

Plumbing Board
 c/o Department of Labor and Industry
 443 Lafayette Road North
 St. Paul, MN 55155-4344
www.dli.mn.gov
 Email: DLI.cclboards@state.mn.us

Plumbing Board Request for Action

PRINT IN INK or TYPE

NAME OF SUBMITTER	PURPOSE OF REQUEST (check all that apply): <input type="checkbox"/> New Code		
	<input type="checkbox"/> Code Amendment <input type="checkbox"/> Repeal of an existing Rule		
The Minnesota Plumbing Code (MN Rules, Chapter 4714) is available at https://epubs.iapmo.org/2020/MPC/			
Specify the purpose of the proposal: If recommendation for code change for appurtenance or method (check all that apply)			
<input type="checkbox"/> Appurtenance (e.g., water conditioning equipment) <input type="checkbox"/> Test Method			
<input type="checkbox"/> Other (describe)			
Does your submission contain a Trade Secret? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If Yes, mark " TRADE SECRET " prominently on each page of your submission that you believe contains trade secret information. Minnesota Statutes, section 13.37, subdivision 1(b), defines "trade secret" as follows: "Trade secret information" means government data, including a formula, pattern, compilation, program, device, method, technique or process (1) that was supplied by the affected individual or organization, (2) that is the subject of efforts by the individual or organization that are reasonable under the circumstances to maintain its secrecy, and (3) that derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use. Note that, although "trade secret" information is generally not public, the Board and its committees may disclose "trade secret" information at a public meeting of the Board or committee if reasonably necessary for the Board or committee to conduct the business or agenda item before it (such as your request.) The record of the meeting will be public.			
Describe the proposed change. The Minnesota Plumbing Code (Minnesota Rules Chapter 4714) is available here: https://epubs.iapmo.org/2020/MPC/			
NOTE:			
<ul style="list-style-type: none"> • Please review the Minnesota Plumbing Code and include all parts of the Code that require revision to accomplish your purpose. • The proposed change, including suggested rule language, should be <i>specific</i>. If modifying existing rule language, <u>underline new words</u> and strike through deleted words. 			
Please list all areas of the Minnesota Plumbing Code that would be affected.			
For Office/Committee Use Only Proposal received completed? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Date Proposer notified of gaps:	Mode of notification (e.g., e-mail)	Date returned to Proposer:	Date materials re-received:
Office Use Only			
RFA File No.	Date Received by DLI	Dated Received by Committee	Date of Forwarded to Board
Title of RFA		:By	
Committee Recommendation to the Board: <input type="checkbox"/> Accept <input type="checkbox"/> Reject <input type="checkbox"/> Abstain			
Board approved as submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No		Board approved as modified: <input type="checkbox"/> Yes <input type="checkbox"/> No	

Need and Reasons For the Change. Thoroughly explain the need and why you believe it is reasonable to make this change. During a rulemaking process, the need and reasonableness of all proposed rule changes must be justified; therefore, a detailed explanation is necessary to ensure the Board thoroughly considers all aspects of the proposal.

If your product/method standard(s) is not currently listed in a national code, your Request For Action will not be considered by the Board or its committees, however, you are welcome to present at any Board meeting during the Open Forum section of the Agenda.

The proposal must be accompanied by copies of any published standards, the results of testing, and copies of any product listings, as documentation of the health, sanitation and safety performance of any materials, methods, fixtures, and/or appurtenances. If none are available, please explain:

Please attach electronic scanned copies of any literature, standards and product approvals or listings. Printed or copyrighted materials, **along with written permission from the publisher to distribute the materials at meetings**, and email to DLI.cldboards@state.mn.us

Primary reason for change: (check only one)

<input type="checkbox"/> Protect public, health, safety, welfare, or security	<input type="checkbox"/> Mandated by legislature
<input type="checkbox"/> Lower construction costs	<input type="checkbox"/> Provide uniform application
<input type="checkbox"/> Encourage new methods and materials	<input type="checkbox"/> Clarify provisions
<input type="checkbox"/> Change made at national level	<input type="checkbox"/> Situation unique to Minnesota
<input type="checkbox"/> Other (describe) _____	

Anticipated benefits: (check all that apply)

<input type="checkbox"/> Save lives/reduce injuries	<input type="checkbox"/> Provide more affordable construction
<input type="checkbox"/> Improve uniform application	<input type="checkbox"/> Provide building property
<input type="checkbox"/> Improve health of indoor environment	<input type="checkbox"/> Drinking water quality protection
<input type="checkbox"/> Provide more construction alternatives	<input type="checkbox"/> Decrease cost of enforcement
<input type="checkbox"/> Reduce regulation	<input type="checkbox"/> Other (describe) _____

The Following Information is Optional. This Information can Assist in Evaluating a Request for Action and in Rulemaking and Should be Provided if Known.

Economic impact: (explain all answers marked "yes")

1. Does the proposed change increase or decrease the cost of enforcement? Yes No If yes, explain

2. Does the proposed change increase or decrease the cost of compliance? Yes No If yes, explain
Include the estimated cost increase or decrease, and who will bear the cost increase or experience the cost decrease:

3. Are there less costly or intrusive methods to achieve the proposed change? Yes No If yes, explain

4. Were alternative methods considered? Yes No If no, why not? If yes, explain what alternative methods were considered and why they were rejected.

5. If there is a fiscal impact, try to explain any benefit that will offset the cost of the change. If there is no impact, mark "N/A."

6. Provide a description of the classes of persons affected by a proposed change, who will bear the cost, and who will benefit.

7. Does the proposed rule affect farming operations? (Agricultural buildings are exempt from the Minnesota Building Code under Minnesota Statutes, Section 326B.121.) Yes No If yes, explain

Are there any existing Federal Standards? Yes No If yes, list:

Are there any differences between the proposed change and existing federal regulations? Yes No
 Not applicable Unknown If yes, describe each difference & explain why each difference is needed & reasonable.

Minnesota Statutes, section 14.127, requires the Board to determine if the cost of complying with proposed rule changes in the first year after the changes take effect will exceed \$25,000 for any small business or small city. A small business is defined as a business (either for profit or nonprofit) with less than 50 full-time employees and a small city is defined as a city with less than ten full-time employees.

During the first year after the proposed changes go into effect, will it cost more than \$25,000 for any small business or small city of comply with the change? Yes No If yes, identify by name the small business(es or small city(ies).

Will this proposed plumbing code amendment require any local government to adopt or amend an ordinance or other regulation in order to comply with the proposed plumbing code amendment? Yes No, If yes, identify by name the government(s) and ordinances(s) that will need to be amended in order to comply with the proposed plumbing code amendment.

Additional supporting documentation may also be attached to this form. Are there any additional comments you feel the Committee/Board may need to consider? If so, please state them here:

Information regarding submitting this form:

- Submissions are received and heard by the Committee on an “as received” basis. **Any missing documentation will delay the process, and your proposal will be listed as the date it was received “Complete.”**
- **Submit any supporting documentation to be considered**, such as manufacturer’s literature, approvals by other states, and engineering data electronically to DLI.CCLDBOARDS@state.mn.us. Once your Request For Action form has been received, it will be assigned a file number. Please reference this file number on any correspondence and supplemental submissions.
- For copyrighted materials that must be purchased from publishers, such as published standards, product approvals or testing data, listings by agencies (IAPMO, ASSE, ASTM, etc..) you may send (or email) two copies, *along with written permission from the publisher to distribute the materials at meetings*, via U.S. Mail to: Plumbing Board, c/o Department of Labor and Industry, 443 Lafayette Road No., St. Paul, MN 55155-4344.
- For materials that must be submitted by U.S. Mail, please include a copy of your “Request For Action” form originally submitted and reference your assigned RFA file number.

Information for presentation to the Committee and/or Board:

- Limit presentations to 5 minutes or less.
- Be prepared to answer questions regarding the proposal and any documentation.

Information regarding Committee and/or Board function:

- The Plumbing Board or designated Committee.

I understand that any action is a recommendation to the Plumbing Board and is not to be considered final action.

NAME	EMAIL ADDRESS	FIRM NAME	
NAME, PHONE NUMBER AND E-MAIL ADDRESS OF PRESENTER TO THE COMMITTEE (if different):			
MAILING STREET ADDRESS		CITY	STATE ZIP CODE
PHONE	SIGNATURE (original or electronic)	DATE	

For Assistance or questions on completing this form, contact Mike Westemeier, Department of Labor and Industry at michael.westemeier@state.mn.us or by phone 651-284-5898.

DLI – Request for Action – Eric Thompson

Please list all areas of the Minnesota Plumbing Code that would be affected.

704.3 Commercial Dishwashing Machines and Sinks.

1014.2 Hydromechanical Grease Interceptors.

Exception: Listed grease interceptors with integral flow controls or restricting devices shall be installed in an accessible location in accordance with the manufacturer's installation instructions.

Add: Grease Interceptors designed in accordance with ASME A112.14.3, Type D, shall be approved and installed per manufacturer's instructions.

Need Reasons for Change:

Minnesota Plumbing code 704.3 requires direct connections with a tell-tale floor drain to be installed for all plumbing systems. This would call for the grease interceptor to be directly connected to the plumbing system. The ASME A112.14.3 standard for grease interceptors has 4 different testing methods based upon the flow control used for the test. Type D (without external flow control, indirectly connected), is tested to the prescribed flow rate without a direct connection to the plumbing fixtures. The interpretation of the code is that Type D is not allowed because of the way it was tested in the standard.

When comparing the flow rates in directly connected systems versus indirectly connected systems, it is hypothesized that directly connected systems behave differently upstream of the interceptor. This hypothesis may be based on the assumption that directly connected systems have fewer obstructions and frictional losses compared to indirectly connected systems, where the flow path may be longer and include additional components such as floor sinks, bends, or fittings. Therefore, the hypothesis posits that the efficiency of fluid flow will be greater in directly connected systems due to reduced resistance, resulting in a higher flow rate compared to indirectly connected systems which will ultimately affect the grease retention of the interceptor.

To find out, in April 2024, Schier tested performance on a 50 GPM interceptor that has a liquid volume of 65 gallons to compare the difference between directly and indirectly connected fixtures under the Type D testing protocol.

- 50 GPM was chosen because of the rate of turnover inside the unit.
- A total of 100 gallons of water was used per test increment along with 10 pounds of lard, both heated to 150 °F.
- The effluent passed through the unit in under 2 minutes.
- A total of 13 test increments were completed to show valid certification under the ASME A112.14.3 standard.
- The interceptor must maintain a cumulative efficiency of 90% or better to be certified.

Table 1 that shows test results per the ASME A112.14.3 Type D standard, without external flow control, indirectly connected. A floor sink in the testing apparatus provides an indirect connection. See figure 1 for reference.

Table 1

Indirect Connection to the Interceptor												
Testing Information						Incremental			Accumulated			
Test No	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	LBS Added	LBS Skimmed	LBS Retained	Efficiency %	LBS Added	LBS Skimmed	LBS Retained	Efficiency %
1	1	2	112	50.9	10	0.32	9.68	96.7%	10	0.32	9.68	96.7%
2	2	1	113	50.4	10	0.61	9.39	93.5%	20	0.93	19.07	95.1%
3	1	2	113	50.4	10	0.59	9.41	93.8%	30	1.52	28.48	94.7%
4	2	1	111	51.4	10	0.43	9.57	95.5%	40	1.95	38.05	94.9%
5	1	2	113	50.4	10	0.51	9.49	94.6%	50	2.47	47.53	94.8%
6	2	1	111	51.4	10	0.47	9.53	95.0%	60	2.94	57.06	94.8%
7	1	2	110	51.8	10	0.50	9.50	94.7%	70	3.44	66.56	94.8%
8	2	1	111	51.4	10	0.46	9.54	95.1%	80	3.91	76.09	94.9%
9	1	2	111	51.4	10	0.40	9.60	95.9%	90	4.31	85.69	95.0%
10	2	1	111	51.4	10	0.57	9.43	94.0%	100	4.88	95.12	94.9%
11	1	2	112	50.9	10	0.55	9.45	94.2%	110	5.42	104.58	94.8%
12	2	1	110	51.8	10	0.41	9.59	95.7%	120	5.83	114.17	94.9%
13	1	2	111	51.4	10	0.48	9.52	94.9%	130	6.32	123.68	94.9%

Figure 1

Indirect Connection (Floor Sink)

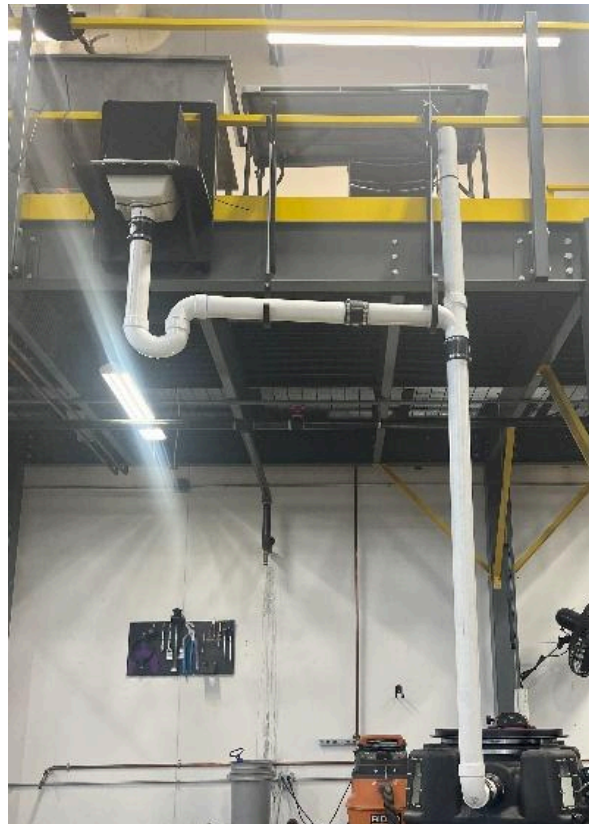


Table 2 and figure 2 shows a similar setup that has the testing apparatus directly connected to the interceptor under the same conditions.

Table 2

Direct Connection to the Interceptor												
Testing Information					Incremental				Accumulated			
Test No	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	LBS Added	LBS Skimmed	LBS Retained	Efficiency %	LBS Added	LBS Skimmed	LBS Retained	Efficiency %
1	1	2	113	51.4	10	0.04	9.96	99.6%	10	0.04	9.96	99.6%
2	2	1	110	50.9	10	0.33	9.67	96.6%	20	0.37	19.63	98.1%
3	1	2	112	51.8	10	0.42	9.58	95.6%	30	0.79	29.21	97.3%
4	2	1	113	51.4	10	0.44	9.56	95.4%	40	1.23	38.77	96.8%
5	1	2	111	50.4	10	0.37	9.63	96.2%	50	1.60	48.40	96.7%
6	2	1	110	50.4	10	0.41	9.59	95.7%	60	2.01	57.99	96.5%
7	1	2	112	51.4	10	0.46	9.54	95.2%	70	2.47	67.53	96.3%
8	2	1	110	50.9	10	0.40	9.60	95.9%	80	2.86	77.14	96.3%
9	1	2	110	50.9	10	0.46	9.54	95.2%	90	3.33	86.67	96.2%
10	2	1	112	51.4	10	0.40	9.60	95.8%	100	3.73	96.27	96.1%
11	1	2	111	50.9	10	0.47	9.53	95.1%	110	4.20	105.80	96.0%
12	2	1	112	51.8	10	0.35	9.65	96.3%	120	4.55	115.45	96.1%
13	1	2	110	50.4	10	0.46	9.54	95.2%	130	5.01	124.99	96.0%

Figure 2

Direct Connection



In reviewing the test results from Tables 1 and 2, the interceptor performs slightly better when directly connected to the system. Table 3 shows the side-by-side comparison along with a deviation between the two tests.

Table 3

Grease Capacity			
Test No	Indirect Connection Grease Retained	Direct Connection Grease Retained	% Deviation
1	9.68	9.96	2.87%
2	19.07	19.63	2.94%
3	28.48	29.21	2.55%
4	38.05	38.77	1.89%
5	47.53	48.40	1.83%
6	57.06	57.99	1.63%
7	66.56	67.53	1.47%
8	76.09	77.14	1.37%
9	85.69	86.67	1.14%
10	95.12	96.27	1.20%
11	104.58	105.80	1.17%
12	114.17	115.45	1.12%
13	123.68	124.99	1.06%

Conclusion:

As long as the unit is tested to the prescribed flow rate, performance is not affected enough to prevent an indirectly connected grease interceptor from being installed in a directly connected system; testing actually shows it performs better. Since 2019, thousands of interceptors have been installed throughout the country in various piping configurations which are fully operational, both directly and indirectly connected, including in the state of Minnesota. Grease Interceptors that are certified to the ASME A112.14.3 standard under the Type D protocol should not be excluded from the code and can be directly or indirectly connected to the plumbing system as defined in the standard.

We are therefore asking the committee to approve our Type D units as was the practice until late 2023. We are asking the state to not only approve them in writing, but also to amend the code to fully allow units certified to the ASME A112.14.3 standard for Type D in future code cycles.

Additional information attached or online:

1. ASME A112.14.3 Product Listing
2. Testing of grease interceptors: <https://youtu.be/h2njNczEkxY>

IAPMO RESEARCH AND TESTING, INC.

5001 E. Philadelphia Street, Ontario, CA 91761 • Phone (909) 472-4100 • Fax (909) 472-4244 • www.iapmort.org



IAPMO R&T Product Listing



This IAPMO R&T Listing is current as of December 20, 2023

File Number:

5317

Issued To:

SCHIER PRODUCTS

6455 WOODLAND DR SHAWNEE, KS , United States

Product:

Hydromechanical Grease Interceptors

Products are in compliance with the following code(s):

Uniform Plumbing Code (UPC®)
National Plumbing Code of Canada
International Plumbing Code (IPC®)

Products are certified to the following standard(s)

ASME A112.14.3-2018 and CSA B481.1-2012 (R2017)

IAPMO RESEARCH AND TESTING, INC.

CERTIFICATE OF LISTING



Issued To: SCHIER PRODUCTS

File Number: 5317

Product: Hydromechanical Grease Interceptors

This IAPMO R&T Listing is current as of December 20, 2023

Identification:

Manufacturer's name or trademark, model number, inlet, outlet, ASME A112.14.3, CSA B481.1, product type by rating, efficiency at rated capacity, flow rate, grease capacity, access cover load classification (L,M,H,X,S), and "Required (external flow control part number)" or "Not required" (if external flow control not required) shall be permanently and legibly marked on the unit so as to be visible after installation. The product shall also bear the cUPC® certification mark.

Characteristics:

Grease traps equipped with a flow control device. Trap contains removable baffles. To be installed in accordance with the manufacturer's instructions and the latest edition of the Uniform Plumbing Code and the National Plumbing Code of Canada.

Products listed on this certificate have been tested by an IAPMO R&T recognized laboratory. This recognition has been granted based upon the laboratory's compliance to the applicable requirements of ISO/IEC 17025.

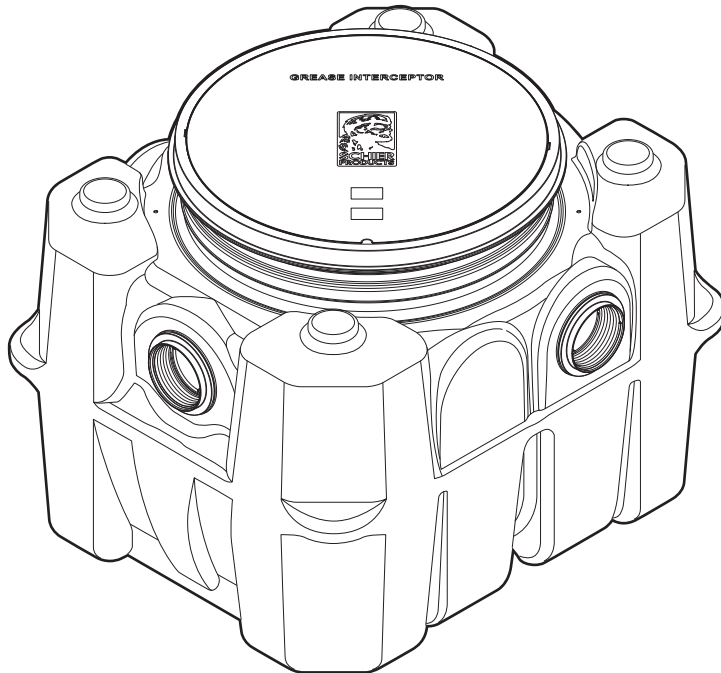
Models

GREAT BASIN™

Model Number	Description
GB1 (20gpm)	Grease Interceptor, Type C
GB1 (25gpm)	Grease Interceptor, Type C
GB2 (35gpm)	Grease Interceptor, Type C
GB2 (50gpm)	Grease Interceptor, Type C
GB2-2 (35gpm)	Grease Interceptor, Type C
GB3 (50gpm)	Grease Interceptor, Type C
GB3 (75gpm)	Grease Interceptor, Type C
GB-50 (50gpm)	Grease Interceptor, Type D
GB-50 (75gpm)	Grease Interceptor, Type D
GB-75-B (50gpm)	Grease Interceptor, Type D
GB-75 (75gpm)	Grease Interceptor, Type D
GB-75-2 (75gpm)	Grease Interceptor, Type C
GB-250 (100gpm)	Grease Interceptor, Type D
GB-250 (200gpm)	Grease Interceptor, Type C
GB-250-2 (100gpm)	Grease Interceptor, Type C
GB-250-B (75gpm)	Grease Interceptor, Type D
GB-500 (100gpm)	Grease Interceptor, Type C
GB-500-B (100gpm)	Grease Interceptor, Type D
GB-1000 (100gpm)	Grease Interceptor, Type D
GB-1000(200gpm)	Grease Interceptor, Type D
GB-1000-B (200gpm)	Grease Interceptor, Type D
GB-1000-L (100gpm)	Grease Interceptor, Type C
GB-1500 (100gpm)	Grease Interceptor, Type D
GB-1500 (200gpm)	Grease Interceptor, Type D

INSTALLATION GUIDE

GB-50 50/75 GPM Great Basin™ Indoor/Outdoor Grease Interceptor



Contents

Special Precautions	2-3
Getting to Know the GB-50	4
Installation	5-10



SCHIER

LIFETIME GUARANTEED **GREASE INTERCEPTORS**

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SPECIAL PRECAUTIONS

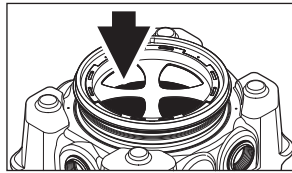
For Schier Grease Interceptor Installations - Failure to follow this guidance voids your warranty

WARNING! DO NOT AIR TEST UNIT OR RISER SYSTEM!
Doing so may result in property damage, personal injury or death.

CAUTION! Do not install this unit in any manner except as described in these instructions.

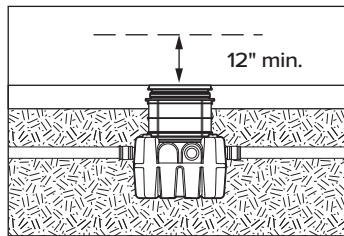
Installation Instructions

Installation instructions and additional components are included with the interceptor. Read all instructions prior to installation. This interceptor is intended to be installed by a licensed plumber in conformance with all local codes.



Install interceptor as close as possible to fixtures being served

Provide at least 12" clearance above unit for routine maintenance.

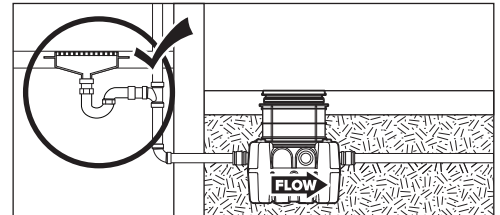


High Temperature Kitchen Water

If water is entering the interceptor at excessive temperature (over 150° F), a drain water tempering valve (DTV) and approved backflow prevention assembly must be installed. Most state and local plumbing codes prohibit water above 150° F being discharged into the sanitary sewer. Water above 150° F will weaken or deform PVC Schedule 40 pipe, poly drainage fixtures like interceptors and erode the coating of cast iron (leading to eventual failure).

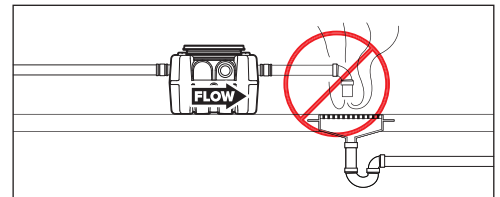
ODOR ALERT!

Interceptor is not a sewer gas trap. All upstream fixtures must be trapped



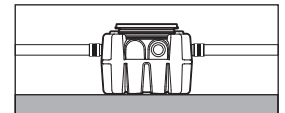
ODOR ALERT!

Do not install air gap on outlet side of interceptor.



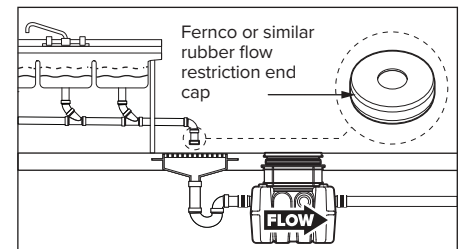
Fully Support Base of Unit

Install unit on solid, level surface in contact with the entire footprint of unit base



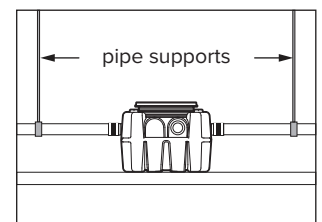
When Installing Interceptor Inside

If your dishwashing sink(s) discharges into a floor drain/sink (drain), you may regulate the flow into the drain to avoid an overflow of water onto the kitchen floor. This can be done by installing a valve or flow restriction cap on the sink piping that discharges into the drain. See drawing for guidance. For detailed guidance on indirect connections, go to: webtools.schierproducts.com/Technical_Data/Indirect_Connections.pdf



Support Inlet and Outlet Piping

For above grade installations ensure heavy inlet and outlet piping (such as cast iron or long runs) is properly supported or suspended during the entire installation process to prevent connection failure or damage to bulkhead fittings.



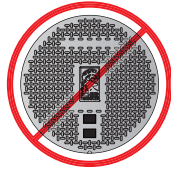


SPECIAL PRECAUTIONS

For Schier Grease Interceptor Installations - Failure to follow this guidance voids your warranty

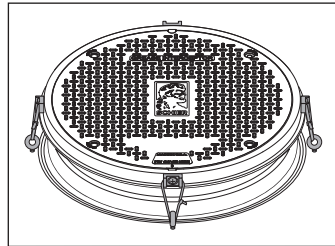
DO NOT USE CAST IRON COVERS IN ABOVE GRADE OR INDOOR INSTALLATIONS

Use composite cover C24BC for above grade installations



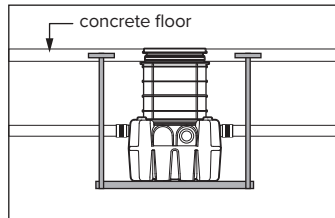
Secure Cover Adapters

Cover adapters must be secured to base units in above grade installations with increased head pressure conditions. Use cover adapter tie-down kit model ATD1.



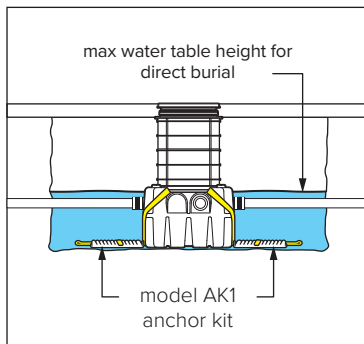
Suspended Installations

Design trapeze to support the wet weight of the unit. Do not partially support unit or suspend unit using metal U-channel to create a trapeze.



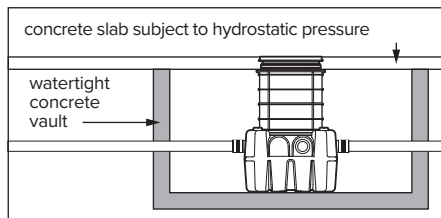
High Water Table Installations

Interceptors and risers are not designed to withstand water table height in excess of the top of the unit when buried (see figure). If it is possible for this to occur, install the interceptor and risers in a water-tight concrete vault or backfill with concrete or flowable fill (wet concrete and flowable backfill should be poured in stages to avoid crushing the interceptor). At risk areas include but are not limited to tidal surge areas, floodplains and areas that receive storm water. Great Basin™ models that are direct buried in high water table scenarios must be installed with an anchor kit. Model GB-50 uses model AK1 anchor kit.



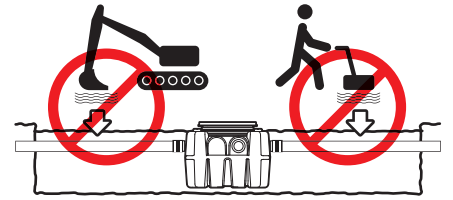
Hydrostatic/ Pressure Slabs

When installed under a hydrostatic slab (slab designed to withstand upward lift, usually caused by hydrostatic pressure) interceptor must be enclosed in a watertight concrete vault.



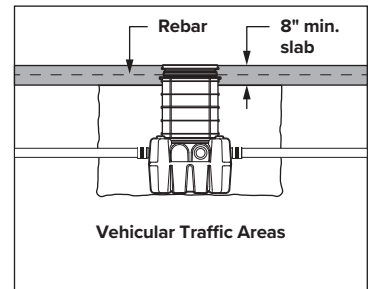
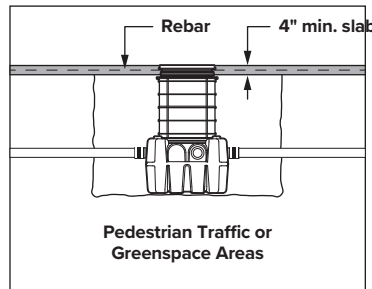
DO NOT COMPACT BACKFILL MECHANICALLY

Compact by hand only

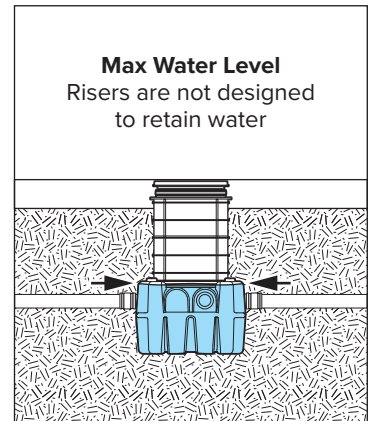
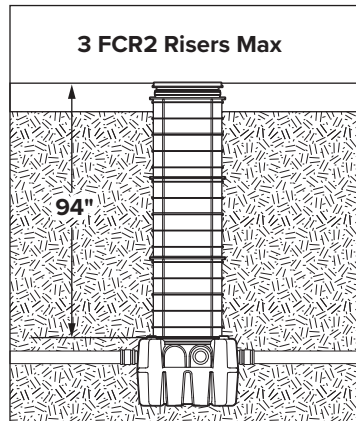


Below Grade Installation Slab Requirements

A concrete slab to finished grade with rebar is required when installing interceptor below grade.

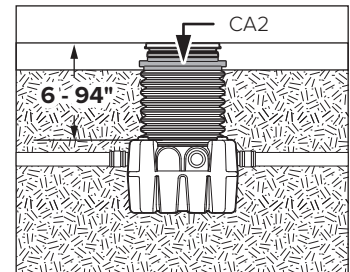


Installations with Risers

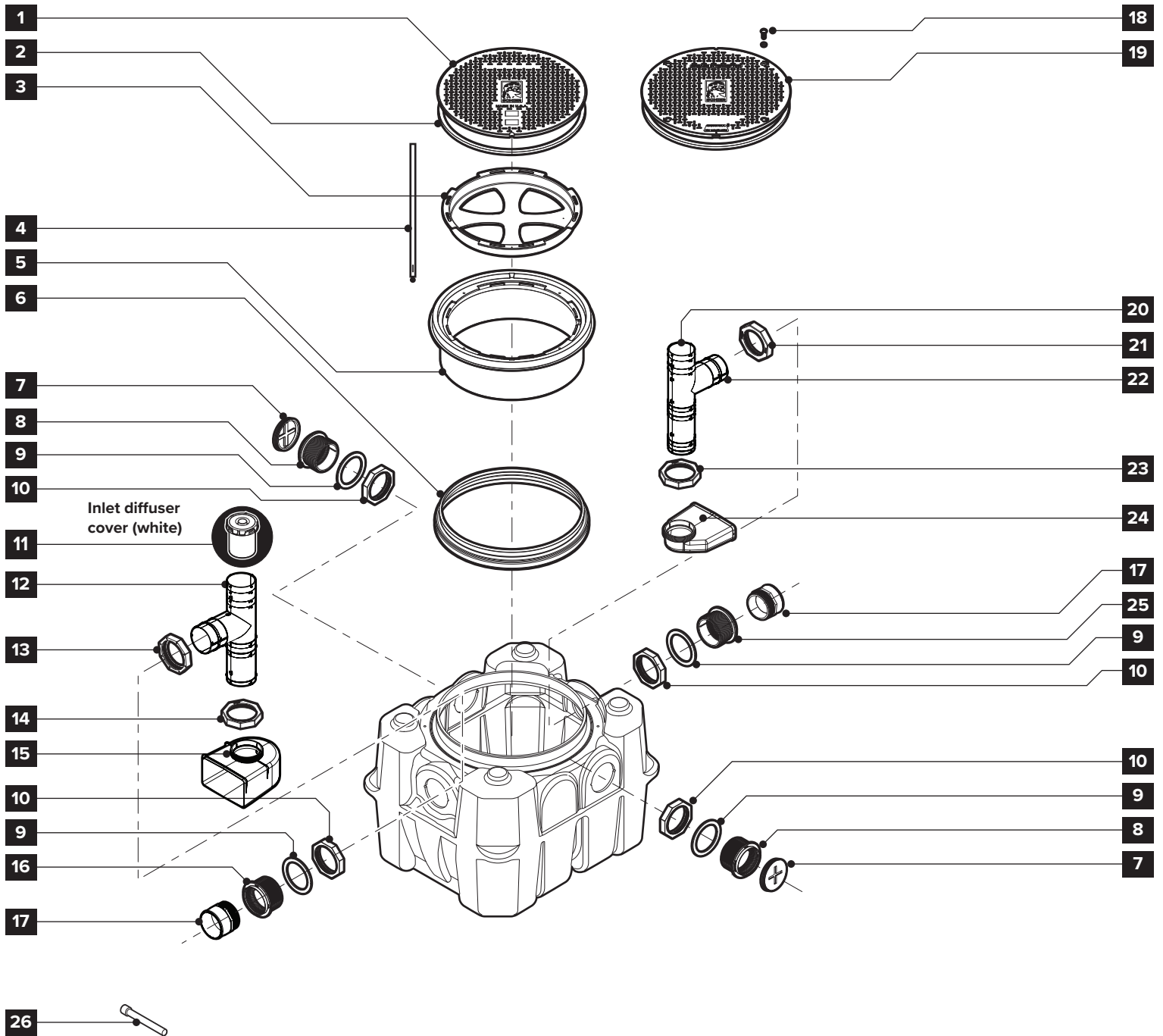


Corrugated Riser Pipe Requirements

Riser adapter model CA2 must be used when installing interceptors using 24" diameter corrugated pipe as a riser. This will adequately embed the cover adapter in the concrete slab, preventing cover/cover adapter failure under traffic rated loads.

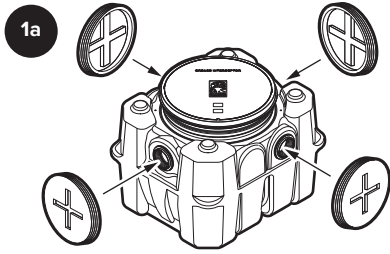


GETTING TO KNOW THE GB-50

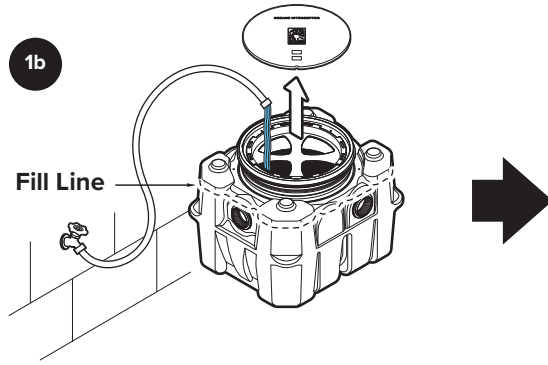


- | | | |
|---|--|--|
| 1. Pickable cast iron cover (standard) | 9. Bulkhead connection gasket | 19. Bolted composite cover (optional) |
| 2. Cover gasket | 10. Bulkhead connection retaining nut | 20. Air relief/visual access |
| 3. Safety Star® access restrictor | 11. Inlet diffuser cover (white) | 21. Outlet diffuser retaining nut |
| 4. Safety Star® tether | 12. Inlet diffuser | 22. Outlet diffuser |
| 5. Cover adapter | 13. Inlet diffuser retaining nut | 23. Outlet diffuser foot retaining nut |
| 6. Cover adapter gasket assembly with upper and lower stainless steel band clamps | 14. Inlet diffuser foot retaining nut | 24. Outlet diffuser (foot) |
| 7. 4" cleanout plug (x2) | 15. Inlet diffuser (foot) | 25. Outlet bulkhead connection (standard) 4" FPT |
| 8. Outlet bulkhead connection (optional) 4" FPT (x2) | 16. Inlet bulkhead connection 4" FPT | 26. 7/16" nut driver bit |
| | 17. 4" plain end fitting (x2) | |
| | 18. Composite cover bolts and washers (x4) | |

1 Test tank for water tightness

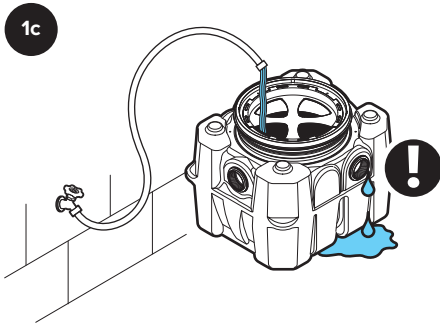


Cap all connection points with 4" cleanout plugs using pipe thread sealant or tape approved for use with plastics.



Remove covers. For base unit testing fill with water to just above the highest connection.

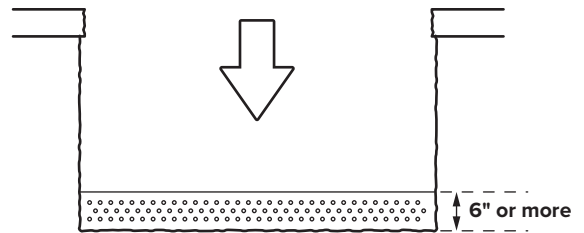
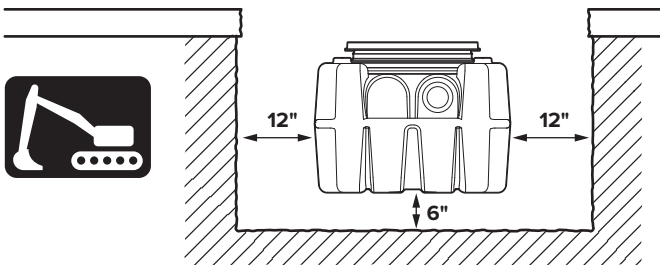
Inspect unit, connections and gaskets for leaks. Check water level at specific time intervals per local code.



Have a Leak?

Call customer care at 913-951-3300
Hours 8am-5pm CST, M-F

2 Excavate Burial Pit ONLY

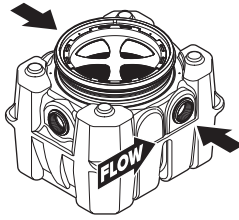


Excavate hole at least 12" larger than interceptor on all sides and 6" deeper than tank bottom. Lay a level bed of well-packed, crushed aggregate (approximately 3/4" size rock or sand, with no fines) in the base of hole.

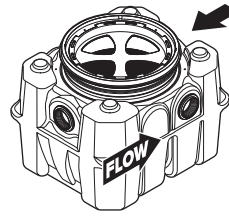
3 Set Up Outlet Diffuser and Install Cleanout Plugs

3a Choose outlet location.

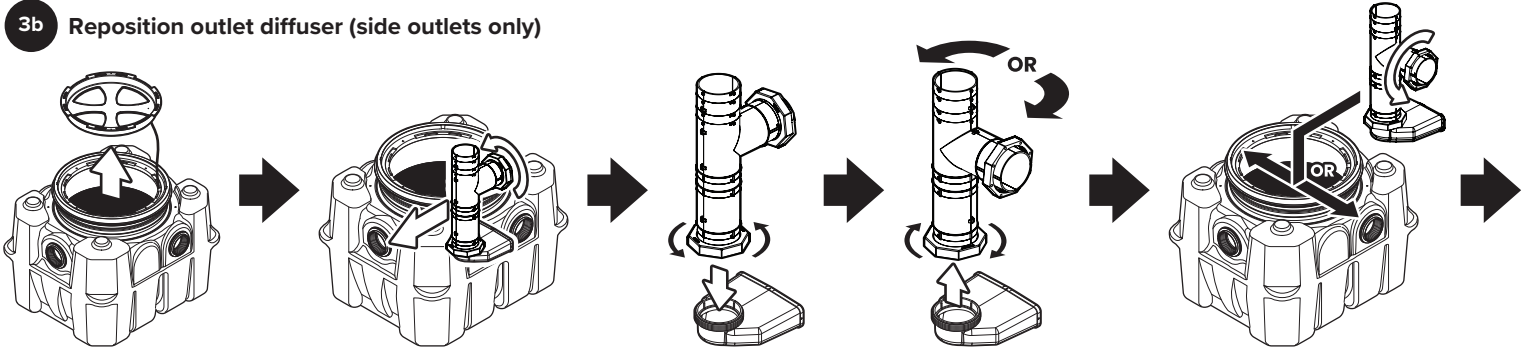
Side Outlet:
Go to Step 3b.



Straight Through:
Go to Step 3c.

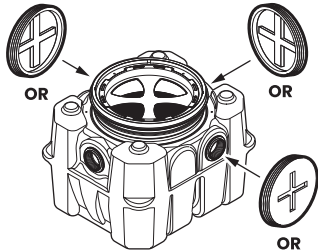


3b Reposition outlet diffuser (side outlets only)



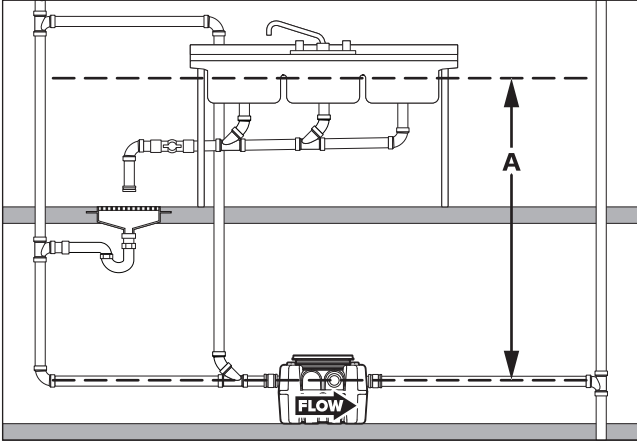
Remove safety star insert, leave tethered to unit. Unscrew diffuser retaining nut and remove outlet diffuser. Unscrew diffuser foot retaining nut and remove outlet diffuser foot. Rotate diffuser toward chosen outlet, replace foot ensuring it will point to the back wall of the unit and hand tighten foot retaining nut. Insert diffuser into chosen outlet and hand tighten retaining nut.

3c Cap unused connections(all configurations)



Screw in provided 4" cleanout plugs using pipe thread sealant or tape approved for use with plastics. **Do not cap the inlet or outlet connections attached to the diffusers.**

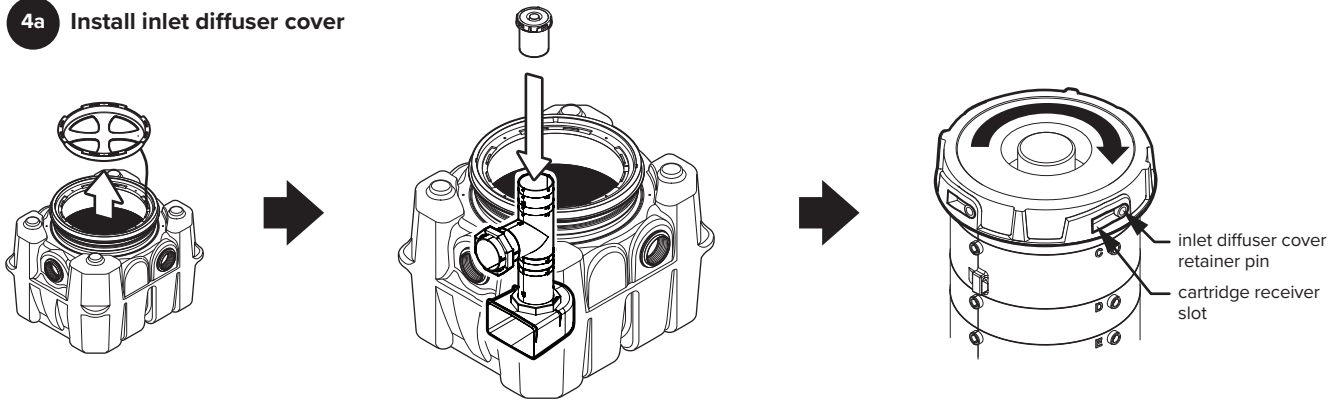
4 Install Inlet Diffuser Components



This unit is supplied with a white inlet diffuser cover to prevent the unit from swamping in high flow/ increased head pressure conditions.

- If dimension "A" is 13 feet or less, the inlet diffuser cover is not needed, **go to Step 5, Connect Piping.**
- If dimension "A" is more than 13 feet, or a high flow/increased head pressure condition exists, **follow Steps below.**

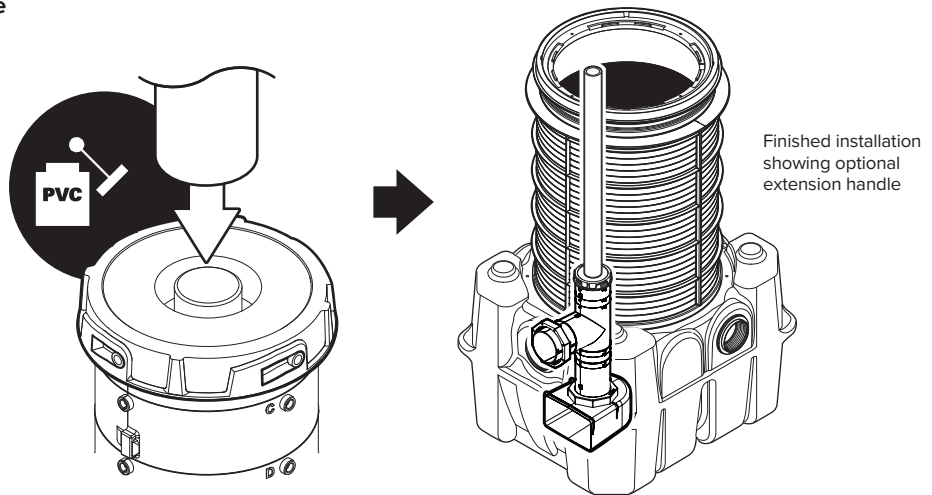
4a Install inlet diffuser cover



Remove Safety Star® insert and remove inlet diffuser cover from the parts bag. Slide inlet diffuser cover into top of inlet diffuser and rotate clockwise until cartridge drops onto inlet diffuser cover retainer pins. Continue rotating clockwise until pins are fully seated.

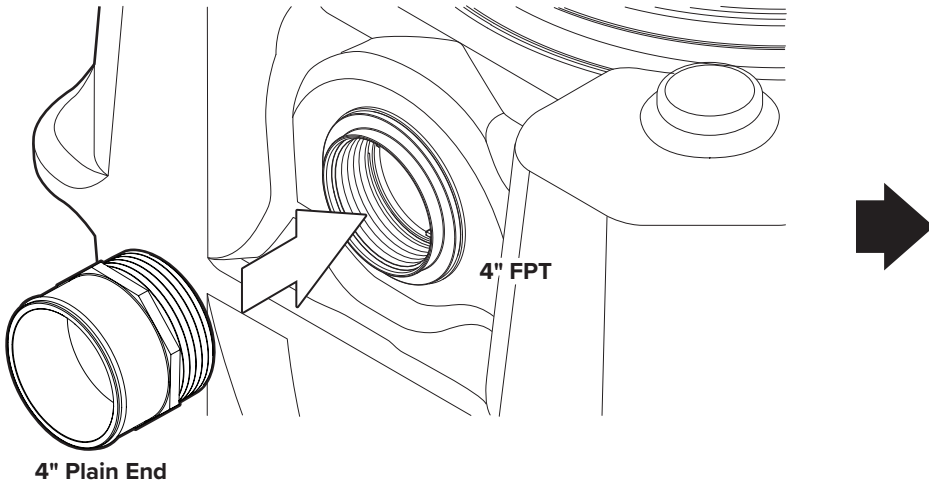
4b OPTIONAL: install extension handle

For easy inlet diffuser cover removal in deep burial installations, 1-1/2" PVC SCH. 40 pipe may be used as an extension handle. Before risers have been installed, cut pipe to length and attach to top of cover using PVC primer/cement. Extension handle length should be about 12" shorter than total riser height.



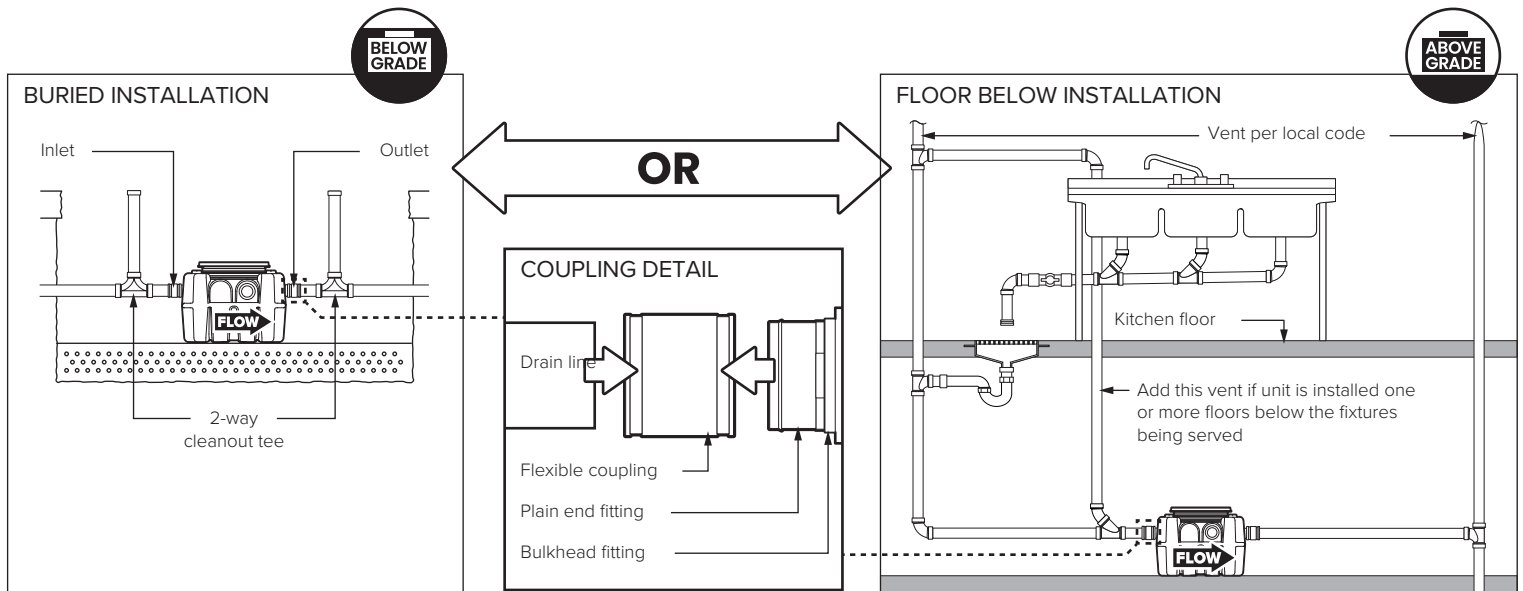
5 Connect Piping

5a Install plain end fittings



Screw plain end fittings (included) into bulkhead fittings using pipe thread sealant or tape approved for use with plastics. 6" connection types come pre-installed from the factory.

5b Connect interceptor to drain lines



Place unit into final position and set level. Mechanically couple inlet and outlet drainage lines to unit. **Do not solvent weld.** Ensure all upstream fixtures are trapped. Vent per local code. Installation of 2-way cleanout tees to grade (by others) is recommended for buried installations.

6 Wet or Air Test Piping Per Local Code

! WARNING! DO NOT AIR TEST UNIT OR RISER SYSTEM!
Doing so may result in property damage, personal injury or death.

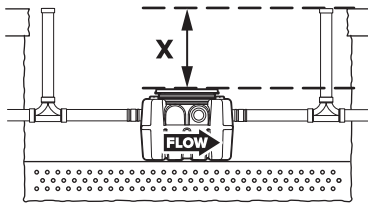
Have a Leak? Call customer care at 913-951-3300
Hours 8am-5pm CST, M-F

7 Bring Covers Flush-to-Grade



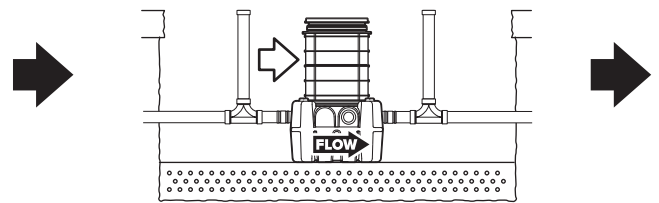
The GB-50 is ready for burial depth of 28-1/2" from finished grade to bottom of tank (or 10-1/2" to centerline of inlet). Deeper burials will require extending the cover adapters and possibly adding risers.

7a Measure dimension X to determine riser height needed.



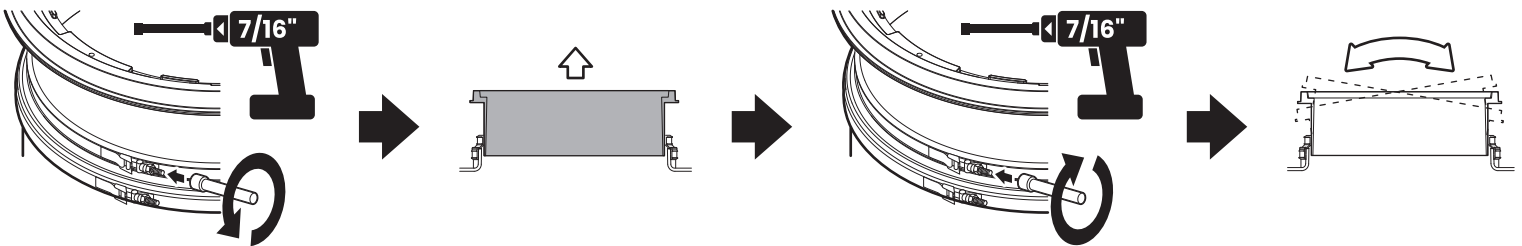
Riser Height Needed	Risers Required
0" - 4"	None (use adapter)
>4" - 34"	FCR2 (x1)
>34" - 64"	FCR2 (x2)
>64" - 94"	FCR2 (x3)

7b Install risers if required

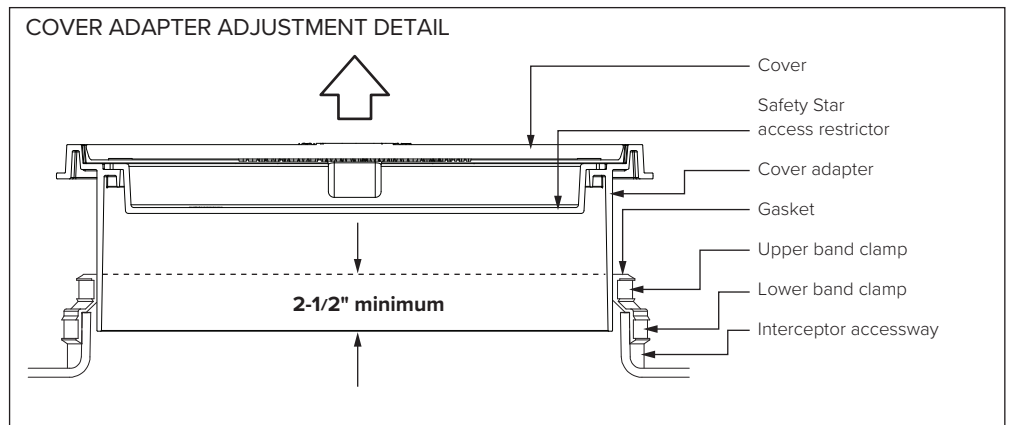


See instructions included with FCR2.

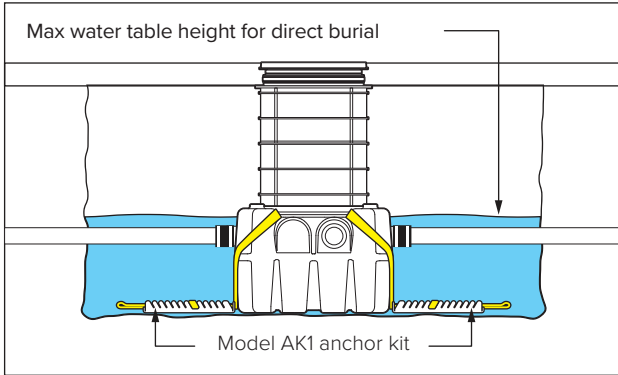
7c Make final cover adapter adjustments



Loosen the cover adapter upper band clamp using 7/16" nut driver bit. Adjust cover adapter heights as needed. **Maintain a minimum 2-1/2" insertion depth.** Tighten upper band clamp to 5 -8 ft. lbs. of torque using 7/16" nut driver bit. If required, cover adapters may now be tilted up to 10° in any direction using gasket flexibility.

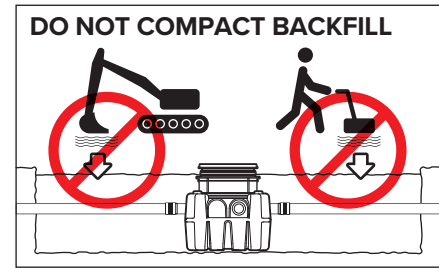
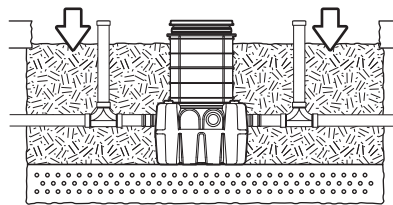
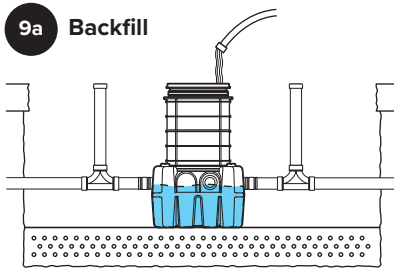


8 Install Anti-Flotation Anchor Kit



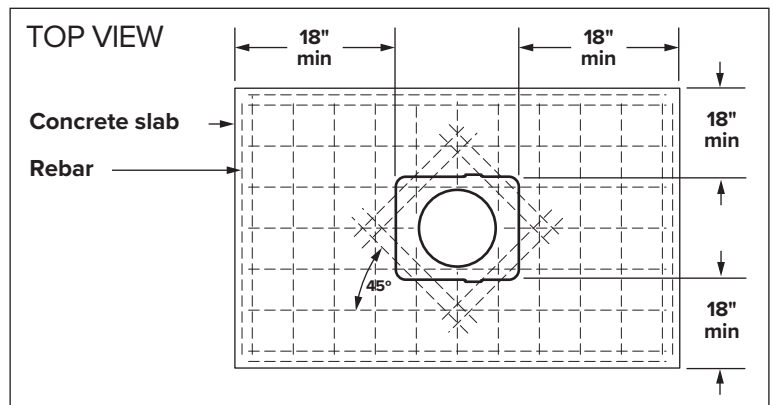
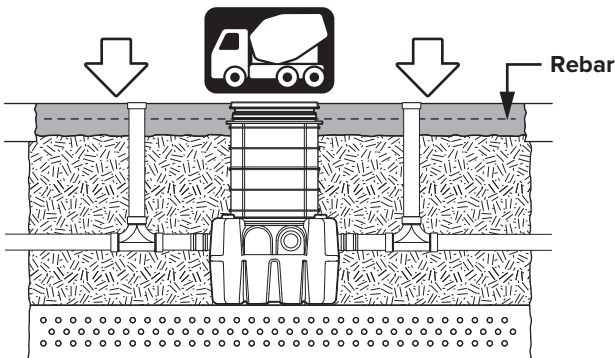
If the installation location is in a high water table or at risk area (including but not limited to tidal surge areas, floodplains and areas that receive storm water) the GB-50 must be installed with Schier model AK1 anchor kit.

9 Backfill and Finished Grade



Fill unit with water for stabilization and float-out prevention. Backfill evenly around tank using crushed aggregate (approximately 3/4" size rock or sand with no fines) or flowable fill. **Do not compact backfill around unit.**

9b Pour concrete slab to finished grade



Vehicular Traffic Areas:

Minimum 8" thick concrete slab with rebar required. Thickness of concrete around covers to be determined by specifying engineer. If traffic loading is required the concrete slab dimensions shown are for guideline purposes only. Concrete to be 28 day compressive strength to 4,000 PSI. Use No. 4 rebar (ø 1/2") grade 60 steel per ASTM A615: connected with tie wire. Rebar to be 2-1/2" from edge of concrete and spaced in a 12" grid with 4" spacing around access openings.

Pedestrian Traffic or Greenspace Areas:

Minimum 4" thick concrete slab with rebar required.