

Installation Instructions Stainless Steel Quick Bolt-on Coupling (QBC) 1.5" and 2.0"

IMPORTANT INFORMATION – FOLLOW ALL INSTRUCTIONS

OPW STANDARD PRODUCT WARRANTIES

FLEXWORKS by OPW, Inc., VAPORSAVER™ and all other OPW products must be used in compliance with all applicable federal, state, provincial and local laws, rules, and regulations. Product selection must be based on physical specifications and limitations, compatibility with the environment and material to be handled. All illustrations and specifications in the literature are based on the latest production information available at the time of publication. Prices, materials, and specifications are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation. OPW warrants solely to its customer that the following products sold by OPW will be free from defects in materials and workmanship under normal use and conditions for the periods indicated:

Product	Warranty Period
FlexWorks Primary Pipe	10 years from date of manufacture
All Products Certified to California Standards*	1 year from date of manufacture or from date of installation registration (not to exceed 15 months from date of manufacture)
All other Products	1 year from date of manufacture
*Products certified to California 2001 Standards will have an OPW Registration Card enclosed/attached to the product.	

OPW's exclusive obligation under this limited warranty is, at its option, to repair, replace or issue credit (in an amount not to exceed the list price for the product) for future orders for any product that may prove defective within the applicable warranty period. (Parts repaired or replaced under warranty are subject to prorated warranty coverage for remainder of the original warranty period). Complete and proper warranty claim documentation and proof of purchase required. All warranty claims must be made in writing and delivered during the applicable

warranty period to OPW at OPW 9393 Princeton-Glendale Road Hamilton, Ohio, USA 45011, Attention: Customer Service Manager. No products may be returned to OPW without its prior written authority.

This limited warranty shall not apply to any FlexWorks or VAPORSAVER™ product unless it is installed by an OPW attested installer and all required site and warranty registration forms are completed and received by OPW within 60 days of installation. This limited warranty also shall not apply to any FlexWorks, VAPORSAVER™ or other OPW product: unless all piping connections are installed with a nationally-recognized or state-approved leak detection device in each tank and dispenser sump (which are not for storage and from which all discharge hydrocarbons must be removed, and the systems completely cleaned, within 24 hours); unless testable sumps utilize FlexWorks pipe and access fittings; unless a sump inspection log or an EPA recommended/required checklist is maintained and the results are furnished to OPW upon request; and unless OPW is notified within 24 hours of any known or suspected product failure and is provided with unrestricted access to the product and the site. This limited warranty also shall not apply to any product which has been altered in any way, which has been repaired by anyone other than a service representative authorized by OPW, or when failure or defect is due to: improper installation or maintenance (including, without limitation, failure to follow FlexWorks Quick Reference Manual Installation Guide and all product warning labels); abuse or misuse; violation of health or safety requirements; use of another manufacturer's, or otherwise un-authorized, substances or components; soil or other surface or subsurface conditions; or fire, flood, storm, lightning, earthquake, accident or any other conditions, events or circumstances beyond OPW's control.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES INCLUDING,

WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED. OPW shall have no other liability whatsoever, whether based on breach of contract, negligence, gross negligence, strict liability, or any other claim, including, without limitation, for special, incidental, consequential or exemplary damages or for the cost of labor, freight, excavation, clean-up, downtime, removal, reinstallation, loss of profit, or any other cost or charges. No person or entity is authorized to assume on behalf of OPW any liability beyond this limited warranty. This limited warranty is not assignable.

IMPORTANT: Read these assembly and installation instructions completely and carefully prior to starting. Check to make sure all parts have been provided. Use only the parts supplied; substitution of parts may cause product failure.

IMPORTANT: Please read all warnings and follow the installation instructions completely and carefully. Failure to do so will void all warranties and may cause product failure or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

WARNING - DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.

WARNING - If servicing, replacing, or otherwise modifying an existing Quick Bolt-on connection, replace all gaskets and install new ones. Never reuse damaged gaskets as it may result in an improper seal. Only qualified, competent, well-trained technicians should perform maintenance. Common sense and good judgment should always be exercised. The contractor's understanding of all related site conditions prior to starting the project is essential. If the contractor does not have a clear understanding of the required work and site conditions, the contractor is advised to seek clarification prior to starting any portion of the project.

NOTICE - The dust covers that are supplied with the couplings should be kept on all couplings both before and after the installation process. This precaution will lessen the possibility of damage and contamination from dirt, sand, and debris.

Stainless Steel Quick Bolt-on Couplings

OPW Fueling Containment Systems Quick Bolt-on Couplings are designed to be used with FlexWorks piping and must be installed within a containment sump. When using FlexWorks double wall flexible piping, **be sure the cut is straight and clean.**

Before Installing:

1. Read all instructions carefully.
2. Inspect barbed surfaces of fittings for loose debris or damage which may have occurred during shipping.
3. See Page 4 for Testing Procedures.
4. Refer to the FlexWorks Piping Manual for additional information.

Tools Needed for Installation and Assembly:

FlexWorks pipe cutter
Liquid soap (optional)
Torque wrench
5/8" socket
Quick Bolt-on Coupling Tool (QF-TOOL, sold separately)
Quick Bolt-on Coupling Clamp/Gasket Kit (QGC-2000 or QGC-2000XC, sold separately)
18" Cable Tie (included with Quick-Bolt-on clamp)

Cut FlexWorks Piping (see Figure 1)

Always cut the FlexWorks piping according to the type of fitting being used. To cut the pipe, measure from the shoulder of one fitting to the shoulder of the corresponding fitting and cut pipe to that length.

NOTE: To avoid a miscut, always be sure to measure your pipe length twice and then cut the pipe. Always cut the FlexWorks pipe squarely to the desired length using the FlexWorks pipe cutter.

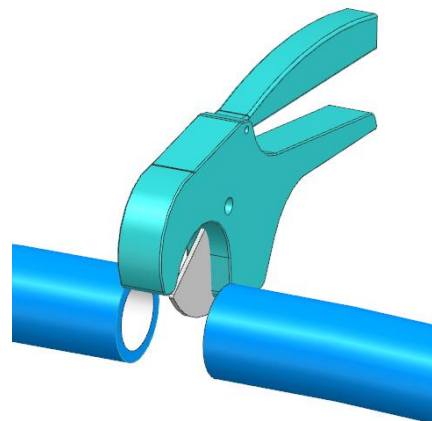


Figure 1

Install Piping into Sump

Insert the piping into the sump through the entry boot.

Install riser and Quick Bolt-on Tee/Elbow.

Mate Barbed Fitting to Quick Bolt-on Tee/Elbow (see Figure 2)

Place appropriate o-ring into the Quick Bolt-on ferrule's groove. Open clamp fully to encapsulate both ferrules. Ensure o-ring is properly seated in groove before installing clamp. Hand tighten clamp to hold in place.



Figure 2

NOTE: QGC-2000 o-ring to be used for normal temperature applications. QGC-2000XC o-ring to be used for extreme cold applications.

Install Pipe to Barbed Fitting (see Figure 3)

Install the pipe onto the barbed end of the fitting. The pipe will stop at the pipe stop. Be sure the O-ring on the insert is clean and free of debris and that it has lubricant on it.

NOTE: Do not use lubricant to assist in pressing pipe onto the barbed fitting. Use liquid soap if required.

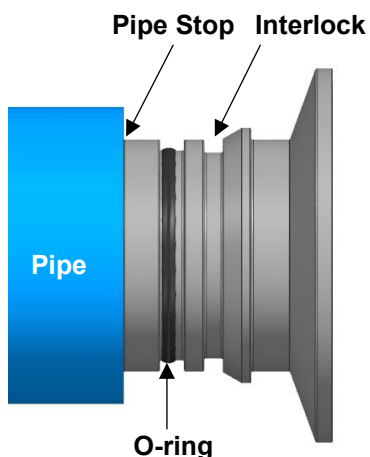


Figure 3 (Quick Bolt-on Tee/Elbow, Clamp hidden for clarity)

Install Clamp Segments (see Figures 4 & 5)

Position the clamp's interlock lip into the groove behind the barbed fitting's ferrule. The pipe should stop approximately 11/16" from the leading face of the clamp. Make sure the clamp pads are clean and free of debris.

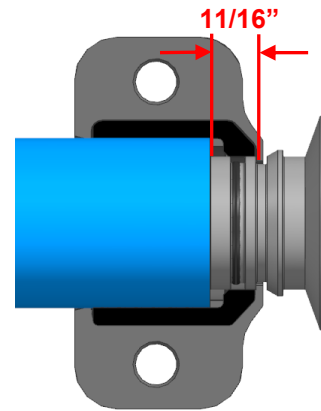


Figure 4 (Quick Bolt-on Tee/Elbow, Clamp hidden for clarity)

NOTE: Do not put any lubrication on clamp pads.

Position second clamp segment and insert two bolts through both segments using included washers. Alternately tighten the clamp bolts until the clamp segments meet, being sure to keep the clamp segments parallel to each other.

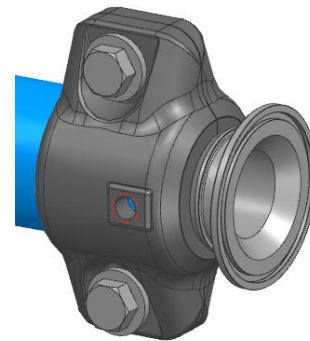


Figure 5 (Quick Bolt-on Tee/Elbow, Clamp hidden for clarity)

NOTE: Torque bolts to 70 ft-lbs. If an impact wrench is used, verify proper torque setting is achieved. Clamp flanges should be line to line.

NOTE: Retighten clamp after a period of 24 hours to ensure proper sealing.

Final Assembly (see Figure 6)

IMPORTANT: Using QF-TOOL, tighten clamp to a torque of **60 in-lb**. To preserve installation torque, install cable tie so that it does not loosen the wing nut when pulled taut.

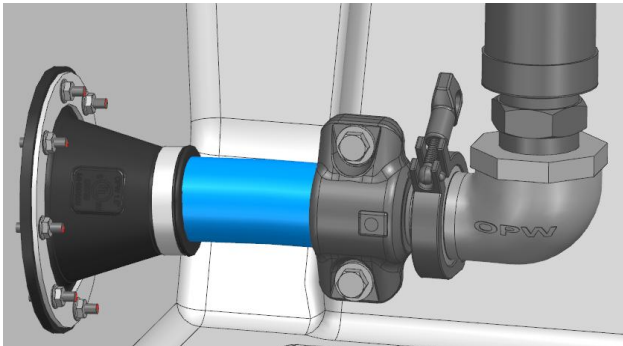


Figure 6 (Cable tie not shown installed)

Retrofit Sites

On retrofit sites such as TCI pipe replacements, piping may enter the sump at an angle. In such cases, a crowbar or strap may be needed to align the pipe with the fittings. Piping entering the Quick Bolt-on Coupling **MUST NOT** go past the pipe stop on the insert. If necessary, pip the pipe back 1/8" from the pipe stop before installing the clamps to the fitting.

Testing Procedures

Interstitial Tube Assemblies

The Bolt-on Couplings attached to the ends of the flexible supply pipe sections have threaded (1/8" NPT) interstitial access ports on their clamp for connection to Interstitial Tube Assemblies that come in various lengths. All tube assemblies are fitted on each end with 1/8" NPT brass compression fittings.

Test Tubes (TTT-2536)



Test Tubes are connected to the Quick Bolt-on Couplings located within tank sumps and the last dispenser sump in a series piping run. These 36" (900mm) long tubing assemblies are used to provide a means of air pressure integrity testing of a pipe interstitial space after installation. They can be cut to any desired length. They are used as another means of testing interstitial space when installed inside a terminating dispenser sump. When not used for testing purposes, they may be plugged or left

open depending on the pipe interstitial monitoring application.

Connector Tubes



Connector Tubes are connected to the Quick Bolt-on Couplings located within dispenser sumps and are 12" (305mm) long. Installed inside junction dispenser sumps, connector tubes are used to interconnect the interstice of one pipe section to the next by bypassing the junction safety valve.

Interstitial Tube Connections for installation of Interstitial Tubes if tubes are to be taken out after install testing:

The steps required for temporarily connecting the connector tubes and/or test tubes to the threaded interstitial access ports of the double wall Quick Bolt-on Couplings is as follows:

Step 1: Apply Teflon tape to only the NPT threads of the adapter.

Step 2: Thread the adapter into the NPT threaded interstitial access port.

Step 3: Cut the tube evenly to the desired length.

Step 4: Slide the compression nut onto the tubing.

Step 5: Slide the ferrule onto the tubing.

Step 6: Insert tube end into preinstalled adapter.

Step 7: Slide down and thread on compression nut to adapter by hand.

Step 8: Complete tightening compression nut with a 1/2" wrench.

Interstitial Tube Connections for installation of Interstitial Tubes if tubes are to remain on coupling after install testing:

The steps required for permanently connecting the connector tubes and/or test tubes to the threaded interstitial access ports of the double wall Quick Bolt-on Couplings is as follows:

Step 1: Apply a gas grade pipe dope to the NPT threads of the adapter.

Step 2: Thread the adapter into the NPT threaded interstitial access port.

Step 3: Cut the tube evenly to the desired length.

Step 4: Slide the compression nut onto the tubing.

Step 5: Slide the ferrule onto the tubing.

Step 6: Insert tube end into preinstalled adapter

Step 7: Slide down and thread on compression nut to adapter by hand.

Step 8: Complete tightening compression nut with a 1/2" wrench.



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