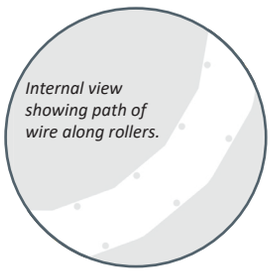
Wire Guide Module® Flex Assembly & Maintenance

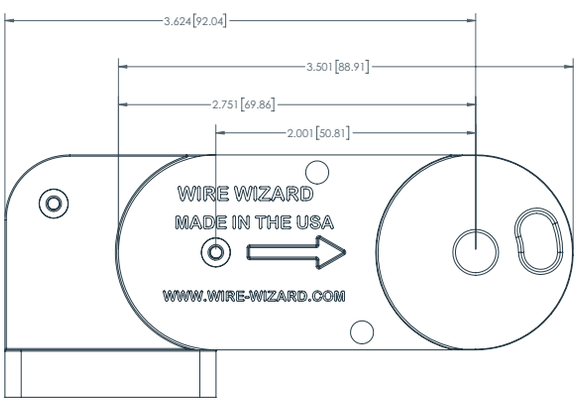
Instructions for WGM-F-2 Models

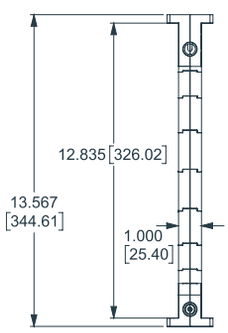


The Guide Module® FLEX System is designed especially for welding applications using a traversing axis, gantry or boom. The FLEX utilizes a series of rollers with bearings to eliminate skid friction on the wire, providing a smooth, consistent wire feed. May be installed internally to select igus® e-chain® cable carriers or mounted in a channel system (aluminum mounting channel available).

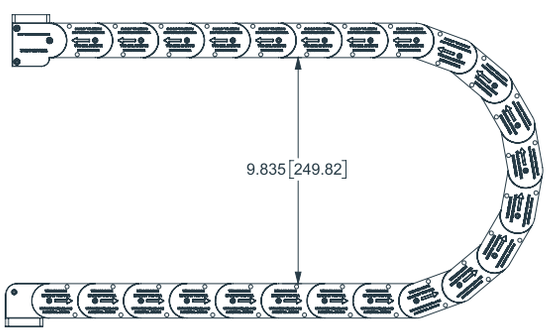
Wire Compatibility: Compatible with solid wires (ferrous or non-ferrous) 0.9 – 1.6 mm. Not for use with cored wire (FCAW). Model for large wire (WGM-F-LW) also available.

Guide Module® Flex Link & End cap Dimensions





Guide Module® Flex Bend Radius Dimensions

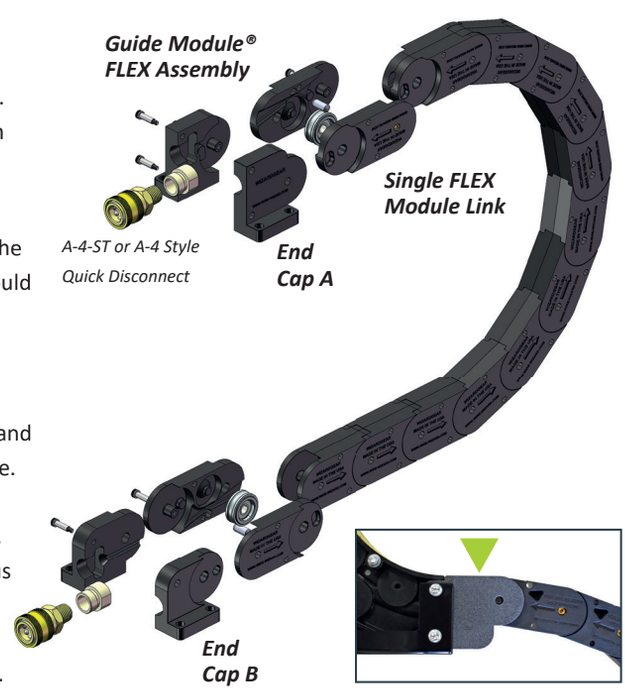


Guide Module Flex Assembly Instructions

1. Sections of FLEX Modules may be attached together. To attach links, first disassemble the end links using a T8 Torx wrench (see assembly drawing at right). Remove the Torx bolt from the last two links and loosen the bolt in the third from last link to attach sections or end caps.

2. Ensure the rollers inside the module links stay in the proper position and attach the links together. When attaching FLEX Module sections, the arrows on the links should always be pointing in the same direction. This is the direction the wire will feed. Reassemble the connected Module links using the T8 Torx wrench.

3. At the ends, connection to the wire delivery system may be made with end caps and quick disconnect fittings or a direct connection to a stationary Wire Guide Module. End Cap Connection: Attach the end caps to the ends of the FLEX Module links (end cap kit part # WGM-F-2-ECK). For a quick disconnect (6,35mm NPT threads), use part # A-4-ST for a steel disconnect or A-4 for brass disconnect for non-ferrous wires. A-4-ST-I disconnects include an insulator sleeve for added protection. Connection to Stationary Guide Module: If attaching directly to a stationary Wire Guide Module, use part # WGM-F-2-ECK-ADP for the Guide Module Adapter Link.



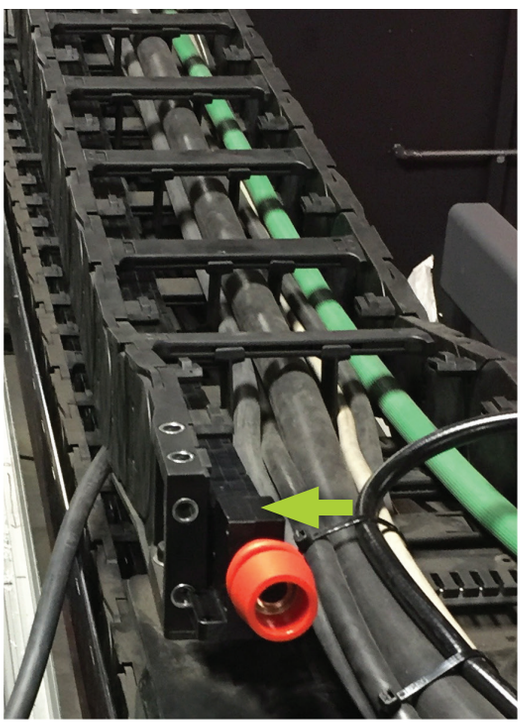
WGM-F-2-ECK-ADP Stationary Guide Module Adapter Link

4. The Guide Module FLEX may be installed internally on select cable carrier systems with large enough internal dimensions and/or mounted in an aluminum channel system (see page 2). Regardless of the mounting method, end caps should always be bolted down securely to avoid wire feeding issues.

Guide module flex installation inside cable carriers

1. The Guide Module FLEX may be installed internally on select cable carrier systems (see photos for examples). The cable carrier must have a minimum of 44mm interior height in order to house the FLEX Modules.
2. To install the Guide Module FLEX on the interior of a cable carrier, run the Modules through the length of the cable carrier and mount securely at each end using the end caps. Typically, one end cap is attached to the cable carrier and the other (towards the wire feeder) to a robot at the base or on a bracket fixed to the robot.
3. Once the FLEX Modules are securely installed, feed the wire through the system. See section at the bottom of this page for wire feeding instructions.

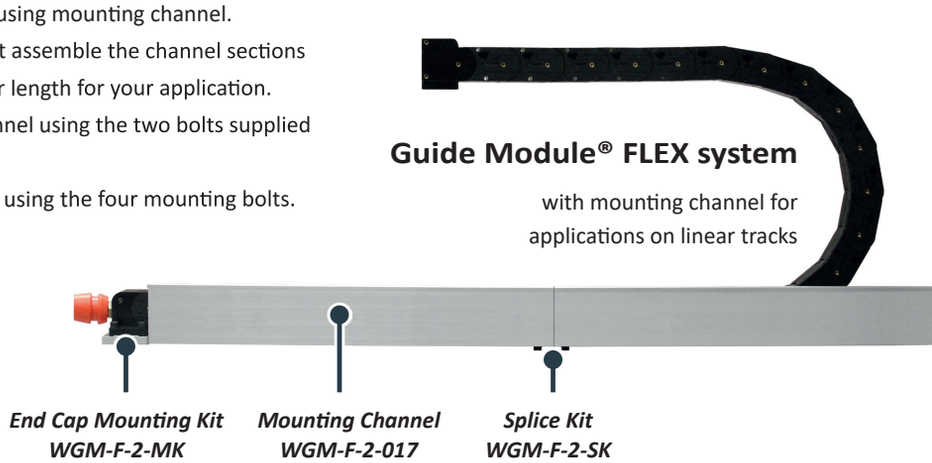
Installation in a cable carrier system used with a longitudinal seam welder



Installation inside igus® cable carrier system

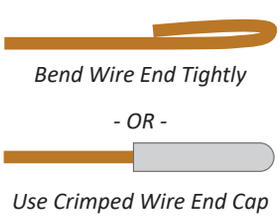
Guide module flex installation on mounting channel

1. Aluminum mounting channel is available for Guide Module FLEX installations. The channel is sold in 1.2m sections. Splice kits and end cap mounting kits (shown installed at right) are required components for most applications using mounting channel.
2. To install the Guide Module FLEX into the channel, first assemble the channel sections together using the splice kits until you have the proper length for your application.
3. Install the end cap mounting kit to the end of the channel using the two bolts supplied with the kit.
4. Attach the Guide Module FLEX end cap to the channel using the four mounting bolts.



Feeding wire through the guide module flex system

The final step is to feed weld wire through the system to the wire feeder. It is usually necessary to round over the wire end or use a wire end cap upon initial feeding through the Guide Module FLEX. This will prevent hang-ups as well as prevent the wire from gouging the conduit. Welding Pliers for bending wire and wire end caps are available from Wire Wizard. If wire still hangs up, try straightening the FLEX Module assembly prior to feeding wire to the feeder.



Maintenance

The Guide Module FLEX should be inspected periodically for any excess dirt and debris build-up. Weld wire can deposit industrial contaminants such as dirt and dust as well as drawing compounds from the wire package onto the Wire Guide Module track and rollers. For inspection, it is recommended that a couple individual links are disassembled and checked for excess contaminants. If there is excessive debris and build-up causing wire delivery issues, the FLEX Modules may need to be replaced. Cleaning the individual links and rollers is possible using a dry cloth (do not use solvents when cleaning) and/or blasting with compressed air to blow out debris.

Cleaning Instructions

- Using a T8 Torx Wrench, disassemble a section of the FLEX Modules from the full assembly.
- Remove the Torx screw from the last link in the assembly, then loosen the Torx screws on the next two links (Fig. 1).
- Hold the flex module length in a vertical position and open the link on the end enough to allow an air gun nozzle into the interior of the link.
- Insert air gun nozzle into the end link on the FLEX Module section, blow air into the assembly to force any loose debris, dirt, or dust to fall out of the opening of the bottom link (Fig. 2)
- Repeat this process for each section of FLEX Modules until the full assembly has been cleaned. When finished, reassemble all sections and reinstall in your wire delivery setup.

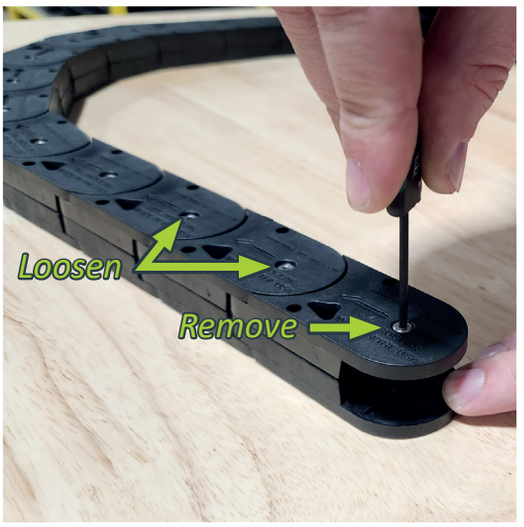


Figure 1


Figure 2

Troubleshooting

- If wire is not feeding smoothly through the FLEX Module assembly, inspect the links for any damage that may have occurred. Each link may be disassembled using a T8 Torx wrench.
- Ensure the FLEX Module assembly is flexing back and forth without any resistance and that no links are sticking together. If two links are stuck together, one or both links may be damaged.
- Inspect the rollers inside the links for any excessive wear and to ensure they have not been forced out of position. Links and/or complete FLEX Module assemblies with worn rollers must be replaced.
- Individual links that are damaged may be replaced (part # WGM-F-2-M). It is recommended to have extra links on hand in case of damage.
- If wire is hanging up upon initial feeding through the FLEX Module assembly, ensure the wire end is bent over tightly or wire guide caps are used. Straightening out the assembly may also help with feeding wire through the system.

Warranty and liability

All liability on the part of Valk Welding ensuing from an agreement entered into with Valk Welding, the law, an unlawful act or any other legal ground and/or for whatever reason or in respect of whatever case is limited to what is stated in the provisions of this article.

The warranty period is 12 months as from the date of shipping to the buyer and with a maximum of 1,500 operating hours. The warranty covers all parts and labor with the exception of misuse, abuse, neglect and typical consumables as determined by Valk Welding. This warranty excludes damage caused by industrial contaminants, arc shorts, improper installation or improper maintenance. Valk welding will at its option, repair, replace or issue a credit for the value of the defective product within the warranty period.

Upon evaluation and validation of warranty, replacements or repairs can be discussed to send to the buyer. If a replacement is needed immediately, a purchase order is required to cover the cost of the product until the warranty is determined.

Except in the event of intent or wilful recklessness on the part of Valk Welding, all liability on the part of Valk Welding for damage, whether direct, indirect or otherwise, and regardless of whether it is based on the contract entered into with Valk Welding, the law, an unlawful act or any other legal ground and/or for whatever reason or in respect of whatever case shall be excluded.