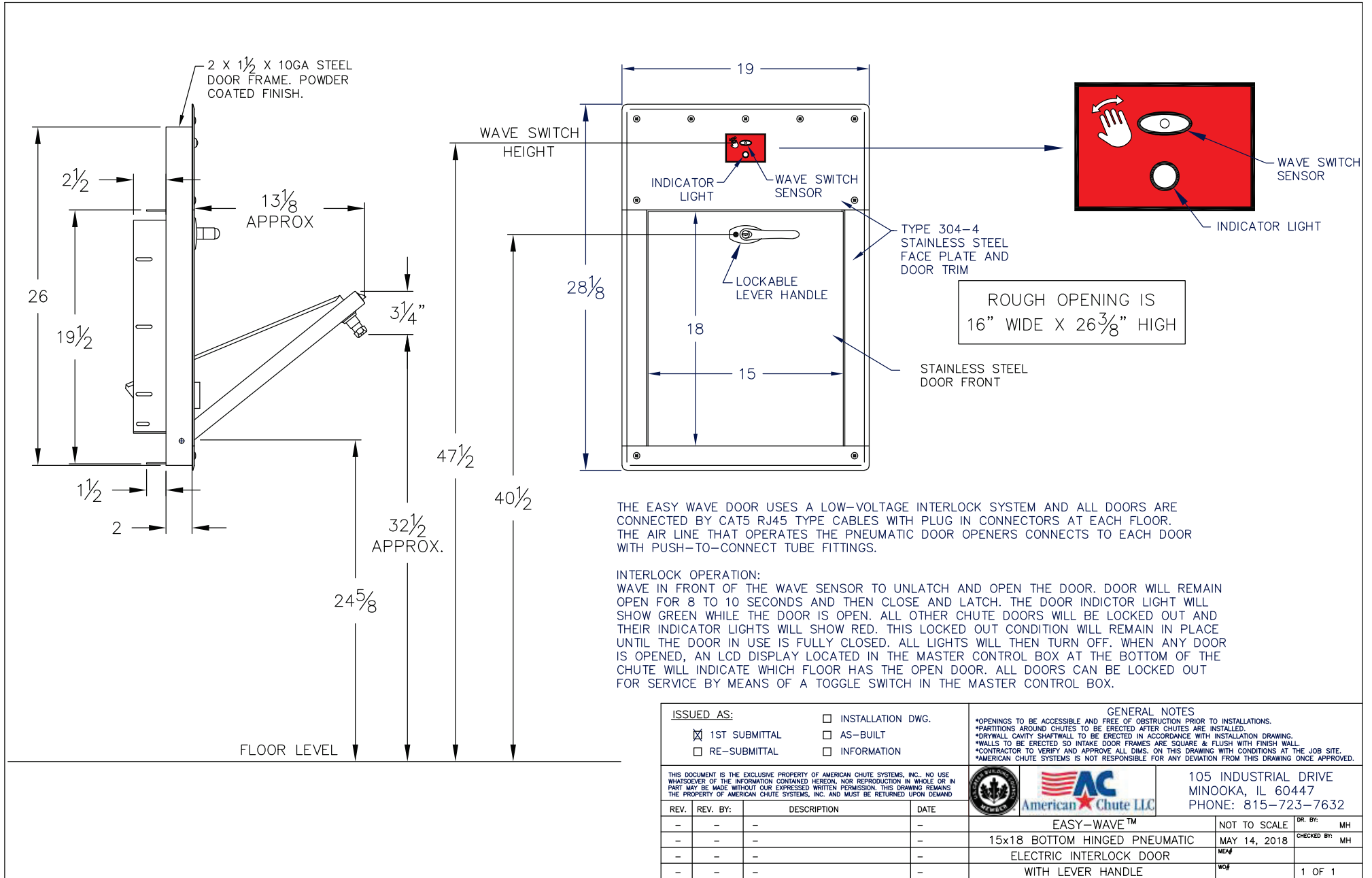



**ATTACHMENT A**

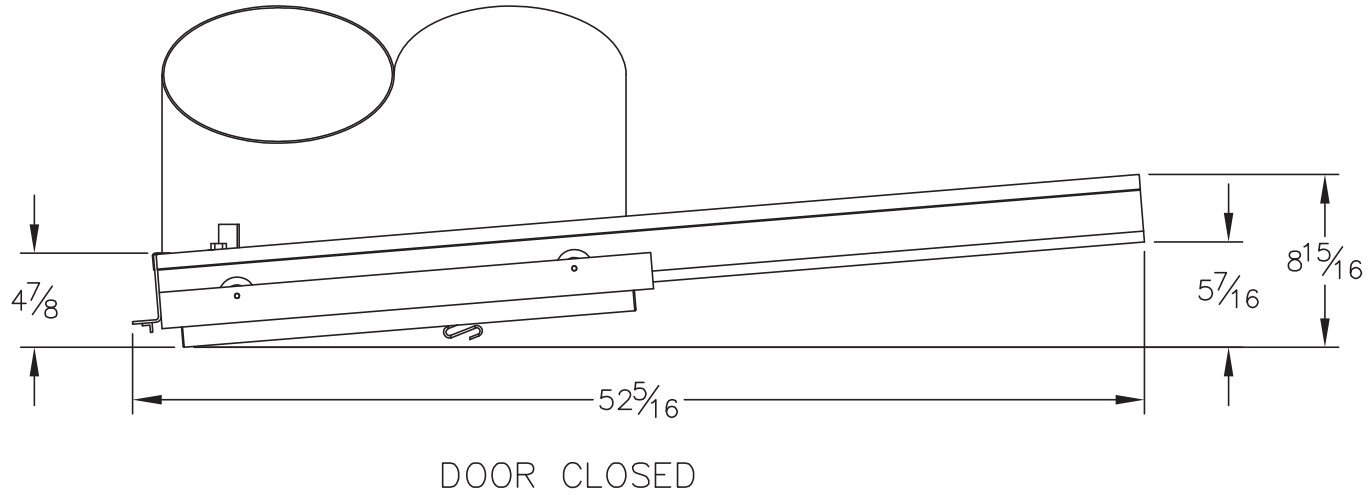
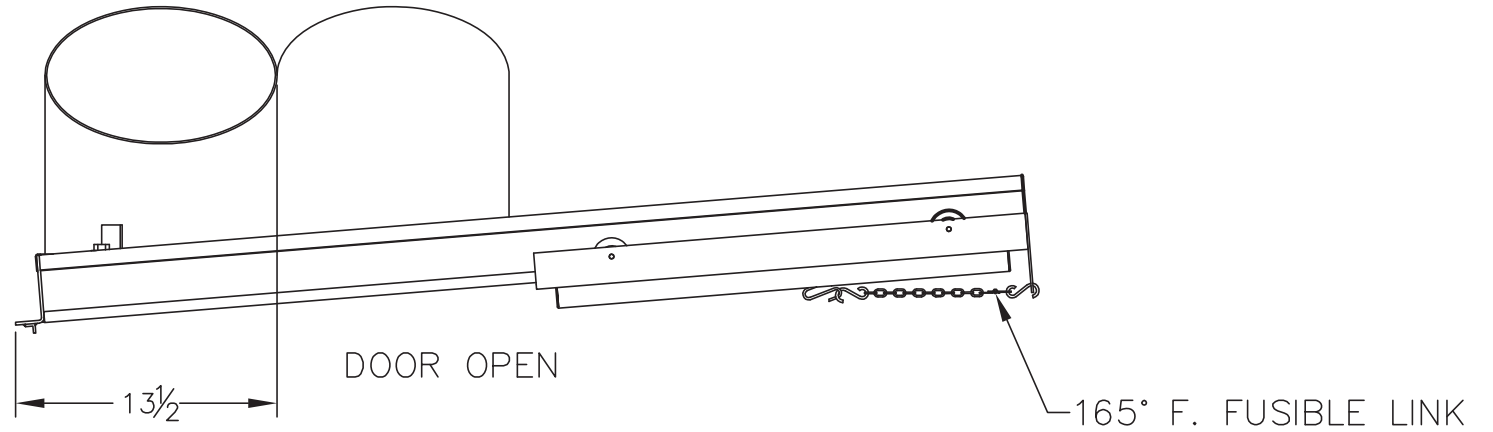


THE EASY WAVE DOOR USES A LOW-VOLTAGE INTERLOCK SYSTEM AND ALL DOORS ARE CONNECTED BY CAT5 RJ45 TYPE CABLES WITH PLUG IN CONNECTORS AT EACH FLOOR. THE AIR LINE THAT OPERATES THE PNEUMATIC DOOR OPENERS CONNECTS TO EACH DOOR WITH PUSH-TO-CONNECT TUBE FITTINGS.

**INTERLOCK OPERATION:**  
 WAVE IN FRONT OF THE WAVE SENSOR TO UNLATCH AND OPEN THE DOOR. DOOR WILL REMAIN OPEN FOR 8 TO 10 SECONDS AND THEN CLOSE AND LATCH. THE DOOR INDICATOR LIGHT WILL SHOW GREEN WHILE THE DOOR IS OPEN. ALL OTHER CHUTE DOORS WILL BE LOCKED OUT AND THEIR INDICATOR LIGHTS WILL SHOW RED. THIS LOCKED OUT CONDITION WILL REMAIN IN PLACE UNTIL THE DOOR IN USE IS FULLY CLOSED. ALL LIGHTS WILL THEN TURN OFF. WHEN ANY DOOR IS OPENED, AN LCD DISPLAY LOCATED IN THE MASTER CONTROL BOX AT THE BOTTOM OF THE CHUTE WILL INDICATE WHICH FLOOR HAS THE OPEN DOOR. ALL DOORS CAN BE LOCKED OUT FOR SERVICE BY MEANS OF A TOGGLE SWITCH IN THE MASTER CONTROL BOX.

<b>ISSUED AS:</b> <input checked="" type="checkbox"/> 1ST SUBMITTAL <input type="checkbox"/> RE-SUBMITTAL		<input type="checkbox"/> INSTALLATION DWG. <input type="checkbox"/> AS-BUILT <input type="checkbox"/> INFORMATION		<b>GENERAL NOTES</b> *OPENINGS TO BE ACCESSIBLE AND FREE OF OBSTRUCTION PRIOR TO INSTALLATIONS. *PARTITIONS AROUND CHUTES TO BE ERRECTED AFTER CHUTES ARE INSTALLED. *DRYWALL CAVITY SHAFTWALL TO BE ERRECTED IN ACCORDANCE WITH INSTALLATION DRAWING. *WALLS TO BE ERRECTED SO INTAKE DOOR FRAMES ARE SQUARE & FLUSH WITH FINISH WALL. *CONTRACTOR TO VERIFY AND APPROVE ALL DIMS. ON THIS DRAWING WITH CONDITIONS AT THE JOB SITE. *AMERICAN CHUTE SYSTEMS IS NOT RESPONSIBLE FOR ANY DEVIATION FROM THIS DRAWING ONCE APPROVED.	
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REV.	REV. BY:	DESCRIPTION	DATE	EASY-WAVE™ 15x18 BOTTOM HINGED PNEUMATIC ELECTRIC INTERLOCK DOOR WITH LEVER HANDLE	
-	-	-	-	NOT TO SCALE	DR. BY: MH
-	-	-	-	MAY 14, 2018	CHECKED BY: MH
-	-	-	-	MEJ	
-	-	-	-	WOF	1 OF 1

ATTACHMENT A



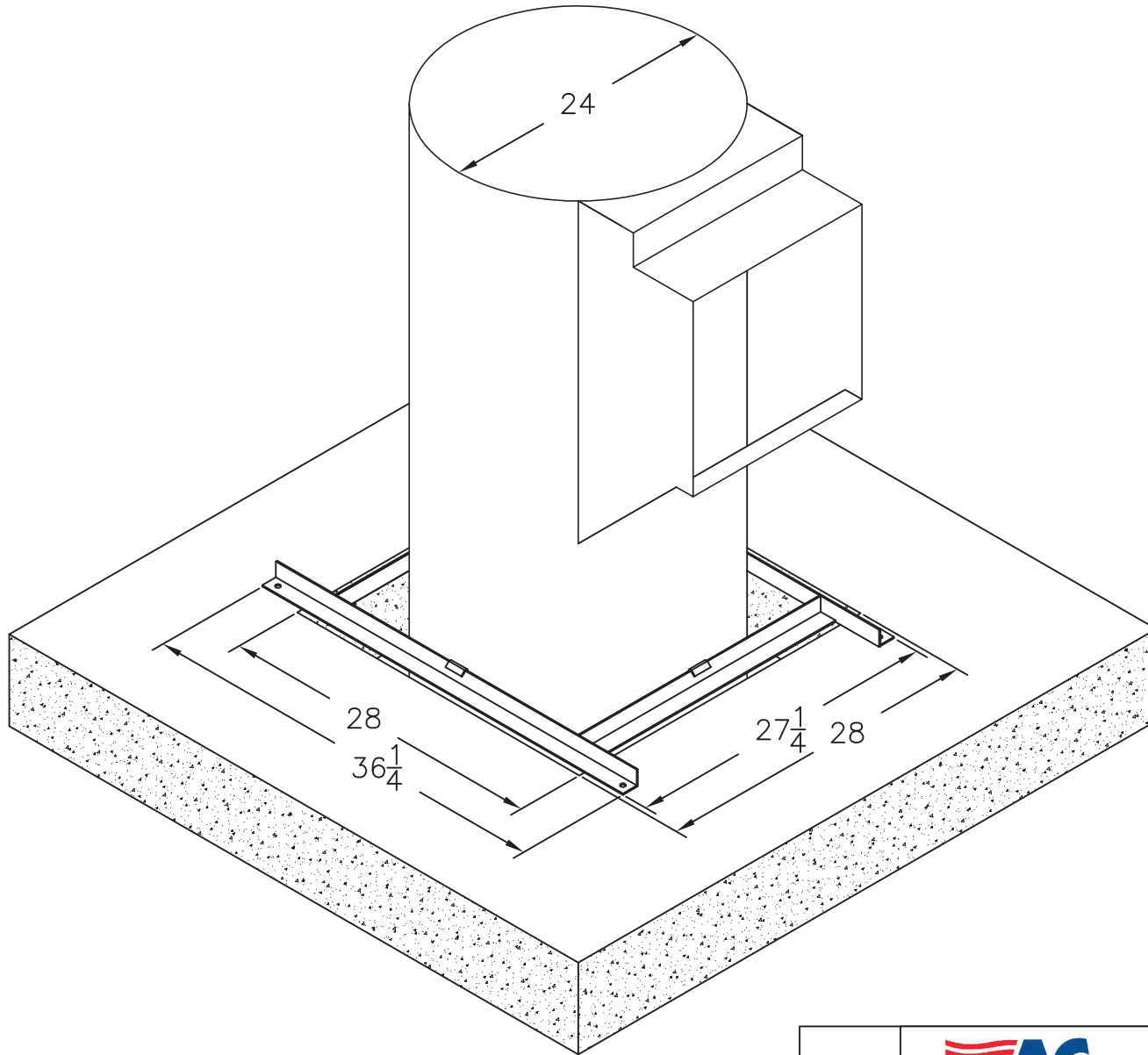
STANDARD 24" INCLINED  
ROLLING DISCHARGE DOOR  
10GA ALUMINIZED STEEL




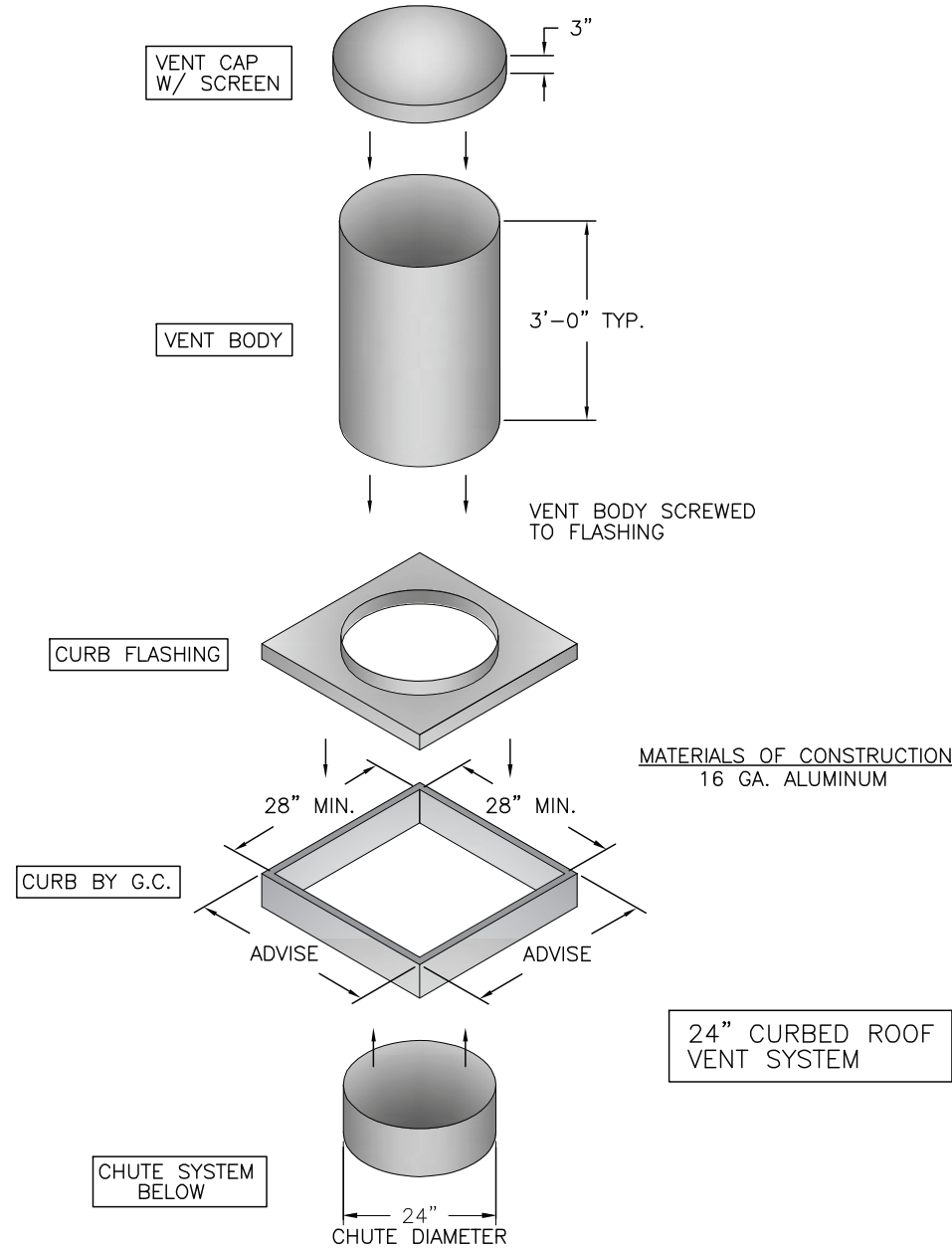
105 INDUSTRIAL DRIVE  
MINOOKA, IL 60447  
PHONE: 815-723-7632


STANDARD 24" INCLINED ROLLING DISCHARGE DOOR	NOT TO SCALE	DR. BY: NM
	MAY 19, 2016	CHECKED BY: NM
	MEA#	
	WO#	1 OF 1

ATTACHMENT A



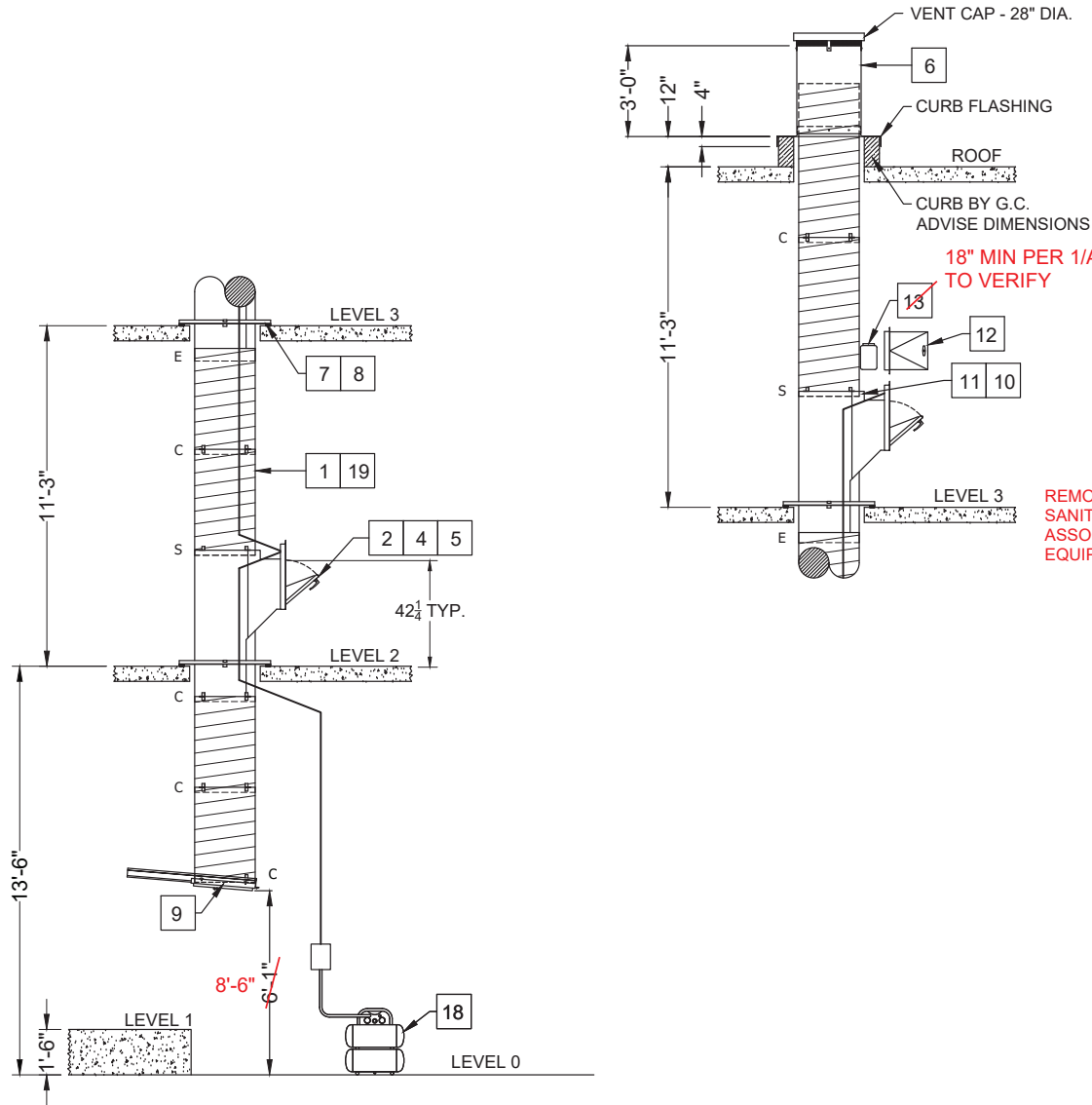
	105 INDUSTRIAL DRIVE MINOOKA, IL 60447 PHONE: 815-723-7632	
	NOT TO SCALE	DR. BY: NM
STANDARD FLOOR SUPPORT DETAIL	DATE	CHECKED BY: NM
FOR 24" CHUTE	MEA#	
	WO#	1 OF 1



 <b>American Chute LLC</b> 105 INDUSTRIAL DR. MINOOKA, IL. 60447	815-723-7632	
	ROOF VENT SYSTEM ON CURB	NOT TO SCALE
FOR 24" CHUTE DIAMETER		CHECKED BY:
	MEA#	
	WO#	
		1 OF 1

**ATTACHMENT A**


"FOR APPROVAL"  
(1) TRASH CHUTE



ITEM	QTY.	MATERIAL LIST DESCRIPTION	TOTAL
1	1	TRASH CHUTE - 24" DIA. OF 16 GA. ALUMINIZED STEEL	1
2	2	TRASH CHUTE INTAKE DOOR: 15" WIDE X 18" HIGH, BOTTOM HINGED, PNEUMATIC OPERATED. DOOR HAS TYPE 304 STAINLESS STEEL FRONT, UL 1-1/2 HOUR "B" LABEL, 250 DEGREE TEMPERATURE RISE, CYLINDER LOCKS KEYED ALIKE WITH ADA LEVER HANDLE. DOORS ARE ELECTRIC INTERLOCKED.	2
4	2	STAINLESS STEEL DOOR FRAME TRIM (20 GA.) - SCREW FASTENED TO FRAME (FIELD-APPLIED) EMBOSSED: TRASH	2
5	2	EASY-WAVE® 24VDC ELECTRIC INTERLOCK SYSTEM INCLUDING WAVE SENSOR AND ILLUMINATED INDICATOR LIGHT. CHUTE INTAKE DOOR WIRED SO THAT ONE DOOR BEING OPEN PREVENTS ANY OTHER DOORS FROM OPENING.	2
6	1	FULL DIA. VENT - 24" DIA. WITH VENT FLASHING, CAP, & SCREEN. VENT MATERIALS ARE 18 GA. ALUMINUM.	1
7	2	FLOOR SUPPORT 1-1/2" X 1-1/2" X 3/16" A36 HR ANGLE IRON, WELDED SUPPORT PROVIDED WITH 3/8" HOLES AT EACH CORNER.	2
8	8	FLOOR SUPPORT EQUIPPED WITH (4 PER FLOOR): <input type="checkbox"/> 1/4" X 3" X 3" NEOPRENE ISO. PADS <input checked="" type="checkbox"/> KORFUND STYLE ISO. PADS <input type="checkbox"/> MASON TYPE ND-X-RED <input type="checkbox"/> FLOOR CLOSURE PLATES (1 PAIR EA. FLOOR) <input type="checkbox"/> MASON BR-A-RED <input type="checkbox"/> MASON SUPER-W ISO. PAD <input type="checkbox"/> KINETICS AC-222 ISO. PAD <input type="checkbox"/> OTHER: _____	8
9	1	INCLINED HORIZONTAL ROLLING DISCHARGE DOOR HELD OPEN WITH 165 DEG. FUSIBLE LINK. UL "B" LABEL CONSTRUCTION.	1
10	1	FLUSHING SPRAY HEAD 1/2 NPT, INSTALLED IN THE LEFT SIDE OF THE INTAKE, AT THE HIGHEST INTAKE LEVEL.	1
11	2	SPRINKLERS 1/2 NPT, 165 DEG. FUSIBLE LINKED. AUTOMATIC SPRINKLER HEADS ARE "SNUG FIT" INSTALLED IN THE COUPLING ABOVE APPROPRIATE INTAKE DOORS. FINAL CONNECTION BY OTHERS. LEVELS: 2 & 3.	2
12	1	ACCESS DOOR: 15" WIDE X 15" HIGH, SIDE HINGED, HAND OPERATED, STAINLESS STEEL, UL "B" LABEL, 250 DEG. MAX. TEMPERATURE RISE WITH CYLINDER LOCKS KEYED ALIKE. ACCESS DOOR INSTALLED BY OTHERS.	2
13	1	<del>DISINFECTING AND SANITIZING UNIT PROVIDED AS SHOWN ON CHUTE ELEVATION. VACUUM BREAKER AND WATER VALVE BY OTHERS. DISINFECTING AND SANITIZING UNIT INSTALLED BY OTHERS.</del>	1
18	1	4.6 GALLON ULTRA QUIET AIR COMPRESSOR FOR PNEUMATIC DOOR SYSTEM. COMPRESSOR IS EQUIPPED WITH AUTOMATIC ELECTRONIC TANK DRAIN VALVE KIT.	1
19	1	APPLICATION OF SOUND DAMPENER (SECTIONS ABOVE HIGHEST INTAKE EXCLUDE). <input checked="" type="checkbox"/> DAUBERT V-DAMP 3680 SOUND DAMPENER <input type="checkbox"/> KINETICS KDC-E-162 SOUND DAMPENER <input type="checkbox"/> OTHER	1

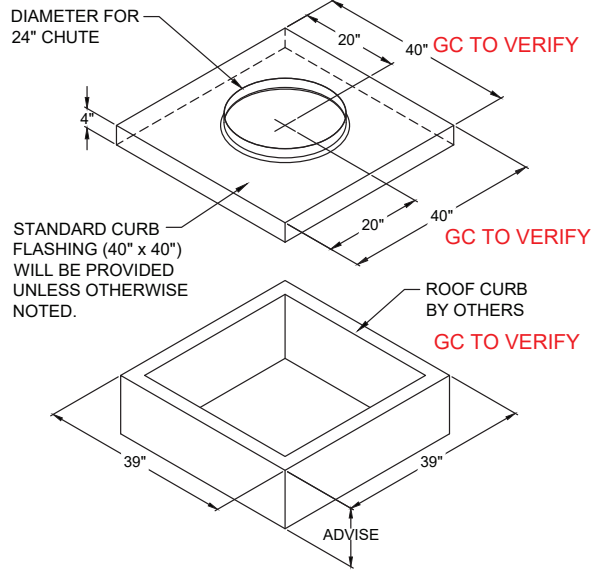
\*OPENINGS TO BE ACCESSIBLE AND FREE OF OBSTRUCTION PRIOR TO INSTALLATIONS.  
 \*PARTITIONS AROUND CHUTES TO BE ERECTED AFTER CHUTES ARE INSTALLED.  
 \*DRYWALL CAVITY SHAFTWALL TO BE ERECTED IN ACCORDANCE WITH INSTALLATION DRAWING.  
 \*WALLS TO BE ERECTED SO INTAKE DOOR FRAMES ARE SQUARE & FLUSH WITH FINISH WALL.  
 \*CONTRACTOR TO VERIFY AND APPROVE ALL DIMS. ON THIS DRAWING WITH CONDITIONS AT THE JOB SITE.  
 \*AMERICAN CHUTE LLC. IS NOT RESPONSIBLE FOR ANY DEVIATION FROM THIS DRAWING ONCE APPROVED.

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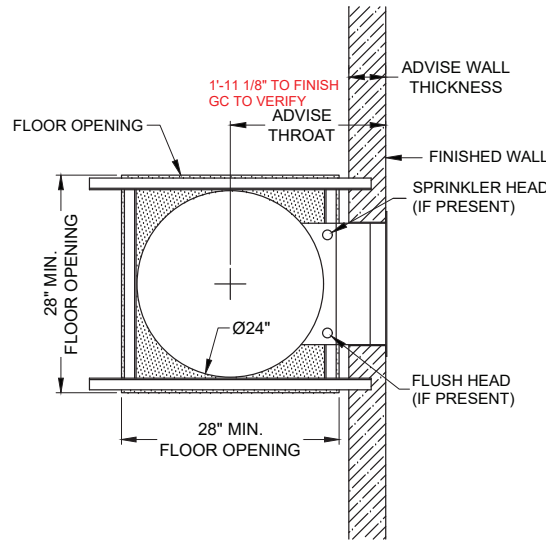
REV.	REV. BY.	REVISION	DATE	 <p>AMERICAN CHUTE, LLC 105 INDUSTRIAL DRIVE MINOOKA, IL 60447 PHONE: 815-723-7632</p>
-	-	-	-	
-	-	-	-	
-	-	-	-	
-	-	-	-	

SCALE: NONE	DWG. BY: SS
DATE:	CHECKED BY: -
TRASH CHUTE	
ANCHORAGE, AK	
WO. #: 401593	SHEET #: 1 OF 2

**ATTACHMENT A**



STANDARD CURB FLASHING DETAIL

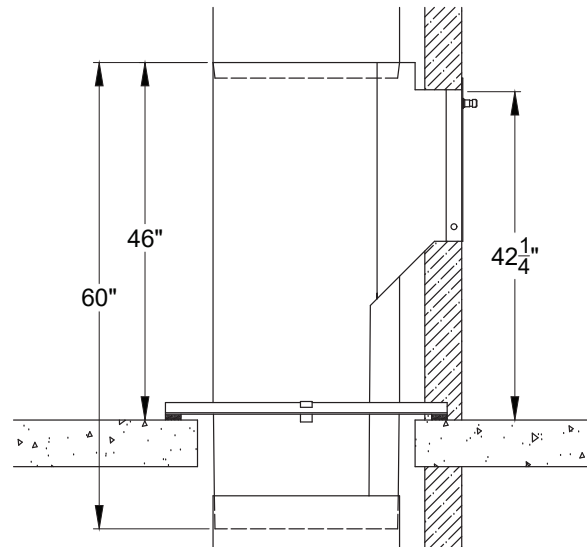
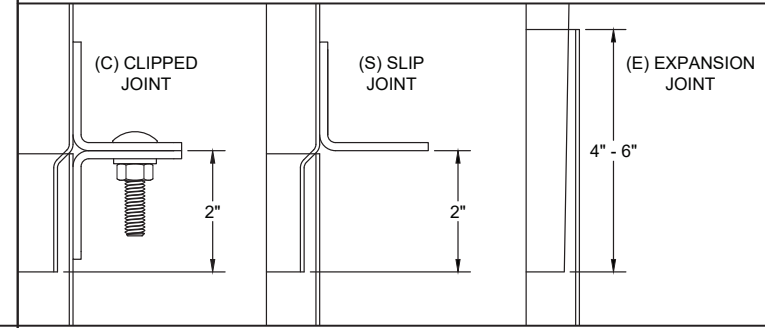


FLOOR OPENING DETAIL

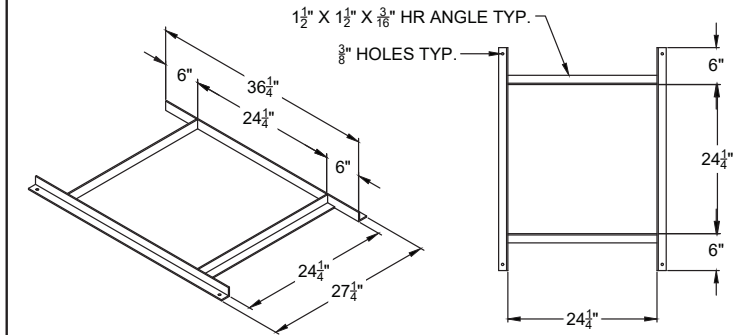
**ITEMS FOR VERIFICATION: THE FOLLOWING ITEMS MUST BE VERIFIED TO BEGIN PRODUCTION**

- \* VERIFY ANY DIMENSION MARKED "ADVISE" \* THRU-WALL DOOR HINGE TYPE:**
- CHUTE DIAMETER: 24"  BOTTOM HINGED
  - THROAT (CL TO OUTSIDE FACE OF WALL): 1'-11 1/8" GC TO VERIFY  RIGHT SIDE HINGED
  - WALL THICKNESS: 6 3/4"  LEFT SIDE HINGED
  - WALL TYPE: B6  LINEN HOPPER (IF APPLICABLE):
- INTAKE DOOR HINGE TYPE:**
- BOTTOM HINGED
  - RIGHT SIDE HINGED
  - LEFT SIDE HINGED
- ACCESS DOOR HINGE TYPE:**
- RIGHT SIDE HINGED
  - LEFT SIDE HINGED
- LINEN HOPPER (IF APPLICABLE):**
- THROAT: \_\_\_\_\_
  - WALL THICKNESS: \_\_\_\_\_
  - WALL TYPE: \_\_\_\_\_
- OFFSET (IF APPLICABLE):**
- MAX. ACCEPTABLE ANGLE: \_\_\_\_\_
  - CL TO CL LINEAR TRAVEL: \_\_\_\_\_
  - ROTATION ANGLE (IF ANY): \_\_\_\_\_

**NOTES:** \_\_\_\_\_



INTAKE CONFIGURATION TYPICAL ON ALL FLOORS UNLESS OTHERWISE NOTED



FLOOR SUPPORT DETAIL

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AMERICAN CHUTE, LLC  
105 INDUSTRIAL DRIVE  
MINOOKA, IL 60447  
PHONE: 815-723-7632

REV.	REV. BY:	REVISION	DATE
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

SCALE: NONE	DWG. BY: SS
DATE:	CHECKED BY: -
TRASH CHUTE ANCHORAGE, AK	
WO. # 401593	SHEET # 2 OF 2



## Product Overview

---

- 2 HP (peak) motor with a running 60 dB sound level
- 4.6-gallon twin tanks with a 120 PSI output
- Compact and lightweight at 45.5 lbs. for easy portability
- Ultra quiet only 60 dB - less than a normal conversation
- Powerful 1.0 HP (rated/running) - 2.0 HP (peak) motor
- Oil-free pump for cleaner air for better tool operation
- 3.10 CFM at 40 psi 2.20 CFM at 90 psi
- Lightweight 4.6 Gal. aluminum (rust-free) twin tank (45.5 lbs.)
- 120 psi maximum pressure
- Low amp draw-8.5 Amp
- 110-Volt / 60 hz
- Time to fill tank from empty to full 130 seconds
- Recovery time from 90 psi to 120 psi 30 seconds
- Less heat which dissipates more efficiently
- Thermal overload protector
- 2 pressure control gauges
- 2 universal 1/4 quick connectors
- (19.1) x W (16.7 in.) x H (19.7 in.)
- 45.5 lbs.
- Comes complete with air filter

## V-DAMP® 3680 Sound Deadener

## PRODUCT INFORMATION

V-DAMP® 3680 is a viscoelastic, sprayable liquid sound damper. It has been found to be highly effective in reducing vibrational resonance conditions in structures such as passenger rail cars, elevator cabs, marine passenger and cargo vessels, stainless steel sinks and other plumbing fixtures, sheet metal panels, floor housings, and a multitude of other applications. V-DAMP® 3680 dissipates structure-borne vibrational energy and reduces radiated air-borne noise.

V-DAMP® 3680 is resistant to water and a variety of solvents, acids and corrosive gasses. It is non-toxic, non-flammable, almost odorless and exhibits exceptional aging characteristics.

Water based and non-toxic, V-DAMP® 3680 offers an efficient and effective alternative to solvent-based sprayable damping products, as well as sheet applied damping materials. V-DAMP® 3680 can be sprayed or toweled directly from the drum without thinning. After application, V-DAMP® 3680 cleans up with water.

A typical setup to spray V-DAMP® 3680 consists of a 30:1 airless pump, a reverse-a-clean airless gun with a tip size of 0.043", a ram and a surge tank.

V-DAMP® 3680 exhibits exceptional adhesion to a variety of materials when properly applied, and air-dries within 24 hours at room temperature. The drying time can be accelerated through oven drying using moderate temperatures. Its normal "tan" color may be varied for decorative purposes.

### KEY ATTRIBUTES OF V-DAMP® 3680

- Sound Deadening Properties – OBERST BAR (SAE J-1637) METHOD - Composite Loss Factor of 0.036 @ 150 Hz, 25 °C. Steel thickness 1.6 mm. Coating thickness 1.6 mm.
- Cold adhesion – when V-DAMP® 3680 is applied to a 10" x 10" x 0.035" panel of primed cold rolled steel at the rate of 0.5 lbs./sq. ft. (dry weight), shows no loss of adhesion when subjected to two 25" lb. impacts from a two inch diameter, 1 ¼ lb., steel ball at -20°F.
- Fire Retardant – Passes ASTM E-162 "Surface Flammability of Materials Using a Radiant Panel Heat Energy Source."
- Passes National Bureau of Standards and NFPA 258. Flaming and smoldering tests were conducted in an Aminco NBS Smoke Density Chamber, Cat. No. 4-5800.

**APPLICATION**

Surface must be clean and free of oil and foreign matter. Adhesion is very good on stainless steel, bonderized steel, primed steel, wash-primed galvanized sheet metal, and wash-primed aluminum. Airless spray mastic type equipment is recommended for application.

Airless Spray - 0.043" to 0.051" spray tip, 3/4" i.d. material hose, a Graco Bulldog® Pump 30:1 ratio or higher.

**DRYING**

1/32" (32 mils) wet film at room temperature dries hard in 3-4 hours.

9/64" (140 mils) wet film at room temperature dries hard in 24 hours.

Where faster drying time is required, use forced ventilation, heat or infrared light.

**THINNING**

Product is ready for use as received. If conditions should require thinning, use water sparingly.

**CLEAN-UP**

After use, equipment may be flushed with water.

**PHYSICAL PROPERTIES (TYPICAL)**

Color	Tan
Viscosity	Sprayable Mastic Consistency
Solids by Weight	55%
Solids by Volume	40.8%
Weight/Gallon	10.95
Flash Point	None
VOC(EPA Method #24)	0 lbs./gal. (water-based coating)
Non-Bleeding	Non-Asphaltic
Odor After Drying	None
Chemical Resistance	Resistant to dilute acids, alkali, grease, gasoline, and aliphatic oils.
Latex Emulsion	Protect From Freezing

Note: V-DAMP® 3680 is not intended for direct outdoor weathering. The weathering resistance of V-DAMP® 3680 can be improved by painting.

CONSULT MSDS BEFORE USE.

5/6/04:kp

V-DAMP® 3680 was formerly known as COATING 368.

CAUTION: The data, statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted by us, and we believe such data, statements and recommendations will serve as reliable guidelines. However, this product is subject to numerable uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

WARRANTY: Daubert Chemical Company, Inc. ("Daubert") warrants all products manufactured by it to be free from defects in material and workmanship. DAUBERT MAKES NO OTHER WARRANTIES, WHETHER, EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH PRODUCTS, AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND IMPLIED WARRANTIES ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE, ARE DISCLAIMED BY DAUBERT. All claims hereunder must be made in writing within 30 days after receipt of the products at the buyer's plant and prior to further processing the products or combining them with other materials or products. Daubert's liability, whether under this warranty or in contract, tort, negligence or otherwise, is limited to the return of the net purchase price paid for any products proven defective or, at Daubert's option, to the repair or replacement of said products upon their return, transportation prepaid, to Daubert. THE REMEDY HEREBY PROVIDED SHALL BE THE EXCLUSIVE AND SOLE REMEDY OF THE BUYER, AND UNDER NO CIRCUMSTANCES SHALL DAUBERT BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES. No Daubert representative or other person is authorized to change this warranty in any way or to assume for Daubert any other liability in connection with the sale or use of its products.

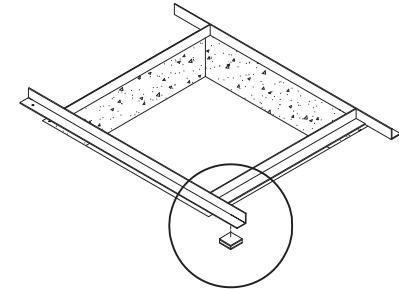
**REFER TO MATERIAL SAFETY DATA SHEET FOR HEALTH AND SAFETY INFORMATION.**

**DAUBERT**  
CHEMICAL COMPANY, INC.

4700 S. Central Ave., Chicago, IL 60638 • (708) 496-7350

ATTACHMENT A

ANTI-VIBRATION ELASTOMER AND CORK PAD. CORK CORE IS PERMANENTLY BONDED BETWEEN TWO LAYERS OF SYNTHETIC RUBBER. PAD SIZE IS 2" X 2" X 7/8" THICK. LOAD CAPACITY IS 50LBS/SQ. INCH. MINIMUM STATIC DEFLECTION IS .020.





SEE SECTION VIEW

1 1/2" X 1 1/2" X 3/16" STEEL FLOOR SUPPORT ANGLE

OIL RESISTANT SYNTHETIC RUBBER

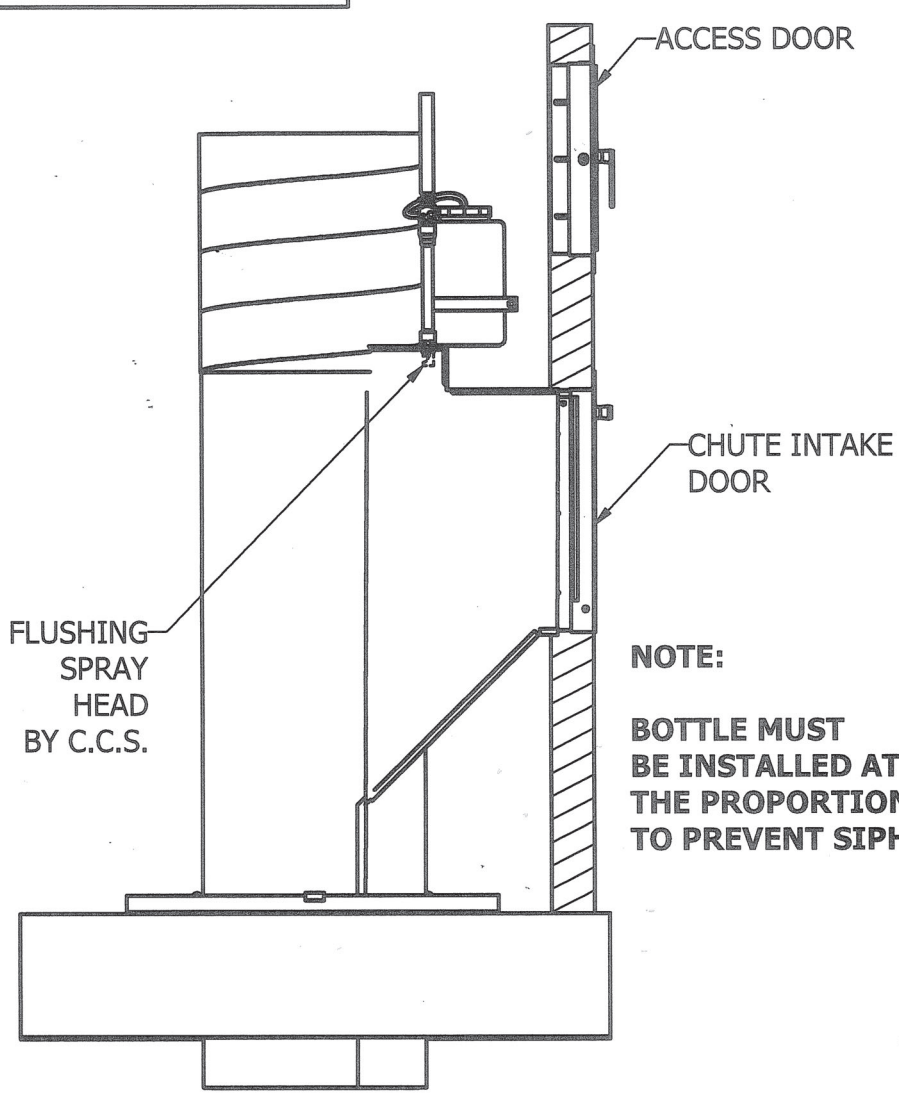
HIGH GRADE CORK CORE

KORFUND TYPE ISO PAD  
SECTION VIEW

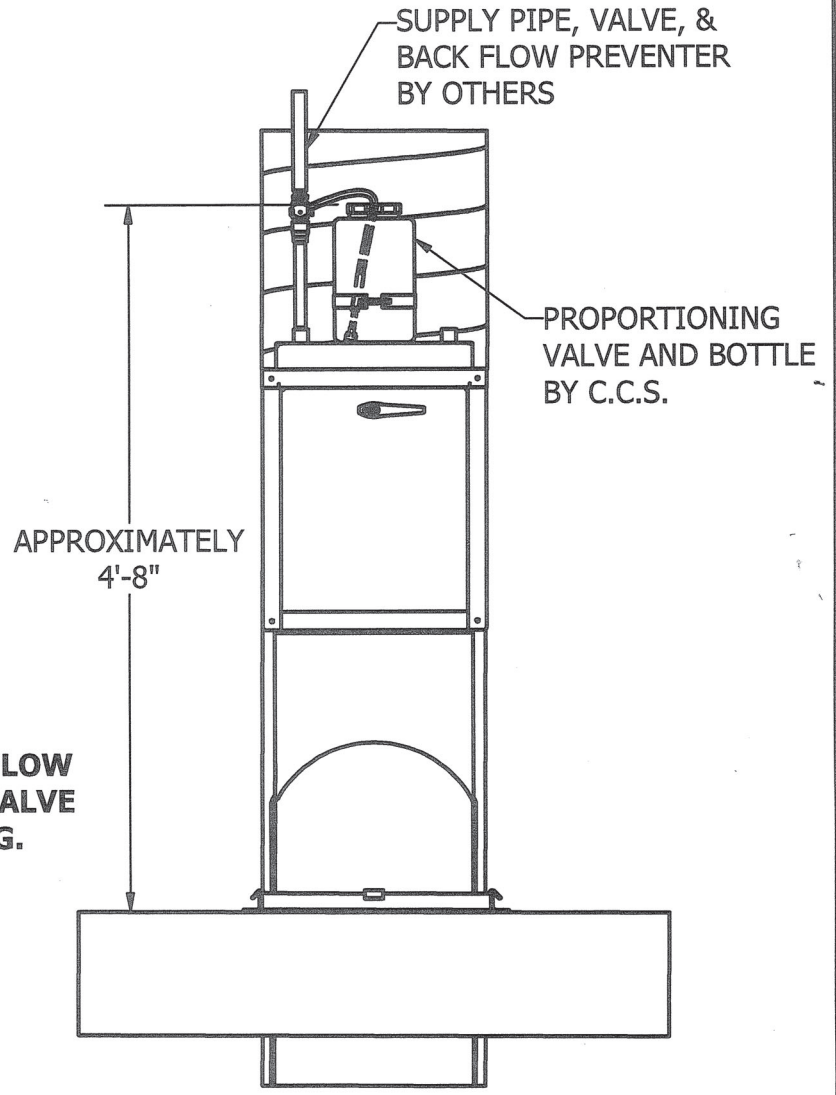
 	105 INDUSTRIAL DRIVE MINOOKA, IL 60447 PHONE: 815-723-7632		
	KORFUND TYPE ISOLATOR PAD	1/4/2010	DR. BY: JB
			CHECKED BY:
		MEA#	
	WO#	1 OF 1	

A

PART #



**NOTE:**  
**BOTTLE MUST BE INSTALLED AT OR BELOW THE PROPORTIONING VALVE TO PREVENT SIPHONING.**



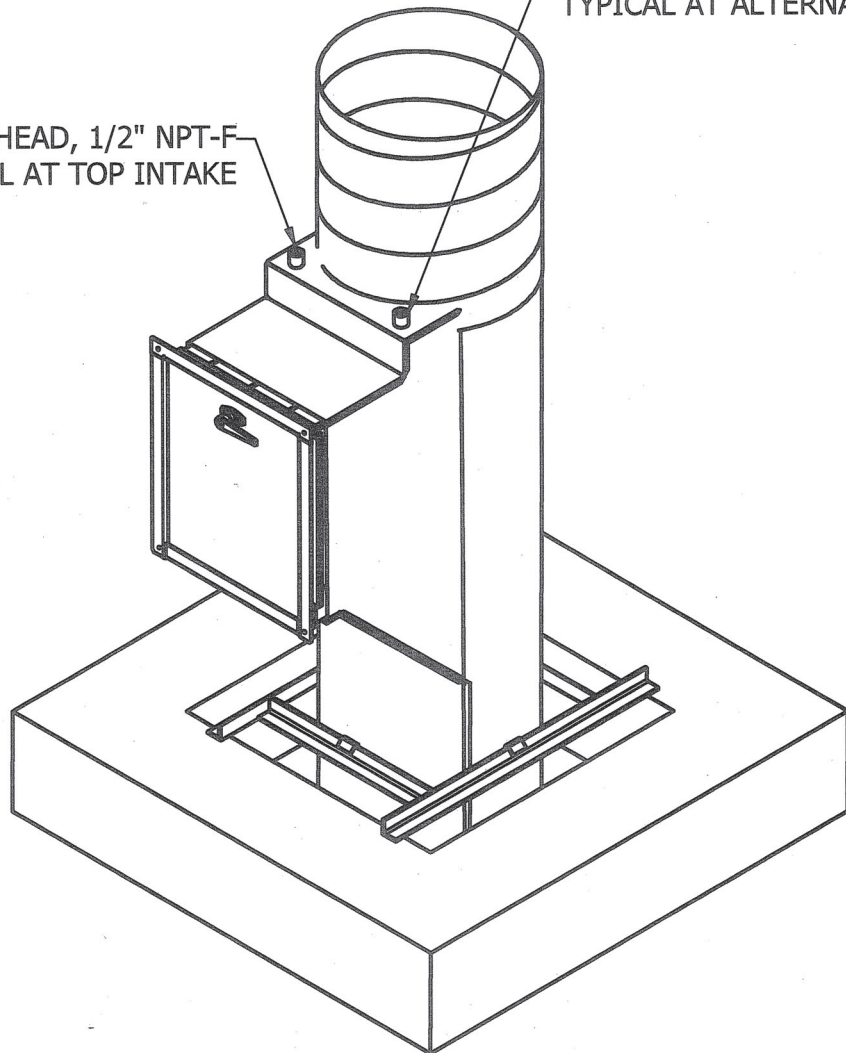
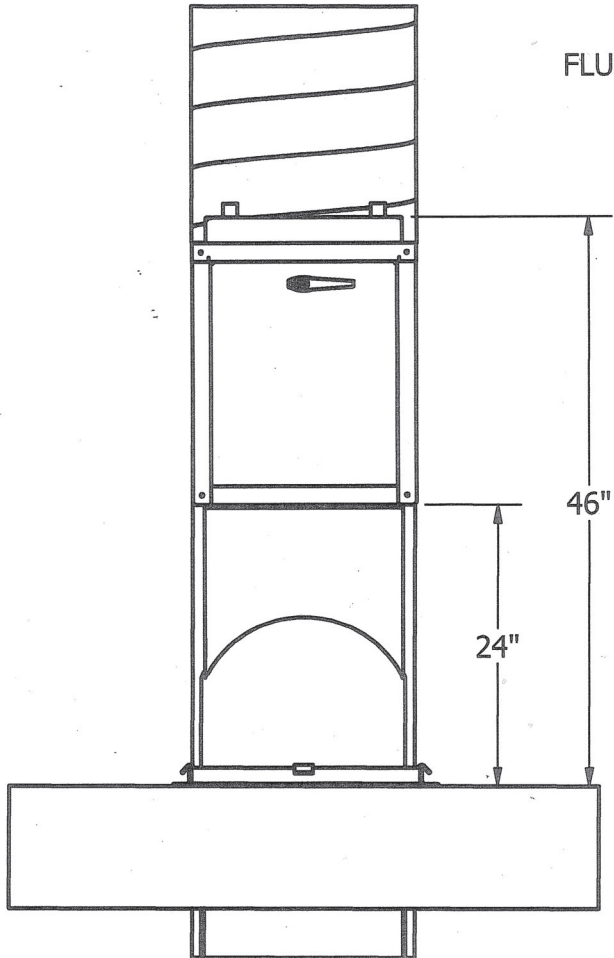
MATERIAL:	105 INDUSTRIAL RD. MINOOKA, IL. 60447			NAME:  <b>SANITATION BOTTLE INSTALLATION</b>
	QTY: 1	TOLERANCES UNLESS OTHERWISE INDICATED XX= ± .015 XXX= ± .005 ∠= ± 1/2' BREAK ALL SHARP EDGES	DWG BY: ERIK CHK'D BY: DATE: 11-19-07	
SCALE: NONE	SHEET 1 OF 3			A PART #

A

PART #

SPRINKLER, 1/2" NPT-F  
TYPICAL AT ALTERNATE FLOORS

FLUSHING SPRAY HEAD, 1/2" NPT-F  
TYPICAL AT TOP INTAKE



MATERIAL:

105 INDUSTRIAL RD. MINOOKA, IL. 60447

NAME:

**TYPICAL INTAKE  
WITH FLUSHING  
SPRAY HEAD AND  
SPRINKLER**

QTY: 1

TOLERANCES UNLESS OTHERWISE INDICATED  
XX= ± .015  
XXX= ± .005  
∠= ± 1/2'  
BREAK ALL SHARP EDGES

DWG BY: ERIK

CHK'D BY:

DATE: 11-19-07

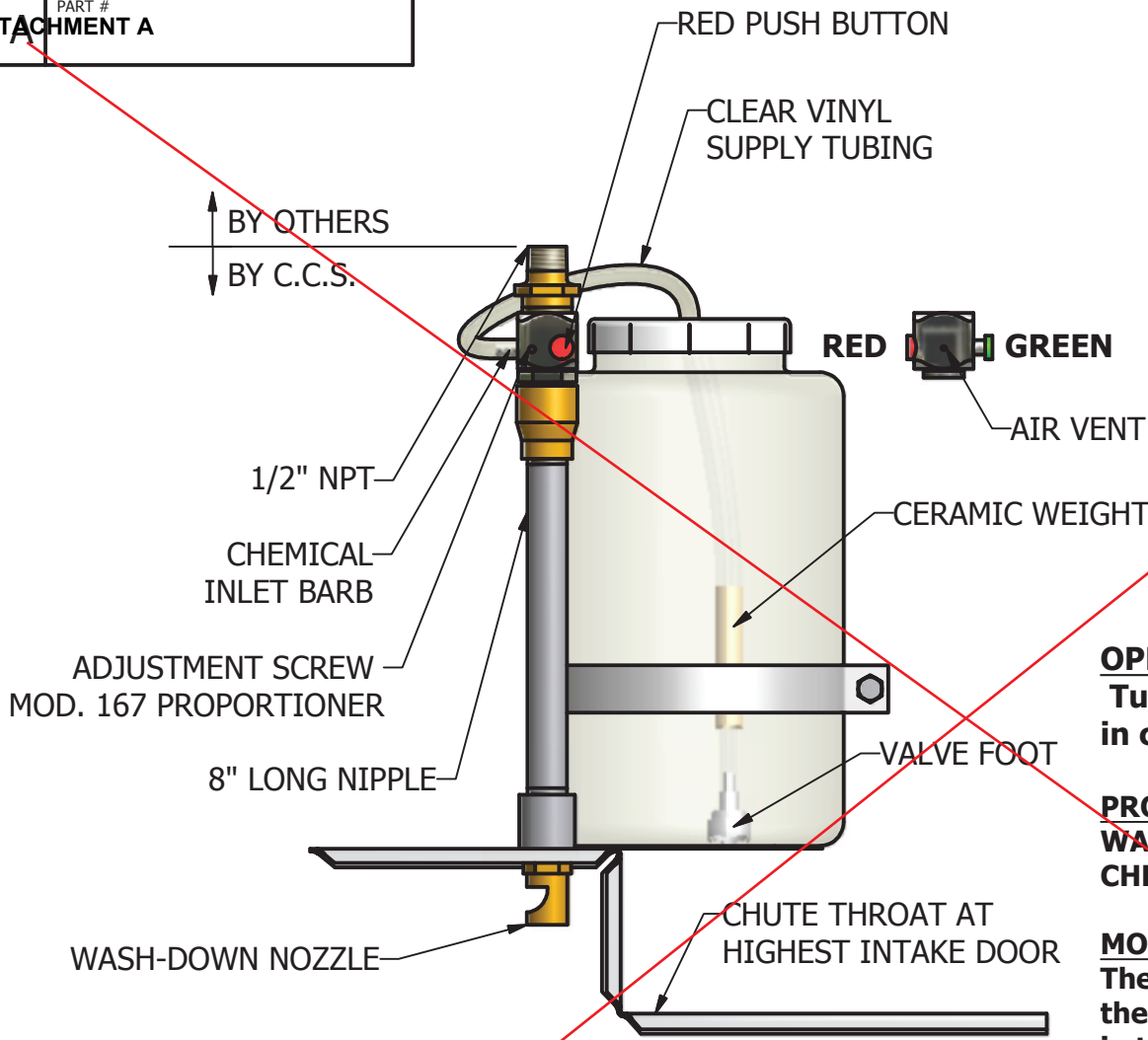
SCALE: NTS

SHEET 2 OF 3

A

PART #

PART #  
**ATTACHMENT A**



TURNS CCW FROM CLOSED POSITION	INJECTION RATE FOR VISCOSITIES SHOWN		
	1 cps OZ/GAL	75 cps OZ/GAL	200 cps OZ/GAL
1	0.40	—	—
2	3.25	1.75	0.90
2 1/2	5.75	2.50	1.00
3	8.25	2.75	1.05
4	12.85	3.00	1.10

**REMOVE SANITIZER AND ASSOCIATED EQUIPMENT**

**OPERATION:**  
Turn on water and push red button to draw in chemical. Push green button for clear water.

**PROPORTIONER ADJUSTMENT:**  
**WARNING: USE CARE WHEN HANDLING HAZARDOUS CHEMICALS.**

**MODEL 167:**  
The injection rate of the detergent or disinfectant into the water can be adjusted by turning the recessed screw in the left side of the proportioner. The injection rates for various settings and for products of different viscosities are shown in the table above.

MOUNT BOTTLE SO THAT THE LIQUID LEVEL IN THE BOTTLE IS LOWER THAN THE PROPORTIONER AIR VENT.

MATERIAL:	<b>Century CHUTE &amp; SUPPLY</b>		NAME:  <b>SANITIZER</b>
	105 INDUSTRIAL RD. MINOOKA, IL. 60447		
QTY: <b>1</b>	TOLERANCES UNLESS OTHERWISE INDICATED XX= ± .015 XXX= ± .005 ∠= ± 1/2' BREAK ALL SHARP EDGES	DWG BY: ERIK CHK'D BY:	PART # <b>A</b>
SCALE: <b>NTS</b>	SHEET <b>3 OF 3</b>	DATE: 11-19-07	

## Series TY-L — 5.6 and 8.0 K-factor Upright, Pendent, and Recessed Pendent Sprinklers Standard Response, Standard Coverage

### General Description

The TYCO Series TY-L, 5.6 and 8.0 K-factor, Upright, Pendent, and Recessed Pendent Sprinklers described in this data sheet are standard response, standard coverage, solder type spray sprinklers designed for use in light, ordinary, and extra hazard, commercial occupancies such as banks, hotels, shopping malls, factories, refineries, chemical plants, etc.

The recessed version of the Series TY-L Pendent Sprinkler, where applicable, is intended for use in areas with a finished ceiling. It uses a two-piece Style 20 (1/2 inch NPT) or Style 30 (3/4 inch NPT) Recessed Escutcheon. The Recessed Escutcheon provides 1/4 in. (6.4 mm) of recessed adjustment or up to 1/2 in. (12.7 mm) of total adjustment from the flush pendent position. The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the fixed pipe drops to the sprinklers must be cut.

Corrosion resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although corrosion resistant coated sprinklers have passed the standard corrosion tests of the applicable approval agencies, the testing is not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these coatings for any given

corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity, should be considered, as a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

An intermediate level version of the Series TY-L Pendent Sprinkler can be obtained by utilizing the Series TY-L Pendent Sprinkler in combination with the Model S Shield.

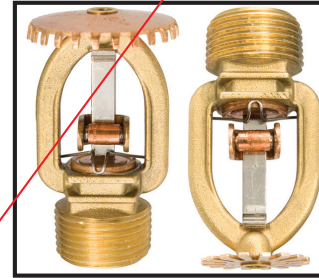
#### NOTICE

*The TYCO Series TY-L, 5.6 and 8.0 K-factor, Upright and Pendent Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.*

*The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.*

### Sprinkler Identification Number (SIN)

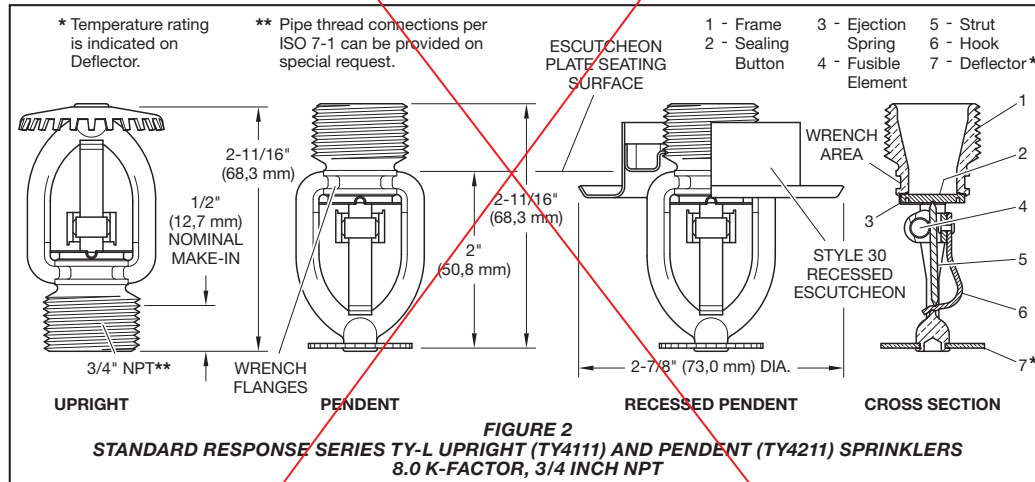
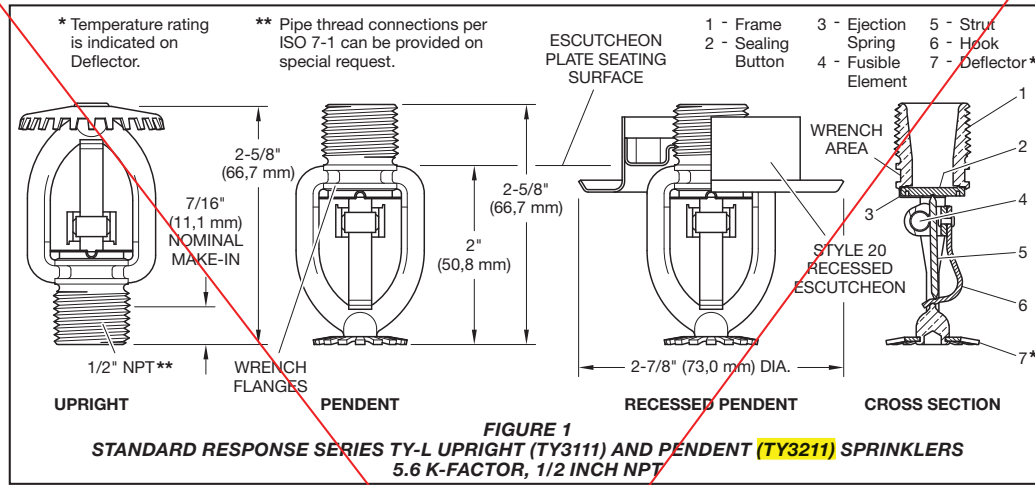
TY3211 . . . . Pendent 5.6K, 1/2" NPT



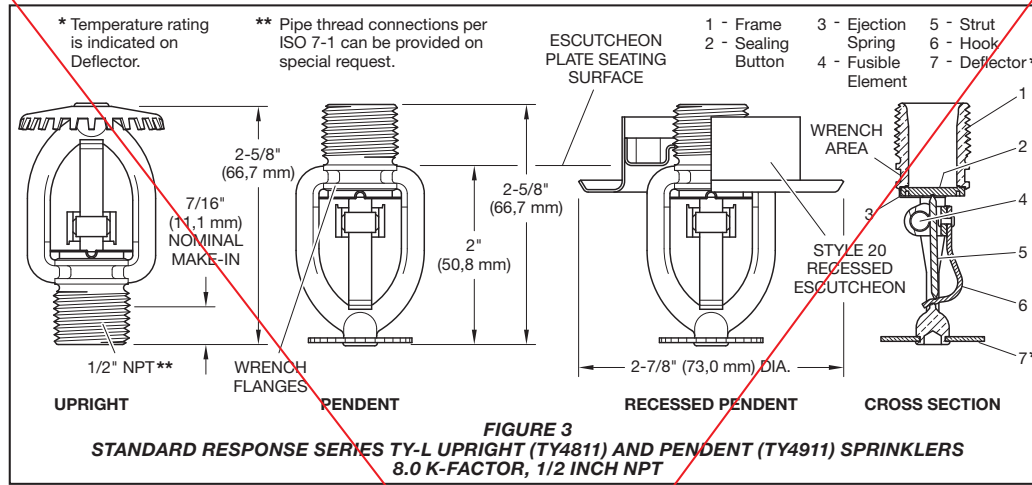
#### IMPORTANT

*Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.*

**ELIMINATE SPRINKLER HEADS. DRY  
SPRINKLER HEADS TO BE INSTALLED BY  
FIRE SPRINKLER CONTRACTOR.**



ELIMINATE SPRINKLER HEADS. DRY  
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FIRE SPRINKLER CONTRACTOR.



## Technical Data

**Approvals**  
UL and C-UL Listed. FM, and LPCB Approved. (Refer to Table A for complete approval information including corrosion resistant status.)

**Maximum Working Pressure**  
175 psi (12,1 bar)

**Discharge Coefficient**  
K=5.6 GPM/psi<sup>1/2</sup> (80,6 LPM/bar<sup>1/2</sup>)  
K=8.0 GPM/psi<sup>1/2</sup> (115,2 LPM/bar<sup>1/2</sup>)

**Temperature Ratings**  
Refer to Table A

**Finishes**  
Sprinkler: Refer to Table A Recessed  
Escutcheon: White Coated, Chrome Plated, or Brass Plated

**Physical Characteristics**

Frame	Brass
Sealing Button	Bronze w/TEFLON
Ejection Spring	Stainless Steel
Strut	MONEL
Hook	Bronze/MONEL
Deflector	Bronze
Fusible Element	Solder, Copper, Stainless Steel

## Operation

A copper tube sealed by two stainless steel balls holds a fusible alloy. When the rated temperature is reached, the alloy melts, the balls are forced toward each other releasing the tension mechanism, allowing the sprinkler to operate.

## Design Criteria

The TYCO Series TY-L, 5.6 and 8.0 K-factor, Upright, Pendent, and Recessed Pendent Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on the requirements of NFPA 13, and FM Approval is based on the requirements of FM's Loss Prevention Data Sheets). Only the Style 20 or 30 Recessed Escutcheon, as applicable, are to be used for recessed pendent installations.

## Installation

The TYCO Series TY-L, 5.6 and 8.0 K-factor, Upright, Pendent, and Recessed Pendent Sprinklers must be installed in accordance with this section:

A leak tight 1/2 inch NPT sprinkler joint should be obtained with a torque of 7 to 14 ft.-lbs. (9,5 to 19,0 Nm). A leak tight 3/4 inch NPT sprinkler joint should be obtained with a torque of 10 to 20 ft.-lbs. (13,4 to 26,8 Nm). Higher levels of torque may distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

Do not attempt to make up or insufficient adjustment in the escutcheon plate by under- or over-tightening the sprinkler. Readjust the position of the sprinkler fitting to suit.

## Series TY-L Pendent and Upright Sprinkler Installation

The Series TY-L Pendent and Upright Sprinklers must be installed in accordance with this section.

Pendent sprinklers are to be installed in the pendent position, and upright sprinklers are to be installed in the upright position.

**Step 1.** With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

**Step 2.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 9 Sprinkler Wrench (Ref. Figure 7), except that an 8 or 10 inch adjustable Crescent wrench is to be used for wax coated sprinklers. With reference to Figures 1, 2, and 3, the W-Type 9 Sprinkler Wrench is to be applied to the wrench area, or as applicable, the adjustable Crescent wrench is to be applied to the wrenching flanges.

When installing wax coated sprinklers with the adjustable Crescent wrench, additional care needs to be exercised to prevent damage to the wax coating on the sprinkler wrench flats or frame arms and, consequently, exposure of bare metal to the corrosive environment. The jaws of the wrench should be opened sufficiently wide to pass over the Wrench Bars without damaging the wax coating. Before wrench tightening the sprinkler, the jaws of the wrench are to be adjusted to just contact the sprinkler wrench flats. After wrench tightening the sprinkler, loosen the wrench jaws before removing the wrench.

**ELIMINATE SPRINKLER HEADS BY THE WRENCH BAR**  
**DO NOT SPRINKLER CONTRACTOR**

K	Type	Temp. Rating	Frame Color Code	Sprinkler Finish				
				Natural Brass	Chrome Plated	Lead Coated	Wax Coated	Wax Over Lead Coated
5.6 1/2" NPT	Pendent (TY3211) and Upright (TY3111)	165°F (74°C)	Unpainted	1, 2, 3, 5	1, 2, 3			
		212°F (100°C)	White					
		280°F (138°C)	Blue		1, 2	4	N/A	
	Recessed Pendent (TY3211 w/Style 20)	165°F (74°C)	Unpainted	1, 2, 3, 5	N/A			
212°F (100°C)		White	1, 2, 3, 5					
8.0 3/4" NPT	Pendent (TY4211)	165°F (74°C)	Unpainted	1, 2, 3	1, 2, 3			
		212°F (100°C)	White					
		280°F (138°C)	Blue		1, 2	4	N/A	
	Upright (TY4111)	165°F (74°C)	Unpainted	1, 2, 3, 5	1, 2, 3			
		212°F (100°C)	White					
		280°F (138°C)	Blue		1, 2	4	N/A	
Recessed Pendent (TY4211 w/Style 30)	165°F (74°C)	Unpainted	1, 2, 5	N/A				
	212°F (100°C)	White						
8.0 1/2" NPT	Pendent (TY4911) and Upright (TY4811)	165°F (74°C)	Unpainted	1, 2, 3, 5	1, 2, 3			
		212°F (100°C)	White					
		280°F (138°C)	Blue		1, 2	N/A		
	Recessed Pendent (TY4911 w/Style 20)	165°F (74°C)	Unpainted	1, 2	N/A			
		212°F (100°C)	White					

NOTES:  
 1. UL Listed  
 2. C-UL Listed  
 3. FM Approved  
 4. FM Approved for maximum 150°F (68°C) ambient temperatures  
 5. LPCB Approved (LPCB Ref. No. 094a/03)  
 N/A: Not Available

**TABLE A**  
**LABORATORY LISTINGS AND APPROVALS**

After installation, the sprinkler wrench flats and frame arms must be inspected and the wax coating retouched (repaired) whenever the coating has been damaged and bare metal is exposed. The wax coating on the wrench flats can be retouched by gently applying a heated 1/8 in. diameter steel rod to the areas of wax that have been damaged, to smooth it back over areas where bare metal is exposed.

**NOTICE**

Only retouching of the wax coating applied to the wrench flats and frame arms is permitted, and the retouching is to be performed only at the time of the initial sprinkler installation.

The steel rod should be heated only to the point at which it can begin to melt the wax, and appropriate precautions need to be taken, when handling the heated rod, in order to prevent the installer from being burned.

If attempts to retouch the wax coating with complete coverage are unsuccessful, additional wax can be ordered in the form of a wax stick (the end of which is color coded). Only the correct

color coded wax is to be used, and retouching of wrench flats and frame arms is only permitted at the time of initial sprinkler installation. With the steel rod heated as previously described, touch the rod to the area requiring additional wax with the rod angled downward, and then touch the wax stick to the rod approximately one-half inch away from the area requiring retouching. The wax will melt and run down onto the sprinkler.

**Series TY-L Recessed Pendent Sprinklers Installation**

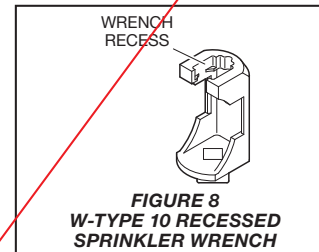
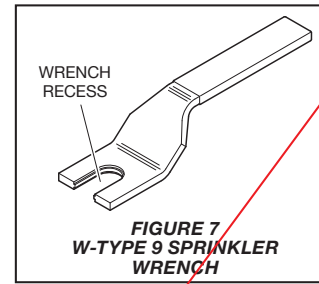
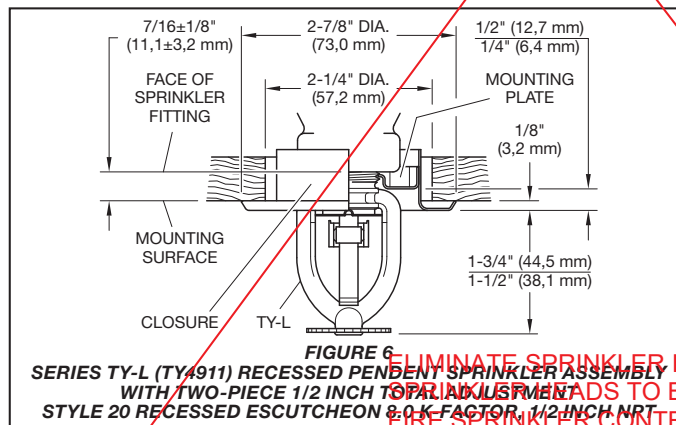
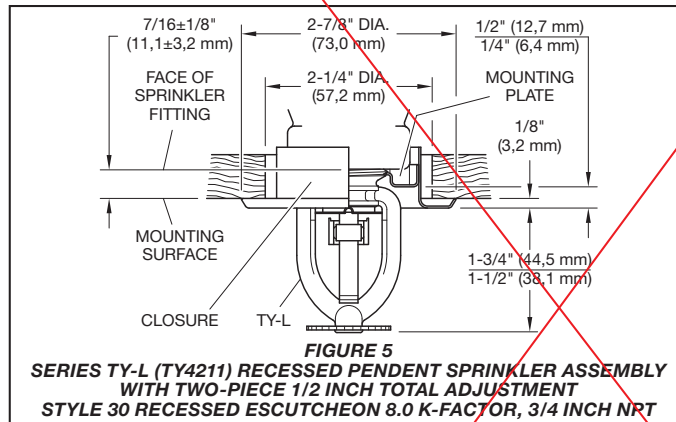
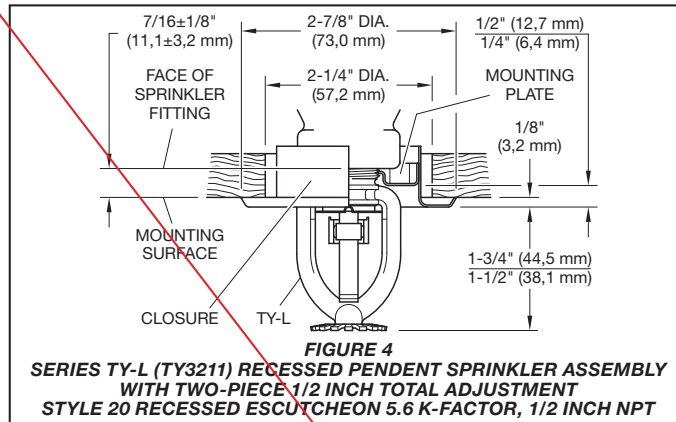
The Series TY-L Recessed Pendent Sprinklers must be installed in accordance with this section.

**Step A.** After installing the Style 20 or 30 Mounting Plate, as applicable, over the sprinkler threads and with pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

**Step B.** Insert the sprinkler into the sprinkler fitting using only the W-Type 10 Recessed Sprinkler Wrench (Ref. Figure 8). With reference to Figure 1, 2, or 3, the W-Type 10 Recessed Sprinkler Wrench is to be applied to the sprinkler wrenching flanges.

**Step C.** After the ceiling has been installed or the finish coat has been applied, slide on the Style 20 or 30 Closure over the Series TY-L Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.

ELIMINATE SPRINKLER HEADS. DRY  
SPRINKLER HEADS TO BE INSTALLED BY  
THE SPRINKLER CONTRACTOR.



## Care and Maintenance

The TYCO Series TY-L, 5.6 and 8.0 K-factor, Upright, Pendent, and Recessed Pendent Sprinklers must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be painted, plated, coated or otherwise altered after leaving the factory. Modified or over-heated sprinklers must be replaced. Care must be exercised to avoid damage to the sprinklers -before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage or the like, must be replaced.

Frequent visual inspections are recommended to be initially performed for corrosion resistant coated sprinklers, after the installation has been

ELIMINATE SPRINKLER HEADS DRY TOPIAL ADJUSTMENT TO BE INSTALLED BY FIRE SPRINKLER CONTRACTOR

P/N 53 - XXX - X - XXX

		SIN	SPRINKLER FINISH		TEMPERATURE RATING	
111	5.6K UPRIGHT (1/2"NPT)	TY3111	1	NATURAL BRASS	165	165°F (74°C)
112	5.6K PENDENT (1/2"NPT)	TY3211	6	WAX COATED 165°F TO 280°F ONLY	212	212°F (100°C)
101	8.0K UPRIGHT (3/4"NPT)	TY4111	7	LEAD COATED	280	280°F (138°C)
102	8.0K PENDENT (3/4"NPT)	TY4211	8	WAX OVER LEAD 165°F TO 212°F ONLY		
106	8.0K UPRIGHT (1/2"NPT)	TY4811	9	CHROME PLATED		
107	8.0K PENDENT (1/2"NPT)	TY4911				

**TABLE B**  
**SERIES TY-L PENDENT AND UPRIGHT SPRINKLERS**  
**PART NUMBER SELECTION**

completed, to verify the integrity of the corrosion resistant coating. Thereafter, annual inspections per NFPA 25 should suffice; however, instead of inspecting from the floor level, a random sampling of close-up visual inspections should be made, so as to better determine the exact sprinkler condition and the long term integrity of the corrosion resistant coating, as it may be affected by the corrosive conditions present.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

### Limited Warranty

For warranty terms and conditions, visit [www.tyco-fire.com](http://www.tyco-fire.com).

## Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

### Sprinkler Assemblies with NPT Thread Connections

Specify: Series TY-L (specify SIN), (specify K-factor), (specify Upright, Pendent, or Recessed Pendent) Sprinkler, Standard Response, Standard Coverage, (specify) temperature rating, (specify) finish or coating, P/N (specify from Table B)

### Recessed Escutcheon

Specify: Style (specify) Recessed Escutcheon with (specify finish), P/N (specify):

- 1/2" (15 mm)  
Style 20  
Brass Plated . . . . . P/N 56-705-2-010
- 1/2" (15 mm)  
Style 20  
Signal White (RAL9003) . . . . . P/N 56-705-4-010
- 1/2" (15 mm)  
Style 20  
Chrome Plated . . . . . P/N 56-705-9-010
- 3/4" (20 mm)  
Style 30  
Brass Plated . . . . . P/N 56-705-2-011
- 3/4" (20 mm)  
Style 30  
Signal White (RAL9003) . . . . . P/N 56-705-4-011
- 3/4" (20 mm)  
Style 30  
Chrome Plated . . . . . P/N 56-705-9-011

### Sprinkler Wrench

Specify: W-Type 9 Sprinkler Wrench, P/N 56-000-1-849

Specify: W-Type 10 Sprinkler Wrench, P/N 56-000-1-948

### Wax Sticks (for retouching wrench damaged wax coating)

Specify: Series TY-L Sprinklers, (specify color), color coded Wax Stick for retouching, (specify) temperature rated, P/N (specify):

- Red for 165°F (74°C) . . . . . P/N 56-065-1-155
- Blue for 212°F (100°C)
- and 280°F (138°C) . . . . . P/N 56-065-1-286

### NOTES:

Each wax stick is suitable for retouching up to twenty-five sprinklers.

The wax used for 280°F (138°C) sprinklers is the same as for 212°F (100°C) sprinklers, and, therefore, the 280°F (138°C) sprinkler is limited to the same maximum ceiling temperature as the 212°F (100°C) sprinkler (i.e., 150°F (65°C)).

**ELIMINATE SPRINKLER HEADS. DRY  
SPRINKLER HEADS TO BE INSTALLED BY  
FIRE SPRINKLER CONTRACTOR.**