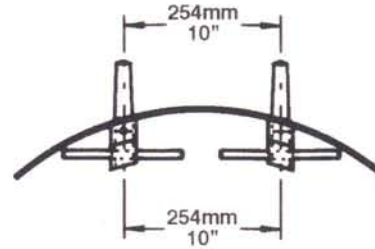
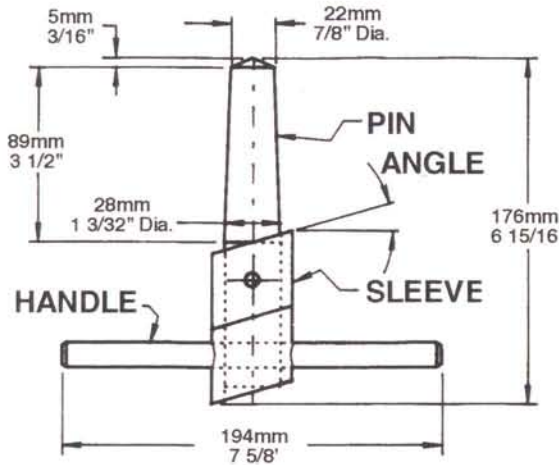


Copol...
13mm
1/2" GRADE 60 STEEL REINFORCEMENT
146mm
SECTION A
S. A. 116
AS
ASTM A-615
AASHTO M-199

Cam Pins, Step Inserts, Magnets

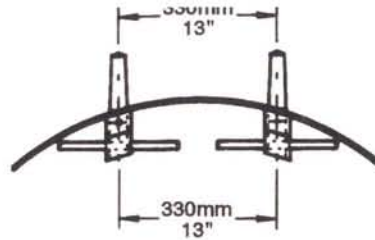
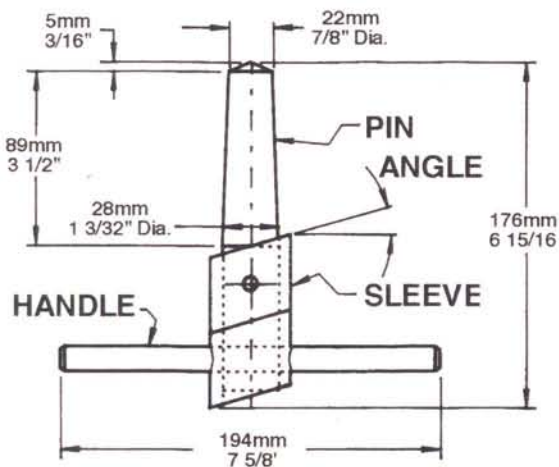
Cam Pins For PS1-PF & PS1-PF-DF



DIAMETER	COLOR*	ANGLE	STOCK NUMBER
36"/914mm	White	16°	004-650
42"/1067mm	Silver	13°	004-651
48"/1219mm	Black	12°	004-652
60"/1524mm	Pink	9° 30°	004-653
72"/1829mm	Gold	8°	004-654
84"/2134mm	Pink/Purple	6°	004-655
90"/2286mm	Blue/Pink	6°	004-656
96"/2438mm	Green/White	6°	004-657

* M.A. Cam Pins are color coded for manhole size.

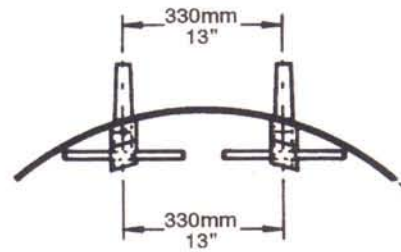
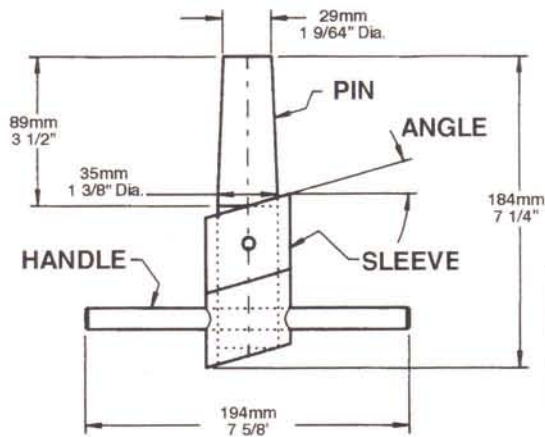
Cam Pins For PS2-F, PS2-PF-DF, PS2-PFS, PS2-PFS-DF, PS2-PF-DRP



DIAMETER	COLOR*	ANGLE	STOCK NUMBER
24"/610mm	Orange/Green	32° 49°	004-670
36"/914mm	Red/Yellow	20° 48°	004-671
48"/1219mm	Green	15° 30°	004-672
54"/1372mm	Yellow/Red	15° 55°	004-673
60"/1524mm	Red	12° 26°	004-674
72"/1829mm	Orange	10° 22°	004-675
84"/2134mm	Brown/Gray	7° 45°	004-676
96"/2438mm	Purple	7° 45°	004-677

* M.A. Cam Pins are color coded for manhole size.

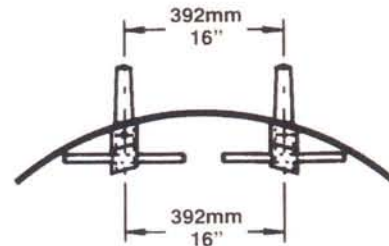
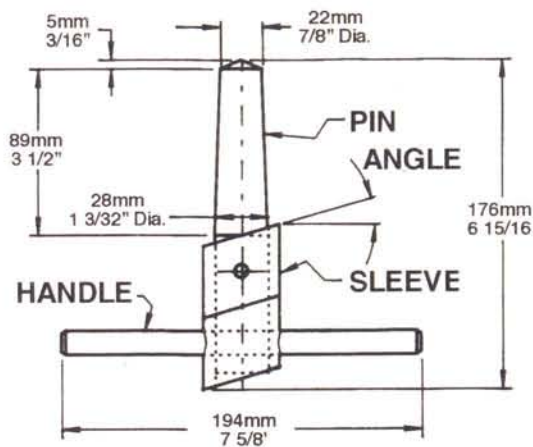
Cam Pins For PS2-PFSL, PS2-PFSL-DF



DIAMETER	COLOR*	ANGLE	STOCK NUMBER
36"/914mm	Brown	20° 48°	004-690
48"/1219mm	Gray	15° 30°	004-691
60"/1524mm	Blue	12° 26°	004-692
72"/1829mm	Yellow	10° 22°	004-693
96"/2438mm	Blue/Brown	7° 45°	004-698

* M.A. Cam Pins are color coded for manhole size.

Cam Pins For PS3-PFC



DIAMETER	COLOR*	ANGLE	STOCK NUMBER
24"/610mm	Gold/Red	43° 59°	004-700-24
36"/914mm	White/Red	27° 35°	004-700-36
48"/1219mm	Green/Red	10° 24°	004-700-48
54"/1372mm	Yellow/Green	9° 29°	004-700-54
60"/1524mm	Blue/Green	8° 20°	004-700-60
72"/1829mm	Black/Red	7° 37°	004-700-72
84"/2134mm	Gray/Red	6° 32°	004-700-84
96"/2438mm	Purple/Red	5° 13°	004-700-96

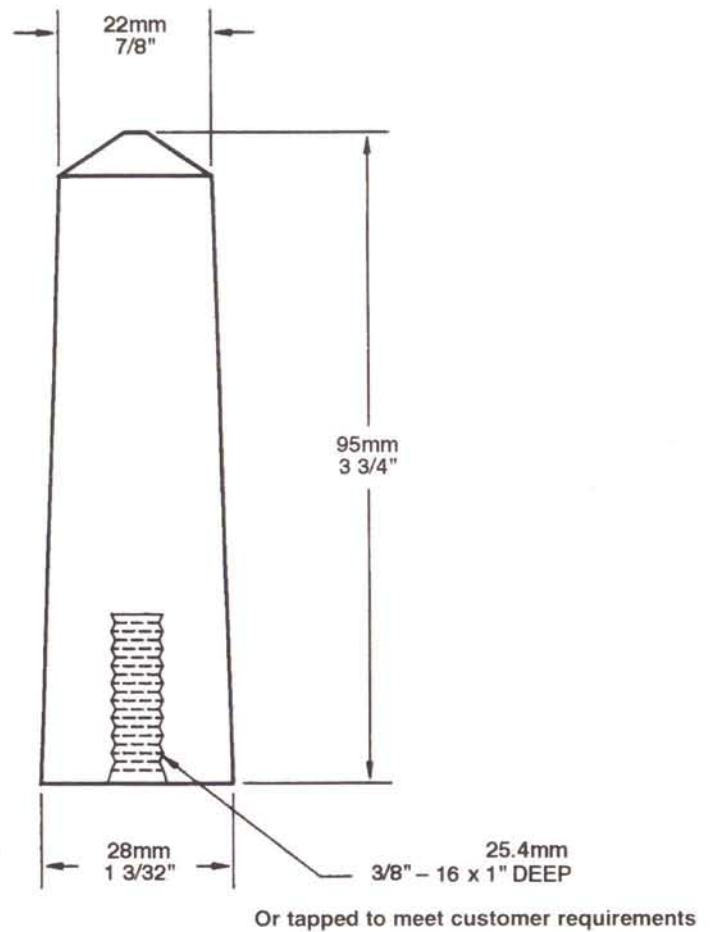
* M.A. Cam Pins are color coded for manhole size.

Steel Form Pin For Flat Wall Structures

MATERIAL: Steel

Can be used for manhole steps:

PS1-PF	PS2-PFS
PS2-PF	PS5-PF
PS3-PFC	PS12-PF-DF
PS1-PF-DF	PS2-PF-DRP
PS2-PFS-DF	PS2-PF-DF

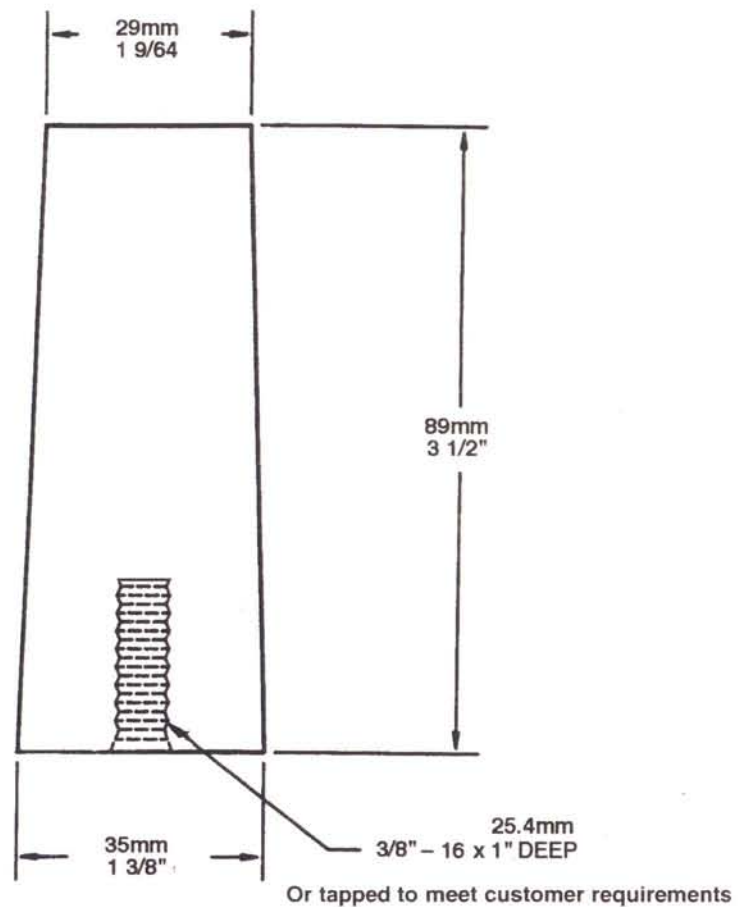


Large Steel Form Pin For Flat Wall Structures

MATERIAL: Steel

Can be used for manhole steps:

PS2-PFSL
PS2-PFSL-DF
PS2-PFLL

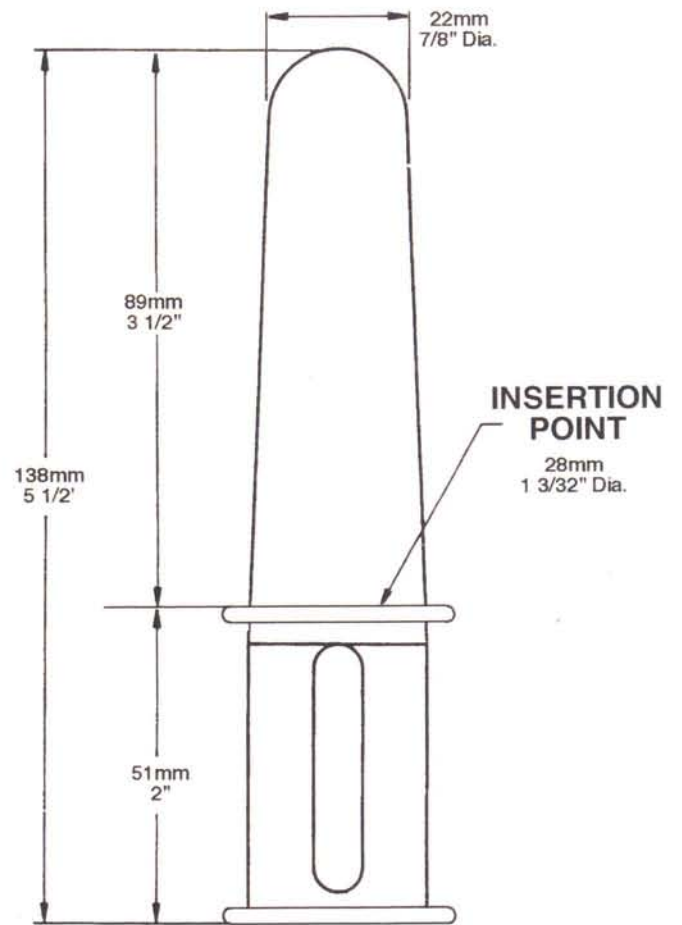


Small Sizing Pin For Dry Cast Operations

MATERIAL: Plastic

Can be used for manhole steps:

PS1-PF	PS2-PFS
PS2-PF	PS5-PF
PS3-PFC	PS12-PF-DF
PS1-PF-DF	PS2-PF-DRP
PS2-PFS-DF	PS2-PF-DF



Breakaway Inserts

INSTALLATION INSTRUCTIONS

The M.A. Breakaway Inserts are designed to secure steps in the walls of precast concrete manholes. The Breakaway Insert is a cast-in-place product, assuring you of a perfect depth and diameter hole, positive alignment and insuring you of having a watertight seal.

Precision-cut retainer sleeve guides are available. Sleeves are to be welded flush with the concrete side of the core and then ground smooth to the radius. Each precision-cut retainer sleeve guide is machined with a keyway to insure you of properly aligning your sleeves to your forms and to insure proper positioning of the insert into the sleeve.

The insert is slid into the retainer sleeve guide (fig. 1), securely mounting the insert in place, then the mold is poured. During stripping, the insert break-a-way portion snaps off (fig. 2), leaving the insert cleanly embedded in the concrete (fig. 3). Punch out the break-a-way portion from the retainer sleeve guide, slip in another insert and you're ready to pour again. No tools are required for installation of the Press Fit Inserts. It is quick and easy, saving you time and money.

M.A. Industries Breakaway Inserts have been tested using M.A. Industries Press Fit Steps. The M.A. Press Inserts exceed the requirements of ASTM C-478 and ASTM C-497.

M.A. INDUSTRIES DOES NOT RECOMMEND THE USE OF ANY STEP OTHER THAN THE M.A. PRESS FIT STEPS TO BE USED IN CONJUNCTION WITH THE M.A. BREAKAWAY INSERTS.

For more information, please call our Customer Service Department at

Toll-Free 1-800-241-8250

or [email@salesorder@maind.com](mailto:salesorder@maind.com)
Patented

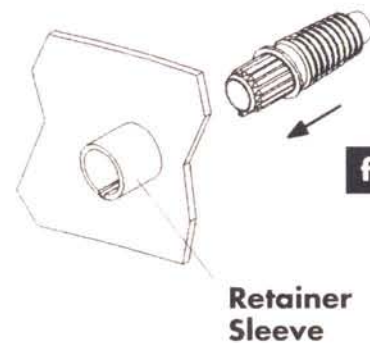


figure 1

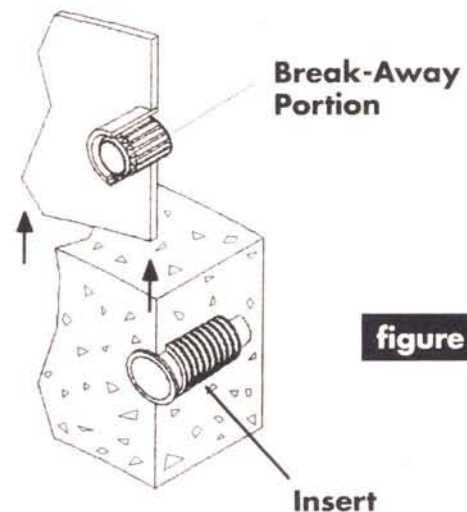


figure 2

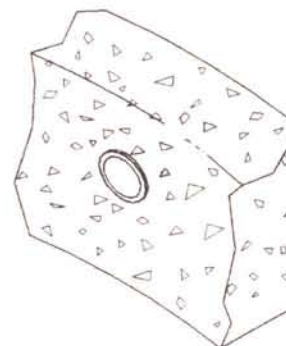


figure 3

Step Inserts

Roundwall Breakaway Step Inserts

Item# – 004-501-IN

Qty – 500 pieces per box

The Roundwall Breakaway Step Inserts are designed to secure steps in the walls of precast concrete manholes. The insert is cast in place, assuring a perfect hole, positive alignment, and insuring a watertight seal. Roundwall Breakaway Step Inserts eliminate the use of Cam Pins. Ribbed on inside.



Slotted Sleeve for Roundwall

Item# – 004-501-SL

Qty – Sold individually

Slotted Sleeves are machined for a perfect fit with Breakaway step inserts. They are available for most sizes of manholes. Slotted Sleeves are to be welded flush with the concrete side of the core and then ground smooth to the radius. Each Slotted Sleeve is machined with a keyway to insure you of properly aligning your sleeves to your forms and to insure proper positioning of the insert into the sleeve. Cam Pins will not work with this sleeve.

Flatwall Breakaway Step Inserts

Item# – 004-501-INF

Qty – 500 pieces per box

The Flatwall Breakaway Step Inserts are designed to secure steps in the walls of precast concrete structures. The insert is cast in place, assuring a perfect hole, positive alignment, and insuring a watertight seal. Flatwall Breakaway Step Inserts eliminate the use of Cam Pins. Ribbed on inside.



Step Inserts



Sleeve For Flatwall

Item# – 004-501-SLF
Qty – Sold individually

Sleeves are machined for a perfect fit with Breakaway step inserts. Easily installed to your flat walled forms. Sleeves are to be welded flush with the concrete side of the core and then ground smooth. Cam Pins will not work with this sleeve.

Large Leg Roundwall Breakaway Step Inserts

Item# – 004-510-LLB
Qty – 500 pieces per box

The Roundwall Breakaway Step Inserts are designed to secure steps in the walls of precast concrete structures. The insert is a cast in place, assuring a perfect hole, positive alignment, and insuring a watertight seal. Roundwall Breakaway Step Inserts eliminate the use of Cam Pins. This Insert has a 1 1/4" Diameter. Ribbed on inside.



Large Leg Slotted Sleeve For Roundwall

Item# – 004-510-LLSL
Qty – Sold individually

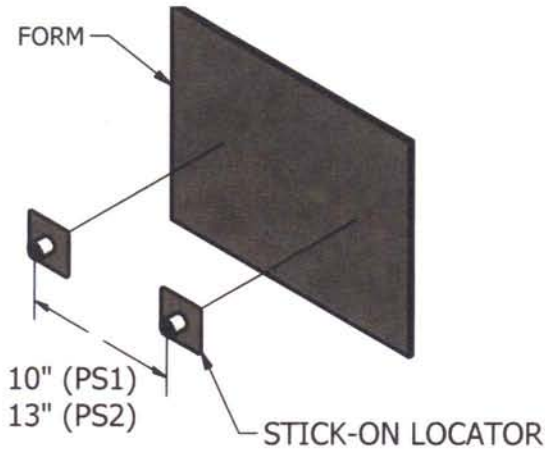
Slotted Sleeves are machined for a perfect fit with Breakaway step inserts. They are available for most sizes of manholes. Slotted Sleeves are to be welded flush with the concrete side of the core and then ground smooth to the radius. Each Slotted Sleeve is machined with a keyway to insure you of properly aligning your sleeves to your forms and to insure proper positioning of the insert into the sleeve. Cam Pins will not work with this sleeve.



PFS-1 INSERT / STICK-ON LOCATOR INSTRUCTIONS

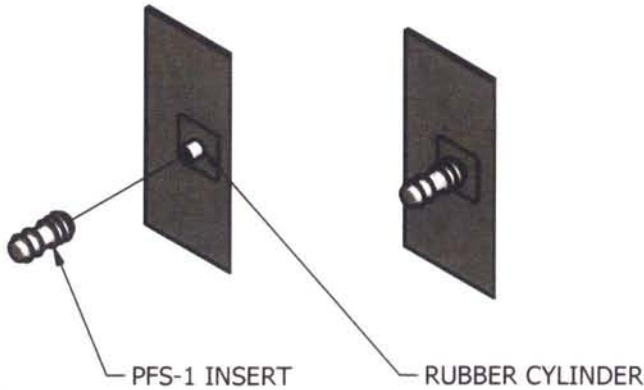
STEP 1

ATTACH STICK-ON LOCATOR TO FORM WITH SILICON ADHESIVE. USE 10" CENTER TO CENTER FOR PS1 STEPS AND 13" CENTER TO CENTER FOR PS2 STEPS.



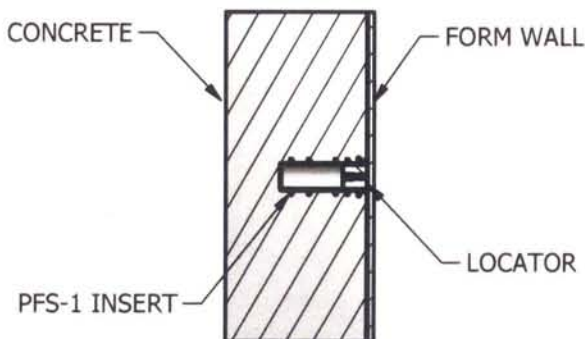
STEP 2

PRESS PFS-1 INSERT ON TO RUBBER CYLINDER. MAKE SURE THE INSERT COMPLETELY COVERS THE RUBBER CYLINDER.



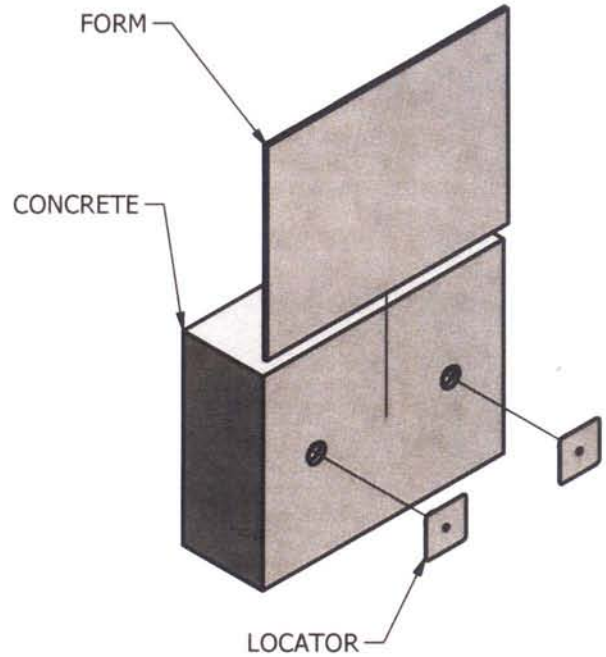
STEP 3

POUR CONCRETE INTO FORM.



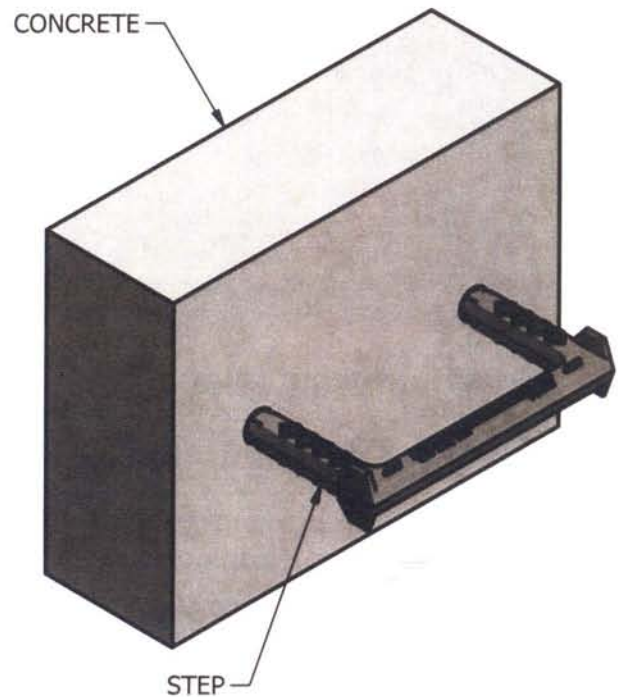
STEP 4

AFTER CONCRETE HAS CURED TO 3000 PSI, STRIP FORM AND REMOVE STICK-ON LOCATORS FROM THE INSERTS.



STEP 5

INSERT M.A. IND STEP ACCORDING TO INSTRUCTIONS INCLUDED WITH THE MANHOLE STEP



Step Inserts

PFS-1 Inserts

Item# – 004-501-S

Qty – 600 pieces per box

PFS inserts are used with straight legged manhole steps. This insert produces a straight hole in the structure. The PFS-1 Inserts are designed to secure steps in the walls of precast concrete structures. The insert is cast in place, assuring a perfect hole, positive alignment, and insuring a watertight seal. This Insert is 1" in Diameter.



Stick-On Flatwall Locator

Item# – 004-501-SFWL

Qty – Sold individually

Stick-On Flatwall Locator is used to position Step Inserts during the concrete pour. Silicone adhesive is used to position the locator on the form. Step inserts are then pressed onto the rubber locator.

Nail-On Flatwall Locator

Item# – 004-501-SFWL

Qty – Sold individually

Nail-On Flatwall Locator is used to position Step Inserts during the concrete pour in wood forms. By driving a nail or screw through the center, the locator is affixed to the form. Step inserts are then pressed onto it.

