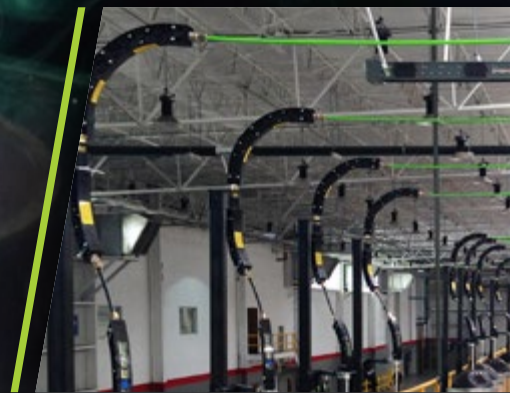


WIRE WIZARD

WELDING PRODUCTS

ALUMINUM WELDING SOLUTIONS



FAMILY OWNED
AMERICAN MADE

wire-wizard.com

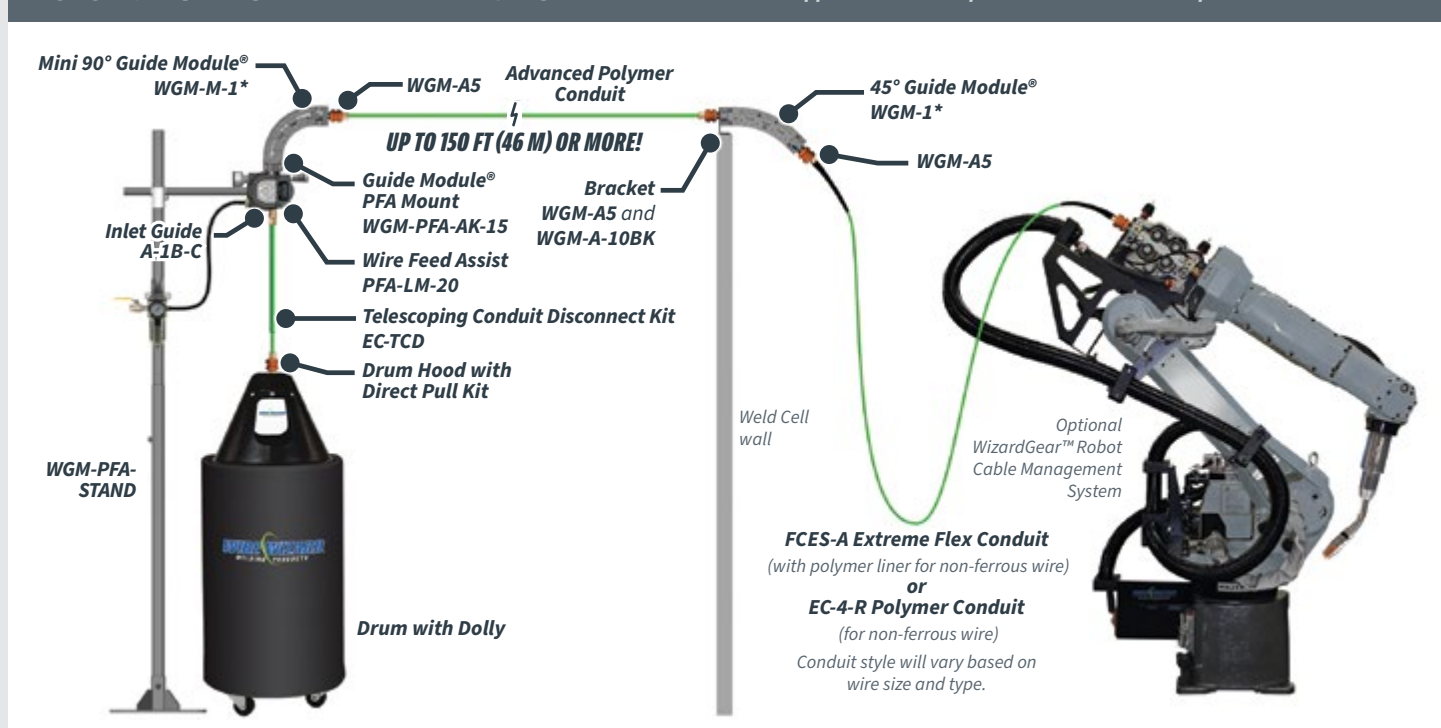
ALUMINUM MIG WIRE DELIVERY

SETUP EXAMPLES

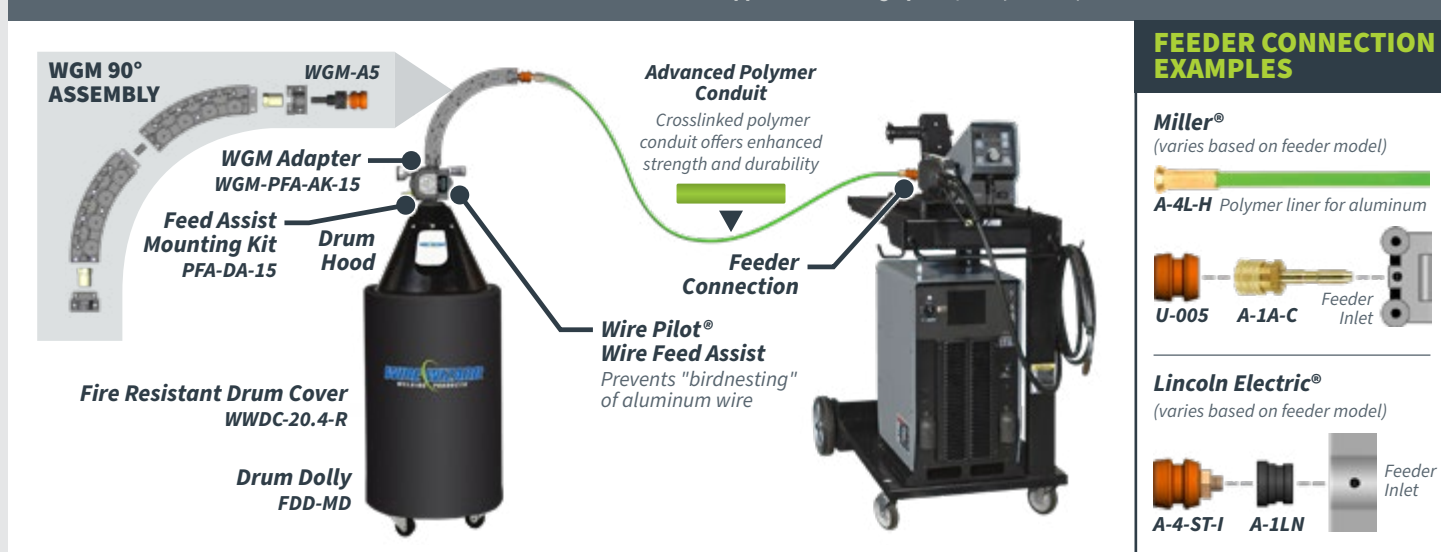
DELIVERY SYSTEMS FOR SMOOTH FEEDING OF DELICATE WIRE

Since aluminum is much softer than steel, it is more susceptible to wire feeding issues around bends and turns in the wire delivery system. It is critical that conduit runs to the wire feeder are installed as straight as possible to minimize friction. Wire Guide Modules are used around turns in the delivery system to eliminate friction at these points. A Wire Pilot® Wire Feed Assist is highly recommended for aluminum wire. The Feed Assist creates a "push-pull" system at the wire source, which eliminates excess skid friction as well as "birdnesting" that can occur at the wire feeder. It can also eliminate the need for expensive push-pull welding guns in some aluminum welding applications. Below are two optimized MIG wire delivery setups for aluminum wire.

ROBOTIC ALUMINUM WIRE DELIVERY SETUP *Guide Modules in this application also require WGM-ECK-50 End Cap Kits



SEMI-AUTOMATIC ALUMINUM WIRE DELIVERY SETUP for applications using up to 1/16" (1.6 mm) wire



ALUMINUM WIRE DELIVERY

ESSENTIALS

FIBER DRUM ALUMINUM WIRE DELIVERY EQUIPMENT

Wire Wizard® **Drum Hoods** feature a direct pull kit with a polished ceramic inlet to help minimize wire friction from the start! They are also manufactured with a tough polyethylene material, strong enough to support a Wire Pilot® Feed Assist right on top of the hood.

Wire tangling inside the drum can be a serious problem with aluminum wire, especially with smaller diameters. The Wire Wizard® **Orbital Arm Kit** prevents this by guiding the wire around the spool and through a liner with a polished ceramic inlet guide.

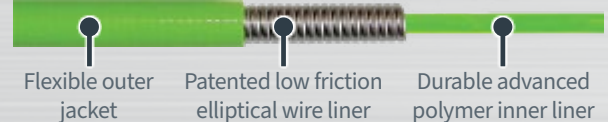


POLYMER AND EXTREME FLEX CONDUIT FOR ALUMINUM

Utilizing an advanced polymer formula for superior strength and durability, Wire Wizard® **Advanced Polymer Conduit** is designed for all aluminum wires. Brass or polymer-lined fittings are available to eliminate wire contamination at connection points. For robotic applications, **Extreme Flex Conduit** for aluminum is a heavy duty, yet flexible, steel lined conduit with a tough inner polymer liner.

Extreme Flex Conduit for aluminum robotic welding FCES-A

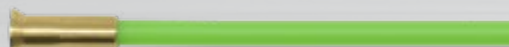
Cutaway view



Brass Fitting
A-16F-4B



Guide Module Connector
WGM-A5



Polymer Liner for aluminum wire
A-4L-H

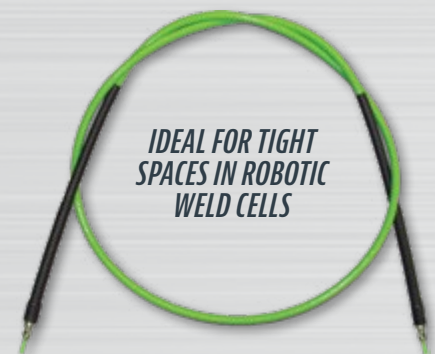


A-4L-H liner installed on wire feeder probe



**ADVANCED POLYMER
FORMULA FOR EXTENDED
WEAR AND DURABILITY!**

Advanced Polymer Conduit
with connector options



**IDEAL FOR TIGHT
SPACES IN ROBOTIC
WELD CELLS**

**Extreme Flex Conduit
for Aluminum Wire**

Cut length with connector options

ALUMINUM WIRE STRAIGHTENER

Soft aluminum wire can easily get recast and twisted as it is fed through the wire delivery system. The Wire Wizard® **Aluminum Wire Straightener** is designed specifically for straightening aluminum wire for smooth, consistent wire placement.

Aluminum Wire Straightener
WSS-100-A



WIRE GUIDE MODULE® AND GUIDE MODULE® FLEX SYSTEM

GUIDE MODULE®

The innovative Wire Wizard® Guide Module® System utilizes a series of rollers with bearings to allow the weld wire to "coast" around bends and corners in the conduit, eliminating the points of high friction that occur in these areas. By eliminating the friction on the wire, it eliminates arc failures, improves welding consistency and enables considerably longer conduit runs of 100 feet or more, allowing bulk wire packages to be centrally located.

- ▶ **Eliminates skid friction** on aluminum wire in areas where bends/corners are necessary throughout the wire dispensing system
- ▶ Smooth, low friction wire feeding **improves consistency of welds, eliminates wire delivery problems, and reduces downtime**
- ▶ Considerably less expensive than alternative methods of eliminating friction on wire over long distances
- ▶ **Increases life of the conduit and consumables** by reducing friction
- ▶ **Saves floor space** by allowing wire drums to be located closer to the cell wall
- ▶ 45° modules may be connected together to form 90°, 135°, or 180° turns



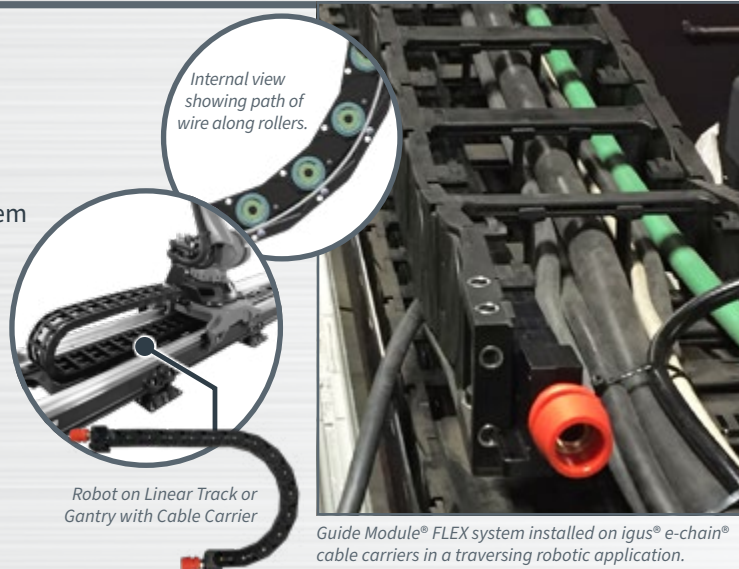
Two 45° Guide Modules combined to form a 90° turn

180° Modules installed on cell with two robots and the Non-Stop™ Wire Dispensing System

GUIDE MODULE® FLEX

Featuring the same innovative concept as the fixed radius Wire Wizard® Guide Modules, the Guide Module® FLEX System is designed especially for welding applications using a traversing axis, gantry or boom.

- ▶ Utilizes a series of flexible links with rollers to **eliminate skid friction**, providing a smooth, consistent wire feed
- ▶ Externally or internally **mountable to select igus® e-chain® cable carrier systems**
- ▶ Ideal solution for **aluminum seam welders**
- ▶ Compatible with 0.035 – 1/16" (0.9 – 1.6 mm) wire



Internal view showing path of wire along rollers.

Robot on Linear Track or Gantry with Cable Carrier

Guide Module® FLEX system installed on igus® e-chain® cable carriers in a traversing robotic application.

WIRE WIZARD® WIRE AND WELDING PLIERS

Feeding new spools of aluminum wire can be a real headache since it can easily kink and get caught in the wire delivery system. Wire Wizard® **Wire & Welding Pliers** have a special tapered tip designed for folding the wire over for quick and easy feeding.



Wire Bending for Easy Feeding through System

WIRE PILOT®

FEED ASSIST

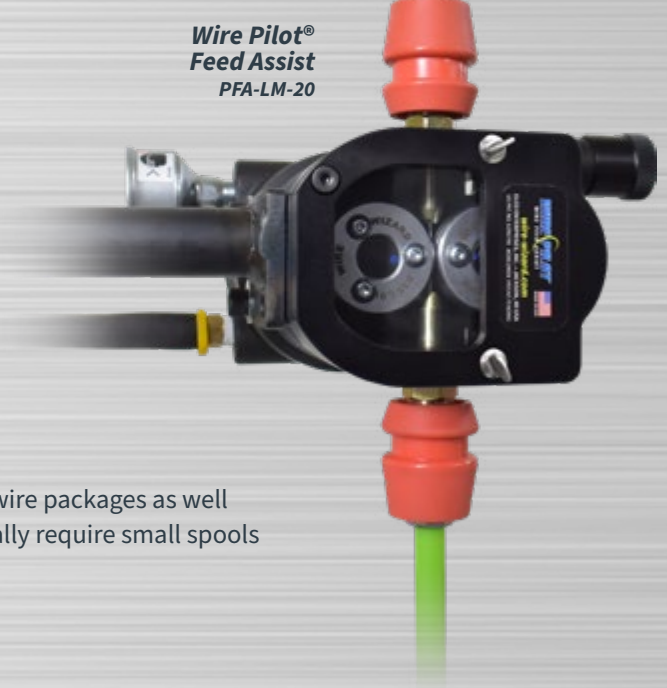
**LONG DISTANCE WIRE DELIVERY
WITH BULK ALUMINUM WIRE!**

PNEUMATIC WIRE FEED ASSIST

The Wire Pilot® Pneumatic Feed Assist provides a "push-pull" system at the wire source to help the feeder move wire through the conduit, allowing the wire to travel a longer distance and reducing the workload on the feed motor. When combined with Guide Modules, it allows the ultimate flexibility and wire packages can be located 150 ft (46 m) or more away from the arc. The Feed Assist is highly recommended for aluminum MIG welding, and it can even allow the use of bulk wire in applications that normally require spools. Adjustable torque setting prevents "bird nesting" that commonly occurs with softer wires. Patented design.

- ▶ **Eliminates drag coefficient inside the conduit**
- ▶ Enables longer conduit runs (150 ft/46 m+), enabling centrally located wire packages as well as allowing the use of bulk wire in many applications that would normally require small spools
- ▶ Ensure smooth delivery of aluminum wire and eliminates shaving
- ▶ Provides "Push-Pull" system to get wire from source to the feeder
- ▶ Extends conduit life and increases arc-on time
- ▶ Prevents burn backs caused by wire feeding problems

Wire Pilot®
Feed Assist
PFA-LM-20



PREMIUM TORCH PRODUCTS FOR ALUMINUM WELDING

HIGH PERFORMANCE MIG WELDING GUNS

- ▶ Patented and proven consumable design with all-copper current path for maximum conductivity with increased consumable life
- ▶ Fully repairable design minimizes ownership cost
- ▶ Low-friction torch liners for aluminum wire available

PowerBall®
Semi-automatic
MIG Welding Gun



**LONG LIFE REPLACEMENT
TORCH CONSUMABLES**



Quality weld completed with PowerBall®
consumables on challenging thick aluminum plate

LONG-LIFE REPLACEMENT CONSUMABLES

- ▶ PowerBall® design with enhanced conductivity increases consumable life and performance in existing robotic MIG torches
- ▶ Consumables and torch liners available for most major torch brands



TORCH WIZARD NOZZLE CLEANING STATION

THE SELF-CLEANING WORKHORSE



Aluminum robotic MIG welding can be a dirty process with excessive soot and spatter build-up. Torch Wizard® Robotic Nozzle Cleaning Stations assist in maintaining quality and productivity by keeping the gas nozzle clean and extending consumable life, reducing downtime required for maintenance. A heavy duty nozzle brush quickly removes spatter and soot from nozzles without the use of anti-spatter.

- ▶ **Extends torch consumable life** by removing spatter accumulation
- ▶ Self-cleaning models feature **integrated air blast for automated cleaning of spatter and debris**, reducing downtime for maintenance
- ▶ **Replaceable nozzle brush** easily removes aluminum spatter and soot build-up
- ▶ No circuit boards and fewer moving parts means more **reliable operation and lower maintenance costs**
- ▶ **Enclosed operating environment** keeps weld cell clean
- ▶ Recommended wire cutter option removes aluminum weld bead for smoother arc starts
- ▶ Ethernet capable (with option)



**Torch Wizard® Robotic
Nozzle Cleaning Station
EL-NCS-C-20-SC**

With optional TCP mount

NOZZLE CLEANING STATION SETUP FOR ALUMINUM WELDING

Model EL-NCS-C-20-SC shown

TOOL CENTER POINT (TCP) MOUNT

Optional TCP mounts available for Fanuc® tool center points.

BUILT FOR RELIABILITY

No complex circuit boards or belts for reliable, low maintenance operation.

ETHERNET OPTION

Optional ethernet capability available for connectivity in modern weld cells.



HIGH TORQUE MOTOR

High torque pneumatic motor prevents stalls and cleans effortlessly!

OPTIONAL WIRE CUTTER

Available wire cutter cleanly cuts wire, removing weld bead for smoother arc starts.

SELF-CLEANING AIR BLAST

Removes spatter and debris, reducing downtime for maintenance.



NOZZLE BRUSH FOR ALUMINUM WELDING

Replaceable nozzle brush easily removes aluminum soot and spatter build-up.

EVACUATION CHUTE/ENCLOSURE

Enclosed operation keeps weld cell clean, optional chute reduces maintenance time.