

Tailor-Made Protectivity™

UTP ROBOTIC SEAMLESS CORED WIRES FOR HARDFACING APPLICATIONS



Tailor-Made Protectivity™

UTP ensures an optimum combination of protection and productivity with innovative and tailor-made solutions. Everything revolves around the customer and their individual requirements.

That is expressed in the central performance promise: Tailor-Made Protectivity™.



UTP

Proven under the toughest conditions: Our products protect metal surfaces from wear and corrosion. With over 70 years of experience and the broadest product portfolio in the industry, we are your preferred partner for Surface Protection solutions. We deliver what we promise: Surface Protection tailored to your needs.

With roots in Bad Krozingen (Germany), Seneffe (Belgium) and Cittadella (Italy), UTP offers the world's most unique product portfolio for filler metals from its own production facilities. The Soudokay brand was established back in 1938, while the UTP brand began operations in 1953. Each of these brands therefore respectively looks back on a long history of international dimension.

By merging into the UTP brand, the collective know-how of both brands – gathered over decades in the fields of metallurgy, service and applications engineering – is now united under one umbrella. As a result, a truly unique portfolio of solutions for welding applications has been created in the fields of repair, maintenance and overlay welding.

Research and Development for Customized Solutions

At UTP, research and development, conducted in collaboration with customers, plays a crucial role. Because of our strong commitment to research and development, combined with our tremendous innovative capacity, we are constantly engineering new products, and improving existing ones on an ongoing basis. The result is a vast number of innovative products for solving individual problems and complex matters.

Solutions at Every Point on the Globe

UTP provides products and services through the global branches of voestalpine Böhler Welding and its dealer network in more than 150 countries throughout the world. A team of welding engineers stand at the customer's side, providing advice and support in all matters related to the challenges of welding technology.

Customized Products of Superior Quality

We continuously adapt our product portfolio of about 600 products to customer and industry specifications, while ensuring that we meet the highest quality specifications.

From its in-house production facilities, UTP delivers innovative, tailor-made welding filler metals for: unalloyed and fine-grained structural steel, low-grade alloyed steels, rust-proof, acid-proof, and heat-proof steels, nickel-based alloys, cast iron, copper and copper alloys, manganese steels, tool steels, and cobalt alloys.

The product portfolio comprises:

- » Stick electrodes
- » Solid wires and rods
- » Flux-cored wires
- » Submerged arc wires and fluxes
- » Submerged arc and electroslag strips & fluxes
- » Spraying and PTA-powders

UTP ROBOTIC SERIES

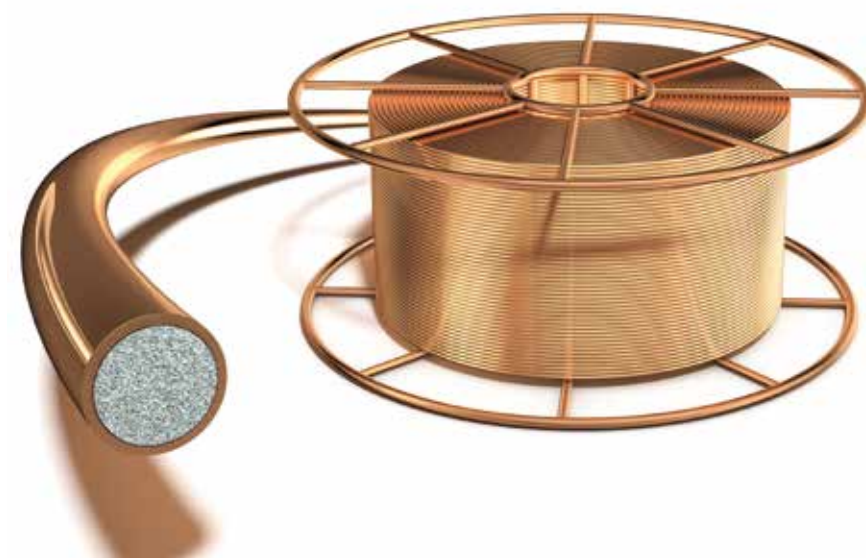
Under the brand statement Tailor-Made Protectivity™, UTP guarantees its customers the ideal combination of protection & productivity – anywhere in the world. The UTP ROBOTIC – Series is an example of an innovative, tailor-made product – developed to optimally fulfill requirements in many heavy industrial segments.

The UTP ROBOTIC wires are seamless, copper-coated, cored wires for the hardfacing of components subjected to extreme combinations of pressure, impact and abrasion wear. These wires can be used in all welding positions and they also have excellent characteristics for the robotic welding applications. They perform equally well in manual or semi-automatic GMAW used for in-situ repair of worn components.

| Product characteristics | User benefits |
|--|---|
| » Reduced contact tip wear | » High productivity, less down-time, less maintenance costs |
| » No moisture pick up | » No need to re-dry, less porosities, less crack risk |
| » Constant positioning accuracy of the metal-cored wire at start ignition and during welding | » Highly beneficial for robotic welding |
| » Reduced wire feeding force | » Constant feeding behaviour |
| » Improved weldability and bead shape appearance | » Less cleaning, post-welding, lower defect weld deposit |
| » Optimal copper coating | » Excellent current transfer, arc stability, less spatters, safer storage |

UTP ROBOTIC wires fulfill the requirements of demanding industries, e.g.

- » Cement & Mining
- » Recycling
- » Steel Industry
- » Tool Manufacturing
- » Power Generation
- » Oil & Gas
- » Tiles Industry
- » Agriculture



UTP ROBOTIC PRODUCTLIST

| Product name | Classification | Hardness | Composition (all weld metal) % | | | | | | Characteristics and field of use | Applications |
|----------------------------|---|--------------|--------------------------------|------|------|------|-----|----------------------|--|---|
| | | | C | Si | Mn | Cr | Mo | Others | | |
| UTP ROBOTIC 250 | DIN 8555: MSG 1-GF-250-P EN 14700: T Fe 1 | 225 - 275 HB | 0.1 | 0.6 | 1.8 | 1.0 | | | Medium alloyed metal cored wire for wear resistant hardfacing with Ar-CO ₂ shielding gas for parts subject to heavy impact and shock | Reconstruction and build-up of various parts. |
| UTP ROBOTIC 257 | DIN 8555: MSG 7-GF-250-KP EN 14700: T Fe 9 | 225 - 275 HB | 0.45 | 0.7 | 14 | 2.0 | | Ni: 1.0 | Mn alloyed metal cored wire for hardfacing application with with Ar-CO ₂ shielding gas. Deposit with elevated resistance to abrasion & strong impacts. | Manganese steels casting foundries , railway crossing repair |
| UTP ROBOTIC 300 NG | DIN 8555: MSG 1-GF-300-GP EN 14700: T Fe 1 | 300 - 325 HB | 0.1 | 0.4 | 1.4 | 0.6 | 0.4 | Ni: 1.9 | Self-shielded flux-cored wire for hardfacing wear-resistant parts or as buffer layer. Easy slag removal and low spatter emission. | Main applications in the railways segment |
| UTP ROBOTIC 352 | DIN 8555: MSG 1-GF-350-P EN 14700: T Fe 1 | 325 - 375 HB | 0.25 | 0.55 | 1.75 | 1.7 | | | Medium alloyed metal cored wire for wear resistant application with AR-CO ₂ shielding gas for surfacing medium-hard steels. Very stable arc and low spatter emission. | Pulley chains, crawler rollers, transport rollers & wheels, wear part from track vehicles |
| UTP ROBOTIC 404 | DIN 8555: MSG 3-GF-40-ST EN 14700: T Fe 3 | 37 - 42 HRC | 0.17 | 0.4 | 0.7 | 6.5 | 2.5 | Ni: 0.25 Ti: 0.10 | Medium alloyed metal cored wire for pressure and abrasion resistant surfacing application up to 550° C with Ar-CO ₂ shielding gas | Main applications in forging. Hot work dies, croppers, hot shearing machines, hot rolling trimmers, extrusion screws, hot cutting tools. |
| UTP ROBOTIC 405 | DIN 8555: MSG 5-GF-40-P EN 14700: T Fe 3 | 37 - 42 HRC | 0.1 | 0.6 | 1.5 | 5.5 | 0.9 | | Medium alloyed metal cored wire with low carbon content for wear-resistant surfacing application with Ar-CO ₂ shielding gas. Very stable arc, low spatter emission & low amount of slag. | Main applications in forging. Parts of earth moving machinery, rollers and mills up to 550° C |
| UTP ROBOTIC 453 | DIN 8555: MSG 3-GF-45-ST EN 14700: T Fe 3 | 42 - 47 HRC | 0.25 | 0.4 | 1 | 5.0 | 4 | | Cr-Mo alloyed metal cored wire for wear-resistant hardfacing on parts subject to high temperature with Ar-CO ₂ shielding gas. | Main applications in forging. Parts of earth moving machinery, rollers and mills up to 650° C |
| UTP ROBOTIC 456 | DIN 8555: MSG 6-GF-45-G EN 14700: T Z Fe 6 | 42 - 47 HRC | 2.2 | 0.9 | 1,2 | 14 | | | Self shielded, Cr alloyed, seamless metal cored wire for wear resistant surfacing applications | Suited for semi or fully automatic surfacing of sugar mill rollers, earth moving machinery, rolls, mills. |
| UTP ROBOTIC 503 | DIN 8555: MSG 3-GF-50-ST EN 14700: T Fe 8 | 47 - 52 HRC | 0.3 | 0.4 | 0.8 | 5.5 | 4.5 | Ti: 0.3 | Metal cored wire for surfacing applications resistant to metal wear up to 650° C with Ar-CO ₂ shielding gas.Very stable arc, low spatter emission, low amount of slag | Main application is forging. Hot work dies, croppers, hot rolling trimmers. Hot cutting tools. |
| UTP ROBOTIC 554 | DIN 8555: MSG 3-GF-55-ST EN 14700: T Fe 8 | 52 - 57 HRC | 0.3 | 0.5 | 0.95 | 6.5 | 2.1 | Ti: 0.30 | Metal cored wire for pressure and abrasion resistant surfacing up to 550° C with Ar-CO ₂ shielding gas..Very stable arc, low spatter emission & low amount of slag | Main applications in forging. Hot working tools, croppers, hot shearing machines, hot rolling trimmers, extrusion screws hot cutting |
| UTP ROBOTIC 600 | DIN 8555: MSG 6-GF-60-GP EN 14700: T Fe 8 | 57 - 62 HRC | 0.45 | 3.0 | 0.4 | 9.0 | | | Cr alloyed metal cored wire for wear-resistant hardfacing for parts subject to a combination of pressure, impact and abrasion wear with Ar-CO ₂ shielding gas. Very stable arc even at very low welding parameters, low spatter emission, low amount of slag, possible to weld also in out of position. | Most common alloy for various applications like ceramic tiles, cutting tools, rollers, parts of earth moving machines, recycling equipment, crushers. |
| UTP ROBOTIC 601 | DIN 8555: MSG 6-GF-60-GP EN 14700: T Fe 8 | 57 - 62 HRC | 1.4 | 1.0 | 0.7 | 6.0 | | Nb: 5.5 | Cr-Nb alloyed metal cored wire for hardfacing, with Ar-CO ₂ shielding gas.Deposit with high but crack free hardness. Suited for wear resisting parts subject to heavy impact and abrasion. Very stable arc, low spatter emission, low amount of slag. | Excellent alloy suited for recycling equipment, cutting edges, conveyer chains, crusher jaws and cones. |
| UTP ROBOTIC 603 | DIN 8555: MSG 3-GF-60-GPZ EN 14700: T Fe 8 | 57 - 62 HRC | 0.5 | 1.0 | 1.1 | 5.5 | 1.3 | V: 0.3 W: 1.3 | Cr-Mo-W-V alloyed metal cored wire for abrading and moderate stress-resistant surface application up to 550° C with Ar-CO ₂ shielding gas. | Crushing hammers, cutting tools, hammers, bulldozer buckets |
| UTP ROBOTIC 606 | DIN 8555: MSG 6-GF-60-GP EN 14700: T Fe 6 | 57 - 62 HRC | 0.5 | 0.6 | 1.4 | 6.0 | 0.5 | | Cr-Mo alloyed metal cored wire for wear-resistant hardfacing applications with Ar-CO ₂ shielding gas; resistance to friction and low stress abrasive wear, especially suited for automated welding. Very stable arc, low spatter emission and low amount of slag. | Parts of earth moving machinery, crusher rollers and mills |
| UTP ROBOTIC 6010 | DIN 8555: MSG 10-GF-60-CPG EN 14700: T Fe 14 | 57 - 62 HRC | 3.5 | 0.8 | 0.2 | 22.0 | | Nb: 0.4 | Cr-Mo alloyed metal cored wire for wear-resistant hardfacing applications; resistance to friction and low stress abrasive wear, especially suited for automated welding with Ar-CO ₂ gas. | Parts of earth moving machinery,rollers and cement applications. |
| UTP ROBOTIC 6011 | DIN 8555: MSG 10-GF-65-G EN 14700: T Fe 13 | 62 - 67 HRC | 0.3 | 0.4 | 1.1 | 0.3 | | Ni: 1.5 B 4.5 | Ni-B alloyed metal cored wire with Ar-CO ₂ shielding gas. Excellent resistance to abrasion induced by sand and minerals. Stringer bead technique is recommended. | Repair of equipment used in agriculture, highway construction machinery, cement pump components, mixing paddles |
| UTP ROBOTIC CHROMELESS 600 | EN 14700 T Z Fe8 | 57-62 HRC | 0.55 | 0.8 | 0.7 | | | < 5.0 | Cr and Nickel-free metal cored wire for wear resistant hardfacing on parts subject to a combination of pressure, impact and abrasion. Specially developed to meet the new stringent fume emission requirements. Good weldability, excellent feedability and easy slag removal. | Shredders, buckets, cutting tools, jaw crushers, baffle plates |
| UTP ROBOTIC S 350 | EN 14700: T Fe3 | 325-375 HB | 0.1 | 0.45 | 1.3 | 4.0 | 0.8 | | Metal-cored flux cored wire for surfacing medium-hard steels in SAW process in combinations with Flux RECORD SK. The product guarantees good combination of toughness, wear resistance and the requested hardness of a base metal. | General surfacing and rebuilding applications. |

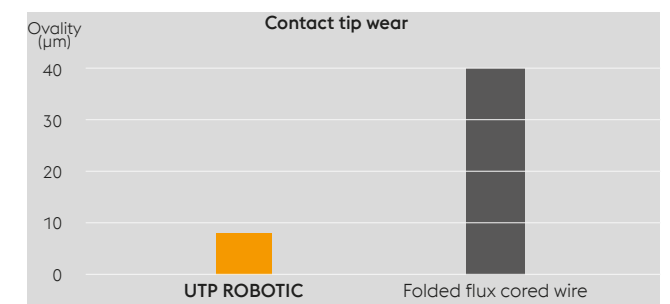
UTP ROBOTIC PREDOMINANT WEAR MODE

| Product | Predominant wear mode | Intensity | | | |
|--------------------|-----------------------|-----------|--|--|------|
| | | Low | | | High |
| UTP ROBOTIC 250 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 257 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 300 NG | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 352 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 404 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 405 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 453 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 456 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 503 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 554 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 600 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |

| Product | Predominant wear mode | Intensity | | | |
|----------------------------|-----------------------|-----------|--|--|------|
| | | Low | | | High |
| UTP ROBOTIC CHROMELESS 600 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 601 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 603 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 606 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 6010 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC 6011 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |
| UTP ROBOTIC S 350 | Abrasion | | | | |
| | High temperature | | | | |
| | Impact | | | | |
| | Corrosion | | | | |
| | Metal to metal | | | | |

Contact tip wear

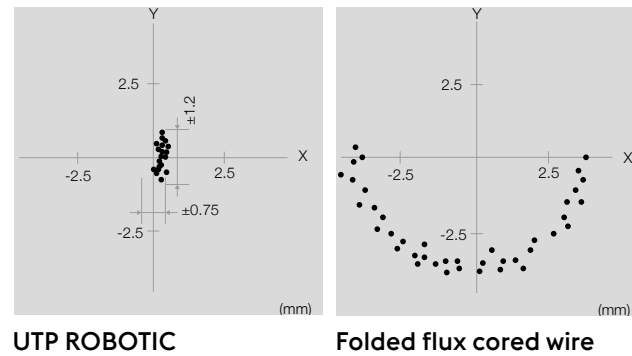
When speaking about efficiency, the low wear rate of the contact tip should also be mentioned. The uniform copper coating of the wire surface in combination with the notch-free design, results in a very smooth and therefore low-friction surface. As a consequence, the wear effect of the wire is reduced by about 80% compared to folded wires. This also leads to significantly less downtime, since the contact tip has to be changed much less frequently. This also contributes to the high efficiency of ROBOTIC wires.



80 % less contact tip wear = less maintenance and downtime

Wire positioning and impact points

For the mechanized manufacturing process, a very high positioning accuracy of the wire-end is particularly important to ensure a reproducible performance of the welding job. Due to the high dimensional stability of the wire, this positioning succeeds with particularly high accuracy. All the impact points of the wire on the workpiece are within a radius of about 1.0 mm. This feature makes the ROBOTIC series particularly valuable for fully mechanized applications.



AVAILABILITY & PACKAGING

- » UTP ROBOTIC seamless cored wires are available on wire basket spools and drums
- » Diameters 1.2 mm to 2.4 mm – Special diameters upon request

Dimensions

| Copper coated basket spool BS300 , with drive pin-hole | | |
|---|--------------|--------|
|  | Wire weight: | 16 kg |
| | Ø external: | 300 mm |
| | Ø inner: | 52 mm |
| | Width: | 110 mm |
| BASEdrums | | |
|  in addition universal hood of rigid plexiglass | Weight: | 250 kg |
| | Height: | 780 mm |
| | Ø external: | 520 mm |
| | | |

Wire volume drum system for additional savings, especially in mechanized and robotic operations. It drastically reduces the downtime for spool exchange and increases the arc time. No spools get empty during welding and there are no partly welded objects to repair or scrap.

JOIN! voestalpine Böhler Welding

We are a leader in the welding industry with over 100 years of experience, more than 50 subsidiaries and more than 4,000 distribution partners around the world. Our extensive product portfolio and welding expertise combined with our global presence guarantees we are close when you need us. Having a profound understanding of your needs enables us to solve your demanding challenges with Full Welding Solutions - perfectly synchronized and as unique as your company.



Lasting Connections – Perfect alignment of welding machines, consumables and technologies combined with our renowned application and process know-how provide the best solution for your requirements: A true and proven connection between people, products and technologies. The result is what we promise: Full Welding Solutions for Lasting Connections.



Tailor-Made Protectivity™ – Proven under the toughest conditions: Our products protect metal surfaces from wear and corrosion. With over 70 years of experience and the broadest product portfolio in the industry, we are your preferred partner for Surface Protection solutions. We deliver what we promise: Surface Protection tailored to your needs.



In-Depth Know-How – As a manufacturer of soldering and brazing consumables, we offer proven solutions based on 60 years of industrial experience, tested processes and methods, made in Germany. This in-depth know-how makes us the internationally preferred partner to solve your soldering and brazing challenge through innovative solutions. The result is what we promise: Innovation based on in-depth know-how.

The Management System of voestalpine Böhler Welding Group GmbH, Peter-Mueller-Strasse 14-14a, 40469 Duesseldorf, Germany has been approved by Lloyd's Register Quality Assurance to: ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007, applicable to: Development, Manufacturing and Supply of Welding and Brazing Consumables. More information: www.voestalpine.com/welding



