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**FLOOR/CURB (HARD) MOUNTED SEISMIC BRACKETS**

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### KSMS Seismic Equipment Bracket

#### Drawings: S-88.071-2A

**Release Date:** 5/13/04

#### Models and Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>A (in.)</th>
<th>L (in.)</th>
<th>T (in.)</th>
<th>E (in.)</th>
<th>ØD (in.)</th>
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</thead>
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<tr>
<td>KSMS-1</td>
<td>2.00</td>
<td>4.25</td>
<td>0.25</td>
<td>0.38</td>
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<td>12.00</td>
<td>0.75</td>
<td>1.13</td>
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<tr>
<td>KSMS-6</td>
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<td>10.00</td>
<td>1.00</td>
<td>1.50</td>
<td>1.06</td>
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</tbody>
</table>

---

**Model KSMS-1**
- **A:** 2.00 in.
- **L:** 4.25 in.
- **T:** 0.25 in.
- **E:** 0.38 in.
- **ØD:** 0.31 in.

**Model KSMS-2**
- **A:** 2.50 in.
- **L:** 5.75 in.
- **T:** 0.38 in.
- **E:** 0.56 in.
- **ØD:** 0.44 in.

**Model KSMS-3**
- **A:** 3.00 in.
- **L:** 7.00 in.
- **T:** 0.50 in.
- **E:** 0.75 in.
- **ØD:** 0.56 in.

**Model KSMS-4**
- **A:** 4.00 in.
- **L:** 9.50 in.
- **T:** 0.63 in.
- **E:** 0.94 in.
- **ØD:** 0.69 in.

**Model KSMS-5**
- **A:** 5.00 in.
- **L:** 12.00 in.
- **T:** 0.75 in.
- **E:** 1.13 in.
- **ØD:** 0.81 in.

**Model KSMS-6**
- **A:** 6.00 in.
- **L:** 10.00 in.
- **T:** 1.00 in.
- **E:** 1.50 in.
- **ØD:** 1.06 in.

---

**Diagram Notes:**
- **ATTACHMENT:**
  - Equipment is attached to a support structure (ST) and a steel surface (STL).
  - Wedge type anchors are used for concrete support.
  - Undercut anchors are used for concrete support.

---

**Equipment Dimensions:**
- **A:** 2.00
- **L:** 5.00
- **T:** 2.00
- **E:** 2.00
- **ØD:** 0.25

---

**Figure:**
- Vertical load vs. horizontal load graph for different models.
- Load capacity varies between 0 and 10,000 lbs.

---

**Graphs:**
- Graphs represent load capacity for different attachment types.
- Vertical load (in. lb) vs. horizontal load (in. lb).

---

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**KINETICS™ Seismic Design Manual**
Views on this drawing are intended to show the various attachment options to the equipment & structure. They may be used in other combinations than those shown.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>KSMS-1</th>
<th>KSMS-2</th>
<th>KSMS-3</th>
<th>KSMS-4</th>
<th>KSMS-5</th>
<th>KSMS-6</th>
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<tbody>
<tr>
<td>Lw (in.)</td>
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<td>0.13 OR 0.25</td>
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<tr>
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<td>4.00</td>
<td>5.00</td>
<td>6.00</td>
</tr>
</tbody>
</table>

Lw TYP 3 PLC.S

Attachment hardware by Kinetics. (Structural washer by others if required.)

Concrete structure by others

Concrete anchor by Kinetics.

Equipment by Kinetics.

Structural steel by others

KSMS KNC Seismic Equip. Bracket by Kinetics.
KSMS BRACKET INSTALLATION INSTRUCTIONS:

1.) LOCATE AND SET EQUIPMENT PER THE MECHANICAL DRAWINGS, OR PER THE INSTRUCTIONS OF THE
   DESIGN PROFESSIONAL OF RECORD.
2.) THE KSMS BRACKETS ARE THEN POSITIONED AGAINST THE LONG SIDES OF THE EQUIPMENT PER THE
   INSTRUCTIONS GIVEN IN DRAWINGS S-88.071-1A AND S-88.071-1B, AND THE "KINETICS SEISMIC
   CERTIFICATION". THE EQUIPMENT MOUNTING SURFACE OF THE KSMS BRACKET MUST BE ENTIRELY ON
   THE EQUIPMENT AS SHOWN IN DRAWING S-88.071-2B.
3.) THE DIMENSIONS (A) AND (B) GIVEN IN THE "KINETICS SEISMIC CERTIFICATION" ARE APPROXIMATE.
   HOLES IN THE BUILDING STRUCTURE SHOULD BE DRILLED ONLY AFTER THE KSMS BRACKETS HAVE
   BEEN POSITIONED AS DESCRIBED IN STEP 2.
4.) IF "BACKING" STEEL MUST BE ADDED TO THE EQUIPMENT TO MOUNT AND SUPPORT THE KSMS BRACKET
   IT MUST HAVE A THICKNESS AT LEAST AS GREAT AS THE KSMS BRACKET BEING USED TO MOUNT
   ATTACH THE EQUIPMENT TO THE BUILDING STRUCTURE.
5.) IF USING THE BOLTS OR ANCHORS TO ATTACH THE KSMS BRACKET TO THE BUILDING STRUCTURE,
   LOCATE, MARK, AND DRILL THE APPROPRIATE HOLES IN THE STRUCTURE BEFORE PERMANENTLY
   ATTACHING THE BRACKET TO THE EQUIPMENT.
6.) IF USING BOLTS TO PERMANENTLY ATTACH THE KSMS BRACKET TO THE EQUIPMENT, LOCATE, MARK
   AND DRILL THE APPROPRIATE HOLES IN THE EQUIPMENT. THE KSMS BRACKET MOUNTING SURFACE MUST
   BE ENTIRELY ON THE EQUIPMENT AS SHOWN IN DRAWING S-88.071-2B.
7.) REPOSITION THE KSMS BRACKETS, AND MAKE THE PERMANENT ATTACHMENTS TO THE EQUIPMENT.
   THIS ATTACHMENT MAY BE EITHER BY USING THE BOLTS, NUTS, AND WASHERS PROVIDED WITH THE
   KSMS KITS, OR THE OPTIONAL WELDS AS SHOWN IN DRAWING S-88.071-2B.
8.) INSTALL THE CONCRETE ANCHORS OR BOLTS IN THE RESPECTIVE HOLES THAT HAVE BEEN DRILLED IN
   STRUCTURE.
9.) THE KSMS BRACKET MAY BE WELDED TO THE STRUCTURE USING THE WELD SIZE & LENGTH GIVEN
   IN DRAWING S-88.071-2B FOR THE OPTIONAL WELD ATTACHMENT TO THE EQUIPMENT.
**KSMF-1 KNC SEISMIC "MUSHROOM" FAN BRACKET**

**DRAWING # S-88.071-17A**

**NOTE:**
1. Locating dimensions are approximate.
2. Pilot holes may be pre-drilled using a No. 22 drill.
3. Fasteners to be located with bracket on curb.
4. Reference Dwgs: S-88.071-17B, S-88.071-17C, AND S-88.071-17D

**VERT. LOAD X 100 (LBS)**

**HORIZ. LOAD X 100 (LBS)**

**Bracket Attachment Capacity 0.75**

**Sheet Metal Screws by Kinetics**

- #10-16 x 0.63 Self Drilling
  - Two (2) Req'd per Clip

- #10-16 x 1.5 Self Drilling
  - Three (3) Req'd per Clip

- #10-16 x 0.56 TYP
  - Self Drilling
  - Young's Modulus: 300 KSI
  - 0.63 Self Drilling

**Fan Housing Thickness**

- 0.75 TYP
- 1.50 TYP

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**KINETICS™ Seismic Design Manual**

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**Email:** sales@kineticsnoise.com

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KSMS & KSMG BRACKET LOCATING INSTRUCTIONS:

1.) SHOWN AT THE RIGHT IS A COPY OF THE FIGURE THAT APPEARS IN THE TOP LEFT HAND QUADRANT OF THE "KINETICS SEISMIC CERTIFICATION" FOR THE PIECE OF EQUIPMENT TO BE MOUNTED. THE POINTS 1, 2, 3, AND 4 INDICATE THE CORNER ATTACHMENT BRACKETS. THEY ARE LOCATED OFF OF THE GEOMETRIC CENTER LINES FOR THE EQUIPMENT.

2.) TYPICALLY (A) IS THE LOCATING DIMENSION ALONG THE LENGTH OF THE EQUIPMENT, AND (B) IS THE LOCATING DIMENSION ACROSS THE WIDTH OF THE EQUIPMENT.

3.) THE C.G. LOCATION FOR THE EQUIPMENT IS LOCATED OFF OF THE GEOMETRIC CENTER OF THE EQUIPMENT BY (Ex) ALONG THE LENGTH OF THE EQUIPMENT, AND (Ey) ACROSS THE WIDTH OF THE EQUIPMENT.

4.) DRAWING S-88.071-1A SHOWS THREE PLAN VIEWS OF A TYPICAL AIR HANDLING UNIT CABINET. THEY COULD ALSO REPRESENT TYPICAL PUMP BASES, FAN BASES, OR FAN HOUSINGS. IN THESE FIGURES, (L) IS THE LENGTH OF THE PIECE OF EQUIPMENT. THE DIMENSION (A) IS THE DISTANCE BETWEEN ATTACHMENT POINTS 1 & 3 AND 2 & 4. EACH OF THESE POINTS IS A DISTANCE (A/2) OFF OF THE CENTER OF THE EQUIPMENT. THE DIMENSION (B) IS THE DISTANCE BETWEEN ATTACHMENT POINTS 1 & 2 AND 3 & 4. EACH OF THESE POINTS IS A DISTANCE (B/2) OFF OF THE CENTER OF THE EQUIPMENT.

5.) IF THE "KINETICS SEISMIC CERTIFICATION" INDICATES THAT MORE THAN FOUR ATTACHMENT POINTS ARE REQUIRED FOR A PIECE OF EQUIPMENT, THERE WILL ALWAYS BE AN EVEN NUMBER OF ATTACHMENT POINTS. HALF OF THE ATTACHMENT POINTS WILL BE ON ONE LONG SIDE OF THE EQUIPMENT, AND HALF WILL BE ON THE OTHER LONG SIDE OF THE EQUIPMENT.

6.) THE ADDITIONAL ATTACHMENT POINTS WILL BE EQUALLY SPACED BETWEEN ATTACHMENT POINTS 1 & 3 AND 2 & 4.
KSMF MOUNTING KIT (MUSHROOM FANS, LOUVERS, AND ETC.)

PAGE 1 OF 4 – DRAWING: S-88.071-17A

NOTE: 1.) LOCATING DIMENSIONS ARE APPROX.
PILOT HOLES MAY BE PRE-DRILLED.
2.) FASTENERS TO BE LOCATED WITH BRACKET ON CURB.
KSMF MOUNTING KIT (MUSHROOM FANS, LOUVERS, AND ETC.)

PAGE 2 OF 4 – DRAWING: S-88.071-17B

RELEASE DATE: 5/13/04

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Email: sales@kineticsnoise.com

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NOTE: 1.) LOCATING DIMENSIONS ARE APPROX.
PILOT HOLES MAY BE PRE-DRILLED USING A NO. 22 DRILL.
2.) FASTENERS TO BE LOCATED WITH BRACKET ON CURB.

MAY REQUIRE A PILOT HOLE
NO. 22 DRILL X 1.25 DEEP
2 X 2 WOOD NAILER
BY OTHERS

0.75
(1.50)

OPTIONAL INSTALLATION

0.75 TYP

PREFERED INSTALLATION

NO. 10 X 2.50 "TEK" SCREW
BY KINETICS.
2 PER KIT

KSMF-1 KNC
SEISMIC FAN CLIP

18 GA. GALVANIZED STEEL CURB WITH FULLY WELDED CORNERS
BY OTHERS.

No. 10 X 0.63 "TEK" SCREW
BY KINETICS.
3 PER KIT

(16)
(GA.)
KSMF-1 "MUSHROOM" FAN BRACKET INSTRUCTIONS:

1. SHOWN AT THE RIGHT IS A COPY OF THE FIGURE THAT APPEARS IN THE TOP LEFT HAND QUADRANT OF THE "KINETICS SEISMIC CERTIFICATION" FOR THE PIECE OF EQUIPMENT TO BE MOUNTED. THE POINTS 1, 2, 3, AND 4 INDICATE THE CORNER ATTACHMENT BRACKETS. THEY ARE LOCATED OFF OF THE GEOMETRIC CENTER LINES FOR THE EQUIPMENT.

2. TYPICALLY (A) IS THE LOCATING DIMENSION ALONG THE LENGTH OF THE EQUIPMENT, AND (B) IS THE LOCATING DIMENSION ALONG THE WIDTH OF THE EQUIPMENT. THESE DIMENSIONS, AS APPLIED TO "MUSHROOM" FANS ARE DEFINED IN S-88.071-17B.


4. INSTALL (3) No. 10 x 0.63 Self-Drilling Tek Screws Per Bracket As Shown In S-88.071-17C. THESE TEK SCREWS ARE TO HOLD THE BRACKET IN PLACE WHILE THE FAN IS BEING SET.

5. INSTALL WEATHER STRIPPING (BY OTHERS) OVER THE TOP OF THE CURB & KSMF-1 BRACKETS.


7. SET THE FAN ON THE CURB AND ADJUST ITS POSITION SO THAT THE LOCATIONS MARKED IN STEP 5) LINE UP WITH THE KSMF-1 BRACKETS ON THE CURB.

8. INSTALL (2) No. 10 X 2.50 SELF-DRILLING TEK SCREWS PER KSMF-1 BRACKET AS SHOWN IN S-88.071-17B AND S-88.071-C. THE SCREWS MUST PASS THROUGH THE BRACKET, CURB NAILER, AND CURB SHEET METAL TO BE EFFECTIVE. APPLIED Caulking (BY OTHERS) TO THE TOPS OF THE No. 10 X 2.50 TEK SCREWS & FAN FLANGE TO SEAL THE CURB.

KSMF MOUNTING KIT (MUSHROOM FANS, LOUVERS, AND ETC.)

PAGE 4 OF 4 – DRAWING: S-88.071-17D

RELEASE DATE: 5/13/04

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NOTES:

1.) EACH KSCM-1, KINETICS SEISMIC CURB ATTACHMENT BRACKET, KIT IS APPROX. EQUIVALENT TO ONE (1) 1/4-20 SAE GRADE 2 BOLT IN SHEAR.

HORIZONTAL RESTRAINT CAPACITY = 625 LBS.

2.) AT LEAST ONE (1) KSCM-1 KIT IS REQUIRED FOR EACH SIDE OF THE CURB, SEE DRAWING S-88.071-18B.

3.) ATTACHMENT TO THE CURB IS BY THREE (3) No. 12-14 X 2.50 SELF DRILLING TEK SCREWS PER BRACKET.

4.) ATTACHMENT TO EQUIPMENT MAY BE BY WELD OR THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS SEE DRAWING S-88.071-18D DETAILS.
NOTES:

1.) KSCM-1 SEISMIC RESTRAINT BRACKETS (No. 1) THRU (No. 4) ARE REQUIRED FOR EACH CURB INSTALLATION.

2.) ADDITIONAL KSCM-1 RESTRAINT BRACKETS MAY BE REQUIRED AS INDICATED BY A KINETICS SEISMIC CERTIFICATION.

3.) ADDITIONAL KSCM-1 RESTRAINT BRACKETS ARE TO BE ADDED IN PAIRS (No. 5) & (No. 6); (No. 7) & (No. 8); (No. 9) & (No. 10); AND (No. 11) & (No. 12) AS SHOWN IN THE FIGURE ABOVE.
KSCM-1 SEISMIC RESTRAINT KIT INSTALLATION INSTRUCTIONS:

1.) SHOWN AT THE RIGHT IS A COPY OF THE FIGURE THAT APPEARS IN THE TOP LEFT HAND QUADRANT OF THE "KINETICS SEISMIC CERTIFICATION" FOR THE PIECE OF EQUIPMENT TO BE MOUNTED. THE POINTS 1, 2, 3, AND 4 INDICATE THE APPROX. POSITIONS OF THE FIRST KSCM-1 KITS. THEY ARE LOCATED OFF OF THE GEOMETRIC CENTER LINES FOR THE EQUIPMENT.

2.) TYPICALLY (A) IS THE LOCATING DIMENSION ALONG THE LENGTH OF THE EQUIPMENT, AND (B) IS THE LOCATING DIMENSION ACROSS THE WIDTH OF THE EQUIPMENT. THESE DIMENSIONS, AS APPLIED, TO THE KSCM-1 KITS ARE DEFINED IN S-88.071-18B. A WILL BE APPROX. EQUAL TO La, AND B WILL BE APPROX. EQUAL TO Lb AS SHOWN IN S-88.071-18B.

3.) THE C.G. LOCATION FOR THE EQUIPMENT IS LOCATED OFF OF THE GEOMETRIC CENTER OF THE EQUIPMENT BY (Ex) ALONG THE LENGTH OF THE EQUIPMENT, AND (Ey) ACROSS THE WIDTH OF THE EQUIPMENT.


5.) DEPENDING ON THE CONSTRUCTION OF THE EQUIPMENT THE KSCM-1 KITS MAY BE INSTALLED BEFORE OR AFTER THE EQUIPMENT IS SET IN PLACE, SEE S-88.071-18D FOR EXAMPLES. IN SOME CASES, ONE OF THE KSCM-1 BRACKETS MUST BE INSTALLED BEFORE THE EQUIPMENT IS SET IN PLACE. THE CONSTRUCTION OF THE EQUIPMENT MUST BE KNOWN AND STUDIED BEFORE SETTING THE TO ENSURE PROPER INSTALLATION OF THE KSCM-1 BRACKETS.

KSCM-1 SEISMIC RESTRAINT KIT INSTALLATION INSTRUCTIONS CONT'D:

7.) THE EQUIPMENT ATTACHMENT IS MADE WITH THREE (3) NO. 12 X 14 X 0.75 SELF DRILLING TEK SCREWS. DETAILED EXAMPLES, SEE S-88.071-18D FOR OPTIONAL ATTACHMENT IS MADE BY THREE (3) 1/8 X 1.0 WELDS.

8.) SEAL ALL EQUIPMENT PENETRATIONS WITH A GOOD RTV CAULKING COMPOUND, BY OTHERS.

9.) WARNING: WHEN ATTACHING TO EQUIPMENT USING SELF DRILLING TEK SCREWS, BE SURE THAT ELECTRICAL & CONTROL WIRES & CONDUITS, AND FLUIDS HOSES ARE NOT IN THE PATHS OF THE TEK SCREWS.

10.) CAUTION: DO NOT BLOCK EQUIPMENT ACCESS & MAINTENANCE DOORS WITH KSCM-1 BRACKETS!
KSCM-1 MOUNTING KIT (EQUIPMENT TO CURB ATTACHMENT)

NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-1 SEISMIC RESTRAINT BRACKET MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

WEATHER SEAL BY OTHERS.

OPTIONAL EQUIPMENT CONNECTION THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS BY KINETICS.

KSCM-1 SEISMIC RESTRAINT BRACKET BY KINETICS.

WEATHER SEAL BY OTHERS.

ROOF CURB BY OTHERS.

EQUIPMENT

NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-1 SEISMIC RESTRAINT BRACKET MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.
KSCM-2 MOUNTING KIT (EQUIPMENT TO CURB ATTACHMENT)

NOTES:

1.) EACH KSCM-2, KINETICS SEISMIC CURB ATTACHMENT BRACKET, KIT IS APPROX. EQUIVALENT TO ONE (1) 1/4-20 SAE GRADE 2 BOLT IN SHEAR.
2.) EACH KSCM-2 KIT CONTAINS TWO (2) "L" SHAPED BRACKETS OF DIFFERENT SIZE AS SHOWN ABOVE.
3.) AT LEAST ONE (1) KSCM-2 KIT IS REQUIRED FOR EACH SIDE OF THE CURB, SEE DRAWING S-88.071-19B.
4.) ATTACHMENT TO THE CURB IS BY THREE (3) No. 12-14 X 2.50 SELF DRILLING TEK SCREWS PER BRACKET.
5.) ATTACHMENT OF ONE BRACKET TO THE OTHER MAY BE BY WELD OR THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS.
6.) ATTACHMENT TO EQUIPMENT MAY BE BY WELD OR THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS. SEE DRAWINGS S-88.071-19D & S-88.071-19E FOR DETAILS.
Croquet No. 2
No. 5
No. 9

2.0 TYP (~La/2)-3.0 TYP

Notes:
1) KSCM-2 Seismic Restraint Brkt. Kits (No. 1) Thru (No. 4) Are Required For Each Curb Installation.
2) Additional KSCM-2 Restraint Brkt. Kits May Be Required As Indicated By A Kinetics Seismic Certification.
3) Additional KSCM-2 Restraint Brkt. Kits Are To Be Added In Pairs (No. 5) & (No. 6); (No. 7) & (No. 8); (No. 9) & (No. 10); And (No. 11) & (No. 12) As Shown In The Figure Above.

KSCM-2 Mounting Kit (Equipment To Curb Attachment)
Page 2 of 6 – Drawing: S-88.071-19B

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World Wide Web: www.kineticsnoise.com
Email: sales@kineticsnoise.com

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KSCM-2 SEISMIC RESTRAINT KIT INSTALLATION INSTRUCTIONS:

1.) SHOWN AT THE RIGHT IS A COPY OF THE FIGURE THAT APPEARS IN THE TOP LEFT HAND QUADRANT OF THE "KINETICS SEISMIC CERTIFICATION" FOR THE PIECE OF EQUIPMENT TO BE MOUNTED. THE POINTS 1, 2, 3, AND 4 INDICATE THE APPROX. POSITIONS OF THE FIRST KSCM-2 KITS. THEY ARE LOCATED OFF OF THE GEOMETRIC CENTER LINES FOR THE EQUIPMENT.

2.) TYPICALLY (A) IS THE LOCATING DIMENSION ALONG THE LENGTH OF THE EQUIPMENT, AND (B) IS THE LOCATING DIMENSION ACROSS THE WIDTH OF THE EQUIPMENT. THESE DIMENSIONS, AS APPLIED, TO THE KSCM-2 KITS ARE DEFINED IN S-88.071-19B. A WILL BE APPROX. EQUAL TO L, AND B WILL BE APPROX. EQUAL TO Lb AS SHOWN IN S-88.071-19B.

3.) THE C.G. LOCATION FOR THE EQUIPMENT IS LOCATED OFF OF THE GEOMETRIC CENTER OF THE EQUIPMENT BY (Ex) ALONG THE LENGTH OF THE EQUIPMENT, AND (Ey) ACROSS THE WIDTH OF THE EQUIPMENT.


6.) ATTACHMENT OF THE KSCM-2 BRACKET TO THE CURB IS ACCOMPLISHED WITH THE THREE (3) No. 12-14 X 2.50 SELF-DRILLING TEK SCREWS. TO BE EFFECTIVE, THE THREADED PORTION OF THESE SCREWS MUST PASS THROUGH THE WOODEN NAILER, AND THE SHEET METAL OF THE CURB SIDE WALL!

CONTINUED ON S-88.071-19C SHT 2.
KSCM-2 SEISMIC RESTRAINT KIT INSTALLATION INSTRUCTIONS CONT'D:

7.) WHEN ATTACHING THE TWO KSCM-2 BRACKETS TOGETHER, USE THREE (3) No. 12-14 X 0.75 SELF-DRILLING TEK SCREWS, OPTIONAL ATTACHMENT MAY BE MADE WITH THREE (3) 1/8 X 1.0 WELDS. SEE S-88.071-19D & S-88.071-19E FOR DETAILED EXAMPLES.

8.) THE EQUIPMENT ATTACHMENT IS MADE WITH THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS. OPTIONAL ATTACHMENT IS MADE BY THREE (3) 1/8 X 1.0 WELDS. SEE S-88.071-19D & S-88.071-19E FOR DETAILED EXAMPLES.

9.) SEAL ALL EQUIPMENT PENETRATIONS WITH A GOOD RTV CAULKING COMPOUND, BY OTHERS.

10.) WARNING: WHEN ATTACHING TO EQUIPMENT USING SELF DRILLING TEK SCREWS, BE SURE THAT ELECTRICAL & CONTROL WIRES & CONDUITS, AND FLUIDS HOSES ARE NOT IN THE PATHS OF THE TEK SCREWS!

11.) CAUTION: DO NOT BLOCK EQUIPMENT ACCESS & MAINTENANCE DOORS WITH KSCM-2 BRACKETS!
NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-2 SEISMIC RESTRAINT BRACKET #2 MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.

WEATHER SEAL BY OTHERS.

0.81 TYP

KSCM-2 SEISMIC RESTRAINT BRACKET #1 BY KINETICS.

WEATHER SEAL BY OTHERS.

0.81 TYP

KSCM-2 SEISMIC RESTRAINT BRACKET #2 BY KINETICS.

OPTIONAL EQUIPMENT CONNECTION THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS BY KINETICS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-2 SEISMIC RESTRAINT BRACKET #2 MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.

WEATHER SEAL BY OTHERS.

0.81 TYP

KSCM-2 SEISMIC RESTRAINT BRACKET #1 BY KINETICS.

WEATHER SEAL BY OTHERS.

0.81 TYP

KSCM-2 SEISMIC RESTRAINT BRACKET #2 BY KINETICS.

OPTIONAL EQUIPMENT CONNECTION THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS BY KINETICS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-2 SEISMIC RESTRAINT BRACKET #2 MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.

WEATHER SEAL BY OTHERS.

0.81 TYP

KSCM-2 SEISMIC RESTRAINT BRACKET #1 BY KINETICS.

WEATHER SEAL BY OTHERS.

0.81 TYP

KSCM-2 SEISMIC RESTRAINT BRACKET #2 BY KINETICS.

OPTIONAL EQUIPMENT CONNECTION THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS BY KINETICS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-2 SEISMIC RESTRAINT BRACKET #2 MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.
KSCM-2 MOUNTING KIT (EQUIPMENT TO CURB ATTACHMENT)

NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-2 SEISMIC RESTRAINT BRACKET #1 MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.

ROOF CURB BY OTHERS.

OPTIONAL CONNECTION BRACKET-TO-BRACKET & BRACKET-TO-EQUIPMENT USING THREE (3) No. 12-14 X 0.75 SELF DRILLING TEK SCREWS BY KINETICS.

CURB CONNECTION USING THREE (3) No. 12-14 X 2.5 SELF DRILLING TEK SCREWS BY KINETICS.

EQUIPMENT WEATHER SEAL BY OTHERS.

WEATHER SEAL BY OTHERS.

KSCM-2 SEISMIC RESTRAINT BRACKETS #1 & #2 BY KINETICS.

NOTES:
1.) PILOT HOLES MAY BE MADE WITH A No. 13 (Ø0.185) DRILL.
2.) KSCM-2 SEISMIC RESTRAINT BRACKET #1 MAY BE TRIMMED TO FIT.
3.) CAULKING OF EQUIPMENT PENETRATIONS TO BE BY OTHERS.
NOTES:
1.) EACH KSCV KIT, WHEN PROPERLY INSTALLED, WILL HAVE AN UPLIFT CAPACITY OF 1,000 LBS.

KINETICS™ Seismic Design Manual

MEMBER

KINETHICS

Noise Control

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Email: sales@kineticsnoise.com

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NOTES:
1.) A MINIMUM OF FOUR (4) KSCV VERTICAL SEISMIC & WIND RESTRAINT KITS ARE PER CURB WHEN INDICATED BY A KINETICS SEISMIC OR WIND CERTIFICATION.
2.) ADDITIONAL KSCV VERTICAL RESTRAINT KITS MAY BE REQUIRED AS INDICATED BY A KINETICS SEISMIC OR WIND CERTIFICATION.
3.) ADDITIONAL KSCV KITS MUST BE ADDED IN SETS OF FOUR (4). EACH ADDITIONAL KIT MUST BE INSTALLED IMMEDIATELY ADJACENT TO THE PREVIOUS KIT AT EACH CORNER POINT. MAINTAIN 1.00 INCH CLEARANCE BETWEEN KSCV EQUIPMENT BRACKETS.

A = La

B = Lb

~3.25 TYP FROM KSCM BRACKET WHEN PRESENT

~2.00 TYP WHEN KSCM BRACKET IS NOT PRESENT.

This dimension is determined by the equip. over-hang.

~5.50 TYP SPACING FOR ADDITIONAL KITS

SIDE A

SIDE B

SIDE C

SIDE D

1ST KSCV FOR POINT 1

1ST KSCV FOR POINT 2

1ST KSCV FOR POINT 3

1ST KSCV FOR POINT 4

1ST KSCV FOR POINT 1

1ST KSCV FOR POINT 2

1ST KSCV FOR POINT 3

1ST KSCV FOR POINT 4

1ST KSCV FOR POINT 1

1ST KSCV FOR POINT 2

1ST KSCV FOR POINT 3

1ST KSCV FOR POINT 4

NOTE: KSCV SEISMIC & WIND VERTICAL RESTRAINT

PAGE 2 OF 7 – DRAWING: S-88.071-20B

KINETICS™ Seismic Design Manual

DUBLIN, OHIO, USA • MISSISSAUGA, ONTARIO, CANADA

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KSCV SEISMIC & WIND VERTICAL RESTRAINT INSTRUCTIONS:

1.) SHOWN AT THE RIGHT IS A COPY OF THE FIGURE THAT APPEARS IN THE TOP LEFT HAND QUADRANT OF THE "KINETICS SEISMIC CERTIFICATION" FOR THE PIECE OF EQUIPMENT TO BE MOUNTED. THE POINTS 1, 2, 3, AND 4 INDICATE THE APPROX. POSITIONS OF THE FIRST KSCV KITS. THEY ARE LOCATED OFF OF THE GEOMETRIC CENTER LINES FOR THE EQUIPMENT.

2.) TYPICALLY (A) IS THE LOCATING DIMENSION ALONG THE LENGTH OF THE EQUIPMENT, AND (B) IS THE LOCATING DIMENSION ACROSS THE WIDTH OF THE EQUIPMENT. THESE DIMENSIONS, AS APPLIED, TO THE KSCV RESTRAINTS ARE DEFINED IN S-88.071-20B. A WILL BE APPROX. EQUAL TO LA, AND B WILL BE APPROX. EQUAL TO LB. ACTUAL VARIATIONS OF 10% TO 15% MAY BE EASILY TOLERATED.


4.) LOCATE THE POSITIONS OF THE REQUIRED KSCV BUILDING ATTACHMENT COMPONENTS RELATIVE TO THE CURB AND EXPECTED EQUIPMENT OVER-HANGS BEFORE THE INSULATION AND ROOF SYSTEM ARE INSTALLED. POSITIONS OF KSCV'S MAY BE MODIFIED TO AVOID STRUCTURAL SUPPORT STEEL.

5.) DRILL CLEARANCE HOLES THROUGH THE ROOF STRUCTURE FOR THE 0.25-20 UNC THREADED RODS. CLEARANCE HOLES MAY BE Ø0.31 TO Ø0.50 INCHES. THE LARGER CLEARANCE HOLES WILL ALLOW MORE LATITUDE FOR ADJUSTMENT AT FINAL ASSEMBLY.

6.) ESTIMATE THE THICKNESS OF THE INSULATION, ROOFING SYSTEM, AND BOOT OR FLASHING. IF NECESSARY, TRIM THE KSCV PIPE ASSEMBLY SO THAT THE PIPE CAP CLEAR THE BOOT OR FLASHING LEAVING ENOUGH ROOM TO SEAL THE JOINT.

7.) THREAD THE COUPLING NUT NINE (9) TURNS ONTO ONE END OF THE 0.25-20 UNC X 24 THREADED ROD. USE A THREAD LOCKING ADHESIVE, BY OTHERS, TO LOCK THE COUPLING NUT TO THE THREADED ROD. CONTINUED ON S-88.071-20C SHT 2.
KSCV SEISMIC & WIND VERTICAL RESTRAINT INSTRUCTIONS CONT'D:

8.) PLACE ON THE 0.25-20 UNC X 24 THREADED ROD A STANDARD 0.25 WASHER, AND THE 0.25 FENDER WASHER. THE FENDER WASHER MUST BEAR AGAINST THE KSCV PIPE ASSEMBLY, PER S-88.071-20A.

9.) FEED THE 0.25-20 UNC X 24 THREADED ROD THROUGH THE KSCV PIPE ASSEMBLY SO THAT THE FENDER WASHER BEARS AGAINST THE PIPE CAP IN THE KSCV PIPE ASSEMBLY, SEE S-88.071-20A.


11.) FEED THE THREADED ROD THROUGH THE CLEARANCE HOLE IN THE ROOF STRUCTURE UNTIL THE KSCV PIPE ASSEMBLY SITS FLUSH ON THE ROOF STRUCTURE. CORRUGATED ROOF STRUCTURES MAY NEED TO BE BRIDGED AS SHOWN IN S-88.071-20D.

12.) FEED THE KSCV RESTRAINT CHANNEL ONTO THE THREADED ROD, AND SECURE USING A 0.25 WASHER AND TWO 0.25-20 UNC NUTS AS SHOWN IN S-88.071-20D. THE KSCV ROOF BRACKET MAY BRIDGE ANY CORRUGATIONS IN THE ROOF STRUCTURE, OR IT MAY SIT IN A TROUGH, OR ON A CREST OF ANY CORRUGATIONS IN THE ROOF STRUCTURE.

13.) SEAL THE JOINT BETWEEN THE KSCV PIPE ASSEMBLY AND THE ROOF STRUCTURE WITH A GOOD RTV CAULKING MATERIAL, BY OTHERS. ALSO SEAL ANY PENETRATIONS IN THE ROOF STRUCTURE THAT WERE MADE BY FASTENERS USED TO ATTACH SHEET METAL BRIDGING MATERIAL WITH THE SAME RTV CAULKING MATERIAL, BY OTHERS.

14.) AFTER THE EQUIPMENT HAS BEEN PLACED, THREAD THE 0.25-20 UNC X 12 THREAD ROD INTO THE TOP OF THE COUPLING NUT UNTIL IT BOTTOMS OUT. THE THREADED ROD MAY NOW BE USED TO HELP LOCATE THE KSCV EQUIPMENT BRACKET TO THE EQUIPMENT.

15.) LOCATE AND ATTACH THE KSCV EQUIPMENT BRACKET TO THE SIDE OF THE EQUIPMENT IN A MANNER SIMILAR TO THE EXAMPLES SHOWN IN S-88.071-20E. DO NOT BLOCK EQUIPMENT ACCESS AND MAINTENANCE DOORS WITH THE KSCV EQUIPMENT BRACKET.

CONTINUED ON S-88.071-20C SHT3.
KSCV SEISMIC & WIND VERTICAL RESTRAINT INSTRUCTIONS CONT'D:

16.) WITH THE 0.25-20 UNC X 12 THREADED ROD IN THE APPROPRIATE HOLE IN THE KSCV EQUIPMENT BRACKET INSTALL THE STANDARD 0.25 WASHER AND TWO (2) 0.25-20 UNC NUTS AS SHOWN IN S-88.071-20E. SLIGHT MISALIGNMENTS MAY BE ACCOMODATED BY BENDING THE TWO THREADED RODS UNTIL CONTACT IS MADE WITH THE HOLE IN THE TOP OF THE KSCV PIPE ASSEMBLY.

17.) SEAL ANY PENETRATIONS IN THE EQUIPMENT MADE DURING THE ATTACHMENT OF THE KSCV EQUIPMENT BRACKET WITH CAULKING COMPOUND, BY OTHERS.

18.) RE-SEAL THE JOINT BETWEEN THE THREADED ROD AND THE TOP OF THE KSCV PIPE ASSEMBLY WITH RTV CAULKING COMPOUND.

19.) IF NECESSARY, RE-SEAL THE JOINT BETWEEN THE KSCV PIPE ASSEMBLY AND THE BOOT OR FLASHING.
KSCV SEISMIC & WIND VERTICAL RESTRAINT

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DO NOT BLOCK ACCESS & MAINT. DOORS WITH KSCV EQUIP. BRACKET!

TRIM PVC PIPE ASSEM. TO FIT APPLICATION.

TRIM 0.25-20 UNC X 12 THREADED ROD TO FIT APPLICATION.

TRIM 0.25-20 UNC X 24 THREADED ROD TO FIT APPLICATION.

DO NOT BLOCK ACCESS & MAINT. DOORS WITH KSCV EQUIP. BRACKET!

TRIM PVC PIPE ASSEM. TO FIT APPLICATION.

TRIM 0.25-20 UNC X 12 THREADED ROD TO FIT APPLICATION.

TRIM 0.25-20 UNC X 24 THREADED ROD TO FIT APPLICATION.

DO NOT BLOCK ACCESS & MAINT. DOORS WITH KSCV EQUIP. BRACKET!

TRIM PVC PIPE ASSEM. TO FIT APPLICATION.

TRIM 0.25-20 UNC X 12 THREADED ROD TO FIT APPLICATION.

TRIM 0.25-20 UNC X 24 THREADED ROD TO FIT APPLICATION.

DO NOT BLOCK ACCESS & MAINT. DOORS WITH KSCV EQUIP. BRACKET!
### KSVR Seismic Curb Wall Reinforcement

**Applicable Curb Height Range**

<table>
<thead>
<tr>
<th>Height Range Inclusive (H) (in.)</th>
<th>Number of Vertical Reinforcements Per Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 to 8.00</td>
<td>1</td>
</tr>
<tr>
<td>8.06 to 16.00</td>
<td>2</td>
</tr>
<tr>
<td>16.06 to 24.00</td>
<td>3</td>
</tr>
<tr>
<td>24.06 to 36.00</td>
<td>4</td>
</tr>
</tbody>
</table>

**Notes:**

1) Each KSVR kit contains one (1) treated wood 2” x 2” x 48” long and eight (8) No. 10-16 x 2” self-drilling Tek screws.

2) For the required number of vertical reinforcements for each curb wall and each curb, see the Kinetics Seismic and Wind Certification for the curb in question.
KSVR SEISMIC CURB WALL REINFORCEMENT
PAGE 2 OF 3 – DRAWING: S-88.071-21B

CURB & WOODEN NAILER
BY OTHERS.

2 X 2 TREATED WOOD REINFORCEMENT
BY KINETICS.

H = CURB HEIGHT
H = MAX. SPACING & CUT TO FIT

S = MAX. SPACING
ACTUAL SIZE

1.50 TYP
1.50 TYP
1.50 TYP

No. 10-16 X 2 SELF-DRILLING TEK SCREWS
BY KINETICS.

1.50 TYP

VIEW A
VIEW B
VIEW C

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P1.3.5

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KSVR CURB WALL VERTICAL REINFORCEMENT KIT INSTRUCTIONS:

1.) MARK THE LOCATIONS FOR THE VERTICAL REINFORCEMENTS ON THE CURB WALLS ACCORDING TO THE KINETICS SEISMIC & WIND CERTIFICATION AND S-88.071-21B. THE MINIMUM NUMBER OF VERTICAL REINFORCEMENTS PER SIDE IS THREE (3). ONE (1) LOCATED ON EACH END OF THE CURB WALL AND ONE (1) AT APPROXIMATELY THE CENTER OF THE CURB WALL. IF MORE THAN THREE (3) VERTICAL REINFORCEMENTS ARE REQUIRED PER SIDE, ONE (1) REINFORCEMENT GOES AT EACH END OF THE CURB WALL AND THE REST ARE MORE-OR-LESS EQUALLY DISTRIBUTED ALONG THE CURB WALL AT A SPACING EQUAL TO (S) FROM THE KINETICS SEISMIC & WIND CERTIFICATION. THE SPACING BETWEEN ADJACENT VERTICAL REINFORCEMENTS MAY BE VARIED SLIGHTLY TO MISS THE CURB ATTACHMENTS TO THE ROOF.


3.) ATTACH THE VERTICAL REINFORCEMENT TO THE CURB WALL USING THE No.10-16 X 2 SELF-DRILLING TEK SCREWS PROVIDED IN THE KSCR KIT. THE NUMBER OF SCREWS REQUIRED FOR EACH REINFORCEMENT IS DEFINED BY S-88.071-21A. WHEN ONLY ONE (1) SCREW IS REQUIRED PER VERTICAL REINFORCEMENT, IT SHOULD BE PLaced IN THE CENTER OF THE REINFORCEMENT AS SHOWN ON S-88.071-21A. WHEN TWO (2) OR MORE SCREWS ARE REQUIRED FOR EACH VERTICAL REINFORCEMENT, AS SHOWN ON S-88.071-21A, THE TOP MOST AND BOTTOM MOST SHOULD BE 1.50 INCHES FROM THE ENDS OF THE VERTICAL REINFORCEMENT. WHEN MORE THAN TWO (2) SCREWS ARE REQUIRED PER VERTICAL REINFORCEMENT, THEY SHOULD BE EVENLY DISTRIBUTED BETWEEN THE TOP MOST, AND BOTTOM MOST SCREWS. THE HEADS OF THESE SCREWS MAY BE DRiven INTO THE VERTICAL REINFORCEMENT SLIGHTLY TO MAKE AN EASIER SURFACE TO FLASH OVER. **DO NOT DRIVE THE SCREW HEAD IN FAR ENOUGH TO SPLIT THE VERTICAL REINFORCEMENT!**