot speed
- High flow – Maximize performance and holding force for handling porous objects
- Flexible mounting options facilitates End-of-Arm Tooling tool design

## Standard Spring Levelers:

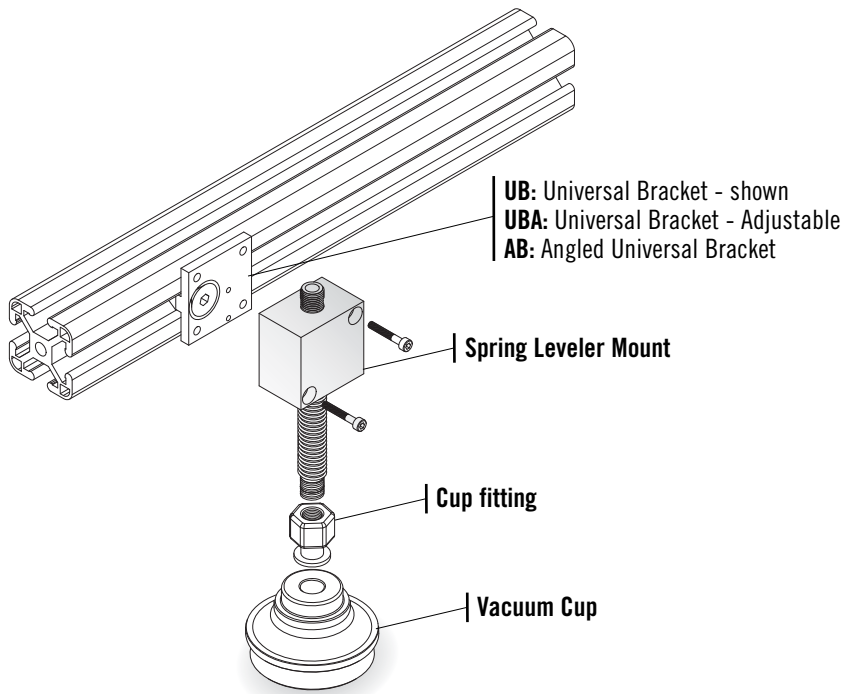
- **2 Series:** 1/8" and 1/4" NPT male thread
- **8 Models:** Travel lengths from 0.80" to 3.60" [20mm to 91mm]
- Nickel plated steel shafts, stainless steel springs, high performance bearings and aluminum body

## Spring Leveler Options:

- Vacuum cups and vacuum fittings
- Swivel attachment – Available for Series 3 only

# Heavy Duty Spring Levelers/Level Compensators

## Heavy Duty Spring Leveler Mounting Assembly



### On-line Configurator and CAD Drawings @ [www.vaccon.com](http://www.vaccon.com)

New powerful design tool saves you time by configuring the pump you need on-line. When complete, simply download the CAD drawing in any one of 13 different CAD formats and insert it right into your design.

**Get the pump you need, in the format you like!**

### How to Specify:

#### Part Number Heavy Duty Spring Leveler Mounting Assembly

##### Series 2

SLB40-2-80	0.80" travel, 1/8" NPT male thread
SLB40-2-120	1.20" travel, 1/8" NPT male thread
SLB40-2-200	2.00" travel, 1/8" NPT male thread
SLB40-2-280	2.80" travel, 1/8" NPT male thread

##### Series 3

SLB40-3-120	1.20" travel, 1/4" NPT male thread
SLB40-3-200	2.00" travel, 1/4" NPT male thread
SLB40-3-280	2.80" travel, 1/4" NPT male thread
SLB40-3-360	3.60" travel, 1/4" NPT male thread

When ordering spring levelers check the "B" dimension for travel range.

Please order spring levelers as separate line items based on part number i.e. **SLB40-2-80**

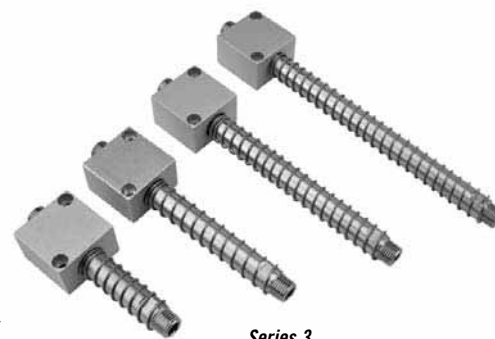
If you would like parts factory assembled, please specify on order "factory assembled."

*To attach Heavy Duty Spring Levelers to extrusions, please see page 353 for Universal Bracket mounting options.*

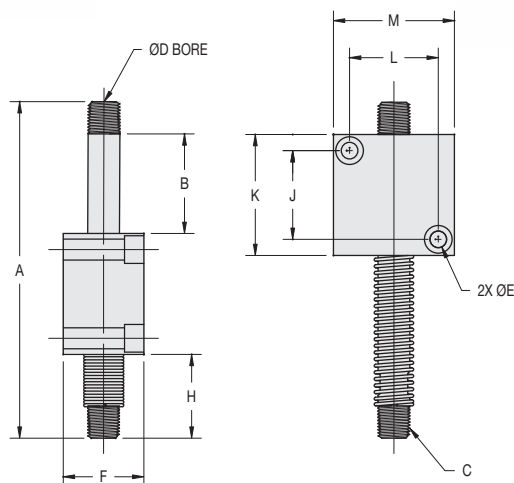
## Heavy Duty Spring Levelers – Series SLB40-2, SLB40-3



Series 2  
SBL40-2 (80, 120, 200, 280)



Series 3  
SBL40-3 (120, 200, 280, 360)

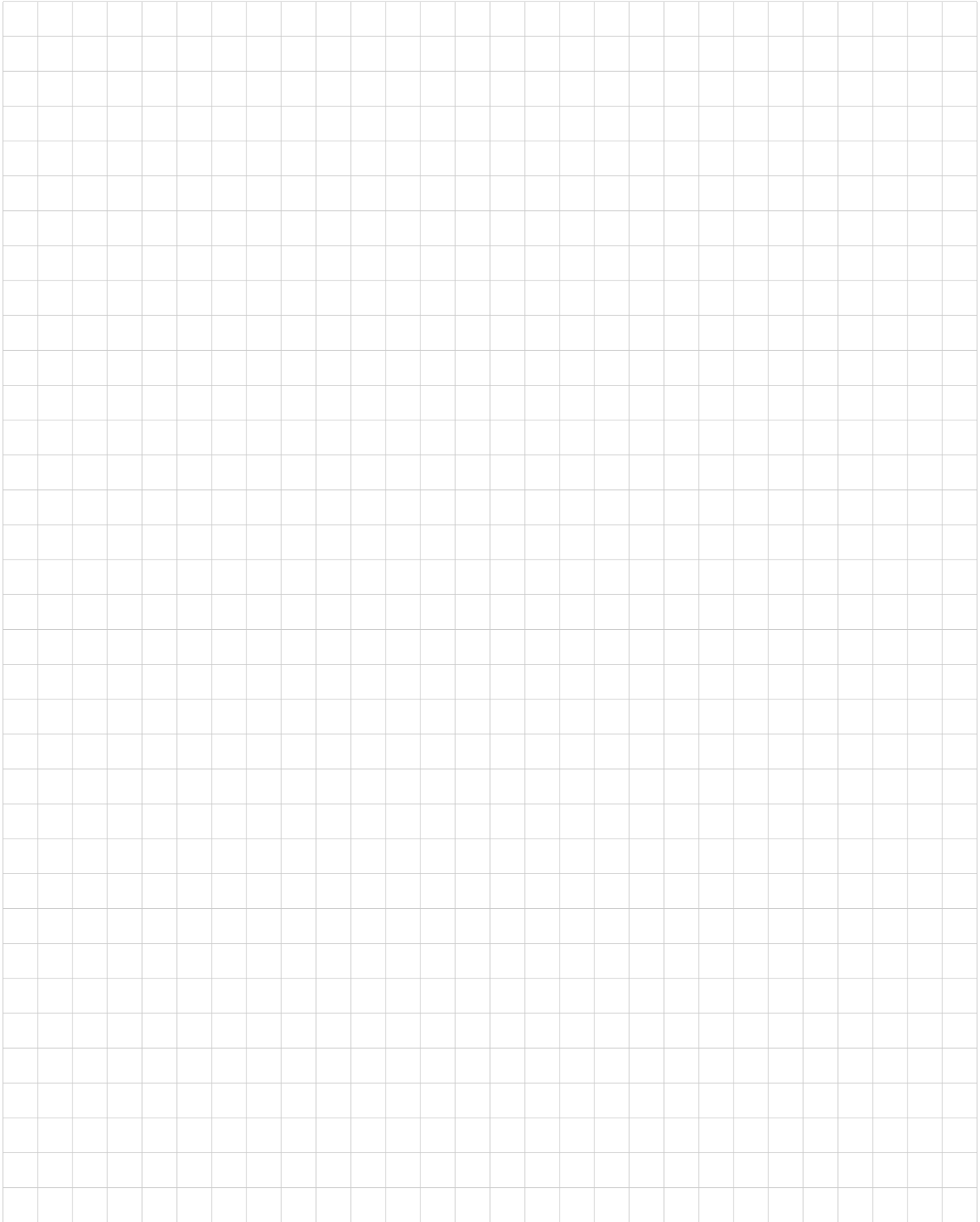


Dimensions											
Model # Series 2		A	B-Travel	C	D	E	F	H	J, L	K, M	Weight
SLB40-2-80	in.	2.70	0.80	1/8" NPT Male	0.24 [6.1]	0.21 [5.2]	1.00 [25.4]	0.40	1.10 [27.9]	1.10 [27.9]	4.7 oz
	mm	68.6	20.3					10.2			133.2 g
SLB40-2-120	in.	4.27	1.20					1.17			4.7 oz
	mm	108.5	30.5					29.7			133.2 g
SLB40-2-200	in.	5.83	2.00					1.93			5.3 oz
	mm	148.1	50.8					49.0			150.3 g
SLB40-2-280	in.	7.41	2.80	2.71	5.9 oz						
	mm	188.2	71.1	68.8	167.3 g						

Dimensions											
Model # Series 3		A	B-Travel	C	D	E	F	H	J, L	K, M	Weight
SLB40-3-120	in.	4.27	1.20	1/4" NPT Male	0.31 [7.9]	0.21 [5.2]	1.00 [25.4]	1.17	1.10 [27.9]	1.10 [27.9]	6.9 oz
	mm	108.5	30.5					29.7			195.6 g
SLB40-3-200	in.	5.83	2.00					1.93			7.9 oz
	mm	148.1	50.8					49.0			224.0 g
SLB40-3-280	in.	7.41	2.80					2.71			9.9 oz
	mm	188.2	71.1					68.8			280.7 g
SLB40-3-360	in.	9.00	3.60	3.49	11 oz						
	mm	228.6	91.4	88.6	311.8 g						

# Heavy Duty Spring Levelers/Level Compensators

Vaccon End-of-Arm Tooling



# Adjustable, Fixed Extension Shaft & Mounting Brackets

## FEB40 (2, 3) - Mounting brackets compatible with 1.5" [40mm] extrusions, 5/16" [10mm] T-slot



FEB40-3 with bellows vacuum cup.



FEB40-2 fixed extension shaft and bracket with VP10-100H-AC – apple core style mount and clamp for robotic assembly operation in the automotive industry.

Adjustable, Fixed Extension Shaft & Bracket is a rigid, non-moving rod that mounts to the top, sides or bottom of 1.5" [40mm] extrusions. Once the shaft is adjusted to meet a specific height requirement, the bracket is clamped into a fixed position.

Designed for flexible manufacturing operations, the FEB40 Series is easily repositioned by simply loosening 2 collar screws and sliding the shaft up or down to meet the new height requirements. For added adjustability, add an adjustable universal bracket to slide the FEB40 left or right.

Combined with Vaccon's apple core style pump, the FEB40 Series extension shaft and bracket becomes a swivel arm assembly that rotates and pivots into any orientation (3 axis positioning) and then locks into place.

### Eliminate the Guesswork: Contact Us!

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For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

### Ideal Applications:

- Injection molding
- Pick and place of irregular shaped parts with large surface height differences

### Features/Benefits

- Easy to assemble, modular End-of-Arm tool components – minimal design time required
- Fixed positioning for consistent indexing and part retention
- Rigid mounting design for heavy, high impact loads
- Smooth operation – reduces shock to an object that is being lifted
- Lightweight – to maximize robot payload and increase robot speed
- High flow – maximize performance and holding force for handling porous objects
- Flexible mounting options facilitates End-of-Arm tool design

### Standard Adjustable, Fixed Extension Shaft & Bracket:

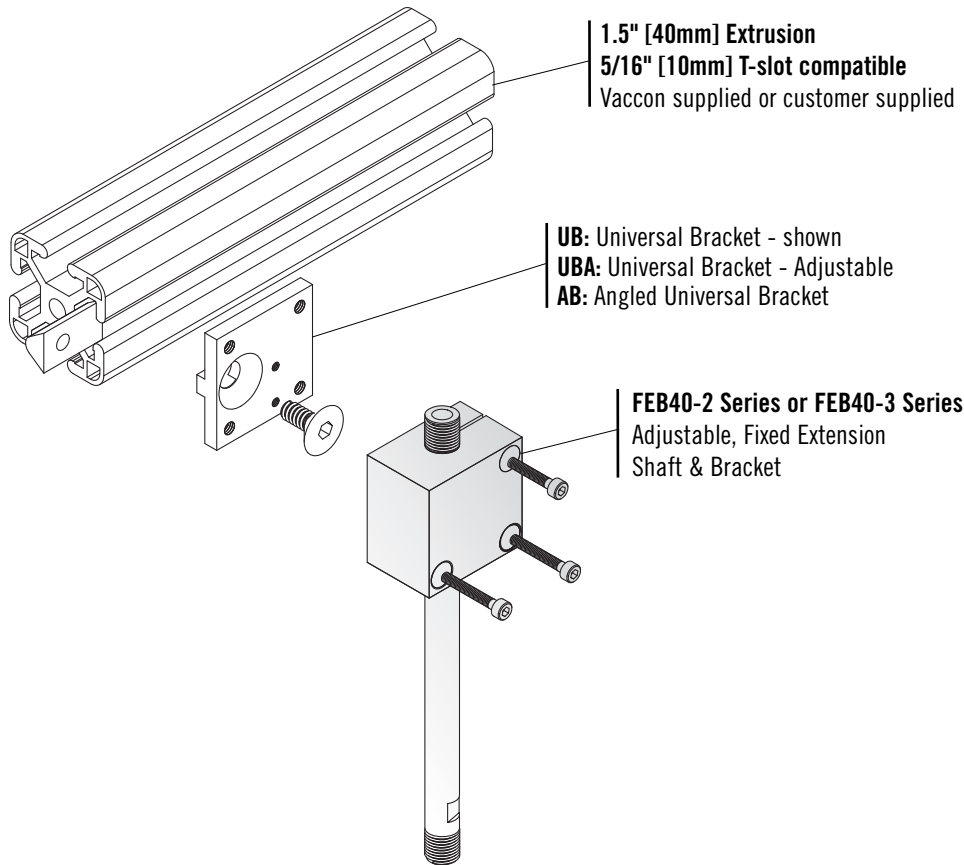
- **2 Series:** 1/8" or 1/4" NPT male
- **8 Shaft Lengths:** 0.40" to 6.7" [10mm to 170mm]
- **Mounting:** Split collar design
- **Material:** Nickel plated steel shafts and aluminum body

### Adjustable, Fixed Extension Shaft & Bracket Options:

- Wide variety of vacuum cups and vacuum fittings
- Apple Core attachment
- Universal brackets for easy attachments and adjustable positioning
- Vacuum Cup Swivel attachment – available for Series 3 only

# Adjustable, Fixed Extension Shaft & Mounting Bracket

## Adjustable Fixed Length Extension Brackets: FEB40- (2, 3) – Configurations and Options:



### On-line Configurator and CAD Drawings @ [www.vaccon.com](http://www.vaccon.com)

New powerful design tool saves you time by configuring the pump you need on-line. When complete, simply download the CAD drawing in any one of 13 different CAD formats and insert it right into your design.

*Get the pump you need,  
in the format you like!*

Vaccon End-of-Arm Tooling

### How to Specify:

#### Part Number Adjustable, Fixed Extension Shaft & Brackets

##### Series 2

FEB40-2-80	0.40" extension length, 1/8" NPT male thread
FEB40-2-120	1.97" extension length, 1/8" NPT male thread
FEB40-2-200	3.51" extension length, 1/8" NPT male thread
FEB40-2-280	5.11" extension length, 1/8" NPT male thread

##### Series 3

FEB40-3-120	1.97" extension length, 1/4" NPT male thread
FEB40-3-200	3.51" extension length, 1/4" NPT male thread
FEB40-3-280	5.11" extension length, 1/4" NPT male thread
SLB40-3-360	6.70" extension length, 1/4" NPT male thread

To specify FEB40, choose part number based on extension length desired, thru bore diameter and thread size on each end of shaft.

Please order FEB40's as separate line items based on part number. i.e. **FEB40-2-280**.

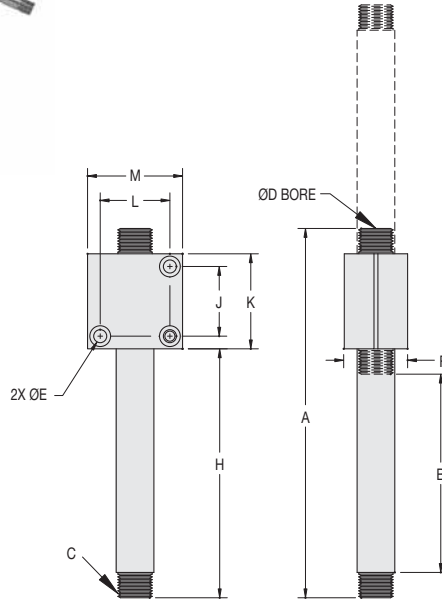
Please order Universal brackets (UB, UBA or AB) as separate line items based on part numbers.

*To attach Adjustable, Fixed Extension Shafts & Brackets to extrusions, please see page 353 for Universal Bracket mounting options.*

## Adjustable – Fixed Length Extension Shafts & Brackets



**Series 2**  
FEB40-2-(80, 120, 200, 280)



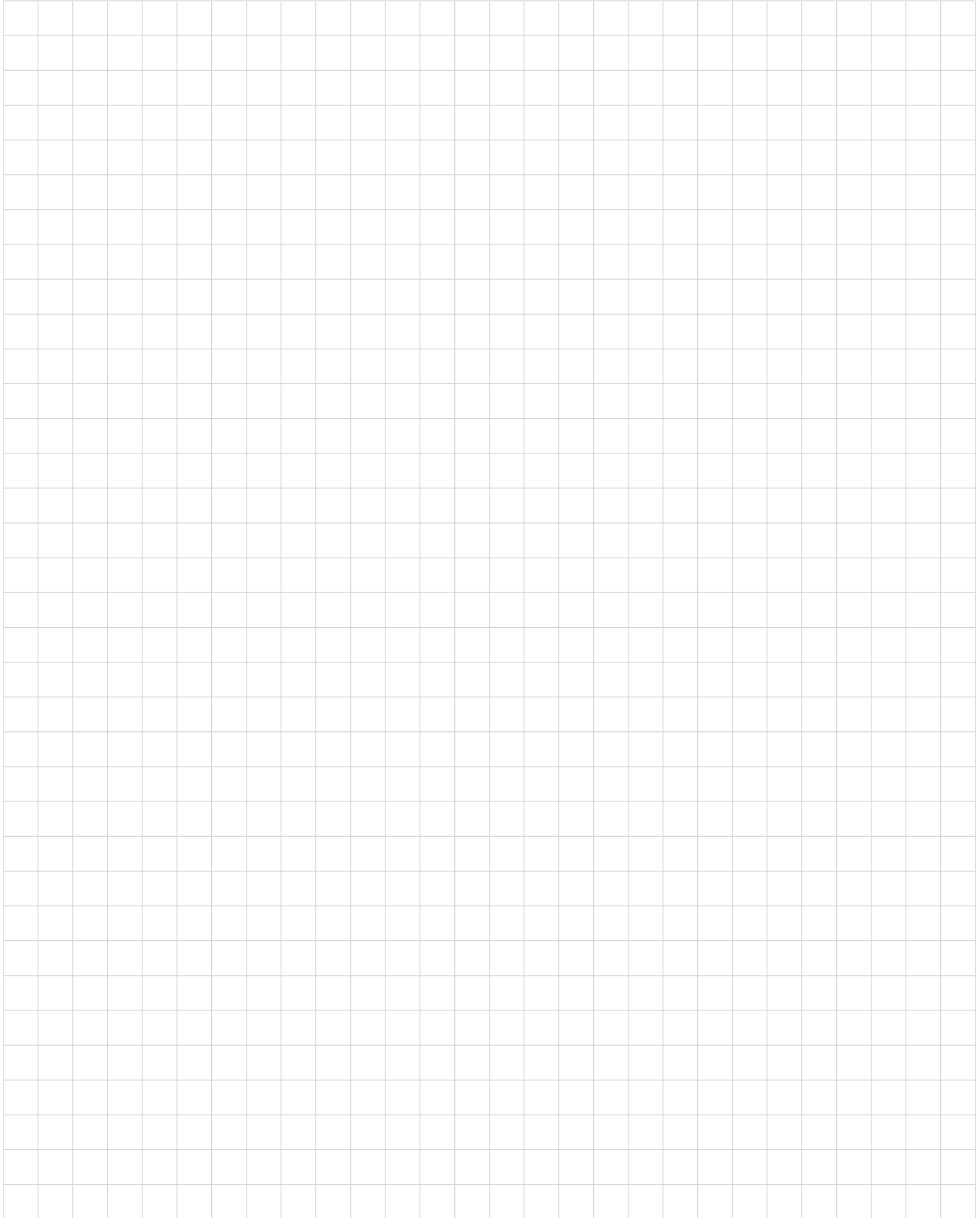
**Series 3**  
FEB40-3-(120, 200, 280, 360)

Dimensions											
Model # Series 2		A	B	C	D	E	F	H	J, L	K, M	Weight
FEB40-2-80	in.	2.70	0.40	1/8" NPT Male	0.24 [6.1]	0.21 [5.2]	1.00 [25.4]	0.80	1.10 [27.9]	1.50 [38.1]	4.7 oz
	mm	68.6	10.2					20.3			133.2 g
FEB40-2-120	in.	4.27	1.97					2.37			4.7 oz
	mm	108.5	50.0					60.2			133.2 g
FEB40-2-200	in.	5.83	3.51					3.91			5.3 oz
	mm	148.1	89.2					99.3			150.3 g
FEB40-2-280	in.	7.41	5.11					5.51			5.9 oz
	mm	188.2	129.8					140.0			167.3 g

Dimensions											
Model # Series 3		A	B	C	D	E	F	H	J, L	K, M	Weight
FEB40-3-120	in.	4.27	1.97	1/4" NPT Male	0.31 [7.9]	0.21 [5.2]	1.00 [25.4]	2.37	1.10 [27.9]	1.50 [38.1]	6.9 oz
	mm	108.5	50.0					60.2			195.6 g
FEB40-3-200	in.	5.83	3.51					3.91			7.9 oz
	mm	148.1	89.2					99.3			224.0 g
FEB40-3-280	in.	7.41	5.11					5.51			9.9 oz
	mm	188.2	129.8					140.0			280.7 g
FEB40-3-360	in.	9.00	6.70					7.1			11 oz
	mm	228.6	170.2					180.3			311.8 g

# Adjustable, Fixed Extension Shaft & Mounting Bracket

Vaccon End-of-Arm Tooling



# Vacuum Cup Swivel Joint

**CSJ3 Series 3** – Mounting brackets compatible with 1.5" [40mm] extrusions, 5/16" [10mm] T-slot



*CSJ3-14 Vacuum Cup Swivel Joint with FEB40-3 Fixed Extension Shaft & Bracket and vacuum cup.*



*CSJ3-38*

Handling curved surfaces is easy with Vaccon's new Vacuum Cup Swivel Joint. The CSJ3 swivel joints attach to a spring leveler and vacuum cup providing a full 40° angular movement. To control the degree of swivel, simply tighten the collar nut located on top of the swivel joint to restrict movement.

Developed in conjunction with Vaccon spring levelers, the CSJ3 swivel joint assemblies feature exceptionally large flow paths to safely handle porous objects. Depending on height and tooling requirements, Vacuum Cup Swivel Joints are interchangeable with the following Series 3 spring levelers:

- VSL3** – Standard spring levelers
- SLB40-3** – Heavy duty spring levelers
- FEB40-3** – Fixed extension shafts & brackets

**Eliminate the Guesswork: Contact Us!**

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**Ideal Applications:**

- Stamping operations (press load and unload)
- Palletizing
- Handling curved and angular objects

**Features/Benefits:**

- Durable – rugged all steel design
- Full 40° angular movement (20° in each direction)
- Smooth and secure operation – follows contour of object being lifted
- Lightweight – maximize robot payload and increase robot speed
- High flow – maximize performance and holding force for handling porous objects
- Flexible mounting options facilitates End-of-Arm Tooling design

**Standard Vacuum Cup Swivel Joint:**

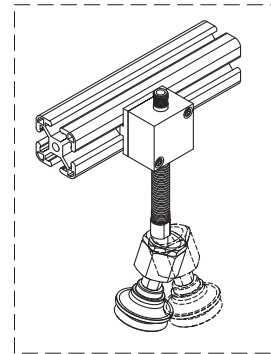
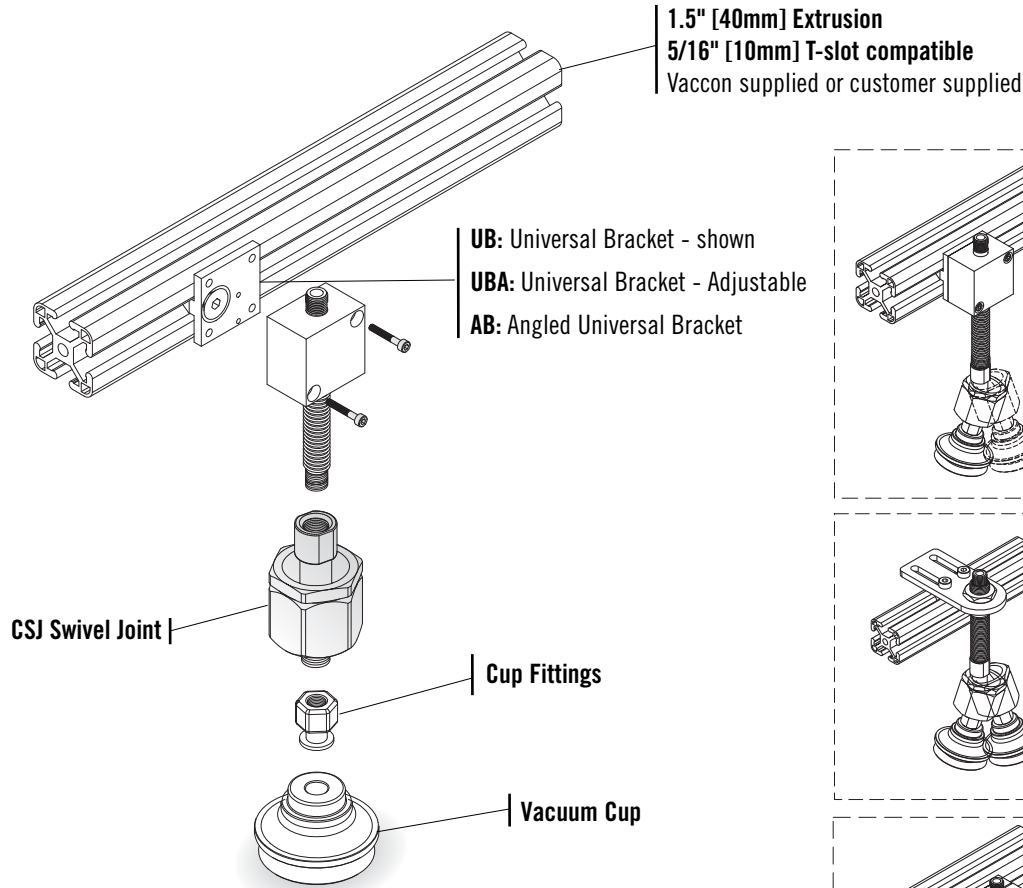
- 3 Sizes: 1/4", 3/8", 1/2" NPT male threads – mates to a wide variety of vacuum cup fittings
- 1/4" NPTF top port mates to all the 1/4" NPT Series 3 levelers
- Material: Nickel plated steel, Buna-N O-ring

**Vacuum Cup Swivel Joint Options:**

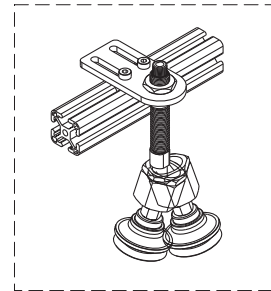
- Variety of vacuum cups and vacuum fittings
- Custom designs and stainless steel construction available for food and wash-down applications. Consult factory.

# Vacuum Cup Swivel Joint

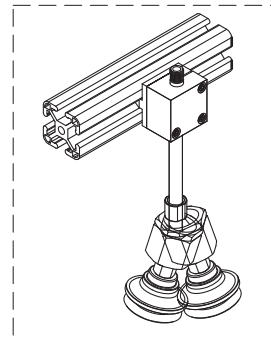
## Vacuum Cup Swivel Joint: CSJ-3 Series:



**SLB40-3 Series:**  
Heavy Duty  
Spring Levelers



**VSL3 Series:**  
Spring Levelers



**FEB40-3 Series:**  
Adjustable, Fixed  
Extension Shaft  
& Bracket

### How to Specify:

Part Number	Vacuum Cup Swivel Joint
CSJ3-14	1/4" NPT – male thread
CSJ3-38	3/8" NPT – male thread
CSJ3-12	1/2" NPT – male thread

Choose the swivel joint with the same NPT thread as the vacuum cup fitting.

Order by part number i.e. **CSJ3-38**

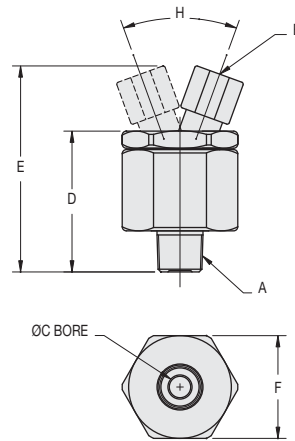


### On-line Configurator and CAD Drawings @ [www.vaccon.com](http://www.vaccon.com)

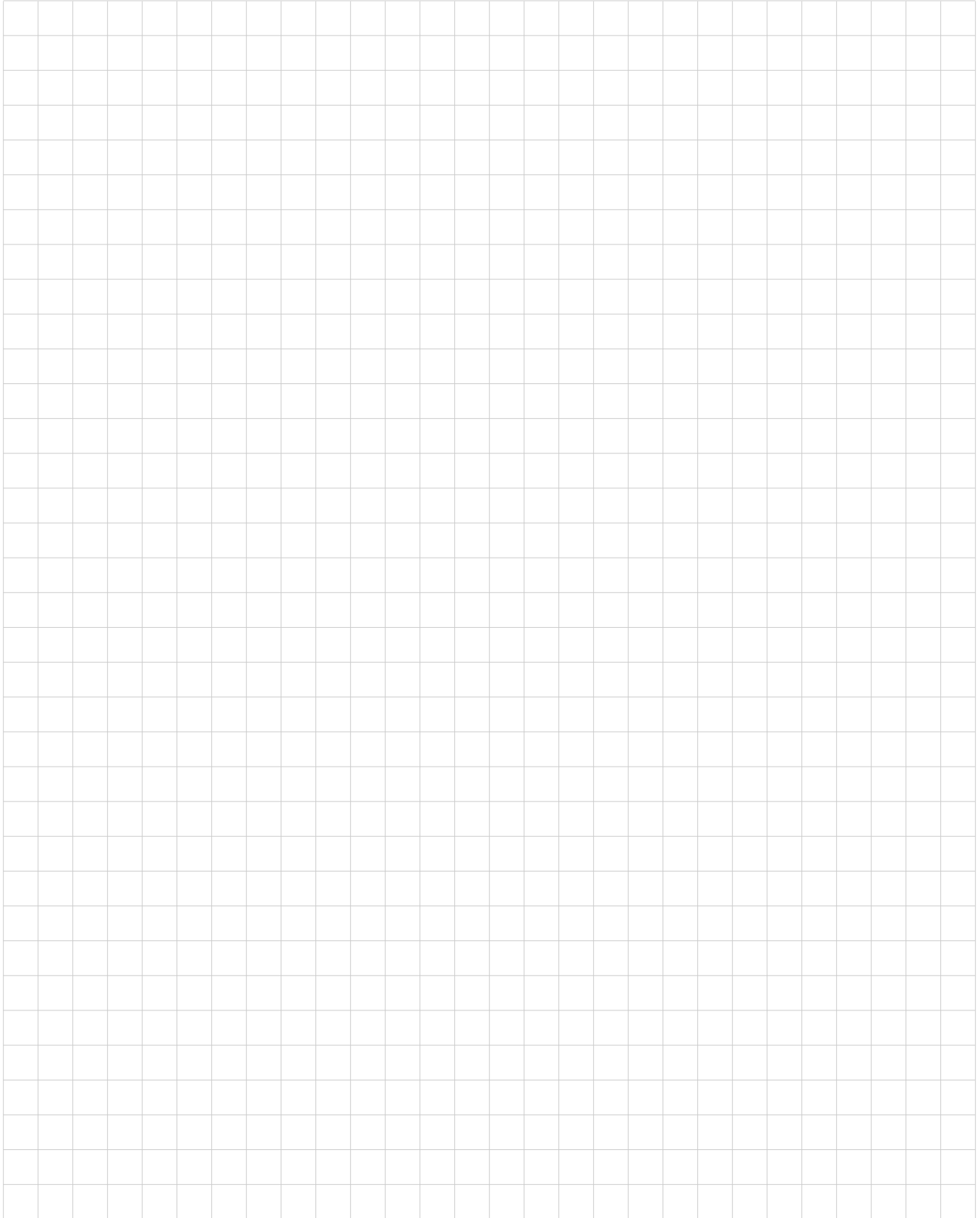
New powerful design tool saves you time by configuring the pump you need on-line. When complete, simply download the CAD drawing in any one of 13 different CAD formats and insert it right into your design.

**Get the pump you need,  
in the format you like!**

## Vacuum Cup Swivel Joint: Series 3 – CSJ-3



Dimensions									
Model #		A Thread	B Thread	C Thru Bore	D	E	F Hex	H Swivel Angle	Weight
CSJ3-14	in.	1/4" NPT	1/4" NPT	0.31 [7.9]	2.90	1.96	1.50 [38.1]	40°	11.7 oz
	mm				73.7	49.8			331.7 g
CSJ3-38	in.	3/8" NPT			3.00	2.06			12.7 oz
	mm				76.2	52.3			360 g
CSJ3-12	in.	1/2" NPT			3.00	2.06			12.7 oz
	mm				76.2	52.3			360 g



# Universal Mounting Brackets – Standard, Adjustable, Angled

Compatible with 1" [25mm] and 1.5" [40mm] extrusions



Standard Universal Bracket attaches VP10-100H to extrusion for halogen bulb pick and place operation.



Universal Bracket (Adjustable) with Vacuum cup/Manifold block assembly. See page 359 for Vacuum cup/Manifold block.



Angled Bracket holds VP10-60M vacuum pump and cup, with exposed fastening screw for quick and easy adjustments.



UB, UBA, and AB brackets.

## Features/Benefits

- 3 Styles – standard, adjustable or angled with simple erector-set connectivity
- Anodized aluminum – lightweight – reduces stress, extends performance and life of robot
- Modular components add design flexibility – adaptable for all EOAT configurations
- Keyed profile for tight fit – non-rotating – strong holding force
- Mounting kit includes hardware to attach products to extrusions
- Angled brackets have optional adjustment knob, consult factory

Universal Mounting Brackets are simple, lightweight connectors that attach Vaccon vacuum pumps, vacuum cups, spring levelers and manifold blocks to 1" or 1.5" extrusions.

Available in 3 models, standard, adjustable or angled, our Universal Brackets are keyed to fit securely in 1/4" [6.5mm] or 5/16" [10mm] T-slots, remain square and increase holding force.

Brackets are available with or without mounting hardware.

### Standard Universal Bracket: (UB)

The standard UB is a fixed position bracket that is tamper resistant. Once the screw is tightened to the extrusion and a product is mounted to the bracket the fastening screw is now covered and inaccessible to adjust.

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### Universal Bracket Adjustable: (UBA)

An elongated version of the standard bracket, the UBA features an exposed fastening screw that enables quick, easy bracket adjustments along the T-slot.

### Angled Universal Bracket: (AB)

For operations that require frequent adjustments, the AB models are the easiest to re-position. One side of the bracket holds the vacuum pump, the other side of the bracket attaches to the extrusion enabling the bracket assembly to slide along the T-slot for unlimited adjustments. With the pump located on a 90° angle, the fastening screw is easily accessible at all times. Optional adjustment knobs are available for the AB models.

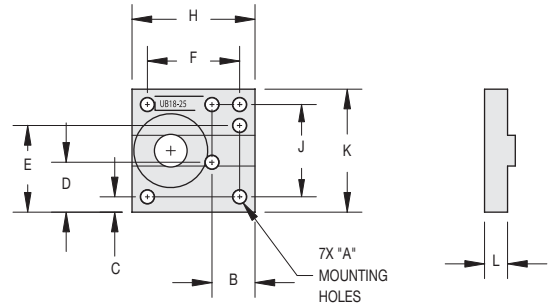
## Universal Brackets and Mounting Kits for 1" Extrusions



Bracket only: UB18-25



Bracket & Mounting Kit: MK-UB18-25



Extrusion fits: Vaccon VP00, VP0X, VP10 & VP1X Series pumps and MB18-25 manifold block.

Model #		Dimensions									Weight
		A- Mtg Holes	B- Mtg Holes	C	D	E	F, J	H, K	L		
UB18-25	Fits 1/4 T-Slot	in	M3 x 0.5	0.35	0.13	0.41	0.70	0.75	1.00	0.19	0.3 oz
	Fits 6.5mm T-Slot	mm		8.9	3.2	10.3	17.8	19.1	25.4	4.7	8.5 g

Note 1: Mounting kit includes all hardware to mount pumps and manifold block.

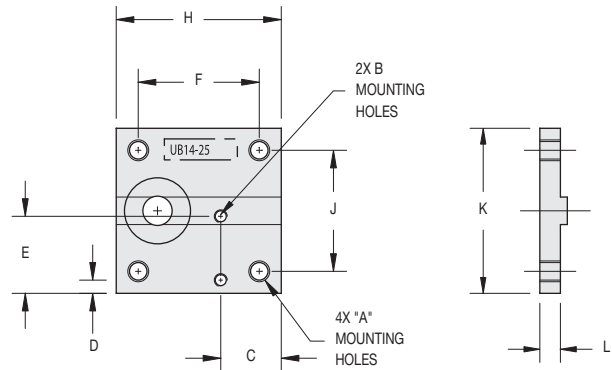
Note 2: Depending on the pump being mounted, it may be necessary to rotate the bracket 180° from diagram shown.



Bracket only: UB14-25



Bracket & Mounting Kit: MK-UB14-25



Extrusion fits all Vaccon VP Series pumps except the VP00/VP0X Series. Fits All MB14 Series manifold blocks. (Allows larger pumps to be mounted to 1" extrusions).

Model #		Dimensions									Weight
		A- Mtg Holes	B- Mtg Holes	C	D	E	F, J	H, K	L		
UB14-25	Fits 1/4 T-Slot	in	10-32	M3 x 0.5	0.55	0.12	0.70	1.10	1.50	0.19	0.7 oz
	Fits 6.5mm T-Slot	mm			14.0	3.0	17.8	27.9	38.1	4.7	19.8 g

Note 1: Mounting kit includes all hardware to mount pumps and manifold block.

### How to Specify:

**Bracket only:** See Model Numbers: i.e. UB18-25

**Bracket & Mounting Kit:** Add "MK" for mounting kit in front of Model Number i.e. MKUB18-25

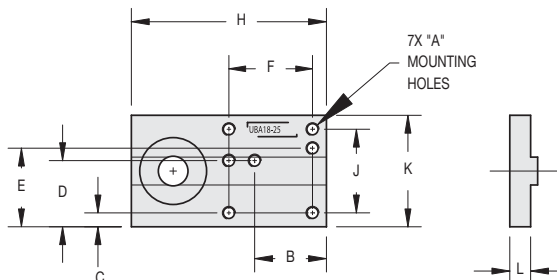
## Universal Brackets (Adjustable) and Mounting Kits for 1" Extrusions



Bracket only: UBA18-25



Bracket & Mounting Kit: MK-UBA18-25



Extrusion fits: Vaccon VP00, VPOX, VP01, VP10 & VP1X Series pumps and MB18-25 manifold block.

Model #		Dimensions										Weight
			A- Mtg Holes	B- Mtg Holes	C	D	E	F, J	H	K	L	
UBA18-25	Fits 1/4 T-Slot	in	M3 x 0.5	0.64	0.13	0.60	0.70	0.75	1.75	1.00	0.19	0.5 oz
	Fits 6.5mm T-Slot	mm		16.4	3.2	15.2	17.8	19.1	44.5	25.4	4.7	14.2 g

Note 1: Mounting kit includes all hardware to mount pumps and manifold block.

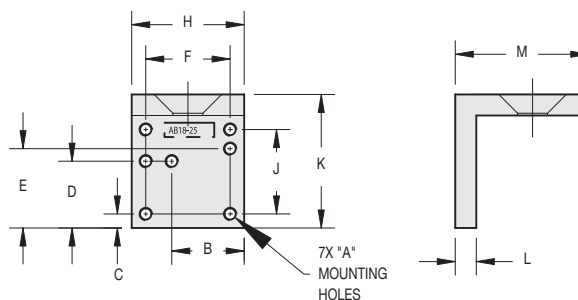
## Angled Brackets and Mounting Kits for 1" Extrusions



Bracket only: AB18-25



Bracket & Mounting Kit: MK-AB18-25



Extrusion fits: Vaccon VP00, VPOX, VP01, VP10 & VP1X Series pumps and MB18-25 manifold block.

Model #		Dimensions										Weight
			A- Mtg Holes	B- Mtg Holes	C	D	E	F, J	H, K	L	M	
AB18-25	Fits 1/4 T-Slot	in	M3 x 0.5	0.64	0.13	0.60	0.70	0.75	1.00	0.19	1.19	0.6 oz
	Fits 6.5mm T-Slot	mm		16.4	3.2	15.2	17.8	19.1	25.4	4.7	30.1	17.0 g

Note 1: Mounting kit includes all hardware to mount pumps and manifold block.

### How to Specify:

**Bracket only:** See Model Numbers: i.e. AB18-25

**Bracket & Mounting Kit:** Add "MK" for mounting kit in front of Model Number i.e. MKAB18-25

**Bracket & Mounting Kit with Adjustment Knob:** ABKUB14-40

## Universal Brackets and Mounting Kits for 1.5" Extrusions



Bracket only: UB14-40 (5/16th T-slot)



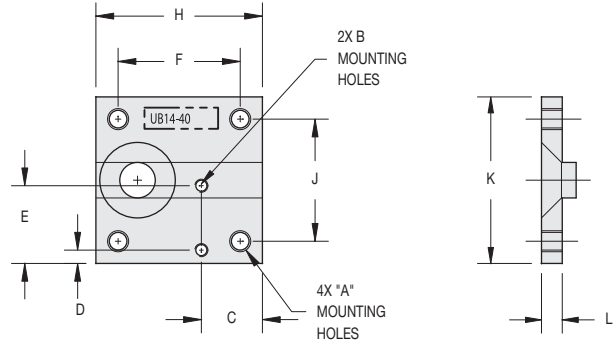
Bracket only: IUB14-40 (10mm T-slot)



Bracket and Mounting Kit:  
MK-UB14-40 (5/16th T-slot)



Bracket and Mounting Kit:  
IMK-UB14-40 (10mm T-slot)



Fits all VP10 Series pumps and above, and MB14 manifold blocks.

Note 1: Mounting kit includes all hardware to mount pumps and manifold block.

Model #		Dimensions								Weight	
		A- Mtg Holes	B- Mtg Holes	C	D	E	F, J	H, K	L		
UB14-40	Fits 5/16 T-Slot	in	10-32	M3 x 0.5	0.55	0.12	0.7	1.10	1.50	0.19	0.7 oz
IUB14-40	Fits 10mm T-Slot	mm			14.0	3.0	17.8	27.90	38.10	4.70	19.8 g

## Universal Brackets (Adjustable) and Mounting Kits for 1.5" Extrusions



Bracket only: UBA14-40 (5/16th T-slot)



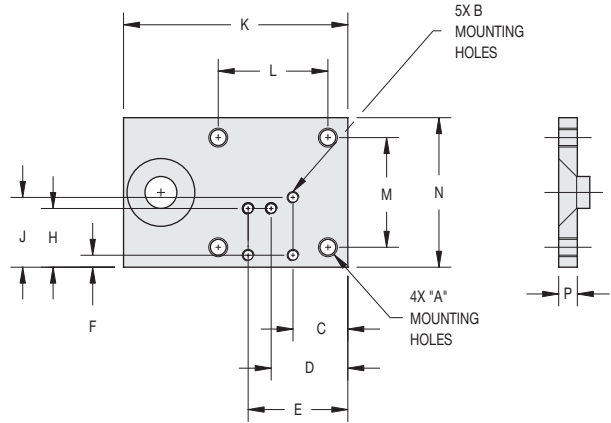
Bracket only: IUBA14-40 (10mm T-slot)



Bracket and Mounting Kit:  
MK-UBA14-40 (5/16th T-slot)



Bracket and Mounting Kit:  
IMK-UBA14-40 (10mm T-slot)



Fits all VP10 Series pumps and above, and MB14 manifold blocks.

Note 1: Mounting kit includes all hardware to mount pumps and manifold block.

Model #		Dimensions													Weight	
		A- Mtg Holes	B- Mtg Holes	C	D	E	F	H	J	K	L	M	N	P		
UBA14-40	Fits 5/16 T-Slot	in	10-32	M3 x 0.5	0.55	0.77	1.00	0.12	0.59	0.70	2.25	1.10	1.50	1.50	0.19	1 oz
IUBA14-40	Fits 10mm T-Slot	mm			14.0	19.5	25.4	3.0	15.0	17.8	57.2	27.9	38.1	38.1	4.7	28.3 g

### How to Specify:

**Bracket only:** See Model Numbers: i.e. UB14-40

**Bracket & Mounting Kit:** Add "MK" for mounting kit in front of Model Number i.e. MKUB14-40

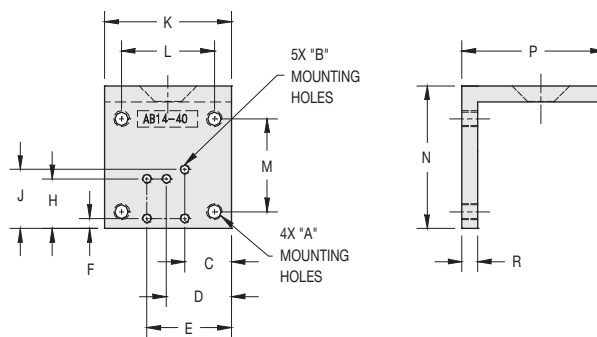
## Angled Brackets and Mounting Kits for 1.5" Extrusions



Bracket only: AB14-40



Bracket & Mounting Kit: MK-AB14-40  
Available with optional adjustment knob.  
See Bracket Construction Sequence below



Fits all VP Series pumps and MB14 manifold blocks.

Note 1: Mounting kit includes all hardware to mount pumps and manifold block.

Model #		Dimensions														Weight	
		A- Mtg Holes	B- Mtg Holes	C	D	E	F	H	J	K	L	M	N	P	R		
AB14-40	Fits 5/16 T-Slot	in	10-32	M3 x 0.5	0.55	0.77	1.00	0.12	0.59	0.70	1.50	1.10	1.50	1.69	1.69	0.19	1 oz
IAB14-40	Fits 10mm T-Slot	mm			14.0	19.5	25.4	3.0	15.0	17.8	38.1	27.9	38.1	42.8	42.8	4.7	28.3 g

### How to Specify:

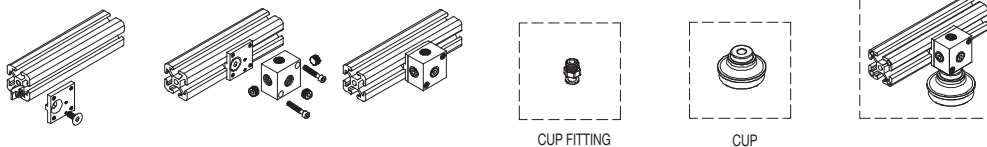
Bracket only: See Model Numbers: i.e. UB14-40

Bracket & Mounting Kit: Add "MK" for mounting kit in front of Model Number i.e. MKUB14-40

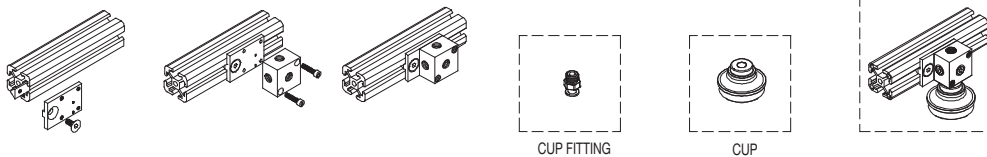
Bracket & Mounting Kit with Adjustment Knob: ABK14-40 (angled brackets only)

### Standard, Adjustable & Angled Bracket Construction Sequence:

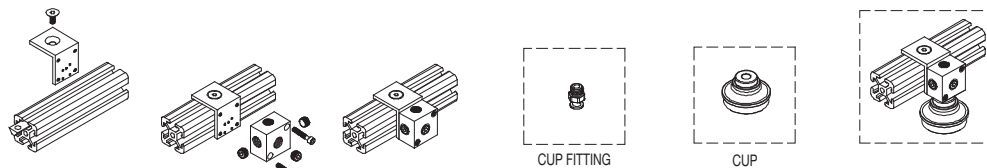
Standard Bracket



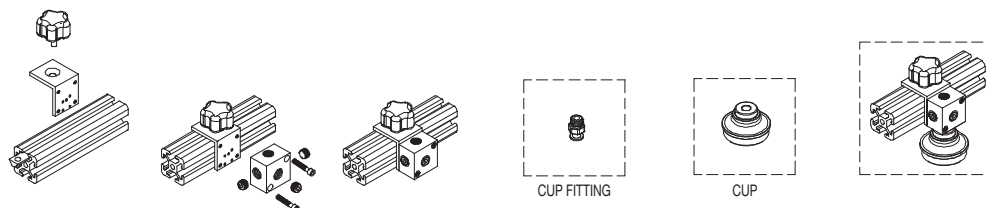
Adjustable Bracket

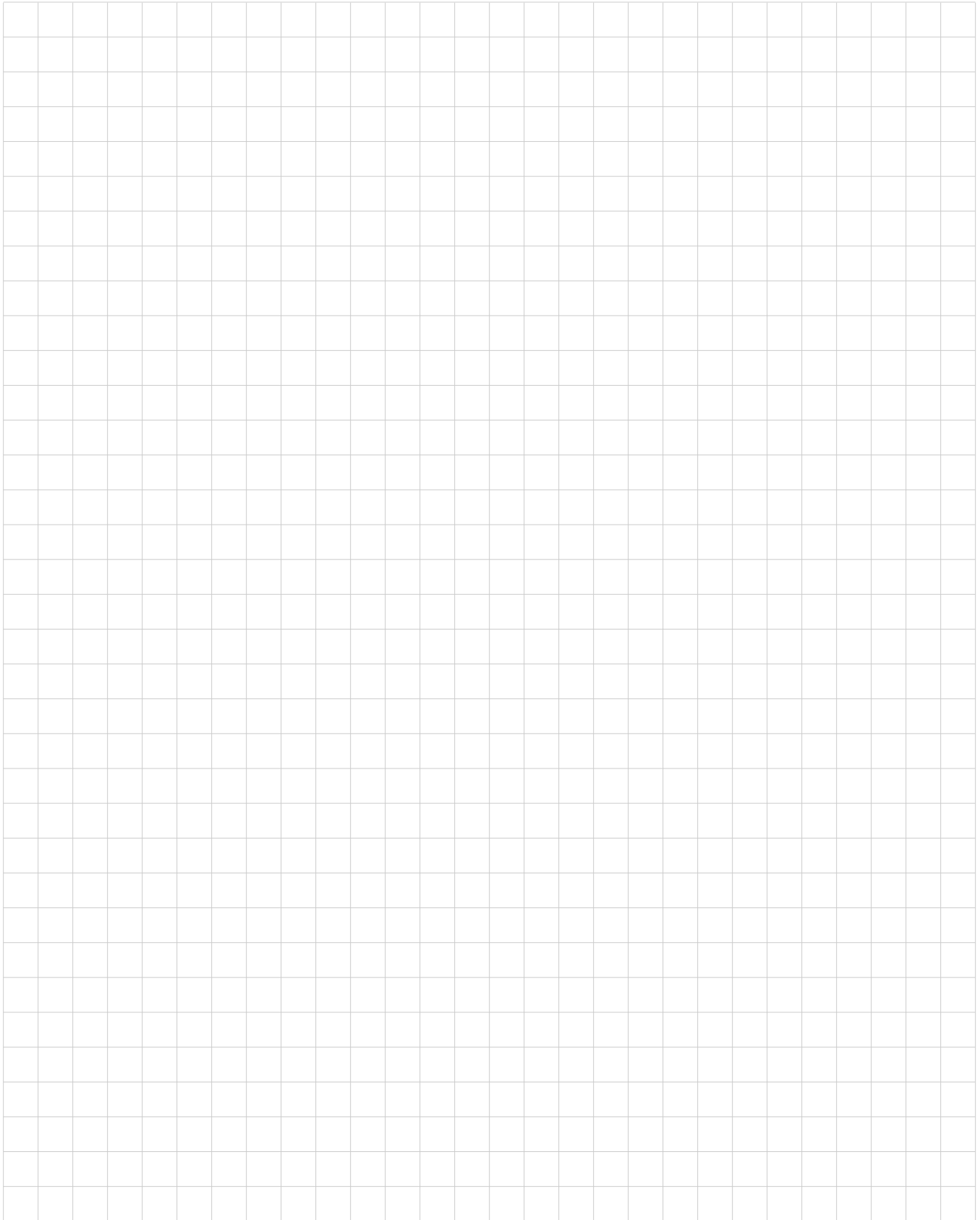


Angled Bracket



Angled Bracket w/Optional Adjustment Knob





# Vacuum Cup Mount/Manifold Block

## Combination Cup Mount and Manifold Block Compatible with 1" [25mm] and 1.5" [40mm] extrusions



*VP80-200M distributes vacuum to four cup mount/manifold assemblies to pick up corrugated board.*



*MB14-40 Vacuum Cup Mount/Manifold Block*

Simplify your End-of-Arm tooling devices using our new dual purpose MB Series - Vacuum Cup Mount/Manifold Block. Whether you are mounting vacuum cups to extrusions and/or distributing vacuum to multiple locations, the MB Series streamlines your design with one multi-functional component.

For design and plumbing flexibility, the MB Series features five vacuum ports and three mounting options that easily connect vacuum pumps and cups to 5/16" [10mm] or 1/4" [6.5mm] T-slot extrusions. Extra vacuum ports allow optional accessories to be directly mounted to the manifold block i.e. vacuum gauges or remotely plumbed such as vacuum switches, sensors or blow-off capabilities.

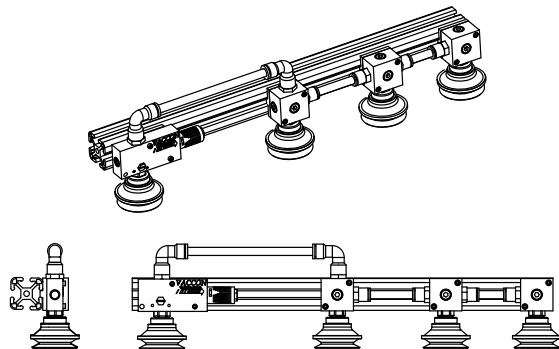
High vacuum flow is critical for handling porous objects. Vaccon offers up to 3/4" NPT ports to ensure high flow paths.

### Options:

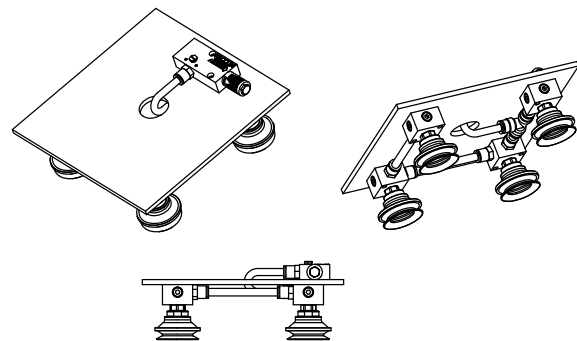
**3 Mounting port options:** standard, bottom or face mount

**9 Models:** 1/8" to 3/4" NPT

**3 Universal brackets:** fixed, adjustable or angled



*The vacuum cup mount/manifold easily connects to the T-slot extrusion using a Universal Bracket (see Page 353).*



*For non T-slot applications, attach the vacuum cup mount/manifold to the underside of a flat tooling plate head.*

### Ideal Applications:

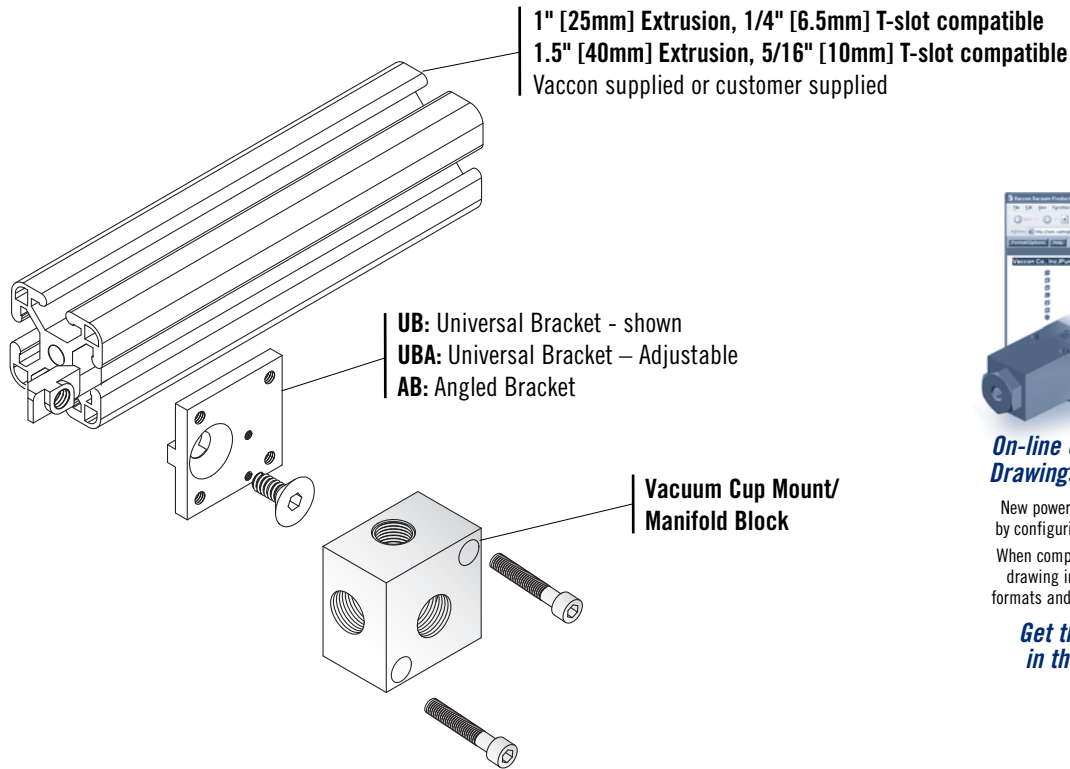
- Robotic End Effectors/End-of-Arm Tooling
- Removing products from molds
- Sheet metal transfer
- Palletizing of work pieces
- Nesting fixtures
- Assembly fixtures
- Pick and place

### Features/Benefits

- Direct mount for cups – maintains consistent height for all cups
- High performance – full vacuum flow out performs competition
- Easy to assemble, modular End-of-Arm Tooling components – minimal design time required
- Flexible design – 5 ports for easy plumbing, allows side entry vacuum, adaptable for all End-of-Arm Tooling configurations
- Square shape – easily mounts to any side of the extrusion, products stay square and flush
- Vacuum lines may be connected in series or home run plumbed to streamline the tooling fixture
- Anodized aluminum – lightweight, extends performance and life of robot, allows higher speeds
- Large thread sizes provides high flow rates for safe handling of porous objects

# Vacuum Cup Mount/Manifold Block

## Vacuum Cup Mount/Manifold Configuration & Specifications:



### On-line Configurator and CAD Drawings @ [www.vaccon.com](http://www.vaccon.com)

New powerful design tool saves you time by configuring the pump you need on-line. When complete, simply download the CAD drawing in any one of 13 different CAD formats and insert it right into your design.

**Get the pump you need,  
in the format you like!**

### How to Specify:

Part Number	Vacuum Cup Mount/Manifold Block
MB18-25	1/8" NPT – All Female Ports – recommended for 1" (25mm) extrusions
MB14-40	1/4" NPT – All Female Ports – recommended for 1.5" (40mm) extrusions
MBB14-40	1/4" NPT – Bottom Male Port – recommended for 1.5" (40mm) extrusions
MBB38-40	3/8" NPT – Bottom Male Port – recommended for 1.5" (40mm) extrusions
MBB12-40	1/2" NPT – Bottom Male Port – recommended for 1.5" (40mm) extrusions
MBF14-40	1/4" NPT – Face Male Port – recommended for 1.5" (40mm) extrusions
MBF38-40	3/8" NPT – Face Male Port – recommended for 1.5" (40mm) extrusions
MBF12-40	1/2" NPT – Face Male Port – recommended for 1.5" (40mm) extrusions
MBF34-40	3/4" NPT – Face Male Port – recommended for 1.5" (40mm) extrusions

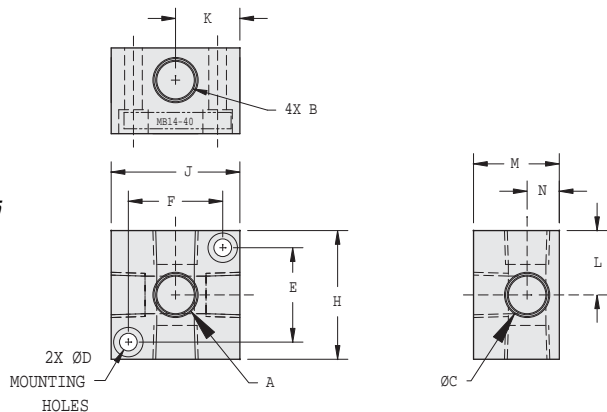
Please note: All vacuum cup mount/manifolds include 3 flush plugs to seal extra ports.

Please order Vacuum cup mount/manifolds as separate line items based on part number i.e. **MBB12-40**

If you would like parts factory assembled, please specify on order "**factory assembled.**"

**To attach Vacuum Cup Mount/Manifold to extrusion, please see page 353 for Universal Bracket mounting options.**

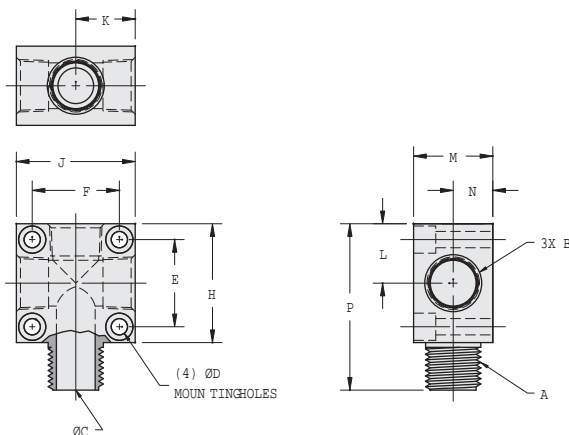
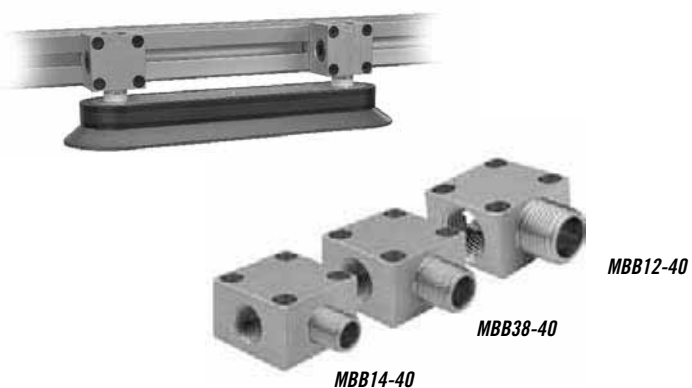
## Vacuum Cup Mount/Manifold – All Female ports : MB 14-40, 18-25



Model #	Dimensions - Fits 1" [25mm] Extrusions										Weight	
	A-Thread	B- Thread	C	D	E, F	H, J	K, L	M	N	P		
MB18-25	in	1/8" NPT	1/8" NPT	0.34	0.1	0.75	1.00	0.5	1.00	0.25	N/A	1.2 oz
	mm	G 1/8	G 1/8	8.6	3.3	19.1	25.4	12.7	25.4	6.4	N/A	34 g

Model #	Dimensions - Fits 1.5" [40mm] Extrusions										Weight	
	A-Thread	B- Thread	C	D	E, F	H, J	K, L	M	N	P		
MB14-40	in	1/4" NPT	1/4" NPT	0.44	0.21	1.10	1.50	0.50	1.00	0.38	N/A	2.6 oz
	mm	G 1/4	G 1/4	11.1	5.2	27.9	38.1	12.7	25.4	9.53	N/A	73.7 g

## Vacuum Cup Mount/Manifold – Bottom Male ports : MBB (14, 38, 12) -40

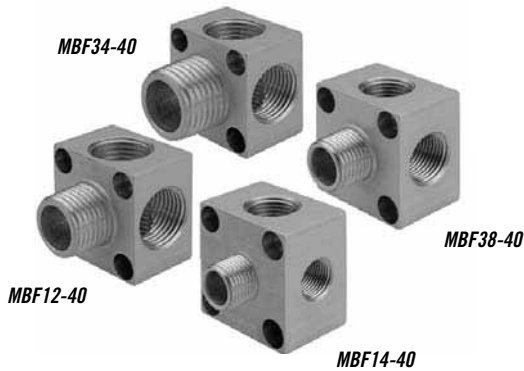
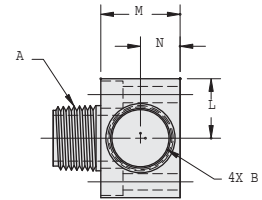
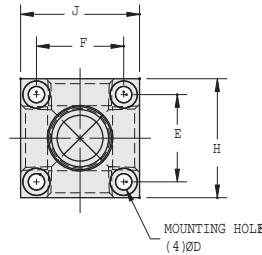
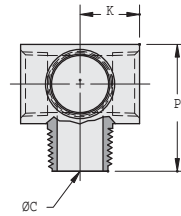


Model #	Dimensions - Fits 1.5" [40mm] Extrusions										Weight	
	A-Thread	B- Thread	C	D	E, F	H, J	K, L	M	N	P		
MBB14-40	in	1/4" NPT	1/4" NPT	0.34	0.21	1.10	1.50	0.50	1.00	0.50	2.00	2.6 oz
	mm	G 1/4	G 1/4	8.6							50.8	73.7 g
MBB38-40	in	3/8" NPT	3/8" NPT	0.45	[5.2]	[27.9]	[38.1]	[12.7]	[25.4]	[12.7]	2.10	2.9 oz
	mm	G 3/8	G 3/8	11.4							53.3	82.2 g
MBB12-40	in	1/2" NPT	1/2" NPT	0.58	14.7						2.10	1.9 oz
	mm	G 1/2	G 1/2								53.3	53.9g

Vaccon End-of-Arm Tooling

# Vacuum Cup Mount/Manifold Block

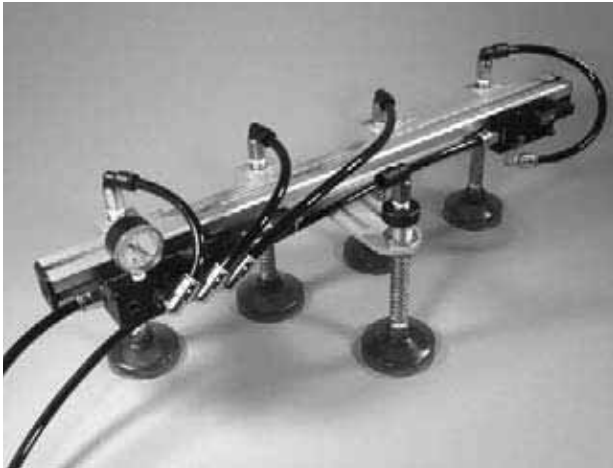
## Vacuum Cup Mount/Manifold – Face Male Port : MBF (14, 38, 12, 34) -40



Model #	Dimensions - Fits 1.5" [40mm] Extrusions										Weight																			
		A-Thread	B-Thread	C	D	E, F	H, J	K, L	M	N		P																		
MBF14-40	in	1/4" NPT	1/4" NPT	0.34	0.21 [5.2]	1.10 [27.9]	1.50 [38.1]	0.50 [12.7]	1.00 [25.4]	0.50 [12.7]	1.50	2.6 oz																		
	mm	G 1/4	G 1/4	8.6							38.1	73.7 g																		
MBF38-40	in	3/8" NPT	3/8" NPT	0.45							0.21 [5.2]	1.10 [27.9]	1.50 [38.1]	0.50 [12.7]	1.00 [25.4]	0.50 [12.7]	1.50	2.7 oz												
	mm	G 3/8	G 3/8	11.4													38.1	76.5 g												
MBF12-40	in	1/2" NPT	1/2" NPT	0.58													0.21 [5.2]	1.10 [27.9]	1.50 [38.1]	0.50 [12.7]	1.00 [25.4]	0.50 [12.7]	1.60	1.7 oz						
	mm	G 1/2	G 1/2	14.7																			40.6	48.2g						
MBF34-40	in	3/4" NPT	3/4" NPT	0.75																			0.21 [5.2]	1.10 [27.9]	1.50 [38.1]	0.50 [12.7]	1.00 [25.4]	0.50 [12.7]	1.60	1.8 oz
	mm	G 3/4	G 3/4	19.1																									40.6	51.0 g

# T-Slotted Extrusions for End-of-Arm Tooling

## 1.0" [25mm] and 1.5" [40mm] extrusion



*1.5" Extrusion with Multi-port pump, spring leveler/vacuum cup assembly – ready to install with one easy connection.*

Vaccon End-of-Arm tooling devices are available factory built and tested with your choice of 1" [25mm] or 1.5" [40mm] extrusions. Using modular, lightweight aluminum components, Vaccon focuses on streamlining designs to minimize overall tool weight and maximize air line efficiency.

Compatible with industry standard T-slot extrusions, Vaccon will mix and/or match profiles to your existing equipment to ensure quick and easy connections.

VEOAT components may be ordered separately for on-site assembly and installation with your existing extrusion.

### Standard Extrusions

- **Material:** Anodized aluminum
- **2 profiles:** 1.0" [25mm] – 3 sizes: 1.0" x 1.0", 1.0" x 2.0", 1.0" x 3.0"  
1.5" [40mm] – 2 sizes: 1.5" x 1.5", 1.5" x 3.0"
- **End Caps:** Optional

### Eliminate the Guesswork: Contact Us!

Vacuum technology isn't an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

To download a complete set of drawings in 13 different CAD formats, please visit our website at [www.vaccon.com](http://www.vaccon.com)

For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

### Features/Benefits

- **Lightweight** – extends life of the robot
- **Aluminum** – high strength
- **Easy to assemble** – uses standard fasteners and end caps
- **Compatible with industry accepted T-slot extrusions**
- **Modular components** – easily assembled and disassembled for flexible manufacturing operations



*1.0" [25mm] Extrusion  
Optional End Caps*



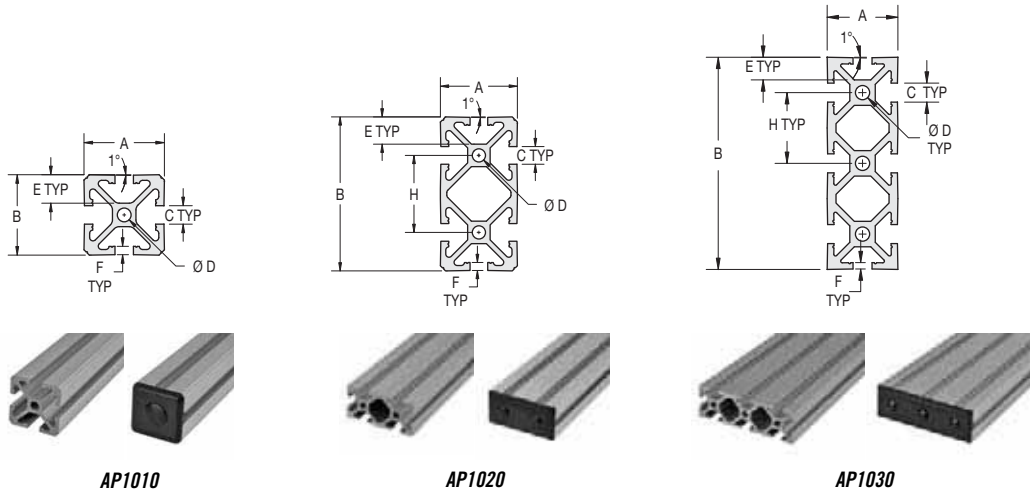
*1.5" [40mm] Extrusion  
Optional End Caps*



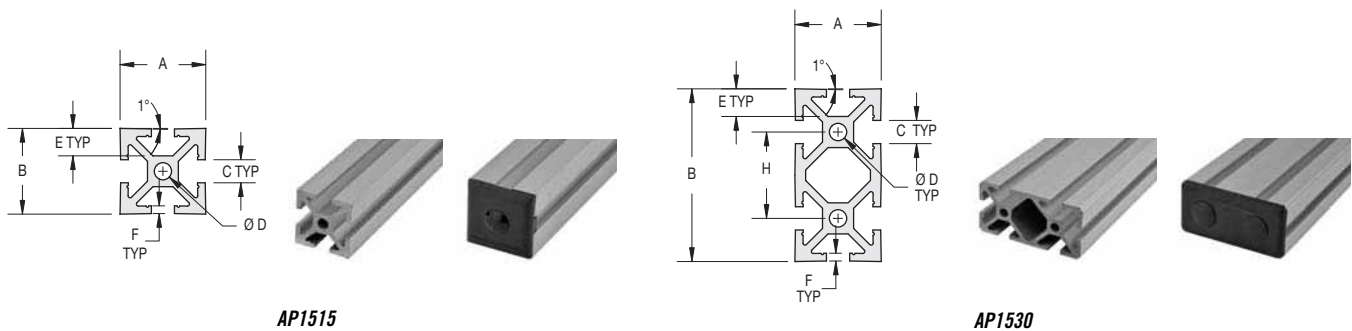
*End Caps and Screws*

# T-Slotted Extrusions

## 1.0" [25mm] Extrusions – 1/4" [6.5mm] T-slot



## 1.5" [40mm] Extrusions – 5/16" [10mm] T-slot



Model #	1" Series		Dimensions						Weight											
			A	B	C	D	E	F		H										
AP1010 –*	1.0" x 1.0"	in	1.00 [2.54]	1.00	0.269 [6.8]	0.20 [5.1]	0.32 [8.1]	0.09 [2.3]	–	0.51 lbs/ft										
		mm		25.4						0.76 kgs/m										
AP1020 –*	1.0" x 2.0"	in		2.00						1.00 [25.4]	0.32 [8.1]	0.09 [2.3]	1.00 [25.4]	1.00 [25.4]	0.92 lbs/ft					
		mm		50.8											1.37 kgs/m					
AP1030 –*	1.0" x 3.0"	in		3.00											1.00 [25.4]	0.32 [8.1]	0.09 [2.3]	1.00 [25.4]	1.00 [25.4]	1.35 lbs/ft
		mm		76.2																2.01 kgs/m
Model #	1.5" Series		Dimensions						Weight											
			A	B	C	D	E	F												H
AP1515 –*	1.5" x 1.5"	in	1.50 [38.1]	1.50	0.34 [8.7]	0.26 [6.5]	0.53 [13.5]	0.16 [4.0]	–	1.05 lbs/ft										
		mm		38.1						1.56 kgs/m										
AP1530 –*	1.5" x 3.0"	in		3.00						0.34 [8.7]	0.26 [6.5]	0.53 [13.5]	0.16 [4.0]	1.5 [38.1]	1.5 [38.1]	2.01 lbs/ft				
		mm		76.2												2.99 kgs/m				

### How to Specify:

**For extrusion only:** Order by part number and –\* (length in inches) i.e. AP1010-24.

**For end caps:** Please add "EC" to the extrusion model number – i.e. AP1010-EC, AP1515-EC etc.

**For complete End-of-Arm Tool device and appropriate hardware:** Consult factory.

# Push-to-Connect Fittings



*Push-to-Connect Male Elbow Fitting connects to Vacuum Cup Mount/Manifold Block on Adjustable Universal Bracket*

## Features/Benefits

- Ready to use, easy to install
- Compact and lightweight
- Fast assembly, disassembly and reassembly – minimal downtime
- No tools required
- No flow restrictions – quick cycle time
- Elbow or elbow angle for tight spaces
- Durable – all metal, solid brass nickel-plated construction
- Tubing sizes: 1/8" to 1/2" OD
- Male or female NPT threads (1/8" to 1/2" NPT)

Push-to-Connect (PTC) fittings are a robotic, End-of-Arm tooling component that connects all Vaccon vacuum pumps, cups, and spring levelers to each other or tubing.

Vaccon provides complete End-of-Arm tooling devices that can be ordered pre-assembled and tested at the factory or shipped in component format for on-site assembly.

## Specifications:

<b>Fitting Material:</b>	Brass, nickel plated, PTFE seal ring, Buna-N o-ring
<b>Operating Pressure:</b>	0-250 psi
<b>Operating Temperature:</b>	0° F to 160° F [-18° C to 71° C]
<b>Vacuum rating:</b>	29"Hg
<b>Fluid:</b>	Compressed air

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For more information or technical assistance, please call 508-358-7200 or 800-848-8788 or email [engineering@vaccon.com](mailto:engineering@vaccon.com)

## PTC Fittings: Male Straight



Model #	Male Straight Fittings	
VSLF-02-32MS	Straight PTC fitting 1/8" OD x 10-32 NPT Male	Connect to VSL1 Spring Levers
VSLF-04-32MS	Straight PTC fitting 1/4" OD x 10-32 NPT Male	
VMPF-04-14MS	Straight PTC fitting 1/4" OD x 1/4" NPT Male	Connect to Vaccon vacuum pumps, and vacuum cup mount/manifold blocks
VMPF-04-38MS	Straight PTC fitting 1/4" OD x 3/8" NPT Male	
VMPF-06-14MS	Straight PTC fitting 3/8" OD x 1/4" NPT Male	
VMPF-06-38MS	Straight PTC fitting 3/8" OD x 3/8" NPT Male	
VMPF-06-12MS	Straight PTC fitting 3/8" OD x 1/2" NPT Male	
VMPF-08-38MS	Straight PTC fitting 1/2" OD x 3/8" NPT Male	
VMPF-08-12MS	Straight PTC fitting 1/2" OD x 1/2" NPT Male	

## PTC Fittings: Male Elbow



Model #	Male Elbow Fittings	
VSLF-04-32ME	Elbow PTC fitting 1/4" OD x 10-32 Male	Connect to VSL1 Spring Levers
VMPF-04-18ME	Elbow PTC fitting 1/4" OD x 1/8" NPT Male	Connect to Vaccon vacuum pumps, spring levelers and vacuum cup mount/manifold blocks
VMPF-04-14ME	Elbow PTC fitting 1/4" OD x 1/4" NPT Male	
VMPF-06-14ME	Elbow PTC fitting 3/8" OD x 1/4" NPT Male	
VMPF-06-38ME	Elbow PTC fitting 3/8" OD x 3/8" NPT Male	
VMPF-06-12ME	Elbow PTC fitting 3/8" OD x 1/2" NPT Male	
VMPF-08-38ME	Elbow PTC fitting 1/2" OD x 3/8" NPT Male	
VMPF-08-12ME	Elbow PTC fitting 1/2" OD x 1/2" NPT Male	

## PTC Fittings: Female Straight



Model #	Female Straight Fittings	
VSLF-02-18FS	Straight PTC fitting 1/8" OD x 1/8" NPT Female	Connect to VSL2 Spring Levers
VSLF-04-18FS	Straight PTC fitting 1/4" OD x 1/8" NPT Female	
VSLF-06-18FS	Straight PTC fitting 3/8" OD x 1/8" NPT Female	
VSLF-04-14FS	Straight PTC fitting 1/4" OD x 1/4" NPT Female	Connect to VSL3 Spring Levers
VSLF-06-14FS	Straight PTC fitting 3/8" OD x 1/4" NPT Female	
VSLF-06-38FS	Straight PTC fitting 3/8" OD x 3/8" NPT Female	

## PTC Fittings: Female Elbow



Model #	Female Elbow Fittings	
VSLF-04-18FE	Elbow PTC fitting 1/8" OD x 1/8" NPT Female	Connect to VSL2 Spring Levers
VSLF-04-14FE	Elbow PTC fitting 1/4" OD x 1/4" NPT Female	Connect to VSL3 Spring Levers
VSLF-06-14FE	Elbow PTC fitting 3/8" OD x 1/4" NPT Female	
VSLF-08-38FE	Elbow PTC fitting 1/2" OD x 3/8" NPT Female	