Robot Peripherals

- Nozzle Cleaning Stations
- Wire Cutters
- Nozzle Cleaners
- Wire Changing Welding Systems
- APC
- Tungsten Changers
- Cooling Water Circulation Systems
- Easyglides
- Microglides
- Flexible Conduits
- Peripherals

Please contact us by FAX or E-mail for catalogues that interest you. You can also download them from our website.

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TOKIN CORPORATION
Robotic welding made more efficient.

The space-saving configuration cleans nozzles efficiently. The stations are available in two series, "F Series", and "Z Series", so that they can be selected to suit your spatter conditions.

**Nozzle cleaning station action example**

1. **Ending welding**
   - Cutting the bead formed at the tip of the wire after welding

2. **Removing the spatter from the nozzle orifice**
   - Nozzle cleaning

3. **Nozzle cleaning**
   - Nozzle cleaning

4. **Wire cutting**
   - Wire cutting

**TKS-Z Series (0462Z *) (Fits type numbers 1 - 3)**

It consists of a nozzle cleaner (TKN-A1), in which the signals from the robot turn the solenoid valve (CWSF01), allowing the pneumatic force to turn the spring thus removing the spatter; a compact wire cutter (TKC-91), and an anti-spatter solution sprayer (TRK-A1). It is the standard type nozzle cleaning station that accommodates a wide range of conditions.

**TKS-F Series (0462F *) (Fits type numbers 1 - 3)**

The spatter that has stuck onto the nozzle orifice can be forcibly removed by using a resamer type nozzle cleaner (TKN-F1). Moreover, it combines a compact wire cutter (TKC91), allowing it to be installed in the smallest space possible among all the series. Select this type for high-speed regions and high-use frequency applications where a large amount of spatter is produced.
TKA-A1 (046200)  
- Pneumatic force turns the spring allowing easy installation and safe operation.  
- It features an escape function after a fixed pressure is applied to the head during nozzle cleaning. Thus, it minimizes damage to the nozzle.  
- Various types of nozzles are available to accommodate nozzles.  
- A "regulator and solenoid valve set" type is also available.  
- A nozzle cleaner cover (spatter receptor) is available as an option.

TKA-B1 (046230)  
- The cap that is stuck onto the nozzle can be removed through the use of an electric type of device. It is the best for removing trapped spatter from the nozzle body and is a spring device, which removes even those stuck inside the nozzle. Because it can keep nozzles without damaging them unnecessarily, use it on electric nozzle or in applications that precisely control a small amount of pressure.  
- The mechanism inside the nozzle is forced by a reverse operation from the nozzle outlet.  
- The regulator turns on automatically when the electric signal is received from a control device.  
- It is recommended for any air source, which can be used for diffusion installation.  
- A regulator and solenoid valve are optional equipment.

TKA-F1 (046255)  
- The air pressure inside the nozzle is forced by a reverse operation from the nozzle outlet.  
- The regulator turns on automatically when the electric signal is received from a control device.  
- A regulator and solenoid valve is optional equipment.

TKA-A1 (046280)  
- This unit, which atomizes and sprays anti-spatter solution, can spray the solution around and inside the nozzle orifice.  
- The sprayed Nozzle Coat, which dries quickly due to the heat created at the nozzle after welding, forms an anti-spatter film.  
- Because this unit sprays the proper amount of anti-spatter solution, it prevents waste (approximately 3,000 sprays are possible per Nozzle Coat*).  
- Recommended setting (air pressure 0.1 MPa, 0.5 second spray).  
- Recommended nozzle within an external diameter range of 15 to 32.

*1 The recommended setting is based on test data obtained under certain conditions. As such, it is not a guarantee, because the number of sprays can vary with the environment where the unit is used.

*2 To use the unit, you will need the dedicated anti-spatter solution "Nozzle Coat" (one can is included for installation).

*3 The regulator and the bottle holder are optional equipment.

TKC-A2 (046250)  
- A favorable arc start can be obtained by cutting off the head that forms at the tip of the arc.  
- A type that uses lubrication to push and cut the wire. It cuts wire after the air pipe is connected.  
- The cutter blade is made of highly durable material, which makes over 40,000 cuts per side. (Either the front or back of the cutter blade can be used).

TKC-B1 (046256)  
- A favorable arc start can be obtained by cutting off the head that forms at the tip of the arc.  
- A type that uses lubrication to push and cut the wire. It cuts wire after the air pipe is connected.  
- The cutter blade is made of highly durable material, which makes over 40,000 cuts per side. (Either the front or back of the cutter blade can be used).

TKC-A1 (046261)  
- A favorable arc start can be obtained by cutting off the head that forms at the tip of the arc.  
- A type that uses lubrication to push and cut the wire. It cuts wire after the air pipe is connected.  
- The cutter blade is made of highly durable material, which makes over 40,000 cuts per side. (Either the front or back of the cutter blade can be used).

TKC-A1 (046260)  
- This unit, which atomizes and sprays anti-spatter solution, can spray the solution around and inside the nozzle orifice.  
- The sprayed Nozzle Coat, which dries quickly due to the heat created at the nozzle after welding, forms an anti-spatter film.  
- Because this unit sprays the proper amount of anti-spatter solution, it prevents waste (approximately 3,000 sprays are possible per Nozzle Coat*).  
- Recommended setting (air pressure 0.1 MPa, 0.5 second spray).  
- Recommended nozzle within an external diameter range of 15 to 32.

*1 The recommended setting is based on test data obtained under certain conditions. As such, it is not a guarantee, because the number of sprays can vary with the environment where the unit is used.

*2 To use the unit, you will need the dedicated anti-spatter solution "Nozzle Coat" (one can is included for installation).

*3 The regulator and the bottle holder are optional equipment.

** WIRE CUTTER 

** NOZZLE COAT 

** CLEAN ARC
Automatic changes between wire and gas can be accomplished by placing two robotic wire feeders equipped with a switching unit onto one Yaskawa Electric robot and one digital welder. Through the use of a motor equipped with an encoder, the setting of the amount of wire retraction or feeding is made possible. Setting the amount of retraction and feeding to the same value will result in a constant length of wire protrusion, allowing you to immediately start welding.

**Features**

- High-speed automatic wire changes: High-speed automatic changes between equal-diameter and unequal-diameter wires are possible. At the same time, two types of welding gases can be changed.
- Space-saving around the arm: A space-saving configuration has been accomplished through the use of a newly developed special cable and a dedicated bracket.
- A single digital welder supports various types of welding: It can change between short-circuiting and pulse welding of course. It also supports aluminum and SUS welding. Signals from the robot controller enable changes in wires and welding conditions.

(* APC is required for unequal-diameter wire changes.

**Equal-Diameter Wire Changes**

Image of wire changing type welding system operation

[Diagram showing wire change process]

1. Ending welding
2. Clamping the welder
3. Restructuring the wires in use
4. Feeding wire through the selected feeder
5. Feeding wire through the selected feeder
6. Dispensing wire
7. Changing time approx. 7 sec

**Changing Unequal-Diameter Wires (APC requires)**

Using the unit in combination with an APC (Auto Parts Changer) will enable it to change unequal-diameter wires. This will greatly expand the combinations of wires that can be used.

Image of wire changing type welding system operation

[Diagram showing unequal wire change process]

1. Ending welding
2. Clamping the welder
3. Restructuring the wire
4. Using APC to select wire (APC requires)
5. Using APC to select wire (APC requires)
6. Dispensing wire
7. Changing time approx. 12 sec

**Realizing high rigidity and high precision**

A high grade Collision sensor optimal for tough use environments

**Features**

1. Dampens shocks from all directions.
2. Despite its high rigidity, it is designed for optimal lost motion to alleviate torch deformation on impact and minimize damage to the robot.
3. Impact detection of interference objects is set to an optimal sensitivity level in order to protect the robot; as such, it does not impede the robot’s normal movements such as high-speed air cuts.
4. Due to its highly rigid and high precision nature, it offers high duplicability, which shortens the recovery time following an impact.
5. Because the torch damp portion has been changed, it can use torches of varying diameters, such as for air-cooled or water-cooled applications.
6. By replacing the finge portion, it can be used regardless of the type of robot.

**YMHS Test Assembly + YMHS Pedestal Assembly**

YMHS test assembly for KUKA in use and YMHS Pedestal Arm.

**YMHS Pedestal Assembly**

YMHS Pedestal Assembly for KH-510

**Option**

YMHS-50B Alignment Fixture

Groups dedicated to adjust the Tool Center Point when replacing the torch.
Automatic Changing of Tungsten Electrodes on the Robot Made Possible

Using in combination with the Tokin TIG torch with a built-in air cylinder (which clamps and unclamps the electrode by actuating the air cylinder located behind the torch body), it can automatically change tungsten electrodes.

**Features**
- Simple configuration consisting of a tungsten electrode stand, chuck, and sensor
- Shorten the time for changing tungsten electrodes, thus saving manpower
- Enables the protrusion length to be kept constant when changing tungsten electrodes
- The tips are not supplied.
- After the break sensor checks that the electrode has been dropped, the electrode to be changed on the "electrode follower" becomes clamped, and pulled out of the stand.
- After waiting for a little while, the "electrode removal chuck" grasps the electrode to unclamp the torch and move it.
- The probe is turned on, and the torch starts operation.

Usable TIG Torches

<table>
<thead>
<tr>
<th>TA-200CDA</th>
<th>TA-500CDB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Features</strong></td>
<td></td>
</tr>
</tbody>
</table>
- With a built-in air cylinder, it shortens the operation for changing tungsten electrodes. 
- The gas lens type is standard equipment, producing a positive welding effect. |
| **Specifications** | 
- **Type** | TIG torch with built-in gas lens type
- **Rated Current** | 200A
- **Gas Lens** | Air
- **Contact Material** | Copper, nickel
| **Dimensions** | 
- **Length** (L) | 250mm
- **Diameter** (D) | 11mm
- **Weight** | 450g |

Various Types of Tungsten Electrodes

- Tungsten with 1.5% lanthanum (Wl5)
- Tungsten with 2% cerium (WC20)
- Pure tungsten (W)

- Nonferrous metals, iron
- Nonferrous metals other than aluminum, iron
- For aluminum only

Filler Wire Feeder

- Usable in plasma welding, laser welding, etc.
- Filler wire feeder with a compact, 100W servo motor.

Air Blower Unit (016700)

- Uses pneumatic force to remove spatter.
- The air flow cools the tip and nozzle, thus extending their use life.
- It can be installed easily on existing torches.
- Its effects can be further improved by combining it with a carbon nozzle.
- An inner tube is supplied as standard equipment.

Wire Clamp Unit (017100)

- Sensing capability in an optimal state.
- Placed between the torch body and the power cable, this unit securely clamps the wire.
- The clamping force on the wire can be changed by changing the air supply pressure.
- It can be installed easily on existing torches.
- The inner tube is supplied as standard equipment.

Teaching Tip/Dummy Tip

- Teaching Tip
  - A movable tip that is used for fast, easy dummy teaching.
  - To accommodate efficient arc protection lengths, the tips are available in sizes shown in the table above.

- Dummy Tip
  - A long stainless steel rod that accommodates the length of the tungsten extension used for torch collimation.
Flexible Conduit

PP Flexible Conduit (on-site assembly)

N Fitting (Coupler/Female) for PP Flexible Conduit

Coupler/Male for PP Flexible Conduit

N Fitting for PP Flexible Conduit

Overview

- Easy to connect/disconnect, less downtime can be achieved.
- On-site cutting & easy-assembly, Piles of various lengths of conduits?? Not any more!!

- Spec. Comparison

<table>
<thead>
<tr>
<th>Spec.</th>
<th>PP</th>
<th>Regular</th>
<th>Simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended bend radius (mm)</td>
<td>300</td>
<td>300</td>
<td>600</td>
</tr>
<tr>
<td>Bend radius by its own weight (mm)</td>
<td>200</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Resistance to creeping (in 30 min)</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Heat resistance</td>
<td>Good</td>
<td>Excellent</td>
<td>Good</td>
</tr>
<tr>
<td>Outer material</td>
<td>PP</td>
<td>Tubular</td>
<td>PVC</td>
</tr>
<tr>
<td>On-site length adjustment</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Replaceable terminals</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Cost reduction</td>
<td>Excellent</td>
<td>Good</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

- Part List

<table>
<thead>
<tr>
<th>Part #</th>
<th>Item name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>PP Flexible Conduit (on-site assembly)</td>
</tr>
<tr>
<td>B</td>
<td>N Fitting for PP Flexible Conduit</td>
</tr>
<tr>
<td>C</td>
<td>Coupler/Male for PP Flexible Conduit</td>
</tr>
<tr>
<td>D</td>
<td>N Fitting for PP Flexible Conduit</td>
</tr>
<tr>
<td>E</td>
<td>Coupler/Male for PP Flexible Conduit</td>
</tr>
<tr>
<td>F</td>
<td>N Fitting for PP Flexible Conduit</td>
</tr>
<tr>
<td>G</td>
<td>PP Flexible Conduit (on-site assembly)</td>
</tr>
<tr>
<td>H</td>
<td>N Fitting for PP Flexible Conduit</td>
</tr>
</tbody>
</table>

Easy Glide

Here is a next-generation flexible conduit with feeding resistance reduced by using rollers in the wire feeding path inside the cable. The pieces can be separated or added on a block-by-block basis, allowing the length to be adjusted at will.**1**

**1**: Adjustable in 1 block (37mm) increments.

- Outstanding Feeding Performance

Cables Can Be Used in Cable Veyor

Microglide

Here is a next-generation flexible conduit that uses rollers in the wire feeding path inside the cable, successfully reducing feeding resistance to a minimum level. It can be used as a conduit in areas that had previously suffered feeding failures due to the high feeding resistance of conventional flexible conduits.

- Outstanding Feeding Performance

Dramatically Improving the Use Life of Parts Such as Feeders

- Weight (per meter): 0.254kg
- Rollers (per meter): 500 (4 pcs X 125)
- Minimum use length: 20m
- Maximum use length: 1500m (driving wire blank)
- Maximum curve distance: 150m (driving wire blank)
- Maximum using temperature: 63°C
- Applicable wire diameter: φ0.8~φ2.0

Weight (per meter): 0.244kg
- Rollers (per meter): 100 (4 pcs X 25)
- Minimum use length: 20m
- Maximum use length: 1500m (driving wire blank)
- Maximum curve distance: 150m (driving wire blank)
- Maximum using temperature: 63°C
- Applicable wire diameter: φ0.8~φ2.0
**Thermo-chiller equipped coolant circulation system**

**WR-200TC**

- Equipped with high-lift pump. Approximate discharge pressure of 0.6 MPa.
- Temperature setting range between 5°C and 40°C (±0.1°C temperature stability).
- Operating conditions can be monitored by way of the digital indication on the control panel.
- Particle filter is provided at the return outlet of the circulating fluid, thus preventing problems caused by dirty circulating fluid.
- Equipped with heating function to prevent freezing.
- Compact design allows installation in tight space.

**Water-Cooled Robotic Torches**

**WX451S / WX451R**

**WX500S / WX500R**

**WR-100 (046500)**

**Features**
- With a compact body and superior cooling performance, it achieves 90% of heat value.
- The pump portion in the circulation unit and the body have been insulated to eliminate any adverse influences while starting any welding.
- No priming is required, and this dramatically reduces the workload for water replacement.
- Because the water tank is a separate, independent type, it facilitates the changing of water.
- It offers superior portability and reduces the work load for cleaning.

**Product Specs**

<table>
<thead>
<tr>
<th>Model</th>
<th>WR-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
<td>100-240V (50/60Hz)</td>
</tr>
<tr>
<td>Power consumption</td>
<td>1.300W</td>
</tr>
<tr>
<td>Discharge pressure</td>
<td>0.9MPa</td>
</tr>
<tr>
<td>Discharge flow rate</td>
<td>2.5-3.5L/min</td>
</tr>
<tr>
<td>Heat dissipation rate</td>
<td>350W</td>
</tr>
<tr>
<td>Tank capacity</td>
<td>1L</td>
</tr>
<tr>
<td>Unit weight (kg)</td>
<td>5.5kg</td>
</tr>
</tbody>
</table>

*Note: With water-cooled torch connected, 0.5L. Cooling water hose not included.*

**Simple Configuration Facilitates Tank and Filter Cleaning**

- The cooling water tank can be replaced in the existing tank. The supply and return hoses can be removed at a touch, facilitating the changing of cooling water.
- The filter can be changed directly through the small opening in the external panel. It can be changed easily by merely removing the strainer cap.