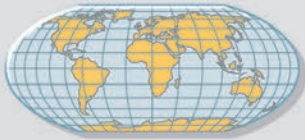


USM



UTENSILI SPECIALI MONZA

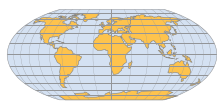
WORLDWIDE ONE NAME MORE SOLUTIONS FOR TUBE INDUSTRY

Since 40 years USM is distributing from stock
the wider range of top quality consumables
for tube industry.



THE WIDEST RANGE OF PRODUCTS FOR TUBE INDUSTRY

USM



UTENSILI SPECIALI MONZA

UTENSILI SPECIALI MONZA

PROFILO AZIENDALE - COMPANY PROFILE

La USM è stata la prima azienda in Europa ed una delle prime al mondo a proporre **la più ampia gamma di articoli** di consumo per l'industria del tubo. USM ha introdotto, in oltre 40 anni di attività, articoli innovativi come **ferriti**, inserti in carburo e ceramica a fissaggio meccanico, i rulli di saldatura in ceramica industriale e tanti altri articoli e macchinari.

Garantendo **spedizioni rapide** con materiale pronto a magazzino, USM desidera essere **il Vostro fornitore** con l'obiettivo di crescere insieme.



La compañía USM fue la primera en Europa y una de las primeras en el mundo a ofrecer la más amplia gama de artículos de consumo para la industria del tubo. USM ha introducido, en más de 40 años de trabajo, artículos innovadores como las ferritas japonesas TDK, las plaquitas de carburo y en cerámica a fijación mecánica, los rodillos de soldadura en cerámica industrial y otros artículos y máquinas. USM le ofrece una rápida entrega con artículos siempre disponibles en almacén. USM gustaría ser Vuestro Partner-Proveedor con el objetivo de crecer juntos.



A USM foi a primeira companhia na Europa e uma das primeiras no mundo à oferecer a mais ampla gama de itens de consumo para a produção do tubo. USM tem introduzido, em mais de 40 anos de atividade, itens inovadores como os Ferrites japonês TDK, as pastilhas de metal duro e cerâmica à fixação mecânica, os rolos cerâmicos de soldagem e muitos outros itens e máquinas. USM oferece uma rápida entrega com itens sempre disponíveis em armazém. A companhia USM gostaria de ser o Vosso Partner-Fornecedor com o objetivo de crescer juntos.



The company USM has been the first one in Europe and one of the first in the world proposing for a wide range of consumable items for the tube industry. USM introduced, in more than 40 years activity, innovative items such as the TDK Japanese ferrites, the mechanical tungsten carbide and ceramic fixing inserts, the ceramic welding rolls and many other items and machines. USM ensures to its customers fast deliveries with items always available in stock. USM would like becoming your partner-supplier with the target of growing together for mutual benefits.



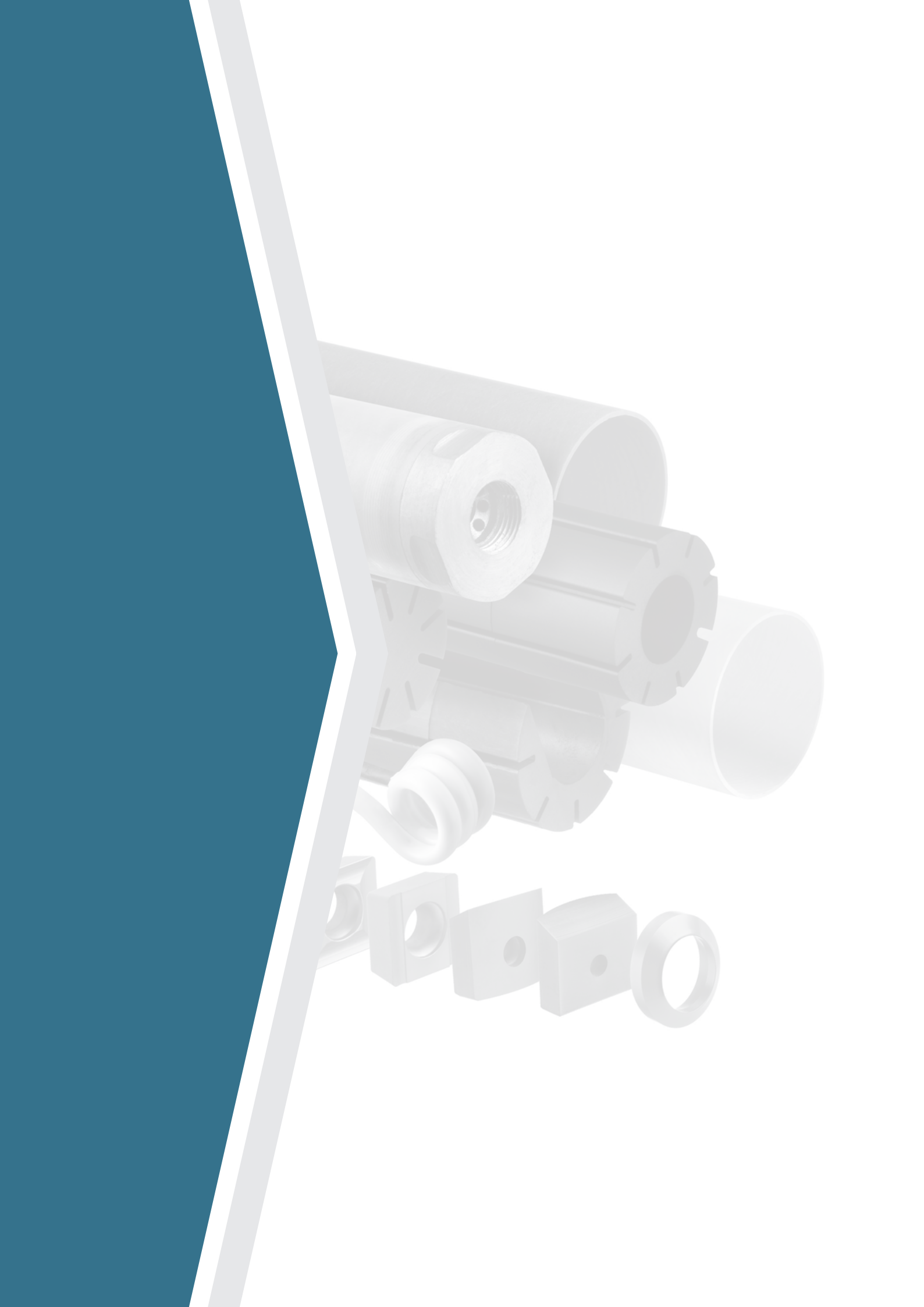
USM war das erste Unternehmen in Europa und einer der ersten Weltweit den ganzen Bereich von Artikeln für die Rohrindustrie zu anbieten. USM hat, in mehr 40 Jahren Aktivitäten, innovativen artikeln wie die japanische TDK Ferritkerne, die Hartmetall und Keramische Wendeschneidplatten mit mechanische Befestigung, die Schweißen Keramikrollen und viele andere Artikeln und Maschinen eingeführt. USM bietet eine sehr schnelle Lieferung mit Artikeln immer lieferbar auf Lager. USM möchte zuren Lieferant-Partner mit dem Ziel zusammen zu wachsen sein.



USM a été la première société en Europe et une des premières au monde entier à offrir la plus grande gamme d'articles de consommation pour l'industrie du tube. USM a introduit, en plus de 40 ans de travail, des produits innovants comme les Ferrites Japonais TDK, les plaquettes de raclage en carbure et céramique à fixation mécanique, les rouleaux de soudure en céramique industrielle et plusieurs articles et machines. USM Vous garantit expéditions très rapides avec articles toujours disponibles chez magasin. USM désirerait être Votre Partner - Fournisseur avec l'objectif croître ensemble.

TDK / KASCHKE

FERRITE CORES FOR HIGH FREQUENCY WELDING



Contratto di collaborazione TDK - Japan

Cooperation agreement TDK - Japan

To all our customers,

herewith we confirm that USM is the sole and official authorised TDK distributor of Ferrite rods for the European market including Russia and CIS.

Best Regards
Peter Miller

Sales and Marketing Manager
Distribution Group



CARATTERISTICHE ELETTROMAGNETICHE TDK FERRITE CORES

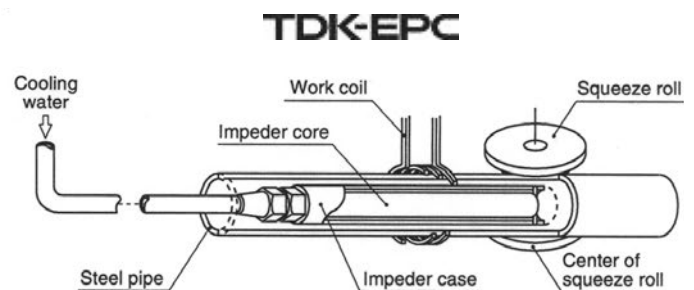
ELECTROMAGNETICS FEATURES TDK FERRITE CORES

Impeder cores for high frequency welding IPH Series

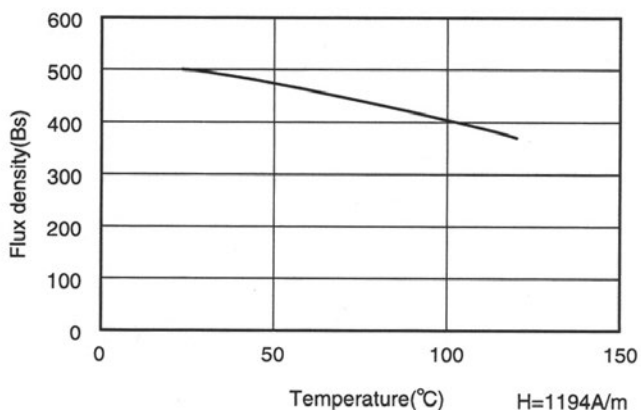
Conformity to RoHS Directive

IMPEDERS FOR HIGH FREQUENCY WELDING

An impeder core is an essential accessory for the welding of tubes and pipes using high frequency waveguide heating. The characteristics and durability of the impeder core have a significant effect on the efficiency and stability of the welding process. Thanks to advances in technology and experience gained from manufacturing with IP1 (TDK's previous impeder material), the new IPH material provides high efficiency, energy savings, and long lifetimes.



Saturation magnetic flux density vs. Temperature



CHARACTERISTICS OF THE MATERIAL IPH

| | | |
|---------------------------------------|---|-------------------------------|
| Initial permeability (μ_i) | 1800±25% | (H=0.24A/m, f=100kHz, at23°C) |
| Saturation magnetic flux density (Bs) | ≥ 490mT | (H=1194A/m, at23°C) |
| Core loss (Pcv) | ≤ 10000kW/m ³ | (f=400kHz, B=200mT, at100°C) |
| Curie temperature (Tc) | >200°C | |
| Density (d) | 4.8 × 10 ³ kg/m ³ | |
| Resistivity (ρ) | 3.0Ω • m | |

*Measurements based on a toroidal core

PIPE WELDING USING AN IMPEDER CORE

The impeder core concentrates the magnetic flux generated by the work coil into the area of the pipe joint. Consequently, use of an impeder core massively increases the efficiency of the welding process.

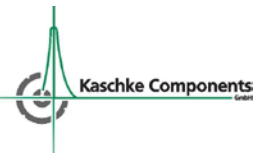
Material IPH for impeder cores

Agreement between KASCHKE Components GmbH and USM srl

This agreement sets forth, but not limited to, the general terms & conditions between Buyer and Seller regarding procurement and shipment of products.

1. Object of agreement

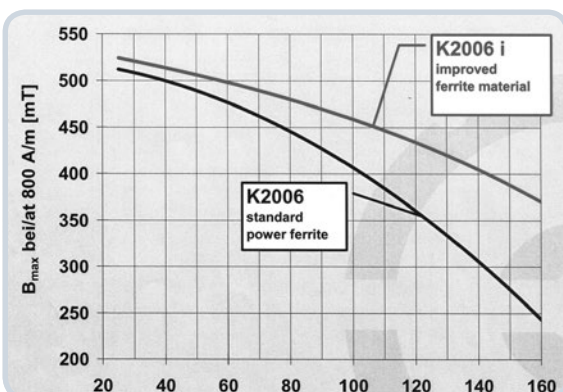
USM Srl Italy is our official distributor for ferrite impeder cores for High Frequency welding of steel tubes in European countries



CARATTERISTICHE ELETTROMAGNETICHE KASCHKE - GERMANY
 ELECTROMAGNETIC FEATURES FERRITE **KASCHKE - GERMANY**

High saturation ferrite material K2006i for HF welding

| | Symbol / symbol | Wert / value | Einheit / unit |
|---|-----------------|--------------|---------------------|
| Anfangspermeabilität / initial permeability | μ_i | 1700 ± 25% | - |
| Flussdichte / flux density | B_{max} | ≥ 550 | mT |
| bei Feldstärke / at field strength | H_{max} | 1200 | A/m |
| Remanenz / remanence | B_r | ≥ 220 | mT |
| Koerzitivfeldstärke / coercive force | H_c | ≤ 25 | A/m |
| Curie-Temperatur / Curie temperature | T_c | ≥ 270 | °C |
| Bez. Temperaturbeiwert / rel. temperature coefficient | α_f | | 10 ⁻⁶ /K |
| bei / at | | ≤ 6 | |
| -25°C ... +25°C | | | |
| +25°C ... +70°C | | ≤ 6 | |
| Spez. Verlustleistung (typische Werte) spec. power losses (typical values) | P_v | | mW/cm ³ |
| bei / at | | 85 | |
| 25kHz, 200mT, 60°C | | 200 | |
| 50kHz, 200mT, 60°C | | 500 | |
| 100kHz, 200mT, 60°C | | | |
| Gleichstromwiderstand / resistivity | ρ | ≥ 1 | Ωm |
| Sinterrohddichte / sintered density | γ | ≈ 4,85 | g/cm ³ |



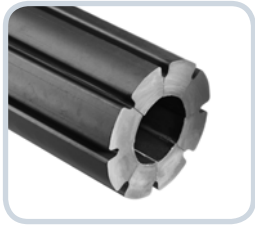
PIPE WELDING USING AN IMPEDER CORE

The impeder core concentrates the magnetic flux generated by the work coil into the area of the pipe joint. Consequently, use of an impeder core massively increases the efficiency of the welding process.

Material K 2006 for impeder cores

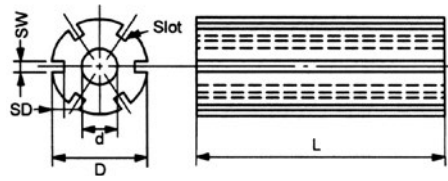
NUCLEI DI FERRITE PER SALDATURA AD ALTA FREQUENZA

FERRITE CORES FOR HIGH FREQUENCY WELDING



ZRSH TYPE

Standard shape, dimension and tolerance

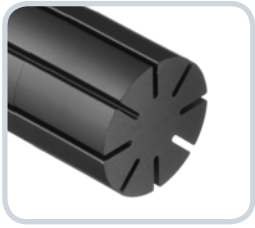


Product identification

IP1 Zrsh 10 x 200 x 3
(1) (2) (3) (4) (5)

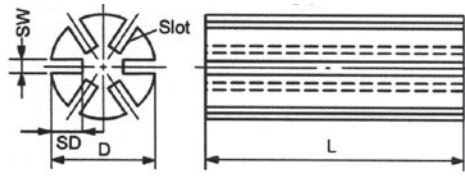
- (1) Material name
- (2) Type
- (3) Outer diameter (mm)
- (4) Length (mm)
- (5) Inner diameter (mm)

| Part No. (D x L x d) | Tolerance D d | | Number of slots | Slot depth. SD | Slot depth. SW | Structure |
|----------------------|-----------------|-------|-----------------|----------------|----------------|-----------|
| ZRSH 6 x 200 x 3 | ±0.35 | ±0.30 | 6 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 7 x 200 x 3 | ±0.35 | ±0.30 | 6 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 8 x 200 x 3 | ±0.25 | ±0.20 | 6 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 8 x 200 x 5 | ±0.30 | ±0.20 | 6 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 9 x 200 x 3 | ±0.30 | ±0.20 | 6 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 9 x 200 x 5 | ±0.30 | CS | 6 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 10 x 200 x 3 | ±0.30 | CS | 6 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 10 x 200 x 5 | ±0.30 | ±0.25 | 6 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 11 x 200 x 3 | ±0.35 | CS | 8 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 11 x 200 x 5 | ±0.35 | CS | 8 | Dx0.15 | Dx0.08 | One piece |
| ZRSH 12 x 200 x 3 | ±0.35 | CS | 8 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 13 x 200 x 5 | ±0.40 | CS | 8 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 13 x 200 x 7 | ±0.40 | CS | 8 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 14 x 200 x 5 | ±0.40 | CS | 8 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 15 x 200 x 5 | ±0.45 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 15 x 200 x 7 | ±0.45 | ±0.25 | 8 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 16 x 200 x 5 | ±0.50 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 16 x 200 x 8 | ±0.50 | ±0.25 | 8 | Dx0.15 | Dx0.06 | One piece |
| ZRSH 17 x 200 x 5 | ±0.50 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 18 x 200 x 5 | ±0.55 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 18 x 200 x 8 | ±0.55 | ±0.25 | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 19 x 200 x 6 | ±0.55 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 19 x 200 x 9 | ±0.55 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 20 x 200 x 6 | ±0.60 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 20 x 200 x 10 | ±0.60 | CS | 8 | Dx0.15 | Dx0.05 | One piece |
| ZRSH 21 x 200 x 6 | ±0.60 | CS | 8 | Dx0.15 | Dx0.04 | One piece |
| ZRSH 22 x 200 x 6 | ±0.65 | CS | 8 | Dx0.15 | Dx0.04 | One piece |
| ZRSH 23 x 200 x 6 | ±0.70 | CS | 8 | Dx0.15 | Dx0.04 | One piece |
| ZRSH 23 x 200 x 11 | ±0.70 | CS | 8 | Dx0.15 | Dx0.04 | One piece |
| ZRSH 24 x 200 x 12 | ±0.70 | CS | 8 | 3,75 mm | 1,25 mm | One piece |
| ZRSH 25 x 200 x 12 | ±0.70 | CS | 8 | 3,75 mm | 1,25 mm | One piece |
| ZRSH 26 x 200 x 13 | ±0.70 | ±0.35 | 8 | 3,75 mm | 1,25 mm | One piece |
| ZRSH 27 x 200 x 6 | ±0.70 | ±0.35 | 8 | 4,05 mm | 1,35 mm | One piece |
| ZRSH 27 x 200 x 8 | ±0.70 | ±0.35 | 8 | 4,05 mm | 1,35 mm | One piece |
| ZRSH 27 x 200 x 13 | ±0.70 | ±0.35 | 8 | 4,05 mm | 1,35 mm | One piece |
| ZRSH 28 x 200 x 14 | ±0.80 | ±0.40 | 8 | 4,05 mm | 1,8 mm | One piece |
| ZRSH 29 x 200 x 14 | ±0.80 | ±0.40 | 8 | 4,05 mm | 1,8 mm | One piece |
| ZRSH 30 x 200 x 15 | ±0.80 | ±0.50 | 8 | 4,05 mm | 3,00 mm | One piece |
| ZRSH 32 x 200 x 16 | ±0.80 | ±0.50 | 8 | 4,05 mm | 3,00 mm | One piece |
| ZRSH 34 x 200 x 17 | ±0.80 | ±0.50 | 8 | 4,05 mm | 3,00 mm | One piece |
| ZRSH 36 x 200 x 18 | ±0.90 | ±0.50 | 8 | 4,05 mm | 3,00 mm | One piece |
| ZRSH 38 x 200 x 19 | ±1.15 | ±0.50 | 8 | 4,05 mm | 3,00 mm | 8 pieces |
| ZRSH 40 x 200 x 20 | ±1.20 | ±0.80 | 8 | 5,00 mm | 3,00 mm | 8 pieces |
| ZRSH 42 x 200 x 21 | ±1.20 | ±0.80 | 8 | 5,50 mm | 3,5 mm | 8 pieces |
| ZRSH 44 x 200 x 22 | ±1.50 | ±0.80 | 8 | 6,00 mm | 3,5 mm | 8 pieces |
| ZRSH 46 x 200 x 23 | ±1.50 | ±0.80 | 8 | 6,00 mm | 3,5 mm | 8 pieces |
| ZRSH 48 x 200 x 24 | ±1.50 | ±0.80 | 8 | 6,00 mm | 4,0 mm | 8 pieces |
| ZRSH 55 x 200 x 27 | ±1.50 | ±0.80 | 8 | 6,00 mm | 4,0 mm | 8 pieces |
| ZRSH 60 x 200 x 30 | ±1.50 | ±0.80 | 8 | 6,00 mm | 4,0 mm | 8 pieces |
| ZRSH 65 x 200 x 32 | ±1.70 | ±0.80 | 8 | 6,00 mm | 4,0 mm | 8 pieces |
| ZRSH 73 x 200 x 35 | ±2.00 | ±0.80 | 8 | 6,00 mm | 4,0 mm | 8 pieces |
| ZRSH 80 x 200 x 40 | ±2.00 | ±0.80 | 8 | 6,00 mm | 4,0 mm | 8 pieces |
| ZRSH 95 x 200 x 48 | ±2.00 | ±0.80 | 8 | 6,00 mm | 4,0 mm | 8 pieces |



ZRS TYPE

Standard shape, dimension and tolerance

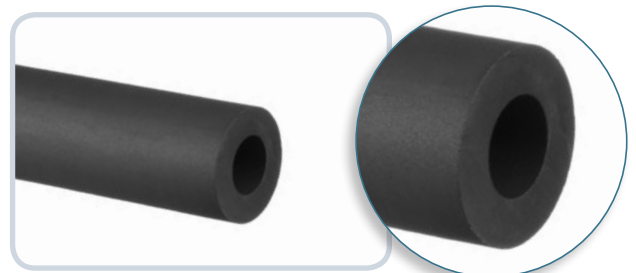
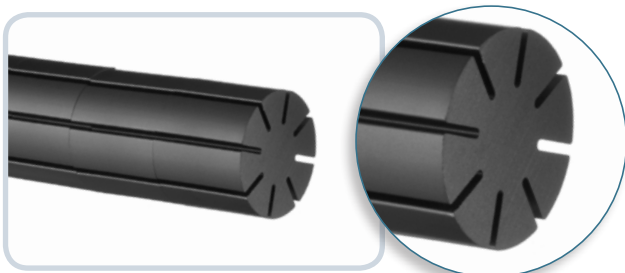


Product identification

IP1 Zrs 10 x 200
(1) (2) (3) (4)

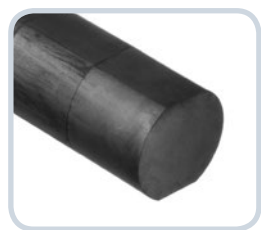
- (1) Material name
- (2) Type
- (3) Outer diameter (mm)
- (4) Length (mm)

| Part No. (D x L x d) | Tolerance D | Number of slots | Slot depth. SD | Slot depth. SW | Structure |
|----------------------|-------------|-----------------|----------------|----------------|-----------|
| ZRS 3 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 4 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 5 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 6 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 6,5 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 7 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 7,5 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 8 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 8,5 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 9 x 200 | ±0.30 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 10 x 200 | ±0.35 | 6 | Dx0,25 | Dx0,10 | One piece |
| ZRS 11 x 200 | ±0.35 | 8 | Dx0,27 | Dx0,08 | One piece |
| ZRS 12 x 200 | ±0.35 | 8 | Dx0,27 | Dx0,06 | One piece |
| ZRS 13 x 200 | ±0.40 | 8 | Dx0,27 | Dx0,06 | One piece |
| ZRS 14 x 200 | ±0.40 | 8 | Dx0,27 | Dx0,06 | One piece |
| ZRS 15 x 200 | ±0.45 | 8 | Dx0,27 | Dx0,05 | One piece |
| ZRS 16 x 200 | ±0.50 | 8 | Dx0,27 | Dx0,05 | One piece |
| ZRS 17 x 200 | ±0.50 | 8 | Dx0,27 | Dx0,05 | One piece |
| ZRS 18 x 200 | ±0.55 | 8 | Dx0,27 | Dx0,05 | One piece |
| ZRS 19 x 200 | ±0.55 | 8 | Dx0,27 | Dx0,05 | One piece |
| ZRS 20 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | One piece |
| ZRS 21 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | One piece |
| ZRS 22 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 23 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 24 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 25 x 200 | ±0.65 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 26 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 27 x 200 | ±0.75 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 28 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 29 x 200 | ±0.60 | 8 | Dx0,27 | Dx0,05 | 8 pieces |
| ZRS 30 x 200 | ±0.75 | 8 | Dx0,27 | Dx0,05 | 8 pieces |



NUCLEI DI FERRITE PER SALDATURA AD ALTA FREQUENZA

FERRITE CORES FOR HIGH FREQUENCY WELDING



ZR TYPE

Standard shape, dimension and tolerance



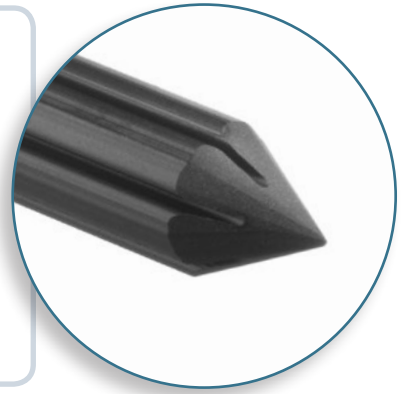
Product identification

IP1 Zr 10 x 200
(1) (2) (3) (4)

- (1) Material name
(2) Type
(3) Outer diameter (mm)
(4) Length (mm)

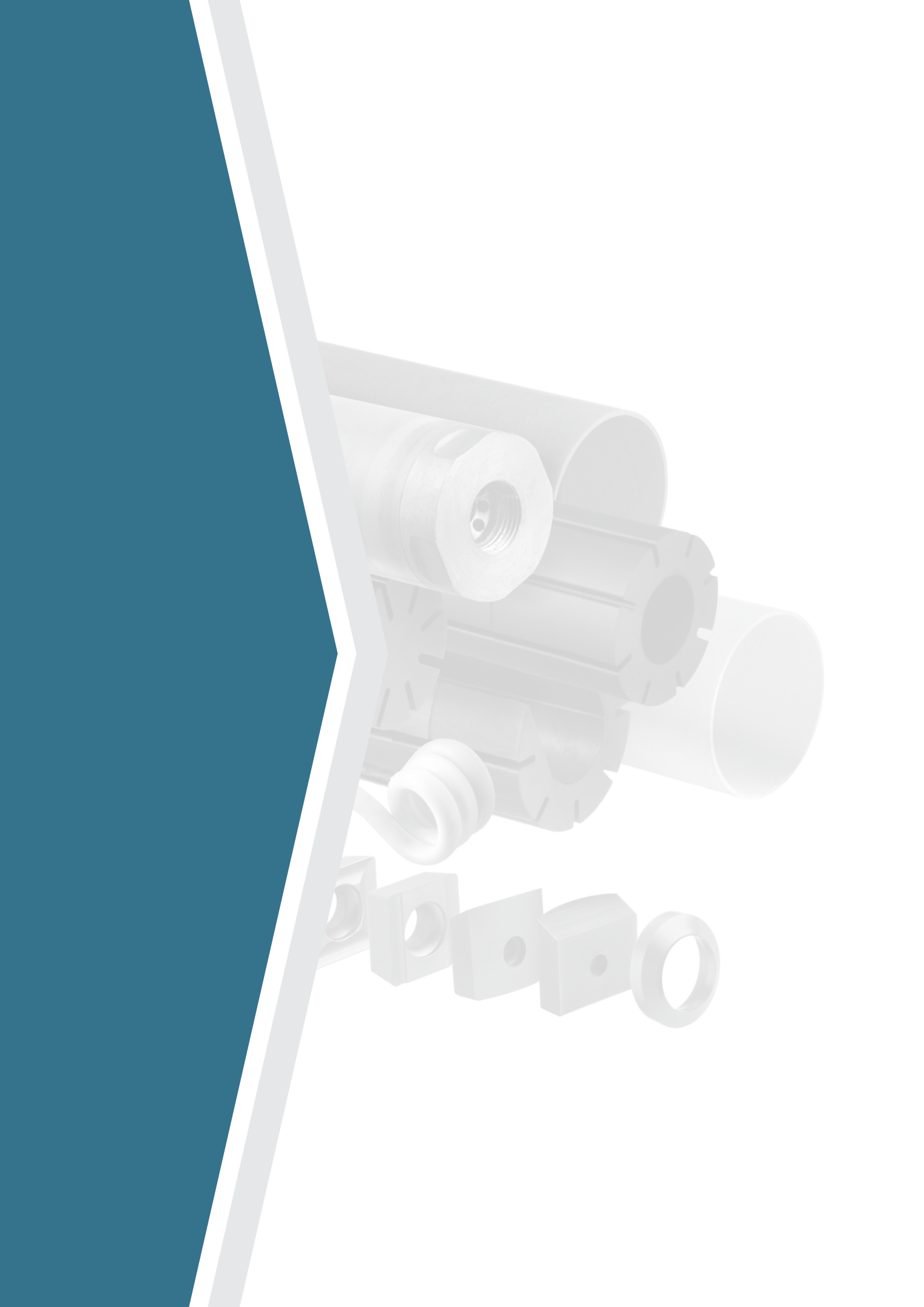
| Part No. (D x L x d) | Tolerance D | | | | | Dt | Structure |
|----------------------|-------------|--|--|--|--|-------|-----------|
| IPH ZR3 x 200 | ±0.20 | | | | | 2,70 | One piece |
| IPH ZR4 x 200 | ±0.20 | | | | | 3,60 | One piece |
| IPH ZR5 x 200 | ±0.25 | | | | | 4,50 | One piece |
| IPH ZR6 x 200 | ±0.25 | | | | | 5,40 | One piece |
| IPH ZR7 x 200 | ±0.20 | | | | | 6,30 | One piece |
| IPH ZR8 x 200 | ±0.20 | | | | | 7,20 | One piece |
| IPH ZR9 x 200 | ±0.25 | | | | | 8,10 | One piece |
| IPH ZR10 x 200 | ±0.25 | | | | | 9,00 | One piece |
| IPH ZR11 x 200 | ±0.30 | | | | | 9,90 | One piece |
| IPH ZR12 x 200 | ±0.30 | | | | | 10,80 | One piece |
| IPH ZR13 x 200 | ±0.35 | | | | | 11,70 | One piece |
| IPH ZR14 x 200 | ±0.35 | | | | | 12,60 | One piece |
| IPH ZR15 x 200 | ±0.40 | | | | | 13,50 | One piece |
| IPH ZR16 x 200 | ±0.40 | | | | | 14,40 | One piece |
| IPH ZR17 x 200 | ±0.45 | | | | | 15,30 | One piece |
| IPH ZR18 x 200 | ±0.45 | | | | | 16,20 | One piece |
| IPH ZR19 x 200 | ±0.50 | | | | | 17,10 | One piece |
| IPH ZR20 x 200 | ±0.50 | | | | | 18,00 | One piece |
| IPH ZR21 x 200 | ±0.55 | | | | | 18,90 | One piece |
| IPH ZR22 x 200 | ±0.55 | | | | | 19,80 | One piece |
| IPH ZR23 x 200 | ±0.60 | | | | | 20,70 | 2 pieces |
| IPH ZR24 x 200 | ±0.60 | | | | | 21,60 | 2 pieces |
| IPH ZR25 x 200 | ±0.65 | | | | | 22,50 | 2 pieces |
| IPH ZR26 x 200 | ±0.65 | | | | | 23,40 | 2 pieces |
| IPH ZR27 x 200 | ±0.70 | | | | | 24,30 | 8 pieces |
| IPH ZR28 x 200 | ±0.70 | | | | | 25,20 | 8 pieces |
| IPH ZR29 x 200 | ±0.75 | | | | | 26,10 | 8 pieces |
| IPH ZR30 x 200 | ±0.75 | | | | | 27,00 | 8 pieces |
| IPH ZR35 x 200 | ±0.90 | | | | | 31,50 | 10 pieces |
| IPH ZR40 x 200 | ±1.00 | | | | | 36,00 | 10 pieces |

Parzialmente disponibili da stock – Available partially from stock

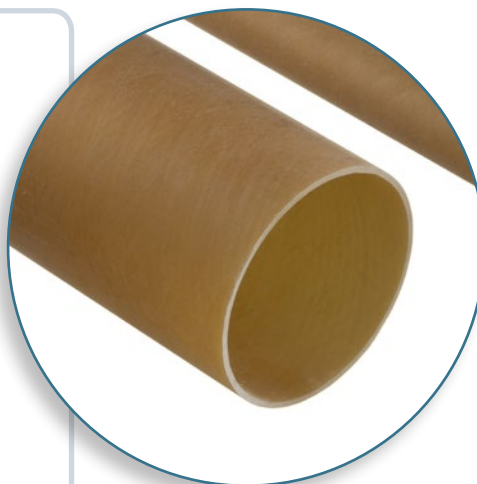


USM PRODUCTS

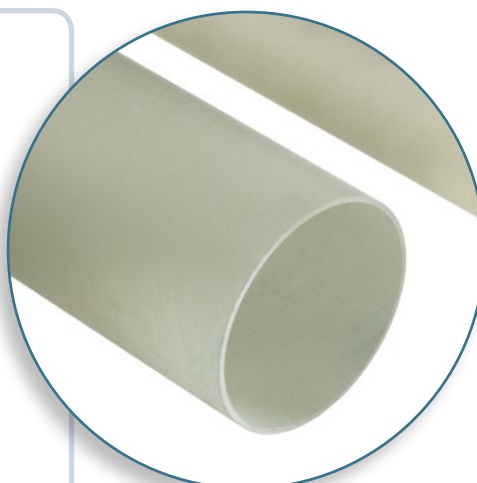
THE HIGH QUALITY SOLUTIONS FOR TUBE INDUSTRY



ASTUCCI DI PROTEZIONE FERRITI (in vetroresina epossidica da filo rettificati) FERRITE CORE'S CASING (fibreglass epoxy made by filament - Ground)



WT2000



WT912

| Code | Features | | | | Relative permeability | Operating temperature |
|---------|----------|--|--|--|-----------------------|-----------------------|
| WT 2000 | BROWN | | | | 5,5 (50 Hz-2KV/mm) | 220 °C |
| WT 912 | GREEN | | | | 5,5 (50 Hz-2KV/mm) | 180 °C |

Disponibili a sezione tonda o rettangolare e quadra - Tagliati a misura
 Available round, rectangular and square sections - Cut to length

IMPEDENZE ASSEMBLATE USM - ACQUA A PERDERE

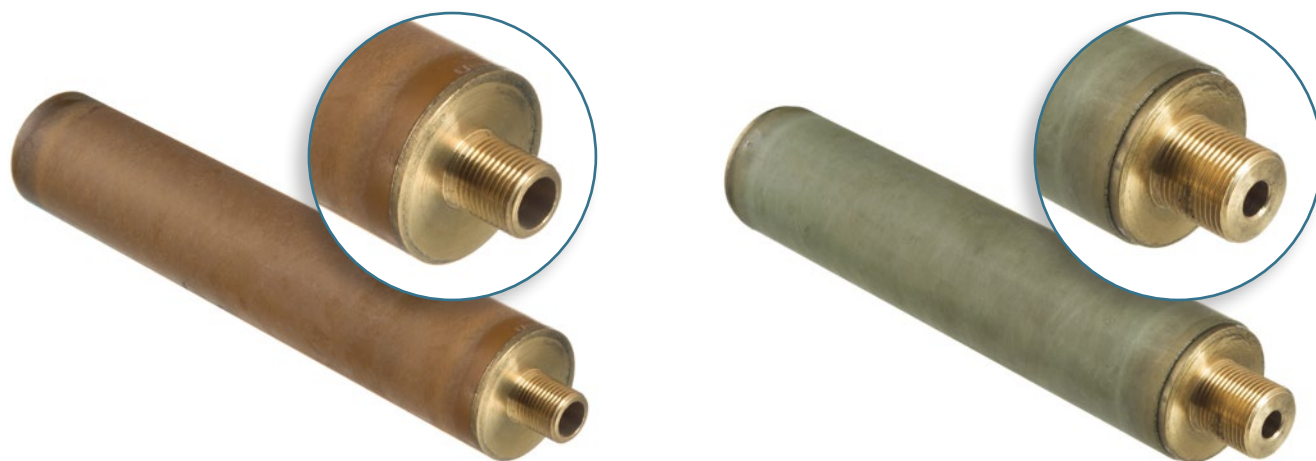
USM STANDARD ASSEMBLY IMPEDERS - THROUGH FLOW TYPE

| Impedenze acqua a perdere - Through flow impeders | | | | | | |
|---|-------------|--------------------|--|------|-----------|-----------------------------------|
| ØE | casing | ferrite | | ØE | casing | ferrite |
| 4,5 | 4,5 x 3,5 | ZR or ZRS 3 x 200 | | 23 | 23 x 21,5 | ZRS 21 x 200 |
| 5,4 | 5,4 x 4,4 | ZR or ZRS 4 x 200 | | 25 | 25 x 21 | ZRS 20 x 200 |
| 6,5 | 6,5 x 5,5 | ZR or ZRS 5 x 200 | | 26 | 26 x 23 | ZRS 22 x 200 |
| 7,5 | 7,5 x 6,5 | ZR or ZRS 6 x 200 | | 28 | 28 x 24 | ZRS 23 x 200 |
| 8 | 8,0 x 7,0 | ZR or ZRS 6 x 200 | | 29 | 29 x 26 | ZRS 25 x 020 |
| 8,5 | 8,5 x 7,5 | ZR or ZRS 7 x 200 | | 31 | 31 x 28 | ZRS 27 x 200 |
| 9,2 | 9,2 x 8,2 | ZR or ZRS 8 x 200 | | 33 | 33 x 30 | ZRSH 29 x 200 x 14 |
| 9,5 | 9,5 x 8,5 | ZR or ZRS 8 x 200 | | 34 | 34 x 31 | ZRS 30 x 200 |
| 10 | 10 x 8,5 | ZR or ZRS 8 x 200 | | 36 | 36 x 32 | ZRSH 30 x 200 x 15 |
| 10,5 | 10,5 x 9,5 | ZR or ZRS 9 x 200 | | 37 | 37 x 34 | ZRSH 32 x 200 x 16 |
| 11 | 11 x 9,5 | ZR or ZRS 9 x 200 | | 39 | 39 x 35 | ZRSH 34 x 200 x 17 |
| 11,5 | 11,5 x 10,5 | ZR or ZRS 10 x 200 | | 41 | 41 x 37 | ZRSH 36 x 200 x 18 |
| 12 | 12 x 10,5 | ZR or ZRS 10 x 200 | | 43 | 43 x 39 | ZRSH 38 x 200 x 19 |
| 12,5 | 12,5 x 11,5 | ZRS 11 x 200 | | 45 | 45 x 41 | ZRSH 40 x 200 x 20 |
| 13 | 13 x 11,5 | ZRS 11 x 200 | | 47 | 48 x 43 | ZRSH 42 x 200 x 21 |
| 13,5 | 13,5 x 11,5 | ZRS 11 x 200 | | 49 | 49 x 45 | ZRSH 44 x 200 x 22 |
| 14 | 14 x 12,5 | ZRS 12 x 200 | | 53 | 53 x 48 | ZRSH 46 x 200 x 23 |
| 14,5 | 14,5 x 13,5 | ZRS 13 x 200 | | 56 | 56 x 51 | ZRSH 48 x 200 x 24 |
| 15 | 15 x 13,5 | ZRS 13 x 200 | | 60 | 60 x 56 | ZRSH 55 x 200 x 27 |
| 15,5 | 15,5 x 14,5 | ZRS 14 x 200 | | 65 | 65 x 62 | ZRSH 60 x 200 x 30 |
| 16,5 | 16,5 x 14,5 | ZRS 14 x 200 | | 74 | 74 x 68 | ZRSH 65 x 200 x 32 |
| 17 | 17 x 15,5 | ZRS 15 x 200 | | 80 | 80 x 74 | ZRSH 73 x 200 x 35 |
| 18 | 18 x 16,5 | ZRS 16 x 200 | | 87 | 87 x 82 | ZRSH 80 x 200 x 40 |
| 19 | 19 x 17,5 | ZRS 17 x 200 | | 100 | 100 x 96 | ZRSH 95 x 200 x 48 |
| 20 | 20 x 18,5 | ZRS 18 x 200 | | 125* | 125 x 114 | ZRSH 65 x 200 x 32 + ZRS 23 X 200 |
| 21 | 21 x 19,5 | ZRS 19 x 200 | | 142* | 142 x 135 | ZRSH 80 x 200 x 40 + ZRS 25 X 200 |
| 22 | 22 x 20,5 | ZRS 20 x 200 | | | | |

* Soluzione con multi-ferriti a corona - Multiple ferrite crown solution

Lunghezza impedenze da decidersi volta per volta - Impeder length to be decided time to time

USM può suggerire le impedenze più adatte - USM can also suggest most suitable impeder size



Impedenze - Impeder

IMPEDENZE ASSEMBLATE USM - RITORNO ACQUA

USM STANDARD ASSEMBLY IMPEDERS - RETURN FLOW TYPE



Stainless steel impeder TOW BAR
Return flow type

Impedenze con ritorno d'acqua - Return flow impiders

| ØE | casing | ferrite | | | ØE | casing | ferrite |
|------|-------------|------------------------|--|--|-----|----------|--------------------|
| 9,5 | 9,5 x 8,5 | ZRSH 8 x 200 x 4 | | | 26 | 26 x 23 | ZRSH 22 x 200 x 11 |
| 10 | 10 x 8,5 | ZRSH 8 x 200 x 4 | | | 28 | 28 x 24 | ZRSH 23 x 200 x 11 |
| 10,5 | 10,5 x 9,5 | ZRSH 9 x 200 x 4 | | | 29 | 29 x 26 | ZRSH 25 x 200 x 12 |
| 11 | 11 x 9,5 | ZRSH 9 x 200 x 4 | | | 31 | 31 x 28 | ZRSH 27 x 200 x 13 |
| 11,5 | 11,5 x 10,5 | ZRSH 10 x 200 x 5 | | | 33 | 33 x 30 | ZRSH 29 x 200 x 14 |
| 12 | 12 x 10,5 | ZRSH 10 x 200 x 5 | | | 34 | 34 x 31 | ZRSH 30 x 200 x 15 |
| 12,5 | 12,5 x 11,5 | ZRSH 11 x 200 x 5 | | | 36 | 36 x 32 | ZRSH 30 x 200 x 15 |
| 13 | 13 x 11,5 | ZRSH 11 x 200 x 5 | | | 37 | 37 x 34 | ZRSH 32 x 200 x 16 |
| 13,5 | 13,5 x 11,5 | ZRSH 11 x 200 x 5 | | | 39 | 39 x 35 | ZRSH 34 x 200 x 17 |
| 14 | 14 x 12,5 | ZRSH 12 x 200 x 5 | | | 41 | 41 x 37 | ZRSH 36 x 200 x 18 |
| 14,5 | 14,5 x 13,5 | ZRSH 13 x 200 x 5 | | | 43 | 43 x 39 | ZRSH 38 x 200 x 19 |
| 15 | 15 x 13,5 | ZRSH 13 x 200 x 5 | | | 45 | 45 x 41 | ZRSH 40 x 200 x 20 |
| 15,5 | 15,5 x 14,5 | ZRSH 14 x 200 x 5 | | | 47 | 48 x 43 | ZRSH 42 x 200 x 21 |
| 16,5 | 16,5 x 14,5 | ZRSH 14 x 200 x 5 | | | 49 | 49 x 45 | ZRSH 44 x 200 x 22 |
| 17 | 17 x 15,5 | ZRSH 15 x 200 x 5 or 6 | | | 53 | 53 x 48 | ZRSH 46 x 200 x 23 |
| 18 | 18 x 16,5 | ZRSH 16 x 200 x 5 or 8 | | | 56 | 56 x 51 | ZRSH 48 x 200 x 24 |
| 19 | 19 x 17,5 | ZRSH 17 x 200 x 5 or 8 | | | 60 | 60 x 56 | ZRSH 55 x 200 x 27 |
| 20 | 20 x 18,5 | ZRSH 18 x 200 x 5 or 8 | | | 65 | 65 x 62 | ZRSH 60 x 200 x 30 |
| 21 | 21 x 19,5 | ZRSH 19 x 200 x 6 or 9 | | | 74 | 74 x 68 | ZRSH 65 x 200 x 32 |
| 22 | 22 x 20,5 | ZRSH 20 x 200 x 10 | | | 80 | 80 x 74 | ZRSH 73 x 200 x 35 |
| 23 | 23 x 21,5 | ZRSH 21 x 200 x 11 | | | 87 | 87 x 82 | ZRSH 80 x 200 x 40 |
| 25 | 25 x 21 | ZRSH 20 x 200 x 10 | | | 100 | 100 x 96 | ZRSH 95 x 200 x 48 |

Lunghezza impedenze da decidersi volta per volta - impeder length to be decided time to time
USM può suggerire le impedenze più adatte - usm can also suggest most suitable impeder size

Supporto impeder inox a disegno - Tow bar stainless non magnetic as for customer's drawing
Impedenze a sezione quadra e rettangolare a disegno - Square and rectangular impiders available as for customer's drawing

IMPEDENZE USM TIPO CARTUCCE - ACQUA A PERDERE

USM CARTRIDGE IMPEDERS - WASTE WATER AND RETURN FLOW TYPE



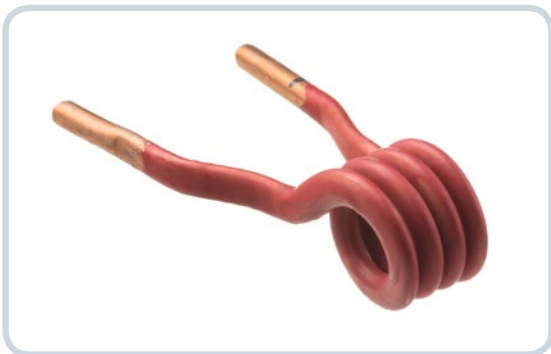
| Ø Ext (mm) | N° Cartucce Nr Cartridges | Tubi VTR Epossidico F/G casings Epoxy | | | | | Nuclei di Ferrite Ferrite Cores |
|------------|------------------------------|--|--|--|--|--|------------------------------------|
| 150 | 16 | Ø 14 x Ø11 | | | | | ZRS or ZRSH 10 x 200 x 3 |
| 170 | 12 | Ø 22 x Ø19 | | | | | ZRS or ZRSH 18 x 200 x 6 |
| 196 | 16 | Ø 22 x Ø19 | | | | | ZRS or ZRSH 18 x 200 x 6 |
| 221 | 18 | Ø 22 x Ø19 | | | | | ZRS or ZRSH 18 x 200 x 6 |
| 261 | 20 | Ø 22 x Ø19 | | | | | ZRS or ZRSH 18 x 200 x 6 |

Disponibili a disegno - Available as for customer's drawing

Lunghezza da discutere caso per caso - Length to be discussed time to time

INDUTTORI USM IN RAME A DISEGNO

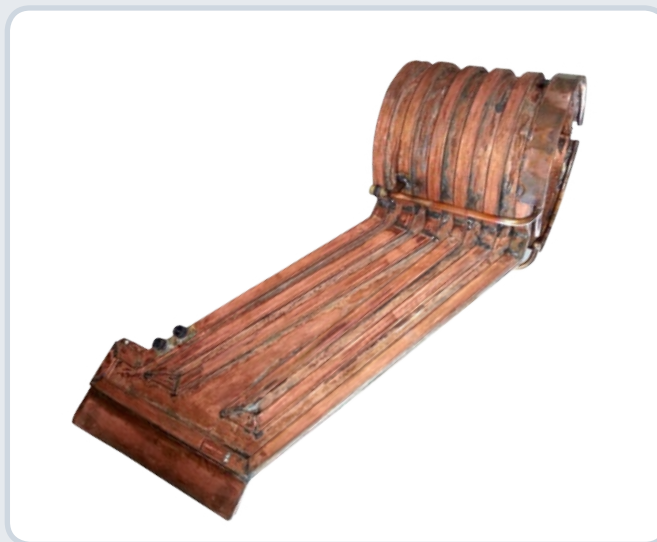
USM CUSTOM MADE COPPER INDUCTORS



Square section



Induttori a spirale ovale
Oval shaped turns



USM può anche suggerire induttori più adatti – USM can also suggest the most suitable inductors

RULLI DI SALDATURA A DISEGNO

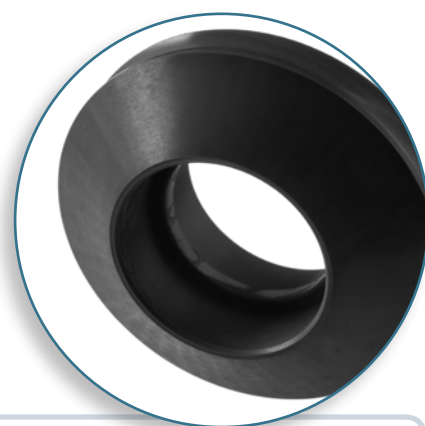
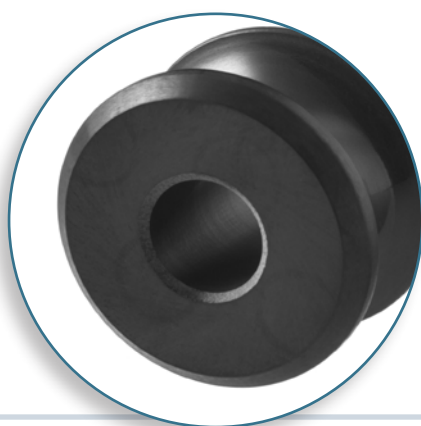
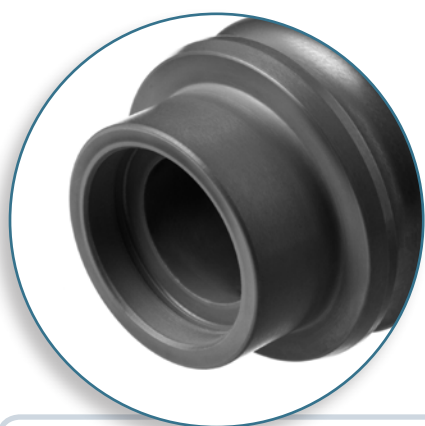
WELDING ROLLS CUSTOM MADE



In lega di bronzo - Bronze alloy made



In metallo duro - Hard metal



In nitruro ceramico - Ceramic nitride

PORTAUTENSILI CIANFRINATORI

CHAMFERING TOOLS



SCMT 120408



SNMG 150612



SNMG 190612

Disponibili 3 tipi per:
Interno, esterno, frontale
3 types available for:
Internal, external, face

Per inserti:
SCMT 12, SNMG 15, SNMG 19
For inserts:
SCMT 12, SNMG 15, SNMG 19

INSERTI CERAMICI PER RIGENERAZIONE RULLI IN ACCIAIO

CERAMIC INSERTS FOR RE-GRINDING STEEL FORMING ROLLS



RCGX 0607 - RCGX 0907
RCGX 1207 - RCGX 1510
RCGX 1910 - RCGX 2512



RNGN 0904 - RNGN 1204
RNGN 1207 - RNGN 1507
RNGN 1907 - RNGN 2507

COMPONENTI PER PRODUZIONE TUBO FRIGORIFERO

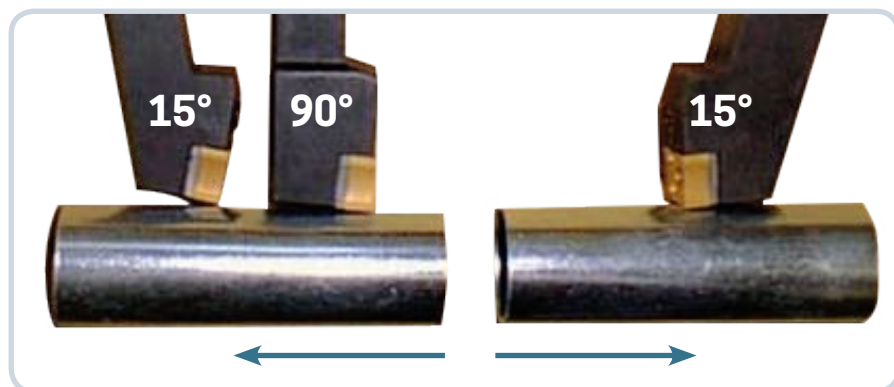
CONSUMABLES FOR REFRIGERATION TUBE MANUFACTURING

(per tubi freno parete singola e doppia) - (single and double wall tubes brakes)



SCORDONATURA ESTERNA - PORTAUTENSILI

OUTSIDE SCARFING - TOOL HOLDERS



Inclinazione stelo rispetto al tubo
Steel shank angle respect the tube

Inclinato - Angled = 15°
Verticale - Vertical = 90°

Direzione Linea Tubi (Dx - Sx) O (Sx - Dx)
Tube mill direction (R to L) or (L to R)

PORTAUTENSILI PER INSERTI - SISTEMI DI FISSAGGIO

TOOL HOLDER SIDED INSERTS - FIXING SYSTEMS



Cartucce - Cartridge



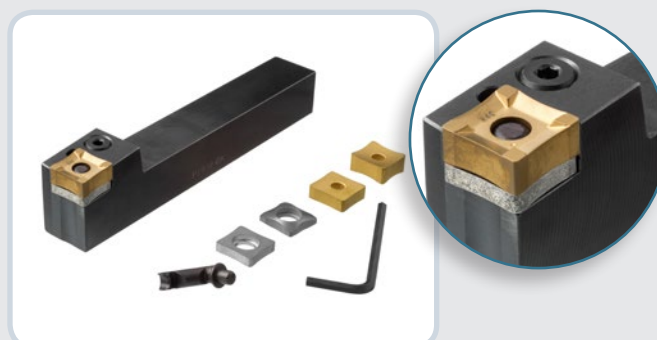
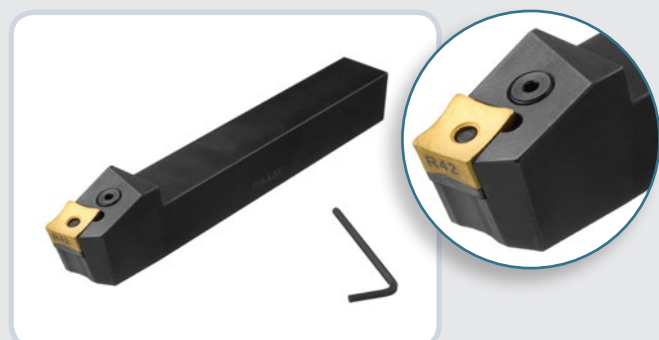
Cartucce - Cartridge



V 121

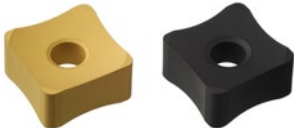
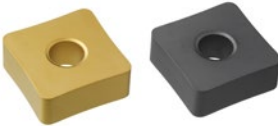
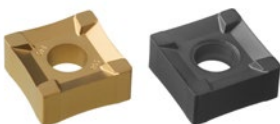


Ceramica
Ceramic



SCORDONATURA ESTERNA - INSERTI METALLO DURO LATO 15 MM

OUTSIDE SCARFING - CARBIDE INSERTS SIDE 15 MM

| | Size | Code | Coating | Application* |
|---|--------------------------|--|---------------|-------------------|
|  | Side 15,87 mm | SNMX 15-22 | CVD TiN/AL203 | HR - CR |
| | Thickness 8,15 mm | | | |
| | Radius available: | 00 - 7 - 9 - 11 - 13 - 15 - 18 - 20 - 22 - 25 - 27 - 30 - 35 - 40 - 42 45 - 50 - 60 - 63 - 65 - 70 - 75 - 80 - 90 - 100 - 120 | | POS + |
|  | Side 15,87 mm | SNMX 15-21 | CVD TiN/AL203 | HR - CR |
| | Thickness 6,35 mm | | | |
| | Radius available: | 00 - 7 - 9 - 11 - 13 - 15 - 18 - 20 - 22 - 25 - 27 - 30 - 35 - 40 - 42 45 - 50 - 60 - 65 - 70 - 75 - 80 - 90 - 100 - 120 | | NEG - |
|  | Side 15,85 mm | SNMG 15-22 | CVD TiN/AL203 | HR - CR - SS - PG |
| | Thickness 8,20 mm | | | |
| | Radius available: | 7 - 9 - 11 - 13 - 15 - 18 - 20 - 22 - 25 - 27 - 30 - 35 - 40 - 45 - 50 - 60 | | POS + |

*HR = Hot Rolled / CR = Cold Rolled / PG = Pre-Galvanized / SS = Stainless Steel / CP = Chrome Plating

N.b. questa tipologia di inserti hanno tutti 8 taglienti - These inserts are manufactured with 8 cutting Edges

RICAMBI PER PORTAUTENSILI 15 MM

SPARE PARTS TOOL HOLDERS 15 MM

| | Codice - Code |
|---|---|
|  | R-P.15 V = Vite Bloccaggio Per Inserti Da 15 <i>R-P.15 V = Fixing Screw For Inserts 15</i> |
|  | R-P.15 - S = Staffe Per Inserti Da 15 <i>R-P.15-S = Steel Stirrup For Insert 15</i> |
|  | S - V 15 N. Raggio = Sottopiacchetta Negativa <i>S - V 15 N. Radius = Negative Support For Insert 15 - 21</i> |
|  | S-V 15 P. Raggio = Sottopiacchetta Positiva <i>S-V 15 P. Radius = Positive Support</i> |

SCORDONATURA ESTERNA - INSERTI METALLO DURO LATO 19 MM

OUTSIDE SCARFING - CARBIDE INSERTS SIDE 19 MM

| | Size | Code | Coating | Application* |
|--|--------------------------|---|---------------|-------------------|
|  | Side 19,05 mm | SNMX 19-22 | CVD TiN/AL203 | HR - CR |
| | Thickness 9,15 mm | | | |
| | Radius available: | 00 - 11 - 13 - 15 - 18 - 20 - 22 - 25 - 30 - 35 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 120 | | |
|  | Side 19,05 mm | SNMX 19-21 | CVD TiN/AL203 | HR - CR |
| | Thickness 6,35 mm | | | |
| | Radius available: | 65 - 70 - 80 - 90 - 100 - 150 | | |
|  | Side 19,05 mm | SNMG 19-22 | CVD TiN/AL203 | HR - CR - SS - PG |
| | Thickness 8,20 mm | | | |
| | Radius available: | 00 - 10 - 12 - 15 - 20 - 25 - 30 - 40 - 50 - 55 - 60 - 70 - 75 - 80 - 90 - 100 - 120 | | |
|  | Side 18,95 mm | SEM 190612-21 | CVD TiN/AL203 | HR - CR - SS - PG |
| | Thickness 6,35 mm | | | |
| | Radius available: | 10 - 11 - 13 - 19 - 22 - 27 - 35 - 43 - 51 - 60 - 70 - 80 - 150 | | |

*Hr = Hot Rolled / Cr = Cold Rolled / Pg = Pre-Galvanized / Ss = Stainless Steel / Cp = Chrome Plating

N.b. questa tipologia di inserti hanno tutti 8 taglienti - These inserts are manufactured with 8 cutting Edges

RICAMBI PER PORTAUTENSILI 19 MM

SPARE PARTS FOR TOOL HOLDERS 19 MM

| | Codice - Code |
|---|--|
|  | R-P.19 V = Vite Bloccaggio Per Inserti Da 19 R-P.19 V = Fixing screw for inserts 19 |
|  | R-P.19 - S = Staffe per Inserti Da 19 R-P.19-S = Steel stirrup for insert 19 solo per inserti SNMG 19 codice R-P.SNMG - CODE = R - P.SNMG 19 =! |
|  | S - V 19 N. Raggio = Sottopiacchetta Negativa S - V 19 N. Radius = Negative support |
|  | S-V 19 P. Raggio = Sottopiacchetta Positiva S-V 19 P. Radius = Positive support |

SCORDONATURA ESTERNA - INSERTI METALLO DURO LATO 25 MM

OUTSIDE SCARFING - CARBIDE INSERTS SIDE 25 MM

| | Size | Code | Coating | Application* |
|---|--------------------------|---|---------------|-------------------|
|  | Side 25,4 mm | SNMX 251224-22 | CVD TiN/AL203 | HR - CR |
| | Thickness 12,7 mm | | | |
| | Radius available: | 00 - 22 - 25 - 30 - 35 - 40 - 45 - 50 - 55 - 60 - 70 - 80 - 90 - 100 - 120 - 140 - 150 - 160 - 200 - 250 | | |
|  | Side 25,4 mm | SNMX 250924-21 | CVD TiN/AL203 | HR - CR |
| | Thickness 9,52 mm | | | |
| | Radius available: | 00 - 25 - 30 - 35 - 40 - 45 - 50 - 55 - 60 - 70 - 80 - 90 - 100 - 120 - 140 - 160 - 200 - 220 - 240 - 280 - 320 - 360 - 380 | | |
|  | Side 25,4 mm | SNMG 250924-21 | CVD TiN/AL203 | HR - CR |
| | Thickness 12,7 mm | | | |
| | Radius available: | 00 - 50 - 55 - 60 - 70 - 75 - 80 - 90 - 100 - 120 - 140 - 146 - 160 - 200 - 250 | | |
|  | Side 25,4 mm | SEMX 250924-22 | CVD TiN/AL203 | HR - CR - SS - PG |
| | Thickness 9,2 mm | | | |
| | Radius available: | 35 - 43 - 51 - 60 - 70 - 80 - 90 | | |
|  | Side 25,4 mm | SPUB 86 | CVD TiN/AL203 | HR - CR - SS - PG |
| | Thickness 9,2 mm | | | |
| | Radius available: | 00" / 00 mm - 2,5" / 63,5 mm - 3,4" / 86,4 mm / 4,5" / 114,3 mm - 9,5" / 241,3 mm | | |

*HR = Hot Rolled / CR = Cold Rolled / PG = Pre-Galvanized / SS = Stainless Steel / CP = Chrome Plating

N.b. questa tipologia di inserti hanno tutti 8 taglienti - These inserts are manufactured with 8 cutting Edges

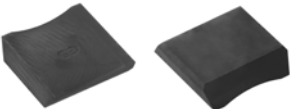
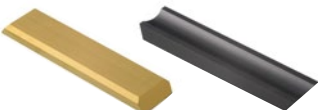

RICAMBI PER PORTAUTENSILI 25 MM

SPARE PARTS TOOL HOLDERS 25 MM

| | Codice - Code |
|---|--|
|  | R-P.25 V = Vite Bloccaggio Per Inserti Da 25 <i>R-P.25 V = Fixing Screw For Inserts 25</i> |
|  | R-P.25 - S = Staffe Per Inserti Da 15 <i>R-P.25-S = Steel Stirrup For Insert 25</i> |
|  | S - V 25 N. Radius = Sottoplacchetta Negativa <i>S - V 25 N. Radius = Negative Support</i> |
|  | S-V 25 P. Radius = Sottoplacchetta Positiva <i>S-V 25 P. Radius = Positive Support</i> |

INSERTI SPECIALI

SPECIAL INSERTS

| | Size | Code | Coating | Application* |
|---|---|--|------------------------------------|--------------|
|  | Side 19,05 mm | SDUX 19016 | CVD TiN/AL203 | HR - CR |
| | Thickness 4,7 mm | | | |
| | Radius available: | 00 - 12 - 15 - 18 - 20 - 25 - 30 - 35 - 40 - 45 - 50 - 55 - 60 - 70 - 75 - 80 - 90 | | |
|  | Side 18,85 mm | V 1217854 | CVD TiN | HR - CR - PG |
| | Thickness 4,95 mm | | | |
| | Radius available: | 15 - 20 - 25 - 30 - 35 - 40 - 45 - 50 - 60 - 70 - 80 - 100 | | |
|  | Side 18,85 mm | V 1217854 | CVD TiN | HR - CR |
| | Thickness 4,95 mm | | | |
| | Radius available: | 15 - 20 - 25 - 30 - 35 - 40 - 45 - 50 - 60 - 70 - 80 - 100 | | |
|  | Side 12,5 mm | HEMX 1305 | CVD TiN/AL203 | HR - CR |
| | Thickness 5,25 mm | | | |
| | Radius available: | 7 - 90 - 12 - 13,5 - 15 - 20 - 24 - 30 - 35 - 40 - 45 - 50 | HEXAGONAL | |
|  | Side 19 mm | SPUB 63 | CVD TiN/AL203 | HR - CR |
| | Thickness 4,7 mm | | | |
| | Radius available: | 00 - 12 - 15 - 20 - 25 - 30 - 40 - 50 - 63 - 75 - 90 - 100 | | |
|  | Side/L 15 x 60 mm | LDGN | CVD TiN/AL203 | SS |
| | Thickness 5 mm | | | |
| | Inserto rettificabile - Re grindable insert / Available also multilayer Al203 (black coated) | | | |
|  | Side 12 mm | SNMX 1210 | none | CP - CR - HR |
| | Thickness 10 mm | | | |
| | Radius available: | 6 - 6,5 - 7 - 9 - 12 - 15 - 18 - 20 - 25 - 30 - 35 - 40 - 50 - 60 - 70 - 90 | Ceramica Ceramic insert | |

*HR = Hot Rolled / CR = Cold Rolled / PG = Pre-Galvanized / SS = Stainless Steel / CP = Chrome Plating

Tutti i portautensili e ricambi disponibili da stock - All tool-holders and spare parts available from stock

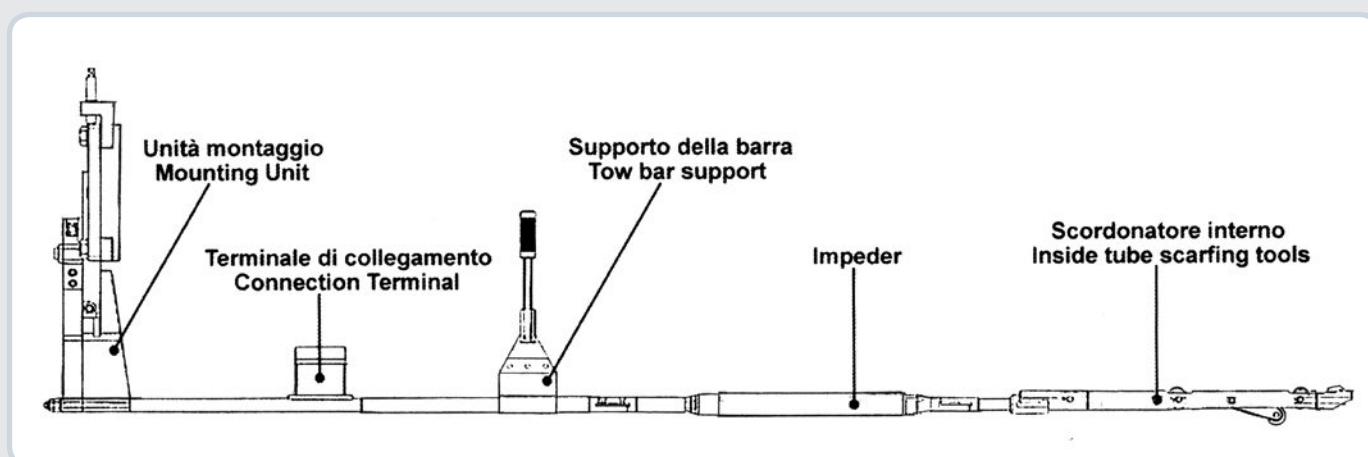
SISTEMI PER SCORDONATURA INTERNA

INSIDE SCARFING TOOLS SYSTEMS



I sistemi sono progettati per ogni singolo cliente

I.D. scarfing systems are developed for each single customer



Disponibili: meccanici - idraulici e pneumatici - Available: mechanical - hydraulic e pneumatic

I sistemi sono progettati per ogni singolo cliente

I.D. scarfing systems are developed for each single customer

SISTEMA DI SCORDONATURA INTERNA MECCANICA

INSIDE SCARFING MECHANICAL TOOL



Mandrini rompitrucoli RI-NC-ME - Chip breaking tools RI-NC-ME

Scordonatori meccanici - Mechanical scarfing tool

| Dispositivo Tool | Gamma D.I. I.D. range | Testa Anelli Ring Holder | Anelli carburo Carbide rings | Gamma D.I. I.D. range | D.E. anello D.E. ring | D.I. anello D.I. ring | Raggio di lavoro Working radius | Kit ricambi Spares kit |
|-----------------------|--------------------------|-----------------------------|---------------------------------|--------------------------|--------------------------|--------------------------|------------------------------------|---------------------------|
| RI-ME 014 | 14 - 17 mm | SH 014 - SR 4,5 | SR 0 - AR 4,5 | 14 - 17 mm | 8 | 4 | 4,5 | ES-ME 014 |
| RI-ME 017 | 17 - 20 mm | SH 017 - SR 4,5 | SR 0 - AR 4,5 | 14 - 17 mm | 8 | 4 | 4,5 | ES-ME 017 |
| | | SH 017 - SR 6,5 | SR 0 - AR 6,5 | 17 - 20 mm | 10 | 4,5 | 6,5 | |
| RI-ME 1 RI-NC-ME 1 | 20 - 26 mm | SH 1 - SR 6,5 | SR 0 - AR 6,5 | 17 - 20 mm | 10 | 4,5 | 6,5 | ES-ME 1 |
| | | SH 1 - SR 1 | SR 1 - AR 7 | 20 - 22 mm | 13 | 6 | 6,8 | |
| | | | SR 1 - AR 8 | 22 - 24 mm | 13 | 7 | 7,9 | |
| RI-ME 2 RI-NC-ME 2 | 26 - 34 mm | SH 2 - SR 1 | SR 1 - AR 9 | 24 - 26 mm | 13 | 8 | 9,1 | ES-ME 2 |
| | | | SR 1 - AR 7 | 20 - 22 mm | 13 | 6 | 6,8 | |
| | | | SR 1 - AR 8 | 22 - 24 mm | 13 | 7 | 7,9 | |
| | | SH 2 - SR 2 SH 2 - SR 2 | SR 1 - AR 9 | 24 - 26 mm | 13 | 8 | 9,1 | |
| | | | SR 2 - AR 10 | 26 - 28 mm | 19 | 9 | 10,2 | |
| RI-ME 3 RI-NC-ME 3 | 32 - 50 mm | SH 3 - SR 2 | SR 2 - AR 11 | 28 - 30 mm | 19 | 10 | 11,4 | ES-ME 3 |
| | | | SR 2 - AR 12 | 30 - 34 mm | 19 | 11 | 12,5 | |
| | | | SR 2 - AR 10 | 26 - 28 mm | 19 | 9 | 10,2 | |
| | | SH 3 - SR 3 | SR 3 - AR 14 | 32 - 41 mm | 22 | 12 | 13,7 | |
| | | | SR 3 - AR 17 | 41 - 50 mm | 22 | 15 | 17,1 | |
| RI-ME 4 RI-NC-ME 4 | 48 - 72 mm | SH 4 - SR 3 | SR 3 - AR 14 | 32 - 41 mm | 22 | 12 | 13,7 | ES-ME 4 |
| | | | SR 3 - AR 17 | 41 - 50 mm | 22 | 15 | 17,1 | |
| RI-ME 5 RI-NC-ME 5 | 70 - 100 mm | SH 4 - SR 4 | SR 4 - AR 23 | 48 - 72 mm | 30 | 20 | 22,8 | ES-ME 5 |
| | | | SR 4 - AR 23 | 48 - 72 mm | 30 | 20 | 22,8 | |
| | | SH 5 - SR 5 | SR 5 - AR 25 | 70 - 85 mm | 35 | 22 | 25,3 | |
| SR 5 - AR 28 | 85 - 100 mm | | 35 | 25 | 28,5 | | | |
| RI-ME 6 RI-NC-ME 6 | 100 - 130 mm | SH 5 - SR 5 | SR 5 - AR 25 | 70 - 85 mm | 35 | 22 | 25,3 | ES-ME 6 |
| | | | SR 5 - AR 28 | 85 - 100 mm | 35 | 25 | 28,5 | |
| | | SH 6 - SR 6 | SR 6 - AR 34 | 100 - 130 mm | 45 | 30 | 34,2 | |
| RI-ME 7 | 125 - 160 mm | SH 7 - SR 6 | SR 6 - AR 34 | 100 - 130 mm | 45 | 30 | 34,2 | ES-ME 7 |
| | | SH 7 - SR 7 | SR 7 - AR 39 | 125 - 160 mm | 50 | 35 | 39,5 | |
| RI-ME 8 | 150 - 260 mm | SH 8 - SR 7 | SR 7 - AR 39 | 125 - 160 mm | 50 | 35 | 39,5 | ES-ME 8 |
| | | SH 8 - SR 8 | SR 8 - AR 46 | 150 - 260 mm | 55 | 40 | 45,6 | |

Suggeriamo sistemi idraulici o pneumatici dal D.I. 130 mm

We suggest Hydraulic or Pneumatic tools from I.D. 130 mm

SCORDONATURA INTERNA - SCORDONATORI IDRAULICI

INSIDE SCARFING - HYDRAULIC SCARFING TOOLS

| Dispositivo Tool | Gamma D.I. I.D. range | Testa Anelli Ring Holder | Anelli in carburo Carbide rings | Gamma D.I. I.D. range | D.I. anello D.I. ring | Raggio di lavoro Working radius | Kit ricambi Spares kit |
|-----------------------|-----------------------|--------------------------|---------------------------------|-----------------------|-----------------------|---------------------------------|------------------------|
| RI-HN 1 RI-NC-HN 1 | 21 - 26 mm | SH 1 - SR 6,5 | SR 0 - AR 6,5 | 10,00 | 4,50 | 6,50 | ES-HN 1 |
| | | | SR 1 - AR 7 | 13,00 | 6,00 | 6,80 | |
| | | SH 1 - SR 1 | SR 1 - AR 8 | 13,00 | 7,00 | 7,90 | |
| | | | SR 1 - AR 9 | 13,00 | 8,00 | 9,10 | |
| RI-HN 2 RI-NC-HN 2 | 26 - 34 mm | SH 2 - SR 1 | SR 1 - AR 7 | 13,00 | 6,00 | 6,80 | ES-HN 2 |
| | | | SR 1 - AR 8 | 13,00 | 7,00 | 7,90 | |
| | | | SR 1 - AR 9 | 13,00 | 8,00 | 9,10 | |
| | | SH 2 - SR 2 | SR 2 - AR 10 | 19,00 | 9,00 | 10,20 | |
| | | | SR 2 - AR 11 | 19,00 | 10,00 | 11,40 | |
| | | | SR 2 - AR 12 | 19,00 | 11,00 | 12,50 | |
| RI-HN 3 RI-NC-HN 3 | 32 - 50 mm | SH 3 - SR 1 | SR 1 - AR 7 | 13,00 | 6,00 | 6,80 | ES-HN 3 |
| | | | SR 1 - AR 8 | 13,00 | 7,00 | 7,90 | |
| | | | SR 1 - AR 9 | 13,00 | 8,00 | 9,10 | |
| | | SH 3 - SR 2 | SR 2 - AR 10 | 19,00 | 9,00 | 10,20 | |
| | | | SR 2 - AR 11 | 19,00 | 10,00 | 11,40 | |
| | | | SR 2 - AR 12 | 19,00 | 11,00 | 12,50 | |
| | | SH 3 - SR 3 | SR 3 - AR 14 | 22,00 | 12,00 | 13,70 | |
| | | | SR 3 - AR 17 | 22,00 | 15,00 | 17,10 | |
| RI-HN 4 RI-NC-HN 4 | 48 - 72 mm | | SH 4 - SR 2 | SR 2 - AR 10 | 19,00 | 9,00 | 10,20 |
| | | SR 2 - AR 11 | | 19,00 | 10,00 | 11,40 | |
| | | SR 2 - AR 12 | | 19,00 | 11,00 | 12,50 | |
| | | SH 4 - SR 3 | SR 3 - AR 14 | 22,00 | 12,00 | 13,70 | |
| | | | SR 3 - AR 17 | 22,00 | 15,00 | 17,10 | |
| | | SH 4 - SR 4 | SR 4 - AR 23 | 30,00 | 20,00 | 22,80 | |
| RI-HN 5 RI-NC-HN 5 | 70 - 100 mm | SH 5 - SR 3 | SR 3 - AR 14 | 22,00 | 12,00 | 13,70 | ES-HN 5 |
| | | | SR 3 - AR 17 | 22,00 | 15,00 | 17,10 | |
| | | SH 5 - SR 4 | SR 4 - AR 23 | 30,00 | 20,00 | 22,80 | |
| | | | SH 5 - SR 5 | SR 5 - AR 25 | 35,00 | 22,00 | |
| | | SR 5 - AR 28 | | 35,00 | 25,00 | 28,50 | |
| RI-HN 6 RI-NC-HN 6 | 95 - 167 mm | SH 6 - SR 4 | SR 4 - AR 23 | 30,00 | 20,00 | 22,80 | ES-HN 6 |
| | | SH 6 - SR 5 | SR 5 - AR 25 | 35,00 | 22,00 | 25,30 | |
| | | | SR 5 - AR 28 | 35,00 | 25,00 | 28,50 | |
| | | SH 6 - SR 6 | SR 6 - AR 34 | 45,00 | 30,00 | 34,20 | |

Anelli disponibili con geometria "ALU" e "NON ALU" - Carbide rings available "ALU" and "NOT ALU" shaped

SCORDONATURA INTERNA - SCORDONATORI IDRAULICI

INSIDE SCARFING - HYDRAULIC SCARFING TOOLS

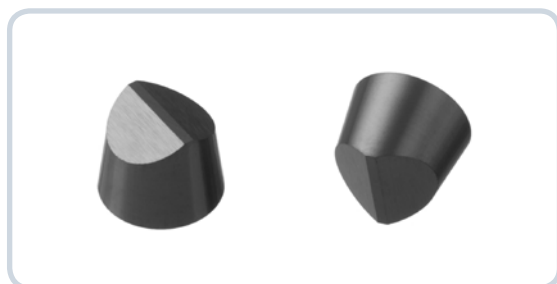
| Dispositivo Tool | Gamma D.I. I.D. range | Testa Anelli Ring Holder | Anelli in carburo Carbide rings | D.E. anello D.E. ring | D.I. anello D.I. ring | Raggio di lavoro Working radius | Kit ricambi Spares kit |
|-------------------------|-----------------------|--------------------------|---------------------------------|-----------------------|-----------------------|---------------------------------|------------------------|
| RI-HN 7 RI-NC-HN 7 | 135 - 220 mm | SH 6 - SR 5 | SR 5 - AR 25 | 35,00 | 22,00 | 25,30 | ES-HN 7 |
| | | | SR 5 - AR 28 | 35,00 | 25,00 | 28,50 | |
| | | SH 6 - SR 6 | SR 6 - AR 34 | 45,00 | 30,00 | 34,20 | |
| | | SH 6 - SR 7 | SR 7 - AR 39 | 50,00 | 35,00 | 39,50 | |
| RI-HN 8 | 180 - 280 mm | SH 6 - SR 6 | SR 6 - AR 34 | 45,00 | 30,00 | 34,20 | ES-HN 8 |
| | | SH 6 - SR 7 | SR 7 - AR 39 | 50,00 | 35,00 | 39,50 | |
| | | SH 6 - SR 8 | SR 8 - AR 46 | 55,00 | 40,00 | 45,60 | |
| RI-HN 9 RI-NC-HN 9 | 230 - 400 mm | SH 6 - SR 6 | SR 6 - AR 34 | 45,00 | 30,00 | 34,20 | ES-HN 9 |
| | | SH 6 - SR 7 | SR 7 - AR 39 | 50,00 | 35,00 | 39,50 | |
| | | SH 6 - SR 8 | SR 8 - AR 46 | 55,00 | 40,00 | 45,60 | |
| RI-HN 10 RI-NC-HN 10 | 400 - 600 mm | SH 6 - SR 6 | SR 6 - AR 34 | 45,00 | 30,00 | 34,20 | ES-HN 10 |
| | | SH 6 - SR 7 | SR 7 - AR 39 | 50,00 | 35,00 | 39,50 | |
| | | SH 6 - SR 8 | SR 8 - AR 46 | 55,00 | 40,00 | 45,60 | |

RI-HN = Mandrini idraulico senza rompitruciolo - hydraulic tool without notching roll

RI-NC-HN = Mandrini idraulico con ruota rompitruciolo - hydraulic tool with notching roll



Ruota rompitruciolo - Notching roll


















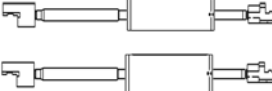

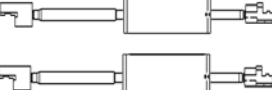


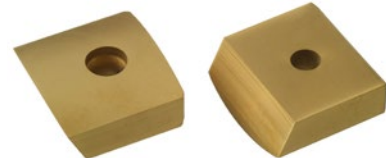
Inserto rompitruciolo
Notching carbide pin

Anelli disponibili rivestiti TIN - TIALN - AL203 - Carbide rings available TIN - TIALN - AL203 coated

SCORDONATORI INTERNI PNEUMATICI

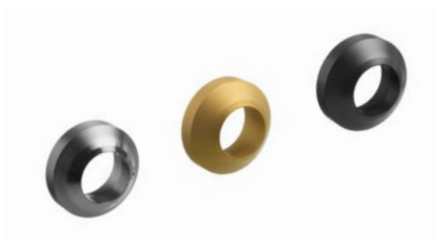
INSIDE SCARFING TOOL SYSTEM PNEUMATIC TYPE

| I.D. Range | Scarfing Tool | Cutting Insert | Impeder Bar | Ferrite | | | |
|------------|---|---|---|--|--|--------------------|--------------------------------------|
| 26 ÷ 32 |  Inside Scarfing Tool 1 Insert | IS-01 |  | T1-085 |  | IB-IS01 | Single Ferrite Rod |
| 32 ÷ 48 | | IS-1 |  | T1-090 T1-100 |  | IB-IS1 | Single Ferrite Rod |
| 47 ÷ 67 | | IS-2 |  | T1-100 T1-110 |  | IB-IS2 | Single Ferrite Rod |
| 66 ÷ 90 |  Inside Scarfing Tool 2 Inserts | IS-3 |  | T1-120 T1-130 T1-140 T1-150 |  | IB-IS3 | Single Ferrite Rod |
| 90 ÷ 125 | | IS-4 |  | T1-150 T1-160 T1-180 |  | IB-IS4 | Single Ferrite Rod |
| 125 ÷ 165 | | IS-5 |  | T1-200 T1-240 T1-260 |  | IB-IS5 | "Single Ferrite Rod + Cluster" |
| 165 ÷ 220 | | IS-6 |  | T1-300 T1-350 |  | IB-IS6 | "Single Ferrite Rod + Cluster" |
| 220 ÷ 290 | | IS-7 |  | T1-350 T1-400 |  | IB-IS7 | Cluster Cluster |
| 280 ÷ 350 | IS-8 |  | T1-400 T1-450 |  | IB-IS8 | Cluster Cluster | |



Inserti speciali a richiesta - Special inserts on demand

| I.D. | Tow Bar | | Mounting Unit | Plunger | | |
|----------------|---------|----------|---------------|--------------|--------------------|-------------------------------|
| > 26 ≤ 32 | | TB-IS 01 | | | IS1/P01 IS1/P02 | |
| > 32 ≤ 48 | | TB-IS 1 | | MU-1 | | IS1/P01 IS1/P02 IS1/P03 |
| ≤ 57 > 57 | | TB-IS 2 | | MU-1 | | IS2/P01 IS2/P02 IS2/P03 |
| ≤ 78 > 78 | | TB-IS 3 | | MU-1 MU-2 | | IS3/P01 IS3/P02 |
| ≤ 105 > 105 | | TB-IS 4 | | | IS4/P01 IS4/P02 | |
| ≤ 140 > 140 | | TB-IS 4 | | MU-2 | | IS5/P01 IS5/P02 |
| ≤ 195 > 195 | | TB-IS 5 | | MU-2 | | IS6/P01 IS6/P02 |
| ≤ 255 > 255 | | TB-IS 6 | | MU-2 | | IS7/P01 IS7/P02 |
| ≤ 315 > 315 | | TB-IS 6 | | MU-2 | | IS8/P01 IS8/P02 |



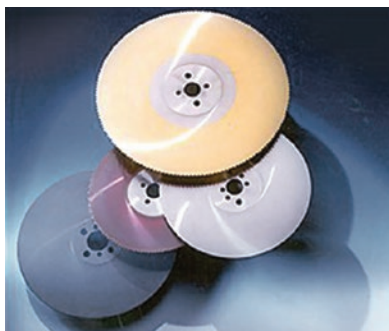
Inserti rettificabili - Re-grindable inserts

TAGLIO TUBI

TUBE CUTTING OFF

HSS

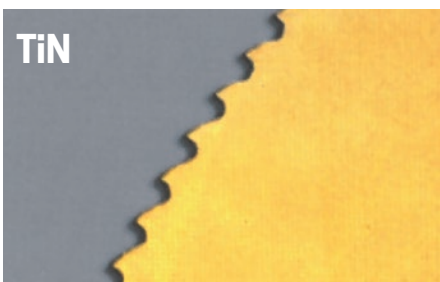
Taglio lento - Seghe circolari DMo 5 - HSS - Disponibili da D.E. 150 - D.E. 700 mm
 Cold saw - Circular saw blades DMo 5 - HSS - Available from O.D. 150 - O.D. 700 mm



Disponibili anche vapo
 Available steam nitrited



Tipologie di denti - Teeth shapes



| Type / Tipo | Color - Colour | Temperatura Max Max temperature | Durezza Hv. Hardness Hv | Spessore Rivestimento Thickness Layer |
|-------------|------------------------|------------------------------------|----------------------------|--|
| TiN | Giallo - Yellow | 500°C | 2500 | 4 microns |
| TiCN | Grigio-Blu - Gray-Blue | 400°C | 3200 | 4 microns |
| TiAlN | Viola - Purple | 800°C | 3000 | 5 microns |

Rivestimenti consigliati - Suggested coatings

A richiesta nuovi rivestimenti speciali - New special coatings on request

TAGLIO TUBI

TUBE CUTTING OFF

Cr-V

Taglio veloce - Seghe circolari (Cr-V) - disponibili da D.E. 250 - D.E. 1000 mm
Hot saw - Circular saw blades (Cr-V) - available from O.D. 250 - O.D. 1000 mm



Dente isoscele
Isosceles tooth

Dente a becco
Beak tooth

TCT Blades

Taglio lento - Seghe circolari (TCT) - disponibili da D.E. 250 - D.E. 500 mm
Cold saw - Circular saw blades (TCT) - available from O.D. 250 - O.D. 500 mm



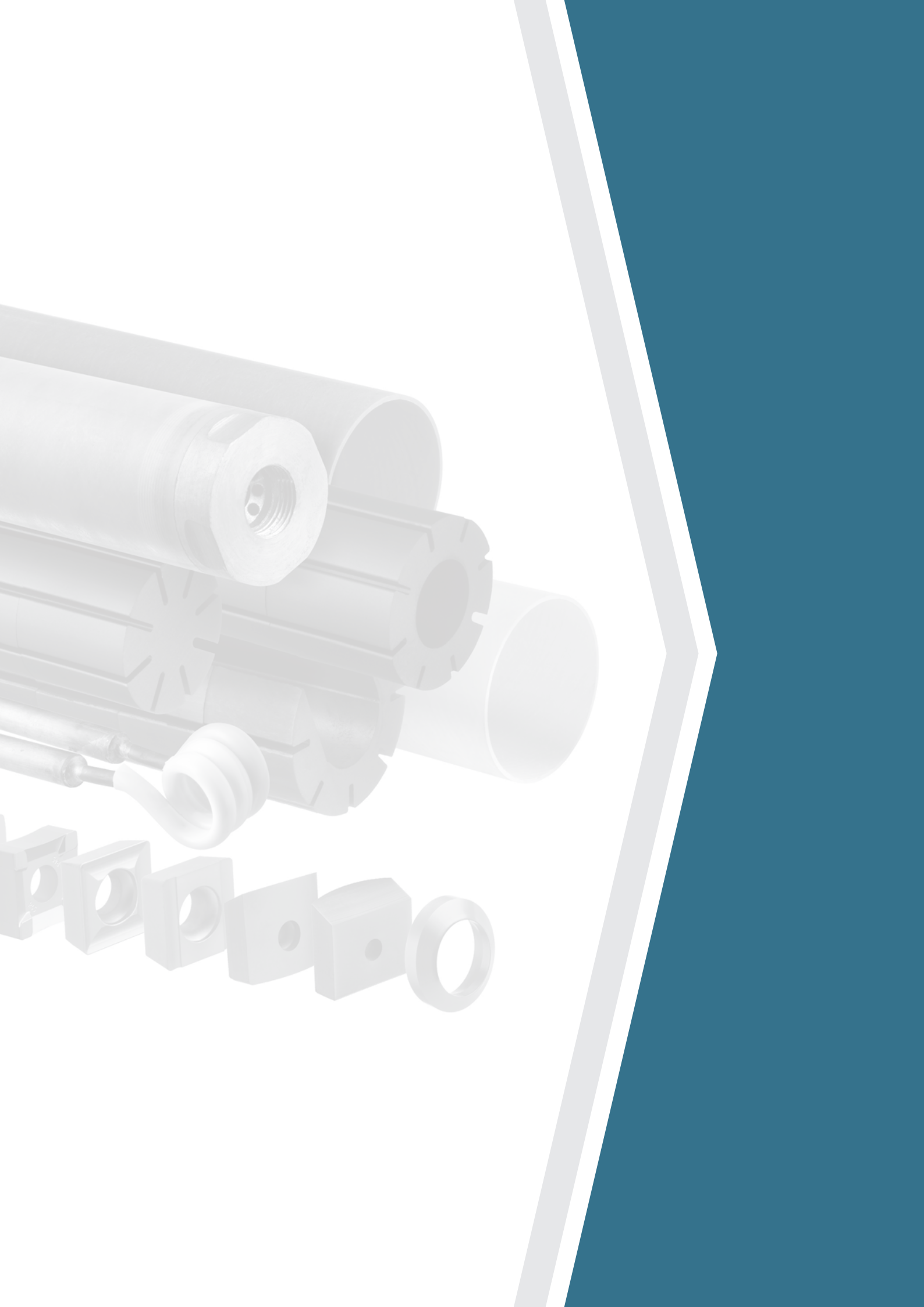
Dente in metallo duro
Tungsten carbide teeth



Lame usa e getta
Single use blades

Taglio ghigliottina (HSS) solo a disegno - Guillotine blades (HSS) only custom made parts





GET THE BEST PRODUCTS CONTACT US NOW

TEL. +39 - 039 387 282 / +39 - 039 230 1687

INFO@USM.IT

WWW.USM.IT

U.S.M. Mazzucchelli srl

Via Antonio Melacca, 13/13A :: CAP 20835 Muggiò (MB) - Italy
P. IVA / VAT NUMBER IT 00789670965

Contacts

Tel. +39 - 039 387 282 / +39 - 039 230 1687 :: Fax +39 - 039 387 633

Information desk
info@usm.it

Domestic Sales - Italy
vendite.italia@usm.it

Administration
amministrativi@usm.it

International Sales
international.sales@usm.it



Visit us at www.usm.it