

# Aleum Standard Respond / Quick Response Sprinkler Head

## Model : QRP/QRU , SRP/SRU

### Technical Features

#### Quick Response - Pendent & Upright

**Maximum Working Pressure:** 175 PSI (Max. Test Pressure: 500 PSI)

**Operating Temperature:** 57°C(135°F) 68°C(155°F) 93°C(200°F)

**Thread Size :** 15A (PT 1/2" , NPT 1/2")

**Orifice Size :**  $\Phi 11.2\text{mm}$

**Bulb :** standard 3mm size

**Flow Rate :** 80  $\ell/\text{min}$ -0.1MPa(K=80)

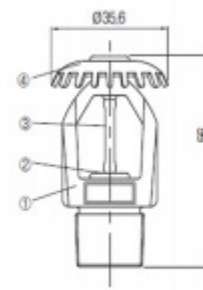
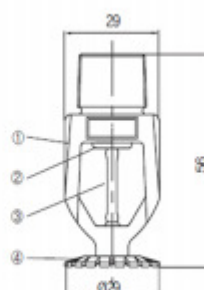
	Component	Material
1	Frame	Forged Brass
2	Bulb Cap	Phosphor Bronze
3	Glass Bulb	-
4	Deflector	Copper



QRP



QRU



#### Standard Response - Pendent & Upright

**Maximum Working Pressure:** 175 PSI (Max. Test Pressure: 500 PSI)

**Operating Temperature:** 57°C(135°F) 68°C(155°F) 93°C(200°F)

**Thread Size :** 15A (PT 1/2" , NPT 1/2")

**Orifice Size :**  $\Phi 11.2\text{mm}$

**Bulb :** standard 5mm size

**Flow Rate :** 80  $\ell/\text{min}$ -0.1MPa(K=80)



SRP



SRU

Style	Model No.	Certi.	57°C (135°F)		68°C (155°F)		93°C (200°F)	
			QR	SR	QR	SR	QR	SR
Pendent	Brass (QRPB / SRPB) Chrome (QRPC / SRPC)	UL/FM	●	●	●	●	●	●
Upright	Brass (QRUB / SRUB) Chrome (QRUC / SRUC)	UL/FM	●	●	●	●	●	●

# Aleum Conceal Sprinkler

Model : QRC/SRC

## Technical Features

### Quick Response - Concealed

**Maximum Working Pressure:** 175 PSI (Max. Test Pressure: 500 PSI)

**Operating Temperature:** 68°C(155°F) 93°C(200°F)

**Thread Size :** 15A (PT 1/2")

**Orifice Size :** Φ11.2mm

**Bulb :** 3mm size

**Flow Rate :** 80 l/min-0.1MPa(K=80)

### Standard Response - Concealed

**Maximum Working Pressure:** 175 PSI (Max. Test Pressure: 500 PSI)

**Operating Temperature:** 68°C(155°F) 93°C(200°F)

**Thread Size :** 15A (PT 1/2")

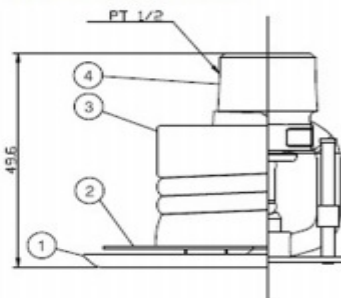
**Orifice Size :** Φ11.2mm

**Bulb :** 5mm size

**Flow Rate :** 80 l/min-0.1MPa(K=80)



	Component	Material
1	Cover Plate	C2680S
2	Retainer	C2680S
3	Cover Adapter	SCP
4	Sprinkler	AS1568, Alloy486
5	Shield Plate	SS41



Style	Model No.	Certi.	68°C (155°F)		93°C (200°F)	
			QR	SR	QR	SR
Concealed	Brass (QRCB / SRCB)	UL	●	●	●	●
	Chrome (QRCC / SRCC)	UL	●	●	●	●

# Aleum Side Wall Sprinkler

Model : QRS / SRS

## Technical Features

### Quick Response - Side Wall

**Maximum Working Pressure:** 175 PSI (Max. Test Pressure: 500 PSI)

**Operating Temperature:** 57°C(135°F) 68°C(155°F) 79°C(175°F)  
93°C(200°F) 141°C(286°F)

**Thread Size :** 15A (PT 1/2")

**Orifice Size :** Φ11.2mm

**Bulb :** 3mm size

**Flow Rate :** 80 l/min-0.1MPa(K=80)



### Standard Response - Side Wall

**Maximum Working Pressure:** 175 PSI (Max. Test Pressure: 500 PSI)

**Operating Temperature:** 57°C(135°F) 68°C(155°F) 79°C(175°F)  
93°C(200°F) 141°C(286°F)

**Thread Size :** 15A (PT 1/2")

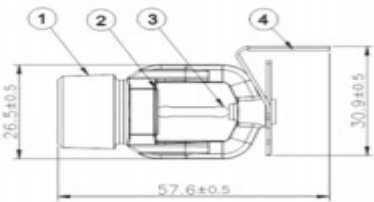
**Orifice Size :** Φ11.2mm

**Bulb :** 5mm size

**Flow Rate :** 80 l/min-0.1MPa(K=80)



	Component	Material
1	Frame	Forged Brass
2	Bulb Cap	Brass
3	Glass Bulb	-
4	Deflector	Brass



Style	Model No.	Certi.	57°C (135°F)		68°C (155°F)		79°C (175°F)		93°C (200°F)		141°C (286°F)	
			QR	SR	QR	SR	QR	SR	QR	SR	QR	SR
Side Wall	Brass (QRSB / SRSB)	UL	●	●	●	●	●	●	●	●	●	●
	Chrome (QRSC / SRSC)	UL	●	●	●	●	●	●	●	●	●	●

# Flexible Sprinkler Hose – Asia Use

Model : FXU ( Unbraided ), FXB ( Braided )



## Technical Features

**Hose Types:** Braided or Unbraided

**Hose Lengths:** 24", 36", 48", 60", 72"

**Maximum Working Pressure:** 175 PSI

**Maximum Working Temperature:** 225 F

**K factor:** 1/2" Outlet 5.6, 3/4" Outlet 8.0

**Connections:** To branch line (inlet) via 1" / 25.4mm NPT male thread

**Connections:** To sprinkler head (outlet) via 1/2" or 3/4" 15mm or 20mm NPT female thread

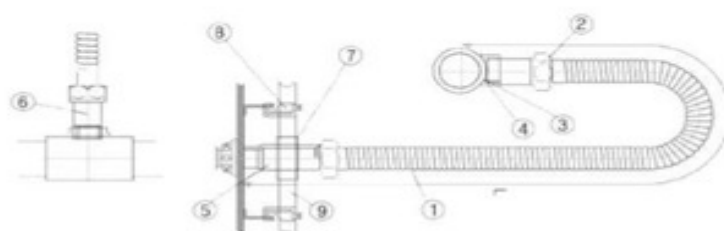
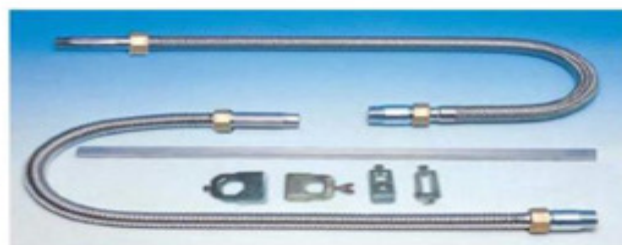
\* NPT & Metric Threads Available

## Approvals & Standards

**Braided:** UL, ULC 2443, FM 1637

**Unbraided:** UL, ULC 2443

NEPA 13, NEPA 13D, NEPA 13R, ASTM C635, ASTM C636



No	Part Name	Material	Qty
1	Flexible Tube	SS304	1
2	Nut	S10C	2
3	Isolation Ring	Nylon66	1
4	O-Ring	Silicon	1
5	Reducer	Zinc Plated Steel	1
6	Nipple	Zinc Plated Steel	1
7	Center Bracket	Steel	1
8	End Bracket	Steel	2
9	Square Bar	GL Pipe	1

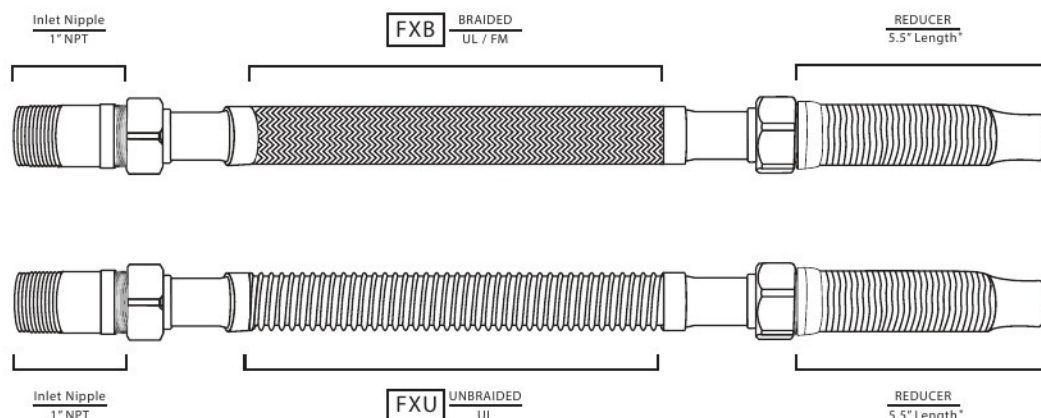
Model	in/mm	Max # of 90° Bends	Min Bend Radius, in.	Equivalent Length of 1" Sch. 40 Pipe
FX(U) - 07	1/2	1	7.5	26.4
	3/4	1	7.5	19.4
FX(U) - 08	1/2	2	7.5	34.1
	3/4	2	7.5	28.4
FX(U) - 10	1/2	2	7.5	46.8
	3/4	2	7.5	39.5
FX(U) - 12	1/2	3	7.5	61.4
	3/4	3	7.5	54.8
FX(U) - 15	1/2	4	7.5	76.1
	3/4	4	7.5	70.1

Model	in/mm	Max # of 90° Bends	Min Bend Radius, in.	Equivalent Length of 1" Sch. 40 Pipe
FX(U) - 07	1/2	1	4	24
	3/4	1	4	30
FX(U) - 08	1/2	2	4	44
	3/4	2	4	48
FX(U) - 10	1/2	2	4	49
	3/4	2	4	55
FX(U) - 12	1/2	2	4	59
	3/4	2	4	64
FX(U) - 15	1/2	3	4	84
	3/4	3	4	86

# Flexible Sprinkler Hose – USA Use Centre Bracket

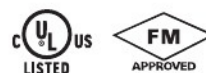


## Flexible Sprinkler Connector | Braided & Unbraided



\* Other Reducer lengths Available

### ASSEMBLY DRAWING: Suspended Ceiling T-Bar Grid System



#### STANDARDS OF COMPLIANCE

##### • UL / ULC LISTING

UL 2443 standards for Flexible Sprinkler Hose with Fittings for fire protection service.

##### • FM APPROVAL

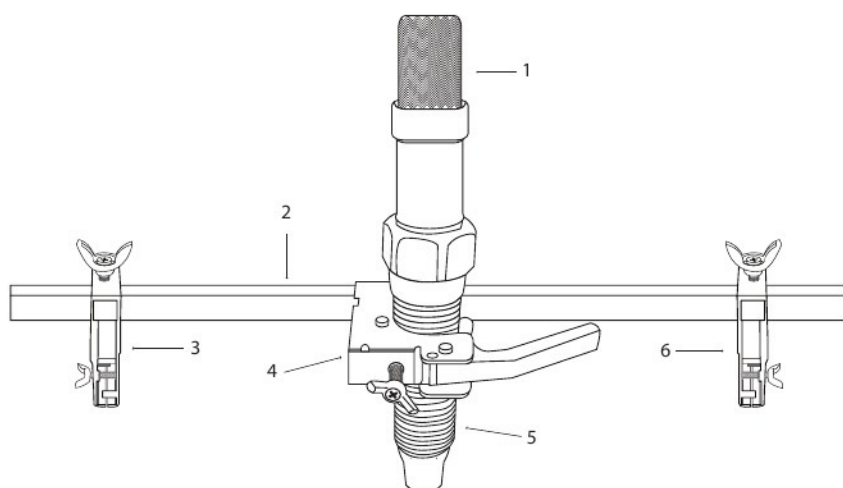
FM class number 1637 approved standard for Flexible Sprinkler Hose with Threaded Ends and Fittings.

##### • NFPA

NFPA 13 Standard for the installation of sprinkler system.  
NFPA 13D Standard for the installation of sprinkler systems in one and two family dwellings and manufactured homes.  
NFPA 13R Standard for the installation of sprinkler systems in residential occupancies up to and including four stories in height.

##### • ASTM

ASTM C635 Standards specification for the manufacture, performance, and testing of metal suspension systems for acoustical tile and lay-in panel ceilings.  
ASTM C636 Standards practice for installation of metal ceilings suspension systems for acoustical tile and lay-in panels.



Item Description	
1	Stainless Steel Flexible Sprinkler Hose
2	Steel Square Bar 25" & 50"
3	97mm End Bracket with Wing Nut
4	Center Bracket D-Type
5	1/2" or 3/4" Reducer NPT
6	97mm End Bracket with Wing Nut



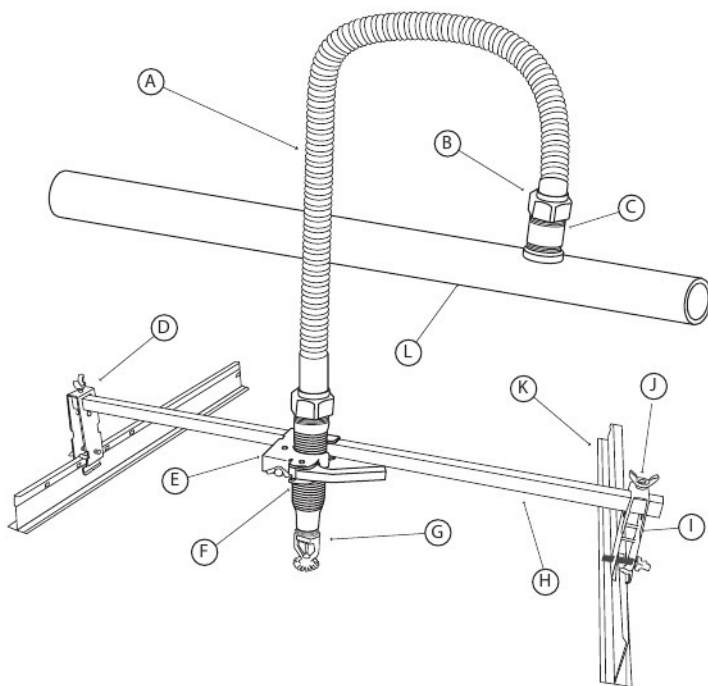
# Flexible Sprinkler Connector | Braided & Unbraided

## Technical Features

- **Hose Types:** Braided or Unbraided
- **Hose Lengths:** 24", 36", 48", 60", 72"
- **Maximum Working Pressure:** 175 PSI
- **Maximum Working Temp:** 225°F
- **K factor:** 1/2" Outlet 5.6, 3/4" Outlet 8.0
- **Connections:** To branch line (inlet) via 1"/25.4mm NPT male thread
- **Connections:** To sprinkler (outlet) via 1/2" or 3/4" 15mm or 20mm NPT female thread

## Approvals & Standards

- **Braided:** UL, ULC 2443, FM 1637
- **Unbraided:** UL, ULC 2443
- NFPA 13, NFPA 13D, NFPA 13R, ASTM C635, ASTM C636



Part	Material
Flexible Hose	Type 304 Stainless Steel
Nut	S10C
Isolation Ring	Nylon 66
Gasket Seal	Silicon
Reducer	Zinc Plated Grade 1020 Steel
End & Center Brackets	Zinc Plated Steel ASTM A109
Square Bar	Zinc Plated Steel Grade 1010 Steel




ASSEMBLY DRAWING: FXB (Braided) & FXU (Unbraided)

- |   |                                     |
|---|-------------------------------------|
| <b>A.</b> Stainless Steel Flexible Hose | <b>G.</b> Sprinkler                 |
| <b>B.</b> Connection Nut                | <b>H.</b> Steel Bar                 |
| <b>C.</b> 1" Inlet Nipple               | <b>I.</b> End Bracket with Wing Nut |
| <b>D.</b> End Bracket with Wing Nut     | <b>J.</b> Wing Nut                  |
| <b>E.</b> Center Bracket                | <b>K.</b> Ceiling Rail (T-Bar)      |
| <b>F.</b> 5.5" Reducer                  | <b>L.</b> Branch Line               |



FRICTION LOSS DATA - Braided (FXB)				
Length	Outlet Size	Max # of 90° Bends	Min Bend Radius, in.	Equivalent Length of 1" Sch. 40 Pipe
Inches	Inches			
24	1/2	1	7.5	26.4
	3/4	1	7.5	19.4
36	1/2	2	7.5	34.1
	3/4	2	7.5	28.4
48	1/2	2	7.5	46.8
	3/4	2	7.5	39.5
60	1/2	3	7.5	61.4
	3/4	3	7.5	54.8
72	1/2	4	7.5	76.1
	3/4	4	7.5	70.1



FRICTION LOSS DATA - Unbraided (FXU)				
Length	Outlet Size	Max # of 90° Bends	Min Bend Radius, in.	Equivalent Length of 1" Sch. 40 Pipe
Inches	Inches			
24	1/2	1	4	24
	3/4	1	4	30
36	1/2	2	4	44
	3/4	2	4	48
48	1/2	2	4	49
	3/4	2	4	55
60	1/2	2	4	59
	3/4	2	4	64
72	1/2	3	4	84
	3/4	3	4	86

## Flexible Sprinkler Connector | Braided & Unbraided

	Part #	Description
	FX-NPT-050A	Straight Reducer 1/2" Outlet x 5-1/4" Length
	FX-NPT-075A	Straight Reducer 3/4" Outlet x 5-1/4" Length
	Part #	Description
	FX-NPT-700	Straight Reducer 1/2" Outlet x 7" Length
	FX-NPT-900	Straight Reducer 1/2" Outlet x 9" Length
	Part #	Description
	FX-90D-50	90° Degree Elbow Reducer 1/2" NPT
	FX-90D-75	90° Degree Elbow Reducer 3/4" NPT

	Part #	Description
	FX-NPT-INL	Inlet Nipple 1" x 2-3/8" NPT
	Part #	Description
	FX-SB-25	Square Bar - 25"
	FX-SB-50	Square Bar - 50"
	Part #	Description
	FX-GSKT	EPDM Gasket

	Part #	Description
	FX-CB	Center Bracket
	Part #	Description
	FX-EB-97MM	97mm End Bracket

	Part #	Description
	DX-CB-D	Center Bracket D TYPE
	Part #	Description
	FX-EB-MTL STUD	Metal Stud End Brackets

# Flexible Sprinkler Connector | Braided & Unbraided

*\*For ASTM C635 metal ceiling suspension systems installed in accordance with ASTM C636 standards.*

### ⚠ WARNING

- \* Read and follow these installation instructions before attempting to install Fivalco products.
- \* Installer must understand the purpose of these products with common standards of the industry for safety, and the consequences of improper product installation.
- \* Wear safety glasses, hardhat, and foot protection during installation.
- \* Failure to follow these instructions could cause improper sprinkler operation, resulting in serious personal injury and / or property damage.
- \* The flexible hose are not to be bent within 2.5 inches of the connection nut at both ends.

### ASSEMBLY INSTRUCTIONS



1

(A) Pipe side: Apply PTFE thread seal tape or pipe joint compound to the tapered threads of the inlet nipple. (B) Flexible hose side: DO NOT use both pipe PTFE or pipe joint compound.



2

Tighten the inlet nipple into branch line using pipe wrench.



3

Connect the nut of flexible hose to the inlet nipple using a pipe wrench. DO NOT use PTFE or pipe joint compound on the inlet nipple at the hose side since there is already a seal gasket in place to seal the joint. Tighten the connection to a maximum torque of 15 ft-lbs/20 N\*m. Too much torque may cause damage to the seal gasket.



# Flexible Sprinkler Connector | Braided & Unbraided

*\*For ASTM C635 metal ceiling suspension systems installed in accordance with ASTM C636 standards.*



4

Connect the nut of the flexible hose to the outlet reducer. DO NOT use PTFE or pipe joint compound since on outlet reducer at the hose side since there is already a seal gasket in place to seal the joint. Tighten the connection to a maximum torque of 15 ft-lbs/20 N\*m. TOO much torque may cause damage to the seal gasket.



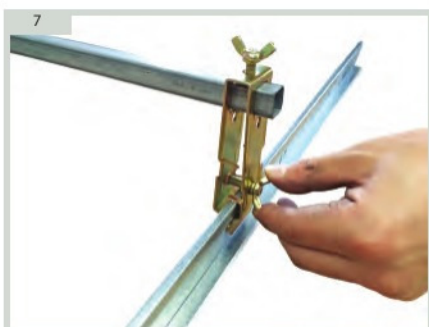
5

Identify the t-bar bracket assembly and confirm if all parts are in present: (1) end bracket at each side, (1) center bracket, (1) square steel bar. Adjust as necessary if the positions of the end brackets to match the length of the t-bar rails.



6

Attach the end brackets to the t-bar rails by loosening the wing nut and pushing in the end bracket into the t-bar rail.



7

Tighten the wing nut to a torque of 3 ft-lbs/4 N\*m to secure end brackets to the rails.

# Flexible Sprinkler Connector | Braided & Unbraided

*\*For ASTM C635 metal ceiling suspension systems installed in accordance with ASTM C636 standards.*



8

Adjust the positions of the center bracket and the flexible hose to desired location.



9

Slide the outlet reducer into the center bracket.



10

With outlet reducer positioned inside the center bracket, grasp and firmly close the handle completely to secure the reducer in place.



11

Optional: Tighten the wing nut to a torque of 3 ft-lbs/4 N\*m.

# Flexible Sprinkler Connector | Braided & Unbraided

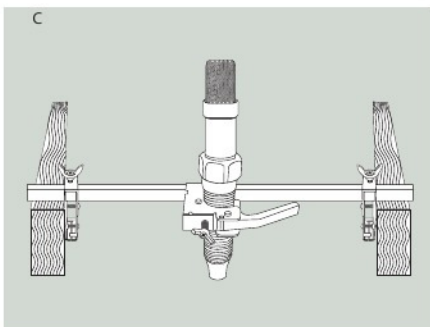
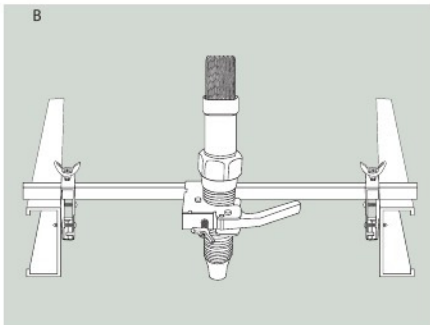
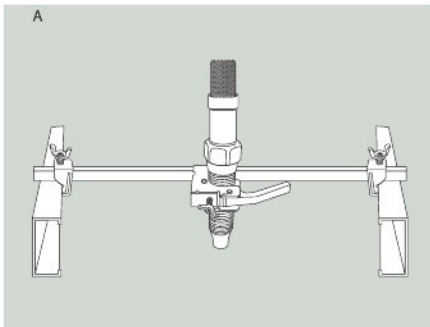
*\*For ASTM C635 metal ceiling suspension systems installed in accordance with ASTM C636 standards.*



12

Apply PTFE or pipe joint compound to the male threads of sprinkler. Install the sprinkler into the female threads of the outlet reducer by following sprinkler manufacturer's installation instructions.

## HARD-LID CEILING JOIST / STUD ASSEMBLY INSTRUCTIONS



A

### Metal Joist / Stud (Option A)

Refer to instructions for "ASTM C635 Metal Ceiling Suspension Systems" and perform steps 1 to 3. Slide the Metal Stud End Bracket (Part # FX-EB-MTL) on each end of square steel bar, making sure the "lip" of the bracket engages the metal joist/stud. Tighten the wing nuts to a torque of 3 ft-lbs/4 N\*m to secure to the metal joist/stud. Perform steps 8 to 12 of the "ASTM C635 Metal Ceiling Suspension Systems".

B

### Metal Joist / Stud (Option B)

Refer to instructions for "ASTM C635 Metal Ceiling Suspension Systems" and perform steps 1 to 3. Place the bracket assembly on top of the metal joist/stud, where the end brackets (Part # FX-EB-97MM) are on the inner side of each metal joist/stud. Drill 1-1/4 inch long #10 self-drilling sheet metal screws (4) in the locations shown in the picture. Perform steps 8 to 12 of the "ASTM C635 Metal Ceiling Suspension Systems".

C

### Wood Joist / Stud

Refer to instructions for "ASTM C635 Metal Ceiling Suspension Systems" and perform steps 1 to 3. Place the bracket assembly on top of the wood joist/stud, where the end brackets (Part # FX-EB-97MM) are on the inner side of each wood joist/stud. Drill 1-1/4 inch long #10 self-drilling wood screws (4) in the locations shown in the picture. Perform steps 8 to 12 of the "ASTM C635 Metal Ceiling Suspension Systems".