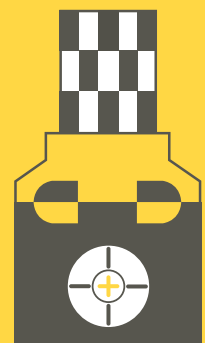


Catalogue

english



RAVITEX®

powered by

SINTERLEGHE

Satisfy your needs. Inspire our quality.

Catalogue

english

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Introduction

p. 10

Tip dresser

- Sigma tip dresser
- Sigma dual tip dresser
- Sigma swivelling tip dresser
- Sigma manual pneumatic tip dresser

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Tip dresser & changer

- Electric tip changer
- Sigma tip dresser & changer
- Sigma tip dresser & changer for aluminum application
- Sigma dual tip dresser & changer
- Sigma dresser & changer continuous tip feeding system
- Sigma pneumatic tip changer

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Cutter

- RX.2 hard metal three blades cutter patented
- Single blade cutter in HSS

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Tools

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Global Network Partners

Who is Sinterleghe

Leader in design, production and sales of dressers, electrodes changers and hard metal cutters to dress resistance welding electrodes.

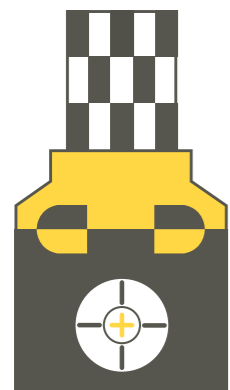
Founded by **Eugenio Tedeschi** in 1989, Sinterleghe has grown thanks to its own development of a Know-How that has allowed to diversify its offer getting to **high quality standards**.

Thanks to its persistence Sinterleghe has conceived new **design solutions** up to become **patents**. This is an added value for the company that has made innovation and technological evolution its strengths.

Today Sinterleghe is a reference partner for big international groups in the automotive production.

The whole know-how and value stream, design, production, sale, accounting is centralized at the headquarter in Anzola d'Ossola (VB), Italy.

Our products, identified by the registered trademark **Ravitex®**, are sold on 4 continents through our Ravitex® Global Network Partners, which guarantees pre- and post-sales support.



RAVITEX®

Our products are known and used everywhere worldwide with our trademark Ravitex®



Lean Enterprise

Sinterleghe is a Lean Enterprise supported by enabling technologies of 4.0 industry that designs, produces and sells dressers, electrodes changers and dressing tools.

Our products, **worldwide patented**, are **approved and purchased from the most important**

automotive plants and are used for the automatic change and dressing of electrodes for spot welding guns.

Sinterleghe ambition is to supply to all partners and customers advanced technological solutions with high quality products and a fast lead time.

RX.2 hard metal three blades cutter patented

Dress and polish simultaneously

Executable dressing cycles: ≥ 60.000



Sigma tip dresser & changer patented

Patented gear for electrode release



Steel application:
torque max 60Nm

Aluminium application:
torque max 120Nm

Sigma pneumatic changer patented

Magazine capacity:
Ø 13 mm: 16+16 electrodes
Ø 16 mm: 14+14 electrodes
Ø 20 mm: 10+10 electrodes



Sigma dresser & changer continuous tip feeding system

Patented solution for continuous loading up to 500 electrodes to feed simultaneously 2 to 4 Sigma tip dresser & changer



Why choose us as a partner

Sinterleghe puts its experience, knowledge and professionalism at customer service.

The goal is to meet the most advanced needs in the dress and change of electrodes' sector by the development of a business process reengineering and redesign that passes through technological innovation and constant development of product and process.



Technological innovation

Sinterleghe's design ideas have become patents, an important guarantee for consumers that testifies the **originality** and **quality** of Ravitex® products.



Experience and know-how

Collaboration with the major automotive players worldwide has allowed Sinterleghe to develop a **solid know-how** and **in-depth knowledge** of the market reference.



High quality

Ravitex® products meet the needs of the most advanced lines of production achieving high goals in terms of reduction of process costs, increase in production capacity, quality and respect for the environment.



Customer care

Ravitex® products come from a careful analysis of our customers' needs, enabling a relevant customer experience and with a high rate of customisation.



Services focused on needs

An excellent customer care is Sinterleghe focus, by offering assistance, support, training and professional advice. Our aim is to satisfy our customers and achieve the highest quality level.



Technical service

The technical staff is very well trained to solve any type of problem and very supportive helping out using Ravitex® products.



Spare parts support

The spare parts supply is highly professional. We respond to each customer needs efficiently and quickly, maintaining our high-quality standards. We also have stock of our components located at our branches and partners.



Technical training

Sinterleghe organises professional courses (e.g. equipment operation, maintenance & application, etc.) with the target of acquire specific technical skills. For this purpose, at the Anzola d'Ossola headquarters, an equipped area has been set up with robots, welding guns and all Ravitex® products.

Sinterleghe in numbers



1

trademark



9

worldwide patents



2

branches



8

authorized Partners



18k

cutter production
annual capacity



5k

machines production
annual capacity



120

supplied automotive
plants



100%

internal production
of cutters. 80% internal
mechanical machining
for Dressers and
electrodes Changers

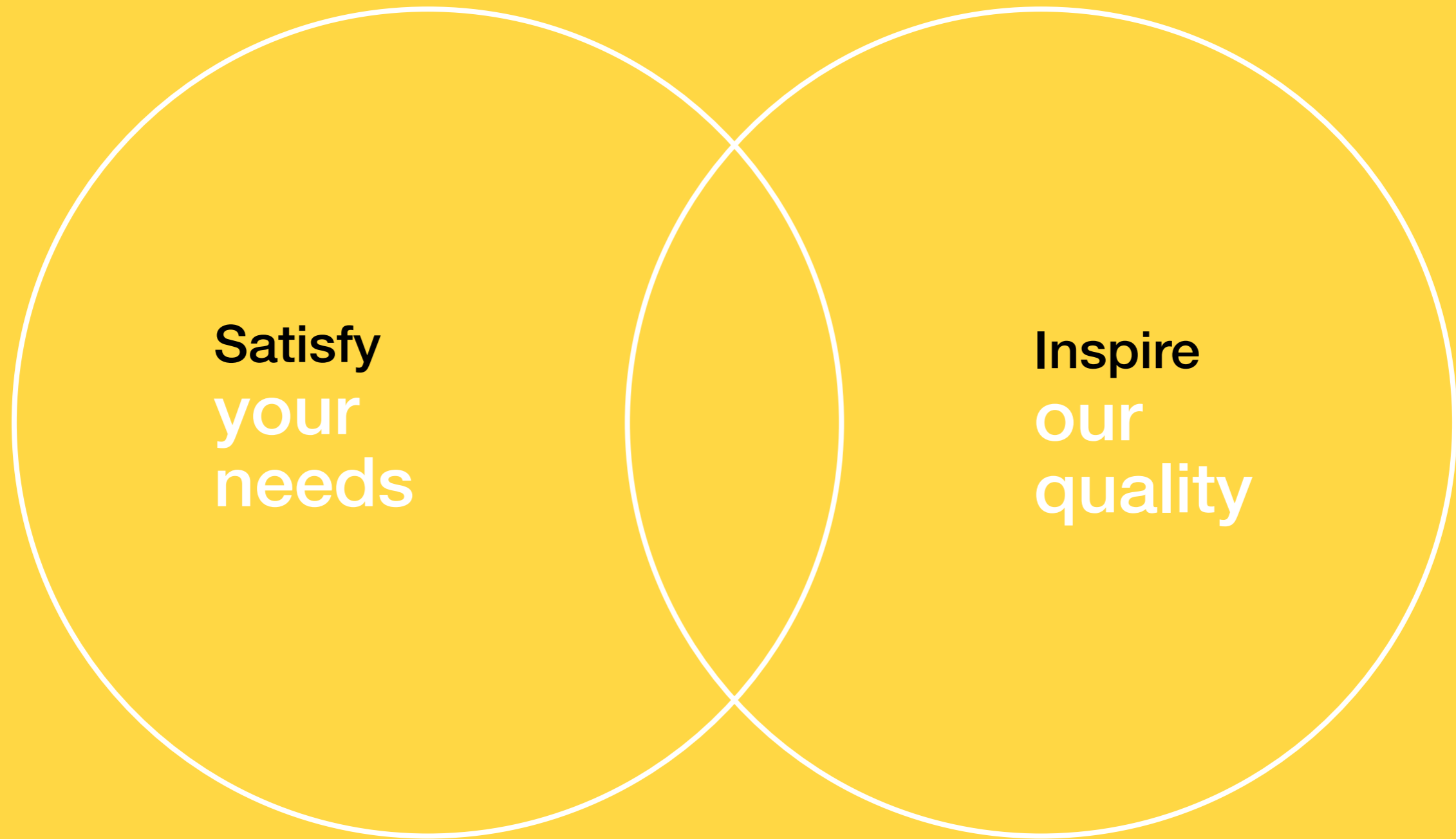
Ravitex® products

Ravitex® products feature are based on our worldwide Customer needs. Their performance is the result of intellectual innovations and process quality.

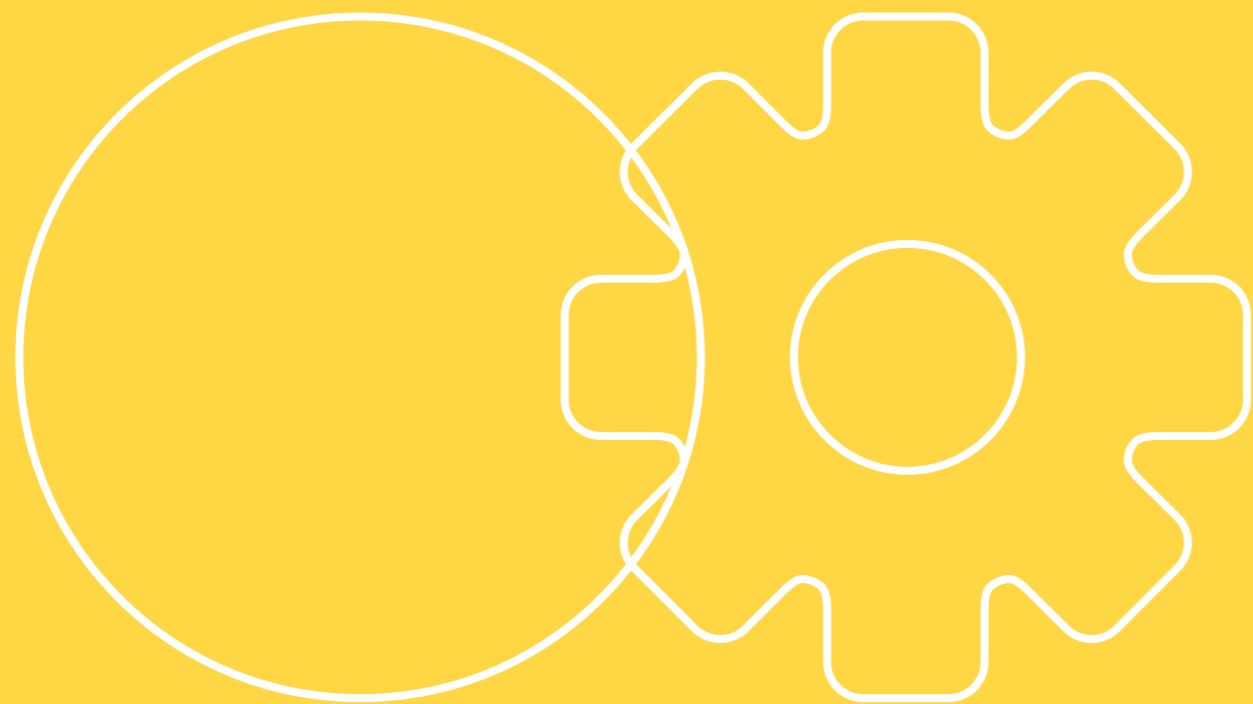
The use of CNC machines enabled for 4.0 industry, allow the product quality constancy thanks to process control. The use of robots for their enslavement guarantees a high flexibility of production capacity. This approach has led to internal and outsourcing process optimisation, reducing delivery times.

All mechanical machining is carried out at the Anzola d'Ossola (VB) plant. The process is managed and controlled from a single management software. A metrology room, with controlled temperature, guarantees complete dimensional control of the entire production range.

Vision



Your
needs.
Our
machines.



Sigma series technical specifications

<i>Specifications</i>	<i>CEE South America Africa - India</i>	<i>China</i>	<i>USA</i>
Power	0,8 kW	0,8 kW	0,8 kW
Frequency	50/60	50	50/60
Power supply	Y 400-415 V Y 460-480 V } 50/60 Hz 2A	Y 400 VAC 50 Hz 2A	Y 400-415 V Y 460-480 V } 50/60 Hz 2A
Optional power supply	/	/	Δ 230-300 V 60 Hz 3.46A
Optional power supply	/	/	Δ 220-255 V 50 Hz 3.46A
Duty cycle	S3-7%	S3-7%	S3-7%
Certification	CE	CCC	AM-UL
Compressed air consumption	400 l/min	400 l/min	400 l/min
Compressed air supply	6 bar	6 bar	6 bar
IP protection level	55	55	55
Pipes and fittings	ISO	ISO	ISO
Solenoid valves	ISO	ISO	ISO

Sigma tip dresser



Features

Dresser with electric engine for robotic welding guns

Design solid and strong

Very efficient chip suction with integrated Venturi system

Compensation system

Electric box according to the desired standard

Change of the horizontal/vertical orientation without adding parts

Technical data

Distance from the center of the gear to the end of the carter	39 mm
---	-------

Height of the head	20 mm
--------------------	-------

Cutter rotational speed	265 rpm
-------------------------	---------

Cutter rotation direction	Clockwise
---------------------------	-----------

Sigma dual tip dresser



Features

Dresser with dual cutter gear with electric engine for robotic welding guns

Design solid and strong

Compensation system

Electric box according to the desired standard

Change of the horizontal/vertical orientation without adding parts

Technical data

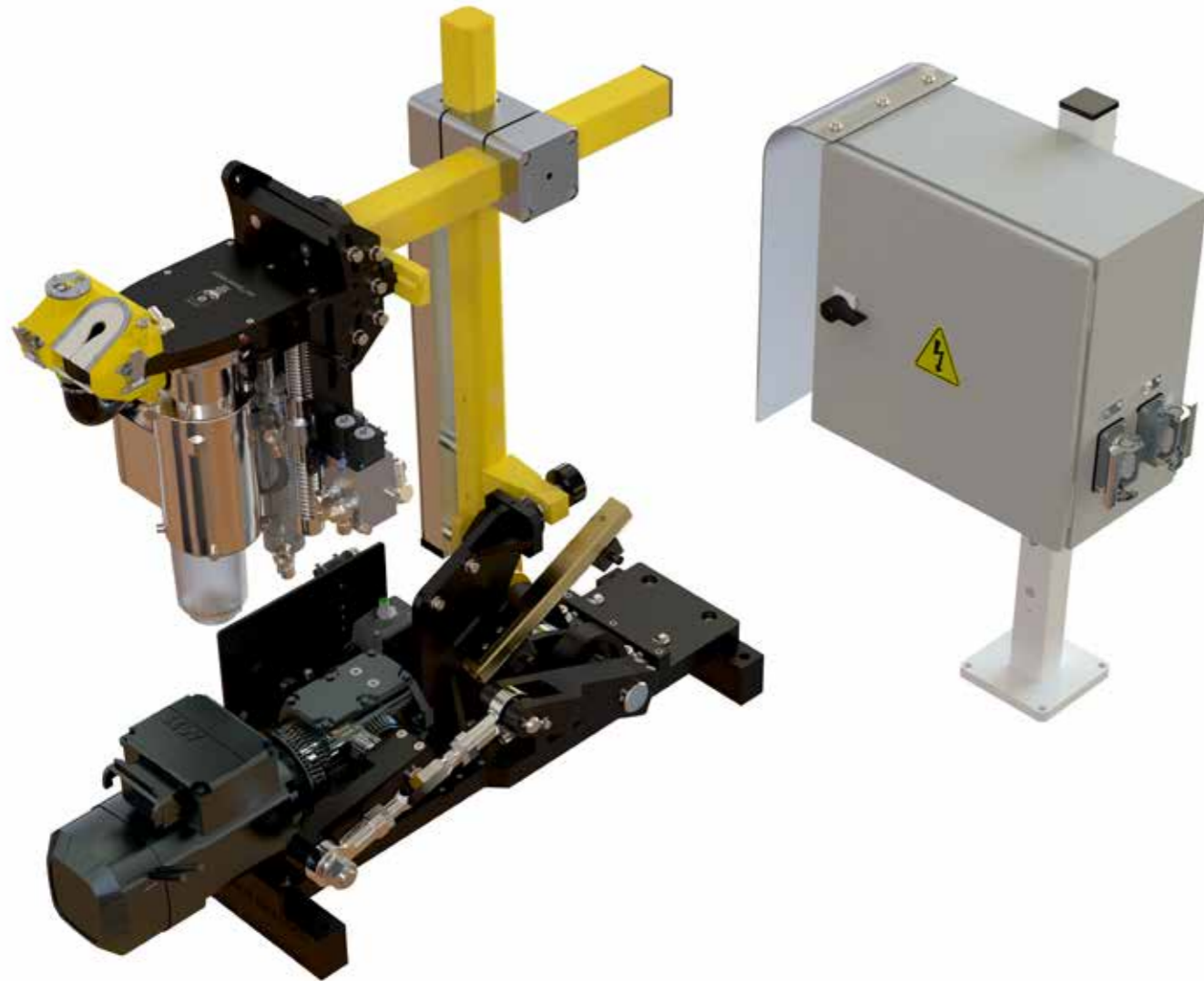
Distance from the center of the gear to the end of the carter	39 mm
---	-------

Height of the head	20 mm
--------------------	-------

Cutter rotational speed	265 rpm
-------------------------	---------

Cutter rotation direction	Clockwise
---------------------------	-----------

Sigma swivelling tip dresser



Features

Swivelling tip dresser for stationary welding guns

Very efficient chip suction with integrated Venturi system

Pneumatic compensation system

Mechanical adjustment of dressing head

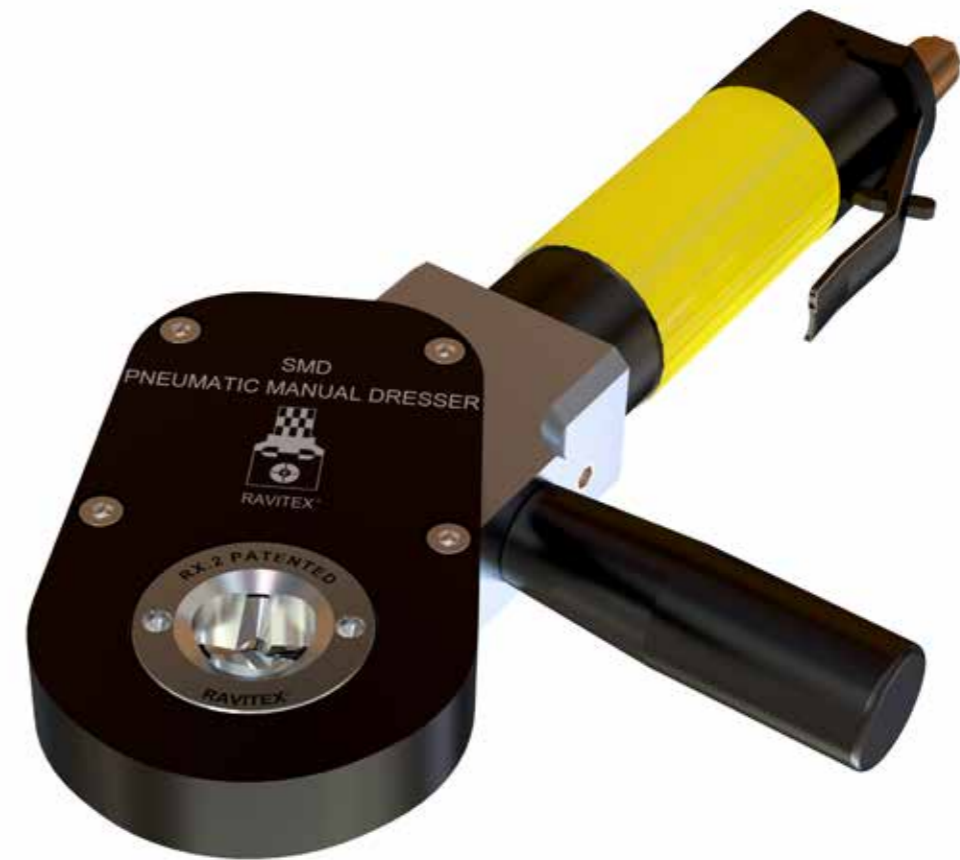
Electric box according to the desired standard

Versions with additional arm available for offset increase

Technical data

Distance from the center of the gear to the end of the carter	39 mm
Height of the head	20 mm
Cutter rotational speed	265 rpm
Cutter rotation direction	Clockwise

Sigma manual pneumatic tip dresser



Features

Manual tip dresser with pneumatic engine

Ergonomic

Installation of cutters with bayonet system

Simultaneous dressing of upper and lower electrode

Technical data

Distance from the center of the gear to the end of the carter	39 mm
Height of the head	20 mm
Cutter rotation direction	Clockwise
Pneumatic power supply	6 bar

Sigma electric tip changer

Patented system



Features

Electric changer with electric engine for robotic welding guns

Design solid and strong

Compensation system

Pneumatic electrodes magazine with high capacity

Container for collection of replaced electrodes

Electric box according to the desired standard

Change of the horizontal/vertical orientation without adding parts

Technical data

Distance from the center of the gear to the end of the carter 39 mm

Height of the head 20 mm

Releasing system Bidirectional

Steel application: releasing gear torque Max 60 Nm

Aluminium application: releasing gear torque Max 120 Nm

Sigma tip dresser & changer

Patented system



Features

Dresser + electrodes changers with electric motor for robotic welding

Design solid and strong

Compensation system

Very efficient chip suction with integrated Venturi system

Pneumatic electrodes magazine with high capacity

Container for collection of replaced electrodes

Electric box according to the desired standard

Change of the horizontal/vertical orientation without adding parts

Technical data

Distance from the center of the gear to the end of the carter 39 mm

Height of the head 20 mm

Cutter rotational speed 265 rpm

Cutter rotation direction Clockwise

Releasing system Bidirectional

Releasing gear torque Max 60 Nm

Sigma tip dresser & changer for aluminum application

Patented system



Features

Dresser + electrodes changer with electric engine for robotic welding

Special solution for plants with aluminium welding

High electrode release torque for operating conditions in high temperature / high welding current

Compensation system

Very efficient chip suction with integrated Venturi system

Pneumatic electrodes magazine with high capacity

Container for collection of replaced electrodes

Electric box according to the desired standard

Change of the horizontal/vertical orientation without adding parts

Technical data

Distance from the center of the gear to the end of the carter	39 mm
Height of the head	20 mm
Cutter rotational speed	265 rpm
Cutter rotation direction	Clockwise
Releasing system	Bidirectional with brakes
Releasing gear torque	Max 120 Nm

Sigma dual tip dresser & changer

Patented system



Features

Dual dresser + electrodes changer with electric engine for robotic welding

Compensation system

Very efficient chip suction with integrated Venturi system

Pneumatic electrodes magazine with high capacity

Container for collection of replaced electrodes

Electric box according to the desired standard

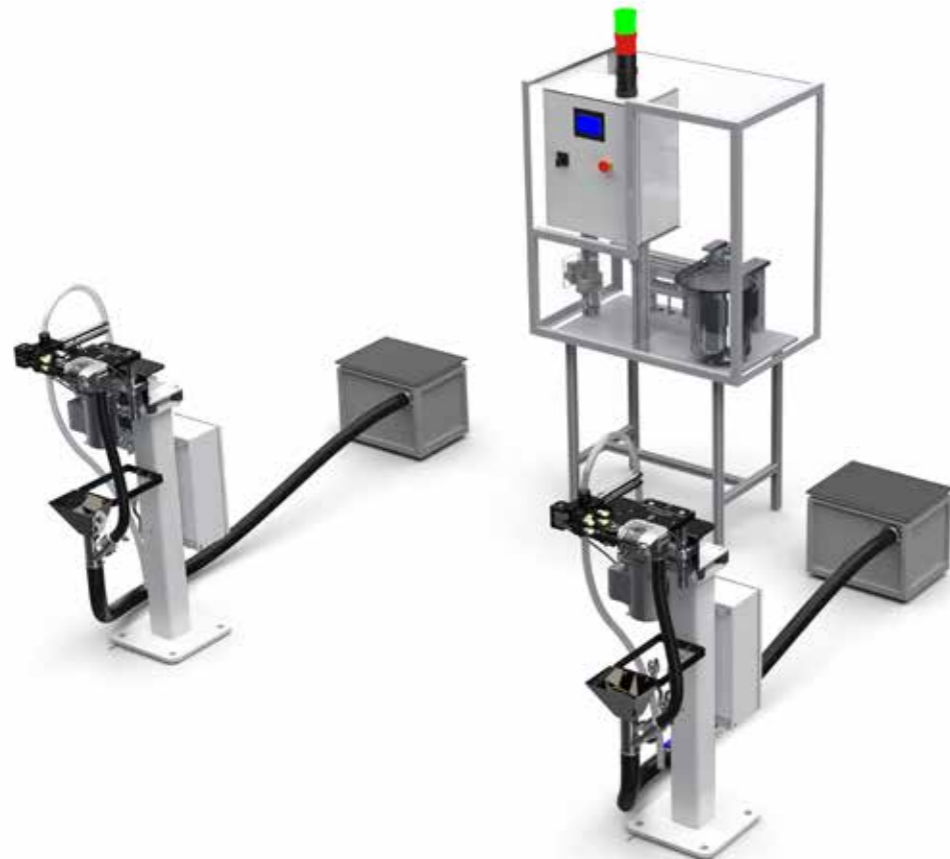
Change of the horizontal/vertical orientation without adding parts

Technical data

Distance from the center of the gear to the end of the carter	339 mm
Height of the head	20 mm
Cutter rotational speed	265 rpm
Cutter rotation direction	Clockwise
Releasing system	Bidirectional
Steel application: releasing gear torque	Max 60 Nm
Aluminium application: releasing gear torque	Max 120 Nm

Sigma dresser & changer continuous tip feeding system

Patented system



Features

Automatic system with two dressers + electrodes changers for robotic welding guns

Integrated PLC for automatic system management

Very efficient double chip suction with integrated Venturi system with external storage station

Pneumatic electrodes magazine

Continuous external electrodes loading center for up to 500 electrodes

Container for collection of replaced electrodes at external storage station

Electric box according to the desired standard

Technical data

Distance from the center of the gear to the end of the carter	39 mm
Height of the head	20 mm
Cutter rotational speed	265 rpm
Cutter rotation direction	Clockwise
Releasing system	Bidirectional
Steel application: releasing gear torque	Max 60 Nm
Aluminium application: releasing gear torque	Max 120 Nm

Images are representative and maybe subject to change for improvements without notice

Sigma pneumatic tip changer

Patented system



Features

Electrodes changer with pneumatic engine for stationary welding guns

Easy installation on gripper robot

Light and compact

High electrode release torque for any conditions of use

Pneumatic electrodes magazine with high capacity

Technical data

Distance from the center of the gear to the end of the carter	39 mm
Height of the head	20 mm
Releasing system	Bidirectional
Releasing gear torque	Max 75 Nm

Images are representative and maybe subject to change for improvements without notice

Focus on

Magazine for electrodes

Pneumatic activation of the electrodes with possibility of a simultaneous loading

Capacity:

Ø13: 16+16 electrodes

Ø16: 14+14 electrodes

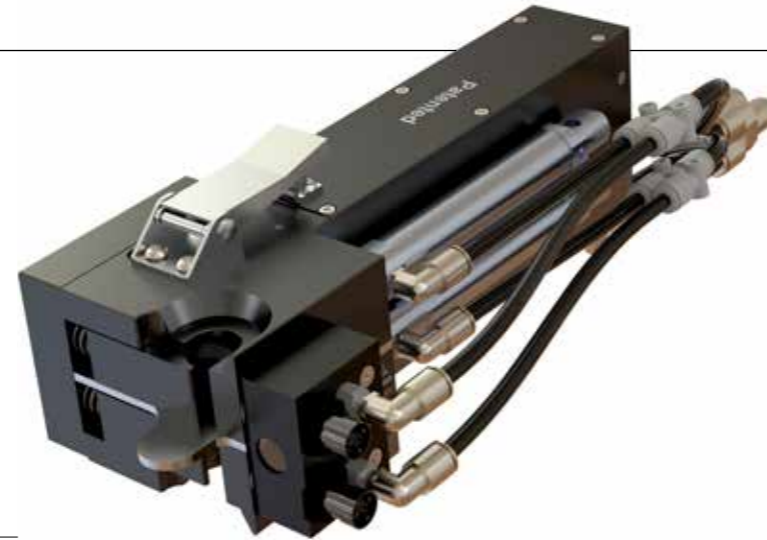
Ø20: 10+10 electrodes

stored and protected until upload

Possibility to load different types of electrodes in upper and lower side

Integrated fixing plate

Separate loader to be charged outside the line



2 sensors to check the reserve status of the electrodes in the charger

1 sensor to detect the presence of electrodes on the welding gun

2 sensors to detect the presence of the electrodes in the loading bay

Optional: external continuous loading for up to 500 electrodes

Suction unit

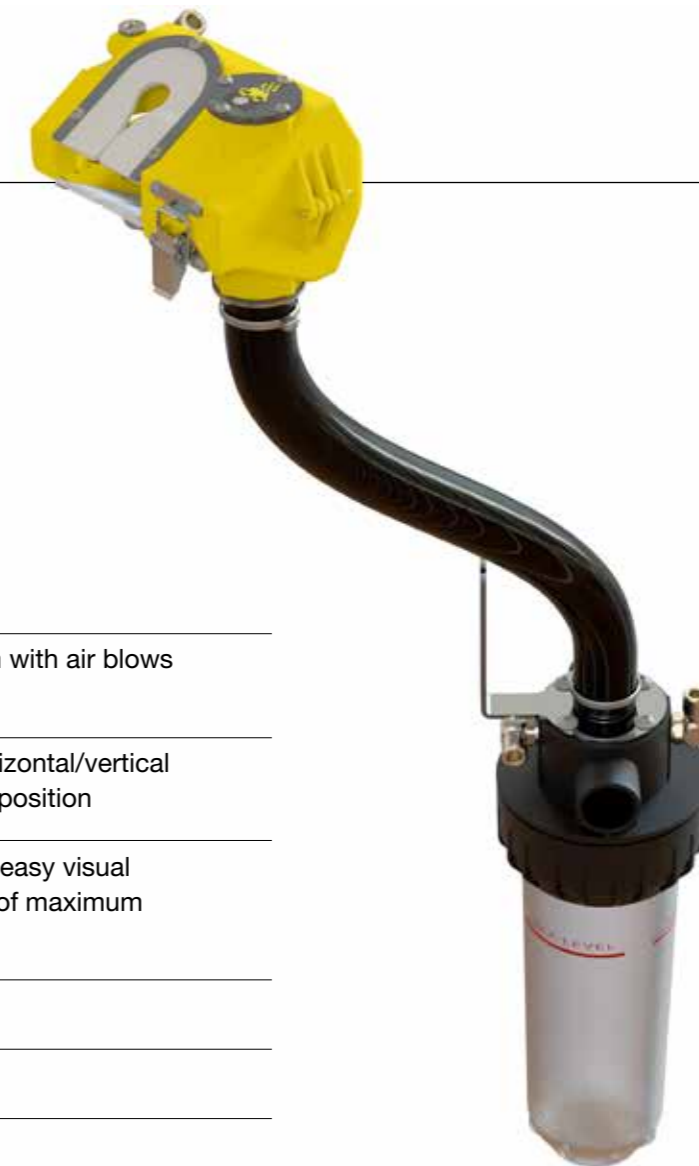
High efficiency Venturi system with air blows integrated in the suction box

Versatility of installation in horizontal/vertical and right/left and top/bottom position

Transparent chip collector for easy visual inspection and with indicator of maximum filling level

Resistant to possible impacts

Easy ordinary maintenance





Custom

*Every detail matters.
That's why Sinterleghe is recognized as
an Automotive Industry Partner in the field
of spot welding.*

Our product portfolio **can be adapted to different types of electrodes used in welding lines**, to the different pneumatic and electrical specification standards and to the different regulations of each country.

The **manufacturing flexibility** allows a **greater empathy with the customers**, fulfilling the highest standards, without losing the typical efficiency of mass production processes.

That's why:
Satisfy your needs. Inspire our quality.

Your needs.
Our cutters.



From cutter providers to dressing masters

From 1989 we design and manufacture hard metal cutters to dress welding electrodes.

In 1994 we are **the first in the world to realise a cutter able to dress a welding electrode both lateral and frontal.**

In 2001 we create the **three blades** hard metal cutters.

In 2009 to complete our product range, we design and produce the standard single blade cutters in HSS coated TiN.

In 2010 we were able to create **such innovative removal peculiarities** to be able to patent them, thanks to the new 3 blades design and updates on the cutter profile.

The transversal skills gained in the design and manufacture of hard metal cutters and single blade, allowed us to develop their comparative Life Cycle Cost Analysis.

From 2010 to 2022 Sinterleghe has produced and sold over 80,000 hard metal three blades cutters worldwide.

From 2009 to 2022 Sinterleghe has produced and sold over 10,000 HSS TiN coated single blade cutters and over 18,000 blades worldwide.

From January 2021 to February 2022 Sinterleghe's team has improved the performance of RX cutters through a redesign of the design process and production.

In February 2022 we bought new CNC machines enabled for Industry 4.0 to increase the production capacity of RX hard metal cutters.

We check all the functional dimensions of the hard metal RX cutters to ensure stability and repeatability in small and large series production.

The quality achieved in the production of cutters has transformed us "from cutter providers to dressing masters".

List of brands where Ravitex® RX patent EP 2193003 cutter can be installed

Europe: Sinterleghe, Aeg, Brauer, Lutz, Abb, Gem, Amdp, Exrod, Rotec-Tooling

USA: Semtorq, Stillwater, Retek

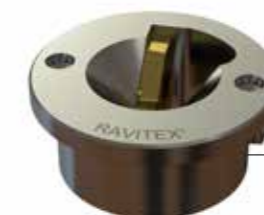
Japan: Kyokutoh, Obara

Brasil: Kappen

Korea: KDC



RX.2 hard metal three blades cutter



Single blade cutter in HSS



We use a green chain for the use of hard metal in our cutters

RX.2 three blades hard metal cutter patented

Excellence does not come at random.

Since the 40s, Anzola d'Ossola is the Italian district known for sintering hard metal. It is here that, in 2007, collecting the legacy of a long family tradition, Sinterleghe patents the innovative hard metal three blades insert installed on the RX cutters. Production with CNC 4.0 machines, supported from predictive maintenance, guarantees its quality for both small and large series.

Key performances of excellence are transformed in unique Key benefits for our customers.

- Hard metal three blades
= cutter life ≥ 60.000 dressing cycles
- Blade applicable on different type of bush
= usable with every brand of dresser
- Copper dimension is 1/3 compared to the single blade cutters = avoid clogging
- Dressed electrode's roughness 0.15 Ra
= suitable for electrodes that weld aluminum
- Dress and polish the welding electrode simultaneously



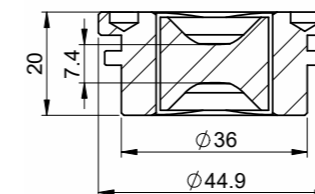
Datasheet cutter 070501000015



3 blades in hard metal

Code to purchase:
070501000015

Measures:



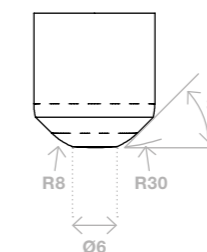
Units of measurement: mm

Cutter RFRW F16 45 R8 P6 R30 RX.2 patented

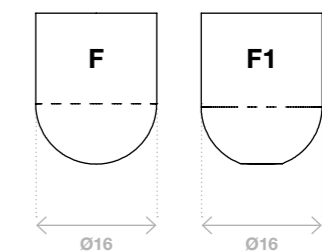
Suitable to dress	Sinterleghe, Bräuer
Recommended welding gun closing force	1.3±0.2 kN
Max. welding gun closing force	2.5 kN
Weight	0.17 kg

Shape of dressed electrode Dressable electrode shapes

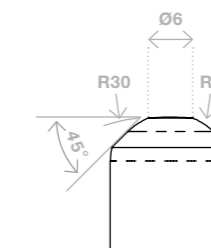
Upper:



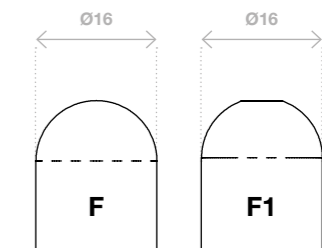
Upper:



Lower:



Lower:



ISO standard 5821
39D 1978

Sample datasheet: each cutter is designed according to the shape of the electrode to be obtained after dressing

Single blade cutter

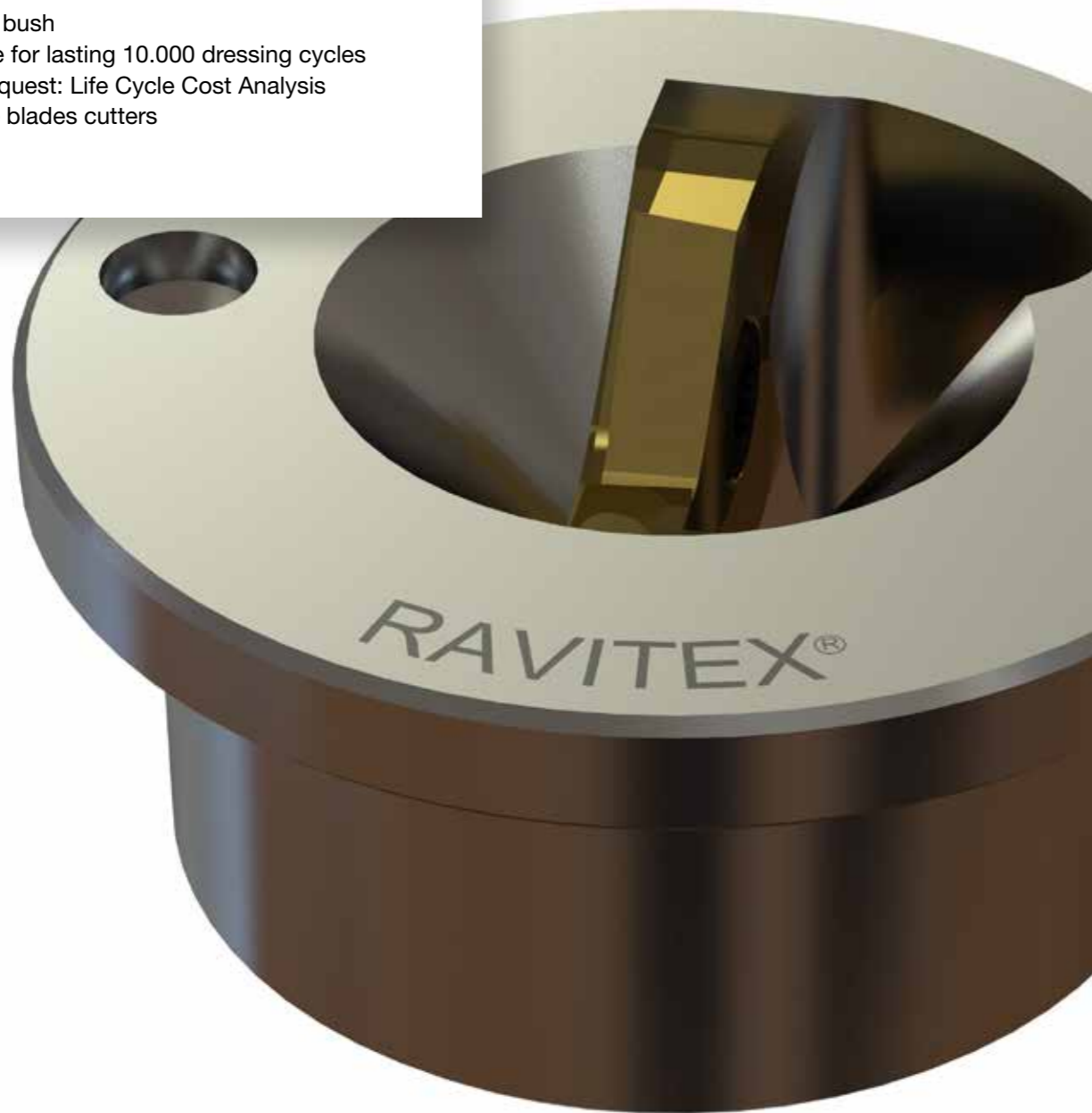
Our TiN coated in HSS single blade cutters remove the oxides on the dressed electrodes' surface.

The goal is to supply a suitable tool to dress electrodes with the below features:

1. dressed surfaces' roughness of 0.5 Ra
2. welding lens diameter on customer request
3. copper chips thickness dimensions: about 0.8 mm

Thanks to the above points, we guarantee quality of dressed electrodes with the below points:

1. regardless the dresser brand on which the cutters are installed
2. only on RFRW bush
3. blades suitable for lasting 10.000 dressing cycles
4. available on request: Life Cycle Cost Analysis
RX.2 VS single blades cutters

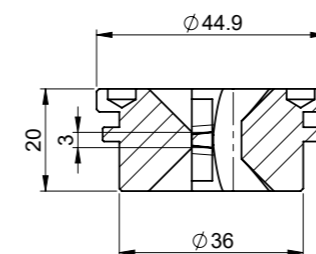


Datasheet cutter 070201000001



Code to purchase:
070201000001

Measures:



Units of measurement: mm

Electrode shapes:

New _____
Dressed _____

Single blade cutter RFRW F16 45 R8 P6 R50 SB

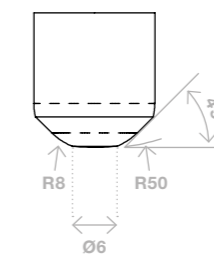
Suitable to dress	Sinterleghe, Bräuer
Weight	0.13 kg

Reccomended operating parameters

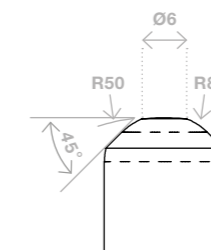
Dressing closing force	1.15±0.15 kN
------------------------	--------------

Shape of dressed electrode Dressable electrode shapes

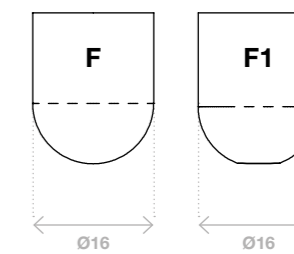
Upper:



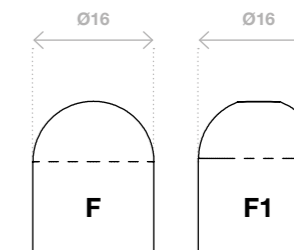
Lower:



Upper:



Lower:

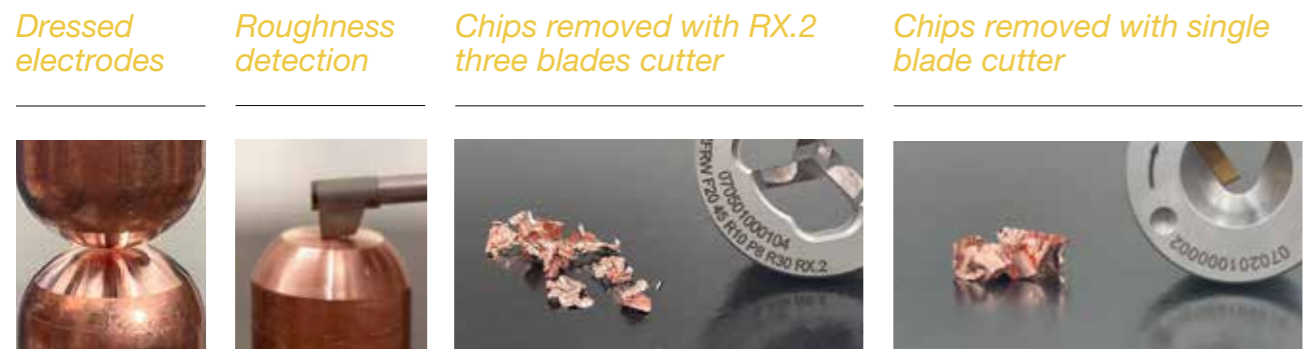
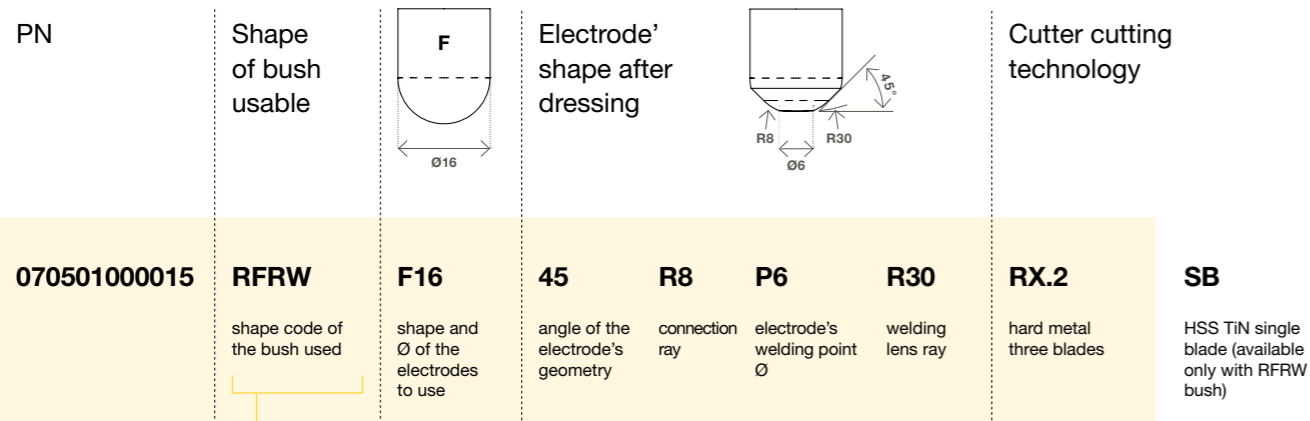


ISO Standard 5821
39D 1978

Sample datasheet: each cutter is designed according to the shape of the electrode to be obtained after dressing

How to read the cutter description

Example:
070501000015 RFRW F16 45 R8 P6 R30 RX.2 Patented



Tools

Machine tools



Electrode extractor wrench in chromed steel with hammer

Code to purchase:
19PA-01372



RRM manual tip dresser

Code to purchase:
163R-03633

Cutter tools



Calibration tool for welding gun/cutter

- Code to purchase:
- 070101000040 for upper electrode diam 16 mm
 - 070101000041 for lower electrode diam 16 mm
 - 070101000154 for upper electrode diam 20 mm
 - 070101000155 for lower electrode diam 20 mm
 - 070101000316 for upper electrode diam 19,05 mm
 - 070101000317 for lower electrode diam 19,05 mm



Tool to remove our cutter easily and quickly from the dresser

Code to purchase: 020199000006

Global Network Partners

Check your Country's partner: www.sinterleghe.it.

To become part of our sales organization, send e-mail to: ravitex.sales@sinterleghe.it

Partner: USA and Canada

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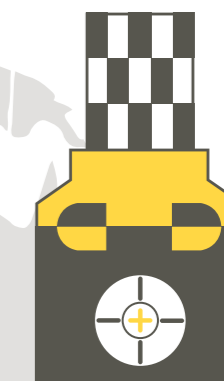
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RAVITEX®

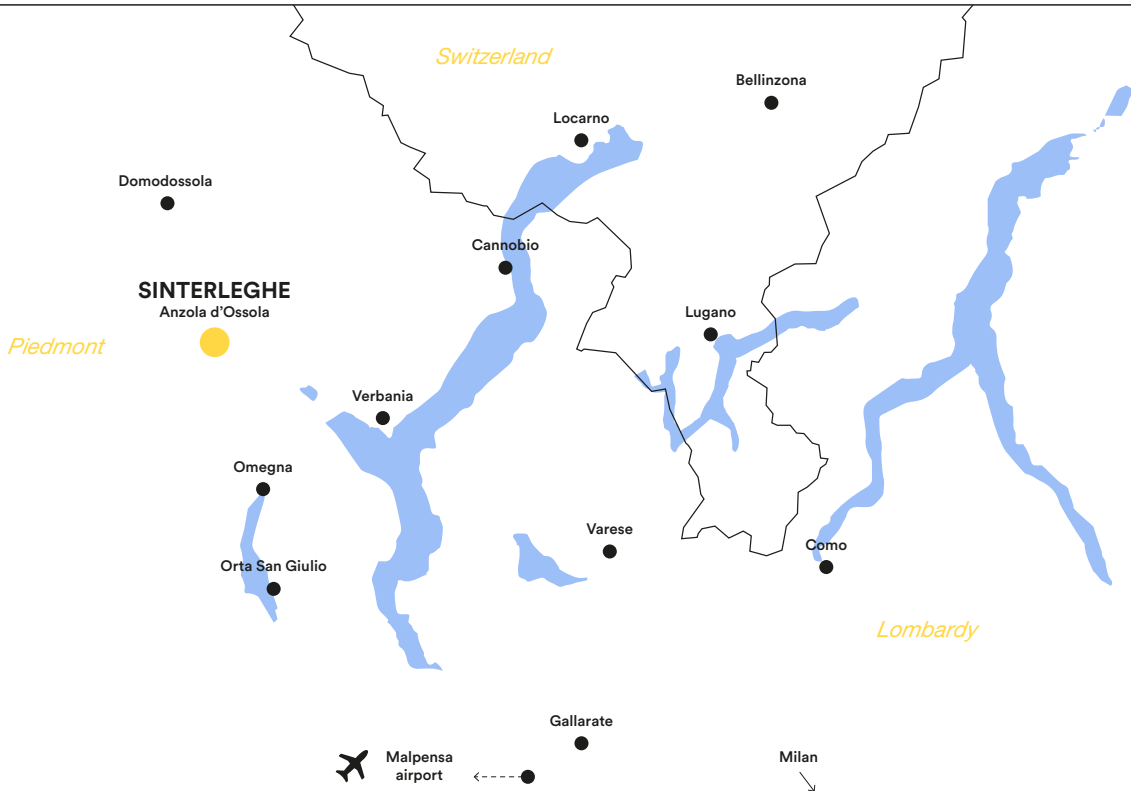
Global Network Partners

"Best in class" supplier of 4.0 solution
in the field of electrodes dressing,
electrodes changing
and welding spot effectiveness

They trust us



Where we are and how to reach us



Our Headquarters is 70 km from Malpensa airport, motorway A4/A26 exit "Anzola d'Ossola"

Sinterleghe S.r.l.

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