

FIG. 646

## Concrete Rod Attachment Plate

FIG. 647

## Concrete Clevis Plate

**SERVICE:** To provide hanger rod attachment to the underside of concrete slabs. Allows vertical hanger rod adjustment or permits horizontal pipe movement through hanger rod rotation. Attached by post-installed or cast-in-place anchor bolts in 3,000 psi minimum compressive strength normal weight and lightweight, cracked and uncracked concrete loaded by static tensile forces from piping or similar services.

**MATERIAL:** Carbon Steel (ASTM A36) or Stainless Steel (ASTM A240, Types 304 and 316)

**FINISH:** Black or Hot-Dip Galvanized (ASTM A123) with Electro-Galvanized (ASTM B633) hardware

**ORDERING:** Specify figure number, rod size, material and finish. (Order anchor bolts and hardware separately.)

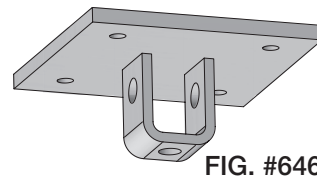


FIG. #646

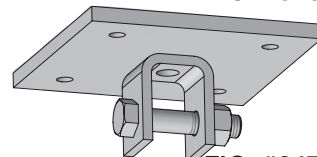


FIG. #647

SIZE	T x W	BOLT B	A	C	E	F	G	H	J	K	P	Q	R	S	V	Y	WEIGHT EACH, LBS.		MAX. REC. LOAD, LBS.
																	FIG. #646	FIG. #647	
3/8	3ga x 2	1/2 x 2 3/4	1	10	2	2	4 7/8	9/16	3/8	9/16	1 1/2	2	4	1 1/2	3	6	11.6	11.9	730
1/2	3ga x 2	5/8 x 2 3/4	1	10	2	2	4 7/8	11/16	3/8	9/16	1 1/2	2	4	1 1/2	3	6	11.6	12.0	1350
5/8	3ga x 2	3/4 x 3	1	10	2	2	4 7/8	13/16	1 1/2	9/16	1 1/2	2	4	1 1/2	3	6	15.2	15.8	2160
3/4	3/8 x 2 1/2	7/8 x 3 1/2	1	10	2	2	4 3/4	15/16	1 1/2	11/16	5/8	2 3/4	6	1 9/16	5	10	16.1	17.0	3230
7/8	3/8 x 2 1/2	1 x 4	1	10	3	3	6 5/8	1 1/16	1 1/2	11/16	5/8	2 3/4	6	2 1/16	5	10	16.7	18.1	4100
1	1/2 x 3	1 1/8 x 5 1/2	2	12	3	3	6 7/8	1 1/4	3/4	13/16	3/4	3 1/8	6	2 3/4	6	12	35.0	36.9	5400
1 1/8	1/2 x 3	1 1/4 x 5 1/2	2	12	3	3	7 13/16	1 3/8	3/4	15/16	7/8	3 1/2	10	2 3/4	6	12	35.2	37.9	5800
1 1/4	5/8 x 4	1 3/8 x 6 †	2	12	3	3	7 3/4	1 1/2	3/4	15/16	7/8	3 1/2	10	3	6	12	40.9	43.0	5800
1 1/2	3/4 x 5	1 5/8 x 6 1/2 †	2	12	4	4	8 7/8	1 3/4	1	1 1/8	1	4 3/8	10	3 1/2	7	14	57.6	60.0	5800

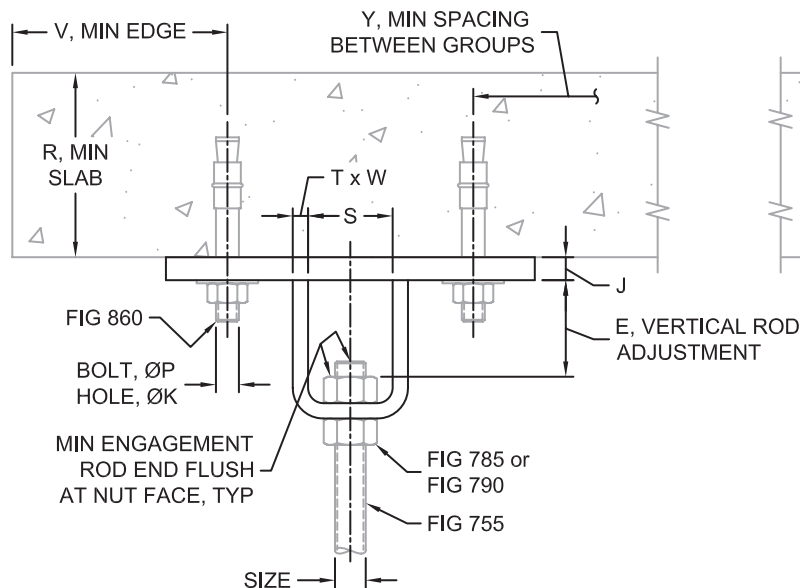


FIG 646

w/o BOLT AND NUT

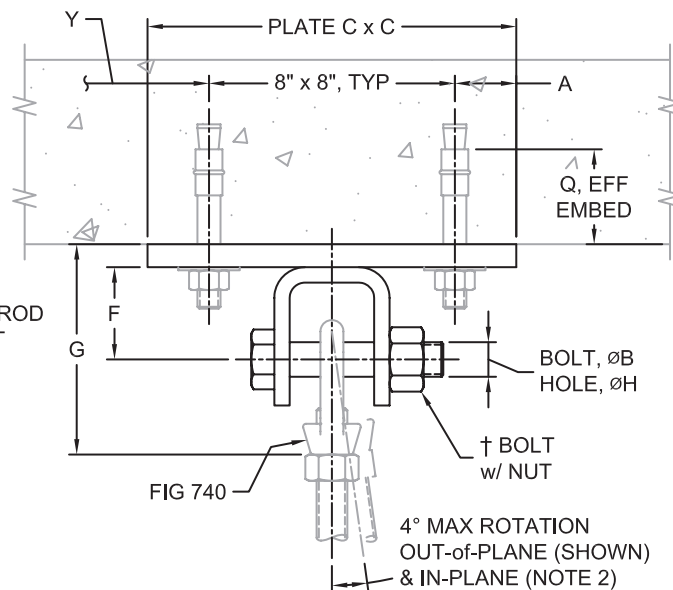


FIG 647

w/ BOLT AND NUT

## Notes:

- † Figure 647 bolt and nut replaced by pin with cotters.
1. Concrete attachment based on Powers Fasteners Power-Stud+ SD1 post-installed wedge expansion anchor bolt in 3,000 psi minimum compressive strength cracked concrete. Concrete failure modes in accordance with American Concrete Institute (ACI) 318, Appendix D, 2011. Minimum safety factor of 3.5 and 4.0 for steel and concrete failure modes, respectively. Maximum recommended loads presented above are unfactored. Condition B applies.
2. Maximum hanger rod in-plane and out-of-plane rotation resultant  $\leq 4^\circ$  per MSS SP-58. Pipe attachment shall provide rotation.
3. Other anchor bolt types and embedment depth combinations may be used. Contact factory for assistance.