

# Smart Box Pipe Chase Housing Specification

## Part one - General

### 1.01 Description

#### **Smart Box through the Roof products.**

The Smart Box Pipe Chase Housing is a roof penetration system for all trades to use to get their piping to the roof. The mechanical contractor will provide and install the pipe chase housing, curb and exit seals. Smart Box Inc. is the manufacturer of the specified Smart Pipe Chase Housing.

### 1.02 Summary

The Smart Pipe Chase Housing is designed to create a pathway to the roof for one or multiple pipe penetrations with rain tight integrity.

### 1.03 Qualifications

All contractors must be familiar and proficient in the use of all trade tools and attachment methods when penetrating a commercial roof. The bonding roofer must be utilized to roof in the curb to maintain the warranty of the roofing system.

### 1.04 Delivery and storage

Smart Box Inc. is the manufacturer of the specified Smart Box Pipe Chase Housing. Store all Smart Pipe Chase Housing products in a dry location.

Call Smart Box Inc. for a Supply House near you.

Smart Box Inc.

Phone: 631-589-3151

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### 1.05 Site Protection

At no time should the mechanical contractor installing the pipe chase housing leave roof openings unprotected. All roof openings must be protected from moisture or rain water entering the building. All openings must be sealed up to prevent animals and debris from infiltrating the building. Protect all exposed roofing surfaces around the penetration from damage. At no time will metal shavings from drilling come in contact with the roof.



## **1.06 Materials.**

The Smart Box Pipe Chase Housing roof penetration system is constructed of 14 gauge powder coated welded aluminum with stainless steel hardware. Exit seals are schedule 80 PVC with UV protection. All seals must be protected from UV with an aluminum or stainless jacket provided by Smart Box Inc. or the pipe insulating contractor.

## **Pipe Chase Housing Specification**

### **1.07 Surface Preparation.**

Roof surface must be clean, dry and free of roofing debris such as gravel.

### **1.08 Roofing**

Roofing must be completed by the designated roofer for this project. .

### **1.09 Penetration location**

The location must be reasonably flat or the curb must be shimmed to create a square installation. Spacers may also be used to elevate the curb above the insulation and elevate to the specified height above the roof.

Stay clear of drainage areas. Do not install closer than 18 inches to a wall or curb. All penetrations must be a minimum of 13 feet from the edge of the building otherwise OSHA regulations will apply.

*Exception:*

*On buildings with legal height parapets. The 18 inch clearance will apply.*

Roof opening must not be located on top of building structural members or expansion joints.

Post tension concrete roofs must be imaged and x-rayed. The structural engineer must approve of the location before any cutting is done.



## **1.10 Installation of the Pipe Chase Housing**

The Smart Pipe Chase Housing must be installed per the manufacturers installation instructions.

Set the curb and attach to the roof with the appropriate fasteners. The curb has a 2 inch flange out on the base. Screw holes are provided on two inch centers.

The approved roofing contractor will roof in the curb with the appropriate materials. Run the roofing material up and over the top of the curb. Then cut holes to expose the threaded holes in the top of the curb.

Install the Smart Pipe Chase Housing on top of the curb. Note, the skirt on the housing will slide down over the outside of the curb three inches and then stop. Inside the housing a flange will mate with the top of the curb. Install bolts and tighten, this will compress the leading edge of the roof material between the curb and housing. The three inch skirt is a receiver for the counter flashing provided by the coping contractor.

## **Smart Box Pipe Chase Housing Specifications**

### **1.11 Pipe Exit Seals**

Each Smart Exit Seal is designed to work on a range of pipe sizes. There are 11 seals to cover all the pipe sizes between 1/4 inch to 1 5/8 inch outside diameter. Each seal range is in 1/8 inch increments. The first seal has a range from 1/4 inch to 3/8. Any outside diameter pipe size that falls on or between 1/4 inch and 3/8 inch will fit this seal. This pattern continues up to 1 5/8 inch OD. The cap will fit any seal body in the event a pipe is removed.

### **1.12 Materials**

The Exit Seals are schedule 80 PVC. Color White. Made with UV protected PVC Plastic. Minimum outside pipe size is 1/4 inch. Maximum outside pipe size 1 5/8 inch. There are 11 seal sizes and one cap that will fit all seal bodies. Aluminum or stainless UV shields are installed over the exit seal body to protect it from the UV light.



## 1.13 Smart Box Exit Seal Installation.

- A. Tag your seals. Trades that look at the exit seals on the roof will immediately know which pipe goes with which seal. Example: Tag ½ inch electrical conduit or 3/8 ACR liquid line.
- B. Drill your holes for the exit seals in the shop. This keeps all the metal shavings off the roof. Additional precautions must be made if this is drilled on the roof. Metal shaving must not come in contact with the roof and cleanliness is a must.
- C. Install your exit seals in the shop and keep the tags on them for identification.
- D. If you want to exit a pipe in a different spot just switch the cap parts and you're done. The seal bodies are all the same size.
- E. If you drill a hole for an exit seal and then decide you don't want to install it. The exit seal cap fits all the seal bodies.
- F. Meet with the electrician with your pipe chase housing mounted with tagged exit seals and stake out your exit position for electrical and refer pipes on the first housing and stick to that pattern on the others.
- G. Some larger pipes are a tight fit with the seal body mounted. Tip: Remove the seal body. Slide the nut on the pipe then stick the pipe through the 2 ¼ inch hole. Then re-install the exit seal body.
- H. Identify the exit seal number and type of pipe you are running when you order.
- I. When an exit seal is installed in a pipe chase housing without conduit or refer lines there is a chance for leakage. To prevent leakage simply remove the cap and insert a small piece of plastic between the cap, gasket and the PVC washer. Place the cap back on the exit seal body and then tighten. This will make for a water tight seal until the required pipe is installed.
- J. Look for the punched pattern on the side of the Pipe Chase Housings. This spacing is set up so you can get the best spacing on the piping. The opposite side is offset so pipes opposite of each other will not hit on the inside. These punched patterns also provide a center punch for your drill bit.
- K. Do not try to push the pipe through the exit seal. It will not work. Take the seal apart first. Install your pipe, then put the PVC washer on first, then EPDM seal and then finally spin the cap on.



## .14 Smart Box Exit Seal Chart

<b>Smart Box Exit Seal Chart</b>			
<p>Each Exit Seal is designed to work on a range of pipe sizes. There are 11 seals to cover all the pipe sizes between 1/4 inch to 1 5/8 inch out side diameter. Each seal range is in 1/8 inch increments. The first seal has a range from 1/4 inch to 3/8. Any out side diameter pipe size that fall on or between 1/4 inch and 3/8 inch will fit this seal. This pattern continues up to 1 5/8 inch OD. The cap will fit any seal body in the event a pipe is removed.</p>			
<b>Model #</b>	<b>Pipe size OD range</b>	<b>Pipe OD range</b>	<b>Hole cut size</b>
<b>2025</b>	<b>1/4 --3/8</b>	<b>.250 --.375</b>	<b>2 1/4 inch</b>
<b>2037</b>	<b>3/8 --1/2</b>	<b>.375 --.500</b>	<b>2 1/4 inch</b>
<b>2050</b>	<b>1/2 --5/8</b>	<b>.500 --.625</b>	<b>2 1/4 inch</b>
<b>2062</b>	<b>5/8 --3/4</b>	<b>.625 --.750</b>	<b>2 1/4 inch</b>
<b>2075</b>	<b>3/4 --7/8</b>	<b>.750 --.875</b>	<b>2 1/4 inch</b>
<b>2087</b>	<b>7/8 --1</b>	<b>.875 --1</b>	<b>2 1/4 inch</b>
<b>2100</b>	<b>1 --1 1/8</b>	<b>1 --1.125</b>	<b>2 1/4 inch</b>
<b>2112</b>	<b>1 1/8 --1 1/4</b>	<b>1.125 --1.250</b>	<b>2 1/4 inch</b>
<b>2125</b>	<b>1 1/4 --1 3/8</b>	<b>1.250 --1.375</b>	<b>2 1/4 inch</b>
<b>2137</b>	<b>1 3/8 --1 1/2</b>	<b>1.375 --1.500</b>	<b>2 1/4 inch</b>
<b>2150</b>	<b>1 1/2 --1 5/8</b>	<b>1.500 -- 1.625</b>	<b>2 1/4 inch</b>
<b>3001</b>	<b>Cap</b>	<b>Fits all seal bodies</b>	
<p><b>Order from : Smart Box Inc. Phone: 631-589-3151 Fax: 631-589-3671</b>  <b>Web site: thrutheroofproducts.com Email: Info@smartboxinc.com</b></p>			



## .15 Smart Box Exit Seal Installation (continue) Smart Box Exit

<b>Pipe Outside Diameter &amp; Exit Seal Selection</b>												
Copper K & L			Copper ACR			Steel			PVC Schedule 40 & 80			
(inches)			(inches)			Schedule 40			(inches)			
Diameter OD			Diameter OD			(inches)			Diameter OD			
CU	OD	Seal	ACR	OD	Seal	Diameter OD			PVC	OD	Seal	
1/4	0.375	2025	1/4	0.25	2025	Steel	OD	Seal	1/2	0.84	2075	
3/8	0.5	2037	3/8	0.375	2037	1/8	0.41	2037	3/4	1.05	2100	
1/2	0.625	2050	1/2	0.5	2050	1/4	0.54	2050	1	1.315	2125	
5/8	0.75	2062	5/8	0.625	2062	3/8	0.68	2062	1 1/4	1.66	2150	
3/4	0.875	2075	3/4	0.75	2075	1/2	0.84	2075	1 1/2	1.9	N/A	
1	1.125	2100	1	1	2100	3/4	1.05	2100				
1 1/4	1.375	2125	1 1/8	1.125	2112	1	1.32	2125				
1 1/2	1.625	N/A	1 1/4	1.25	2125	1 1/4	1.66	2150				
			1 1/2	1.5	2137	1 1/2	1.9	N/A				
Electrical EMT			Electrical Rigid			Aluminum			Liquid-Tight			
(inches)			(inches)			(inches)			(inches)			
Diameter OD			Diameter OD			Diameter OD			Diameter OD			
EMT	OD	Seal	Rigid	OD	Seal	AL	OD	Seal	Size	OD	Seal	
1/2	0.706	2062	1/2	0.84	2075	1/2	0.84	2075	3/8	0.7	2062	
3/4	0.922	2087	3/4	1.05	2100	3/4	1.05	2100	1/2	0.83	2075	
1	1.163	2112	1	1.315	2125	1	1.315	2125	3/4	1.04	2100	
1 1/4	1.51	2137	1 1/4	1.66	2150	1 1/4	1.66	2150	1	1.303	2125	
1 1/2	1.74	N/A	1 1/2	1.9	N/A	1 1/2	1.9	N/A	1 1/4	1.645	2150	
									1 1/2	1.883	N/A	
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<b>Web site: <a href="http://thrutheroofproducts.com">thrutheroofproducts.com</a> Email: <a href="mailto:Info@smartboxinc.com">Info@smartboxinc.com</a></b>												

### Seal Selection Chart



# Smart Box Pipe Chase Housing Specifications

## ***.16 Exit Seals for Electrical and Controls.***

The mechanical contractor installing the Smart Pipe Chase Housing will also provide two Smart Exit Seals per pipe chase housing for the electrical conduits. One exit seal for the power conduit and one for controls.

## ***1.17 Smart Box Pipe Chase Housing Specification***

Unless otherwise specified in this section Smart Box Pipe Chase Housing specifications shall be used for the installation of the roof penetration system for split system AC units, dry coolers, solar panels, low temp, hydronic piping, water bibs on the roof and electrical piping where multiple conduits are penetrating the roof.

End of Section

