Section 7
Special Applications

Pneumatic Profiles

Application

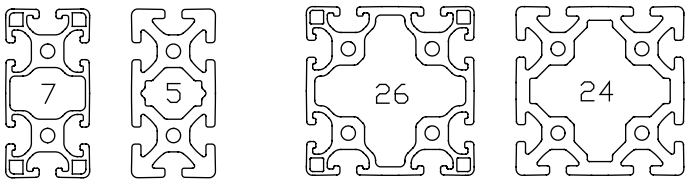
The cavity within a profile can be used to distribute compressed air as well as provide structural foundation for the system application. Connections may be made at any location using the proper accessory component and machining. Many of the profile configurations also provide for multiple channels allowing for the complete distribution of compressed air in complex systems.

Available Profiles

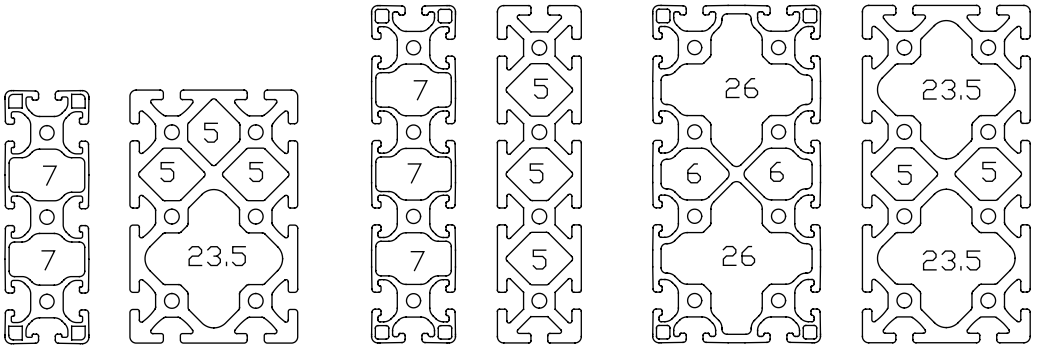
Part #	Description	Available Air Channels	Structural Properties					Weight [kg/m]	Page
			I_x [cm^4]	I_y [cm^4]	W_x [cm^4]	W_y [cm^4]	Section [cm^2]		
10-080	Profile 80X40 Standard	1	71.79	17.23	17.99	8.62	11.53	3.18	26
11-080	Profile 80X40 Heavy	1	102.00	26.73	25.50	13.37	16.59	4.58	26
10-088	Profile 80X80 Standard	1	138.30	138.30	34.58	34.58	20.17	5.45	27
11-088	Profile 80X80 Heavy	1	185.20	185.20	46.30	46.30	26.01	7.02	27
10-120	Profile 120X40 Standard	2	220.54	24.22	36.76	12.11	16.12	4.35	28
11-122	Profile 120x80 Heavy	4	575.07	274.46	92.75	68.61	40.08	10.82	27
10-164	Profile 160X40 Standard	3	517.25	33.13	64.65	16.56	21.48	5.80	28
11-140	Profile 160X40 Heavy	3	749.51	54.80	93.60	27.40	32.30	8.72	28
10-160	Profile 160X80 Standard	4	922.50	271.10	115.30	67.80	38.10	10.29	29
11-160	Profile 160X80 Heavy	2	1215.79	357.51	151.97	89.38	51.72	13.96	29

Cavity areas shown are in cm^2 (1 cm^2 = 0.155 in^2)

To calculate volume, multiply area by the profile length.



10-080 **11-080** **10-088** **11-088**



10-120 **11-122** **10-164** **11-140** **10-160** **11-160**

Pressure Ratings and Leak Test

Safe Maximum Pressure Rating

1725 kPa (250 psi)

Supporting Pressure Rating Data

Procedures

Stage 1

A sample assembly was connected to a nitrogen cylinder. Pressure of 690 kPA (100psi) was applied. The holding button head screws were checked and tightened to a torque of 13.6 Nm (10 ft-lbs). Pressure was increased in stages to 6900 kPa (1000 psi) with continuous inspection for leaks. This was duplicated for each profile.

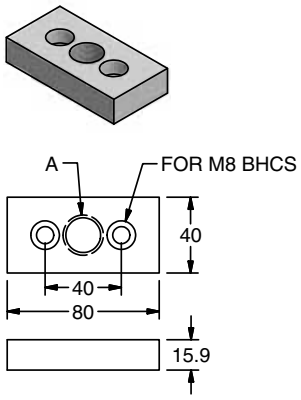
Stage 2

A sample was filled with water and pressure was applied in the same manner as in stage 1. Pressure was increased until a gaskets leaked or profiles burst. This was duplicated for each profile.

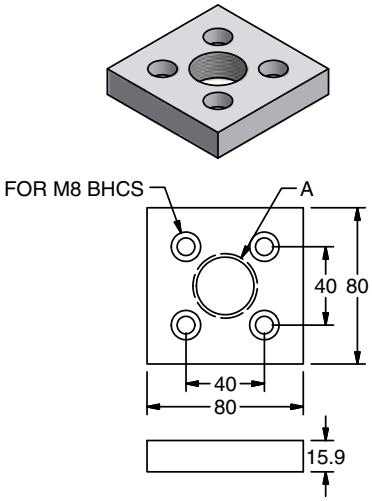
Sample Testing Results

Profile	Pressure Medium	Pressure kPA (psi)	Observation
10-080	Nitrogen	6,900 (1000)	No Leakage
	Water	9,655 (1400)	Profile Burst
10-088	Nitrogen	6,900 (1000)	No Leakage
	Water	9,655 (1400)	Profile Burst
11-080	Nitrogen	6,900 (1000)	No Leakage
	Water	27,580 (4000)	No Leakage
11-088	Nitrogen	6,900 (1000)	No Leakage
	Water	10,345 (1500)	Gasket Leaked

Connecting Plates



21-040zX



21-043zX

Application

Connecting plates provide threaded NPT ports and align with air chambers within properly machined profiles. Both styles are designed to be attached to the end face of the profile. The 80x80 plate can also be attached to the T-slotted side of a profile with an 80mm dimension. All plates include the appropriate sealing gasket. These plates can be used to seal end of profile by using appropriate plug.

Technical Data

Plate: Aluminum, Anodized

Seal: Neoprene or Buna

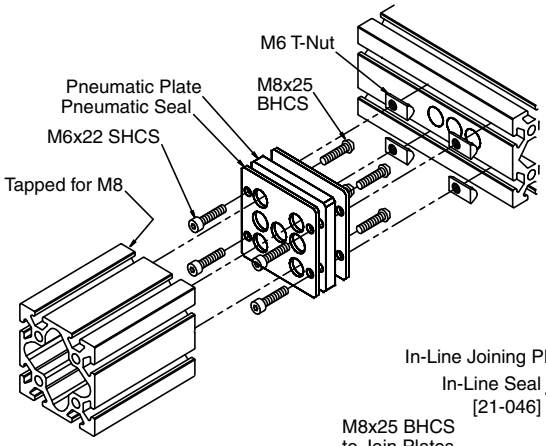
Recommended Fasteners

Mounting	Hardware	21-040zX	21-043zX
End Face Mount	Screw	(2) 24-125-8	(4) 24-125-8
Side Mount	Screw	—	(4) 24-118-8
	T-Nut	—	(4) 20-058

Ordering Information

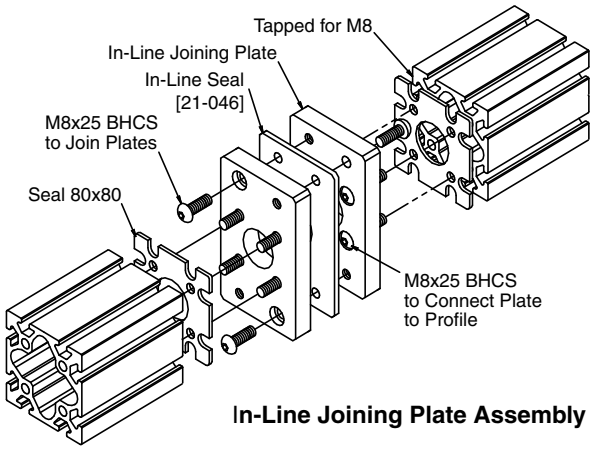
Description	A	Unit	Weight	Part #
Connector Plate 80x40	1/8"-27 NPT	1 Set	0.11 kg	21-040z1
	1/4"-18 NPT	1 Set	0.11 kg	21-040z2
	3/8"-18 NPT	1 Set	0.11 kg	21-040z4
	1/4" BSPP	1 Set	0.11 kg	21-040z6
	1/2"-14 NPT	1 Set	0.11 kg	21-040z8
Connector Plate 80x80	1/2"-14 NPT	1 Set	0.23 kg	21-043z2
	1/2" BSPP	1 Set	0.23 kg	21-043z6
	1"-11.5 NPT	1 Set	0.23 kg	21-043z8

Joining Plates

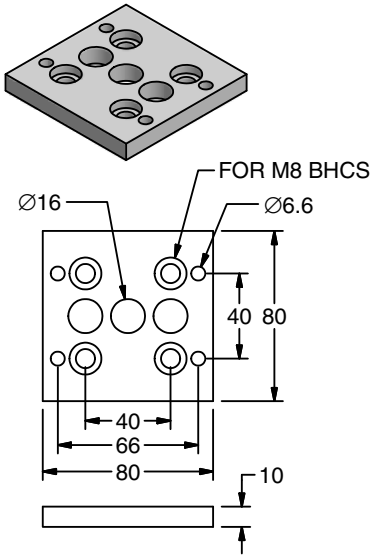


T-Joining Plate Assembly

Assembly note for 21-044: M6 SHCS must be inserted head first into T-slot of 80x80 profile BEFORE attachment of plate to end.



In-Line Joining Plate Assembly



21-044

Application

Joining Plates are used to join two profiles together while extending the compressed air cavity across the joint. These plates are available in in-line as well as "T" configurations. In-Line connections couple the end face of two profiles into a continuous straight section. "T" plates allow a profile to extend at a 90^{O} angle. All Joining Plates come with the necessary seals for the intended application.

Technical Data

21-044: Steel, Galvanized

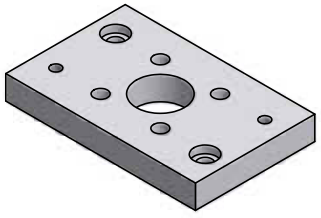
21-045: Aluminum, Clear Anodized

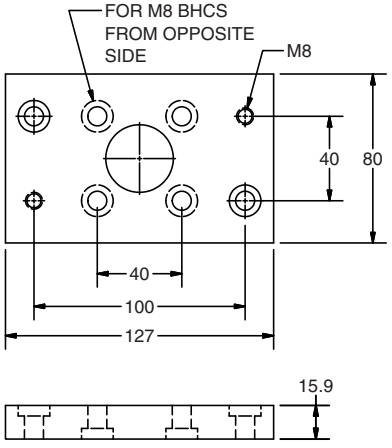
Recommended Fasteners

Mounting	Screws	T-Nuts
"T" Connection (21-044)	(4) 24-125-8 (4) 24-322-6	(4) 20-058
In-Line (21-045)	(12) 24-125-8	—

Ordering Information

Description	Unit	Weight	Part #
T-Joining Plate	1 Set	0.42 kg	21-044
In-Line Joining Plate	1 Set	1.09 kg	21-045

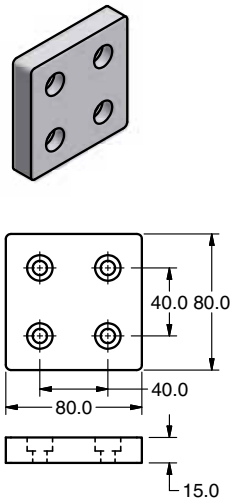




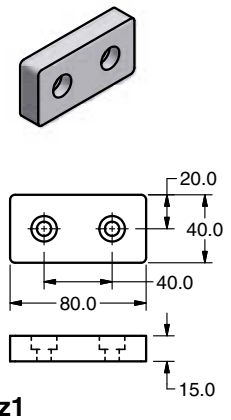
21-045

Parker Hannifin Corporation
Industrial Profile Systems
Wadsworth, Ohio USA

Blank Plates



21-8000z1



21-4000z1

Application

Used for closing 80x40 and 80x80 profile ends.

Technical Data

Aluminum, Clear Anodized

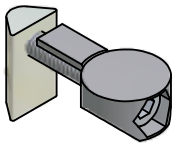
Recommended Fasteners (Order Separately)

Screws: 24-125-8

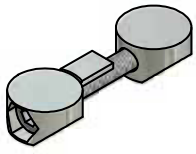
Ordering Information

Description	Unit	Weight	Part #
Blank Plate 80x40	Each	0.1 kg	21-4000z1
Blank Plate 80x80	Each	0.2 kg	21-8000z1

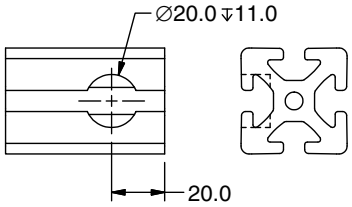
Pneumatic Fasteners



20-011



20-012



Application

Two styles for connecting 80x40 or larger profiles together when used as compressed air piping. Universal is used on 90° connections. Butt-Fastening is for end to end connections

Technical Data

Zinc Cast, Galvanized

Ordering Information

Description	Unit	Weight	Part #
Pneumatic Universal Fastening Set	Each	36 g	20-011
Butt-Fastening Set M6	Each	45 g	20-012

Pneumatic Seals

Application

Replacement seals for pneumatic connections.

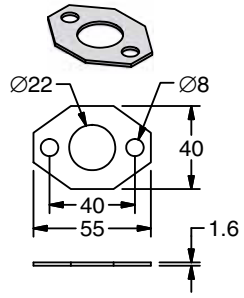
Technical Data

Neoprene or Buna, Black

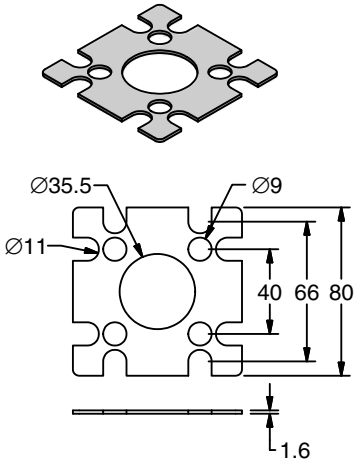
Note: Seals should be retightened after 24 hours of initial installation.

Ordering Information

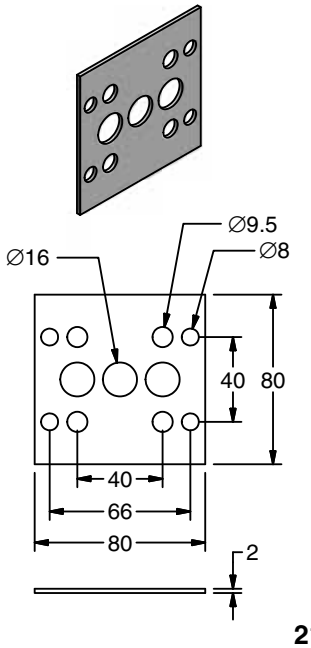
Description	Unit	Part #
Seal 80x40	Each	21-041
Seal 80x80	Each	21-042
Seal 80x80 T-Joining Plate	Each	21-144
Seal 80x80 In-Line Plate	Each	21-046



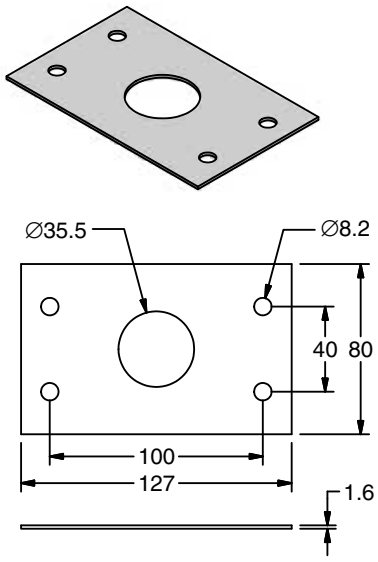
21-041



21-042

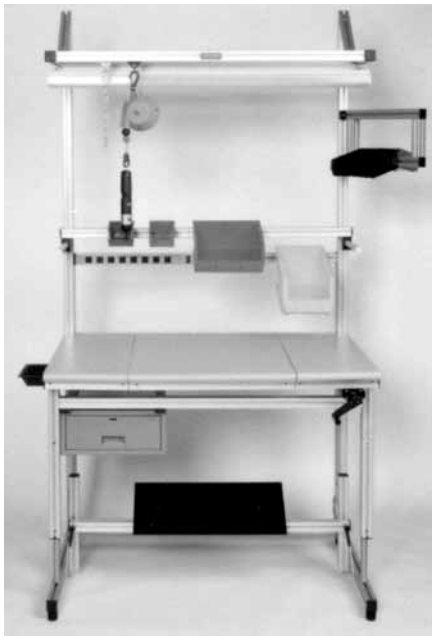


21-144



21-046

Complete Workstations

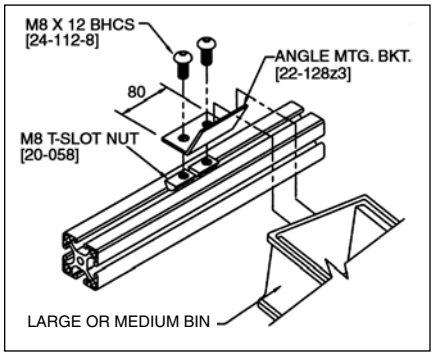


Modular designed workstations by IPS offer a wide range of options and accessory combinations. All structural profiles used in our workstations are made of high strength aluminum, combined with our unique fastening system which provides exceptional flexibility in design for a wide range of applications. All profiles are clear anodized with several available in black. Special colors and coatings are available on request.

T-Slots provide easy attachment points for accessories. Closed face profiles are also available for applications requiring aesthetically clean looks or reduction in the potential for dust and contamination.

All workstations can be customized for your exact needs. From the heaviest assembly tables to ergonomic LEAN work cells, we have the products and expertise to meet your specifications.

Parts Bin



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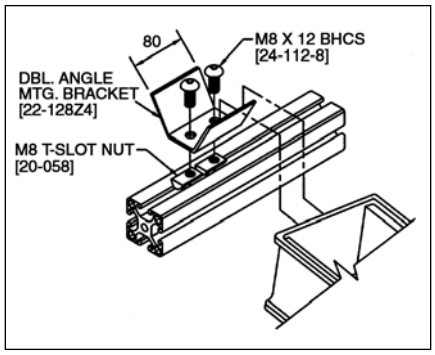

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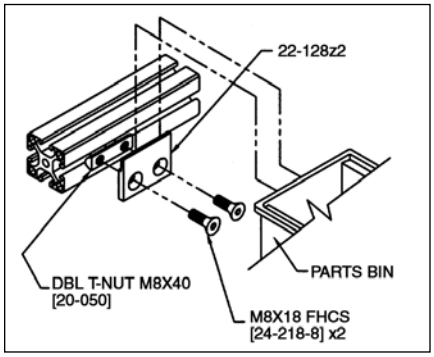

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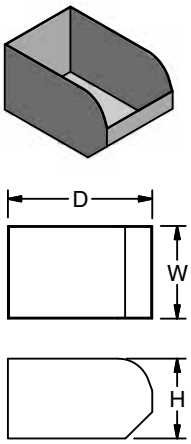


22-126 thru 22-129

Application

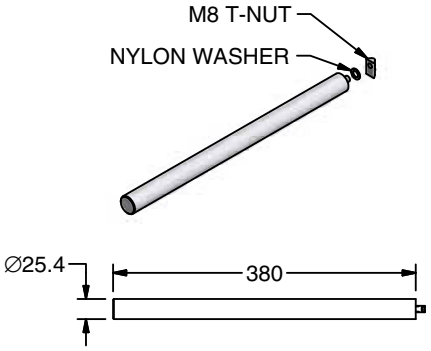
Bins for small to large parts and equipment on work benches, work stations, parts racks, etc. Minimizes parts handling.

Order all hardware separately

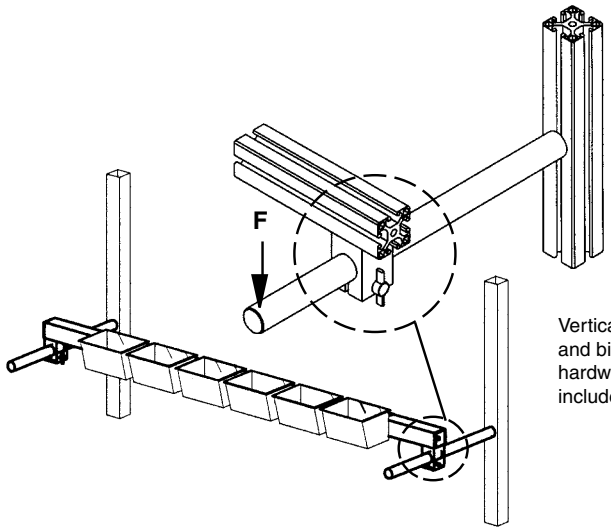
Ordering Information

Description	Dimensions			Mounting Hardware	Material	Weight (kg)	Part #
	W	D	H				
Parts Bins	140	280	127	See fig. 1-3 for mounting choices	Heavy duty polypropylene, red	0.67	**22-126**
	280	280	127	See fig. 1-3 for mounting choices		1.24	**22-127**
	105	135	76	See fig. 1-3 for mounting choices		0.08	**22-128**
	105	187	76	See fig. 1-3 for mounting choices		0.11	**22-129**
Flat Mounting Bracket	60	6.4	25.4	Not included (See fig. 3)	Al, anodized	0.02	**22-128Z2**
Angled Mounting Bracket	80	47	30	Not included (See fig. 1)	Al, anodized	0.08	**22-128Z3**
Dbl Ang. Mounting Bracket	80	74	30	Not included (See fig. 2)	Al, anodized	0.07	**22-128Z4**

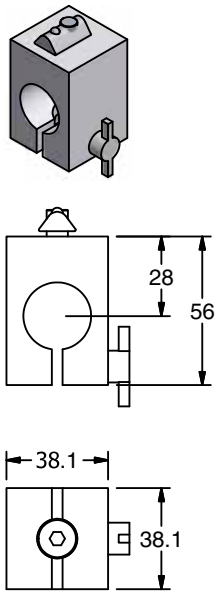
Adjustable Bin Mounting Components



22-130



Vertical posts, bins and bin mounting hardware not included.



22-134

Application

Adjustable bin mounting system for 40 Series work stations and assembly lines. Allows shelf adjustment in two directions: up-down and in-out. 40 series profile can be used as brace for bins at any required horizontal length.

Bins and bin mounting hardware must be ordered separately.

Technical Data

Slide Rail: Al, clear anodized

Slide Collar: Delrin, black

Includes all hardware as shown.

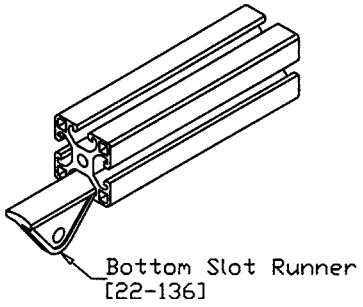
Max. load F = 60 N (13.5 lbs)

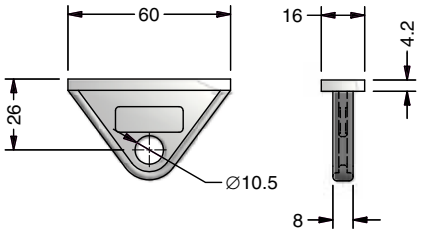
Mounting Brace includes: profile and two end caps.

Ordering Information

Description	Unit	Weight	Part #
Bin Mounting Slide Rail (2 req.)	1 set	0.53 kg	22-130
Slide Collar (2 req.)	1 set	81 g	22-134

Tool Runner





22-136

Application

To suspend and postion tools at work stations. Runner slides in 40 series profile.

Technical Data

Runner: glass-filled nylon, black

Max. load 100 N (23 lbs)

Runner Stop can be created by using:
(1) Flat Point Set Screw [24-516-5F]
(1) M5 Z-Nut [20-035]

Ordering Information

Description	Unit	Weight	Part #
Runner	1 pc	12 g	22-136

Drawer

Technical Data

Grey painted steel construction with ball bearing slides and padlock attachment. Stackable.

Order all hardware separately

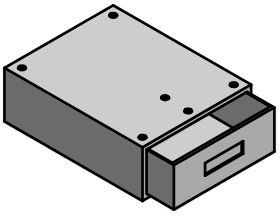
For mounting to 40 series profile:

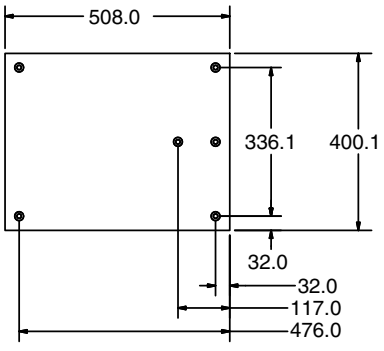
Screws	24-118-8
T-nuts	20-058
Flat Washers	24-700-8

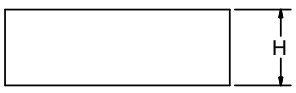
Ordering Information

Description (W x D x H)	Part #
Drawer 400 x 508 x 172mm	22-121
Drawer 400 x 508 x 343mm	22-122

* Contact factory for additional details



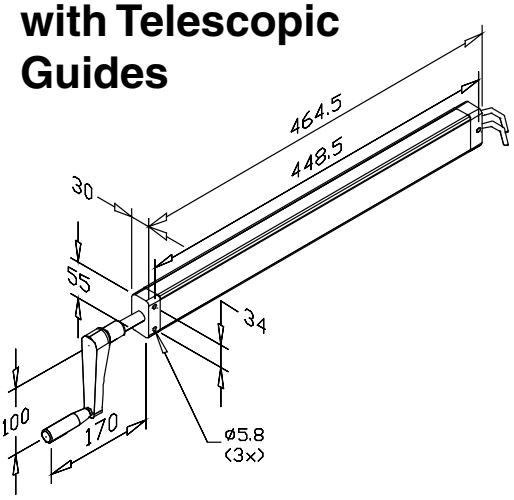


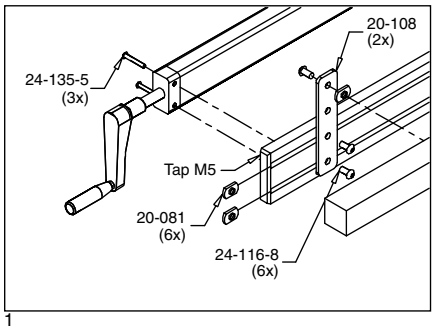


22-121

Parker Hannifin Corporation
Industrial Profile Systems
Wadsworth, Ohio USA

2-Cylinder Lift System with Telescopic Guides





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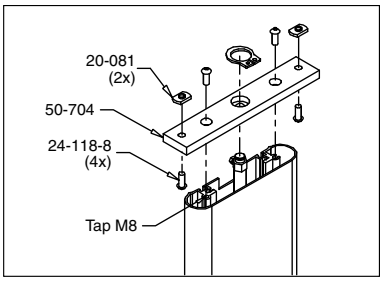

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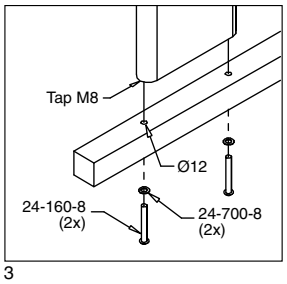

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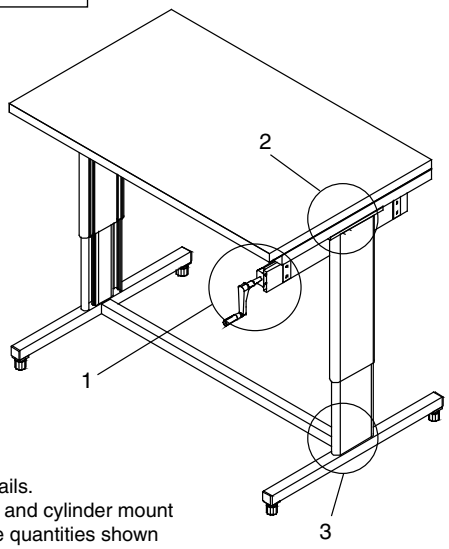
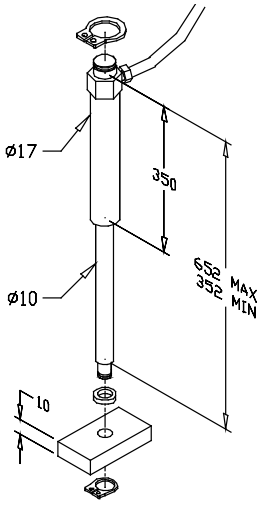
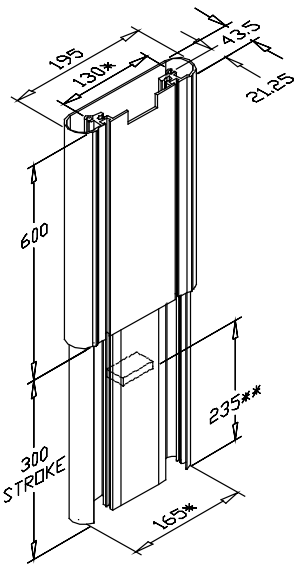


1 Pump mount details.
2,3 Telescopic guide and cylinder mount details (hardware quantities shown per side).



50-702



* Distance between mounting holes
** Cylinder mounting distance

50-703

Application

2-Cylinder Lift System together with Telescopic Guides create a compact versatile height adjustment mechanism. The system consists of two fluid-drive cylinders connected by flexible tubing to a manual pump with a unique “fold-away” hand crank. Due to cylinder internal construction, use of telescopic guides is required. Each guide has four mounting holes (two on top, two on bottom) that can be tapped for M8 or 5/16”-18.

Technical Data

Maximum lift capacity 2224 N (500lbs.)

Adjustment range 300mm

Cylinders are single acting. External force of approx. 67 N (15 lbs.) is required for return stroke.

Tubing length: one at 8’ and one at 10’ section.

Minimum bending radius for tubing 40mm.

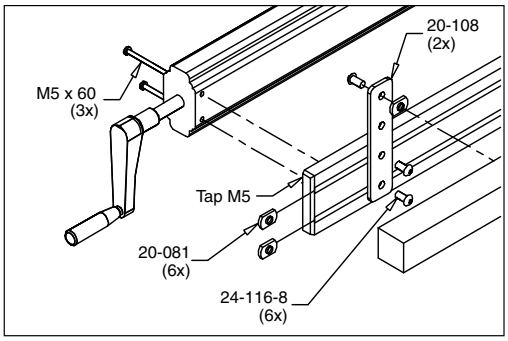
Operating temperature 0 - 115°F.

Order mounting hardware for pump and telescopic guides separately (see application illustration)**.**

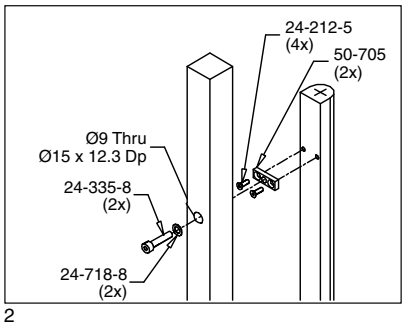
Ordering Information

Description	Unit	Weight	Part #
2-Cylinder Lift System	1 set		50-702
Telescopic Guide (2 required)	1 pc	4.3 kg	50-703
Mounting Plate for 50-703	1 pc	6 g	50-704

4-Cylinder Lift System

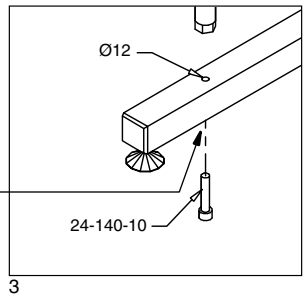


1

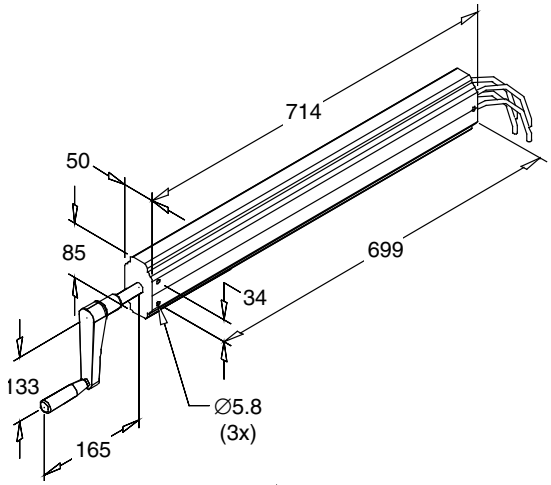


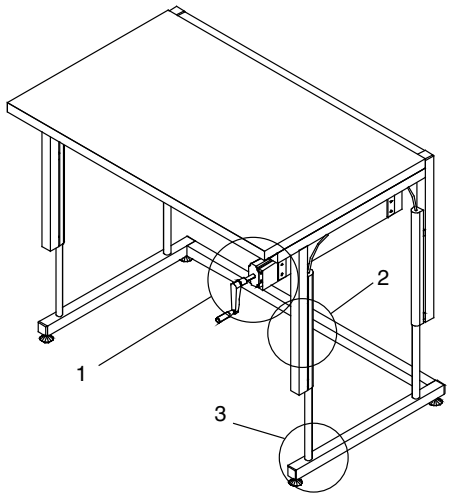
2

1 Pump mount details.
2,3 Cylinder mount details (hardware quantities shown per cylinder).



3





Application

4-Cylinder Lift System is a compact versatile height adjustment mechanism. It consists of four fluid-drive cylinders connected by flexible tubing to a manual pump with a unique “fold-away” hand crank. The cylinders are completely self-contained, requiring no external support structure.

Each cylinder has five pre-tapped mounting holes: four on a flat side (M5x7mm deep) and one at the bottom (M10x12mm deep).

Technical Data

Maximum lift capacity 3336 N (750lbs.)

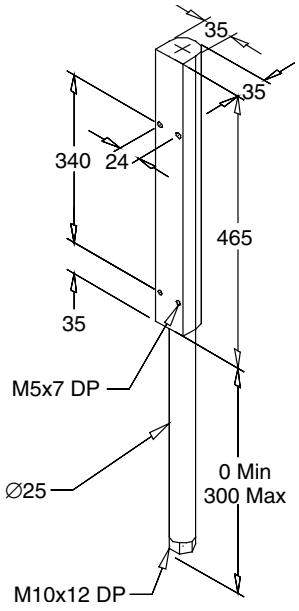
Adjustment range 300mm

Cylinders are single acting. External force of approx. 89 N (20 lbs.) is required for return stroke.

Tubing length: two at 8’ and two at 10’ section.

Minimum bending radius for tubing 40mm.

Operating temperature 0 - 115°F.



Order all mounting hardware separately (see application sample 1-3).

Ordering Information

Description	Unit	Weight	Part #
4-Cylinder Lift System	1 set	11.7 kg	50-700
Mounting Plate for 50-700 (2 per cylinder)	1 pc	6 g	50-705

Parker Hannifin Corporation
Industrial Profile Systems
Wadsworth, Ohio USA

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