

# Pneumatic Applications

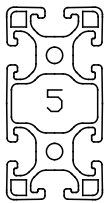
## Pneumatic Profiles

### 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.

Cavity areas shown are in  $\text{cm}^2$  ( $1 \text{ cm}^2 = 0.155 \text{ in}^2$ )

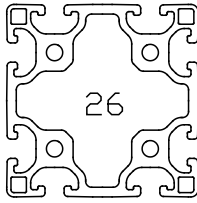
To calculate volume, multiply area by the profile length.



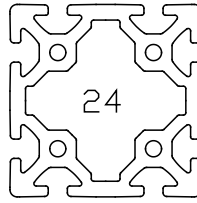
10-080



11-080



10-088



11-088

### Available Profiles

Part #	Description	Available Air Channels
10-080	Profile 80X40 Standard	1
11-080	Profile 80X40 Heavy	1
10-088	Profile 80X80 Standard	1
11-088	Profile 80X80 Heavy	1

### 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

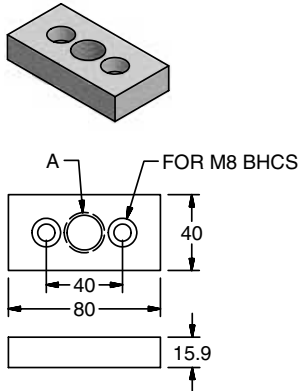
A sample was filled with water and pressure was applied in the same manner as in stage 1. Pressure was increased until a gaskets leaked or profiles burst. This was duplicated for each profile.

### 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



#### Application

Connecting plates provide threaded 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

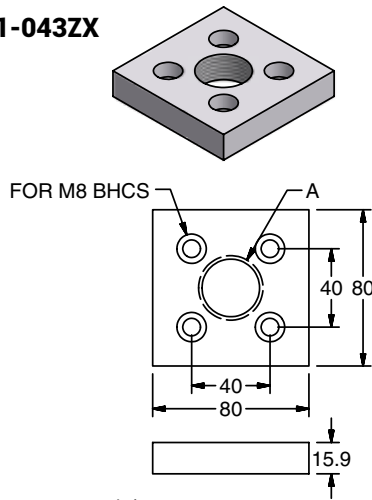
Plate: Aluminum, Anodized

Seal: Neoprene or Buna

#### Recommended Fasteners (Order Separately)

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

### 21-043ZX



X = port type and size

#### Ordering Information

Description	A	Unit	Weight (g)	Part #
Connector Plate 40x80	1/8"-27 NPT	Set	110	21-040Z1
	1/4"-18 NPT	Set	110	21-040Z2
	3/8"-18 NPT	Set	110	21-040Z4
	1/4" BSPP	Set	110	21-040Z6
	1/2"-14 NPT	Set	110	21-040Z8
Connector Plate 80x80	1/2"-14 NPT	Set	230	21-043Z2
	1/2" BSPP	Set	230	21-043Z6
	1"-11.5 NPT	Set	230	21-043Z8

# Pneumatic Components

## Blank Plates

### Application

Used for closing 40x80 and 80x80 profile ends.

### Technical Data

Aluminum, Clear Anodized

### Recommended Fasteners

#### (Order Separately)

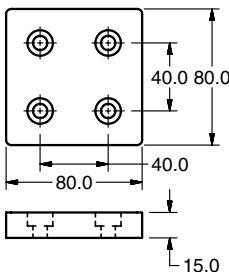
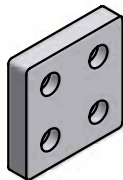
Screws: 24-125-8

Gasket:

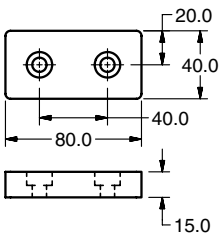
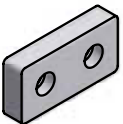
21-041 for 21-4000Z1

21-042 for 21-8000Z1

21-8000Z1



21-4000Z1



### Ordering Information

Description	Unit	Weight (g)	Part #
Blank Plate 40x80	Each	100	21-4000Z1
Blank Plate 80x80	Each	200	21-8000Z1

## Pneumatic Fasteners

### Application

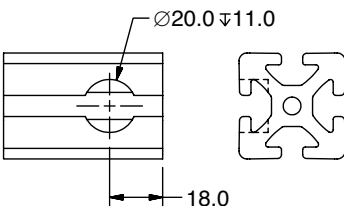
Two styles for connecting 40x80 or larger profiles together when used as compressed air piping. Universal is used on 90° connections. Butt-Fastening is for end to end connections

### Technical Data

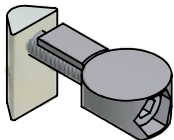
Zinc Cast, Galvanized

### Ordering Information

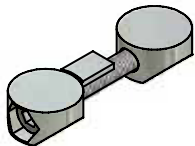
Description	Unit	Weight (g)	Part #
Pneumatic Universal Fastening Set	Each	36	20-005
Butt-Fastening Set M6	Each	45	20-012



20-005

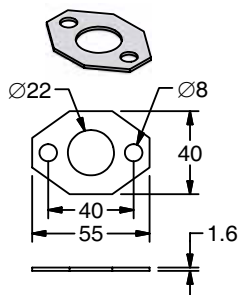


20-012



Special

## Pneumatic Seals



**21-041**

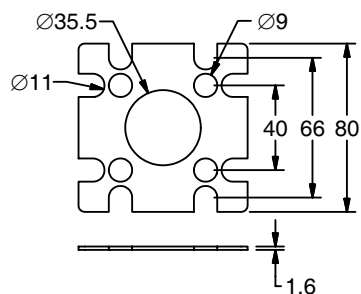
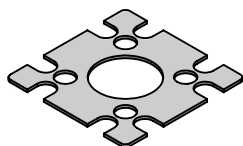
### Application

Replacement seals for pneumatic connections.

### Technical Data

Neoprene or Buna, Black

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



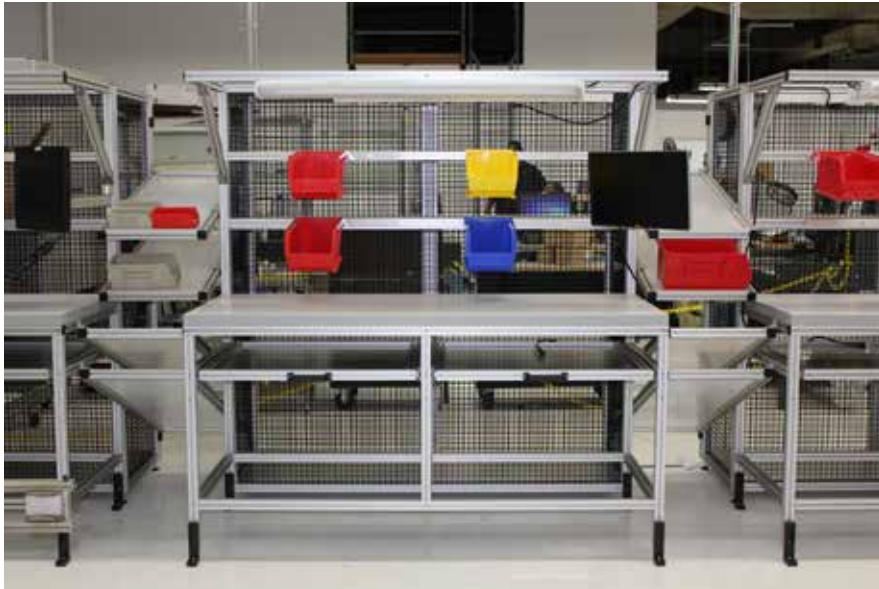
**21-042**

### Ordering Information

Description	Unit	Weight (g)	Part #
Seal 40x80	Each	2	21-041
Seal 80x80	Each	6	21-042

# Workstations

## 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.



Special

## Parts Bin

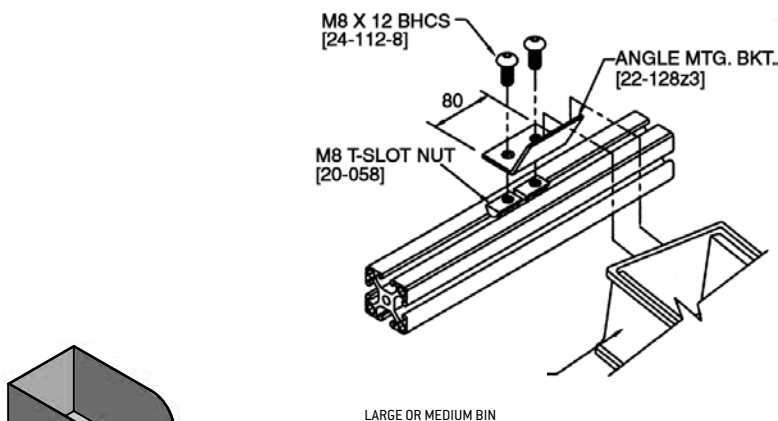


Figure 1

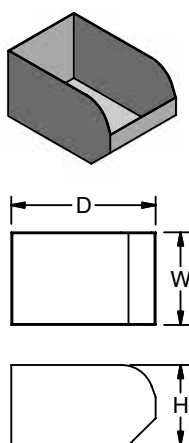


Figure 2

### Application

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

Order all fasteners separately

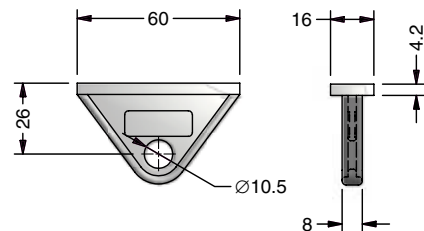
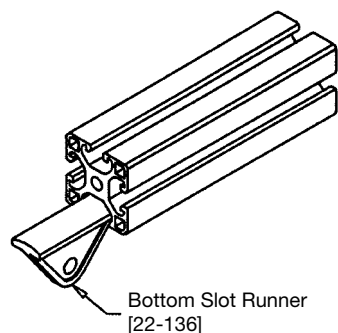
22-126 thru 22-129

### Ordering Information

Description	Dimensions			Mounting Hardware	Material	Weight (g)	Part #
	W	D	H				
Parts Bins	140	280	127	See fig. 1-2 for mounting choices	Heavy Duty Polypropylene, Red	670	22-126
	280	280	127	See fig. 1-2 for mounting choices		1240	22-127
	105	187	76	See fig. 1-2 for mounting choices		110	22-129
Flat Mounting Bracket	60	6.4	25.4	Not included [See fig. 2]	Aluminum, Anodized	20	22-128Z2
Angled Mounting Bracket	80	47	30	Not included [See fig. 1]	Aluminum, Anodized	80	22-128Z3

# Workstations

## Tool Runner



**22-136**

### Application

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

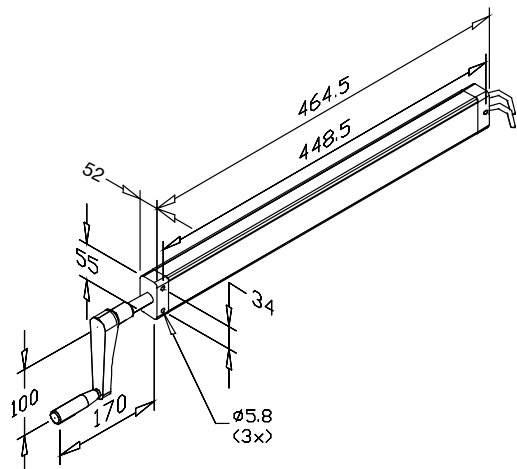
### Technical Data

Runner: Glass-Filled Nylon, Black  
Max Load: 10 kg (23 lbs)  
Runner Stop can be created by using:  
[1] Flat Point Set Screw [24-516-5F]  
[1] M5 Z-Nut [20-035]

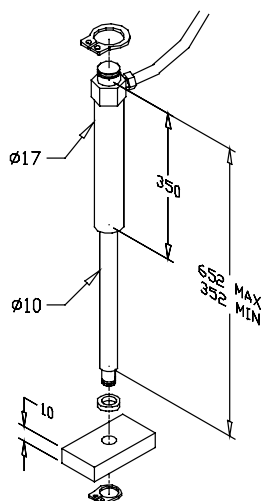
### Ordering Information

Description	Unit	Weight (g)	Part #
Runner	Each	12	22-136

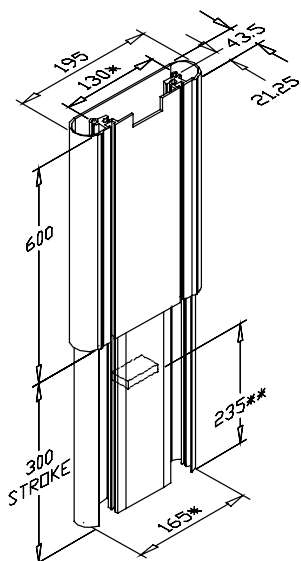
## 2-Cylinder Lift System with Telescopic Guides



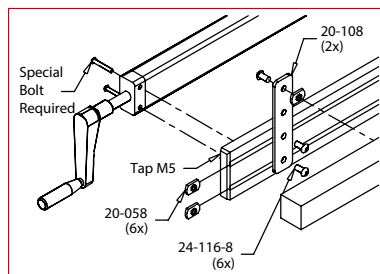
**50-702**



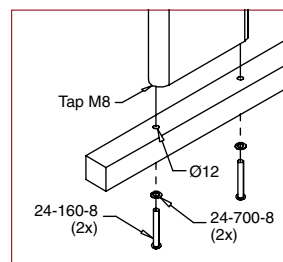
**50-703**



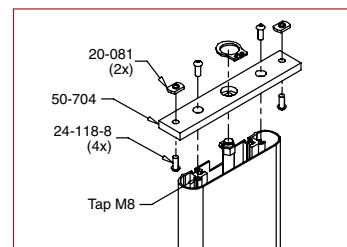
\* Distance between mounting holes  
\*\* Cylinder mounting distance



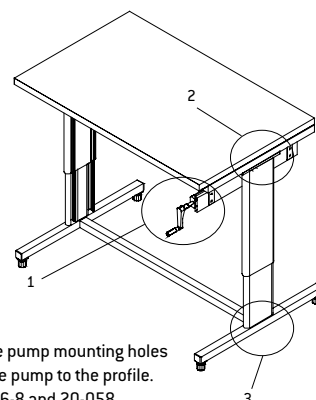
1



3



2



- 1 Mount pump to profile 10-081. Drill and tap the 10-081 M5 where the pump mounting holes match. Use appropriate bolt based off pump dimensions to mount the pump to the profile. Mount the 10-081 to the frame with 2X 20-108 flat plate using 24-116-8 and 20-058.
- 2 Mounting the top of the 50-703 to the frame. First tap the two bosses at the top of 50-703 M8. Use 24-118-8 to mount 50-704 to 50-703. Use 24-118-8 and 20-058 to mount to frame.
- 3 Mounting the bottom of the 50-703 to the frame. First tap the two bosses at the bottom of 50-703 M8. Drill and counterbore through the frame profile to match the M8 tapped hole on 50-703. Use 24-160-8 and 24-707-8 to mount to frame.

The mounting information above is only one example of how the lift system can be mounted. **Order fasteners separately.**

### 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 227 kg (500lbs.)

Adjustment range 300mm

Cylinders are single acting. External force of approx. 7 kg (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.

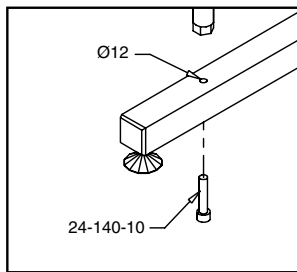
### Ordering Information

Description	Unit	Weight (g)	Part #
2-Cylinder Lift System	Set	4062	50-702
Telescopic Guide (2 required)	Each	430	50-703
Mounting Plate for 50-703	Each	6	50-704

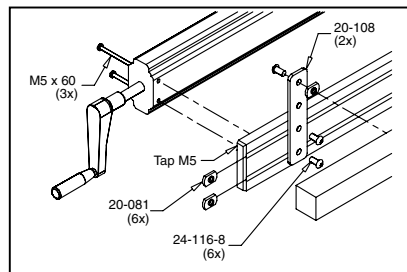


# Lift Systems

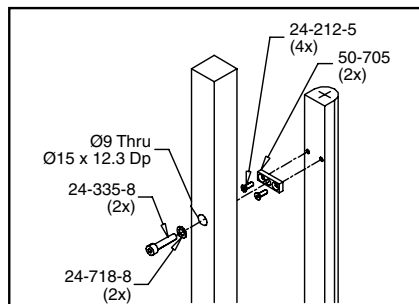
## 4-Cylinder Lift System



1



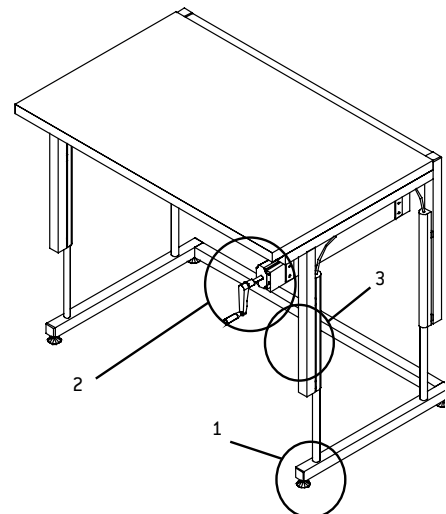
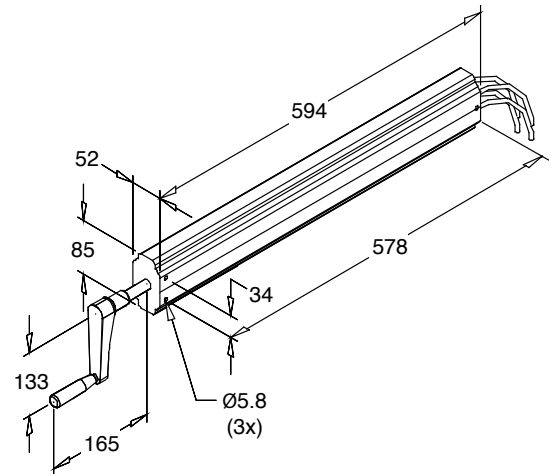
2



3

- 1 Mount pump to profile 10-081. Drill and tap the 10-081 M5 where the pump mounting holes match. Use appropriate bolt based off pump dimensions to mount pump to profile. Mount the 10-081 to the frame with 2X 20-108 flat plates using 24-116-8 and 20-058.
- 2 Mounting the cylinders of the 50-700 to the frame. First drill and counterbore a hole through the frame profile to match up to the mounting holes on the cylinder. Attach the 50-705 to the cylinder with 24-212-5. Then mount the attached 50-705 frame profile with 24-335-8 and 24-718-8 through the previously drilled hole.
- 3 Mount the rod end of the cylinder to the frame by drill and counterboring a hole through and using a 24-140-10.

The mounting information above is only one example of how the lift system can be mounted. For example, a leveling foot can be placed in the rod end of the cylinder rather than attaching to the frame. **Order fasteners separately.**



### 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 340 kg (750lbs.)

Adjustment range 300mm

Cylinders are single acting. External force of approx. 9 kg (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.

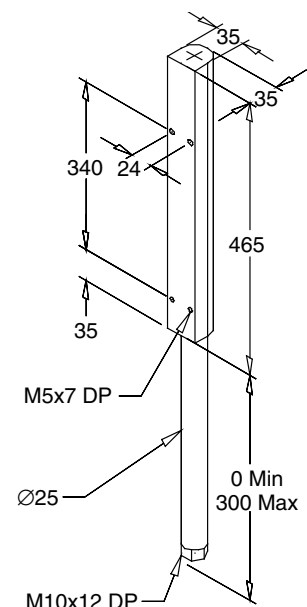
### Ordering Information

#### Description

4-Cylinder Lift System

Mounting Plate for 50-700 (2 per cylinder)

Unit	Weight [g]	Part #
Set	11700	50-700
Each	6	50-705



Special

## Section 8 - Linear Applications

<b>Double Flange Slide Blocks</b> 28 and 1" Series 40 and 1.5" Series	200-201 204-205	
<b>Side Flange Slide Blocks</b> 28 and 1" Series 40 and 1.5" Series	202-203 206-207	
<b>Slide Pads &amp; Shims</b>	208	
<b>Slide Block Accessories</b> Clamp Accessories Ratchet Lever Clamp Machining	209 209 210-211	
<b>Roller Track</b>	212	
<b>Roller Components</b>	213-229	

# Slide Blocks

## Slide Blocks



### Application

Profile Slide Blocks are a versatile, cost efficient concept to build a multitude of adjustable slides and movable rail systems. UHMW slide pads engage directly into the T-slots. Shims provide adjustment for a variety of assembly tolerances. Slide blocks are designed for a compression load only.

The slide blocks attach to any surface with M8 button head screws. The block slides along a profile when the profile is stationary, or a profile slides in the block, when the block is mounted. Clamping mechanism can be added to lock slide block in place.

