

ELKAY[®]

SPECIFICATIONS

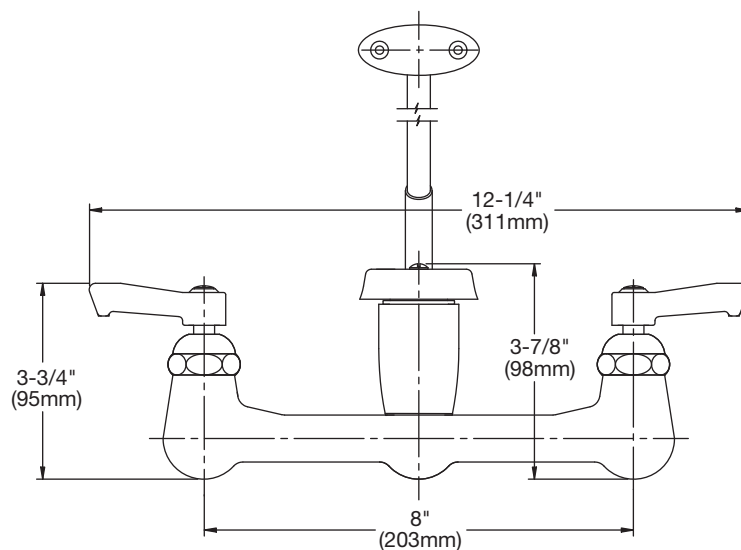
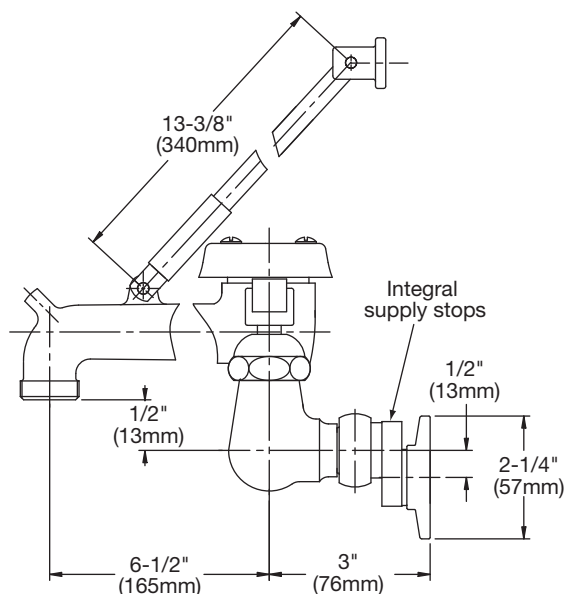
Wall Mount 8" (203mm) Center Bucket Hook Rough 7" (178mm) Commercial Faucet Model LKB940C

GENERAL FEATURES

- Quarter turn ceramic disc cartridge
- Solid brass construction
- Rough chrome finish
- Integral supply stops
- Replacement cartridge A70001 for cold
- Replacement cartridge A70002 for hot
- 1/2" (13mm) NPT female inlets

CODES/STANDARDS

- ASME/ANSI A112.18.1
- NSF/ANSI 61
- ADA
- UPC/CUPC
- IAPM Listed
- ASSE-1001



SEE OTHER PAGE FOR REPLACEMENT PARTS INFORMATION

ELKAY LIMITED FIVE YEAR FAUCET WARRANTY ON COMMERCIAL FAUCETS

Limited Five Year Functional and Finish Warranty

Elkay warrants to the original consumer purchaser that the Elkay faucet will be free from defects in material and workmanship for Five Years from the original installation date. Elkay will, at its option, supply replacement parts (or if no longer available a comparable product) if the faucet fails due to a defect in material or workmanship. This warranty does not apply in the event of produce surface damage caused by abuse, misuse or improper care and maintenance. This warranty excludes damage caused by harsh or abrasive cleaners and/or materials. This warranty includes all industrial, commercial and business use. Product replacement does not include transportation cost or labor installation cost. Elkay reserves the right to examine product in question and its installation prior to replacement.

OTHER WARRANTY CONDITIONS ON FAUCETS

Our warranty does not cover product failure or damage caused by abusive treatment, misuse, environmental factors, improper care and cleaning, or damage due to handling or faulty installations. This warranty is extended only to the original consumer purchaser of the product. This warranty does not cover shipping costs, labor costs, or any other charges for such items as installation or replacement of the sink, diagnosis or replacement of any faucet or component part, or any other expense or loss.

ALL INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE SPECIFICALLY EXCLUDED. NO ADDITIONAL WARRANTIES, EXPRESS OR IMPLIED ARE GIVEN. ANY IMPLIED WARRANTY, INCLUDING ONE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.

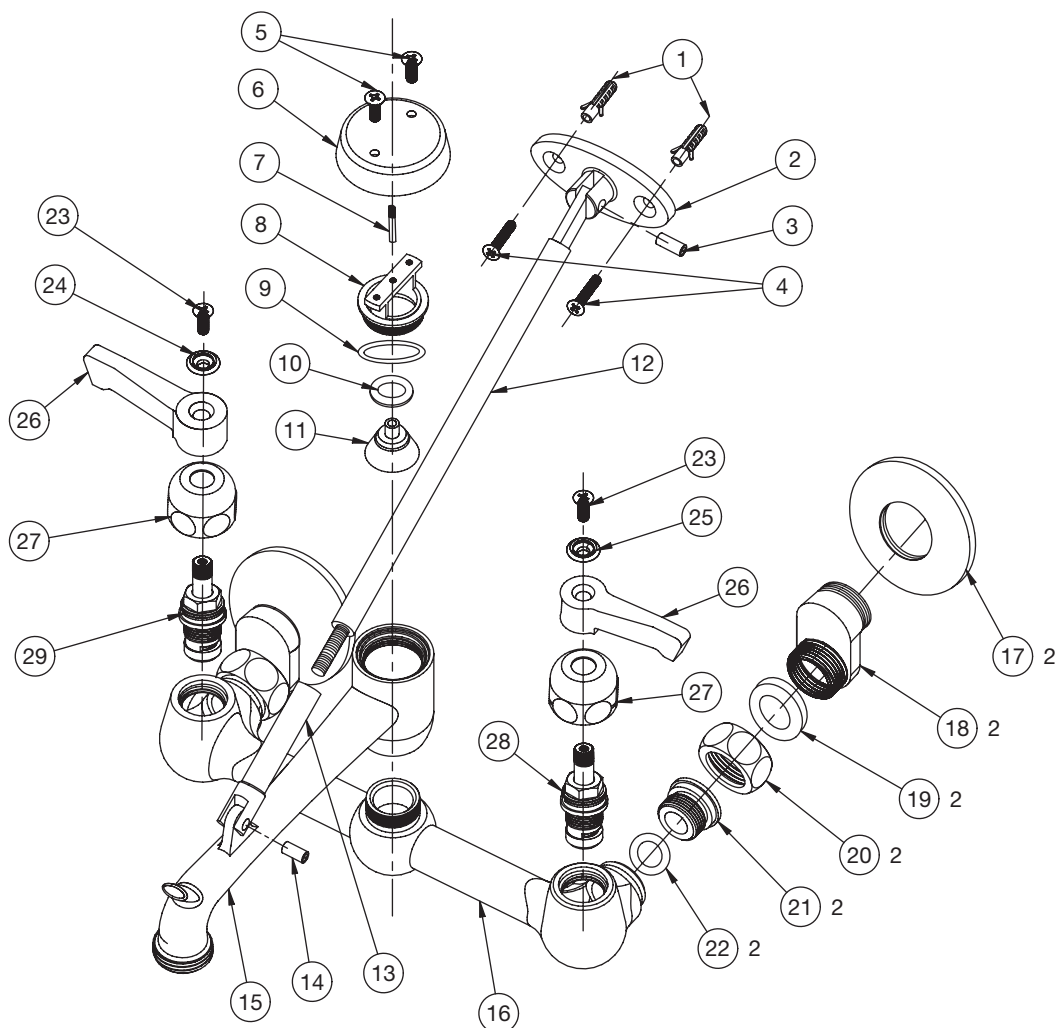
Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

TO OBTAIN SERVICE UNDER WARRANTY

1. Write to: Elkay
Attention: Consumer Services
2222 Camden Court
Oak Brook, IL 60523
2. Include a letter containing the following information:
 - a. Date of purchase and installation
 - b. Description of nature of defect
 - c. Model number or description of model and/or component part if possible.

Replacement Parts



Item No.	Description
1	Plug
2	Brace - Stator
3	Pin - Long
4	Screw - Phil Oval HD
5	Screw - Phil Oval HD
6	Handle
7	Leader
8	Bonnet
9	"O" Ring
10	Washer
11	Seat
12	Brace
13	Adapter
14	Pin - Short
15	Spout

Item No.	Description
16	Body
17	Cap - Wall
18	Adapter "S" w/ Integral Supply Stops
19	Washer
20	Nut
21	Adapter
22	"O" Ring
23	Screw - Phil Oval HD
24	Ring - Red Mark
25	Ring - Blue Mark
26	Handle
27	Bonnet
28	Right Handle Cartridge Assembly - A70001
29	Left Handle Cartridge Assembly - A70002

SPECIFICATIONS

GENERAL

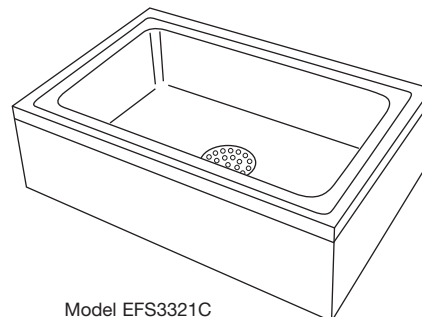
#16 gauge, type 304 (18-8), stainless steel floor model service sink with 1-3/4" (44mm) radius vertical and horizontal covered corners. Apron on three sides. Top has 5/32" (4mm) raised rim. Exposed surfaces are polished to a lustrous satin finish. Underside is fully undercoated to prevent condensation and dampen sound. Furnished with wall hanger and LK43 drain with strainer.

(CHECK MODEL SPECIFIED)

- ☐ EFS2523C
☐ EFS3321C

FURNISHED COMPLETE WITH:

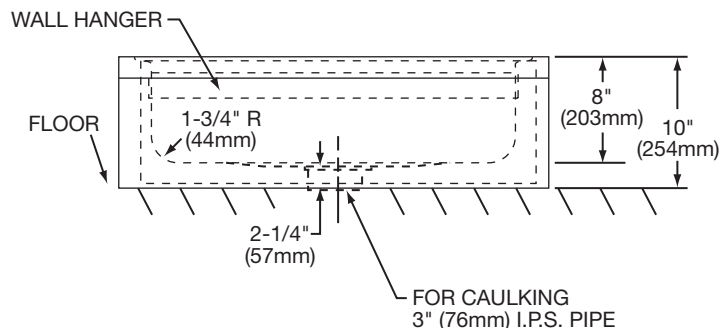
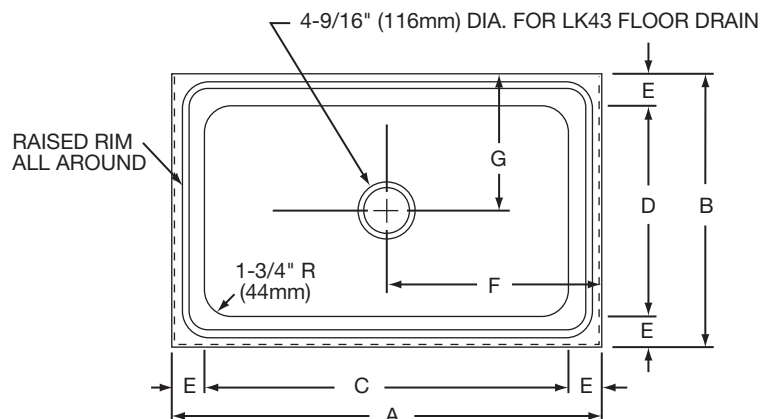
DRAIN: LK43. Chrome plated brass body drain outlet fitting. Field adjustable stainless steel flat grid strainer or dome strainer. Designed to attach to 3" (76mm) I.P.S. pipe utilizing sealant by others.



Model EFS3321C

DIMENSIONS

Model Number	A		B		C		D		E		F		G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
EFS2523C	25	635	23	584	20	508	18	457	2 1/2	64	12 1/2	318	11 1/2	292
EFS3321C	33	838	21	533	28	711	16	406	2 1/2	64	16 1/2	419	10 1/2	267



In keeping with our policy of continuing product improvement, Elkay reserves the right to change product specifications without notice.

This specification describes an Elkay product with design, quality and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

CLOSET CARRIERS

Types of Carriers

The JOSAM 12000 Series and –32 Wide Chase Closet Carriers for commercial installation suit all makes and types of off-the-floor closet bowls. Simply indicate the information below for the product desired.

CARRIER TYPE	APPLICATION
COMMERCIAL ADJUSTABLE FITTINGS ON-STACK, HUB & SPIGOT, NO-HUB	For use with 12000 and –32 Wide Chase Carriers in single, battery or on-stack installation of closet bowls.
COMMERCIAL FITTINGS ON-STACK, HUB & SPIGOT, PLASTIC	For commercial on-stack installation of closet bowls.
CLOSE CARRIERS & FITTINGS HUB & SPIGOT, NO-HUB	For installation in soil stack where pipe space is minimum.

How To Order

EXAMPLE: Series No. 12704

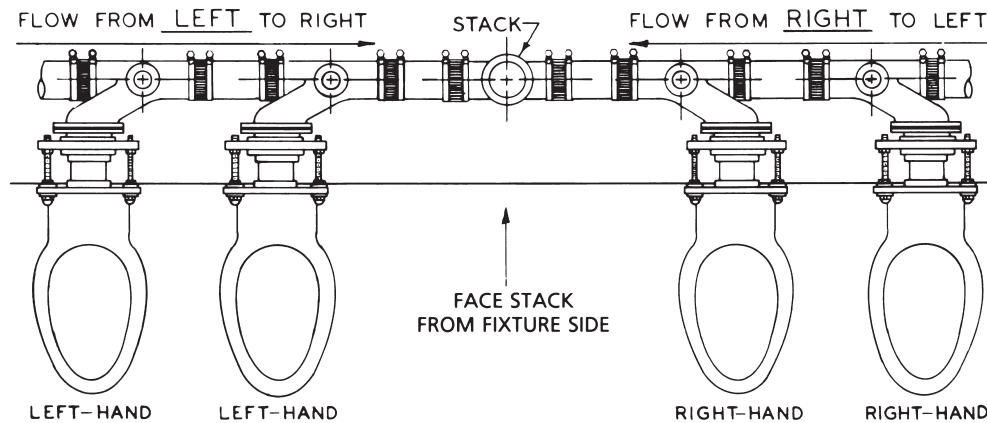
Outlet Size _____ 12704 -LH4 -10

Option, Left-Hand 4" No-Hub Branch _____

Option, ABS Extension, through 10-1/2" Wall _____

Horizontal Fitting & Carrier Selection

DIAGRAM TO DETERMINE LEFT- OR RIGHT-HAND CLOSET FITTINGS



TYPICAL
INSTALLATION
SHOWN

1. If flow in waste line is **from the right of the stack**, the closet fitting should be a **right-hand fitting**.
2. If flow in waste line is **from the left of the stack**, the closet fitting should be a **left-hand fitting**.

CLOSET CARRIERS

Advantages of Off-The-Floor Plumbing Fixtures

WHY OFF-THE-FLOOR PLUMBING FIXTURES?

The reasons are many – including aesthetics, installation, cost, maintenance and sanitation. This concept in modern plumbing has been acknowledged for many years by leading architects, engineers and mechanical contractors to be far superior in all respects to systems with floor-mounted fixtures. The more significant advantages of off- versus on-the-floor plumbing fixtures and their required support and drainage systems are presented on these pages for your consideration when specifications are written.

AESTHETICS

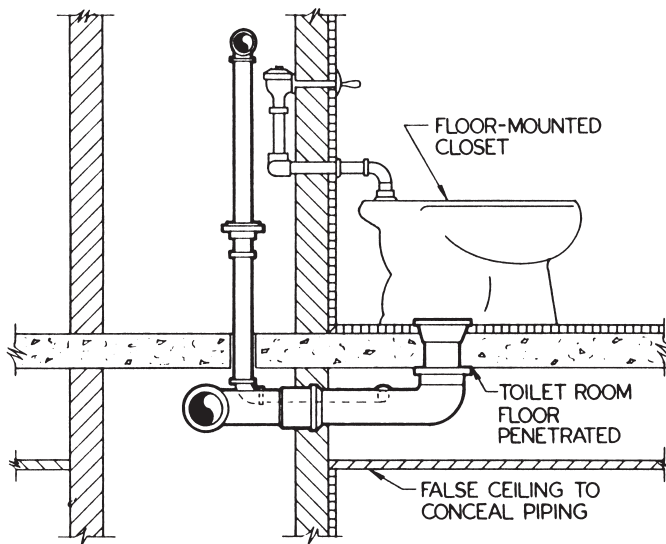
In keeping with the current trends of architectural design toward smooth, uncluttered lines, off-the-floor plumbing fixtures are the necessary practical complement in toilet and restroom décor. Victorian pedestals and unsightly floor-mounted closets of a bygone year cannot be aesthetically integrated in contemporary designs.

INSTALLATION

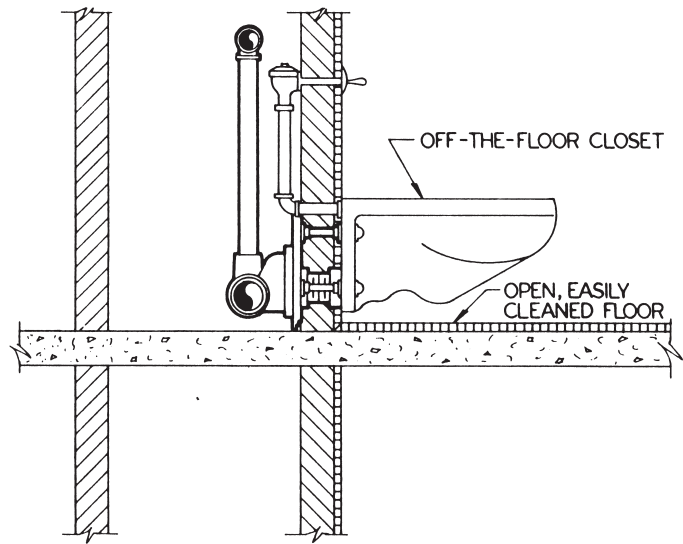
Many factors, including cost, material, labor required, space, handling and others must be thoroughly evaluated when planning an installation. With on-the-floor water closets, slabs must be penetrated and sleeved at each fixture to accommodate waste piping which, in many instances, has to be suspended below the slab.

Such suspended piping requires concealment in multi-story installations, thereby necessitating drop or furred ceilings in the rooms below. The fitting and assembly of waste piping in such installations, as a rule, must be accomplished on the spot with the aid of scaffolding and extra mechanics, which contributes to high construction costs and affects not only the mechanical contractor but the structural, floor, wall and ceiling mechanics as well.

Conversely, with off-the-floor fixtures, there is no slab penetration in toilet room areas. The support and piping systems are concealed behind the walls. Such systems are ideally suited to the modern modular plumbing concept as they are readily fabricated either on site or in the contractor's shop at significant savings over conventional piece-by-piece assembly. A well planned and executed off-the-floor fixture installation today will provide lasting benefits appreciated by future building occupants and owners.



ON-THE-FLOOR WATER CLOSET



OFF-THE-FLOOR WATER CLOSET

MAINTENANCE AND SANITATION

The benefits of off-the-floor plumbing will immediately become evident to those involved in maintenance. Mechanically, off- and on-the-floor plumbing installations are similar in terms of service required. However, when service is necessary, it is generally agreed that off-the-floor fixtures and attendant systems are more easily maintained. With no obstructions, daily floor cleaning is accomplished more effectively in far less time than needed to work around on-the-floor fixtures.

Toilet rooms are the most susceptible of all rooms to unsanitary conditions. Therefore, sanitation should be the foremost consideration in the design of such rooms. On-the-floor fixtures, regardless of their efficiency or manufacture, provide natural harbors at the base for accumulated filth, which is virtually impossible to remove, never allowing total sanitation. The ever-present problem of floor deterioration adjacent to and under on-the-floor fixtures is completely eliminated with off-the-floor installations. Off-the-floor plumbing fixtures eliminate this potential health hazard, and toilet room floors are clear of obstructions which hamper efforts to achieve proper sanitary maintenance. Another advantage of off-the-floor fixtures is that they provide much greater rentable or usable floor space than do on-the-floor fixtures, and that is a factor which should be considered when fixture selection is made. The specification of off-the-floor fixtures will prove to be a wise and practical decision.

CLOSET CARRIERS

Advantages of Off-The-Floor Plumbing Fixtures

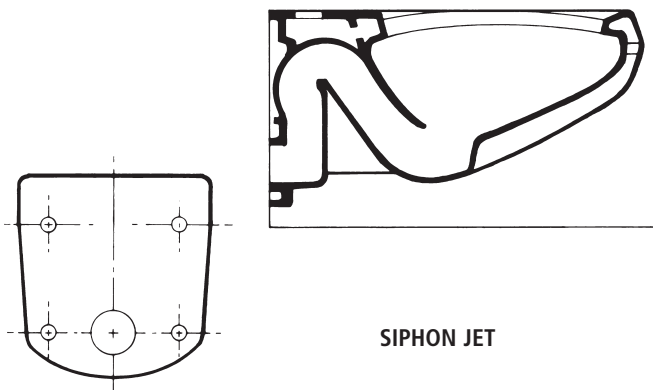
SUPPORT & DRAINAGE SYSTEMS

When JOSAM entered into the manufacturing of off-the-floor plumbing fixture carriers and fittings, extensive research was conducted into the requirements for support and discharge of these fixtures. From this research, the design of the JOSAM line of carriers and fittings evolved, including such innovations as invertible carriers to mount either siphon jet or blowout water closets, common vents on back-to-back fittings, dual feet on closet carriers to accommodate all fixture roughing heights in any floor construction and many others.

Our innovations have been copied, but not equaled, and they paved the way for universal acceptance of this line of products. In the ensuing years, this product line has been expanded to meet new requirements as they develop in the dynamic construction industry. The result is today's most comprehensive range of products for off-the-floor plumbing fixture support and drainage.

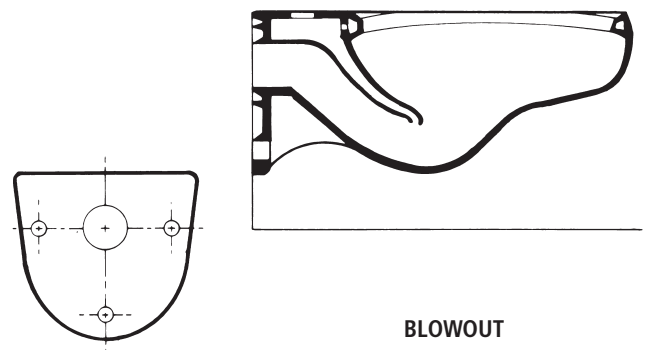
TYPES OF WATER CLOSETS

Prior to the introduction of JOSAM universal carriers, it was necessary to specify carriers for each specific type of water closet. Even though JOSAM has taken this task out of carrier specifications, water closet types should be understood. There are two basic types of water closets, identifiable by their flushing action, that are normally used in commercial installations requiring carriers. These are siphon jet and blowout action water closets. The siphon jet bowl is attached to the carrier with four mounting studs arranged in a rectangular pattern whereas the blowout bowl is mounted on three studs arranged in a triangular pattern, point down. By inverting the carrier body, JOSAM carriers accommodate either type. Both siphon jet and blowout type water closets are also produced in floor-mounted wall-out-let pattern and require special drainage fitting connections.



SIPHON JET

This type, because of its quiet, efficient, sanitary flushing action, is usually specified in most commercial, institutional and hotel applications. Water is introduced into the bowl through the rim and up leg of trap through jets placed there to fill the trapway thus creating siphonic action to quickly evacuate the bowl. The large water surface in the bowl insures sanitation.

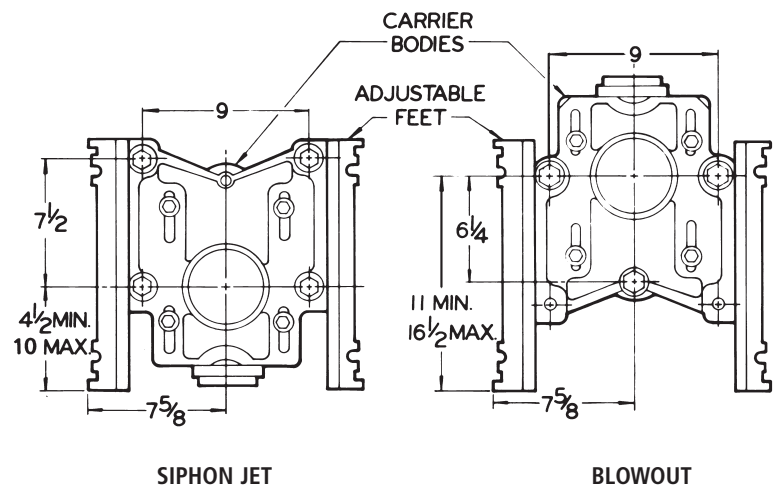


BLOWOUT

This type is particularly suited to heavy use applications such as public facilities in stadiums and terminals. The flushing action produced by the jet of water in the outlet passage is strong for rapid evacuation of the bowl. Fouling problems are minimal. However, because of the powerful flushing action, this type of closet is noisy to operate.

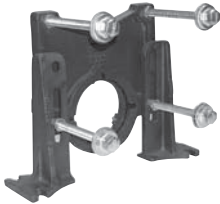
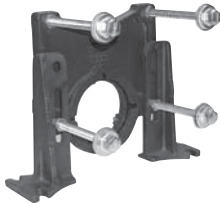
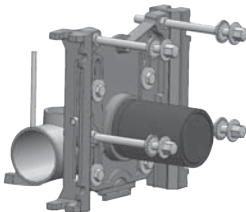
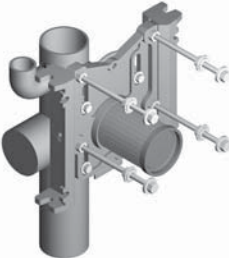
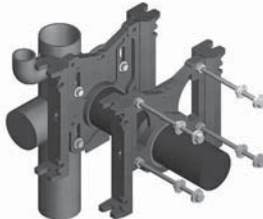
ONE CARRIER FOR SIPHON JET OR BLOWOUT



CHASE-SAVER® is shipped pre-assembled for siphon jet closets and is quickly inverted for use with blowout closets.















SIPHON JET

BLOWOUT







CARRIERS		12000 TRIM PACKS		
11001 With 4" Pipe Grip Adapter  Page 23	11007/11008 With 3" & 4" Copper Fitting Adapters  Page 23	12000  Page 14	12000-OR  Page 15	12000-32  Pages 16

HORIZONTAL ADJUSTABLE FITTINGS				VERTICAL ADJ. FITTINGS	
12674/12684 No-Hub, Single, 12674, L.H., 12684, R.H.  Page 24	12694 No-Hub, Back-to-Back  Page 24	12674/12684-HS Hub & Spigot, Single, 12674-HS, L.H., 12684-HS, R.H.  Page 25	12694-HS Hub & Spigot, Back-to-Back  Page 25	12704 No-Hub, Single, L.H. 2" Vent  Page 26	12704-HS Hub & Spigot, Single, L.H. 2" Vent  Page 26







VERTICAL ADJUSTABLE FITTINGS					
12704-LH4 No-Hub, Single, L.H. 4" Branch, L.H. 2" Vent  Page 26	12704-HS-HLH4 Hub & Spigot, Single, L.H. 4" Branch, L.H. 2" Vent  Page 27	12704-RH4 No-Hub, Single, R.H. 4" Branch, L.H. 2" Vent  Page 27	12704-HS-HRH4 Hub & Spigot, Single, R.H. 4" Branch, L.H. 2" Vent  Page 27	12704-D4 No-Hub, Single, Two 4" Branches, L.H. 2" Vent  Page 27	12704-HS-HD4 Hub & Spigot, Single, Two 4" Branches, L.H. 2" Vent  Page 27

VERTICAL ADJUSTABLE FITTINGS					
12714 No-Hub, Single, R.H. 2" Vent  Page 28	12714 -HS Hub & Spigot, Single, R.H. 2" Vent  Page 28	12714-RH4 No-Hub, Single, R.H. 4" Branch, R.H. 2" Vent  Page 28	12714-HS-HRH4 Hub & Spigot, Single, R.H. 4" Branch, R.H. 2" Vent  Page 29	12714-LH4 No-Hub, Single, L.H. 4" Branch, R.H. 2" Vent  Page 29	12714-HS-HLH4 Hub & Spigot, Single, L.H. 4" Branch, R.H. 2" Vent  Page 29







VERTICAL ADJUSTABLE FITTINGS

12714-D4 No-Hub, Single, Two 4" Branches, R.H. 2" Vent  Page 29	12714-HS-HD4 Hub & Spigot, Single, Two 4" Branches, R.H. 2" Vent  Page 29	12724 No-Hub, Back-to-Back, 2" Vent  Page 30	12724-HS Hub & Spigot, Back-to-Back, 2" Vent  Page 31	12724-VS4 No-Hub, Back-to-Back, 4" Branch, 2" Vent Same Side  Page 31	12724-OS4 No-Hub, Back-to-Back, 4" Branch, 2" Vent Opposite Side  Page 31
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VERTICAL ADJUSTABLE FITTINGS

12724-HS-HVS4 Hub & Spigot, Back-to-Back, Single Branch, 2" Vent  Page 31	12724-D4 No-Hub, Back-to-Back, Two 4" Branches, 2" Vent  Page 31	12724-HS-HD4 Hub & Spigot, Back-to-Back, Two 4" Branches, 2" Vent  Page 31	14004/14024 L.H. Offset, L.H. 2" Vent R.H. Offset, R.H. 2" Vent  Page 32	14044 Back-to-Back, Offset, 2" Vent  Page 32	14064 Single, On-Stack, 4" Vent  Page 33
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VERTICAL CLOSE FITTINGS

14104 Single, On-Stack, 2" Vent  Page 33	14404/14424 L.H. Offset, L.H. 2" Vent R.H. Offset, R.H. 2" Vent  Page 34	14444 Back-to-Back, Offset, 2" Vent  Page 34	14464 Single, On-Stack, 4" Vent  Page 35	14484 Back-to-Back, On-Stack, 4" Vent  Page 35	14504 Single, On-Stack, 2" Vent  Page 36
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90° INSTITUTIONAL CARRIERS

15964 Vertical, 2" Vent, 4" Branches  Page 37	15984 Vertical, 2" Vent, 4" Branches  Page 37
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FLOOR-MOUNTED

16123 Single, On-Stack, 3" PVC Fitting Adapter  Page 38
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CLOSET CARRIERS

12000-PF Series CHASE-SAVER® II Features

CARRIERS

JOSAM 12000-PF Series CHASE-SAVER® II Closet Carrier meets the most rigid requirements for securing and supporting water closets. Some of the many specification and installation features are shown below. CHASE-SAVER® II can be used to mount either siphon jet or blow-out closets by inverting the carrier body. This carrier was specifically designed for pre-fabricated plumbing systems and exceeds the requirements of American National Standard ANSI A112.6.1M-1997. Pre-assembled carrier and pylon feet are packed with all the hardware. The extension and fitting are shipped separately for convenient handling at the fabrication or job site.

FITTING GASKET

Neoprene gasket with raised "O" ring beads on both sides provides a positive watertight seal between fitting and carrier.

PYLON FEET

Heavy-duty cast iron, compact, invertible (same foot both sides – no rights and lefts) outboard side mount for easy access to all assembly hardware, with "Wrap around" carrier retaining channel (1) which "locks" foot to carrier with only one bolt (2). Each foot requires only one floor anchor bolt and has additional "convenience" slots (3) for securing pre-fab transport frames, and pipe supports, incorporates handy elevation scale (4) divided in 1/2" increments on front to permit roughing-in at a glance, extends only 3/4" in front of carrier with flat vertical face and 13-3/4" height accommodates either standard or high rough mounting.

ANCHOR FOOT

Cast iron, rotatable, secured to back of fitting by means of fully threaded rod for complete adjustment, provides the final link in the 3 point support system for ultimate stability of the installation.

FIXTURE GASKET

JIFFEE-SEAL Neoprene Gasket fits all closet gasket recesses.

BOWL STABILIZER BACK UP WASHERS

Provide gripping power necessary to prevent water closet from settling out of installed location over a long period of time.

HARDWARE

Zincbrite plating protects all hardware and cap nuts are finished in chrome.

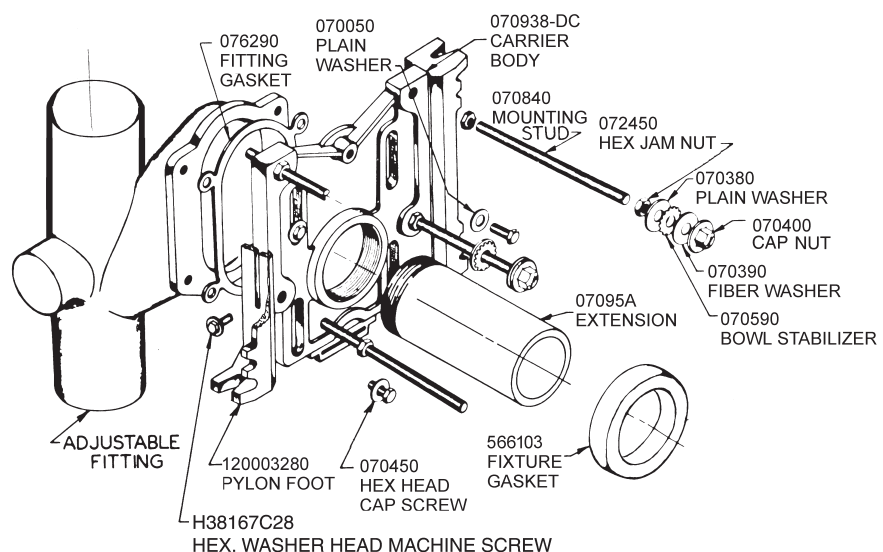
ADJUSTABLE EXTENSION

High strength ABS plastic with built-in test cap, assembled to carrier body with positive taper threads, easily cut to desired length. Furnished 7" long standard for 1" minimum to 5-1/2" maximum dimension, and 12" long (specify -10 Option) for 10-1/2" maximum dimension.

CARRIER BODY

Heavy-duty cast iron, compact, invertible for positive support of siphon jet or blow-out closets, with break-off tabs for rough-in less than standard 5-1/2", at the base (in siphon jet position), accommodates complete range of rough-in heights in two models, one (standard) for 4-1/2" through 6" and the other for higher rough, bolts directly to fitting. Bolt securing standard, stud securing is optional.

SPECIFICATION: JOSAM 12000-PF Series coated cast iron CHASE-SAVER® II Closet Carrier with adjustable connection, adjustable pylon feet, ABS extension with integral test cap, chrome plated trim, coated accessories and JIFFEE-SEAL Neoprene fixture gasket, for use with blowout or siphon jet water closets.



CLOSET CARRIERS

12000-OR Series CHASE-SAVER® II Features

JOSAM 12000-OR Series CHASE-SAVER® II Closet Carrier meets the most rigid requirements for securing and supporting water closets. Some of the many specification and installation features are shown below. CHASE-SAVER® II can be used to mount either siphon jet or blow-out closets by inverting the carrier body. This carrier was specifically designed for pre-fabricated plumbing systems and exceeds the requirements of American National Standard ANSI A112.6.1M-1997. Pre-assembled carrier and pylon feet are packed with all the hardware. The extension and fitting are shipped separately for convenient handling at the fabrication or job site.

FITTING GASKET

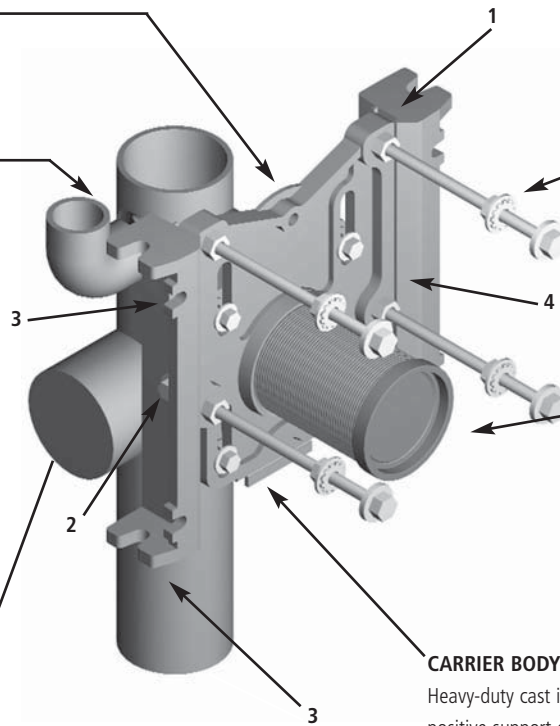
Neoprene gasket with raised "O" ring beads on both sides provides a positive watertight seal between fitting and carrier.

PYLON FEET

Heavy-duty cast iron, compact, invertible (same foot both sides – no rights and lefts) outboard side mount for easy access to all assembly hardware, with "Wrap around" carrier retaining channel (1) which "locks" foot to carrier with only one bolt (2). Each foot requires only one floor anchor bolt and has additional "convenience" slots (3) for securing pre-fab transport frames, and pipe supports, incorporates handy elevation scale (4) divided in 1/2" increments on front to permit roughing-in at a glance, extends only 3/4" in front of carrier with flat vertical face and 13-3/4" height accommodates either standard or high rough mounting.

ANCHOR FOOT

Cast iron, rotatable, secured to back of fitting by means of fully threaded rod for complete adjustment, provides the final link in the 3 point support system for ultimate stability of the installation.



FIXTURE GASKET

JIFFEE-SEAL Neoprene Gasket fits all closet gasket recesses.

BOWL STABILIZER BACK UP WASHERS

Provide gripping power necessary to prevent water closet from settling out of installed location over a long period of time.

HARDWARE

Zincbrite plating protects all hardware and cap nuts are finished in chrome.

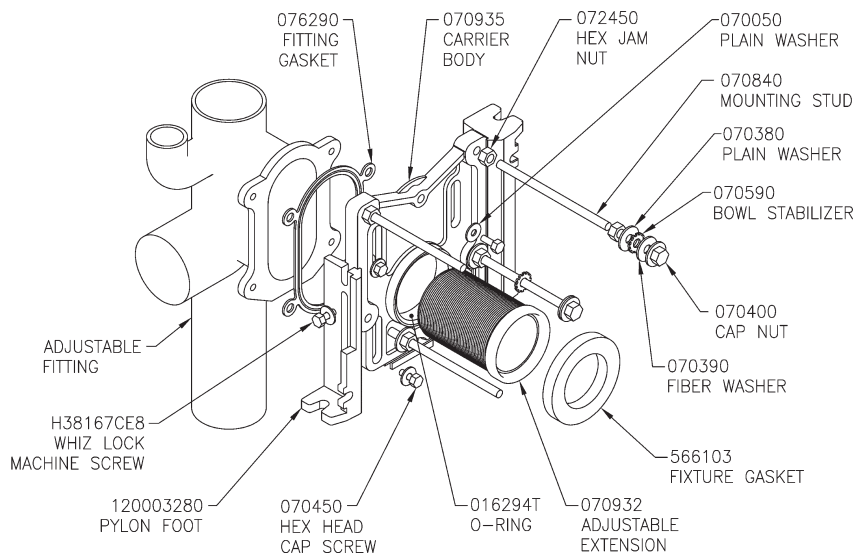
ADJUSTABLE EXTENSION

Threaded high strength ABS plastic with built-in test cap, assembled to carrier body and o-ring to form a gas and watertight seal. Furnished 6" long standard, easily cut for 1" minimum to 5-1/2" maximum dimension. For 12" long extension (specify -10 Option) for 10-1/2" maximum dimension.

CARRIER BODY

Heavy-duty cast iron, compact, integral o-ring sealing connection, invertible for positive support of siphon jet or blow-out closets, with break-off tabs for rough-in less than standard 5-1/2", at the base (in siphon jet position), accommodates complete range of rough-in heights in two models, one (standard) for 4-1/2" through 6" and the other for higher rough, bolts directly to fitting. Bolt securing standard, stud securing optional.

SPECIFICATION: JOSAM 12000-OR Series coated cast iron CHASE-SAVER® II Closet Carrier with adjustable connection, adjustable pylon feet, ABS extension with integral test cap, chrome plated trim, coated accessories and JIFFEE-SEAL Neoprene fixture gasket, for use with blowout or siphon jet water closets.



CLOSET CARRIERS

-32 WIDE CHASE CARRIER Features

CARRIERS

JOSAM -32 Wide Chase Carrier is universal for all applications in any type of construction, providing positive support for either siphon jet or blowout off-the-floor closets whether construction involves monolithic floors, minimum or maximum floor fills and high or low roughing. The carrier assembly, separate from the fitting and face plate assembly, is ideally suited for installation in wide chases as it can be positioned in or immediately behind the wall where the closet support should be, regardless of stack or drainage line location. The -32 Carrier comes from the factory shrink wrapped and partially assembled for convenient storage until required for use with any JOSAM adjustable fitting and face plate assembly.

12000 CARRIER BODY

Compact cast iron heavy-duty construction, invertible with break-off sections to provide various roughing heights to meet all drainage and pitch requirements for waste line.

ANCHOR FOOT

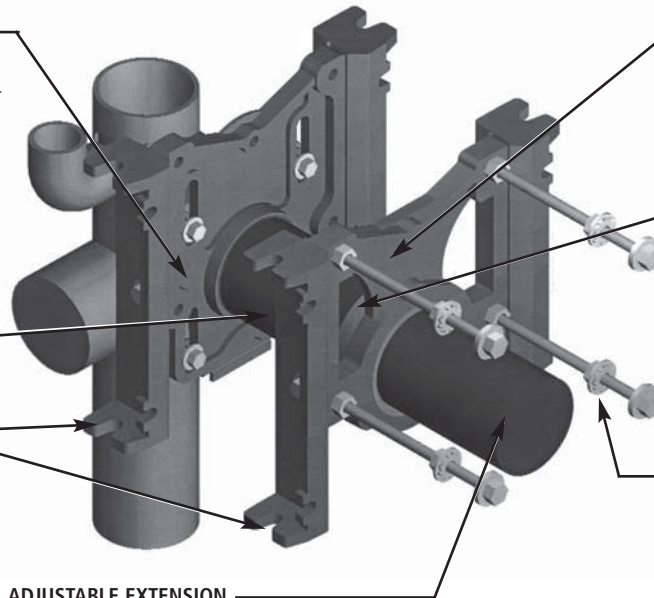
Cast iron, rotatable foot is secured to back of fitting by means of fully threaded rod for complete adjustment.

NPT NIPPLE

Provided by others.

PYLON FEET

Heavy-duty cast iron, compact, invertible (same foot both sides – no rights and lefts) outboard side mount for easy access to all assembly hardware. (Same foot as our standard 12000 Series Carrier.)



12000-32 CARRIER BODY

Compact cast iron heavy-duty construction, invertible and provides various roughing heights to meet all drainage and pitch requirements for waste line.

COUPLING

Heavy-duty cast iron coupling, threaded to allow connection between nipple and ABS extension.

FIXTURE GASKET

JIFFEE-SEAL Neoprene Gasket fits all closet gasket recesses.

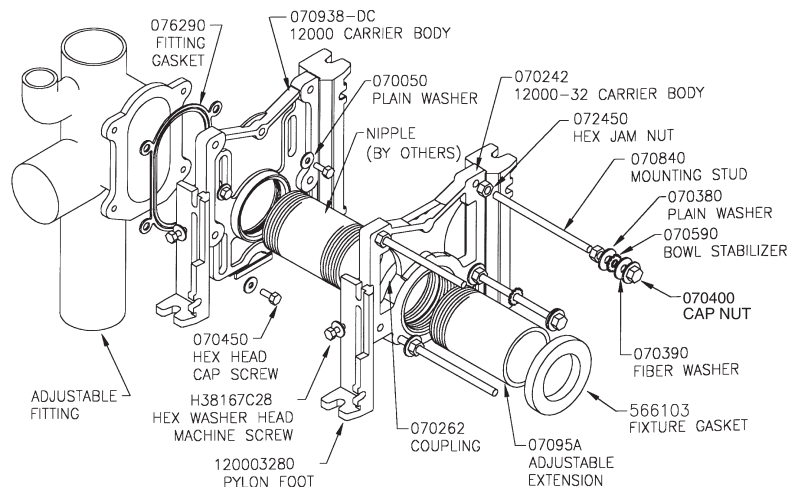
BOWL STABILIZER BACK-UP WASHERS

Provide gripping power necessary to prevent water closet from settling out of installed location over a prolonged period of time.

ADJUSTABLE EXTENSION

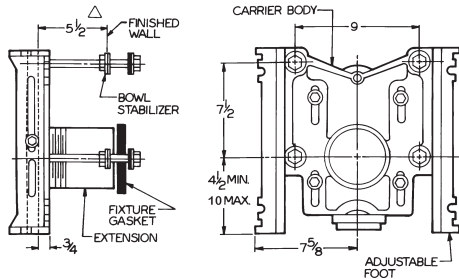
High strength ABS plastic with built-in test cap, assembled to body with positive taper threads, easily cut to desired length. Furnished 7" long standard for 1" minimum to 5-1/2" maximum dimension and 12" long, (specify -10 Option) for 10-1/2" maximum dimension. Cast iron extensions are available on special order.

SPECIFICATION: JOSAM -32 coated cast iron Wide Chase Closet Carrier with adjustable closet connection, adjustable pylon feet, ABS extension with integral test cap, chrome plated trim, coated accessories and JIFFEE-SEAL Neoprene fixture gasket, for use with blowout or siphon jet water closets.

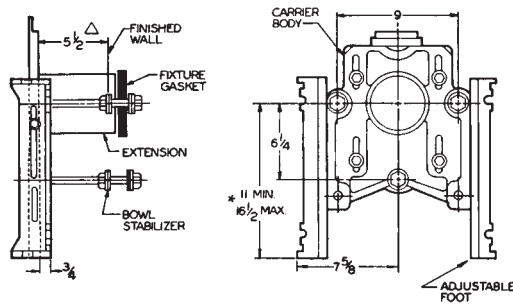


CLOSET CARRIERS

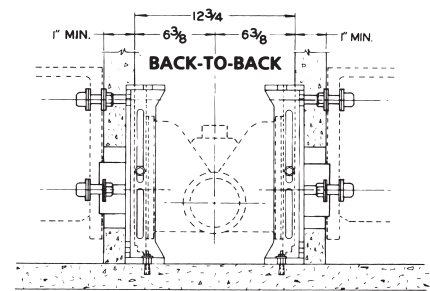
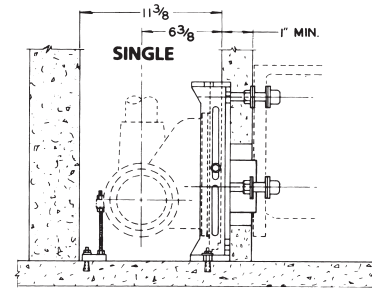
12000 Series Minimum Dimensions



Carrier shown in Siphon Jet Position

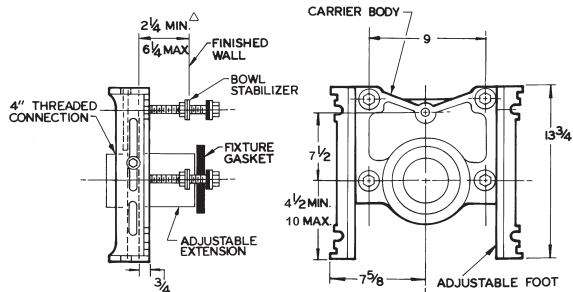


Carrier shown in Blowout Position

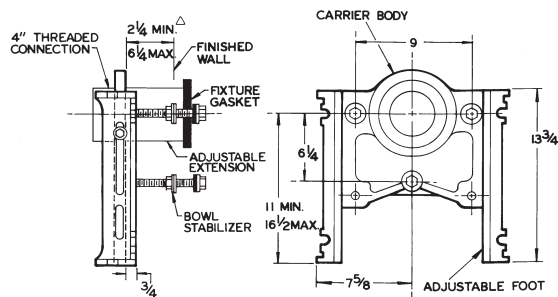


△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.), CUT EXT.
FOR LONGER EXT. (10-1/2" MAX.), SPECIFY -10 OPTION.
* FOR DIM. GREATER THAN 12-1/2", SPECIFY 12000-M1358.

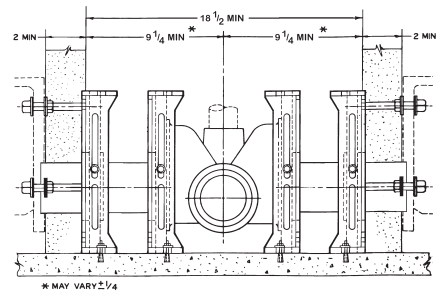
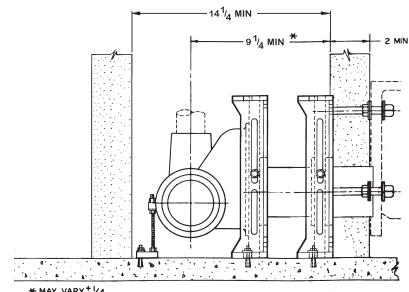
-32 Option Minimum Dimensions



Carrier shown in Siphon Jet Position



Carrier shown in Blowout Position



△ FOR DIM. LESS THAN 3-3/4" CUT EXT.
* MAY VARY ±1/4"

ADJUSTABLE EXTENSIONS AVAILABLE FOR -32 OPTION

Wall Thickness	Length of Extension	Length of Threaded Rod	Part No.	Description
1" through 5-1/2"	7"	9-1/2"	07095A	ABS Extension
5-1/2" through 10-1/2"	12"	14-1/2"	07095E	ABS Extension

CLOSET CARRIERS

Nipple Selection

The key to pipe chase width adaptability of the -32 Wide Chase Carriers and the component that makes them universal for all installation conditions is the 4 inch NPT nipple that connects the coupling of the carrier assembly to the adjustable fitting faceplate. This nipple is furnished by others, and the recommended length can be determined by using the chart below.

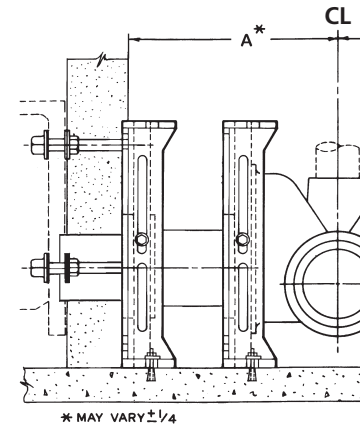
To provide proper fixture support, the carrier should be set directly behind or within the wall. To accomplish this in wide pipe chases with DWV piping either centered or offset, it is necessary to separate carrier and drainage fitting as required with nipples that are longer than 2-7/8." The minimum dimension (A*) was determined using a 2-7/8" length nipple. Nipples ranging in length from 2-7/8" to 12" in 1 inch increments are identified on this page for specification when such construction conditions are encountered.

-32 OPTION RECOMMENDED LENGTH NIPPLES (BY OTHERS)

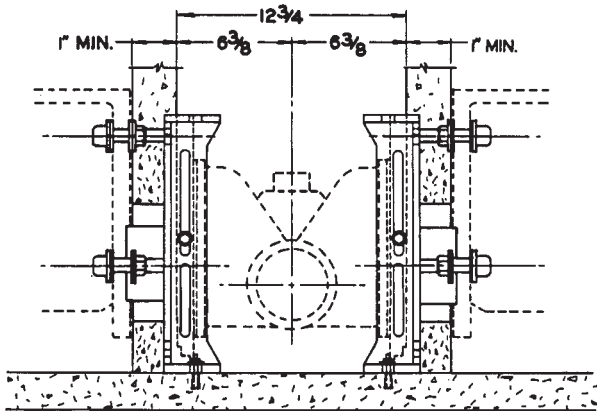
A* Minimum Chase	Length Nipple to Use
9-1/4	2-7/8
10-1/4	4
11-1/4	5
12-1/4	6
13-1/4	7
14-1/4	8
15-1/4	9
16-1/4	10
17-1/4	11
18-1/4	12

Recommended Pipe: 4" Galvanized Steel

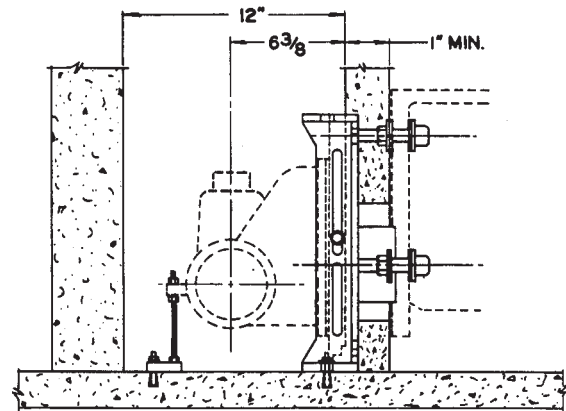
NIPPLE LENGTH DRAWING



Adjustable Carrier Installations



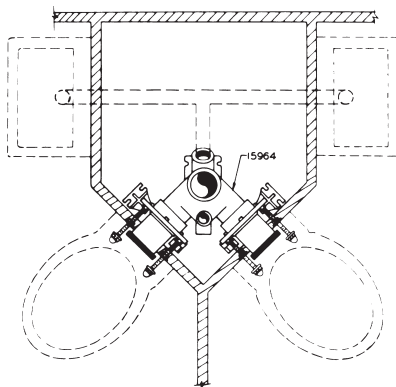
Installation of back-to-back 12000-PF Series Carrier showing minimum extension.



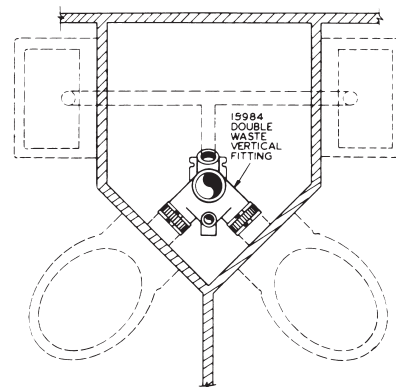
Installation of 12000-PF Series Carrier in a standard 12" wide pipe chase showing minimum extension.

Installations 90° Double Waste Fitting 15964 & 15984 Series

Installations of 15964 and 15984 Series double vertical 90° no-hub fittings where a closet and lavatory are installed in each room with one stack serving two rooms.



15964 SERIES SHOWN IN A TYPICAL ROOM BACK DISCHARGE TOILET FACILITY



15984 DOUBLE WASTE VERTICAL FITTING SHOWN INSTALLED IN A TYPICAL ROOM BOTTOM DISCHARGE TOILET FACILITY LAYOUT

CLOSET CARRIERS

Bowl To Carrier Installation

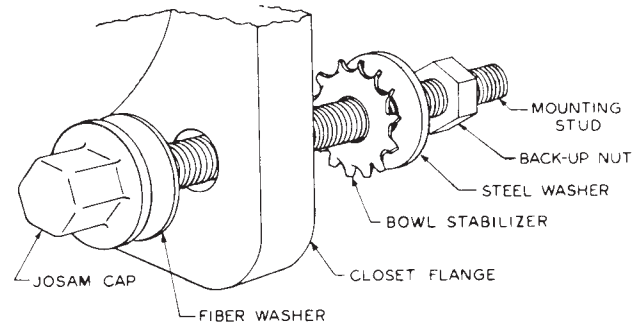
To set bowl using finished hardware group "FH," put a hex nut, back-up washer, and a bowl stabilizer on each mounting stud.

Adjust with front of back-up nut and washer at finished wall line.

If the back-up nut and washer are moved to clear irregularities in the finished wall, the extension **MUST** be adjusted an equal amount.

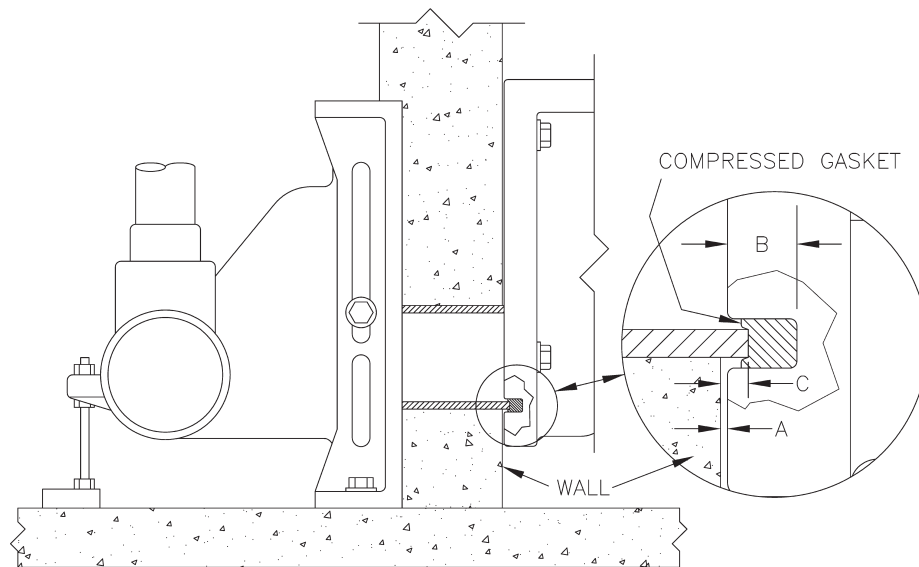
Place fixture gasket in toilet outlet and hang closet. Assemble fiber washers and JOSAM cap nuts to two studs on the center line of the closet outlet and one other stud below and tighten with a wrench.

Assemble fiber washer and JOSAM cap nut to remaining stud, hand tighten and take 1/2 turn with a wrench.



FH Hardware Part #: 565985T
Mounting Stud and Back-up Nut
not included in FH Hardware Kit.

Extension Length Determination



This is a side view. The enlarged inset shows the depth of the gasket within the groove of the fixture and the extension with proper pressure on the gasket.

When the closet is installed on the carrier, the front end of the extension must be located properly in order to compress the gasket enough so that the gasket's adhesive coated surfaces are in contact with the china and the face of the extension. This will help ensure a tight seal.

For closets which have a groove with a rectangular cross-section, Use this formula: $C = A + B - 1/2''$

Where: A = Distance from Closet to Wall
B = Depth of Groove in Closet
C = Distance Extension Extends from Wall

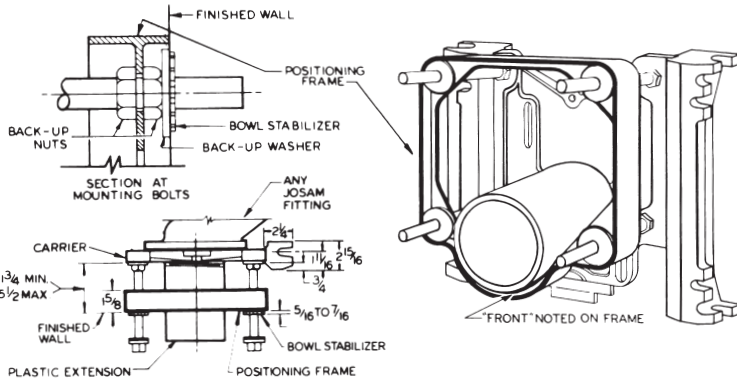
For closets which have a groove with a V-shaped cross-section:

Use the above formula, but an additional 1/8" (or more) may be added to C.

CLOSET CARRIERS

Adjustable Closet Carrier Options

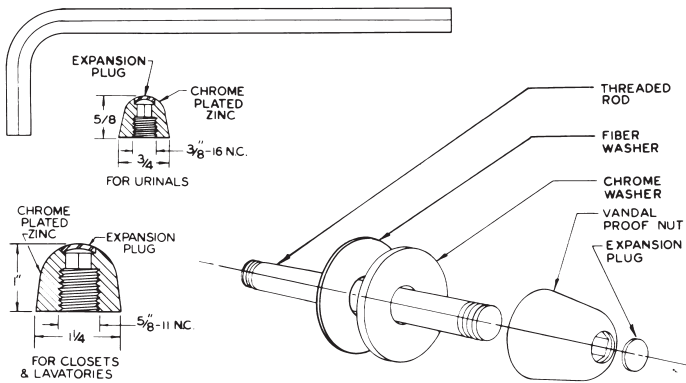
The options shown below illustrate and explain various optional carrier components. These options must be specified and installed when the type of closet or installation dictates their use.



(-1) OPTION, TRU-SET POSITIONING FRAME (Siphon Jet Closets Only)

Made of high impact polystyrene, the TRU-SET Positioning Frame offers many advantages to the plumbing contractor. The positioning frame is mounted on the carrier studs at the time the carrier is being installed, thus it acts as a guide and template, eliminating problems caused by normal dimensional variations when the wall is being erected. Studs and adjustable extension are set to the frame, eliminating further adjustment when the fixture is being hung. Chances of bowl breakage are minimized since bowl is held the correct distance from finished wall.

NOTE: Sold only with JOSAM closet carriers.



(-VP) OPTION, VANDAL-PROOF TRIM

The JOSAM Vandal-Proof trim is designed to prevent tampering and possible damage to the fixture caused by vandalism. The Vandal-Proof trim can be used in place of the regular JOSAM cap nuts. Trim is installed using a hex key. After installation is complete, chrome plated expansion plugs which match the nuts, snap into place minimizing the chances of vandalism.

(-6) OPTION, SUPPLY PIPE SUPPORT

Support assembly attaches to an upper carrier mounting stud and securely holds water supply pipe running to the flush valve. This hanger prevents movement of water piping during and after construction, protecting piping as well as the flush valve. When ordering, specify type of pipe to be supported.

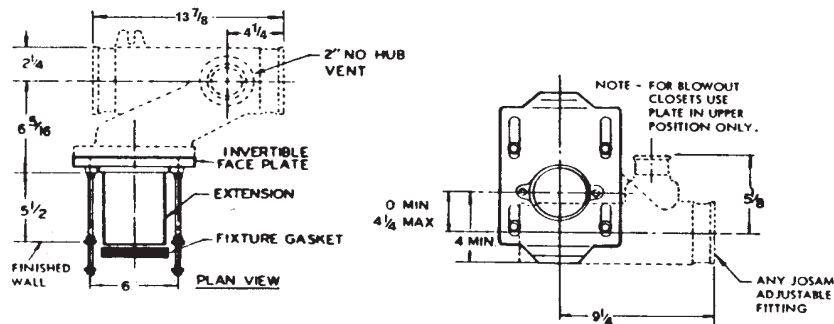
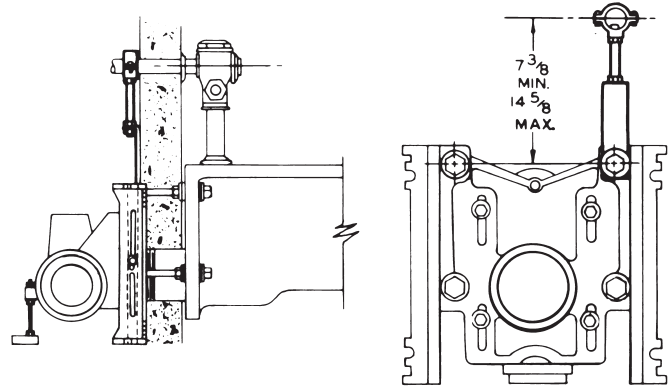


ILLUSTRATION A

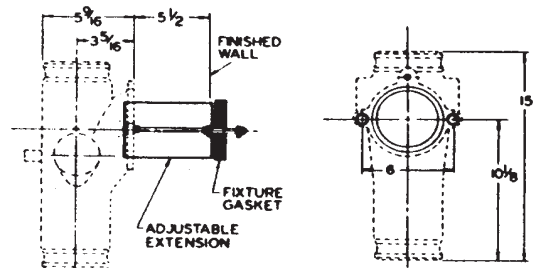


ILLUSTRATION B

(-24) OPTION, FOR FLOOR-MOUNTED BACK-OUTLET CHINA CLOSETS

This option adapts adjustable as well as other types of fittings for securing floor-mounted back-outlet China closets. Any adjustable fitting is adapted as shown in Illustration A. Other types of fittings are provided with bosses to attach the closet securing studs at the correct dimensions for this type of closet. See Illustration B.

CLOSET CARRIERS



Closet Carrier Position Chart for Wheelchair Facilities



EXPLANATION AND USE OF CHART

The chart represents solutions for nine separate applications, each line being the solution for a different application. Notice that for every application, there is a solution using only standard carriers. Use of the 12000-35 carrier can be avoided in most situations. Column 1 represents a fixture mounted on a vertical stack fitting. Columns 2 through 8 represent the locations of additional fixtures mounted on horizontal fittings. Each column is divided into three sub-columns, identified as A, B, and C. The ○, ● and ▲ symbols show the types of carriers that can be used for either normal or high rough in that particular location. Blank spaces mean that the carrier cannot be used in that location. The far right-hand column shows the slope or pitch per foot of the horizontal drain line to the stack. **Notice that lines 5 and 6 show a slope of 1/4 in. per foot.** The chart applies to either siphon jet or blowout fixtures, and should eliminate confusion about installations for the physically disabled.

CLOSET CARRIER SELECTION INSTALLATIONS FOR THE PHYSICALLY DISABLED

Based on 3 in. difference in elevation between normal and high rough fixtures,
and on 36 inches between fixtures [horizontally]. See note below.*

	STACK			HORIZONTAL CARRIER LOCATIONS																					SLOPE PER FOOT	
LINE	1			2			3			4			5			6			7			8				
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C		
1	○	●	▲																						1/8 in.	
2	○	●	▲	○		▲																			1/8 in.	
3	○	●	▲	○		▲	○		▲																1/8 in.	
4	○	●	▲	○		▲	○		▲	○		▲													1/8 in.	
5	○		▲	○		▲	○		▲		●	▲													1/4 in.	
6	○		▲	○		▲	○		▲	○		▲		●	▲										1/4 in.	
7	○		▲	○		▲	○		▲	○		▲	○		▲		●	▲							1/8 in.	
8	○		▲	○		▲	○		▲	○		▲	○		▲	○		▲		●	▲				1/8 in.	
9	○		▲	○		▲	○		▲	○		▲	○		▲	○		▲	○		▲		●	▲	1/8 in.	
<div>A = ○ = Normal rough with standard 12000 Series Carrier B = ● = High rough with standard 12000 Series Carrier C = ▲ = High rough with 12000-35 Series Carrier</div> <div>Carriers ○ and ▲ are required for back-to-back mounting when one fixture is normal rough and the other is high rough.</div>																										

EXAMPLE:

A. Requirement: Plans call for rest rooms back-to-back, each with six water closets, one of which is to be high rough.

B. Solution: Because six fixtures are involved, refer to column 6, line 7. Note that a standard 12000 Carrier [sub-column B] can be used for the high rough fixture at the upstream end of the branch. The remaining five fixtures, all at normal rough, can be mounted on standard 12000 Carriers as shown in columns 1 through 5, sub-columns A.

Note that the standard 12000 Carrier can be used in a high rough position at the stack or at the upstream end of the horizontal branch, depending on the number of closets required, as shown in sub-columns B. Either of these locations is preferred for the high rough water closet. **Thus, for most installations, the standard 12000 Carrier is suitable.** However, if the high rough water closet cannot be so located, the 12000-35 high rough Carrier can be used in almost any location, depending on the number of closets required. In this case it may be necessary to increase the horizontal spacing between locations to some distance greater than 36 inches. If so, the above chart is no longer applicable. Furthermore, whenever the fixture arrangement for back-to-back water closets requires high rough on one side and normal rough on the other side, the 12000-35 Carrier must be used on the high rough side.

For unusual requirements not covered by this chart, we suggest you contact your JOSAM Representative.

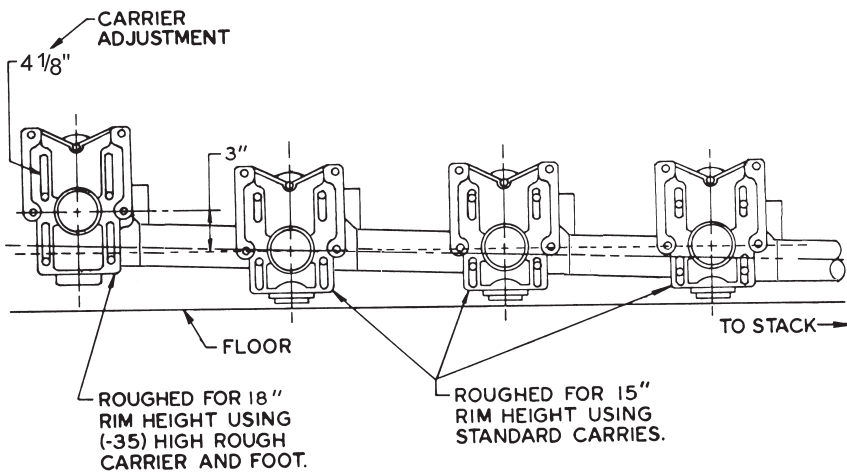
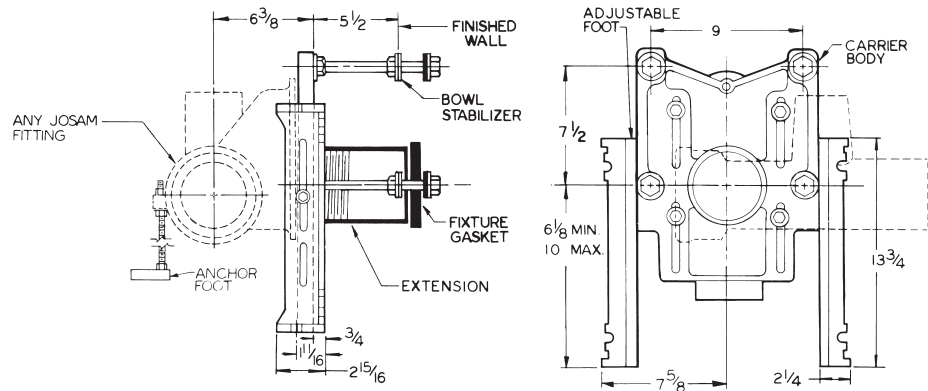
*NOTE: Even though specific construction requirements for the physically disabled may vary from one jurisdiction to another, those specified in American National Standard ANSI A117.1-1980 are generally accepted. In this standard, Section 4, Paragraph 4.16.3 states that the height of water closets shall be 17 to 19 in. to the top of the seat. This confirms the water closet rim height of 18 in. for the physically disabled, previously established in ANSI A112.19.2, which is a standard for vitreous China plumbing fixtures. In compliance with these standards, the above selection chart has been developed using a 3 in. difference in elevation between normal rough fixtures [15 in. rim height] and high rough fixtures [18 in. rim height].

CLOSET CARRIERS

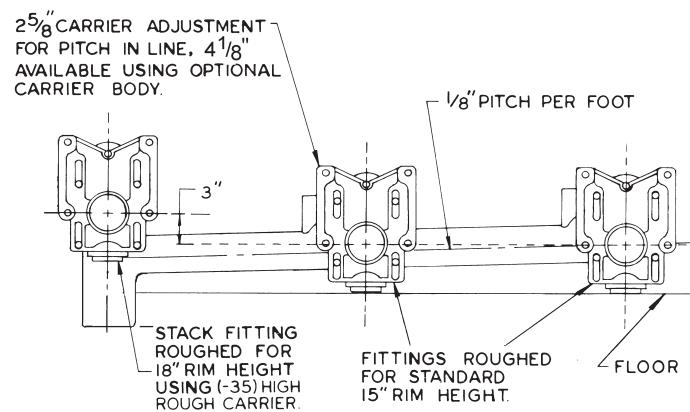
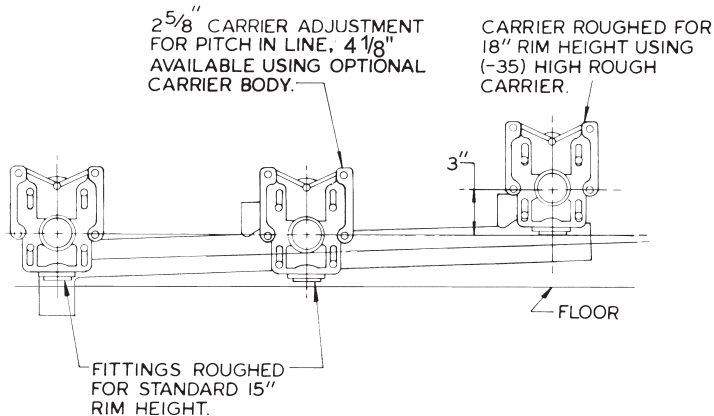
Wheelchair Closet Carrier Installations

Accommodations for the physically disabled who depend on wheelchairs for mobility are of prime importance and should be included in any building where public toilet facilities are provided. Off-the-floor water closets are ideally suited for wheelchair use. In addition to the sanitation benefits, the elevation is not fixed as it is with the floor-mounted closets. By utilizing the JOSAM line of carriers and fittings, the wheelchair closet can be located anywhere in a battery. See Carrier Selection Chart. The illustrations below show the wheelchair closet in various locations.

(-35) Option Carrier can be used with all adjustable fittings. When used with blowout closets over 12 1/2", specify -M1358.



To the left is a possible installation utilizing the -35 Option at the end of a battery of standard rough carriers.



The above shows an installation utilizing a JOSAM vertical fitting and carrier and a horizontal waste line with fittings and carriers. The horizontal fitting and carrier on the end show the (-35) high rough for wheelchair use.

The above shows an installation utilizing a standard JOSAM stack fitting with the carrier on this fitting roughed for wheelchair use. With this installation one to three horizontal fittings can be connected to the stack fitting.

11001 SERIES

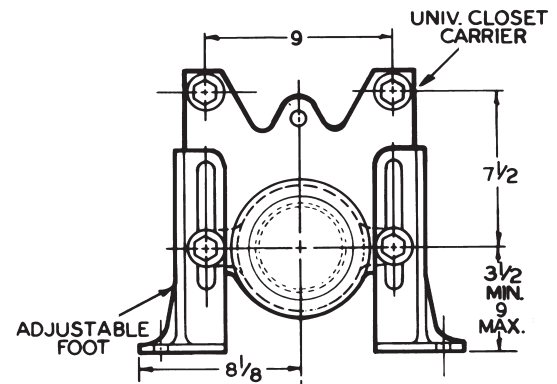
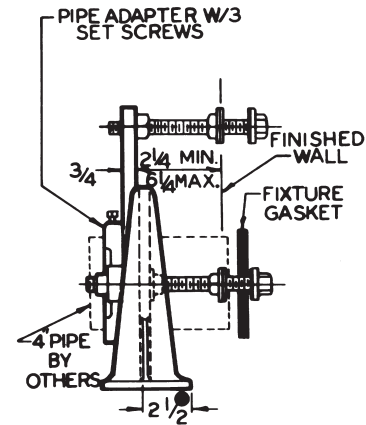
CARRIER WITH PIPE ADAPTER

APPLICATION

For wall-hung water closets where carrier fitting is not required.

SPECIFICATION

JOSAM 11001 Series coated cast iron universal pipe grip Closet Carrier with 4" pipe adapter, adjustable feet and finish hardware and trim to support siphon jet or blow-out wall-hung water closet. Waste piping and fitting provided by others.



11007 & 11008 SERIES

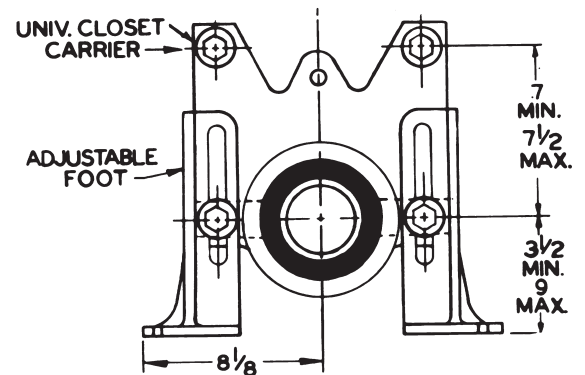
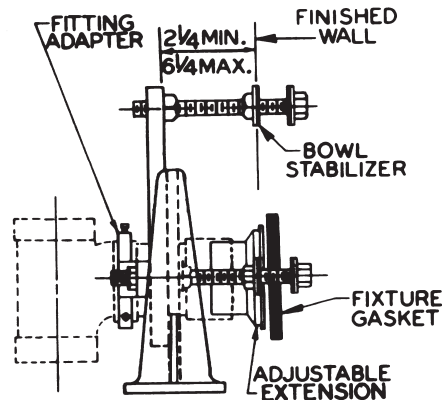
CARRIER WITH COPPER PIPE ADAPTOR

APPLICATION

For wall-hung water closets where carrier fitting is not required.

SPECIFICATION

JOSAM 11007 and 11008 Series coated cast iron universal pipe grip Closet Carrier with 3" or 4" copper pipe adapter, adjustable feet and finish hardware and trim to support siphon jet or blow-out wall-hung water closet. Waste piping and fitting provided by others.

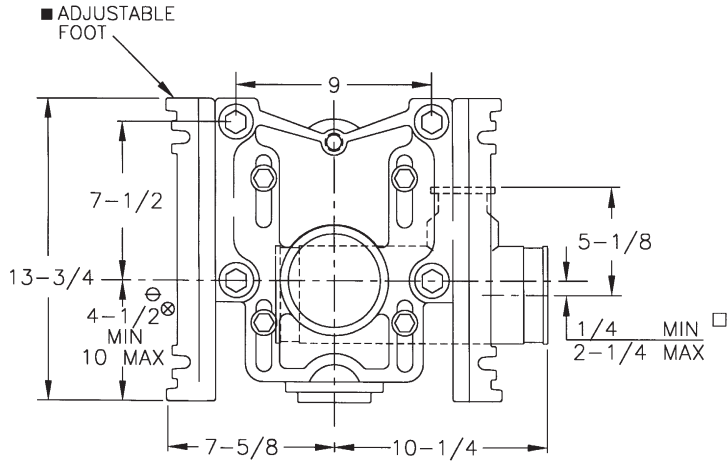


HORIZONTAL 4" NO-HUB, ADJUSTABLE, SINGLE

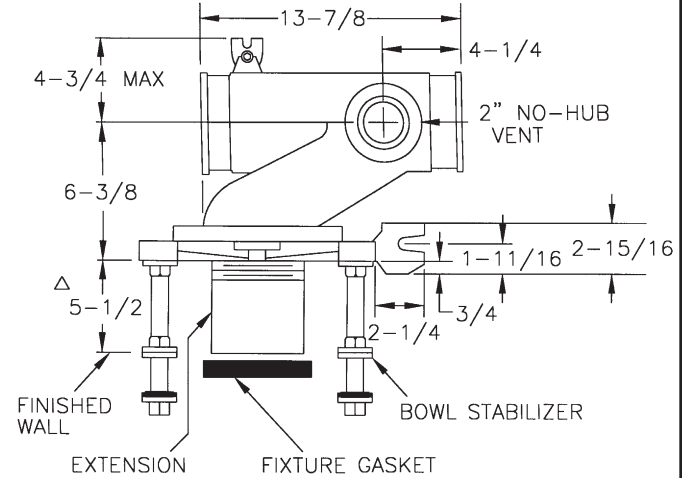
12674 & 12684

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where single adjustable fitting with horizontal flow is desired.

12674 Left-Hand (Shown)
12684 Right-Hand (Opposite)



60 LBS.

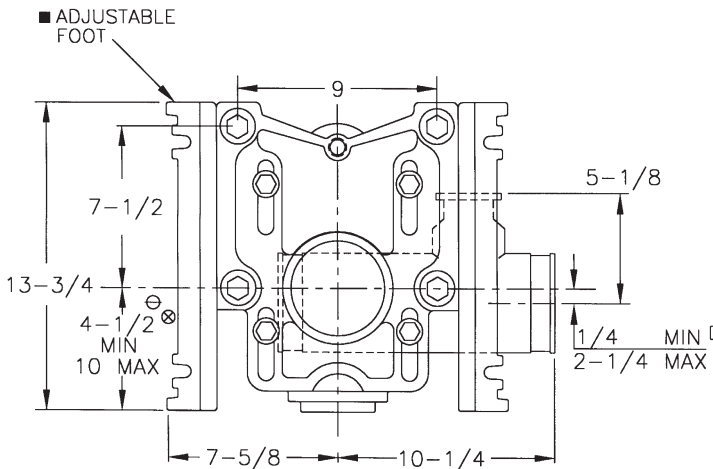


HORIZONTAL 4" NO-HUB, ADJUSTABLE, BACK-TO-BACK

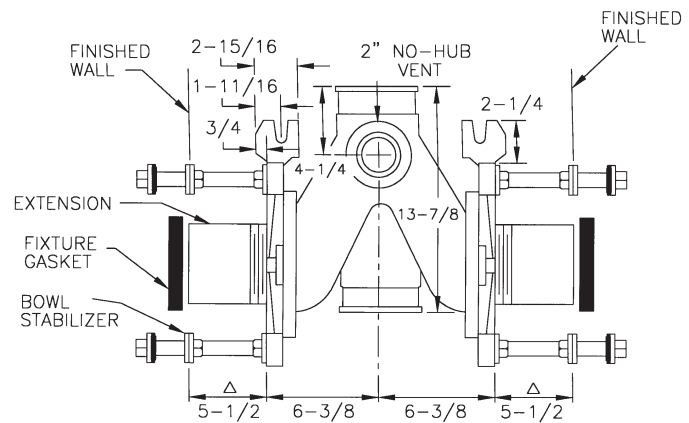
12694

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where back-to-back adjustable fitting with horizontal flow is desired.

Back-to-Back



100 LBS.



OPTIONS & NOTES

- PF Pylon Foot, Std.
- OR O-Ring Carrier
- SD Special-Duty 500 lb. Carrier
- ▼ -HS Hub & Spigot
- AUX Auxiliary Inlet, 2"
- VP Vandal-Proof Trim
- 1 Positioning Frame
- 6 Supply Pipe Support (Specify Type of Pipe)

- 10 ABS Extension, through 10-1/2" Wall
- 24 Carrier for Floor-Mounted, Back-Outlet China Bowls
- 30 Cast Iron Adjustable Extension with Connector
- 30-2 Cast Iron Adjustable Extension with Connector and Test Cap
- 32 Carrier for Wide Chase Installations
- 35 Closet Carrier for Wheelchair High Rough
- ▼ -58 Horizontal No-Hub Cast Long Barrel

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

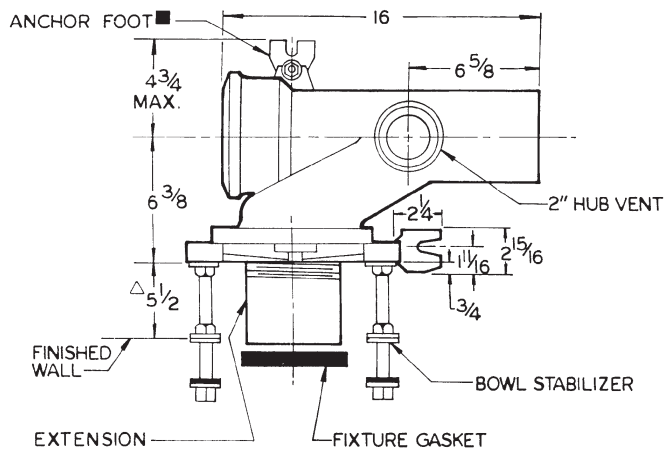
DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: ⊕ 11" MIN. & 16-1/2" MAX. □ 2" MIN. & 4" MAX.

⊗ FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.) CUT EXT. SPECIFY -10 FOR LONGER EXT. (10-1/2" MAX.)

12674-HS SERIES

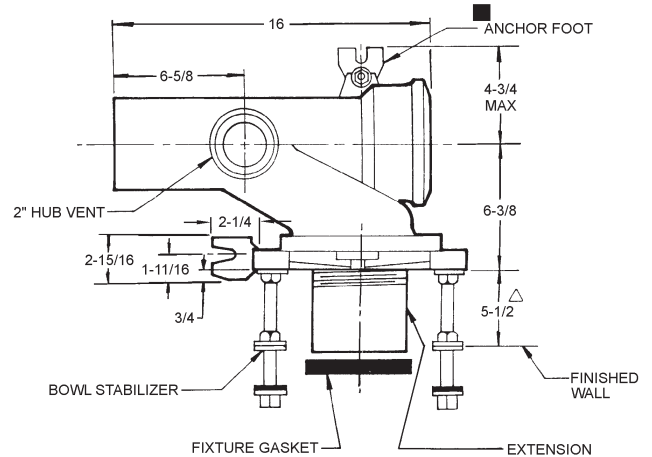
Single, Left-Hand, Hub & Spigot



65 LBS.

12684-HS SERIES

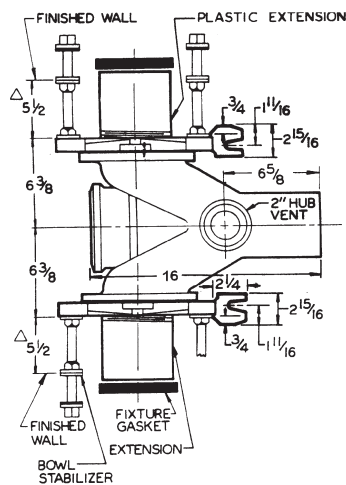
Single, Right-Hand, Hub & Spigot



65 LBS.

12694-HS SERIES

Back-to-Back, Hub & Spigot

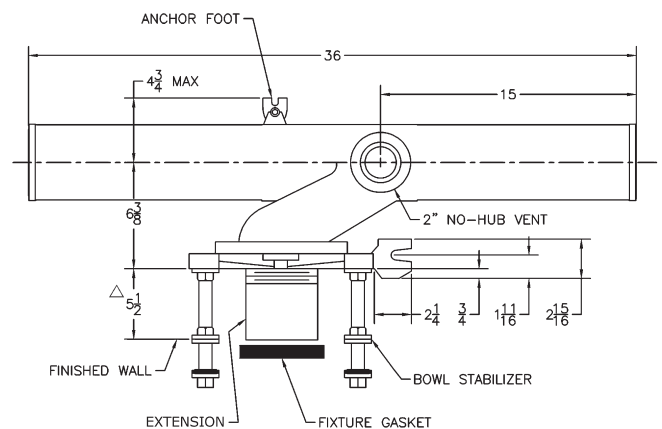


112 LBS.

12674-58 SERIES

Long Barrel

Single, Left-Hand, No-Hub

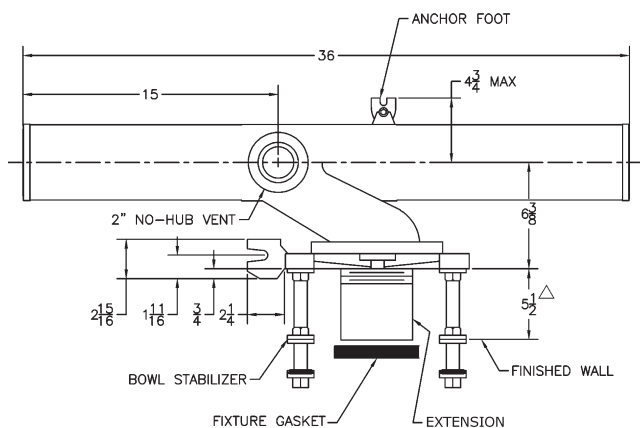


82 LBS.

12684-58 SERIES

Long Barrel

Single, Right-Hand, No-Hub

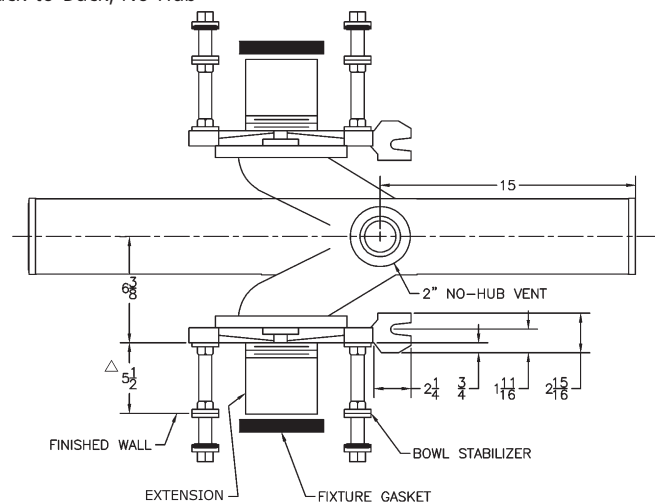


82 LBS.

12694-58 SERIES

Long Barrel

Back-to-Back, No-Hub



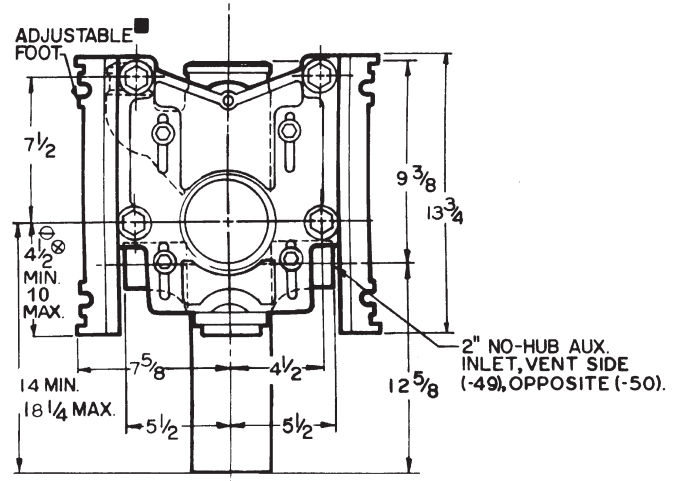
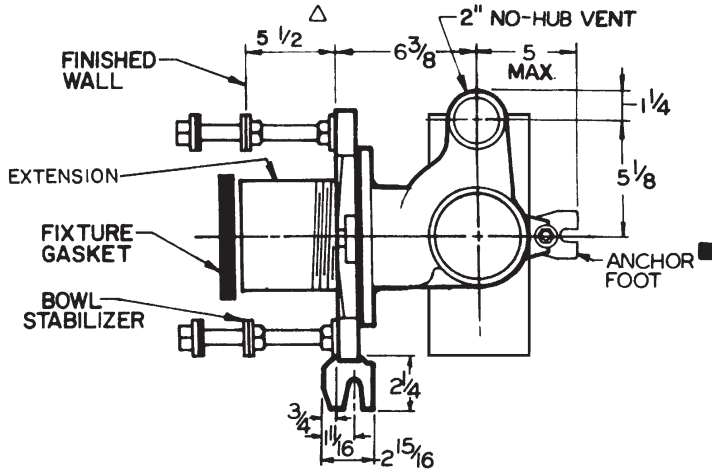
125 LBS.

VERTICAL 4" NO-HUB, ADJUSTABLE, SINGLE

12704

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where back-to-back adjustable fitting with vertical flow is desired.

Single Fitting, On Stack, Left-Hand 2" Vent



72 LBS.

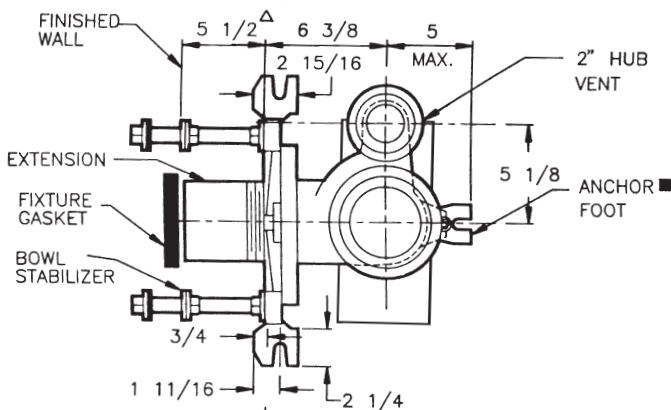
OPTIONS N/A: -LH4, -RH4, -D4

OPTIONS

- | | | | |
|---------|------------------------------|-------|--|
| —PF | Pylon Foot, Std. | —6 | Supply Pipe Support (Specify Type of Pipe) |
| —OR | O-Ring Carrier | —10 | ABS Extension, through 10-1/2" Wall |
| —SD | Special-Duty 500 lb. Carrier | —24 | Carrier for Floor-Mounted, Back-Outlet China Bowls |
| ▼ —HS | Hub & Spigot | —30 | Cast Iron Adjustable Extension with Connector |
| ▼ —LH4 | Left-Hand 4" No-Hub Branch | —30-2 | Cast Iron Adjustable Extension with Connector and Test Cap |
| ▼ —HLH4 | Left-Hand 4" Hub Branch | —32 | Carrier for Wide Chase Installations |
| ▼ —RH4 | Right-Hand 4" No-Hub Branch | —35 | Closet Carrier for Wheelchair High Rough |
| ▼ —HRH4 | Right-Hand 4" Hub Branch | —49 | No-Hub High Auxiliary Inlet, Under Vent |
| ▼ —D4 | Double 4" No-Hub Branches | —50 | No-Hub High Auxiliary Inlet, Opposite Vent |
| ▼ —HD4 | Double 4" Hub Branches | —53 | Threaded High Auxiliary Inlet, Under Vent |
| —VP | Vandal-Proof Trim | —54 | Threaded High Auxiliary Inlet, Opposite Vent |
| —1 | Positioning Frame | | |

12704-HS SERIES

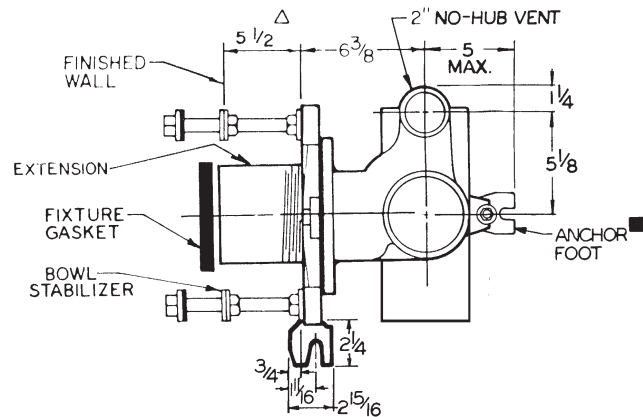
Single, Left-Hand 2" Vent, Hub & Spigot



83 LBS.

12704-LH4 SERIES

Single, Left-Hand 4" Branch, Left-Hand 2" Vent



71 LBS.

OPTIONS N/A: -49, -53

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

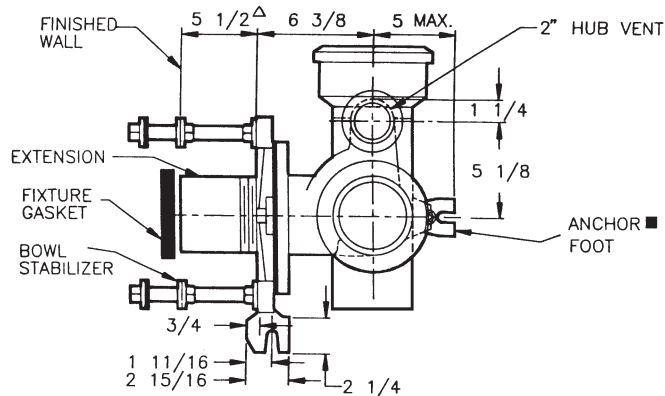
DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: ⊕ 11" MIN. & 16-1/2" MAX.

⊗ FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.) CUT EXT. SPECIFY -10 FOR LONGER EXT. (10-1/2" MAX.)

12704-HS-HLH4 SERIES

Single, Left-Hand Branch, Left-Hand 2" Vent

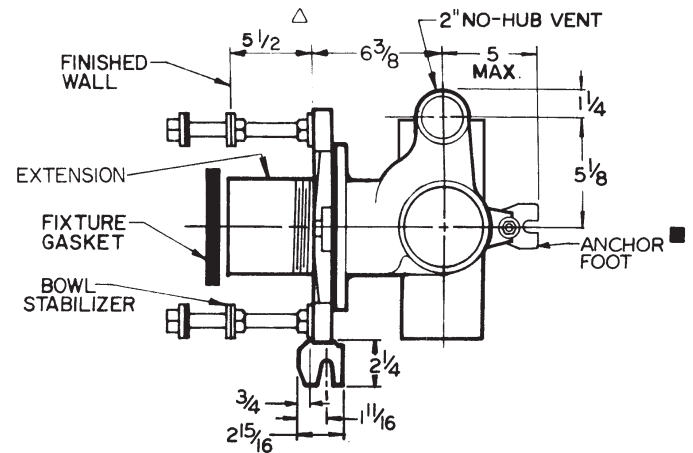


84 LBS.

OPTIONS N/A: -49, -53

12704-RH4 SERIES

Single, Right-Hand 4" Branch, Left-Hand 2" Vent

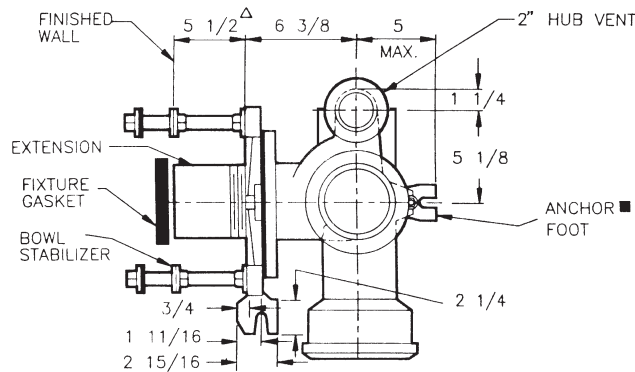


71 LBS.

OPTIONS N/A: -50, -54

12704-HS-HRH4 SERIES

Single, Right-Hand Branch, Left-Hand 2" Vent

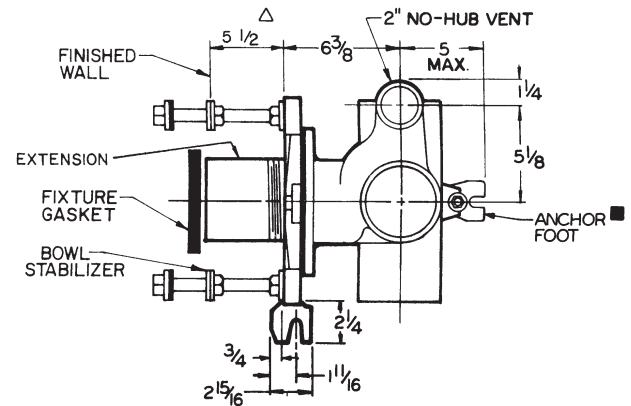


84 LBS.

OPTIONS N/A: -50, -54

12704-D4 SERIES

Single, Two 4" Branches, Left-Hand 2" Vent

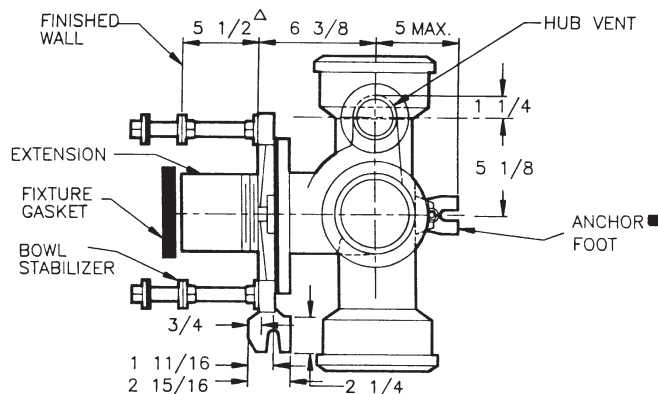


70 LBS.

OPTIONS N/A: -49, -50, -53, -54

12704-HS-HD4 SERIES

Single, Two 4" Branches, Left-Hand 2" Vent



86 LBS.

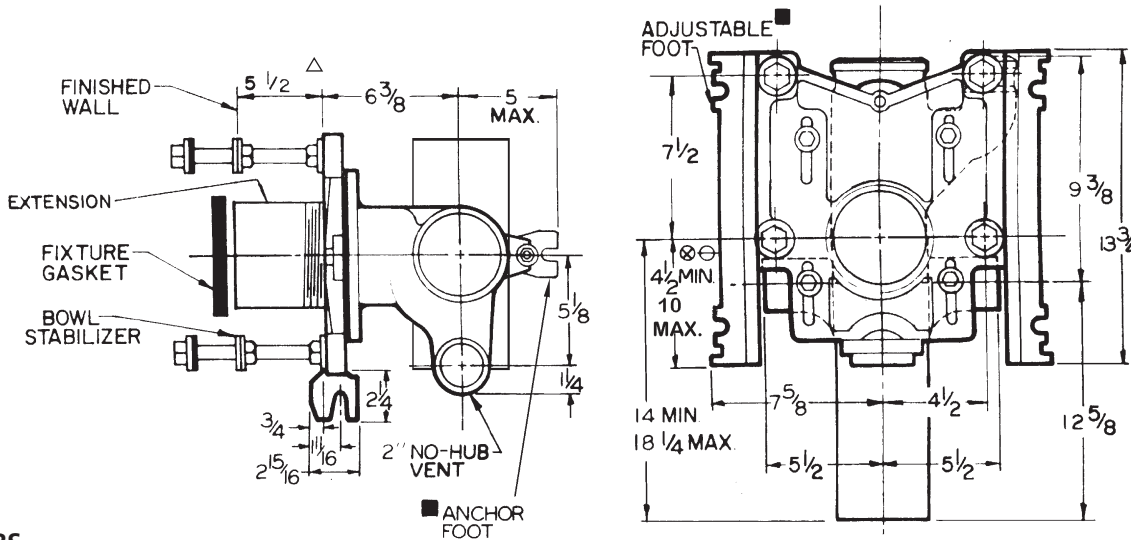
OPTIONS N/A: -49, -50, -53, -54

VERTICAL 4" NO-HUB, ADJUSTABLE, SINGLE

12714

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where single adjustable fitting with vertical flow is desired.

Single Fitting, On Stack, Right-Hand 2" Vent



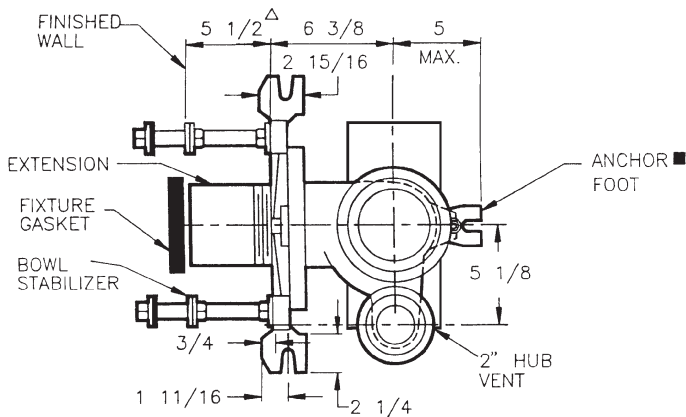
72 LBS.

OPTIONS

- | | | | |
|---------|------------------------------|-------|--|
| -PF | Pylon Foot, Std. | -6 | Supply Pipe Support (Specify Type of Pipe) |
| -OR | O-Ring Carrier | -10 | ABS Extension, through 10-1/2" Wall |
| -SD | Special-Duty 500 lb. Carrier | -24 | Carrier for Floor-Mounted, Back-Outlet China Bowls |
| ▼ -HS | Hub & Spigot | -30 | Cast Iron Adjustable Extension with Connector |
| ▼ -LH4 | Left-Hand 4" No-Hub Branch | -30-2 | Cast Iron Adjustable Extension with Connector and Test Cap |
| ▼ -HLH4 | Left-Hand 4" Hub Branch | -32 | Carrier for Wide Chase Installations |
| ▼ -RH4 | Right-Hand 4" No-Hub Branch | -35 | Closet Carrier for Wheelchair High Rough |
| ▼ -HRH4 | Right-Hand 4" Hub Branch | -49 | No-Hub High Auxiliary Inlet, Under Vent |
| ▼ -D4 | Double 4" No-Hub Branches | -50 | No-Hub High Auxiliary Inlet, Opposite Vent |
| ▼ -HD4 | Double 4" Hub Branches | -53 | Threaded High Auxiliary Inlet, Under Vent |
| -VP | Vandal-Proof Trim | -54 | Threaded High Auxiliary Inlet, Opposite Vent |
| -1 | Positioning Frame | | |

12714-HS SERIES

Single, Right-Hand 2" Vent, Hub & Spigot

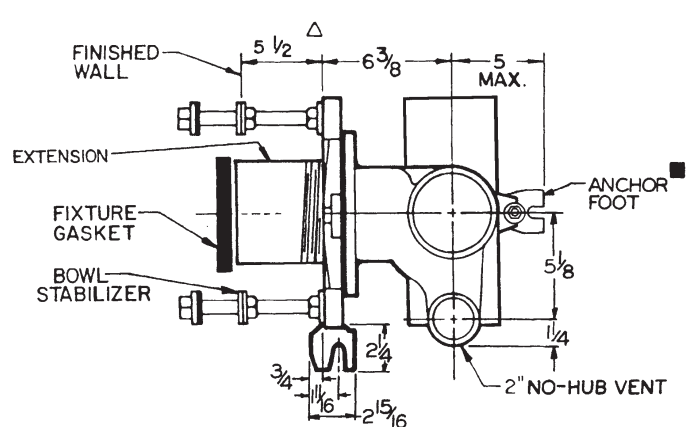


83 LBS.

OPTIONS N/A: -LH4, -RH4, D4

12714-RH4 SERIES

Single, Right-Hand 4" Branch, Right-Hand 2" Vent



71 LBS.

OPTIONS N/A: -49, -53

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

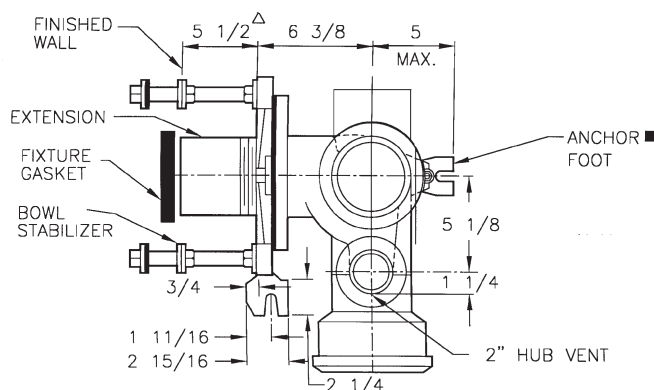
DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: ⊕ 11" MIN. & 16-1/2" MAX.

⊗ FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.) CUT EXT. SPECIFY -10 FOR LONGER EXT. (10-1/2" MAX.)

12714-HS-HRH4 SERIES

Single, Right-Hand Branch, Right-Hand 2" Vent

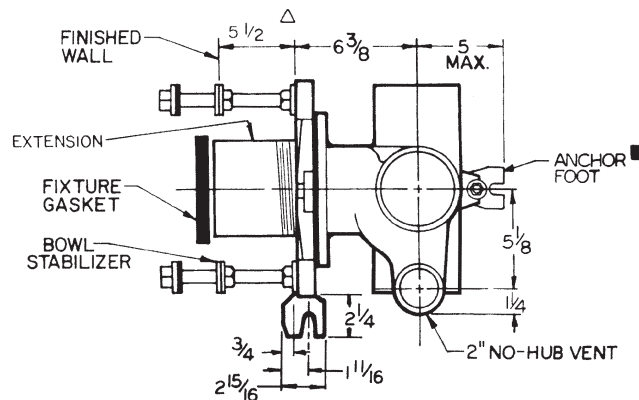


84 LBS.

OPTIONS N/A: -49, -53

12714-LH4 SERIES

Single, Left-Hand 4" Branch, Right-Hand 2" Vent

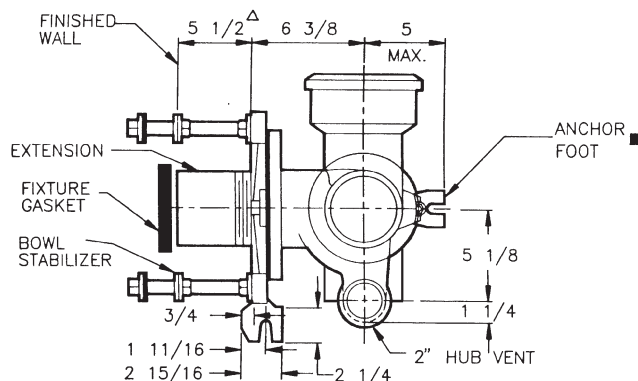


71 LBS.

OPTIONS N/A: -50, -54

12714-HS-HLH4 SERIES

Single, Left-Hand Branch, Right-Hand 2" Vent

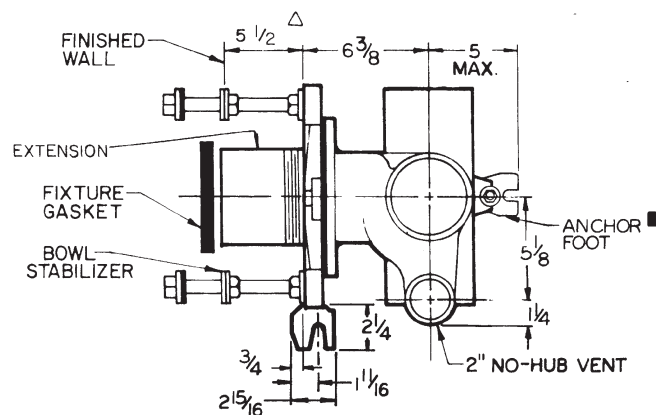


84 LBS.

OPTIONS N/A: -50, -54

12714-D4 SERIES

Single, Two 4" Branches, Right-Hand 2" Vent

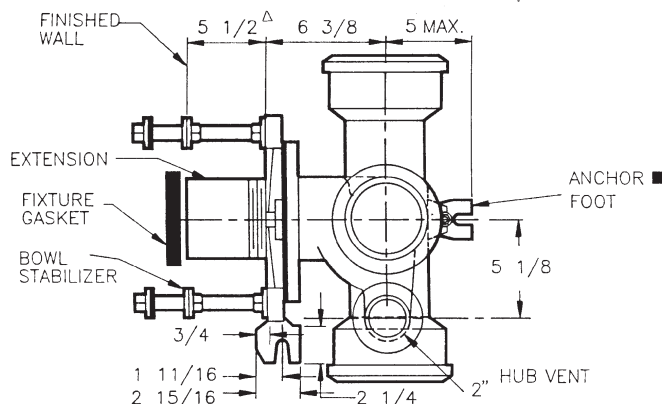


70 LBS.

OPTIONS N/A: -49, -50, -53, -54

12714-HS-HD4 SERIES

Single, Two 4" Branches, Right-Hand 2" Vent



86 LBS.

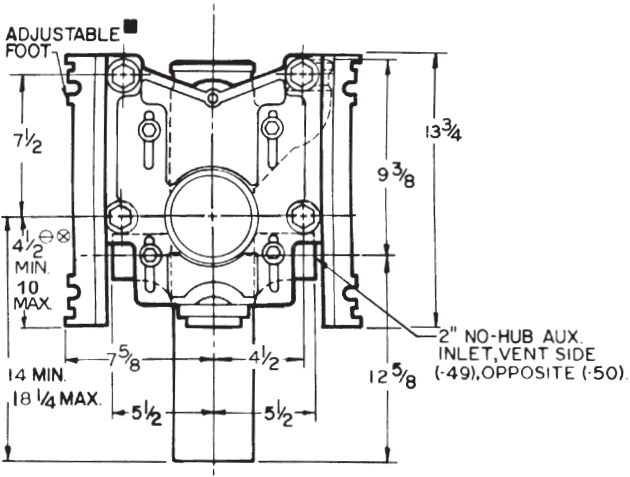
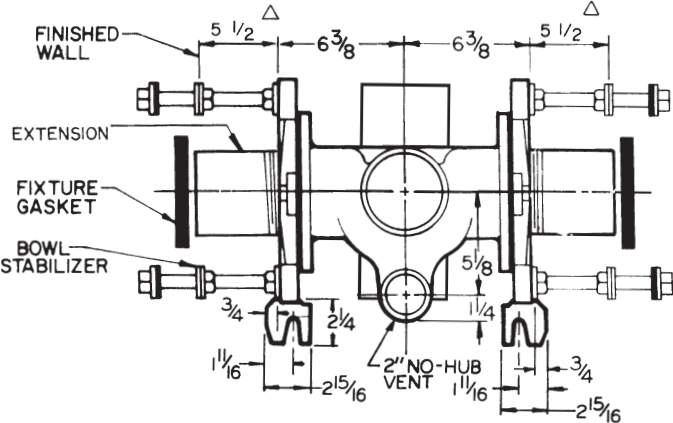
OPTIONS N/A: -49, -50, -53, -54

VERTICAL 4" NO-HUB, ADJUSTABLE, BACK-TO-BACK

12724

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where back-to-back adjustable fitting with vertical flow is desired.

Back-to-Back Fitting, On Stack, 2" Vent



117 LBS.

OPTIONS N/A: -HD4, -HVS4.

OPTIONS & NOTES

- | | | | |
|---------|--------------------------------|-------|--|
| —PF | Pylon Foot, Std. | —6 | Supply Pipe Support (Specify Type of Pipe) |
| —OR | O-Ring Carrier | —10 | ABS Extension, through 10-1/2" Wall |
| —SD | Special-Duty 500 lb. Carrier | —24 | Carrier for Floor-Mounted, Back-Outlet China Bowls |
| ▼ —HS | Hub & Spigot | —30 | Cast Iron Adjustable Extension with Connector |
| ▼ —D4 | Double 4" No-Hub Branches | —30-2 | Cast Iron Adjustable Extension with Connector and Test Cap |
| ▼ —HD4 | Double 4" Hub Branches | —32 | Carrier for Wide Chase Installations |
| ▼ —VS4 | Vent Side 4" No-Hub Branch | —35 | Closet Carrier for Wheelchair High Rough |
| ▼ —OS4 | Opposite Vent 4" No-Hub Branch | —49 | No-Hub High Auxiliary Inlet, Under Vent |
| ▼ —HVS4 | Vent Side 4" Hub Branch | —50 | No-Hub High Auxiliary Inlet, Opposite Vent |
| —VP | Vandal-Proof Trim | —53 | Threaded High Auxiliary Inlet, Under Vent |
| —1 | Positioning Frame | —54 | Threaded High Auxiliary Inlet, Opposite Vent |

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

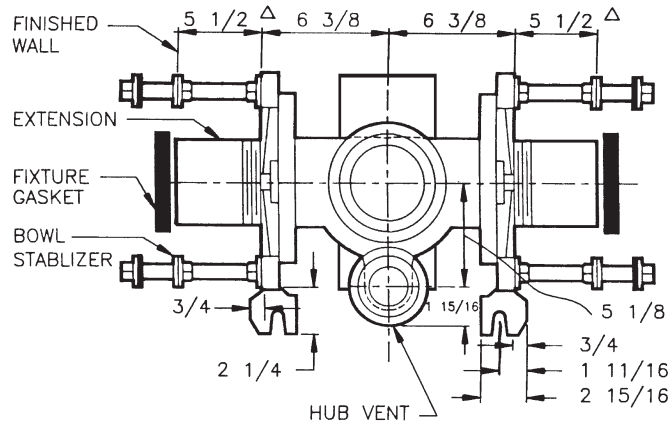
DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: ⊕ 11" MIN. & 16-1/2" MAX.

⊗ FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.) CUT EXT. SPECIFY -10 FOR LONGER EXT. (10-1/2" MAX.)

12724-HS SERIES

Back-to-Back, 2" Vent

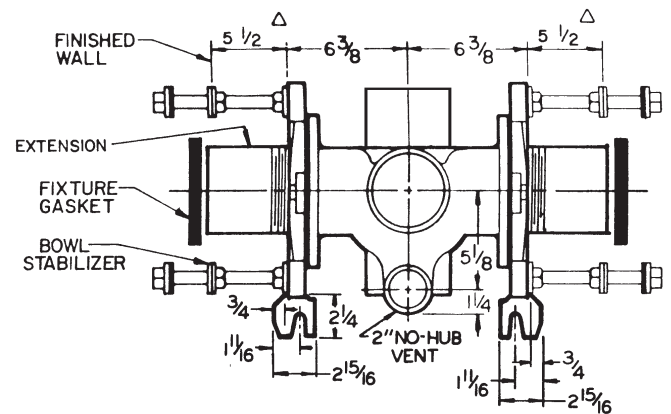


129 LBS.

OPTIONS N/A: -D4, -VS4, -OS4

12724-VS4 SERIES

Back-to-Back, 4" Branch, 2" Vent Same Side

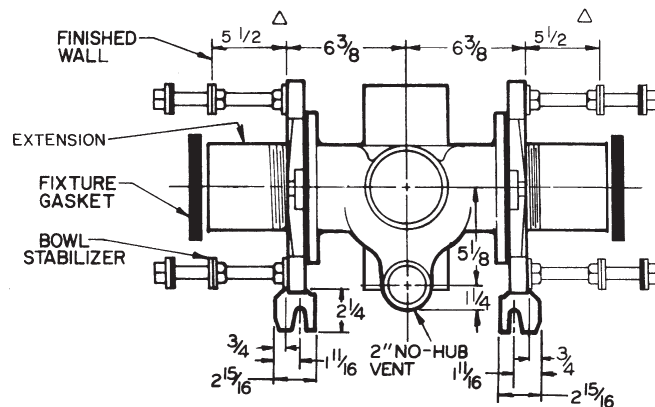


116 LBS.

OPTIONS N/A: -49, -53

12724-OS4 SERIES

Back-to-Back, 4" Branch, 2" Vent Opposite Side

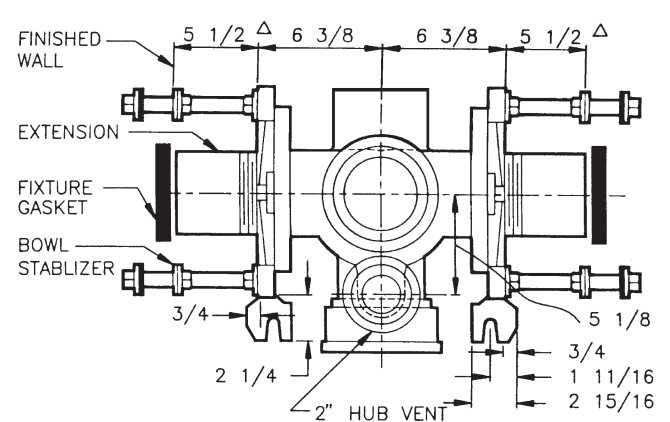


116 LBS.

OPTIONS N/A: -50, -54

12724-HS-HVS4 SERIES

Back-to-Back, Single Branch, 2" Vent

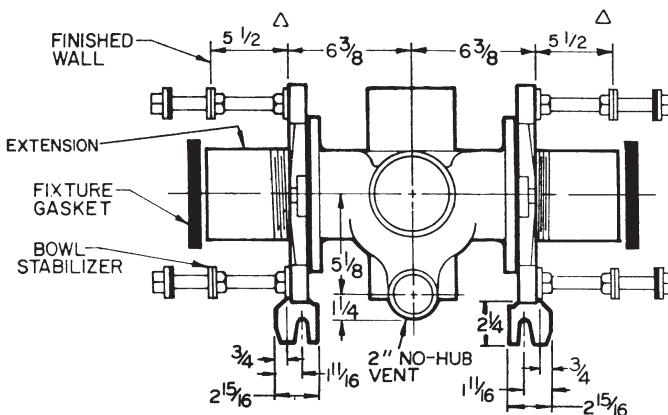


118 LBS.

OPTIONS N/A: -49, -53

12724-D4 SERIES

Back-to-Back, Two 4" Branches, 2" Vent

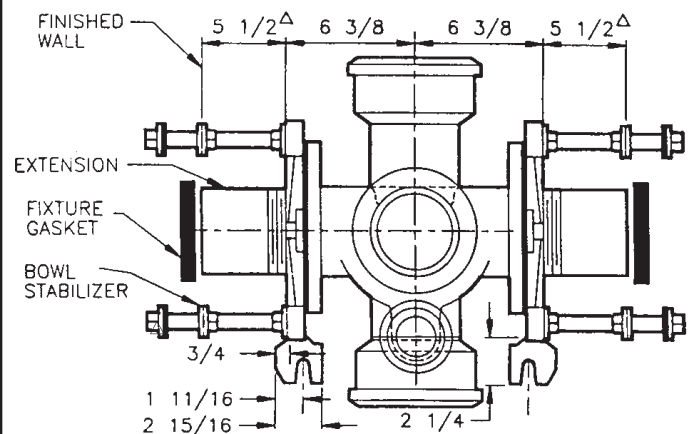


115 LBS.

OPTIONS N/A: -49, -50, -53, -54

12724-HS-HD4 SERIES

Back-to-Back, Two 4" Branches, 2" Vent



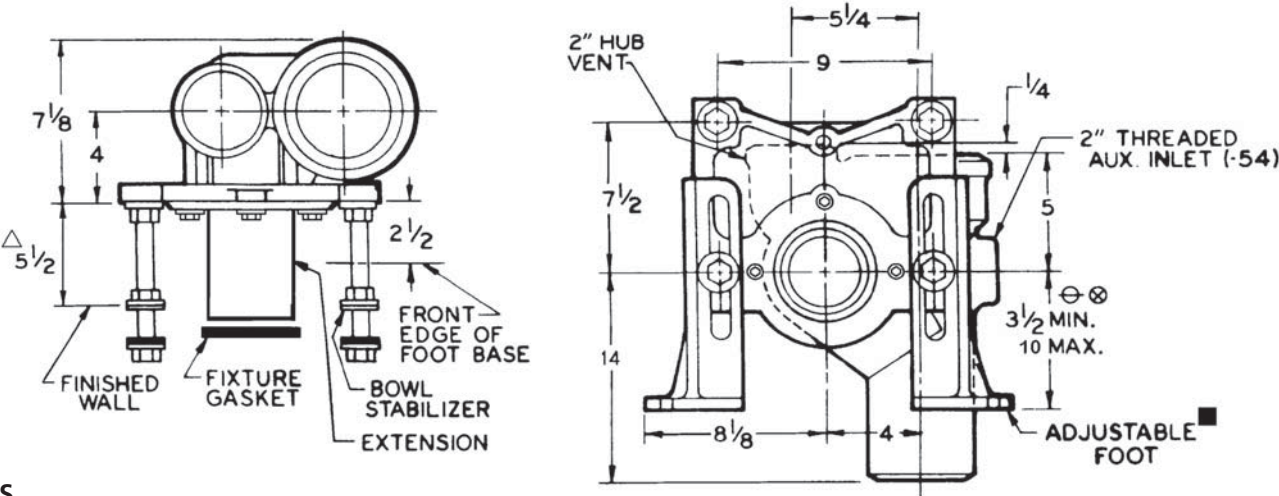
131 LBS.

OPTIONS N/A: -49, -50, -53, -54

VERTICAL 4" HUB & SPIGOT, CLOSE, SINGLE

14004 & 14024	APPLICATION: For use with Siphon Jet or Blowout Closets in Hub and Spigot piping systems where single compact offset fitting with vertical flow is desired.
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14004 Single Fitting, Left-Hand Offset, Left-Hand 2" Vent (Shown)
14024 Single Fitting, Right-Hand Offset, Right-Hand 2" Vent (Opposite)

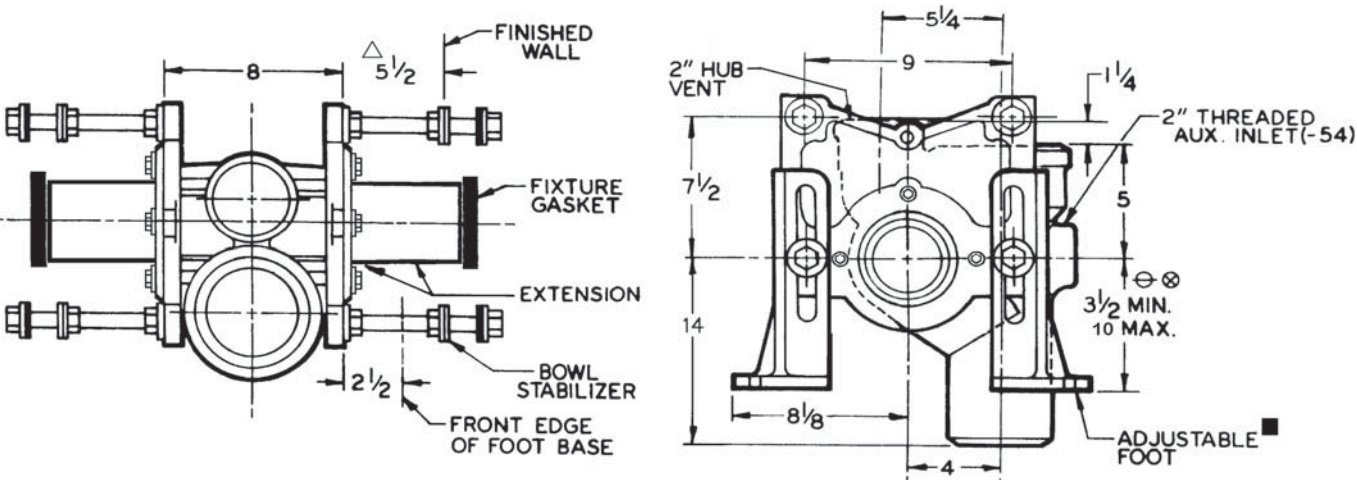


70 LBS.

VERTICAL 4" HUB & SPIGOT, CLOSE, BACK-TO-BACK

14044	APPLICATION: For use with Siphon Jet or Blowout Closets in Hub and Spigot piping systems where back-to-back compact offset fitting with vertical flow is desired.
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Back-to-Back Fitting, Offset, 2" Vent



120 LBS.

OPTIONS & NOTES

- | | |
|-----|--|
| -VP | Vandal-Proof Trim |
| -1 | Positioning Frame |
| -6 | Supply Pipe Support (Specify Type of Pipe) |
| -21 | Hanger Type Closet Adapter |
| -54 | Threaded Auxiliary Inlet, Opposite Vent |

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: ⊕ 11" MIN. & 16-1/2" MAX.

⊗ FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

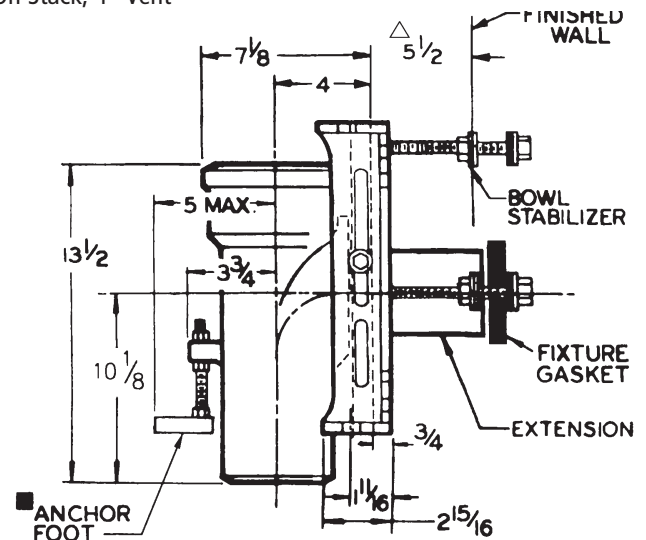
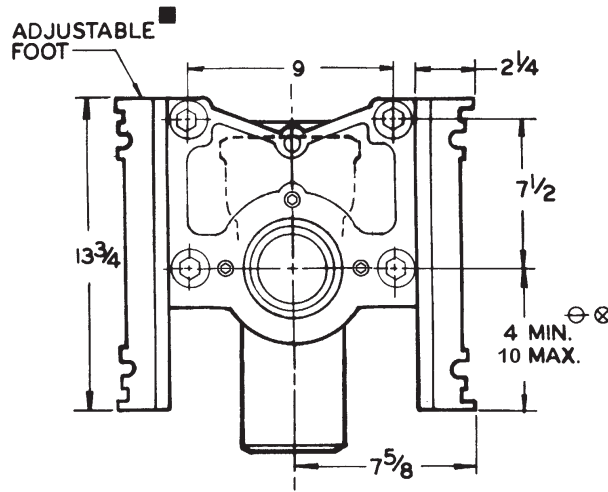
△ FOR DIM. SHORTER THAN 3-3/4" (1" MIN.) CUT EXT.

VERTICAL 4" HUB & SPIGOT, CLOSE, SINGLE

14064

APPLICATION: For use with Siphon Jet or Blowout Closets in Hub and Spigot piping systems where single compact on-stack fitting with 4" vent and vertical flow is desired.

Single Fitting, On Stack, 4" Vent



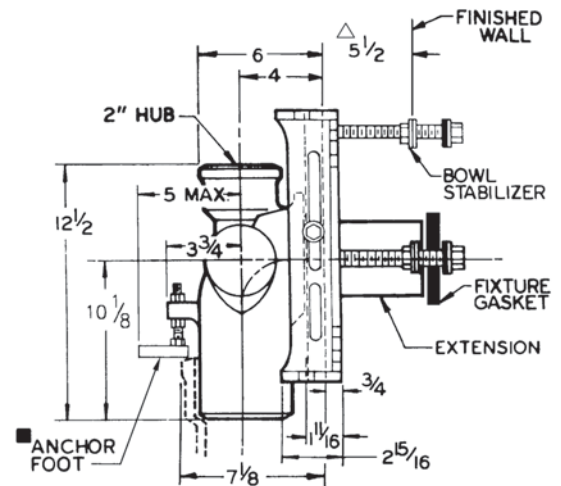
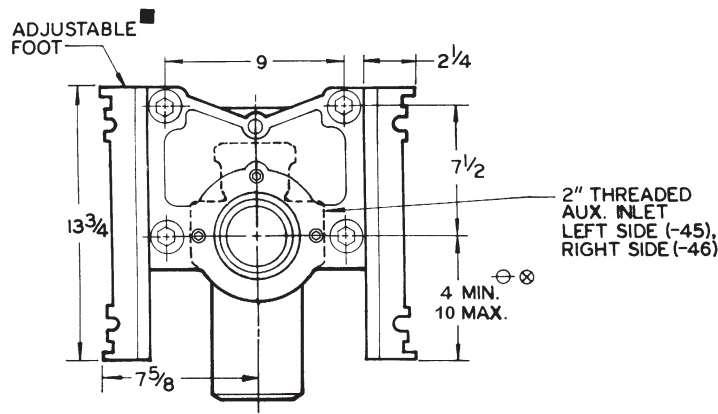
63 LBS.

VERTICAL 4" HUB & SPIGOT, CLOSE, SINGLE

14104

APPLICATION: For use with Siphon Jet or Blowout Closets in Hub and Spigot piping systems where single compact on-stack fitting with 2" vent and vertical flow is desired.

Single Fitting, On Stack, 2" Vent



60 LBS.

OPTIONS & NOTES

- SD Special Duty 500 lb. Carrier
- VP Vandal-Proof Trim
- 1 Positioning Frame
- 6 Supply Pipe Support (Specify Type of Pipe)
- 45 Threaded Left-Hand Auxiliary Inlet
- 46 Threaded Right-Hand Auxiliary Inlet

RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: 11" MIN. & 16-1/2" MAX.

FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

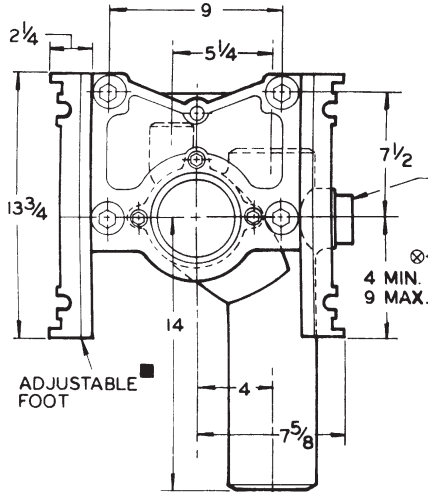
△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.) CUT EXT.

VERTICAL 4" NO-HUB, CLOSE, SINGLE

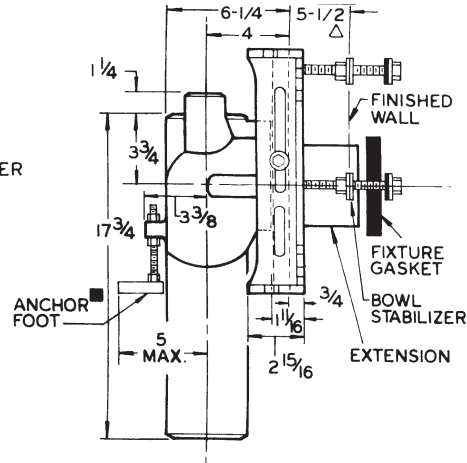
14404 & 14424

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where single compact offset fitting with 2" auxiliary inlet vertical flow is desired.

14404 Single Fitting, Left-Hand Offset, Left-Hand 2" Vent (Shown)
14424 Single Fitting, Right-Hand Offset, Right-Hand 2" Vent (Opposite)



FOR 2" NO-HUB AUX. INLET, EITHER CUT IN FIELD OR SPECIFY (-50).
 THREADED (-54).



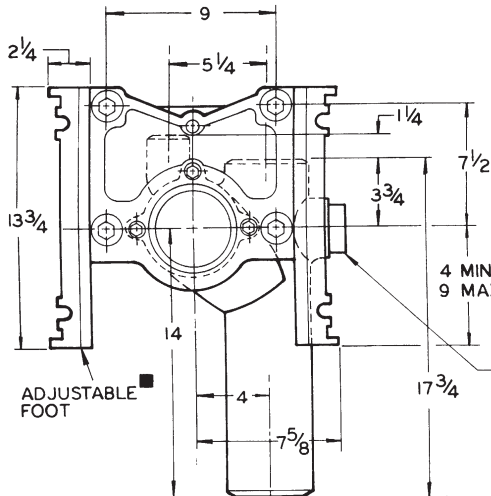
60 LBS.

VERTICAL 4" NO-HUB, CLOSE, BACK-TO-BACK

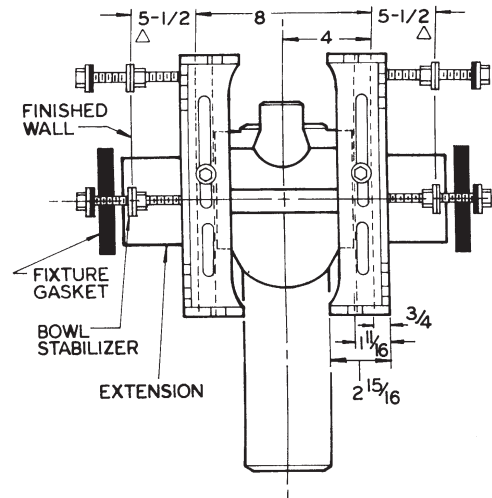
14444

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where back-to-back compact offset fitting with 2" auxiliary inlet vertical flow is desired.

Back-to-Back Fitting, Offset, 2" Vent



FOR 2" NO-HUB AUX. INLET, EITHER CUT IN FIELD OR SPECIFY (-50).
 THREADED (-54).



90 LBS.

OPTIONS & NOTES

- SD Special Duty 500 lb. Carrier
- VP Vandal-Proof Trim
- 1 Positioning Frame
- 6 Supply Pipe Support (Specify Type of Pipe)
- 10 ABS Extension, through 10-1/2" Wall

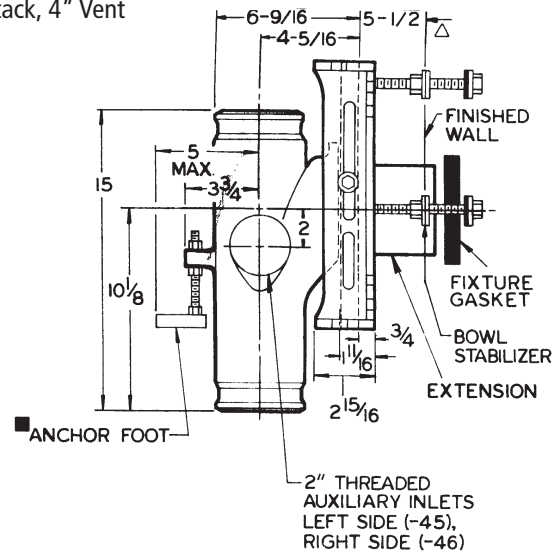
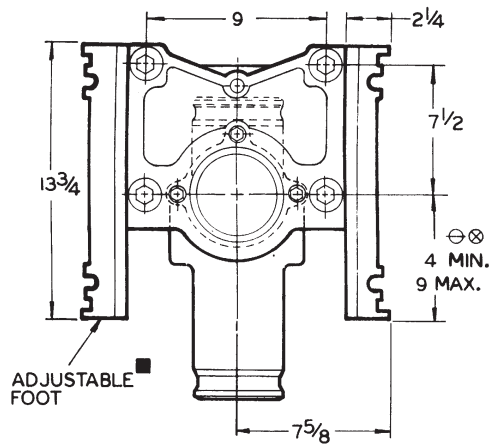
- 24 Carrier for Floor-Mounted, Back-Outlet China Bowls
- 30 Cast Iron Adjustable Extension with Connector
- 30-2 Cast Iron Adjustable Extension with Connector and Test Cap Assembly
- 50 No-Hub High Auxiliary Inlet, Opposite Vent
- 54 Threaded High Auxiliary Inlet, Opposite Vent

VERTICAL 4" NO-HUB, CLOSE, SINGLE

14464

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where single compact on-stack fitting with 4" vent and vertical flow is desired.

Single Fitting, On Stack, 4" Vent



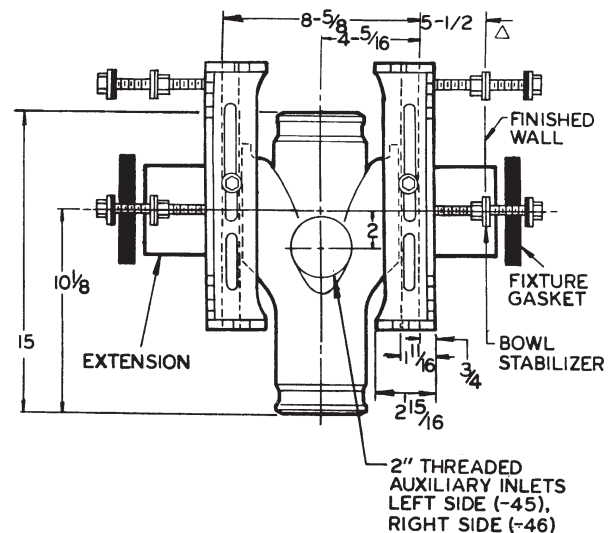
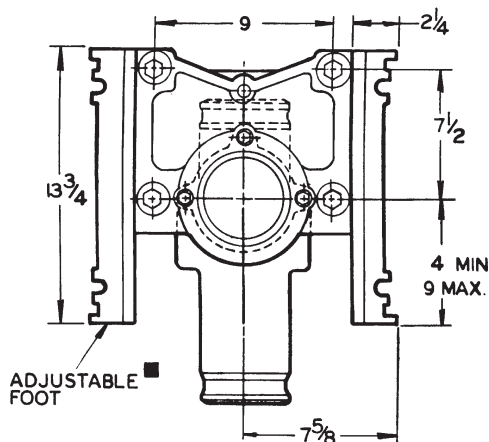
52 LBS.

VERTICAL 4" NO-HUB, CLOSE, BACK-TO-BACK

14484

APPLICATION: For use with Siphon Jet Closets in No-Hub piping systems where back-to-back compact on-stack fitting with vertical flow is desired.

Back-to-Back Fitting, 4" Vent, for Siphon Jet Closets Only



82 LBS.

OPTIONS & NOTES

- | | | | |
|-----|--|-------|---|
| -SD | Special Duty 500 lb. Carrier | -24 | Carrier for Floor-Mounted, Back-Outlet China Bowls |
| -VP | Vandal-Proof Trim | -30 | Cast Iron Adjustable Extension with Connector |
| -1 | Positioning Frame | -30-2 | Cast Iron Adjustable Extension with Connector and Test Cap Assembly |
| -6 | Supply Pipe Support (Specify Type of Pipe) | -45 | Threaded Left-Hand Auxiliary Inlet |
| -10 | ABS Extension, through 10-1/2" Wall | -46 | Threaded Right-Hand Auxiliary Inlet |

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: \ominus 11" MIN. & 16-1/2" MAX.

⊗ FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

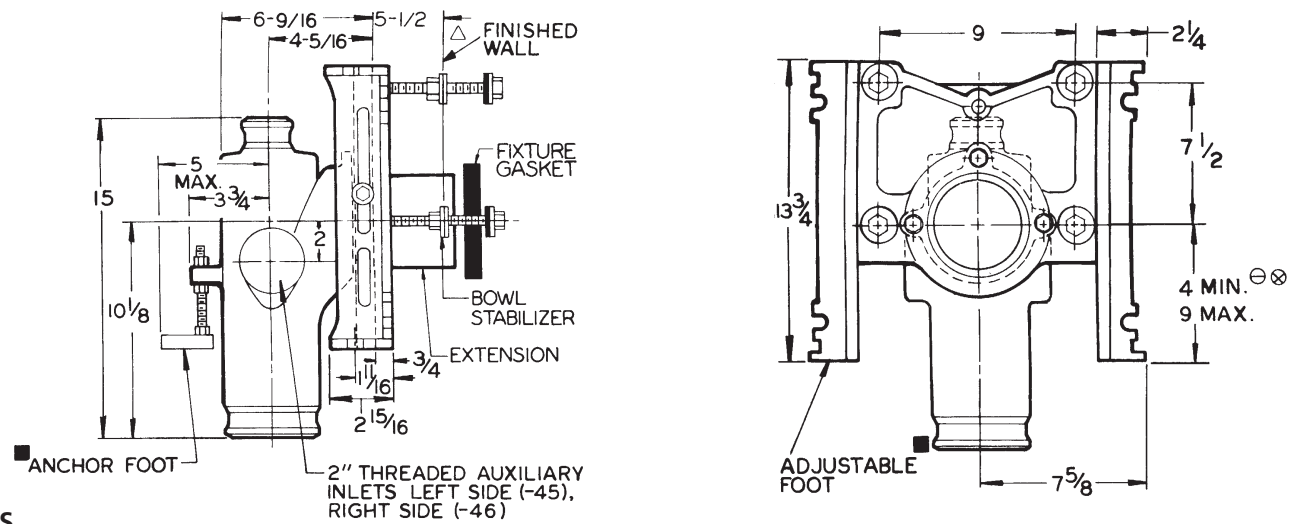
△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.) CUT EXT. SPECIFY -10 FOR LONGER EXT. (10-1/2" MAX.)

VERTICAL 4" NO-HUB, CLOSE, SINGLE

14504

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where single compact on-stack fitting with 2" vent and vertical flow is desired.

Single Fitting, On Stack, 2" Vent



82 LBS.

OPTIONS & NOTES

-SD	Special Duty 500 lb. Carrier	-24	Carrier for Floor-Mounted, Back-Outlet China Bowls
-VP	Vandal-Proof Trim	-30	Cast Iron Adjustable Extension with Connector
-1	Positioning Fram	-30-2	Cast Iron Adjustable Extension with Connector and Test Cap Assembly
-6	Supply Pipe Support (Specify Type of Pipe)	-45	Threaded Left-Hand Auxiliary Inlet
-10	ABS Extension, through 10-1/2" Wall	-46	Threaded Right-Hand Auxiliary Inlet

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: ⊕ 11" MIN. & 16-1/2" MAX.

⊗ FOR ROUGHING OVER 6" FOR SIPHON JET OR 12-1/2" FOR BLOWOUT, SPECIFY ON ORDER.

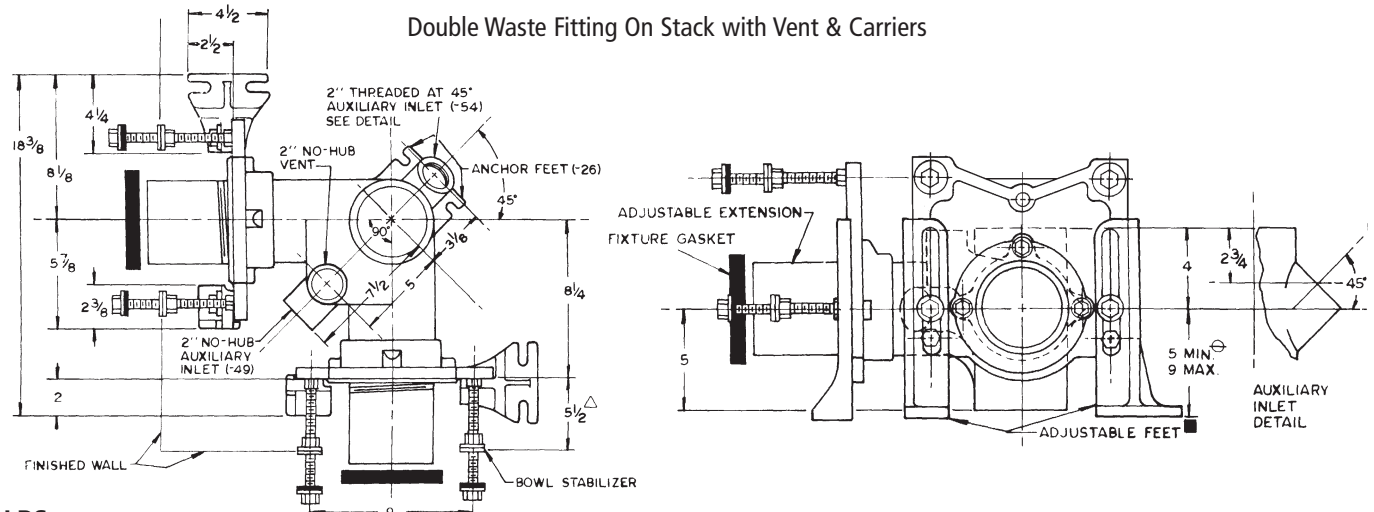
△ FOR DIM. SHORTER THAN 5-1/2" (1" MIN.) CUT EXT. SPECIFY -10 FOR LONGER EXT. (10-1/2" MAX.)

VERTICAL NO-HUB, 90° INSTITUTIONAL FITTING

15964

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where 90-degree double waste fitting with vent, auxiliary inlet and vertical flow is desired such as in prisons.

SPECIFICATION: JOSAM 15964 Series coated cast iron vertical 4" no-hub double waste 90° Stack Fitting with 4" closet branches, 2" no-hub vent, with close closet carriers invertible for siphon jet or blowout closets, ABS extensions with integral test caps, buttress feet, plated hardware and fixture gaskets.



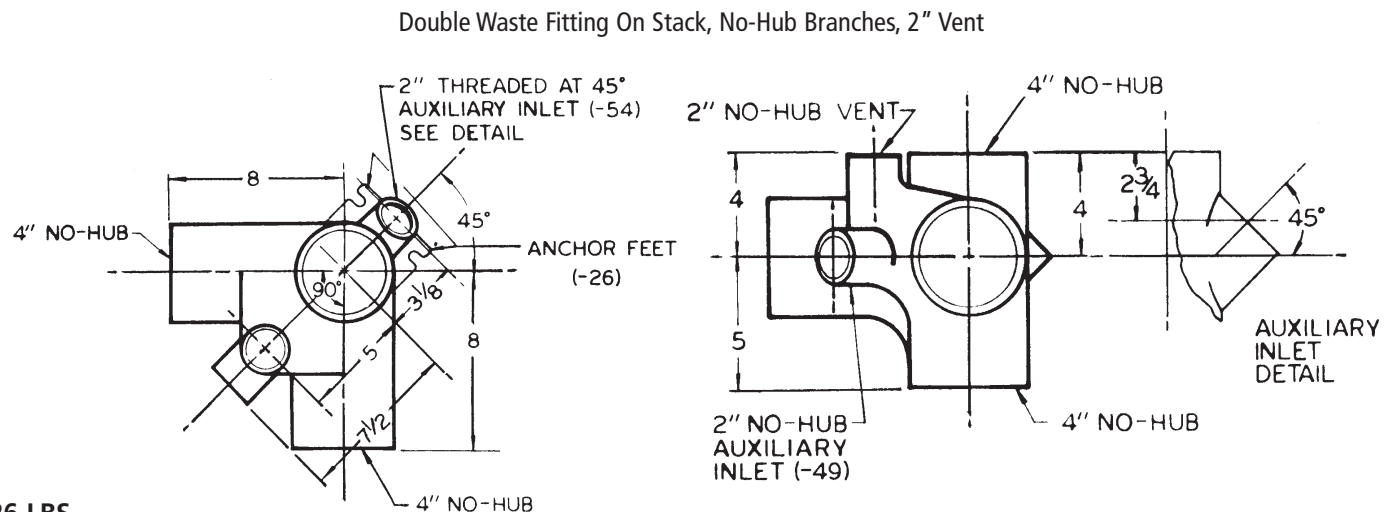
90 LBS.

VERTICAL NO-HUB, 90° INSTITUTIONAL FITTING

15984

APPLICATION: For use with Siphon Jet or Blowout Closets in No-Hub piping systems where 90-degree double waste fitting with vent, auxiliary inlet and vertical flow is desired such as in prisons. Fitting only, carrier trim by others.

SPECIFICATION: JOSAM 15984 Series coated cast iron vertical 4" no-hub double waste 90° Stack Fitting with 4" no-hub closet branches and 2" no-hub vent.



26 LBS.

OPTIONS & NOTES

		APPLICATIONS SERIES		APPLICATIONS SERIES	
		15964	15984	15964	15984
-VP	Vandal-Proof Trim	X	-	X	X
-1	Positioning Frame	X	-	X	-
-6	Supply Pipe Support (Specify Type of Pipe)	X	-	X	-
-10	ABS Extension, through 10-1/2" Wall	X	-	X	X
-24	Carrier for Floor-Mounted, Back-Outlet China Bowls	X	-	X	X
-26	Fitting Anchor Foot	-	-	X	X
-30	Cast Iron Adjustable Extension with Connector	-	-	X	-
-30-2	Cast Iron Adjustable Ext. w/Connector & Test Cap Assy.	-	-	X	-
-49	No-Hub High Auxiliary Inlet, Under Vent	-	-	X	X
-54	Threaded High Auxiliary Inlet, Opposite Vent	-	-	X	X

■ RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS.

DIM. SHOWN IS FOR SIPHON JET. BLOWOUT IS: \varnothing 11" MIN. & 16-1/2" MAX.

△FOR DIM. SHORTER THAN 5-1/2" (1-3/4" MIN.) CUT EXT. SPECIFY -10 FOR LONGER EXT. (10-1/2" MAX.)

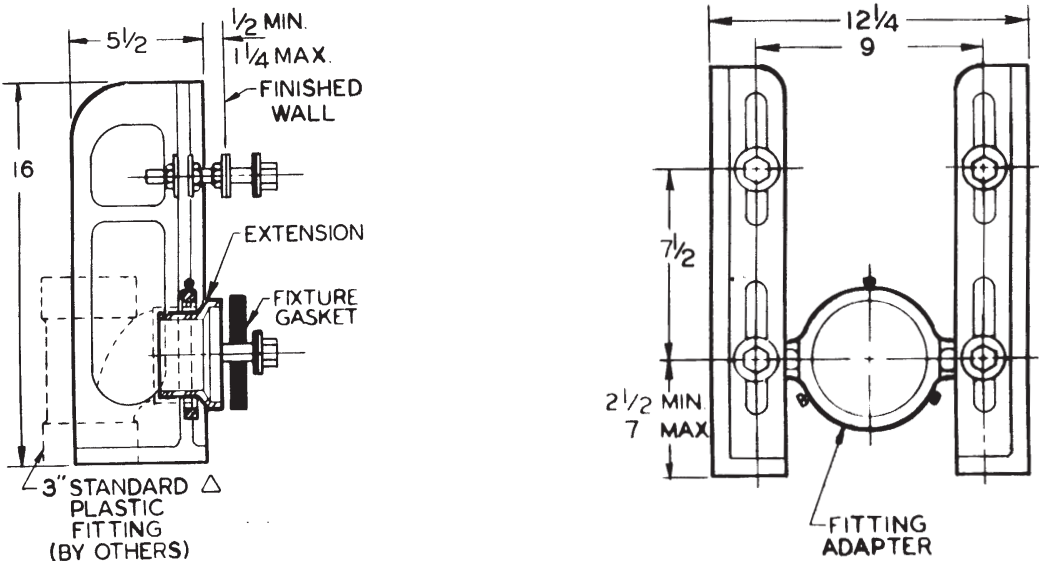
FLOOR-MOUNT, PVC ADAPTER TYPE

16123

APPLICATION: For use with Siphon Jet Closets only in PVC piping systems where a single compact carrier with vertical flow is desired and a 3" PVC fitting is to be furnished by others.

SPECIFICATION: JOSAM 16123 Series coated cast iron single Commercial Closet Carrier and 3" PVC plastic fitting adapter with extension and chrome plated trim.

Single Fitting, On Stack, Adapter Type for PVC Plastic Pipe for Siphon Jet Closets Only



35 LBS.

OPTIONS & NOTES

- VP Vandal-Proof Trim
- 1 Positioning Frame
- 6 Supply Pipe Support (Specify Type of Pipe)
- 13 ABS Extension
- 21 Hanger Type Closet Adapter

RECOMMENDED ALL FEET BE SECURED TO FLOOR WITH 1/2" BOLTS AND ANCHORS BY OTHERS. △ THIS CARRIER CAN ALSO BE USED WITH A 4 X 4 X 3 TEE.



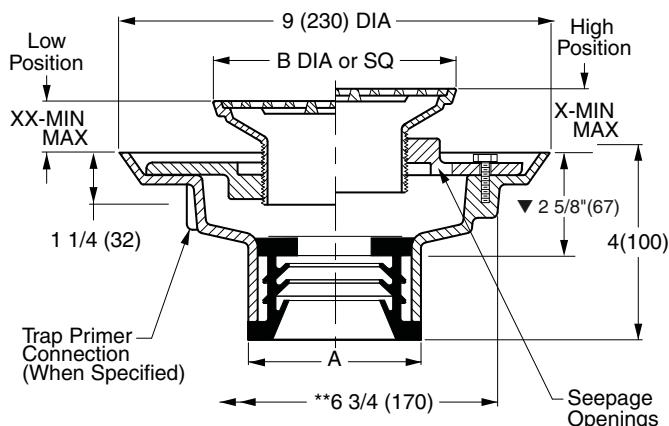
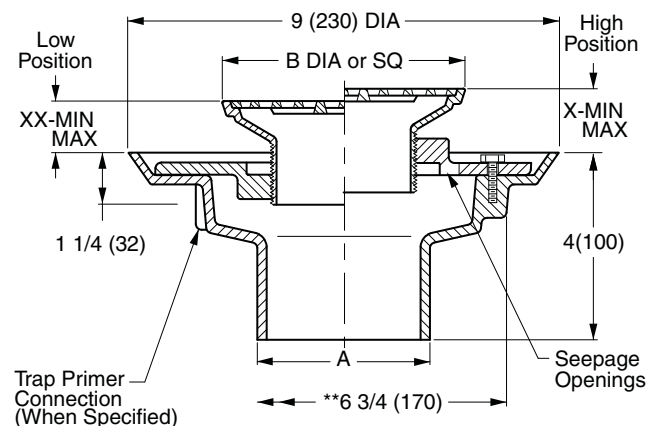
JAY R. SMITH MFG. CO.
 MEMBER OF ACORN'S FAMILY OF COMPANIES
 POST OFFICE BOX 3237
 MONTGOMERY, ALABAMA 36109-0237 (USA)
 TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com



LOCATION

FLOOR OR SHOWER DRAINS WITH ADJUSTABLE STRAINER HEADS

FUNCTION: General service floor drain for use in showers, toilets, kitchens and other finished areas where foot traffic is expected. The round top strainer head is used for all types of poured finished floors. The square top is particularly adaptable to floors that are finished in material of square or straight line pattern. Reversible flashing collar permits adjustment of the strainer to meet finished floor level.



A (Pipe Size) = 02(50), 03(75), 04(100), 05(125) or 06(150)

NO-HUB OUTLET

- ☐ Fig. 2005Y.....(A) ROUND TOP
☐ Fig. 2005Y.....(B) SQUARE TOP

Outlet Size	Nickel Bronze Strainer Head
▲ 02(50)	05(125) DIA or SQ
▲ 03(75)	06(150) DIA or SQ
▲ 04(100)	08(205) DIA or SQ

- ▼ This dimension to internal stop of speedi-set gasket.
- Add 3/8"(10) to all min/max dimensions for round strainers.
- * Collar is reversible to obtain extreme high and low strainer positions.
- Not available for 5"(125) size strainer.
- ** MIN 6 3/4"(170) hole required for core drilled application.

SPEEDI-SET OUTLET

- ☐ Fig. 2005L.....(A) ROUND TOP
☐ Fig. 2005L.....(B) SQUARE TOP

Strainer Size B	*Collar In High Position X		*Collar In Low Position XX		Free Area SQ IN (SQ CM)	
	MIN	MAX	MIN	MAX	ROUND	SQUARE
05 (125)	1 1/4(32)	2 1/4(57)	3/4(19)	1 5/8(41)	7(45)	6.5(42)
06 (150)	1 1/4(32)	2 1/4(57)	3/4(19)	1 5/8(41)	9(58)	12.5(81)
07 (180)	1 1/4(32)	2 1/4(57)	7/8(22)	1 7/8(48)	14(90)	11(71)
08 (205)	1 1/2(38)	2 1/2(64)	1(25)	1 7/8(48)	17(110)	14(90)
•09 (230)	1 1/2(38)	2 3/8(60)	1(25)	1 7/8(48)	18(116)	16(103)
•10 (255)	1 1/2(38)	2 3/8(60)	1(25)	1 7/8(48)	23(48)	16(103)

REGULARLY FURNISHED:

Duco Cast Iron Body with Flashing Collar and Adjustable Strainer Head as Indicated by Suffix Letter Selected.

VARIATIONS:

- ☐ Flapper Type Backwater Valve -V
- ☐ Hinged Grate -H
- ☐ L Speedi-Set Service Weight 2(50), 3(75) & 4"(100) only
- ☐ LXH Speedi-Set Extra Heavy 2(50), 3(75) & 4"(100) only
- ☐ Sediment Bucket -B
- ☐ Trap Primer Connection -P050 1/2" (13) & -P075 3/4" (19)
- ☐ Vandal Proof Screws -U
- ☐ Wide Flanged Strainer (Specify Fig. DX2005)
- ☐ T Threaded Outlet
- ☐ Heelproof Grate -HP -AHP (Round) or -BHP (Square)

OPTIONAL MATERIALS:

- ☐ Bronze Body -BB
- ☐ Chrome Plated Strainer -CP
- ☐ Galvanized Cast Iron Body -G
- ☐ Nickel Bronze Strainer -NB
- ☐ Polished Bronze Strainer -PB
- ☐ Stainless Steel (Specify Fig. 9700-A)

NOTE: Dimensions shown in parentheses are in millimeters.

- ▲ Meets ASME Standard A112.6.3-2001 02(50), 03(75) or 04"(100) sizes only.

SEE PM0457 FOR OPTIONAL STRAINER HEADS.

Q P N M	11-18-11 11-20-09 12/18/08 10/24/06	Rev. Dwg., Var. Revised Variations Addition to Variations NO-HUB to SPEEDI-SET	TBW RN JJ RN	CR BW BW CL	WEIGHT POUNDS	VOLUME CUBIC FEET	FIGURE NUMBER
REV.	DATE	DESCRIPTION	BY	CKD. BY			2005

G	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> SMITH® JAY R. SMITH MFG. CO.® <small>MEMBER OF ACORN'S FAMILY OF COMPANIES POST OFFICE BOX 3237 MONTGOMERY, ALABAMA 36109-0237 (USA) TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com</small> </div> <div style="text-align: center;"> <small>MEMBER OF:</small> </div> <div style="text-align: right;"> <small>MEMBER OF:</small> </div> </div>					LOCATION <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>																																																
	OPTIONAL STRAINER HEADS																																																					
	DRAWING NUMBER PM0457 SH 1 of 2	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center; font-weight: bold;">ROUND STRAINER</p> <div style="display: flex; align-items: center;"> <div> <p>MATERIALS: Chrome Plated -CP Polished Bronze -PB Nickel Bronze -NB</p> <p>VARIATIONS: *Hinged Grate (Specify Suffix -AH) Sediment Bucket -B Vandal Proof Screws -U</p> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><th>B DIA</th><th>05 (125)</th><th>06 (150)</th><th>07 (180)</th><th>08 (205)</th><th>09 (230)</th><th>10 (255)</th></tr> <tr><td>H</td><td>2 (51)</td><td>2 (51)</td><td>2 1/4 (57)</td><td>2 1/2 (64)</td><td>2 1/2 (64)</td><td>2 3/4 (70)</td></tr> <tr><td>X MIN</td><td>1 1/4 (32)</td><td>1 1/4 (32)</td><td>1 1/4 (32)</td><td>1 1/2 (38)</td><td>1 1/2 (38)</td><td>1 1/2 (38)</td></tr> <tr><td>X MAX</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td><td>2 1/2 (64)</td><td>2 1/2 (64)</td><td>2 3/4 (70)</td></tr> </table> <p style="text-align: center;">Specify Type, Size & Finish eg: A05NB *Not available for 05" (125) size</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -A</p> </div> <div style="width: 48%;"> <p style="text-align: center; font-weight: bold;">FLAPPER TYPE BACKWATER VALVE</p> <div style="display: flex; align-items: center;"> <div> <p>FUNCTION: Provides backwater protection at point where protection is needed.</p> <p>MATERIALS: Chrome Plated -CP Polished Bronze -PB Nickel Bronze -NB</p> <p>VARIATIONS: *Hinged Grate (Specify Suffix -AH) Vandal Proof Screws -U</p> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><th>B DIA</th><th>05 (125)</th><th>06 (150)</th><th>07 (180)</th><th>08 (205)</th></tr> <tr><td>H</td><td>2 (51)</td><td>2 (51)</td><td>2 1/4 (57)</td><td>2 1/2 (64)</td></tr> <tr><td>X MIN</td><td>1 1/4 (32)</td><td>1 1/4 (32)</td><td>1 1/4 (32)</td><td>1 1/2 (38)</td></tr> <tr><td>X MAX</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td><td>2 1/2 (64)</td></tr> </table> <p style="text-align: center;">Specify Type, Size & Finish eg: AV05NB *Not available for 05" (125) size</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -AV</p> </div> </div>					B DIA	05 (125)	06 (150)	07 (180)	08 (205)	09 (230)	10 (255)	H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)	2 1/2 (64)	2 3/4 (70)	X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)	X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 1/2 (64)	2 3/4 (70)	B DIA	05 (125)	06 (150)	07 (180)	08 (205)	H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)	X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)
	B DIA	05 (125)	06 (150)	07 (180)	08 (205)	09 (230)	10 (255)																																															
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)	2 1/2 (64)	2 3/4 (70)																																																
X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)																																																
X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 1/2 (64)	2 3/4 (70)																																																
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H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)																																																		
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X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)																																																		
SIZE A	<p style="text-align: center; font-weight: bold;">SQUARE STRAINER</p> <div style="display: flex; align-items: center;"> <div> <p>MATERIALS: Chrome Plated -CP Polished Bronze -PB Nickel Bronze -NB</p> <p>VARIATIONS: Flapper Type Backwater Valve (Specify Suffix -BV) 05 (125), 06 (150), 07 (180) or 08" (205) sizes only *Hinged Grate (Specify Suffix -BH) Sediment Bucket -B Vandal Proof Screws -U</p> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><th>B DIA</th><th>05 (125)</th><th>06 (150)</th><th>07 (180)</th><th>08 (205)</th><th>09 (230)</th><th>10 (255)</th></tr> <tr><td>H</td><td>2 (51)</td><td>2 (51)</td><td>2 1/4 (57)</td><td>2 1/2 (64)</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td></tr> <tr><td>X MIN</td><td>1 1/4 (32)</td><td>1 1/4 (32)</td><td>1 1/4 (32)</td><td>1 1/2 (38)</td><td>1 1/2 (38)</td><td>1 1/2 (38)</td></tr> <tr><td>X MAX</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td><td>2 1/2 (64)</td><td>2 1/4 (57)</td><td>2 3/8 (60)</td></tr> </table> <p style="text-align: center;">Specify Type, Size & Finish eg: B05NB *Not available for 05" (125) size</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -B</p>					B DIA	05 (125)	06 (150)	07 (180)	08 (205)	09 (230)	10 (255)	H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)	2 1/4 (57)	2 1/4 (57)	X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)	X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 1/4 (57)	2 3/8 (60)	<p style="text-align: center; font-weight: bold;">STRAINER HEAD w/SQUARE HINGED COVER</p> <div style="display: flex; align-items: center;"> <div> <p>MATERIALS: Chrome Plated -CP Polished Bronze -PB Nickel Bronze -NB</p> <p>VARIATIONS: Gasketed Water Tight Cover -GC Secured Cover -SC Secondary Strainer Grate-SG</p> </div> </div> <p style="text-align: center;">Specify Type, Size & Finish eg: BSNB</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -BS</p>																				
B DIA	05 (125)	06 (150)	07 (180)	08 (205)	09 (230)	10 (255)																																																
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)	2 1/4 (57)	2 1/4 (57)																																																
X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)																																																
X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 1/4 (57)	2 3/8 (60)																																																
SCALE NONE	<p style="text-align: center; font-weight: bold;">REINFORCED ROUND STRAINER</p> <p>FUNCTION: Used in finished floors where light wheeled loads are anticipated.</p> <div style="display: flex; align-items: center;"> <div> <p>MATERIALS: Chrome Plated -CP Polished Bronze -PB Nickel Bronze -NB</p> <p>VARIATIONS: Flapper Type Backwater Valve (Specify Suffix -CV) Sediment Bucket -B Vandal Proof Screws -U</p> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><th>B DIA</th><th>05 (125)</th><th>06 (150)</th><th>08 (205)</th><th>10 (255)</th></tr> <tr><td>H</td><td>2 (51)</td><td>2 (51)</td><td>2 1/2 (64)</td><td>2 3/4 (70)</td></tr> <tr><td>MIN</td><td>1 1/4 (32)</td><td>1 1/4 (32)</td><td>1 1/2 (38)</td><td>1 7/8 (48)</td></tr> <tr><td>MAX</td><td>2 1/4 (57)</td><td>2 1/4 (57)</td><td>2 1/2 (64)</td><td>2 3/4 (70)</td></tr> </table> <p style="text-align: center;">Specify Type, Size & Finish eg: C06NB</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -C</p>					B DIA	05 (125)	06 (150)	08 (205)	10 (255)	H	2 (51)	2 (51)	2 1/2 (64)	2 3/4 (70)	MIN	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 7/8 (48)	MAX	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 3/4 (70)	<p style="text-align: center; font-weight: bold;">REINFORCED TRACTOR STRAINER</p> <p>FUNCTION: Used in finished floors where medium weight wheeled loads are anticipated and loose set non-tilt tractor grate is desired.</p> <div style="display: flex; align-items: center;"> <div> <p>MATERIALS: Cast Iron -CI Chrome Plated -CP Polished Bronze -PB Nickel Bronze -NB</p> <p>VARIATIONS: Flapper Type Backwater Valve (Specify Suffix -DV or -EV) Sediment Bucket -B Vandal Proof Screws -U</p> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><th>SUFFIX</th><th>B DIA</th><th>H</th><th colspan="2">X</th></tr> <tr><td></td><td></td><td></td><td>MIN</td><td>MAX</td></tr> <tr><td>-D</td><td>07 (180)</td><td>3 1/4 (83)</td><td>2 5/8 (67)</td><td>3 1/2 (89)</td></tr> <tr><td>-E</td><td>09 (230)</td><td>3 1/2 (89)</td><td>2 3/4 (70)</td><td>3 1/2 (89)</td></tr> </table> <p style="text-align: center;">Specify Type, Size & Finish eg: D09PB E09PB</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -D-E</p>					SUFFIX	B DIA	H	X					MIN	MAX	-D	07 (180)	3 1/4 (83)	2 5/8 (67)	3 1/2 (89)	-E	09 (230)	3 1/2 (89)	2 3/4 (70)	3 1/2 (89)				
B DIA	05 (125)	06 (150)	08 (205)	10 (255)																																																		
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SUFFIX	B DIA	H	X																																																			
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-D	07 (180)	3 1/4 (83)	2 5/8 (67)	3 1/2 (89)																																																		
-E	09 (230)	3 1/2 (89)	2 3/4 (70)	3 1/2 (89)																																																		
DATE: 5-17-85	<p style="text-align: center; font-weight: bold;">TILE FLANGE</p> <p>FUNCTION: Provides integral flange set 5/32" (4) below rim to receive floor covering. Flange may have option of tapped holes for securing pan and gasket.</p> <div style="display: flex; align-items: center;"> <div> <p>MATERIALS: Chrome Plated -CP Polished Bronze -PB Nickel Bronze -NB</p> <p>VARIATIONS: Flapper Type Backwater Valve (Specify Suffix -FV) Holes in Flange -SH Sediment Bucket -B Vandal Proof Screws -U</p> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><th colspan="2">X</th></tr> <tr><td>MIN</td><td>MAX</td></tr> <tr><td>1 1/4 (32)</td><td>2 1/8 (54)</td></tr> </table> <p style="text-align: center;">Specify Type, Size & Finish eg: F06NB</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -F</p>					X		MIN	MAX	1 1/4 (32)	2 1/8 (54)	<p style="text-align: center; font-weight: bold;">ADJUSTABLE STRAINER HEAD</p> <p>FUNCTION: Used in a non-traffic area when a funnel type strainer head is required and space does not allow use of the 3500 series funnel. The extended rim allows use as an anti-flood and anti-splash drip pan.</p> <div style="display: flex; align-items: center;"> <div> <p>VARIATIONS: Flapper Type Backwater Valve (Specify Suffix -F37V or F38V)</p> <p>MATERIALS: Cast Iron -CI Chrome Plated -CP Galvanized Cast Iron -G Polished Bronze -PB Nickel Bronze -NB</p> </div> </div> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><th>SUFFIX</th><th>-F37</th><th>-F38</th></tr> <tr><td>B DIA</td><td>07 (180)</td><td>09 (230)</td></tr> <tr><td>H</td><td>3 1/4 (83)</td><td>3 1/2 (89)</td></tr> <tr><td>X MIN</td><td>2 5/8 (67)</td><td>2 3/4 (70)</td></tr> <tr><td>X MAX</td><td>3 1/2 (89)</td><td>3 1/2 (89)</td></tr> </table> <p style="text-align: center;">Specify Type, Size & Finish eg: F37NB F38CP</p> <p style="text-align: center; background-color: black; color: white; font-weight: bold;">SUFFIX -F37-F38</p>					SUFFIX	-F37	-F38	B DIA	07 (180)	09 (230)	H	3 1/4 (83)	3 1/2 (89)	X MIN	2 5/8 (67)	2 3/4 (70)	X MAX	3 1/2 (89)	3 1/2 (89)																							
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APPROVED BY: TD	<p style="text-align: center; font-weight: bold;">FIGURE NUMBER</p> <table border="1" style="width: 100%; text-align: center; font-size: 0.8em;"> <tr><td>REV.</td><td>DATE</td><td>DESCRIPTION</td><td>BY</td><td>CKD. BY</td></tr> <tr><td>1</td><td>10-4-01</td><td>Revised Suffix-BS</td><td>RN</td><td>CL</td></tr> <tr><td>2</td><td>8-24-99</td><td>Revised</td><td>TBW</td><td>BS</td></tr> <tr><td>3</td><td>6-11-99</td><td>Revised Tables</td><td>CMD</td><td>BS</td></tr> <tr><td>4</td><td>11-4-97</td><td>Added Nickel Bronze</td><td>EMB</td><td></td></tr> </table>					REV.	DATE	DESCRIPTION	BY	CKD. BY	1	10-4-01	Revised Suffix-BS	RN	CL	2	8-24-99	Revised	TBW	BS	3	6-11-99	Revised Tables	CMD	BS	4	11-4-97	Added Nickel Bronze	EMB		<p style="text-align: center; font-weight: bold;">FIGURE NUMBER</p> <p style="text-align: center; font-weight: bold;">2010 SERIES OPTIONAL STRAINER HEADS</p> <p style="text-align: center;">1 of 2</p>																							
REV.	DATE	DESCRIPTION	BY	CKD. BY																																																		
1	10-4-01	Revised Suffix-BS	RN	CL																																																		
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CHECKED BY: TD	<p style="text-align: center; font-weight: bold;">FIGURE NUMBER</p>					<p style="text-align: center; font-weight: bold;">FIGURE NUMBER</p>																																																
DRAWN BY: PJ	<p style="text-align: center; font-weight: bold;">FIGURE NUMBER</p>					<p style="text-align: center; font-weight: bold;">FIGURE NUMBER</p>																																																
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE																																																						

NOTE: Dimensions shown in parenthesis are in millimeters.

2010 SERIES OPTIONAL STRAINER HEADS	DRAWING NUMBER PM0457 SH 2 of 2	SIZE A	SCALE NONE	DATE: 5-17-85	APPROVED BY: TD	CHECKED BY: TD	DRAWN BY: PJ	DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE	H
									SMITH® JAY R. SMITH MFG. CO.® MEMBER OF ACORN'S FAMILY OF COMPANIES POST OFFICE BOX 3237 MONTGOMERY, ALABAMA 36109-0237 (USA) TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com
									LOCATION
									ASPE
									MEMBER OF:
									OPTIONAL STRAINER HEADS
									LOW DOME STRAINER
									SOLID HINGED COVER
									SPANNER WRENCH COVER
									REINFORCED SQUARE STRAINER
									RECTANGULAR STRAINER
									ANGLE STRAINER
									EXTENSION ADAPTOR
									OVERFLOW WITH STANDPIPE
									HEAVY DUTY ADJUSTABLE
									FIGURE NUMBER
									REV. DATE DESCRIPTION BY CKD.BY
									FIGURE NUMBER 2010 SERIES OPTIONAL STRAINER HEADS 2 of 2

SMITH® JAY R. SMITH MFG. CO.®
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 TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com



LOCATION

OPTIONAL STRAINER HEADS

LOW DOME STRAINER

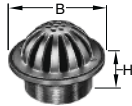
FUNCTION: Used in gutters and recessed areas where excessive debris build-up is expected. Dome insures drainage even when partly covered.

MATERIALS:

Chrome Plated -CP
 Polished Bronze -PB
 Nickel Bronze -NB

VARIATIONS:

Flapper Type Backwater Valve (Specify Suffix -GV)
 Sediment Bucket -B
 Vandal Proof Screws -U



B DIA	05 (125)	06 (150)	08 (205)
H	2 (51)	2 (51)	2 1/2 (64)
MIN	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)
MAX	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)

SUFFIX -G

Specify Type, Size & Finish
eg: G08PB

REINFORCED SQUARE STRAINER

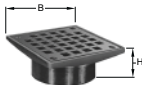
FUNCTION: Used in finished floors where some light wheeled traffic is anticipated.

MATERIALS:

Chrome Plated -CP
 Polished Bronze -PB
 Nickel Bronze -NB

VARIATIONS:

Flapper Type Backwater Valve (Specify Suffix -KV)
 Sediment Bucket -B
 Vandal Proof Screws -U



B SQ	05 (125)	06 (150)	07 (180)	08 (205)
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)
MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)
MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)

SUFFIX -K

Specify Type, Size & Finish
eg: K07CP

EXTENSION ADAPTOR

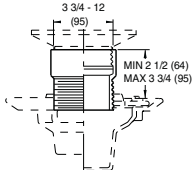
FUNCTION: Used when a strainer head must be raised to accommodate deeper floor fill.

REGULARLY FURNISHED:

Duco Cast Iron -CI

MATERIALS:

Cast Bronze -CB
 Galvanized Cast Iron -G



NOTE: Extension can be stacked for increased maximum adjustment.

SUFFIX -X

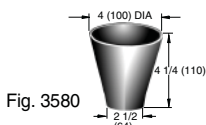


Fig. 3580

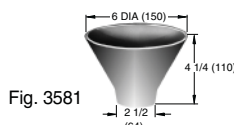
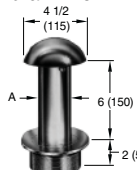


Fig. 3581

OVERFLOW WITH STANDPIPE

FUNCTION: Used as overflow drain in decorative pools, fish ponds or similar areas. Dome prevents floating objects from entering drain line.



SUFFIX	A SIZE	MIN	MAX
-Y	2 (51)	3/4 (19)	2 1/8 (54)
-Z	3 (76)	3/4 (19)	2 1/8 (54)

SUFFIX -Y-Z

Specify Type, Size & Finish
eg: YCP, ZCP

MATERIALS:

Chrome Plated -CP
 Nickel Bronze -NB
 Polished Bronze -PB

VARIATIONS:

Less Dome -LD
 Standpipe Height other than 6" (150) (Specify Height)



Fig. 3590

SPANNER WRENCH COVER

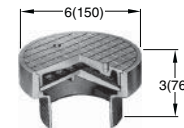
FUNCTION: Solid gas tight, vandal proof, threaded cover for areas where intermittent drain use is required.

MATERIALS:

Chrome Plated -CP
 Polished Bronze -PB
 Nickel Bronze -NB

VARIATIONS:

Flapper Type Backwater Valve (Specify Suffix -JV)
 Holes in Flange -SH
 Sediment Bucket -B
 Vandal Proof Screws -U



X	MIN	MAX
	2 (51)	3 (76)

SUFFIX -J

Specify Type, Size & Finish
eg: J06NB

ANGLE STRAINER

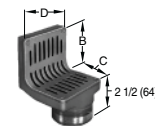
FUNCTION: Shower room drain set at wall and floor junction. Vertical grate openings prevent drain stoppage should flat surface become covered.

MATERIALS:

Cast Iron -CI
 Chrome Plated -CP
 Polished Bronze -PB
 Nickel Bronze -NB

VARIATIONS:

Vandal Proof Screws -U



SUFFIX	B	C	D	MIN	MAX
-V	3 1/2 (89)	3 1/2 (89)	4 1/2 (115)	1 5/8 (41)	2 5/8 (67)
-W	6 3/4 (170)	6 3/4 (170)	6 1/2 (165)	1 5/8 (41)	2 5/8 (67)

SUFFIX -V-W

Specify Type, Size & Finish
eg: VPB, WNB

HEAVY DUTY ADJUSTABLE

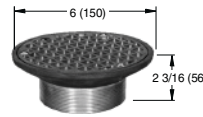
FUNCTION: Used in finished floors where light wheeled loads and or heavy foot traffic are anticipated.

MATERIALS:

Polished Bronze -PB
 Rough Bronze -RB
 Nickel Bronze -NB

VARIATIONS:

Flapper Type Backwater Valve (Specify Suffix -69V)
 Sediment Bucket -B
 Vandal Proof Screws -U



SUFFIX -69

eg: A06NB-69



Fig. 3591

NOTE: Dimensions shown in parenthesis are in millimeters.

N	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: left;"> SMITH® JAY R. SMITH MFG. CO.® DIVISION OF SMITH INDUSTRIES, INC. POST OFFICE BOX 3237 MONTGOMERY, ALABAMA 36109-0237 (USA) TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com </div> <div style="text-align: center;"> MEMBER OF: </div> <div style="text-align: center;"> MEMBER OF: </div> <div style="text-align: center;"> MEMBER OF: </div> </div>				LOCATION <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>																																								
	<h2 style="margin: 0;">FINISHED FLOOR CLEANOUTS</h2> <h3 style="margin: 0;">WITH "TWIS-TO-FLOOR®" ADJUSTABLE TOPS</h3>																																												
DRAWING NUMBER S4020	SIZE A	SCALE: NONE	DATE: 2-16-70	APPROVED BY: JM	CHECKED BY: BH	DRAWN BY: RK	DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE																																						
<h2 style="margin: 0;">ROUND NICKEL BRONZE TOP</h2>																																													
<p>FUNCTION: For use in finished floors bearing foot and medium load wheeled traffic. Allows for easy floor level adjustment.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: left;"> <p>"C.O." cast in Secured Cover</p> <p>Flashing Clamp (when specified)</p> <p>Flashing Flange (when specified)</p> </div> <div style="text-align: center;"> </div> <div style="text-align: right;"> <p>Adj. Top and Frame</p> <p>Min. 3 3/16" (81) Max. 4 3/8" (111)</p> </div> </div> <p style="text-align: center; margin-top: 10px;">TWIS-TO-FLOOR® ADJUSTMENT</p> <p style="text-align: center; margin-top: 5px;">NO-HUB OUTLET</p> <p style="text-align: center; margin-top: 5px;">"A" (Pipe Size) = 02(50), 03(75), 04(100) or 05(125)</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p><input type="checkbox"/> Fig. 4020S.....Gasket Seal - ABS Plug</p> <p><input type="checkbox"/> Fig. 4021S.....Gasket Seal - Bronze Plug</p> <p><input type="checkbox"/> Fig. 4023S.....Taper Thread - Bronze Plug</p> <p><input type="checkbox"/> Fig. 4024S.....Taper Thread - ABS Plug</p> </div> <div style="width: 50%;"> <p>(Twis-to-Floor® design shown with gasketed plug.)</p> </div> </div>																																													
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>REGULARLY FURNISHED:</p> <p>Duco Cast Iron Cleanout with Round Adjustable Scoriated Secured Nickel Bronze Top. Closure Plug Type as Indicated By Figure Number Selected.</p> </div> <div style="width: 30%;"> <p>VARIATIONS:</p> <p><input type="checkbox"/> Flashing Flange -F</p> <p><input type="checkbox"/> Flange with Flashing Clamp -F-C</p> <p><input type="checkbox"/> Carpet Clamping Type -X</p> <p><input type="checkbox"/> Carpet Marker Type -Y</p> <p><input type="checkbox"/> Vandal Proof Top -U</p> <p><input type="checkbox"/> Wide Flange (DX)</p> </div> <div style="width: 30%;"> <p>OPTIONAL MATERIALS:</p> <p><input type="checkbox"/> Galvanized Cast Iron -G</p> <p><input type="checkbox"/> Polished Bronze Top -PB</p> </div> </div>																																													
<p>NOTE: Dimensions shown in parentheses are in millimeters.</p>																																													
FIGURE NUMBER 4020 SERIES	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">N</td> <td style="width: 10%;">11-20-09</td> <td style="width: 40%;">Revised Variations</td> <td style="width: 10%;">RN</td> <td style="width: 10%;">BW</td> <td style="width: 10%;">WEIGHT POUNDS</td> <td style="width: 10%;">VOLUME CUBIC FEET</td> <td style="width: 10%;">FIGURE NUMBER</td> </tr> <tr> <td>M</td> <td>12/18/08</td> <td>Addition to Variations</td> <td>JJ</td> <td>BW</td> <td></td> <td></td> <td rowspan="3" style="font-size: 2em; font-weight: bold;">4020 SERIES</td> </tr> <tr> <td>L</td> <td>12/17/04</td> <td>Added Core-Drilling Note</td> <td>JJ</td> <td>CL</td> <td></td> <td></td> </tr> <tr> <td>K</td> <td>07/26/02</td> <td>Corrected Clamp & Flange view</td> <td>JJ</td> <td>CL</td> <td></td> <td></td> </tr> <tr> <td>REV.</td> <td>DATE</td> <td>DESCRIPTION</td> <td>BY</td> <td>CKD. BY</td> <td></td> <td></td> <td></td> </tr> </table>	N	11-20-09	Revised Variations	RN	BW	WEIGHT POUNDS	VOLUME CUBIC FEET	FIGURE NUMBER	M	12/18/08	Addition to Variations	JJ	BW			4020 SERIES	L	12/17/04	Added Core-Drilling Note	JJ	CL			K	07/26/02	Corrected Clamp & Flange view	JJ	CL			REV.	DATE	DESCRIPTION	BY	CKD. BY									
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K	07/26/02	Corrected Clamp & Flange view	JJ	CL																																									
REV.	DATE	DESCRIPTION	BY	CKD. BY																																									



Chesapeake™

Wall-Mount Bathroom Sink

K-1722

Features

- Made from premium materials that withstand high-volume usage.
- Constructed of vitreous china.
- 19-1/4" L x 17-1/4" W
- Wall-mount installation.
- Faucet not included.
- Ledge-back
- Includes wall hanger.
- Drilled for concealed arm carrier.

Recommended Accessories

K-8998 P-Trap

Components

Additional included component/s: Hanger.



ADA

Codes/Standards

ASME A112.19.2/CSA B45.1

ADA




ICC/ANSI A117.1

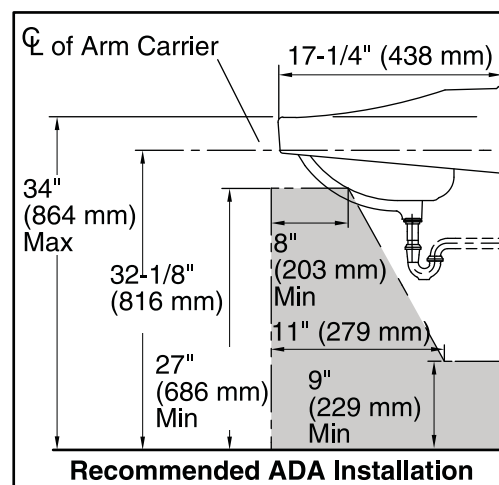
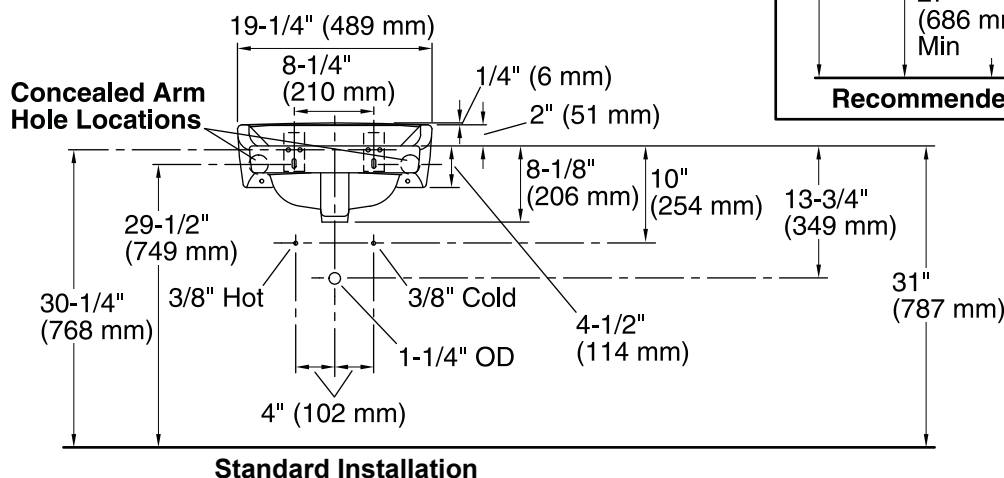
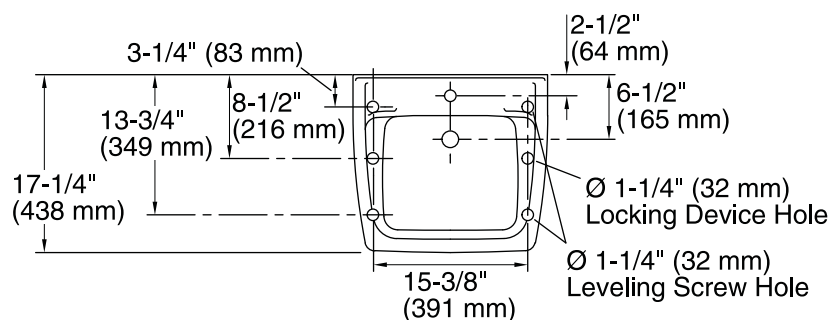
KOHLER® One-Year Limited Warranty

See website for detailed warranty information.

Available Color/Finishes

Color tiles intended for reference only.

Color	Code	Description
	0	White
	96	Biscuit
	47	Almond



Technical Information

All product dimensions are nominal.

Bowl configuration: Single

Installation: Wall-mount

Bowl area (Only): Length: 14" (356 mm)
Width: 11" (279 mm)
Water depth: 4-7/16" (113 mm)

Number of deck holes: 1

Faucet hole(s): 1-3/8" (35 mm)

Drain hole: 1-3/4" (44 mm)

Notes

Install this product according to the installation guide.

ADA compliant when installed to the specific requirements of these regulations.

Features

- Vitreous china.
- Elongated bowl.
- Siphon jet.
- Wall-mount.
- 1-1/2" rear spud.
- 1.28 gpf (4.8 lpf) or 1.6 gpf (6 lpf) depending on flushometer specified.
- 10-1/2" (267 mm) x 9" (229 mm) water area.
- 26-1/2" (673 mm) x 16-1/2" (419 mm) x 13-1/4" (337 mm).

Recommended Accessories

K-4731-C Commercial Heavy-duty Toilet Seat
K-4731-SC Commercial Heavy-duty Toilet Seat
K-4731-GC Commercial Heavy-duty Toilet Seat

Components

Additional included component/s: Spud.



ADA **CSA B651**

Codes/Standards





ASME A112.19.2/CSA B45.1
DOE - Energy Policy Act 1992
ADA
ICC/ANSI A117.1
CSA B651

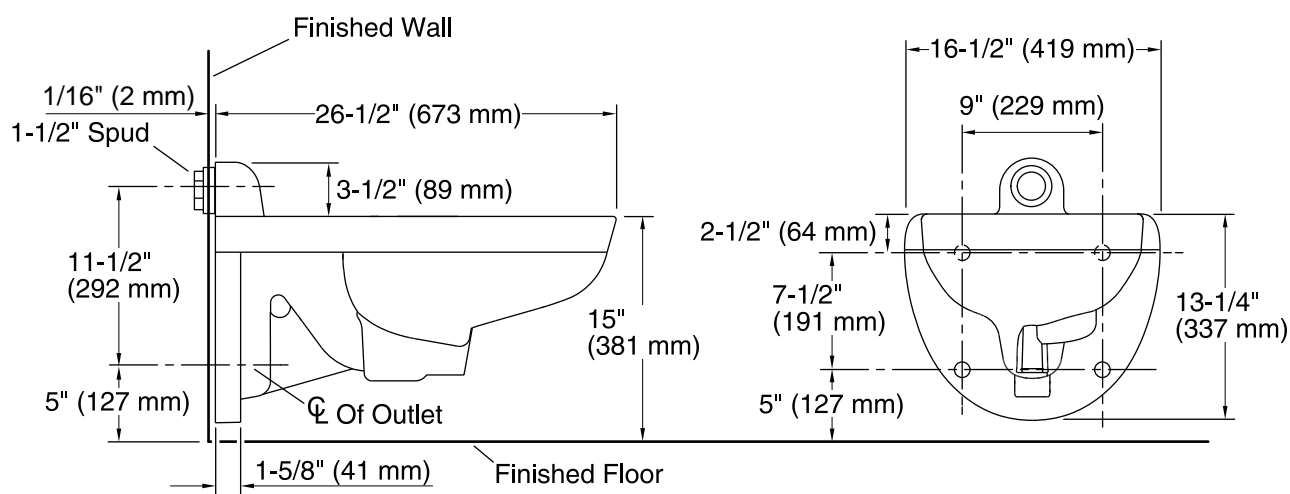
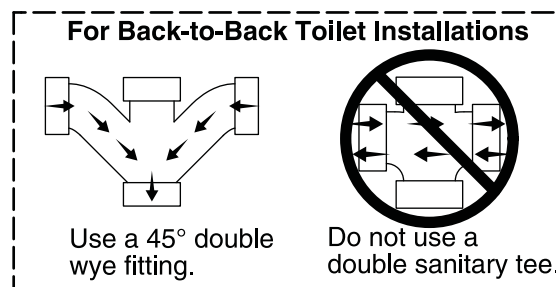
KOHLER® One-Year Limited Warranty

See website for detailed warranty information.

Available Color/Finishes

Color tiles intended for reference only.

Color	Code	Description
	0	White
	96	Biscuit
	47	Almond
	7	Black Black™



Technical Information

All product dimensions are nominal.

Flush type:	Siphon jet
Spud size:	1-1/2", Inlet, Rear
Trap passageway:	2-1/8" (54 mm)
Water surface size:	10-1/2" x 9" (267 mm x 229 mm)
Rim to water surface:	5-1/4" (133 mm)
Seat-mounting holes:	5-1/2" (140 mm)

Fixture Supply Requirements

Min static pressure:	35 psi (241.3 kPa)
Max static pressure:	80 psi (551.6 kPa)
Min flow rate:	25 gpm (94.6 lpm)

Notes

Install this product according to the installation guide.

Refer to manufacturer's instructions and local codes for flushometer requirements.

For back-to-back toilet installations: Use only a 45° double wye fitting.

ADA, CSA B651 compliant when installed to the specific requirements of these regulations.

The Model Plumbing Codes require the installation of elongated open-front toilet seats on public bathrooms.

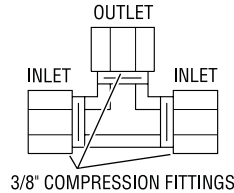


INSTALLATION INSTRUCTIONS ADDENDUM

USE OF ETF-617-A BAK-CHEK® TEE OPTIMA® SENSOR OPERATED LAVATORY AND SINK FAUCETS

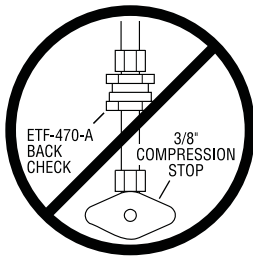
The following instructions are to be used in conjunction with the Installation Instructions furnished with the Sloan Optima and Optima *Plus* faucets.

Sloan Optima and Optima *Plus* faucets are now being furnished with the ETF-617-A Bak-Chek Fitting. This 3/8" compression tee fitting includes integral back checks in both inlets.



ETF-617-A Bak-Chek® Tee

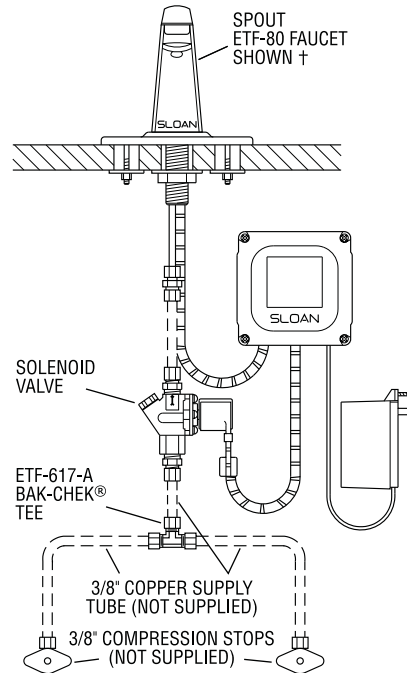
The ETF-470-A Back Checks are no longer used or provided with the Optima faucet.



When installing the faucet please, disregard "**Step 1 — Install Back Checks.**" Instead, simply connect the Hot and Cold water supplies directly from the Supply Stops to the Bak-Chek Tee.

Complete the faucet installation procedure as instructed in the Installation Instructions furnished with the faucet.

Typical Faucet Rough-in



† The above rough-in is representative of a typical faucet installation. Installation may vary slightly depending on the model of Sloan Faucet used. See Faucet Installation Instructions for more information.

The ETF-617-A Bak-Chek is not used or provided when the faucet is supplied or installed with any of the following Sloan Temperature Mixing Valves:

- **MIX-100-A / MIX-110-AA** ("ADM" Variation)
Above Deck Mechanical Mixing Valve
- **MIX-60-A** ("BDM" Variation)
Below Deck Mechanical Mixing Valve
- **MIX-135-A** ("BDT" Variation)
Below Deck Thermostatic Mixing Valve
- **Mix-70-A or MIX-75-A**
Thermostatic Mixing Valve

The information contained in this document is subject to change without notice.

SLOAN VALVE COMPANY • 10500 Seymour Avenue • Franklin Park, IL 60131

Ph: 1-800-9-VALVE-9 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • <http://www.sloanvalve.com>
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ETF-880

► Description

Sensor Activated Electronic Hand Washing Faucet with Metal Throat Plate, for tempered or hot/cold water operation.

► Flow Rate

☐ 0.5 gpm/1.9 Lpm Vandal Resistant Spray Head
(See Accessories for other Spray Head options)

► Specifications

ADA Compliant, Sensor Activated, 24 VAC, Chrome Plated Brass, Hand Washing Faucet with the following features:

- Splash-proof Circuit Control Module
- Sensor Range Adjustment Screw
- Troubleshooting LED Indicator Lights
- User Friendly Variable Time Out Settings
- Filtered Solenoid Valve with serviceable "Y" Strainer Filter
- Chrome Plated Metal Throat Plate
- Bak-Chek[®] Tee for Hot/Cold Supply
- Trim Plate with Anti-Rotation Pin (specify 4" or 8")
- 120 VAC/24 VAC Transformer (specify Plug-in or Box Mount)
- Vandal Resistant Spray Head with Pressure Compensating Flow Control
- Metal Jacketed Wire Protection for Sensor and Solenoid Leads
- Modular Quick-Release Sensor and Solenoid Connections

► Variations

(Add suffix to Model Number for inclusion with Faucet)

• Trim Plate (must be specified)

- ☐ -4 Trim Plate for 4" Centerset Sink
☐ -8 Trim Plate for 8" Centerset Sink

• Transformer Type (must be specified)

- ☐ P Plug-in Transformer (furnished with ETF-233)
☐ B Box Mount (furnished with EL-248-40)
☐ LT Less Transformer
(specify Transformer separately - See Accessories)

• Temperature Mixing Valves (optional)

- ☐ ADM Above Deck Mechanical Mixing Valve
☐ BDM Below Deck Mechanical Mixing Valve
☐ BDT Below Deck Thermostatic Mixing Valve

Bak-Chek[®] Tee not required or provided when a Temperature Mixing Valve is included with the faucet.

Consult Factory for Finish Variations

► Accessories (Specify separately)

• Transformers

- ☐ ETF-233 120 VAC/24 VAC, 50/60 Hz (35 VA) - Plug-in
(will operate up to 2 faucets)
☐ EL-248-40 120 VAC/24 VAC, 50/60 HZ (40 VA) - Box Mount
(will operate up to 2 faucets)
☐ EL-154 120 VAC/24 VAC, 50/60 Hz (50 VA) - Box Mount
(will operate up to 3 faucets)
☐ EL-208 120 VAC/24 VAC, 50/60 HZ (100 VA) - Foot Mount
(will operate up to 6 faucets)
☐ EL-342 240 VAC/24 VAC, 50/60 Hz (50 VA) - Box Mount
(will operate up to 3 faucets)

• Vandal Resistant Spray Heads

- ☐ ETF-1028-A 1.5 gpm/5.7 Lpm Laminar Flow Spray Head
(recommended for medical applications)

• Grid Strainer

- ☐ ETF-460-A Chrome Plated Brass Grid Strainer w/1¼" Outlet Tube

See OPTIMA Accessories Section of the Sloan Catalog for a complete listing of OPTIMA Faucet Accessories and Variations.



► ADA Compliant

► Automatic

The Sloan OPTIMA[®] ETF-880 Electronic Hand Washing Faucet operates by means of an infrared sensor. Once the user enters the sensor's effective range, the Solenoid activates the water flow. Tempered water flows from the Faucet until hands are moved away. The Faucet then automatically shuts off.

► Hygienic

The ultimate in sanitary protection — there are no handles to turn or buttons to push. Helps to control the spread of infectious diseases. High style design makes the ETF-880 ideal for upscale public rest rooms.

► Economical

Automatic operation provides water usage savings over other faucet devices. Reduces maintenance and operation costs.

► Warranty

3 year (limited)

► Compliant to:

ASME A112.18.1M



This product may contribute to LEED credits. See details on LEED calculation worksheet.

This space for Architect/Engineer approval

Job Name _____	Date _____
Model Specified _____	Quantity _____
Variations Specified _____	
Customer/Wholesaler _____	
Contractor _____	
Architect _____	

ETF-880

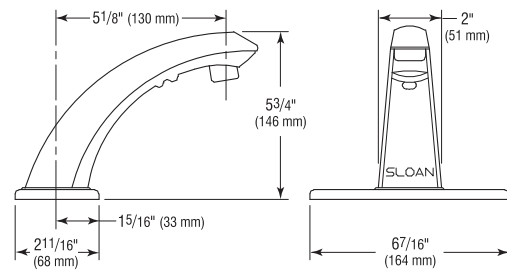
Description

Sensor Activated Electronic Hand Washing Faucet with Metal Throat Plate, for tempered or hot/cold water operation.

Flow Rate

□ 0.5 gpm/1.9 Lpm Vandal Resistant Spray Head
(See Accessories for other Spray Head options)

FAUCET DIMENSIONS (Shown with 4" Trim Plate)



ELECTRICAL SPECIFICATIONS

Control Circuit

24 VAC Input/Output, 50/60 Hz,
Adjustable Range Time Out Settings,
Modular Plugs and Troubleshooting LED
Indicators.

OPTIMA® Sensor Range

Factory Set: 4" - 5" (102 mm - 127 mm)
Adjustable: 1" - 8" (25 mm -
203 mm) — Adjustability dependent
upon depth and reflectivity of basin.

Solenoid Valve

24 VAC, 50/60 Hz with Integral "Y"
Strainer Filter, 3/8" NPT Inlet/Outlet.

Time Out Adjustment Settings

3, 6, 12, 30 & 45 seconds; 1, 3 & 20
minutes. The Faucet Time Out Setting
determines the maximum time the
faucet will run upon continuous
activation. This timing can be changed
to meet individual application
requirements. Unless otherwise
specified the ETF-880 is factory set at
the 30 second time out.

Transformer

All Sloan Transformers are 50/60 Hz.
Multiple faucets can be powered by a single transformer, provided that the
transformer has been properly sized. Allow a minimum of 15 VA of current rating
for each faucet being used.

Plug-in	ETF-233	120 VAC/24 VAC - 35 VA (supplied with "P" variation)
Box Mount	EL-248-40	120 VAC/24 VAC - 40 VA (supplied with "B" variation)
Box Mount	EL-154	120 VAC/24 VAC - 50 VA
Foot Mount	EL-208	120 VAC/24 VAC - 100 VA
Box Mount	EL-342	240 VAC/24 VAC - 50 VA

Max. Distance Control Module may be Installed from Spout With Standard Cable: 12" (305 mm)

Extension Cables (Optional)

From Sensor to Control Module:			From Solenoid Valve to Control Module:		
ETF-1005-26	26"	(660 mm)	ETF-1003-36	36"	(914 mm)
ETF-1005-36	36"	(914 mm)	ETF-1003-48	48"	(1219 mm)
ETF-1005-72	72"	(1829 mm)	ETF-1003-72	72"	(1829 mm)
ETF-1005-108	108"	(2743 mm)	ETF-1003-108	108"	(2743 mm)

OPERATION

1. A continuous, invisible light
beam is emitted from the
OPTIMA® Sensor located on
the throat of the lavatory
faucet.



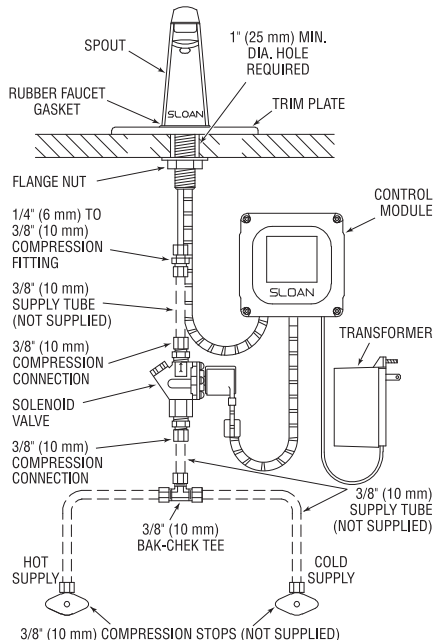
2. As the user's hands enter the
beam's effective range, the
beam is reflected back into the
Sensor Receiver and activates
the solenoid valve allowing
tempered water to flow from
the faucet. Water will flow until
the hands are removed or until
the faucet reaches its
automatic time out limit
setting.



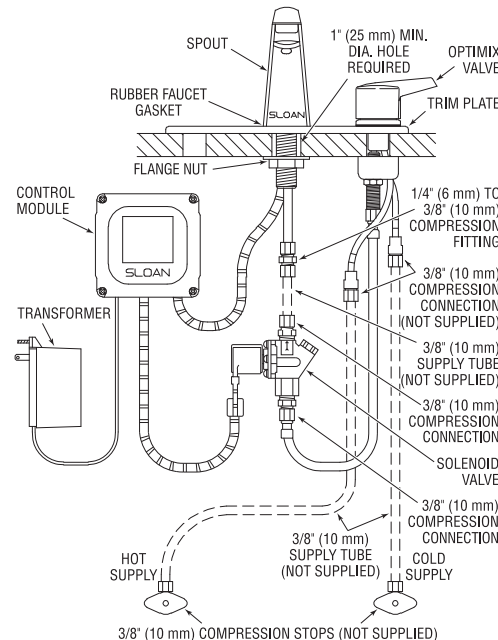
3. When hands are moved
away from the OPTIMA®
Sensor, the loss of reflected
light initiates an electrical
signal that deactivates the
Solenoid Valve shutting off
the water flow. The Circuit
then automatically resets and
is ready for the next user.



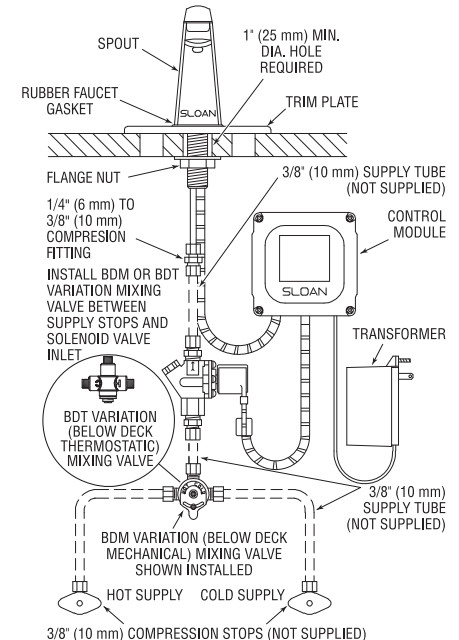
ETF-880 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply (shown with 4" trim plate)



ETF-880 Faucet with ADM Variation Mixing Valve for Hot and Cold Water Supply (shown with 8" trim plate)



ETF-880 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply (shown with 4" trim plate)



SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131

Phone: 1-800-982-5839 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • www.sloanvalve.com

INSTALLATION INSTRUCTIONS FOR BATTERY POWERED SENSOR ACTIVATED LAVATORY FAUCETS

EBF-615

Pedestal,
Battery Powered,
Sensor Activated
Lavatory Faucet



EBF-650

4" Centerset,
Battery Powered,
Sensor Activated
Lavatory Faucet



LIMITED WARRANTY

Sloan Valve Company warrants its EBF-615 and EBF-650 Faucets to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of three years (1 year for special finishes) from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of the batteries.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

PRIOR TO INSTALLATION

Prior to installing the Sloan EBF-615 or EBF-650 faucet, install the items listed below. Also, refer to rough-in illustrations on Page 2.

- Lavatory/sink
- Drain line
- Hot and cold water supply lines or tempered water supply line

Mixing Valve

When installing the faucet with a Sloan Mixing Valve, these Installation Instructions AND the Installation Instructions packaged with the Mixing Valve **MUST** be followed.

Important:

- **ALL PLUMBING IS TO BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **KEEP THREAD SEALANT OUT OF YOUR WATERWAY TO PREVENT COMPONENT PART DAMAGE! DO NOT USE ANY SEALANT ON COMPRESSION FITTINGS. FOR THREADED PIPE FITTINGS, DO NOT APPLY SEALANT TO THE FIRST TWO "STARTER" THREADS.**
- **FLUSH ALL WATER LINES UNTIL WATER IS CLEAR BEFORE CONNECTING SOLENOID TO SUPPLY STOPS.**

DO NOT INSTALL THE BATTERIES UNTIL THE FAUCET IS COMPLETELY INSTALLED. If batteries are installed before sensor cable is connected to control module, the faucet will not properly set the sensing range for the sink on which it is installed.

TOOLS REQUIRED FOR INSTALLATION

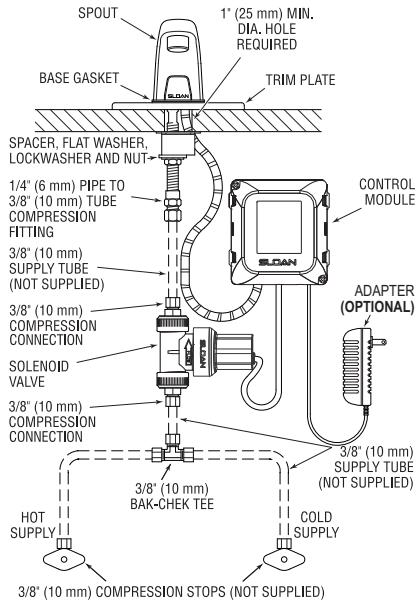
- Open end wrenches for the following hex sizes: 1/2", 9/16", 5/8", 11/16", 1"
- Basin wrench
- Phillips head screwdriver, #2
- Hammer (if installing plastic or hollow wall anchors to mount the control module)
- Pliers
- 1/4" drill bit (if installing plastic wall anchors to mount the control module)
- 5/16" drill bit (if installing hollow wall anchors to mount the control module)
- 3/8" drill bit (if installing toggle nut anchors to mount control module)

Bak-Chek[®] Tee Usage

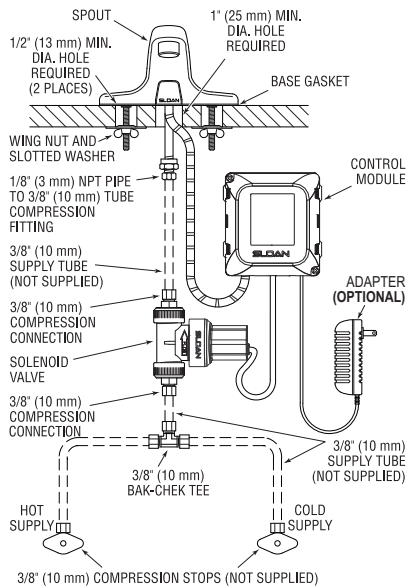
When connecting the EBF-615 or EBF-650 faucet to both hot and cold water supplies, a Bak-Chek[®] Tee is provided and required as illustrated in Step 3. Water temperature can be controlled by adjusting the supply stops. When connecting the faucet to a single line water supply or a pre-tempered water supply, a Bak-Chek[®] Tee is not required. A Bak-Chek[®] Tee is not required or provided when a Temperature Mixing Valve is included with the faucet.

FAUCET ROUGH-IN

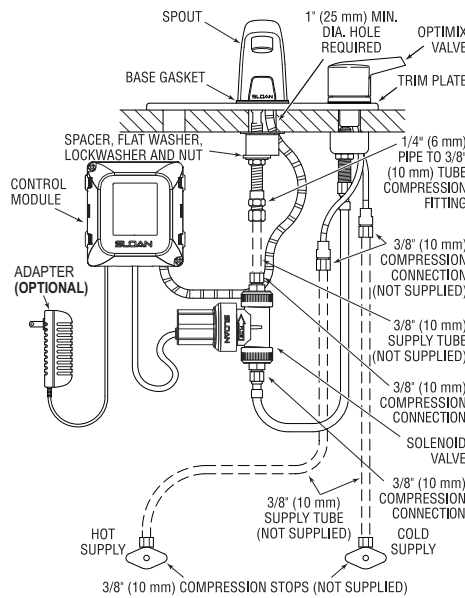
EBF-615 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply (shown with 4" trim plate)



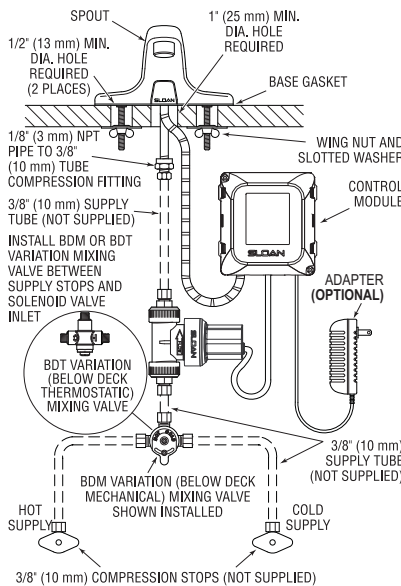
EBF-650 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply



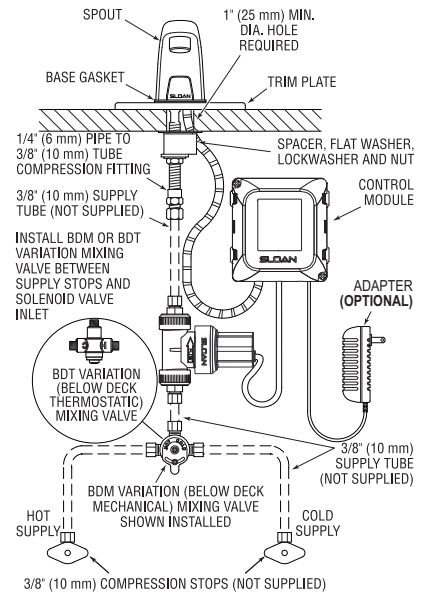
EBF-615 Faucet with ADM Variation Mixing Valve for Hot and Cold Water Supply (shown with 8\"/>



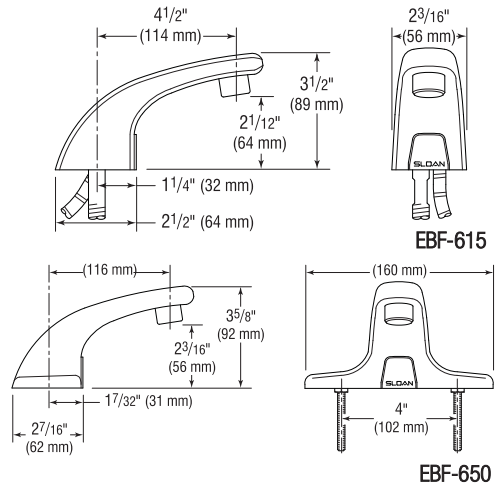
EBF-650 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply



EBF-615 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply (shown with 4\"/>



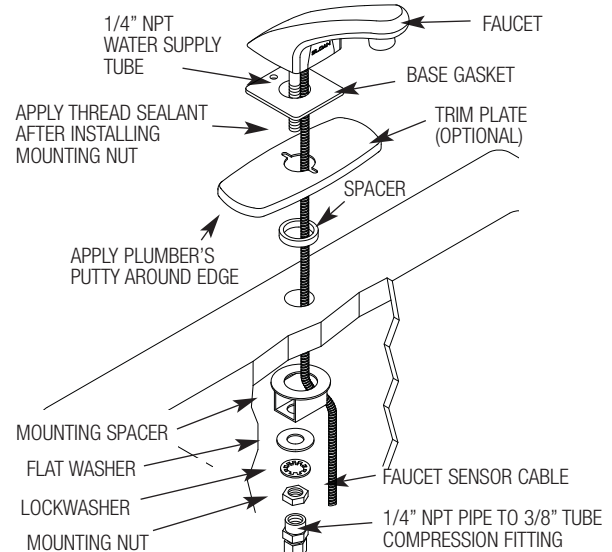
FAUCET SIDE VIEW



1A - Install Faucet Spout and Optional Trim Plate — EBF-615

Sloan Valve Company recommends installation of our trim plate with anti-rotation feature to prevent rotation of this single-hole pedestal-style faucet.

- A** Install Faucet Spout as shown. Use plumber's putty to secure optional Trim Plate, if used.
- Important:** After installing Mounting Nut, apply thread sealant or Teflon tape to threads of Water Supply Tube.

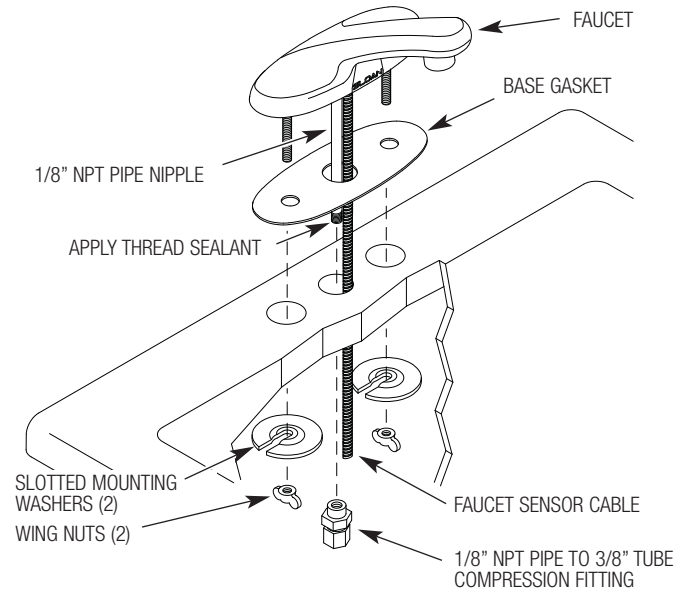


1B - Install Faucet Spout — EBF-650

Refer to the Installation Instructions included with the ETF-578-A Trim Plate for additional information about using an 8" Trim Plate with an EBF-650 faucet.

- A** Install Faucet Spout as shown.

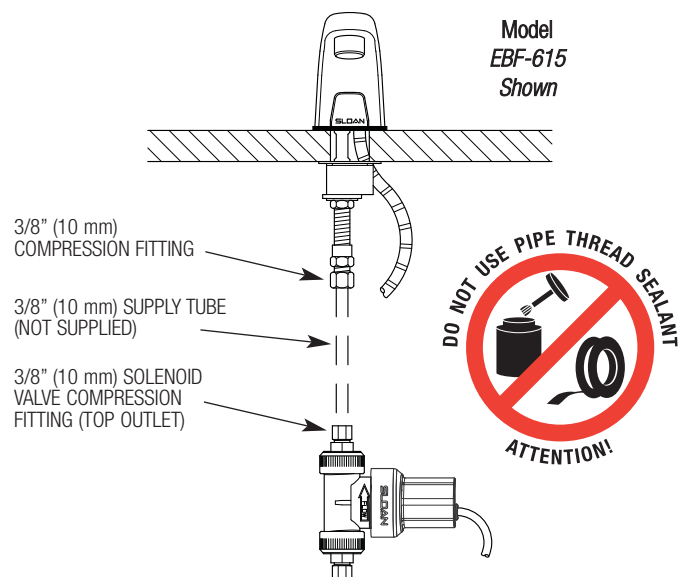
Important: Apply thread sealant or Teflon tape to threads of Water Supply Pipe Nipple.



2 - Install Solenoid Valve

Flow direction of Solenoid Valve is indicated by an arrow on Valve Body.

- A** Install 3/8 inch (10 mm) supply tube (furnished by installer) between the Compression Fittings on Spout and the top outlet of Solenoid Valve.



3 - Connect Supply Line(s) from Supply Stop(s) to Solenoid Valve Inlet

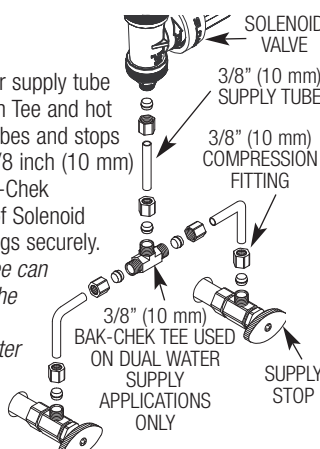
Important: Keep thread sealant out of your waterway and prevent component part damage! Do not use sealant on compression fittings. When thread sealant is used, do not apply it to the first two "starter" threads.

Important: Flush dirt, debris, and sediment from the supply line(s).

- A** Dual Line Hot and Cold Water Supply Applications

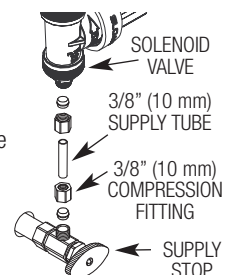
Install a 3/8 inch (10 mm) copper supply tube between Bak-Chek® Compression Tee and hot and cold supply stops. (Supply tubes and stops furnished by installer.) Install a 3/8 inch (10 mm) copper supply tube between Bak-Chek Compression Tee and inlet side of Solenoid Valve. Tighten Compression Fittings securely.

Note: Failure to install the Bak-Chek® Tee can result in a cross flow connection when the faucet is off and the supply stops are open. If pressure of the hot and cold water supply differ, hot water can migrate into the cold water supply or vice-versa. Most plumbing codes require that the Bak-Chek® be used to prevent this.



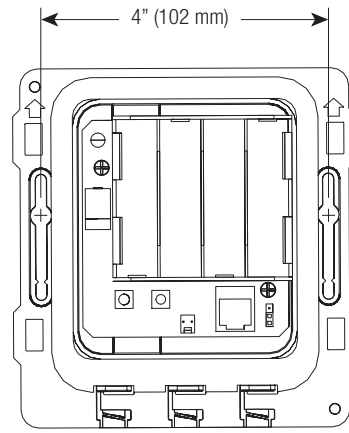
- B** Single Line Water Supply Applications

Install a 3/8 inch (10 mm) copper supply tube between the supply stop and inlet side of Solenoid Valve. (Supply tube and supply stop furnished by installer.) Tighten Compression Fittings securely.



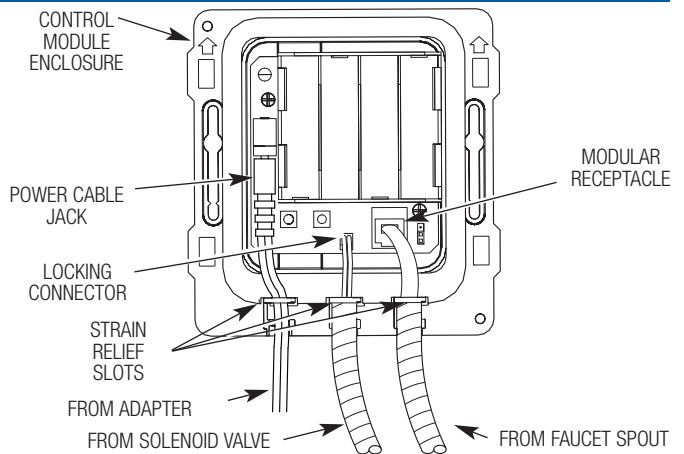
4 - Mount Control Module to Wall

- A** Install the Control Module in an appropriate location. Control Module must be installed so that all cables enter from the bottom of the unit. When installed, Cables from the Spout and Solenoid Valve to the Control Module should have some slack.
- B** Mount Control Module to wall using Mounting Screws and Plastic Anchors.



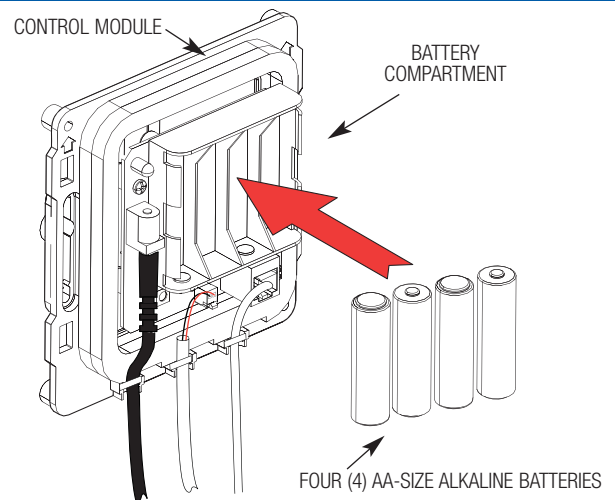
5 - Control Module Connection

- A** Route Cables from Solenoid Valve and Spout to the Control Module.
- B** Insert Locking Connector from Solenoid Valve into mating Receptacle.
- C** Insert Connector from Faucet Spout into Modular Receptacle.
- D** Insert Power Cable Jack from Adapter (optional) into Receptacle.
- E** Insert each Cable into a Strain Relief Slot.



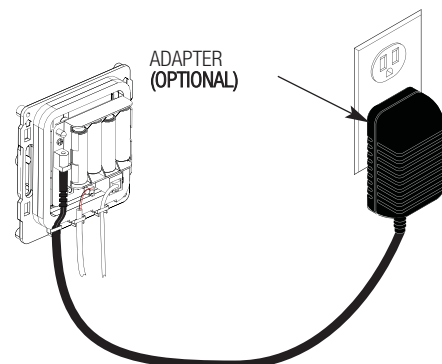
6 - Install Batteries

- A** Insert four (4) AA-size Alkaline Batteries provided as indicated by the (+) and (—) symbols inside the Battery Compartment.



7 - Plug in Adapter (Optional)

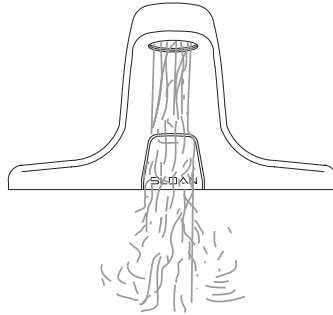
- A** Plug Adapter into Receptacle.



8 - Start-Up

- A** Activate ("dry fire") Faucet by placing hands in front of the Sensor. The Solenoid Valve should "click." Once hands are removed the Solenoid Valve should click again. If this does not occur, refer to the Troubleshooting section of this instruction manual.

Once "dry firing" segment is complete, remove spray head. Open supply stop(s) then activate Faucet by placing hands in front of the Sensor. The Solenoid Valve should "click" and water should flow from the Spout.



- B** Activate Faucet for 30 seconds by placing hands in front of the Sensor. The Solenoid Valve should "click" and water should flow from the Spout. If this does not occur, refer to the Troubleshooting section of this instruction manual.

- C** Close supply stop(s) and reinstall Spray Head in Spout using the Key provided. Reopen supply stop(s), activate Faucet and check for leaks.

9 - Range Adjustment

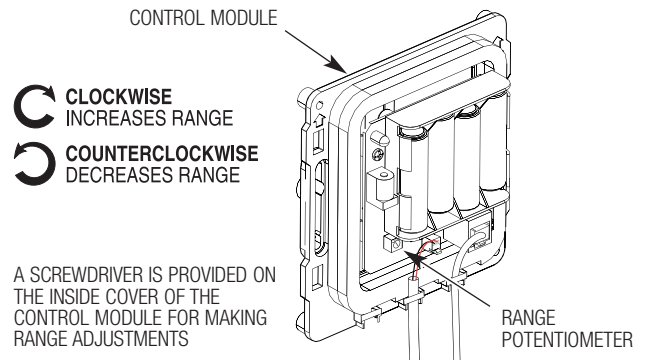
The OPTIMA Plus EBF-615 and EBF-650 Faucets are factory set to operate when hands are placed 4 to 5 inches (102 to 127 mm) from Sensor. This range should be satisfactory for most installations. If range adjustment is required, refer to the following range adjustment procedure.

- A** The Range Potentiometer is located in the Control Module.

Important: Range Potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-rotate. Over-rotating will damage range adjustment screw.

- B** Cycle Faucet several times to assure that the Sensor will not inadvertently pick up reflection off the edge of the sink. If reflection occurs, adjust Range Potentiometer counterclockwise very slightly and again cycle Faucet.

Repeat adjustment procedure until desired range is achieved.



10 - Noise Reduction (NR) and Time Out (Mode) Jumper Settings

For jumper settings, refer to Table below or label on cover of Control Module along with the instructions in this Step.

Noise Reduction (NR) Setting

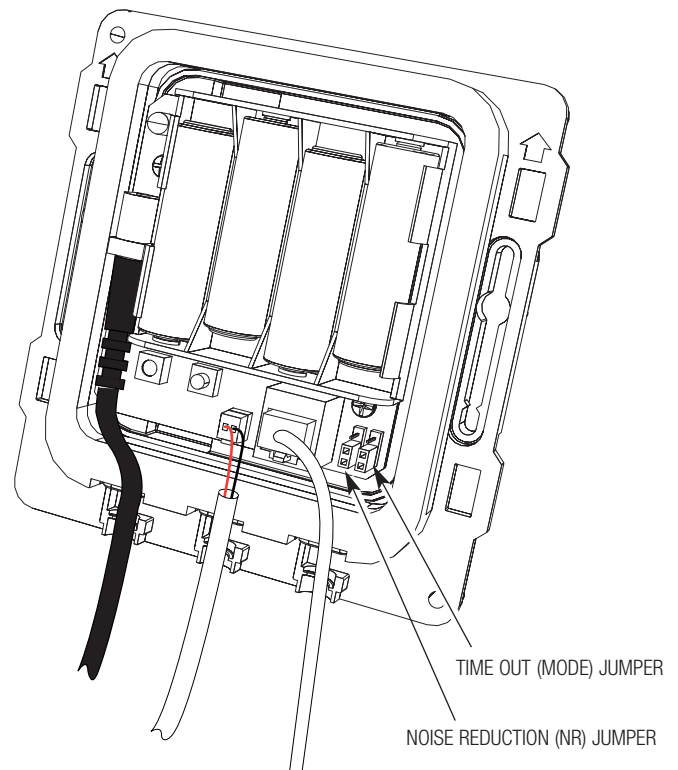
- When operating the faucet on batteries alone, set the NR jumper to bridge pins 1 and 2.
- When operating the faucet using the plug-in adapter with battery backup, bridge pins 2 and 3.

Time Out (Mode) Setting

The Faucet Time Out Setting determines the maximum time the Faucet will run upon continuous activation. This timing can be changed to meet individual application requirements.

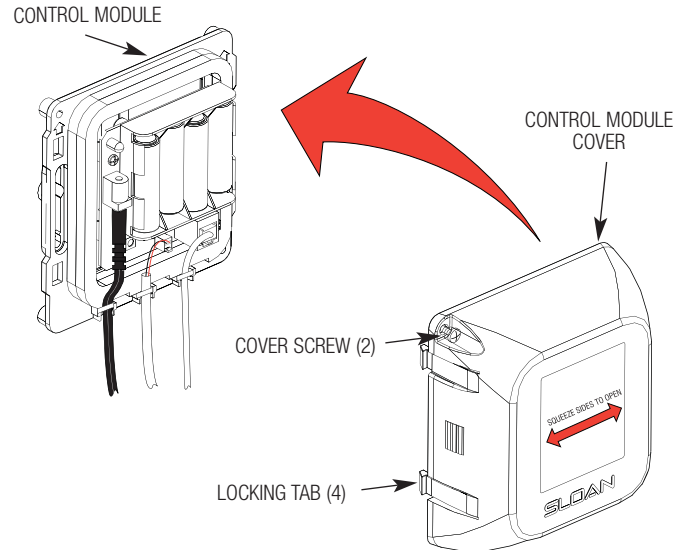
Unless otherwise specified, Faucets leave the factory set with a 30 second Time Out.

DESCRIPTION	PINS		
	1	2	3
NOISE REDUCTION (NR) SETTING			
Normal Operation (Adapter w/Battery Backup Operation)	●	●	
NR Enabled (Battery Operation Only)		●	●
TIME OUT (MODE) SETTING			
13.75 Second On Demand	●	●	
30 Second On Demand		●	●



11 - Install Cover onto Control Module

- A** Install Cover over the Control Module making sure that all four (4) locking tabs snap into place. Secure using the two (2) screws provided. Cover can be installed in only one orientation.



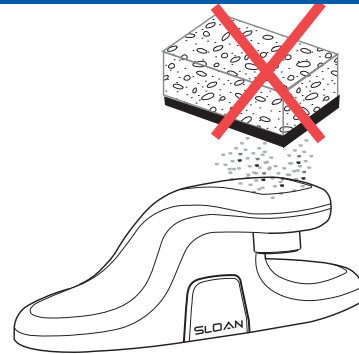
Operation

1. A continuous invisible beam of infrared light is emitted from the sensor located on the throat of the lavatory faucet.
2. As the user's hands enter the beam's effective range (beneath the spray head), the beam is reflected back into the sensor receiver and activates the solenoid valve. Tempered water flows from the faucet into the sink until the hands are removed from the beam or until the faucet reaches an automatic time out limit setting.
3. When hands are moved away from the sensor, the loss of reflected light initiates an electrical signal that deactivates the solenoid valve, shutting off the water flow. The circuit then automatically resets and is ready for the next user.

Care and Cleaning

DO NOT USE abrasive or chemical cleaners (including chlorine bleach) to clean faucets as they may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** soap and water, then wipe dry with clean cloth or towel.

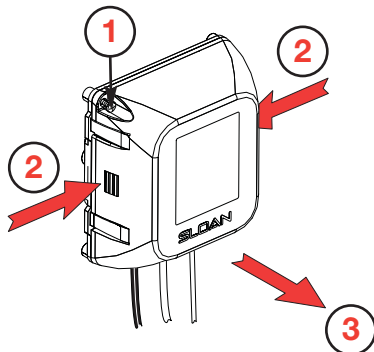
While cleaning the bathroom tile, the faucet should be protected from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.



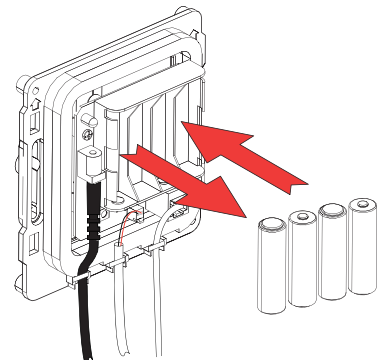
Battery Replacement Procedure (Water does not need to be turned off)

The Sloan Optima *Plus* EBF-615 and EBF-650 faucets are furnished with four (4) AA-size alkaline batteries that provide up to two (2) years of operation (8000 cycles per month). A flashing LED signal indicates that battery power will be depleted within one (1) month.

- A** Remove Cover as follows:
1. Remove the two (2) Cover Screws.
 2. Press in the middle of both sides.
 3. Pull Cover straight out from Control Module Base.



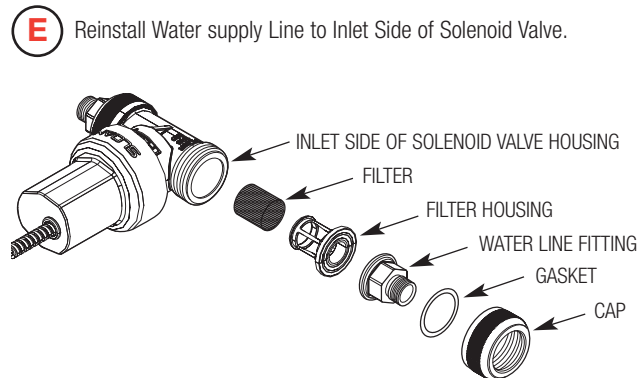
- B** Remove old batteries and insert four (4) new AA-size Alkaline Batteries as indicated by the (+) and (—) symbols inside the Battery Compartment.



- C** Reinstall Cover. Refer to Step 11.

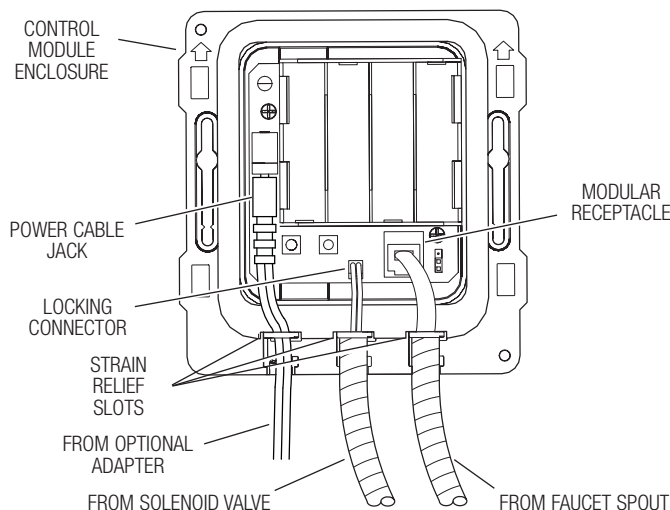
Solenoid Screen Filter Cleaning Procedure

- A** Turn off water supply at supply stop(s). Activate Faucet to relieve system pressure.
- B** Remove Water Supply Line from Inlet Side of Solenoid Valve. Remove Cap, Water Line Fitting, Gasket, Filter Housing and Filter from Solenoid Valve Housing.
- C** Slide Filter off Filter Housing. Clean Filter using fresh tap water only. If necessary, use a small brush to clean. Use caution while cleaning to prevent damage to Filter.
If any Filter components are damaged, replace as necessary. Examine the Gasket for wear or damage; replace if necessary.
- D** Reinstall Filter on Filter Housing.
Install Filter Housing, Gasket, Water Line Fitting and Cap onto Solenoid Valve Housing.
Tighten Cap securely.



Troubleshooting Guide

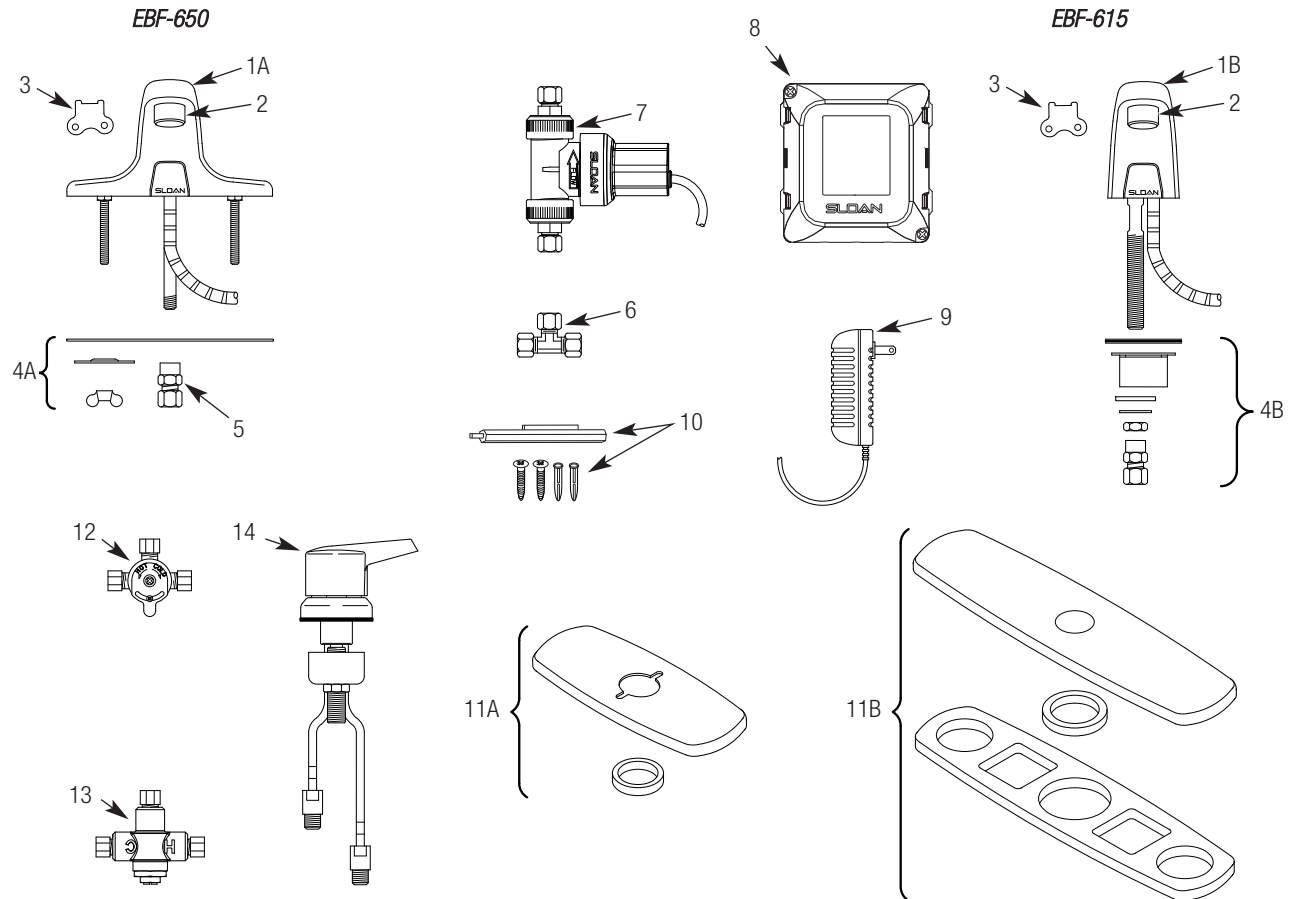
1. **PROBLEM:** Sensor LED does not function (indicator light on sensor window in faucet spout does not flash during initial 10 minute set-up mode).
CAUSE: There is no visible indicator light. Normal operation.
SOLUTION: This is a normal operating feature of the faucet.
2. **PROBLEM:** Faucet does not deliver any water when Sensor is activated.
INDICATOR: Solenoid valve produces audible "CLICK."
CAUSE: Water supply stop(s) closed.
SOLUTION: Open supply stop(s) completely.
INDICATOR: Solenoid valve DOES NOT produce an audible "CLICK."
CAUSE: Solenoid Lead is not properly connected to the Control Module.
SOLUTION: Disconnect and reconnect Solenoid Lead to the Control Module.
CAUSE: No battery or Transformer (optional) power is being supplied to Sensor.
SOLUTION: Ensure that the batteries are installed properly. Check that the orientation of each battery matches the positive (+) and negative (—) symbols shown on the bottom of the battery compartment. Reinsert the Batteries into the Control Module. Transformer (optional) is unplugged or wall receptacle has no power.
CAUSE: Sensor Cable is not properly connected to the Control Module.
SOLUTION: Disconnect and reconnect Sensor Cable to the Control Module.
CAUSE: Sensor range is set at minimum distance.
SOLUTION: Increase Sensor range. Refer to Step 9, Range Adjustment.
CAUSE: Control Module assembly is defective.
SOLUTION: Replace Control Module assembly.
3. **PROBLEM:** Faucet delivers only a slow flow or dribble when Sensor is activated.
CAUSE: Water supply stop(s) partially closed.
SOLUTION: Open supply stop(s) completely.
CAUSE: Solenoid Filter is clogged.
SOLUTION: Remove, clean and reinstall Filter. Refer to Solenoid Screen Filter Cleaning Procedure on Page 6. Replace with new Solenoid Filter Kit if necessary.
CAUSE: Aerator is clogged.
SOLUTION: Remove, clean and reinstall Aerator.
4. **PROBLEM:** Faucet does not stop delivering water or continues to drip after user is no longer detected (automatic shut-off fails even when batteries are removed).
CAUSE: Solenoid Valve has been connected backwards.
SOLUTION: Disconnect Solenoid Valve compression fittings at both the inlet and outlet positions. The water should flow from inlet through the Solenoid Valve to the outlet according to the direction of the arrow shown on the side of the Solenoid Valve. Reconnect the compression fittings in the correct orientation.
CAUSE: Solenoid Valve is dirty.
SOLUTION: Backflush by reversing water flow (opposite to the direction shown by the arrow on the side of the Solenoid Valve) through the Solenoid Valve. Reconnect the compression fittings in the correct orientation. Activate faucet.
CAUSE: Solenoid Valve Module is defective.
SOLUTION: Replace Solenoid Valve Module.
5. **PROBLEM:** The water temperature is too hot or too cold on a faucet connected to hot and cold supply lines with Bak-Chek Tee.
CAUSE: Supply stops are not adjusted properly.
SOLUTION: Adjust supply stops.
NOTE: For some systems, a Thermostatic Mixing Valve may be required.
6. **PROBLEM:** The Red LED turns on in the control module (below deck).
CAUSE: One (or more) of the batteries is "dead."
SOLUTION: To ensure proper operation, insert four (4) new AA-size Alkaline batteries. Check that the orientation of each battery matches the positive (+) and negative (—) symbols shown on the bottom of the battery compartment. Reinsert Batteries into the Control Module.



When assistance is required, please contact your local Sloan Representative or Sloan Valve Company Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614)

PARTS LIST



Item No.	Part No.	Description
1A	ETF-755-A	CP Faucet Assembly 4" Centerset (ETF-650)
1B	EBF-120-A	Pedestal Faucet Spout and Sensor Assembly (EBF-615)
—	ETF-749-A	Sensor Only
2	ETF-1023-A	0.5 gpm (1.9 Lpm) Spray Head with Key (male thread)
	ETF-1024-A	2.2 gpm (8.3 Lpm) Aerator Spray Head with Key (male thread)
	F-174	CP Spray Head 0.5 gpm Laminar Flow Spray Head (male thread)
3	ETF-435	Replacement Key Only for ETF-1023-A 0.5 gpm (1.9 Lpm) Spray Head and ETF-1024-A 2.2 gpm (8.3 Lpm) Aerator Spray Head (NOT required for F-175-L 2.2 gpm/8.3 Lpm Laminar Flow Spray Head)
4A	ETF-546-A	Faucet Mounting Kit for EBF-650 includes Base Gasket, two (2) Slotted Mounting Washers, two (2) Wing Nuts and ETF-547 Compression Fitting Connector
4B	EBF-123-A	Faucet Mounting Kit for EBF-615 includes Base Gasket, Spacer, Washer, 9/16" Lockwasher, 1/4" NPSM Hex Nut and ETF-547 Compression Fitting Connector
5	ETF-547	1/8" NPT Pipe to 3/8" Tube Compression Fitting Connector (female)
6	ETF-617-A	3/8" Bak-Chek® Tee Compression Fitting
7	ETF-740-A	6 VDC Solenoid Assembly
8	ETF-735-A	Control Module
—	ETF-736	Control Module Replacement Gasket (two required)

Item No.	Part No.	Description
9	SFP-6	110 VAC/6 VDC Plug-in Adapter (optional)
10	ETF-443-A	Hardwired Mounting Kit (optional)
—	EBF-113	Compression Fitting Kit (optional) includes:
	ETF-209	2 compression nuts
	ETF-208	2 ferrules
	ETF-91	1 plastic screwdriver

OPTIONAL TRIM PLATES

11A	ETF-607-A	4" (102 mm) Centerset Single-hole Trim Plate Kit for EBF-615 Faucet (Faucet only)
11B	ETF-608-A	8" (204 mm) Centerset Single-hole Trim Plate Kit for EBF-615 Faucet (Faucet only)

OPTIONAL MIXING VALVES

12	MIX-60-A	Below Deck Mechanical Water Mixing Valve (BDM Variation)
13	MIX-135-A	Below Deck Thermostatic Water Mixing Valve (BDT Variation)
14	MIX-110-AA	Optimix® Deck Mounted Water Mixing Valve (only available for EBF-615 faucets)

For additional information about Sloan Mixing Valves or Trim Plates, consult our Installation Instructions and Maintenance Guides.

SLOAN

SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131
 Phone: 1-800-9-VALVE-9 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380
www.sloanvalve.com

140-1.28 ES-S TMO SWB



Description

Concealed, Sensor Activated Royal® Model Water Closet Flushometer with True Mechanical Override button, enclosed behind a 13½" x 13½" (343 mm x 343 mm) Wall Frame with Stainless Steel Access Panel, for floor mounted back spud bowls with exposed back spud.

Flush Cycle

Model 140-1.28 ES-S TMO SWB High Efficiency (1.28 gpf/4.8 Lpf)

Specifications

Quiet, Concealed, Diaphragm Type, Rough Brass Closet Flushometer with the following features:

- PERMEX™ Synthetic Rubber Diaphragm with Dual Filtered Fixed Bypass
- OPTIMA® EL-1500-L Self-Adaptive Infrared Sensor with Indicator Light
- "Walk By" Delay of Eight (8) Seconds Prevents Unintentional Flushes
- User friendly three (3) second Flush Delay
- Courtesy Flush™ Non-Hold-Open True Mechanical Override
- Non-Hold-Open Integral Solenoid Operator
- Die Cast Sensor Plate with no visible Fasteners (for 2-gang Electrical Box)
- 1" I.P.S. Wheel Handle Bak-Chek® Angle Stop
- Adjustable Tailpiece
- High Back Pressure Vacuum Breaker Flush Connection, Spud Coupling and Flanges for a 1½" Exposed Back Spud
- Sweat Solder Adapter
- Chrome Plated Exposed Flushometer Parts
- High Copper, Low Zinc Brass Castings for Dezincification Resistance
- Non-Hold-Open Integral Solenoid Operator, Fixed Metering Bypass and No External Volume Adjustment to Ensure Water Conservation
- Flush Accuracy Controlled by CID™ Technology
- Diaphragm, Stop Seat and Vacuum Breaker molded from PERMEX™ Rubber Compound for Chloramine Resistance

Valve Body, Cover, Tailpiece and Control Stop shall be in conformance with ASTM Alloy Classification for Semi-Red Brass. Valve shall be in compliance with the applicable sections of ASSE 1037. Installation conforms to ADA requirements.

L Dimension

Specify the "L" Dimension for the proper length of the Flush Connection. The "L" Dimension is equal to the Wall Thickness (to nearest whole inch) plus 2¾".

Accessories

- ☐ **EL-154** Transformer (120 VAC/24 VAC 50 VA)
- ☐ **EL-342** Transformer (240 VAC/24 VAC 50 VA)

See Accessories Section and OPTIMA Accessories Section of the Sloan catalog for details on these and other OPTIMA Flushometer variations.

Automatic

Sloan OPTIMA® equipped Flushometers provide the ultimate in sanitary protection and automatic operation. There are no handles to trip or buttons to push. The Flushometer operates by means of an infrared sensor that adapts to its surrounding. Once the user enters the sensor's effective range and then steps away, the Flushometer Solenoid initiates the flushing cycle to flush the fixture.

Hygienic

User makes no physical contact with the Flushometer surface except to initiate the Override Button when required. Helps control the spread of infectious diseases. 24-Hour Sentinel Flush keeps fixture fresh during periods of nonuse.

Economical

Automatic operation provides water usage savings over other flushing devices. Reduces maintenance and operation costs.

Practical

Solid state electronic circuitry assures years of dependable, trouble-free operation. The operational components of the Flushometer are identical to a handle activated Royal® Flushometer, proven by 90 years of experience.

Warranty

3 year (limited)

Patent Pending



This space for Architect/Engineer approval

Job Name _____	Date _____
Model Specified _____	Quantity _____
Variations Specified _____	
Customer/Wholesaler _____	
Contractor _____	
Architect _____	

140-1.28 ES-S TMO SWB

WIRING DIAGRAM



Description

Concealed, Sensor Activated Royal® Model Water Closet Flushometer with True Mechanical Override button, enclosed behind a 13½" x 13½" (343 mm x 343 mm) Wall Frame with Stainless Steel Access Panel, for floor mounted back spud bowls with exposed back spud.

Flush Cycle

Model 140-1.28 ES-S TMO SWB High Efficiency (1.28 gpf/4.8 Lpf)

ELECTRICAL SPECIFICATIONS

Control Circuit

Solid State
24 VAC Input
24 VAC Output
8 Second Arming Delay
3 Second Flush Delay
24-Hour Sentinel Flush

OPTIMA Sensor Range

Nominal 22" - 42" (559 mm - 1067 mm)
Self-adaptive Window ± 10" (254 mm)

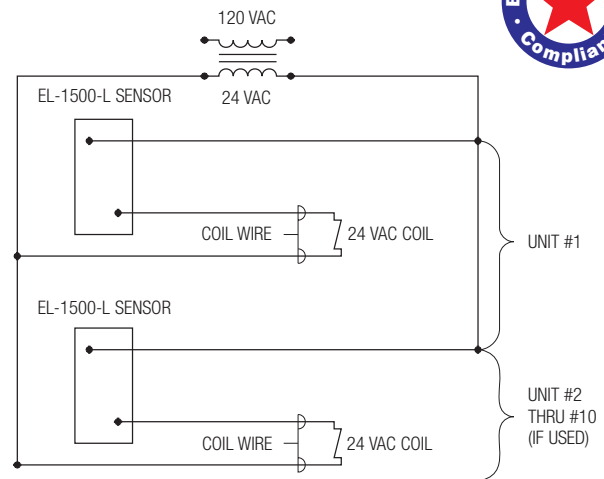
Solenoid Operator

24 VAC, 50/60 Hz

Transformer

Sloan Part #EL-154
120 VAC, 50/60 Hz Primary
24 VAC, 50/60 Hz Secondary
Class II, UL Listed, 50 VA.

Sloan Part #EL-342
240 VAC, 50/60 Hz Primary
24 VAC, 50/60 Hz Secondary
Class II, UL Listed, 50 VA.



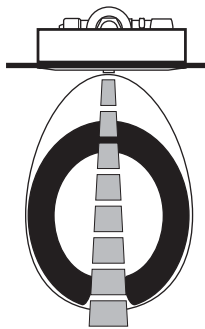
One Transformer serves up to ten (10) OPTIMA Closet/Urinal Flushometers. Specify number of transformers required accordingly.

Wall Plate Specifications

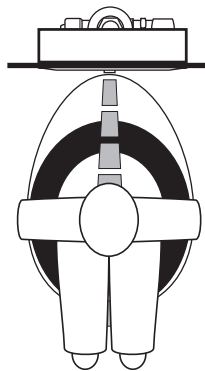
Sloan Wall Plate Assembly
Frame: 12" x 12" x 4" (305 mm x 305 mm x 102 mm), #16 Gauge
Cover (Access Panel): 13½" x 13½" (343 mm x 343 mm), #16 Gauge, #304
Stainless Steel, #4 Finish
Frame: (4) #8-32x¾" Drilled Spanner Flat Head – Spanner Bit Provided

OPERATION

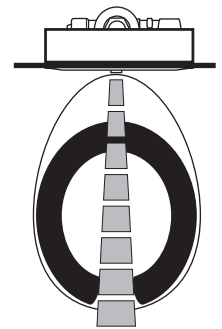
1. A continuous, invisible light beam is emitted from the OPTIMA Sensor.



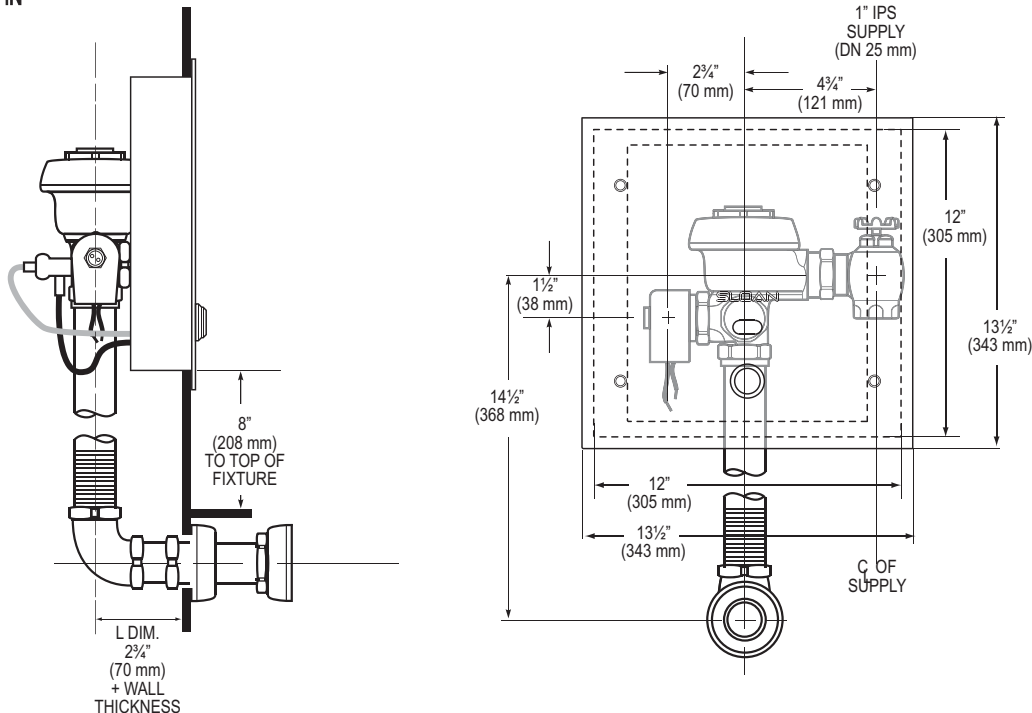
2. As the user enters the beam's effective range (22" to 42") the beam is reflected into the OPTIMA Scanner Window and transformed into a low voltage electrical circuit. Once activated, the Output Circuit continues in a "hold" mode for as long as the user remains within the effective range of the Sensor.



3. When the user steps away from the OPTIMA Sensor, the circuit waits 3 seconds (to prevent false flushing) then initiates an electrical "one-time" signal that operates the Solenoid. This initiates the flushing cycle to flush the fixture. The Circuit then automatically resets and is ready for the next user.



ROUGH-IN



SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131

Phone: 1-800-982-5839 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • www.sloanvalve.com



Smart Series Commercial Performance Data

Performance Data Charts

Use Of These Charts Will Determine:

- **Model Of The Indirect-Fired Water Heater**
- **MBH Net Boiler Output Required For Hot Water Generation**
- **Boiler Water Temperature Required**

To Use The Performance Charts, These Conditions Must Be Known:

- **Domestic Water Temperature Rise**
 - **Continuous Draw GPH or First Hour Rating GPH**
-

- For the purpose of this manual,
First Hour Rating GPH = Continuous Draw GPH + Usable Storage*
- For hot water requirements greater than those listed, multiple water tanks must be used.
- Smart Series indirect-fired water heaters will absorb less than 200,000 BTU per hour with boiler supply temperature of 240° F and domestic water outlet temperature of 210° F.
- The installing contractor assumes responsibility for compliance with state or local codes.

Model	Usable Storage [gal]	Min. Circulator Flow Rate [gpm]	Boiler Head loss at Min. Flow
Smart-60	50 gal	20 gpm	4.0 Ft
Smart-80	60 gal	22 gpm	3.5 Ft
Smart-100	80 gal	24 gpm	4.5 Ft
Smart-120	100 gal	28 gpm	4.0 Ft

* Approximately 85% of storage capacity

200° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	200	200	200	200
75	300	300	300	300
100	400	400	400	400
150	600	600	600	600
200	800	800	800	800
250	1000	1000	1000	1000
300	1200	1200	1200	1200
350	1400	1400	1400	1400
400	1580	1600	1600	1600
450	1580	1730	1800	1800
500	1580	1730	2000	2000
550	1580	1730	2000	2200
600 or More	1580	1730	2000	2345

30° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	150	150	150	150
75	225	225	225	225
100	300	300	300	300
150	450	450	450	450
200	600	600	600	600
250	750	750	750	750
300	900	900	900	900
350	1050	1050	1050	1050
400	1130	1200	1200	1200
450	1130	1240	1350	1350
500	1130	1240	1440	1500
550	1130	1240	1440	1650
600 or More	1130	1240	1440	1685

40° F Domestic Rise

200° F Boiler Water Temperature

50° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	120	120	120	120
	75	180	180	180	180
	100	240	240	240	240
	150	360	360	360	360
	200	480	480	480	480
	250	600	600	600	600
	300	720	720	720	720
	350	840	840	840	840
	400	860	940	960	960
	450	860	940	1080	1080
	500	860	940	1090	1200
	550 or more	860	940	1090	1280

60° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	100	100	100	100
	75	150	150	150	150
	100	200	200	200	200
	150	300	300	300	300
	200	400	400	400	400
	250	500	500	500	500
	300	600	600	600	600
	350	690	700	700	700
	400	690	740	800	800
	450 or more	690	740	812	900

70° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	90	90	90	90
	75	130	130	130	130
	100	170	170	170	170
	150	260	260	260	260
	200	345	345	345	345
	250	430	430	430	430
	300	515	515	515	515
	350	550	600	600	600
	400	550	600	666	685
	450 or more	550	600	666	740

200° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	75	75	75	75
75	115	115	115	115
100	150	150	150	150
150	225	225	225	225
200	300	300	300	300
250	375	375	375	375
300	450	450	450	450
350	450	500	525	525
400	450	500	560	600
450 or more	450	500	560	640

80° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	70	70	70	70
75	100	100	100	100
100	135	135	135	135
150	200	200	200	200
200	270	270	270	270
250	335	335	335	335
300	360	400	400	400
350	360	450	470	470
400	360	450	500	535
450 or more	360	450	500	560

90° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	60	60	60	60
75	90	90	90	90
100	120	120	120	120
150	180	180	180	180
200	240	240	240	240
250	280	300	300	300
300	280	360	360	360
350	280	360	400	420
400 or More	280	360	400	450

100° F Domestic Rise

200° F Boiler Water Temperature

110° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	55	55	55	55
	75	80	80	80	80
	100	110	110	110	110
	150	165	165	165	165
	200	220	220	220	220
	250	220	275	275	275
	300	220	280	311	330
	350 or More	220	280	311	360

120° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	50	50	50	50
	75	75	75	75	75
	100	100	100	100	100
	150	145	150	150	150
	200	145	200	200	200
	250	145	220	244	250
	300 or More	145	220	244	275

130° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	45	45	45	45
	75	70	70	70	70
	100	85	95	95	95
	150	85	140	140	140
	200 or More	85	170	176	185

180° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	200	200	200	200
75	300	300	300	300
100	400	400	400	400
150	600	600	600	600
200	800	800	800	800
250	1000	1000	1000	1000
300	1195	1200	1200	1200
350	1195	1345	1400	1400
400	1195	1345	1575	1600
450	1195	1345	1575	1800
500 or more	1195	1345	1575	1860

30° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	150	150	150	150
75	225	225	225	225
100	300	300	300	300
150	450	450	450	450
200	600	600	600	600
250	750	750	750	750
300	850	900	900	900
350	850	955	1050	1050
400	850	955	1120	1200
450 or more	850	955	1120	1320

40° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	120	120	120	120
75	180	180	180	180
100	240	240	240	240
150	360	360	360	360
200	480	480	480	480
250	600	600	600	600
300	640	720	720	720
350	640	720	840	840
400	640	720	840	960
450 or more	640	720	840	995

50° F Domestic Rise

180° F Boiler Water Temperature

60° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	100	100	100	100
	75	150	150	150	150
	100	200	200	200	200
	150	300	300	300	300
	200	400	400	400	400
	250	500	500	500	500
	300	500	560	600	600
	350	500	560	640	700
	400 or More	500	560	640	720

70° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	90	90	90	90
	75	130	130	130	130
	100	170	170	170	170
	150	260	260	260	260
	200	345	345	345	345
	250	400	430	430	430
	300	400	460	515	515
	350 or More	400	460	525	590

80° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	75	75	75	75
	75	115	115	115	115
	100	150	150	150	150
	150	225	225	225	225
	200	310	310	310	310
	250	310	375	375	375
	300	310	380	435	450
	350 or More	310	380	435	500

180° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH				90° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	70	70	70	70	
75	100	100	100	100	
100	135	135	135	135	
150	200	200	200	200	
200	250	270	270	270	
250	250	320	335	335	
300	250	320	365	400	
350 or More	250	320	365	420	

Boiler Output (MBH)	Continuous Draw GPH				100° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	60	60	60	60	
75	90	90	90	90	
100	120	120	120	120	
150	180	180	180	180	
200	200	240	240	240	
250	200	260	295	300	
300 or More	200	260	295	360	

Boiler Output (MBH)	Continuous Draw GPH				110° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	55	55	55	55	
75	80	80	80	80	
100	110	110	110	110	
150	160	165	165	165	
200	160	220	220	220	
250	160	220	250	275	
300 or More	160	220	250	280	

Boiler Output (MBH)	Continuous Draw GPH				120° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	50	50	50	50	
75	60	75	75	75	
100	60	100	100	100	
150 or More	60	120	127	135	

160° F Boiler Water Temperature

30° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	200	200	200	200
	75	300	300	300	300
	100	400	400	400	400
	150	600	600	600	600
	200	800	800	800	800
	250	875	1000	1000	1000
	300	875	1010	1200	1200
	350	875	1010	1200	1400
	400 or More	875	1010	1200	1430

40° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	150	150	150	150
	75	225	225	225	225
	100	300	300	300	300
	150	450	450	450	450
	200	600	600	600	600
	250	610	710	750	750
	300	610	710	835	900
	350 or More	610	710	835	1000

50° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	120	120	120	120
	75	180	180	180	180
	100	240	240	240	240
	150	360	360	360	360
	200	455	480	480	480
	250	455	525	600	600
	300	455	525	620	720
	350 or More	455	525	620	740

60° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	100	100	100	100
	75	150	150	150	150
	100	200	200	200	200
	150	300	300	300	300
	200	340	400	400	400
	250	340	400	465	500
	300 or More	340	400	465	550

160° F Boiler Water Temperature

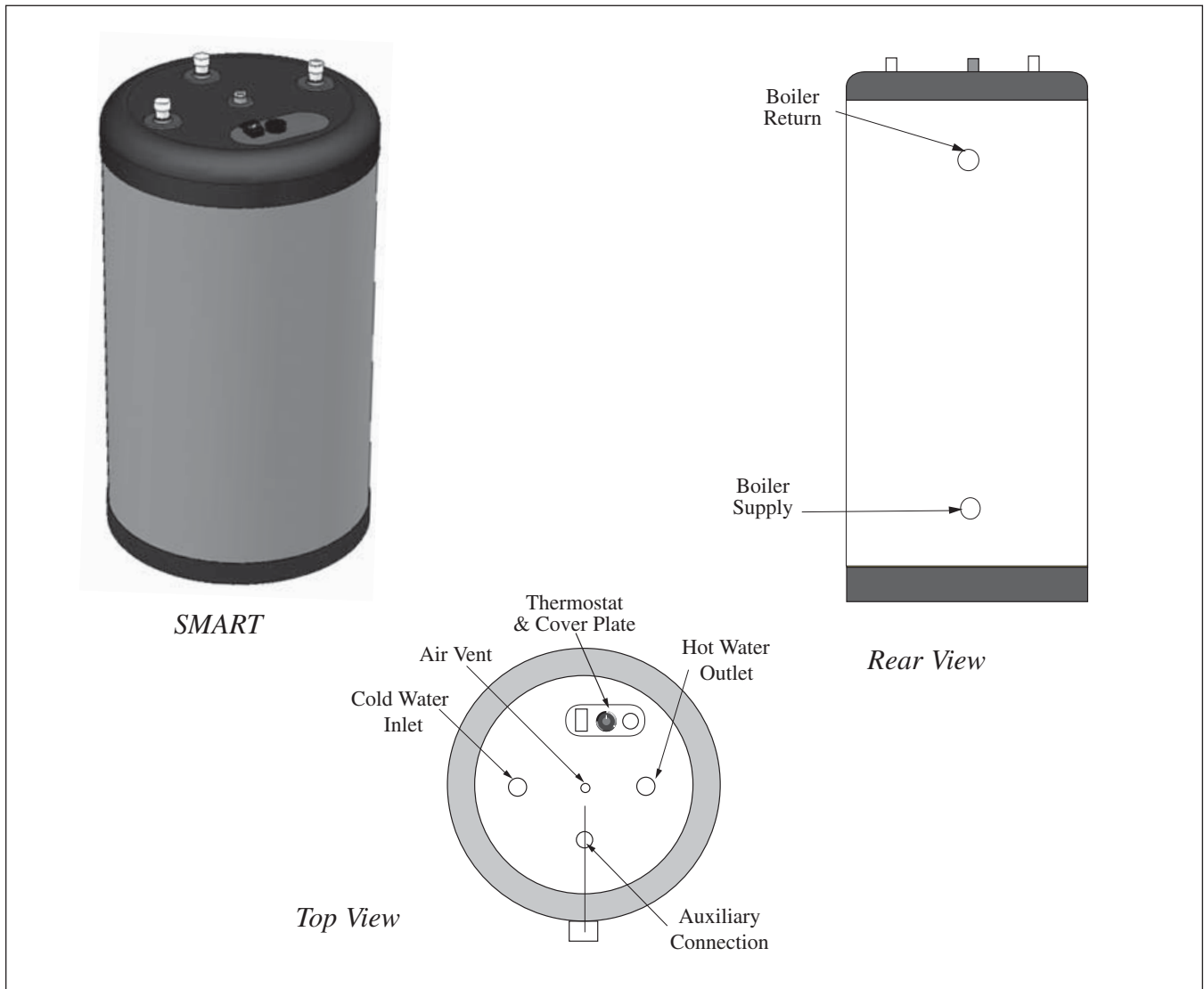
Boiler Output (MBH)	Continuous Draw GPH				70° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	90	90	90	90	
75	130	130	130	130	
100	170	170	170	170	
150	260	260	260	260	
200	260	310	345	345	
250	260	310	378	430	
300 or More	260	310	378	450	

Boiler Output (MBH)	Continuous Draw GPH				80° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	75	75	75	75	
75	115	115	115	115	
100	150	150	150	150	
150	180	225	225	225	
200	180	230	274	300	
250 or More	180	230	274	340	

Boiler Output (MBH)	Continuous Draw GPH				90° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	70	70	70	70	
75	100	100	100	100	
100	130	135	135	135	
150	130	170	200	200	
200 or More	130	170	210	260	

Boiler Output (MBH)	Continuous Draw GPH				100° F Domestic Rise
	Smart-60	Smart-80	Smart-100	Smart-120	
50	60	60	60	60	
75	70	90	90	90	
100	70	120	120	120	
150	70	120	155	180	
200 or More	70	120	155	200	

Construction



Specifications

Model No.	Diameter	Height	Boiler/Supply Return	Domestic Inlet/Outlet	Auxiliary Connection	Domestic Capacity (gal.)	Heating Water Capacity (gal.)	Heat Surface (sq. ft.)	Empty Weight (lbs)
Smart 60	22"	66"	1 1/4"	3/4"	3/4"	56	8	24	190
Smart 80	26"	61"	1 1/2"	1 1/2"	1 1/2"	70	14	29	315
Smart 100	26"	78"	1 1/2"	1 1/2"	1 1/2"	95	25	36	362
Smart 120	32"	72"	2"	1 1/2"	1 1/2"	119	43	40	479



Freeway Center - 1 Triangle Lane
 Blackwood, NJ 08012
 Tel: (856) 228 8881 - Fax: (856) 228 3584
 E-mail: sales@triangletube.com - <http://www.triangletube.com>



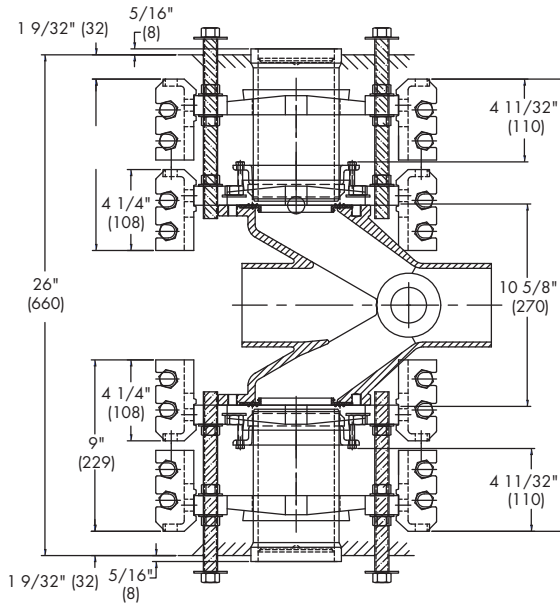


ISCA-102-D

Tag: _____

Industry Standard Back-To-Back Horizontal 1000 lb. Bariatric Closet Carrier

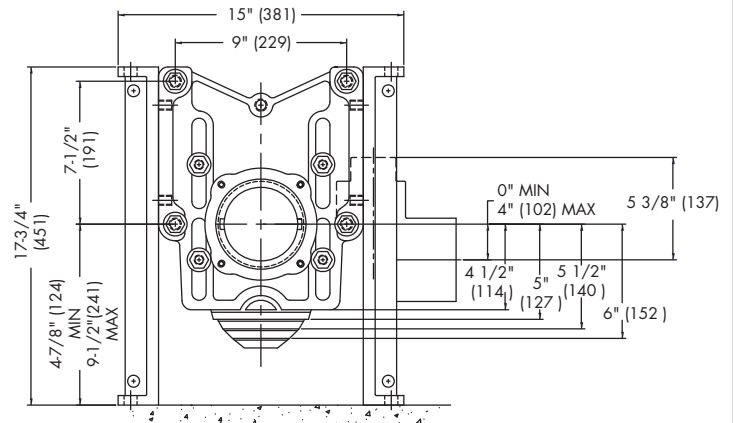
SPECIFICATION: Watts Drainage Products ISCA-102-D *Industry Standard* back-to-back horizontal adjustable water closet carrier with epoxy coated cast iron fitting, 4"(102) no hub waste and 2"(51) no hub vent connections, epoxy coated ductile iron patented compression seal faceplate assembly, epoxy coated ductile iron foot supports and rod support assembly adjustable for standard and wheelchair height, ductile iron rear anchor support, adjustable ABS nipple with integral test cap and neoprene bowl gasket, stainless steel support rods and hardware, and chrome plated cap nuts. Carrier complies with requirements of ASME A112.6.1M up to a 1000 lb. (454 kg.) static load.



Options (Select One or More)

Suffix	Description	
-M20	Flush Valve Support	<input type="checkbox"/>

NOTE: All foot supports must be securely anchored to concrete floor with min. 1/2"(13) anchors with pull-out force of 500 lbs. (227 kg). Rear anchor support must be securely anchored with min. 1/2"(13) anchors with pull-out force of 1000 lbs. (454 kg).



Job Name _____ Contractor _____
Job Location _____ Contractor's P.O. No. _____
Engineer _____ Representative _____

WATTS Drainage reserves the right to modify or change product design or construction without prior notice and without incurring any obligation to make similar changes and modifications to products previously or subsequently sold. See your WATTS Drainage representative for any clarification. Dimensions are subject to manufacturing tolerances.



Specification Drainage Products

USA: 100 Watts Road, Spindale, NC, 28160-2298; TEL: 828-288-2179 TOLL-FREE: 1-800-338-2581 www.watts.com

Canada: 5435 North Service Rd., Burlington, ONT. L7L 5H7; www.wattscanada.ca

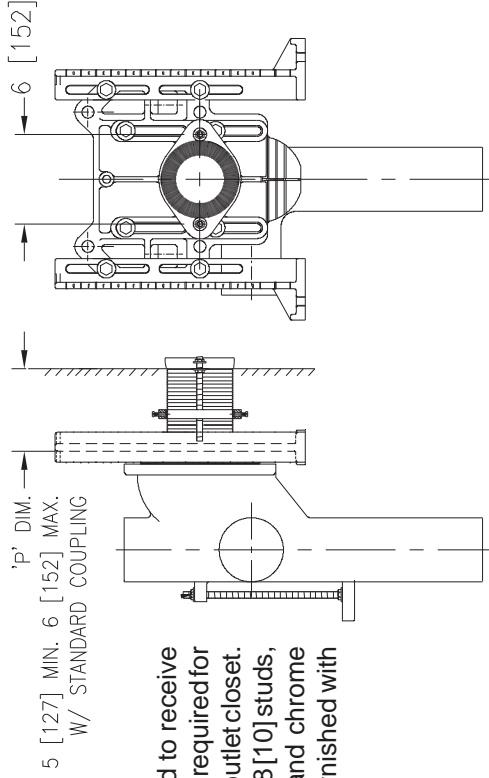


Z1203 thru Z1207

INSTALLATION INSTRUCTIONS

-F Option Floor Style Back Outlet Closet System

* Min. "P" Dim = 2 [51]

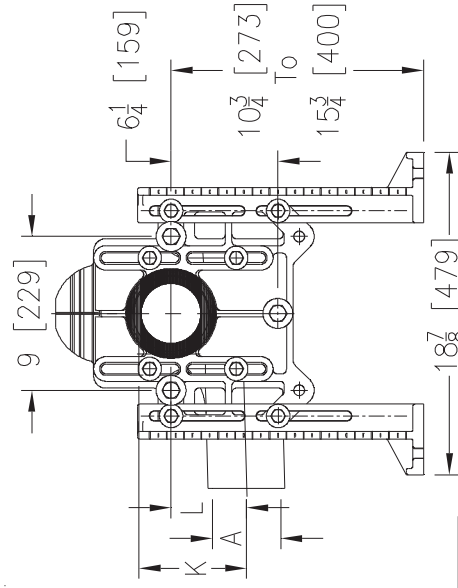


Flange is tapped to receive 3/8 [10] studs as required for floor style back outlet closet. All necessary 3/8 [10] studs, nuts, washers and chrome plate trim are furnished with assembly.

Rigid Blow Out System

Note:

For concealed flush valves and wall closets with rear inlet supply, face plate must be located behind supply line to prevent interference of face plate with supply line.



A I.P.S.	K	Min.	L Max.
4 [102]	6 1/8 [156]	2 [51]	4 1/4 [108]
5 [127]	6 5/8 [168]	1 1/2 [38]	3 3/4 [95]

1 Lay out all necessary closet fittings on floor. To obtain spacing between units, place proper lengths of pipe between adjoining fittings (or use ZE-Series).

2 Lift lengths of pipe into place between closet fittings and make up joints being sure all faces of fittings are parallel.

3 Roll entire assembly of connected closet fittings and drainage pipe 180° so that the flat faces are facing upward.

4 Place gasket on faces of fitting.

Bolt face plate onto fitting, making certain to hand-tighten the four bolts. Beginning with the nearest fitting stack, locate top of large opening in face plate to coincide with top of oval waterway in closet fitting. (The opening on successive fittings should be located at successively lower positions to maintain proper drainage pitch). Using wrench, tighten all bolts uniformly until gasket is sufficiently compressed.

5 (Omit this step when installing non-adjustable ZF carrier)

Adjust and secure feet on each faceplate, to bring closet outlet to desired closet height.

6 Roll entire assembly 90° forward onto feet, move into position, level, align, and make stack connection. Check to be sure closet outlets are in correct position and true. Secure feet to floor using rear slots (slots on fitting side of foot, not coupling side) and 1/2 [13] bolts (supplied by others).

6a (Omit this step when installing double carrier)

At this point, install the rear anchor foot assembly. To assemble, screw stud into cast foot and secure with locknut, attach top of stud to anchoring lug on backside of carrier using locknuts and washers, then securely fasten cast foot to floor using 1/2 [13] bolts (supplied by others).



Z1203 thru Z1207 INSTALLATION INSTRUCTIONS

7 At this point the coupling should be installed. Wipe O-ring seal recess in face plate clean. Insert O-ring in face plate recess and lubricate with white petroleum jelly provided. Screw adjustable coupling into faceplate until it meets O-ring, recognizable by the feel of resistance to the turning motion. Then use coupling wrench to turn the coupling into the O-ring, thus obtaining a water tight seal. Continue adjustment to locate face of coupling as instructed in #9, being certain that coupling is fully engaged with O-ring at final positioning.

It is recommended that a sleeve be placed around the coupling. Should further adjustments be anticipated, as this will keep mortar from locking coupling in wall, thus allowing coupling to be turned from front side of wall. If the installation requires a shorter coupling than provided, the excess length should be cut off from the threaded end.

8 After the wall finish is completed, place backup nut and washer on each stud per dimension X shown in #9. Due to variation in gasket recesses and thicknesses of flanges on various fixtures, it is important to recheck all coupling and stud dimensional data shown in #9. (If studs are too long, they will bottom in cap nut before closet has been drawn up sufficiently to compress gasket. Coupling should extend far enough beyond finished wall so that gasket will compress properly in gasket recess to provide a leak proof seal when cap nuts are installed). Remove Neo-seal gasket from container and install in strict accordance with installation instructions therein. Place closet in position on the fixture studs and tighten securely to complete the installation. Be sure all bearing washers are located in same plane so that they all contact the closet.

SPECIAL NOTE: The carrier is designed to support the fixture only and must be installed correctly on a floor substantial enough for support. The piping system must be supported by other means.

9 Enlarged illustration shows depth of gasket recess in fixture and coupling with normal pressure on gasket.

To ensure a tight seal at outlet of closet having a rectangular groove, the front end of the coupling should be located to compress the gasket adequately when the fixture is in the desired location. This dimension will vary depending on depth of recess, (Dim. A) in closet. The following formula may be used to determine the amount the coupling should extend (Dim. B) in front of finished wall.

Let A = depth of recess in closet

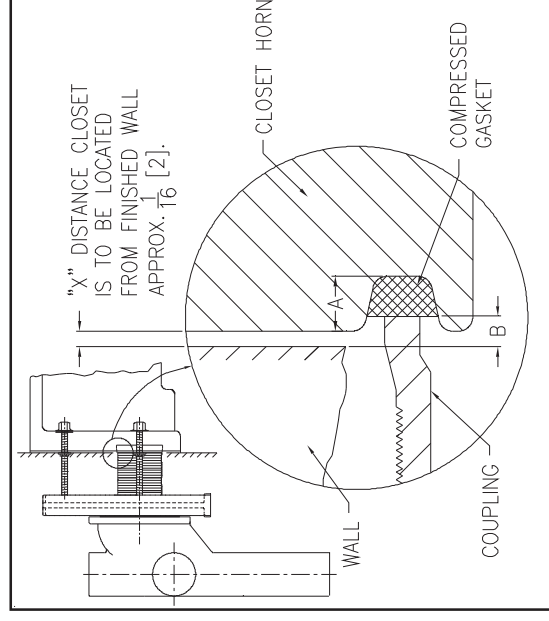
X = distance closet is to be located from finished wall.

B = distance coupling should extend in front of finished wall.

Thus, $A + X - 1/2 [13] = B$

With fixtures having "V" shaped grooves, coupling may have to extend an additional 1/8 [3] or more. With any closet, the coupling must compress the gasket enough so the adhesive coated surfaces are in good contact with the china and the face of the coupling.

IMPORTANT: Bearing nuts and washers must be located properly to establish and maintain dimension X.



Distance for Fixture Bolts Located in Front of Wall

To locate fixture bolts:

Let T = thickness of wall flange of closet

X = distance closet is to be located from finished wall

B = distance fixture stud should extend in front of finished wall.

Thus, $T + X + 5/8 [16] = B$

10 When installed correctly, the fixture will be supported by Zum Systems only, it will not touch the wall at any point.

IMPORTANT: When coupling with "Integral Test Cap" is utilized, Integral Test Cap must be removed prior to mounting water closet on studs and coupling for final assembly.



Z-1203-HD

ADJUSTABLE HORIZONTAL SIPHON JET Hub & Spigot

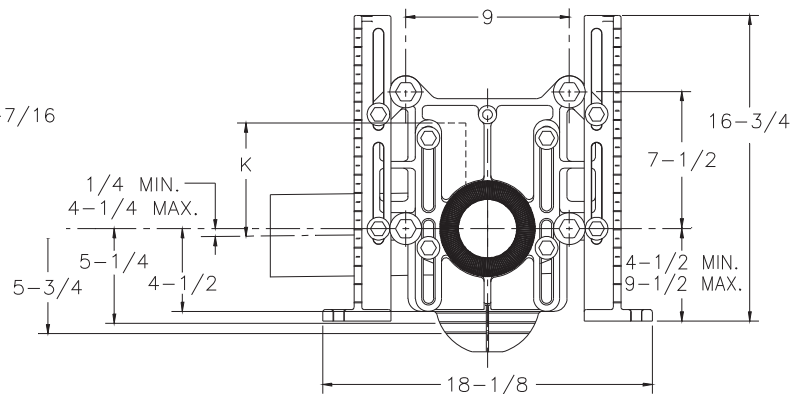
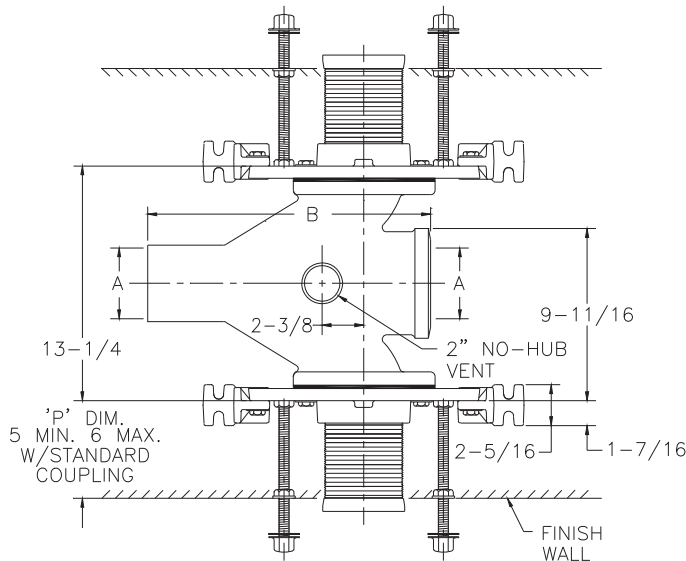
SPECIFICATION SHEET

TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Note:

1. Min. 'P' Dim. Obtainable=2"
2. Feet bolted to floor using min. 1/2 dia. bolts and back slots on carrier feet.



Product No.	Dimensions In Inches		Approx. Wt. Lbs.
	B	K	
Z-1203-HD4	16	6 1/8	75
ZE-1203-HD4	39	6 1/8	125
Z-1203-HD5	16	6 5/8	80
ZE-1203-HD5	39	6 5/8	130

ENGINEERING SPECIFICATION: ZURN Z-1203-HD() Adjustable, horizontal siphon jet water closet "Rigid System" with 4 or 5 Hub & Spigot connections. Complete with Dura-Coated cast iron right hand or left hand main fitting, with 2" vent, adjustable gasketed face plate, universal floor mounted foot supports, corrosion resistant adjustable ABS coupling with integral test cap, fixture bolts, trim, and stud protectors. Rear anchor tie down and bonded "Neo-Seal" gasket.

PRODUCT/DEFINITION

Z-1203-HR4,5 4" or 5" Caulk, Back to Back Inlet (Double)
ZE-1203-HL4,5 4" or 5" Caulk, Back to Back Inlet (Double)

PREFIXES

___ **Z-** D.C.C.I. System with Zurn "ZZ" Adjustable Coupling*
___ **ZE-** D.C.C.I. System with Elongated Fitting
___ **ZQ-** D.C.C.I. System with Non-Adjustable Coupling

SUFFIXES

___ **-A** Auxiliary Support Assembly
(For 'P' Dim. Greater than 18")
___ **-B** Blowout Type Fixture Support
___ **-BC** Back Cleanout
___ **-CC** Cast Iron Coupling 6" Long
___ **-CL** Coupling Length Greater Than Standard 12"
(Specify length if greater than 6")
___ **-F** Floor Mounted Back Outlet, Fixture Support
___ **-G** Galvanized Cast Iron
___ **-M** Auxiliary Foot Support (For P-Dim. 10"-18")
___ **-T** Threaded Stack Connection
(Available on Restricted Basis Only)

___ **-VP** Vandal Proof Trim
___ **-W** Adapter for Womens Urinal
___ **-29** Mechanical Test Cap Assembly
(Previously Z-1210-29)
___ **-45** Finishing Frame for Siphon Jet Closet
(For Blowout System Specify -45-B)
(Previously Z-1210-45)
___ **-50** Flush Valve Supply Support for
Water Closets (Previously Z-1210-50)
___ **-61** "ZZ" Coupling Wrench

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED

REV. B DATE: 8/9/94 C.N. NO. 69939

DWG. NO. 54356 PRODUCT NO. Z-1203-HD

ZURN INDUSTRIES, INC. ♦ SPECIFICATION DRAINAGE OPERATION ♦ 1801 Pittsburgh Ave. ♦ Erie, PA 16514

Phone: 814/455-0921 ♦ Fax: 814/454-7929 ♦ World Wide Web: www.zurn.com

In Canada: ZURN INDUSTRIES LIMITED ♦ 3544 Nashua Drive ♦ Mississauga, Ontario L4V1L2 ♦ Phone: 905/405-8272 Fax: 905/405-1292



Z1300

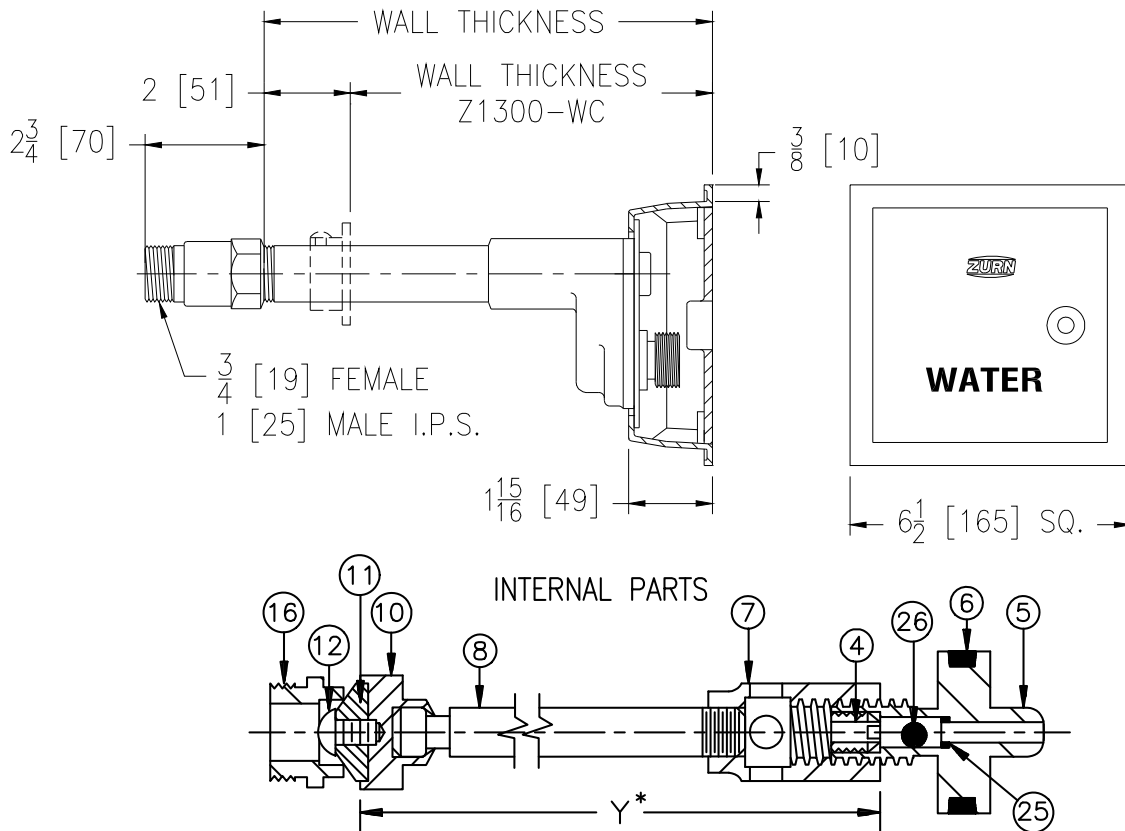
ECOLOTROL WALL HYDRANT

Encased, Non-Freeze, Anti-Siphon, Automatic Draining

SPECIFICATION SHEET

TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



Wall Thickness Inches	Approx. Wt. Lbs. [kg]
6-8 [152-203]	9 [4]
10-12-14 [254-305-356]	12 [5]
16-18 [406-457]	15 [7]
20-22-24 [508-559-610]	18 [8]

ENGINEERING SPECIFICATION: ZURN Z1300 Encased Ecolotrol "anti-siphon" automatic draining wall hydrant for flush installation. Complete with non-freeze type integral backflow preventer, bronze casing, all bronze interior parts, non-turning operating rod with free-floating compression closure valve, replaceable bronze seat and seat washer, and combination 3/4 [19] female or 1 [25] male straight IP inlet. Nickel bronze box and hinged cover with operating key lock and "WATER" cast on cover.

OPTIONS (Check/specify appropriate options)

SUFFIXES

___ -CL	Cylinder Lock
___ -PB	Polished Bronze Face
___ -RA2	12 [305] Replacement Rod Assembly with Repair Kit (-RK)
___ -RA4	24 [610] Replacement Rod Assembly with Repair Kit (-RK)
___ -RK	Hydrant Parts Repair Kit
___ -SB	Statuary Bronze Face
___	(Specify light, medium or dark finish)
___ -SS	Stainless Steel Box and Cover
___ -WC	Wall Clamp
___ -34FS	3/4 [19] Solder Female Inlet Adapter
___ -34UN	3/4 [19] IP 90° Inlet Elbow w/Union Nut

PARTS LIST

Item	Name	Quan.
6	O-Ring	1
4	Screw	1
5	Operating Screw	1
7	Operating Coupling	1
8	Operating Rod	1
10	Washer Guide	1
11	Washer (neoprene)	1
12	Screw	1
16	Removable Seat	1
25	O-Ring	1
26	Ball	1

*WHEN ORDERING REPLACEMENT PARTS SPECIFY Y DIM.

REV. F DATE: 10/22/10 C.N. NO. 111930

DWG. NO. 58867 PRODUCT NO. Z1300

ZURN INDUSTRIES, LLC ♦ SPECIFICATION DRAINAGE OPERATION ♦ 1801 Pittsburgh Ave. ♦ Erie, PA 16514

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