

**SYSPEND 281-MAX SUSPENSION SYSTEM, TYPE 12**



**INDUSTRY STANDARDS**

*Maintains NEMA Type 12 and IEC IP55 enclosure rating when properly installed per nVent HOFFMAN instructions.*

**APPLICATION**

Variability in system configuration, advanced design and ease of assembly are key requirements when specifying an enclosure suspension system. The Syspend 281-Max features a modern industrial design, excellent ergonomics and multiple component combinations for an innovative system solution on a modular platform. At 3.3 ft. (1 m) the system supports up to 281 lb. (127.7 kg). Recommended for use with Syspend Aluminum HMI and Concept HMI enclosures.

**FEATURES**

- System supports up to 281 lb. and allows operators to easily move controls into and out of position
- Multiple modular components available to provide ergonomic, fatigue-free operation
- Clean lines and smooth transitions between tubes and system components provide attractive aesthetics and allow for ease of cleaning
- Tubing provides structural integrity and acts as equipment wiring conduit

- Vertical motion pedestal tubes provide versatile, height-adjustable solutions for pedestal mounting
- Secure attachment with sixfold positive connection between tubes and components along with recessed mounting areas in components; no additional safety drilling required
- Secure connections and easy adjustment of system alignment using tube setscrews, coated with LOCTITE, that seal threaded holes
- System design allows for user friendly readjustment at any time without disassembling the complete system
- Cable access covers available on all components
- Multiple tube lengths offer system design versatility
- Heavy-duty bearings in all movable joints for convenient, smooth operation and enhanced durability to withstand stresses of repeated use
- Variable torque adjustment available for all rotating components; general adjustment at the bearing with locking handle adjustment on enclosure couplings

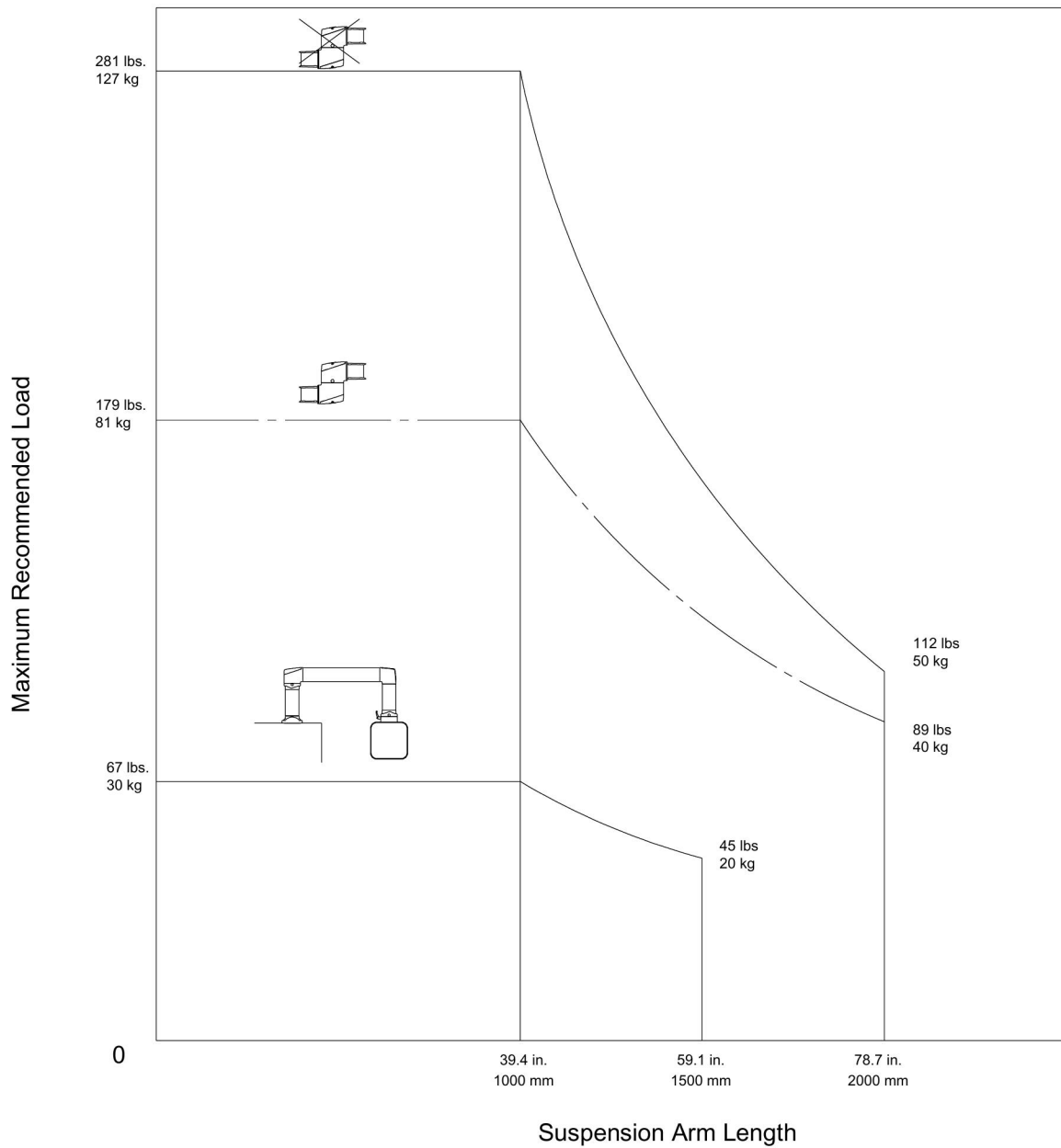
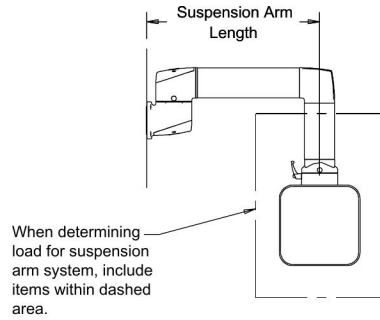
**SPECIFICATIONS**

- Silver anodized aluminum tubes
- RAL 9005 black die-cast aluminum components
- Gray composite cable access covers
- Oil-resistant neoprene gaskets

**SYSTEM LOAD CAPACITY**

The Syspend 281-Max load graph is the result of load capacity tests. Please contact nVent HOFFMAN for specific application information.

Load Diagram



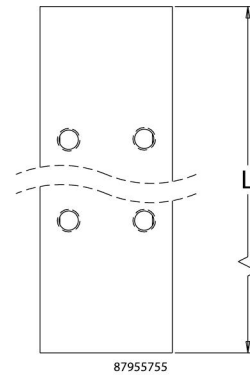
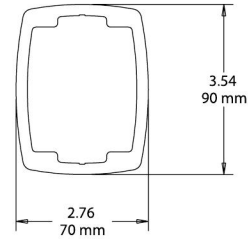
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Angled aluminum tubes provide structural integrity and act as conduit for equipment wiring. Tubes attach to system components with 6 setscrews on each end of the tube. (Setscrews are provided with the mating system components, not the tubes.) Setscrews allow for easy adjustment and leveling of the system. Setscrews are provided with LOCTITE to seal threaded holes and provide secure connections. Available in 8 standard lengths ranging from 250 mm to 2000 mm. Tubes 750 mm and longer include drilling template to assist with drilling and tapping the holes when the tube is cut to length.

BULLETIN: CS4

Catalog Number	L (mm)	L (in.)	Weight (lb.)
S2MT250	250	9.84	2.8
S2MT500	500	19.68	5.4
S2MT750	750	29.53	8.2
S2MT1000	1000	39.37	11.0
S2MT1250	1250	49.21	13.7
S2MT1500	1500	59.05	16.5
S2MT1750	1750	68.90	19.3
S2MT2000	2000	78.74	22.0



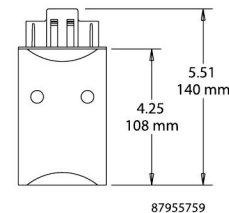
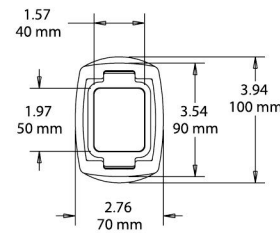
TUBE ADAPTER



Use a Tube Adapter when the tube is cut to length and it is not desirable to drill and tap new holes in the tube. Adapter attaches to the tube with internal setscrews and provides mounting holes at the end where the tube was cut. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gasket and hardware for attaching to the tube.

BULLETIN: CS4

Catalog Number	Weight (lb.)
S2MTA	1.6

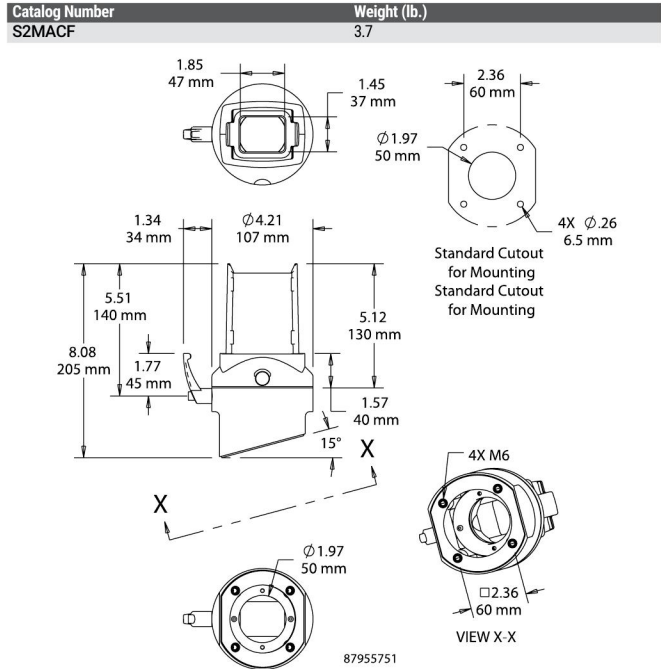
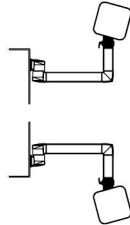


**ANGLED COUPLING TILTED FORWARD**



Use Angled Coupling Tilted Forward to mount enclosure at a 15-degree forward angle. Enclosure can be rotated 300 degrees and locked in position. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets, tube setscrews and enclosure mounting hardware.

**BULLETIN: CS4**

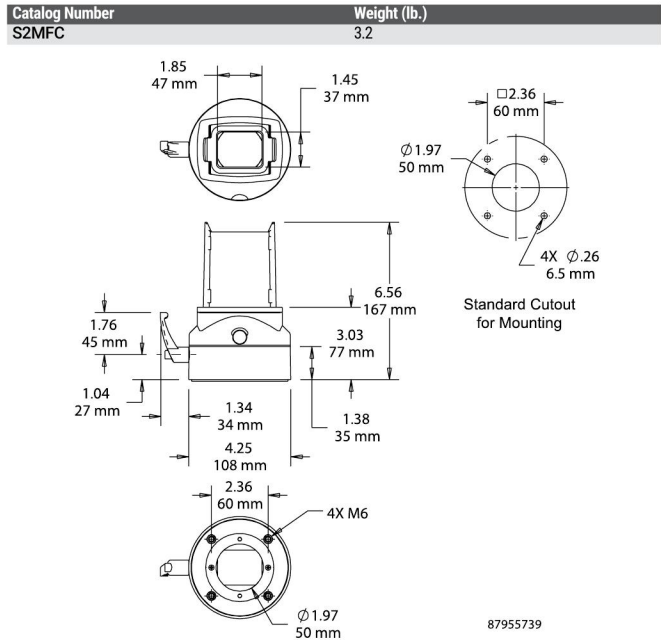
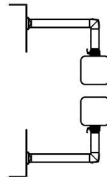


**FLANGE COUPLING**



Flange Coupling attaches a tube to the enclosure, enabling 300-degree enclosure rotation. Enclosure can be locked in position. Flange Coupling has safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets, tube setscrews and enclosure mounting hardware.

**BULLETIN: CS4**

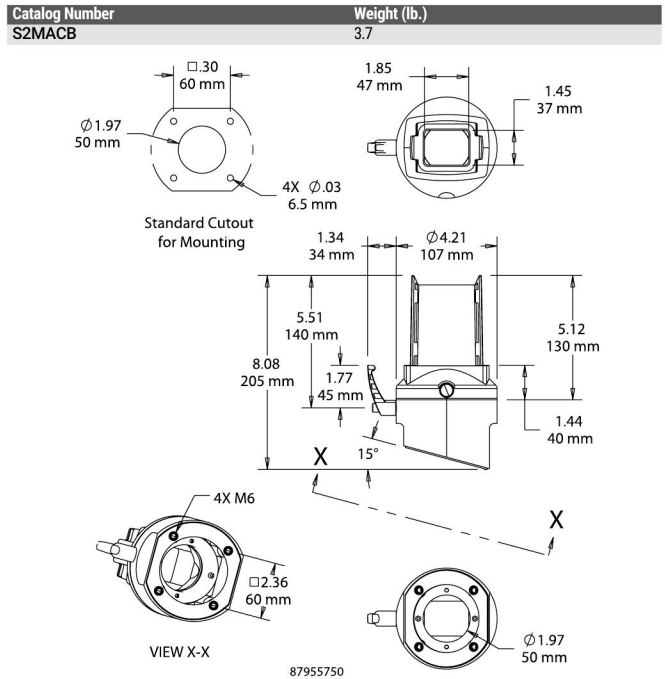
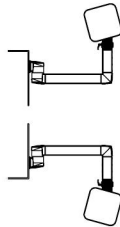


**ANGLED COUPLING TILTED BACK**



Use Angled Coupling Tilted Backward to mount enclosure at a 15-degree backward angle. Enclosure can be rotated 300 degrees and locked in position. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets, tube setscrews and enclosure mounting hardware.

**BULLETIN: CS4**

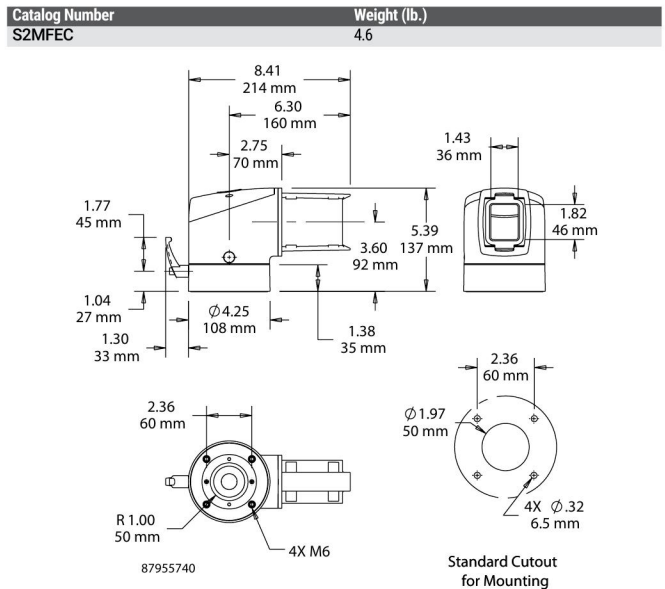
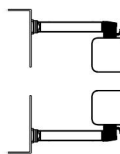


**FLANGE ELBOW COUPLING**



Flange Elbow Coupling attaches directly to the enclosure for applications where a vertical tube is not required. Enables enclosure to be rotated 300 degrees and locked in position. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes cable access cover, installation instructions, gaskets, tube setscrews and enclosure mounting hardware.

**BULLETIN: CS4**

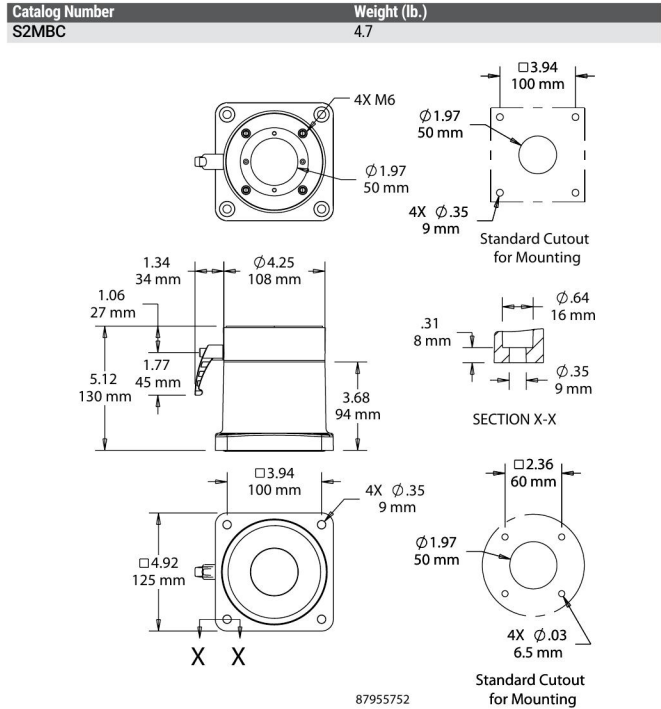


**BASE COUPLING**



Base Coupling attaches the enclosure directly to a horizontal surface. Enclosure can be rotated 300 degrees and locked in position. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets and enclosure mounting hardware. Surface mounting hardware not provided.

**BULLETIN: CS4**

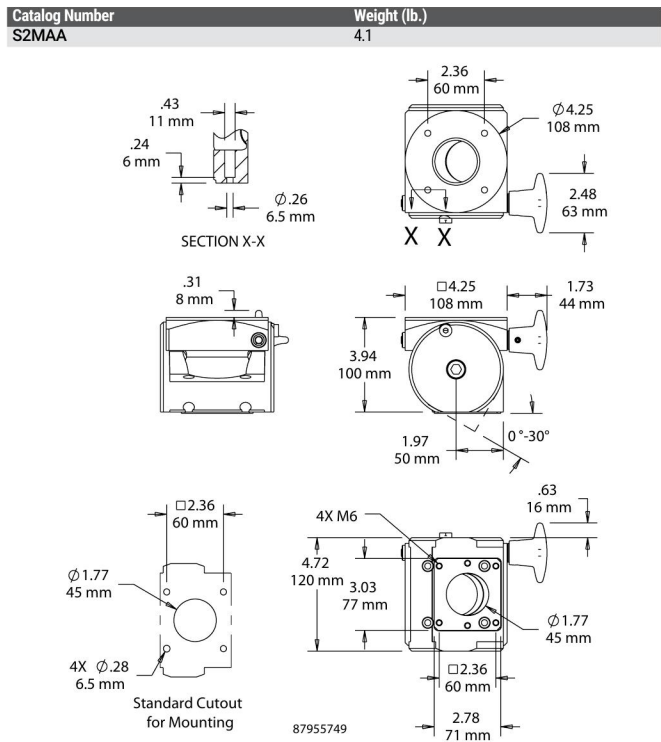
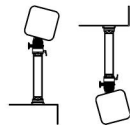


**ANGLED ADAPTER, STEPLESS 30 DEGREES**



Angled Adapter must be used in conjunction with a coupling (not compatible with S2MFC48). Enclosure angle can be adjusted forward or backward up to 30 degrees. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gasket and enclosure mounting hardware. **Maximum load bearing capacity is 67 lb. (30.4 kg).**

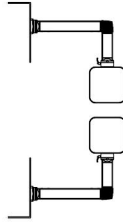
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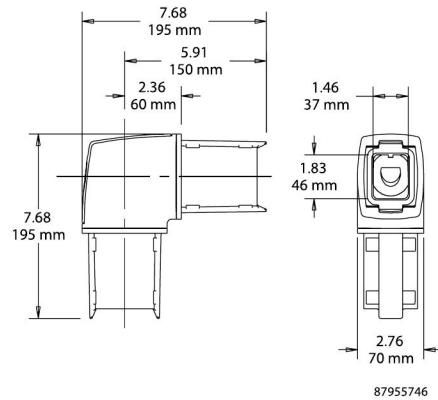


Elbow provides a 90-degree bend in the suspension system. RAL 9005 black finish. Die-cast aluminum construction. Includes removable cable access cover, installation instructions, gaskets and tube setscrews.

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2ME	3.7



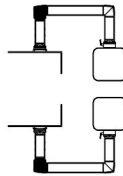
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**ROTATABLE ELBOW**

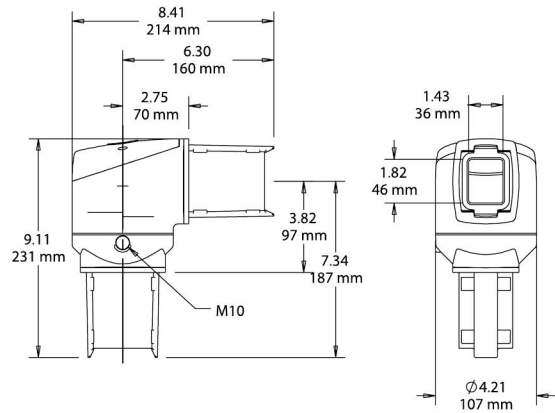


Rotatable elbow provides a 90-degree bend in the suspension system and allows the vertical tube to rotate 300 degrees. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes removable cable access cover, installation instructions, gaskets and tube setscrews.

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2MER	5.4



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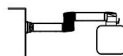
**INTERMEDIATE JOINT**



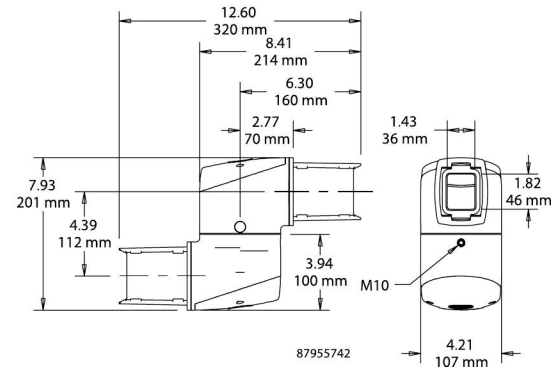
Use Intermediate Joint to join two horizontal tubes together for a longer run. Arm can be rotated or turned 300 degrees. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes two removable cable access covers, installation instructions, gaskets and tube setscrews.

*Use of the Intermediate Joint reduces the system load capacity to 179 lb. (81.2 kg) at 3.3 ft. (1 m).*

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2MIJ	6.5



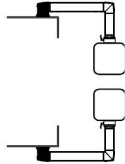
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**SET-UP JOINT**

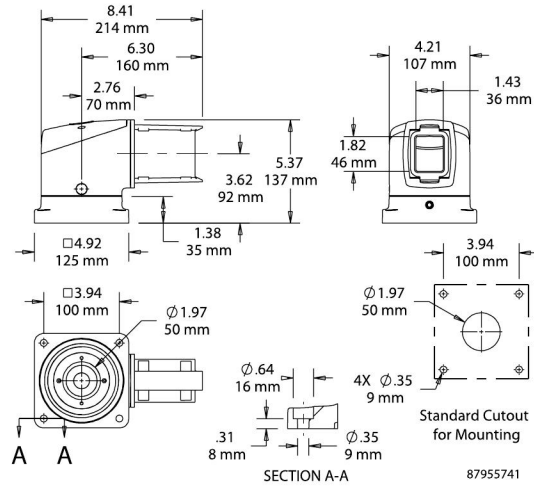


Set-Up Joint mounts suspension system to a horizontal surface. Arm can be rotated or turned 300 degrees. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes removable cable access cover, installation instructions, gaskets and tube setscrews. Surface mounting hardware not provided.

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2MSJ	5.0

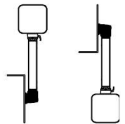


**VERTICAL WALL JOINT**

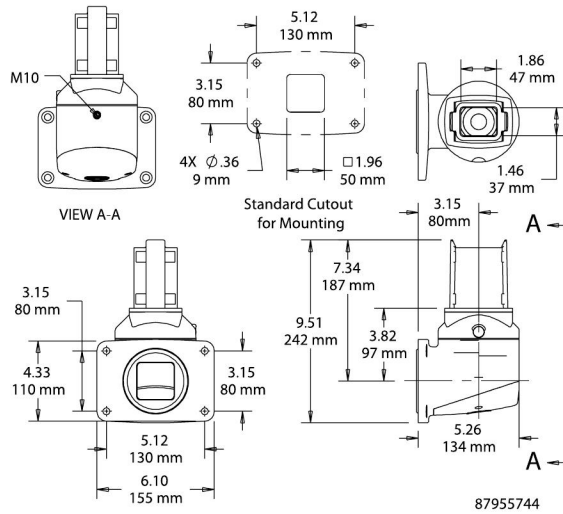


Vertical Wall Joint mounts suspension system to vertical surface and allows tube to extend vertically. Enables arm to be rotated or turned 300 degrees. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes removable cable access cover, installation instructions, gaskets and tube setscrews. Surface mounting hardware not provided.

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2MWJV	5.4



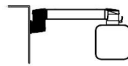


**HORIZONTAL WALL JOINT**

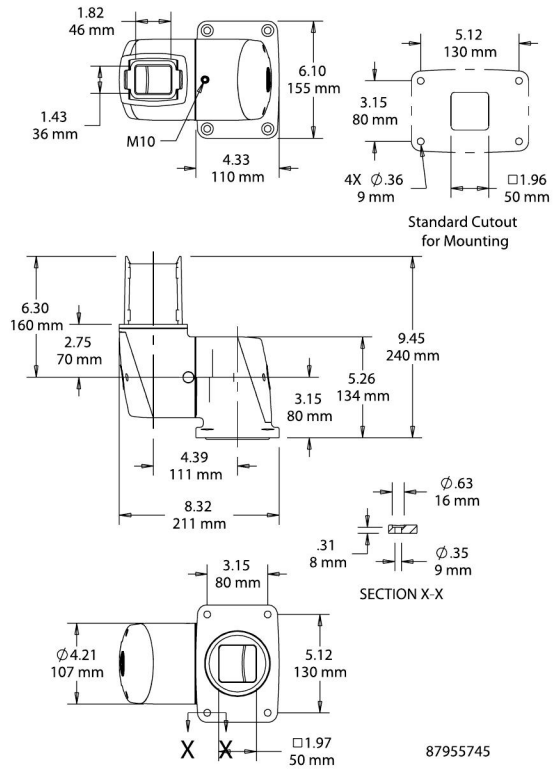


Horizontal Wall Joint mounts suspension system to vertical surface, allowing tube to extend horizontally. Arm can be rotated or turned 300 degrees. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes two removable cable access covers, installation instructions, gaskets and tube setscrews. Surface mounting hardware not provided.

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2MWJH	6.4

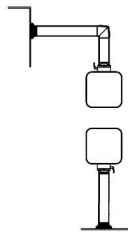


**WALL FLANGE**

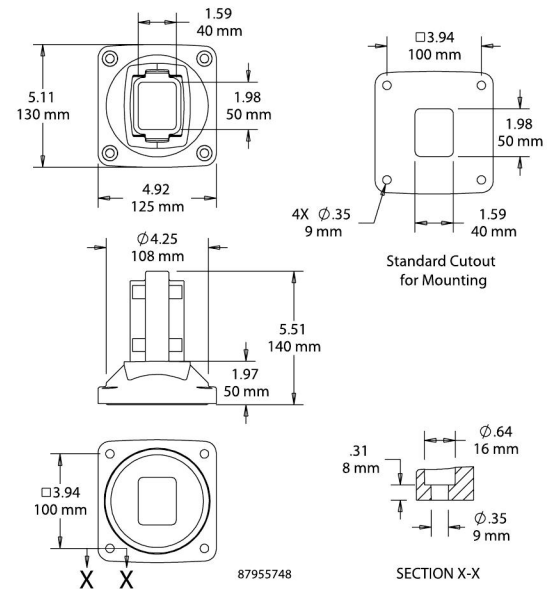


Wall Flange allows for fixed positioning on a horizontal or vertical surface when rotation is not needed. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets and tube setscrews. Surface mounting hardware not provided.

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2MWF	2.8

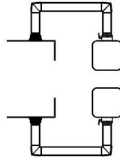


**ROTARY BASE**

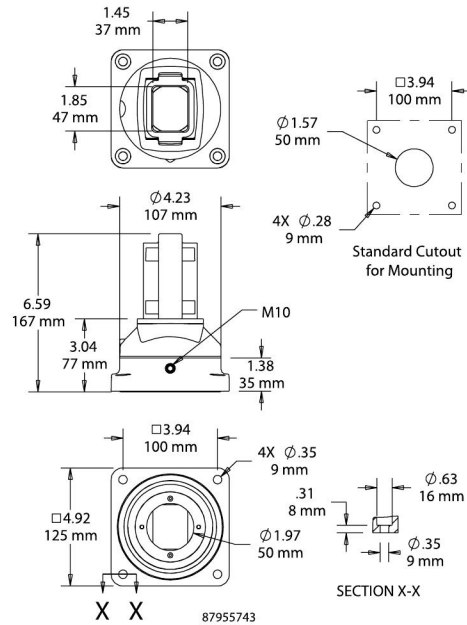


Rotary Base allows the entire suspension system to rotate at the point of attachment on a horizontal surface. Arm can be rotated or turned 300 degrees. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets and tube setscrews. Surface mounting hardware not provided.

**BULLETIN: CS4**



Catalog Number	Weight (lb.)
S2MRB	3.9



**48-MM ROUND TUBE FLANGE COUPLING AND ADAPTER**



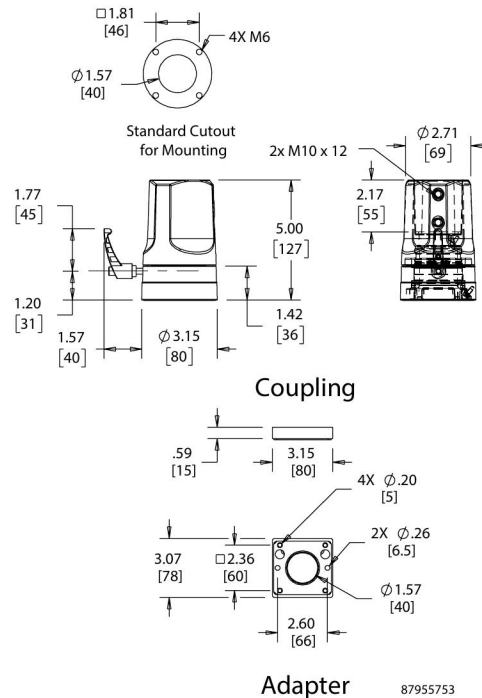
Use Flange Coupling to attach the Vertical Motion Pedestal Tube to the enclosure. Enclosure can be rotated 300 degrees and locked in position. Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets and enclosure mounting hardware.

Coupling attaches to enclosure using a 48 x 48-mm hole pattern. An adapter is required to attach the coupling to a standard nVent HOFFMAN HMI enclosure that uses a 60 x 60-mm hole pattern (i.e., required for attaching to Concept HMI, CC2000, CC4000). Includes safety stop and maintenance-free bearing. RAL 9005 black finish. Die-cast aluminum construction. Includes installation instructions, gaskets and enclosure mounting hardware.

**BULLETIN: CS4**



Catalog Number	Description	Weight (lb.)
S2MFC48	Flange Coupling	3.9
(Requires use of S2MA48 for enclosure with 60 x 60-mm hole pattern)		
S2MA48	Adapter	0.2



### VERTICAL MOTION PEDESTAL TUBES



Height-adjustable tubes allow enclosure to be positioned at the optimal viewing height for different operators. Requires the 48-mm Round Tube Flange Coupling (S2MFC48) and Adapter (S2MA48) for attachment to Hoffman enclosures with a 60 x 60-mm hole pattern (i.e., required for attaching to Concept HMI, CC2000, CC4000).

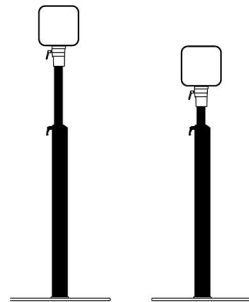
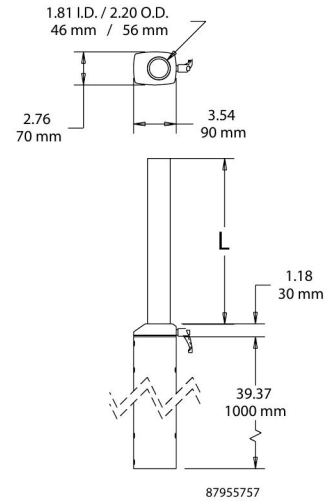
- Adjustable from 1130 mm (44.49 in.) to 1380 mm (54.33 in.) with internal gas springs
- Four models support loads ranging from 11 to 77 lb. (4.9 to 34.9 kg)
- Height is fixed in place at any position by locking handle
- Cables are separated from gas springs inside the tube
- Internal strain-relief for cables inside the tube
- Can be attached to Small Pedestal Base, Large Pedestal Base, Vertical Wall Joint, Wall Flange, Rotary Base, Elbow or Rotatable Elbow
- Aluminum construction

**Tube cannot be inverted for overhead mounting on the enclosure.**

**The weight of the coupling, adapter plate, enclosure and internal components must be factored into the load when selecting a tube.**

BULLETIN: CS4

Catalog Number	L Max. mm/in.	L Min. mm/in.	Load Capacity	Weight (lb.)
S2M10VP22	350 13.78	100 3.94	11-22 lb.	15.5
S2M10VP37	350 13.78	100 3.94	22-37 lb.	15.5
S2M10VP57	350 13.78	100 3.94	37-57 lb.	15.5
S2M10VP77	350 13.78	100 3.94	57-77 lb.	15.5



### VERTICAL MOTION PEDESTAL TUBE LOAD CHART

Ambient Temperature	100 N (6-11 kg)	150 N (11-19 kg)	200 N (19-29 kg)	300 N (29-39 kg)
40°C	100 N (6-11 kg)	150 N (11-19 kg)	200 N (19-29 kg)	300 N (29-39 kg)
30°C	100 N (5.5-10.5 kg)	150 N (10.5-18 kg)	200 N (18-27.5 kg)	300 N (27.5-37 kg)
20°C	100 N (5-10 kg)	150 N (10-17 kg)	200 N (17-26 kg)	300 N (26-35 kg)

Damper Force/Total Weight

When using a Vertical Motion Pedestal the overall system load is limited to the load capacity of the Vertical Motion Pedestal.

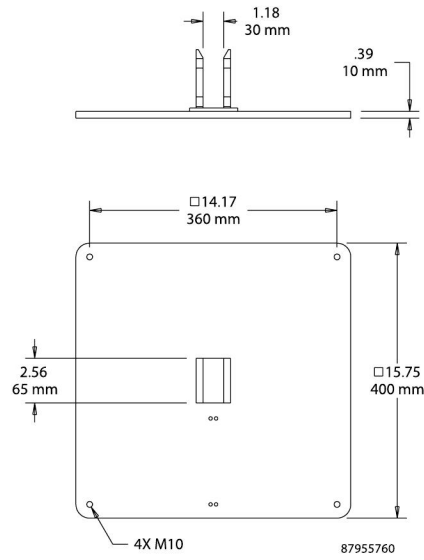
**SMALL PEDESTAL BASE**



Tubes attach directly to Small Pedestal Base. RAL 9005 black finish. Constructed from 3/8-in. thick steel plate. Includes installation instructions, cable ties and tube setscrews. Surface mounting hardware not provided. *Supports loads per Load Rating Graph.*

**BULLETIN: CS4**

Catalog Number	Weight (lb.)
S2MPBS	29.1



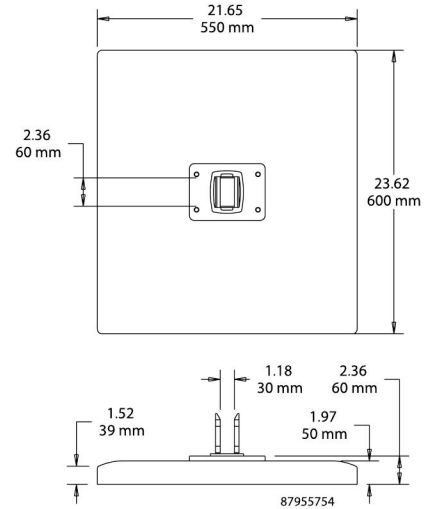
**LARGE PEDESTAL BASE**



Tubes attach directly to Large Pedestal Base. RAL 9005 black finish. Cast aluminum construction. Includes installation instructions and tube setscrews. Surface mounting hardware not provided. *Supports loads per Load Rating Graph.*

**BULLETIN: CS4**

Catalog Number	Weight (lb.)
S2MPBL	25.7

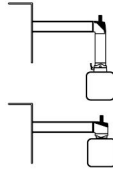


**LIGHT SIGNAL ADAPTERS**

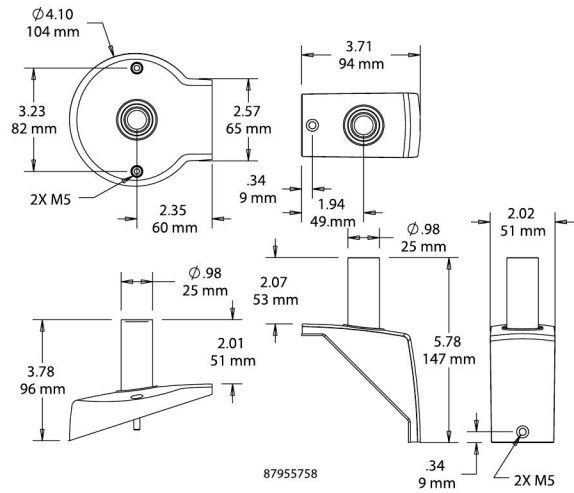


Light Signal Adapters are available in either round or elbow cover versions and provide a means for attaching signal lights. Signal lights are not included. Gray composite cover caps include a gasket, attachment hardware and post and replace the caps provided with other system components.

**BULLETIN: CS4**



Catalog Number	Description	Weight (lb.)
S2MLSAR	Round Cover	0.3
S2MLSAE	Rectangular Cover	0.3



**ROTATION LIMITERS**



Rotation limiters can be retro-fit on coupling and joint components and are adjustable in increments of 13.7 degrees. Limits rotation of couplings and joints which normally rotate 300 degrees. Kit includes ten steel balls, plug and installation instructions.

**BULLETIN: CS4**

Catalog Number	Weight (lb.)
S2MRL	0.1

**TUBE HOLE PLUGS**



Plastic hole plugs cover up the set screws in the tubes. Kit includes 50 hole plugs. Hole plugs are not needed to maintain the suspension system's NEMA Type 12 rating but provide an attractive smooth finish for the tube. Gray RAL 9006 color.

**BULLETIN: CS4**

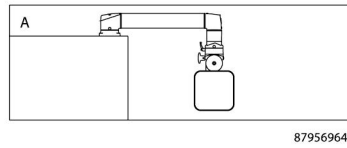
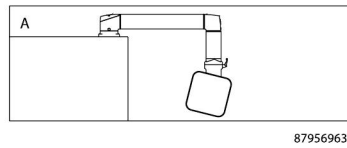
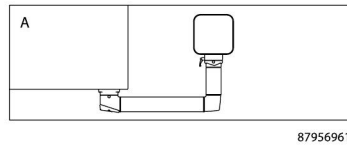
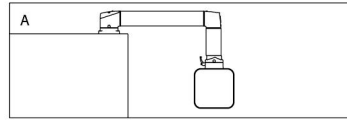
Catalog Number
S2MTHP

## SYSTEM CONFIGURATIONS

**Note to Specifier:**

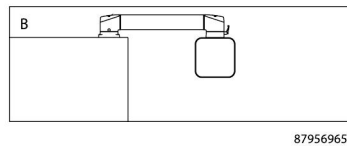
Select suspension system sizing using the Syspend 281-MAX load capacity chart.

1. Tube catalog numbers are not included in configuration tables.
2. There are multiple configurations possible with many of the options shown. Components can be inverted in all cases except for Vertical Motion Pedestal Tube. For illustration purposes, configuration A shows how components can be inverted or used with varying enclosure couplings.
3. When using Vertical Motion Pedestal the overall system load is limited to load capacity of Vertical Motion Pedestal.
4. No tube section used vertically should exceed 59.05 inches (1500 mm).



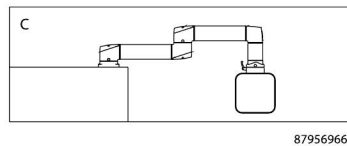
**A**

Description	Qty.	Catalog Number
Set-Up joint	1	S2MSJ
Elbow	1	S2ME
Flange Coupling or Angled Coupling (Tilted Back)	1	S2MFC
or Angled Coupling (Tilted Forward)	1	S2MACB
or Angled Coupling (Tilted Forward)	1	S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA



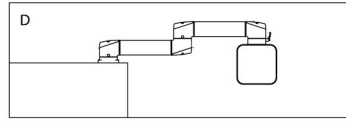
**B**

Description	Qty.	Catalog Number
Set-Up joint	1	S2MSJ
Flange Elbow Coupling	1	S2MFEC
For tilt, add Angled Adapter to coupling	1	S2MAA



**C**

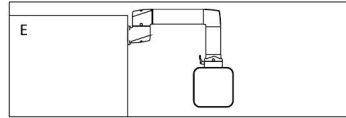
Description	Qty.	Catalog Number
Set-Up joint	1	S2MSJ
Intermediate Joint	1	s2mij
Elbow	1	s2me
Flange Coupling or Angled Coupling (Tilted Back)	1	S2MFC
or Angled Coupling (Tilted Forward)	1	S2MACB
or Angled Coupling (Tilted Forward)	1	S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA



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**D**

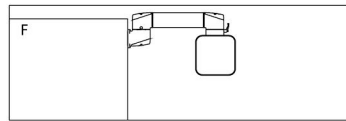
Description	Qty.	Catalog Number
Set-Up joint	1	S2MSJ
Intermediate Joint	1	S2MIJ
Flange Elbow Coupling	1	S2MFEC
For tilt, add Angled Adapter to coupling	1	S2MAA



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**E**

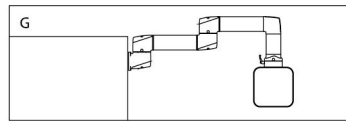
Description	Qty.	Catalog Number
Wall Joint, Horizontal	1	S2MWJH
Elbow	1	S2ME
Flange Coupling or Angled Coupling (Tilted Back)	1	S2MFC
or Angled Coupling (Tilted Forward)	1	S2MACB S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA



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**F**

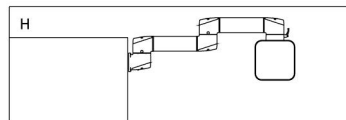
Description	Qty.	Catalog Number
Wall Joint, Horizontal	1	S2MWJH
Flange Elbow Coupling	1	S2MFEC
For tilt, add Angled Adapter to coupling	1	S2MAA



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**G**

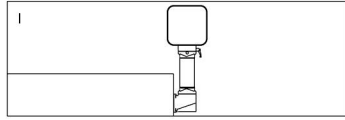
Description	Qty.	Catalog Number
Wall Joint, Horizontal	1	S2MWJH
Intermediate Joint	1	S2MIJ
Elbow	1	S2ME
Flange Coupling or Angled Coupling (Tilted Back)	1	S2MFC
or Angled Coupling (Tilted Forward)	1	S2MACB S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA



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**H**

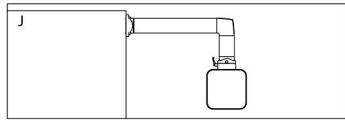
Description	Qty.	Catalog Number
Wall Joint, Horizontal	1	S2MWJH
Intermediate Joint	1	S2MIJ
Flange Elbow Coupling	1	S2MFEC
For tilt, add Angled Adapter to coupling	1	S2MAA



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**I**

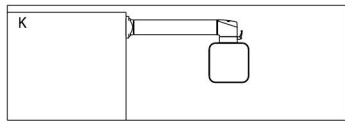
Description	Qty.	Catalog Number
Wall Joint, Vertical	1	S2MWJV
Flange Coupling or Angled Coupling (Tilted Back)	1	S2MFC
or Angled Coupling (Tilted Forward)	1	S2MACB
For tilt, add Angled Adapter to coupling	1	S2MAA



87956975

**J**

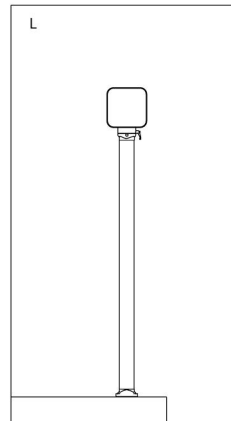
Description	Qty.	Catalog Number
Wall Flange	1	S2MWF
Elbow	1	S2ME
Flange Coupling or Angled Coupling (Tilted Back)	1	S2MFC
or Angled Coupling (Tilted Forward)	1	S2MACB
For tilt, add Angled Adapter to coupling	1	S2MAA



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**K**

Description	Qty.	Catalog Number
Wall Flange	1	S2MWF
Flange Elbow Coupling	1	S2MFEC
For tilt, add Angled Adapter to coupling	1	S2MAA



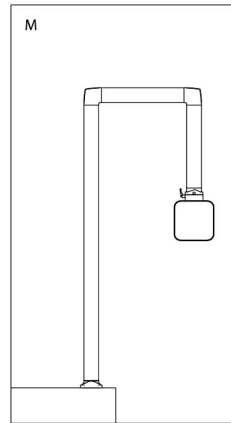
87956977

**L**

Description	Qty.	Catalog Number
Wall Flange	1	S2MWF
Flange Coupling or Angled Coupling (Tilted Back)	1	S2MFC
or Angled Coupling (Tilted Forward)	1	S2MACB
For tilt, add Angled Adapter to coupling	1	S2MAA



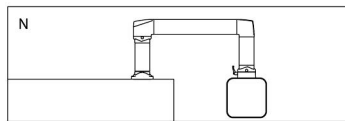
**M**



87956979

Description	Qty.	Catalog Number
Wall Flange	1	S2MWF
Elbow	2	S2ME
Flange Coupling or Angled Coupling (Tilted Back) or Angled Coupling (Tilted Forward)	1	S2MFC S2MACB S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA

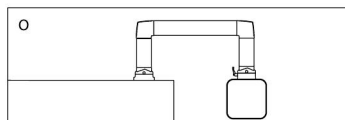
**N**



87956980

Description	Qty.	Catalog Number
Wall Flange	1	S2MWF
Rotary Elbow	1	S2MER
Elbow	1	S2ME
Flange Coupling or Angled Coupling (Tilted Back) or Angled Coupling (Tilted Forward)	1	S2MFC S2MACB S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA

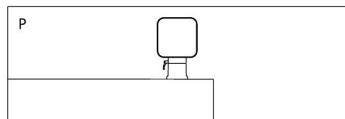
**O**



87956981

Description	Qty.	Catalog Number
Rotary Base	1	S2MRB
Elbow	2	S2ME
Flange Coupling or Angled Coupling (Tilted Back) or Angled Coupling (Tilted Forward)	1	S2MFC S2MACB S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA

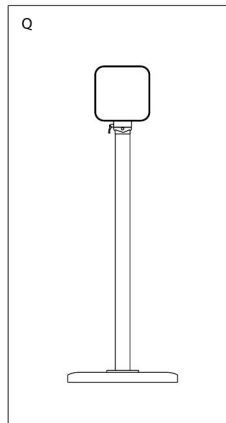
**P**



87956982

Description	Qty.	Catalog Number
Base Coupling	1	S1MBC
For tilt, add Angled Adapter to coupling	1	S2MAA

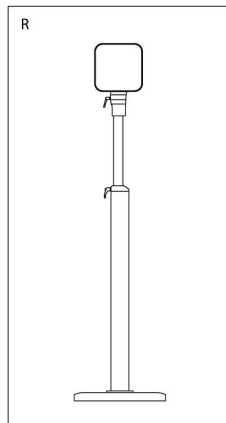
**Q**



87956983

Description	Qty.	Catalog Number
Large Pedestal Base or Small Pedestal Base	1	S2MPBL S2MPBS
Flange Coupling or Angled Coupling (Tilted Back) or Angled Coupling (Tilted Forward)	1	S2MFC S2MACB S2MACF
For tilt, add Angled Adapter to coupling	1	S2MAA

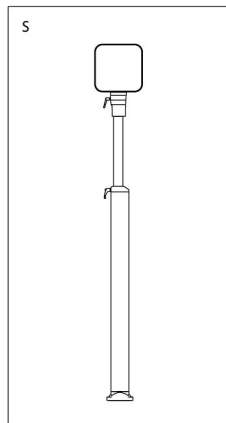
**R**



87956984

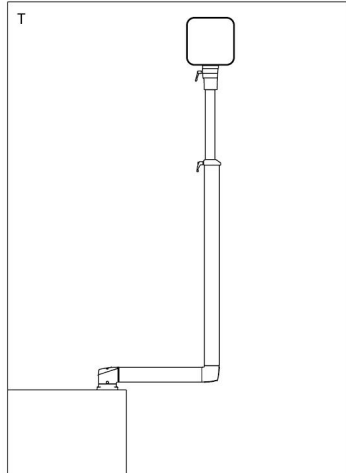
Description	Qty.	Catalog Number
Large Pedestal Base or Small Pedestal Base	1	S2MPBL S2MPBS
Flange Coupling, 48-mm Round Tube	1	S2MFC48
Adapter, 48-mm Round Tube	1	S2MA48

**S**



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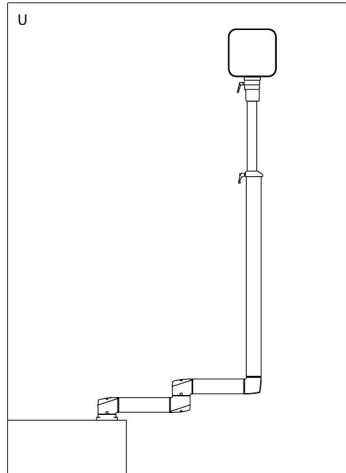
Description	Qty.	Catalog Number
Wall Flange	1	S2MWF
Flange Coupling, 48-mm Round Tube	1	S2MFC48
Adapter, 48-mm Round Tube	1	S2MA48



89104512

**T**

Description	Qty.	Catalog Number
Set-Up Joint	1	S2MSJ
Elbow	1	S2ME
Flange Coupling, 48mm Round Tube	1	S2MFC48
Adapter, 48mm Round Tube	1	S2MA48



89104514

**U**

Description	Qty.	Catalog Number
Set-Up Joint	1	S2MSJ
Intermediate Joint	1	S2MIJ
Flange Coupling, 48mm Round Tube	1	S2MFC48
Adapter, 48mm Round Tube	1	S2MA48

## Notes