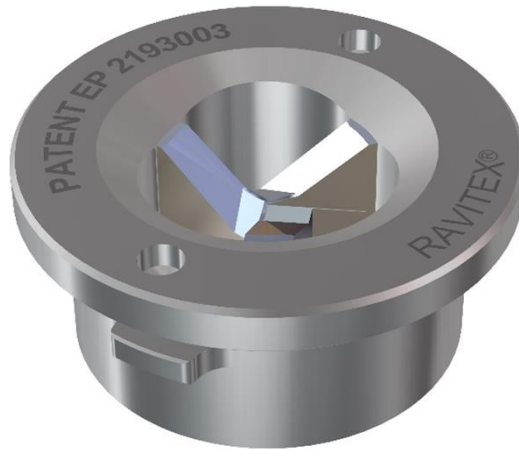
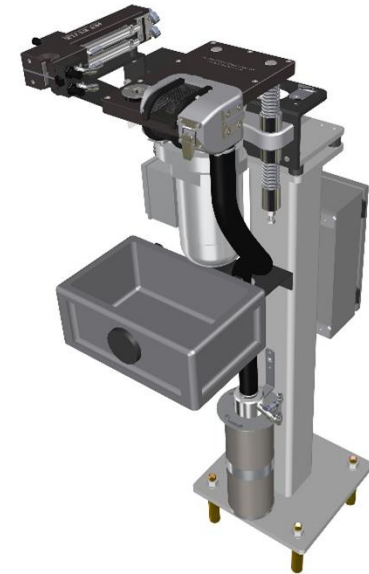


WELCOME TO SINTERLEGHE

SIGMA ELECTRIC DRESSER



SIGMA CHANGER & DRESSER PATENT N°0001338264





LOCATION

Established in 1989 by Eugenio Tedeschi, SINTERLEGHE S.r.l. is in 2014 a company that owns the entire know-how of its production range, because all the processes of planning, design, production, inspection and testing are performed in-house.

The company is certified ISO 9001:2008 and applies to his business processes the Lean Production. This has allowed the optimization of the organizational mechanisms, making flexible and reliable its production capacity and allowing since 2014 to export 85% of production in more than 32 states in 4 continents.

HOW TO FIND US

Sales Dept. /Accountancy Dept.:

SINTERLEGHE s.r.l.

Via Cenischia 33

10139 Torino Italy

Tel +39 011 3314 24

Fax +39 011 38 54 774

ravitex.sales@sinterleghe.it

Production/R&D Office:

SINTERLEGHE s.r.l.

Via alla sega sn

28877 Anzola d'Ossola (VB) - Italy

Tel +39 0323 837862

Fax +39 0323 83 993

ravitex.engineering@sinterleghe.it



The manufacturing headquarters is only 45 minutes away from the international airport of Malpensa (Mi)



- Sinterleghe s.r.l. is an independent private company with a team of 15 people.
- In 2013 a total turnover of approximately Euro 3,0 million.
- The range Sinterleghe was sold in 4 continents, 31 countries
- The company is certified ISO 9001:2008 and applies to his business processes the Lean Production.

This has allowed the optimization of the organizational mechanisms, making flexible and reliable its production capacity and allowing since 2014 to export 85% of production in more than 32 states in 4 continents. This brought to the optimization of internal and outsourcing processes, thus reducing lead times.

PRODUCTION CAPACITY	TIP DRESSER & TIP CHANGER Q.TY/YEAR	CUTTERS Q.TY/YEAR
INSTALLED	4.000	6.000
ACHIEVED* (31-12-2014)	2.853	4.562
ACHIEVABLE	4.000	6.000

* These figures were achieved through a single working shift. Production peaks can be handled by increasing working shifts. Reduction of lead times and production increase are carried out by employing same spare parts for different models



QUALITY SYSTEM

Since 1998 Sinterleghe is certified
ISO 9001-2008 n° 1440/98/S



RINA
www.rina.org

CERTIFICATO N. CERTIFICATE No. 1440/98/S

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITÀ DI
IT IS HEREBY CERTIFIED THAT THE QUALITY MANAGEMENT SYSTEM OF

SINTERLEGHE S.r.l.

VIA CENISCHIA, 33 10139 TORINO (TO) ITALIA

NELLE SEGUENTI UNITÀ OPERATIVE / IN THE FOLLOWING OPERATIONAL UNITS

VIA ALLA SEGA S.N.C. 28877 ANZOLA D'OSSOLA (VB) ITALIA

È CONFORME ALLA NORMA / IS IN COMPLIANCE WITH THE STANDARD
ISO 9001:2008

PER I SEGUENTI CAMPI DI ATTIVITÀ / FOR THE FOLLOWING FIELD(S) OF ACTIVITIES

EA:18

PROGETTAZIONE, PRODUZIONE ED ASSISTENZA POST VENDITA DI MACCHINE E FRESE PER LA RAVVIVATURA
DI ELETTRODI IMPIEGATI NELLA SALDATURA A RESISTENZA

DESIGN, MANUFACTURE AND AFTER SALES ASSISTANCE OF TIP DRESSERS AND CUTTERS FOR RESISTANCE
WELDING ELECTRODES

La validità del presente certificato è subordinata a sorveglianza periodica annuale / semestrale ed al riesame completo del sistema di gestione con periodicità triennale
The validity of this certificate is dependent on an annual / six monthly audit and on a complete review, every three years, of the management system
L'uso e la validità del presente certificato sono soggetti al rispetto del documento RINA: Regolamento per la Certificazione di Sistemi di Gestione per la Qualità
The use and validity of this certificate are subject to compliance with the RINA document: Rules for the certification of Quality Management Systems

Prima emissione First Issue	15.10.1998
Emissione corrente Current Issue	01.03.2013
Data scadenza Expiry Date	25.02.2016

Dott. Roberto Cavanna
(Managing Director)

Manually

RINA Services S.p.A.
Via Corsica 12 - 16128 Genova Italia



ISO 9001:2008 A ISO 9001:2008 B
ISO 9001:2008 C ISO 9001:2008 D
ISO 9001:2008 E ISO 9001:2008 F
ISO 9001:2008 G ISO 9001:2008 H
ISO 9001:2008 I ISO 9001:2008 J
ISO 9001:2008 K ISO 9001:2008 L
ISO 9001:2008 M ISO 9001:2008 N
ISO 9001:2008 O ISO 9001:2008 P
ISO 9001:2008 Q ISO 9001:2008 R
ISO 9001:2008 S ISO 9001:2008 T
ISO 9001:2008 U ISO 9001:2008 V
ISO 9001:2008 W ISO 9001:2008 X
ISO 9001:2008 Y ISO 9001:2008 Z

Member degli Accordi di Mutuo
Riconoscimento IAF, ILAC, UKAS
Signatory of EA, IAF and ILAC Mutual
Recognition Agreements

CISQ is a member of



www.iqnet-certification.com

*IQNet, the association of the world's first
class certification bodies, is the largest
provider of management System
Certification in the world.
IQNet is composed of more than 30
bodies and counts over 150 subsidiaries
all over the globe.*

Per informazioni sulla validità
del certificato, visitare il sito
www.rina.org

For information concerning
validity of the certificate, you
can visit the site
www.rina.org

Ritornarsi al Manuale della Qualità
per i dettagli delle esclusioni ai
requisiti della norma

Reference is to be made to the
Quality Manual for details
regarding the exemptions from the
requirements of the standard

CISQ è la Federazione Italiana di
Organismi di Certificazione dei
sistemi di gestione aziendale

CISQ is the Italian
Federation of management
system Certification Bodies



www.cisq.com

Foto: CISQ/2013 01/011

SINTERLEGHE S.r.l.

Your needs Our quality



An idea and the perseverance to fulfill it, gave rise to SINTERLEGHE and it is with this spirit that we continue to find solutions that become Patents. Our Patents protect the talent of our engineers and the trust of our customers and of all those who want originality and quality in the products purchased. For this reason, we consider the Patent titles the certification of that added value that only the inventors and original manufacturers can give.

- **1992 Registered Trademark Ravitex®**
- **1996 Patent 00239855** Dressing unit for electrodes
- **2001 Patent 0000254577** Supporting device for a dressing head
- **2001 Patent 0000254578** Supporting device for a dressing head
- **2005 Patent 0001361126** Device sensing electrodes...
- **2007 Patent 0001338264** Device for the replacement of electrodes in spot welding robots.
- **2010 Patent EP 2193003** Cutter for dressing electrodes of resistance welding.
- **2011** Under the 7th European Framework Programme for Research and Technological Development, is formed a research consortium, in which SINTERLEGHE plays the role of coordinator for the development of an Adaptive Tip dress Control for Automated Resistance Spot Welding" called "SMARTDRESS" ([Http://www.smartdress-project.eu](http://www.smartdress-project.eu)) destined to revolutionize the processes of welding of steel and aluminium.
- **2013 Patent Pending** EP 2013-0662201 Optical device
- **2013 Patent Pending** TO 2013-A000746 Storage for electrodes
- **2013 Patent Pending** EP 2013-069034 Software

MANAGEMENT & PLANIFICATION

Established in 1989 by Eugenio Tedeschi, SINTERLEGHE S.r.l. is in 2014 a company that owns the entire know-how of its production range, because all the processes of planning, design, production, inspection and testing are performed in-house. All business processes are run and monitored by a single managing software



SINTERLEGHE has created a testing area equipped with robot, welding gun and the complete Ravitex® products range. This area has the greatest importance in the development and test of new products, and has allowed Sinterleghe to organize detailed courses regarding:

1. **Training of agents/resellers of Sinterleghe S.r.l.**
2. **RAVITEX® Technology Patent EP 2193003 & Patent N° 0001338264**
3. **Instruction and training of the maintenance staff that works on Sinterleghe's products**
4. **Test and check of the removal (mm/sec) of tip-dressing cutters**

DESIGN

N° 3 Workstations CAD 3D SOLIDEDGE

N° 3 Workstation con CAD 2D

PRODUCTION

N° 1 CNC SINKER EDM

N° 1 CNC TOOL GRINDER

N° 2 CNC WORKSTATIONS

N° 1 CNC LATHER

N° 1 AUTOMATIC SAWING MACHINE

N° 1 VERTICAL AUTOMATED
WAREHOUSE

N° 3 WORKBENCHES FOR MECHANICAL
ASSEMBLY

N° 3 WORKBENCHES FOR ELECTRICAL
ASSEMBLY

N° 2 WORKBENCHES FOR FUNCTIONAL
AND FINAL TESTS

DIMENSIONAL CHECK

An air-conditioned metrological room guarantees the complete dimensional check of all our production range through
N°1 MICRO-VU Optical CMM
N° 1 COORD3 CMM
Calibers, go/no go gauges, micrometers



REFERENCE LIST



Gravatai - Brazil
 Saõ Josè Do Campo - Brazil
 SGM -Shangha i- China
 SGM- Dongyue - China



Pomigliano - Italy



Belvedere Plant, Illinois - USA
 Warren Stamping Plant, Michigan - USA
 Sterling Stamping Plant, Michingan - USA
 Saltillo Plant - Mexico

IVECO

Brescia - Italy
 Suzzara - Italy



pirinfarina
 Grugliasco - Italy



Mlada Boleslav
 Czech Republic



None-Italy
 Cassino-Italy
 Melfy_Italy
 Cordoba- Argentina



Wolfsburg -Germany
 Hanover -Germany
 Kassel - Germany
 Braunschweig - Germany
 Bruxelles - Belgium
 Palmela - Portugal
 Puebla - Mexico
 Shanghai - China
 Yzheng - China
 Anchieta - Brazil
 Taubatè - Brazil
 Poznan - Poland
 Bratislava - Rep. Slovakia
 Buenos Aires - Argentina



Cassino - Italy
 Tichy - Poland
 Melfi - Italy
 Val di Sangro - Italy
 Mirafiori - Italy
 Bursa - Turkey
 Termini Imerese - Italy



Beijing - China



Porto Real - Brazil



Dingolfing - Germany



Neckarsulm - Germany
 Curitiba - Brazil



Mercedes-Benz

São Bernardo do Campo - Brazil
 Buenos Aires - Argentina



SUZUKI

Esztergom - Hungary



Izmit - Turkey
 Camaçari - Brazil
 Buenos Aires - Argentina
 São Paulo - Brazil

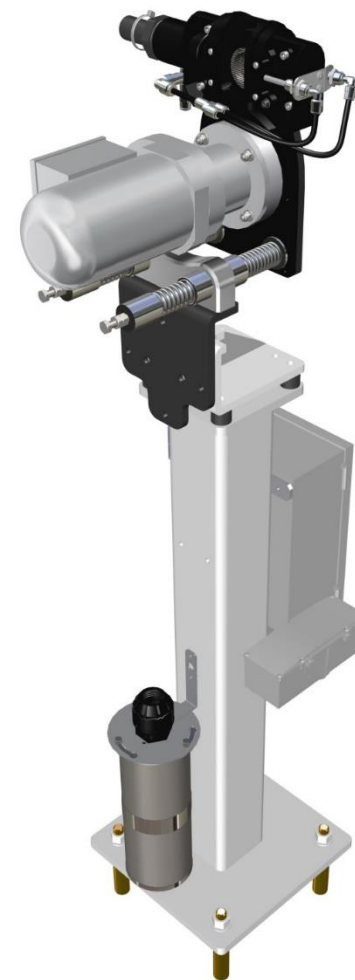


Chengdu - China



HORIZONTAL POSITION

IT'S POSSIBLE TO CONFIGURE
THE TIP DESSER IN
HORIZONTAL OR VERTICAL
POSITION WITHOUT ANY
ADDITIONAL OPTIONALS



VERTICAL POSITION



SIGMA ELECTRIC DRESSER



SWARVES COLLECTOR
BETTER PERFORMANCE WITH A
MOST POWERFUL PNEUMATIC
SUCTION DEVICE



NEW GEAR BOX DESIGNED ON ALL
SIGMA SERIES MACHINES.

MOST PRECISION ON ROTATION DUE TO
THE USE OF BEARINGS.

MOST RELIABILITY DUE TO NEW GEARS
DESIGN AND TO NEW HARDNESS AND
SURFACES TREATMENTS TO AVOID
CORROSION.



NEW EQUALIZATION SYSTEM

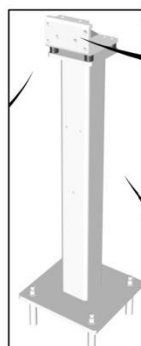
UP TO +/- 30MM RANGE

VERY SMOOTH MOVEMENTS

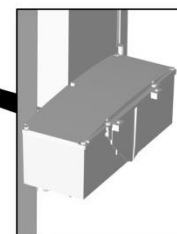
POSSIBILITY TO REGULATE THE
HARDNESS OF THE SPRINGS



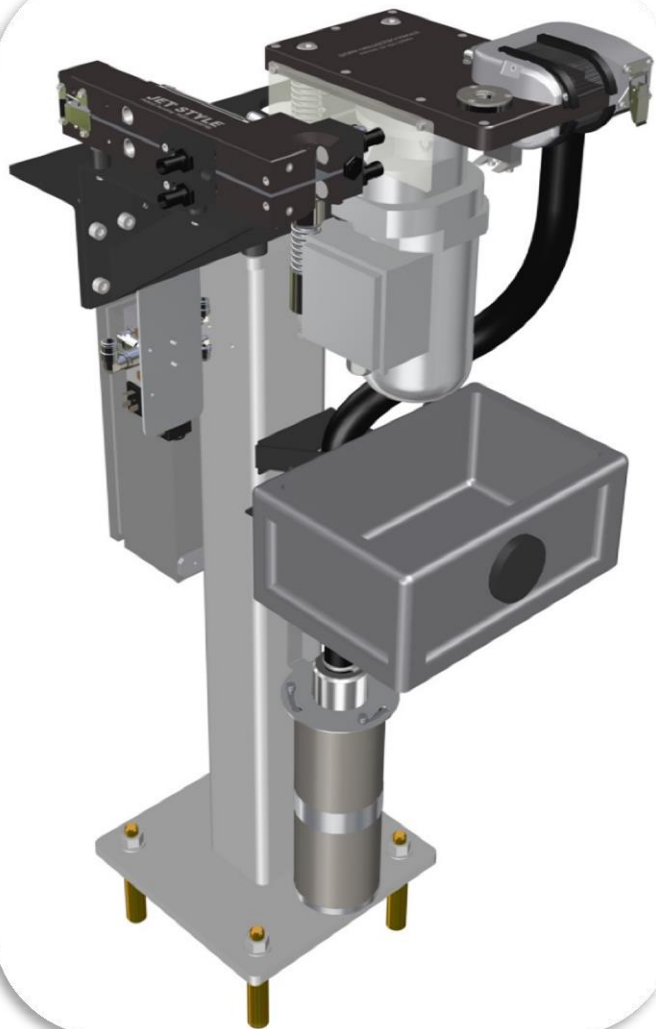
HIGH-POWER MOTOR
UP TO 0.8KW
HIGH CUTTING TORQUE



NEW PILLAR BASED ON
NEW VW DESIGN

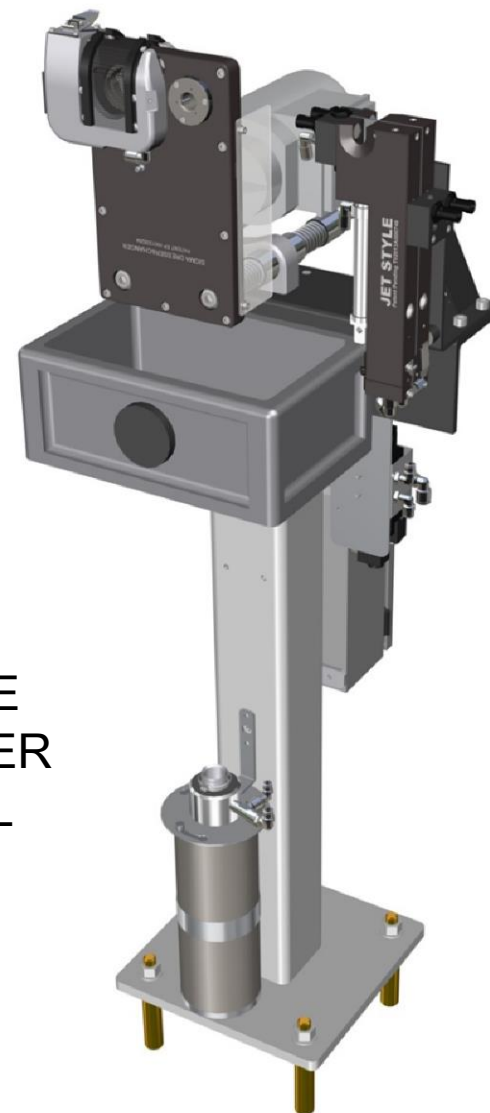


NEW PROFINET
FIBER-OPTIC I/O MODULE



HORIZONTAL POSITION

IT'S POSSIBLE TO CONFIGURE
THE SIGMA CHANGER&DRESSER
IN HORIZONTAL OR VERTICAL
POSITION WITHOUT ANY
ADDITIONAL OPTIONALS



VERTICAL POSITION



NEW ELECTRODES MAGAZINE
PATENT PENDING
VERY COMPACT MAGAZINE



NEW GEAR BOX DESIGNED ON ALL
SIGMA SERIES MACHINES.
MOST PRECISION ON ROTATION DUE TO
THE USE OF BEARINGS.
MOST RELIABILITY DUE TO NEW GEARS
DESIGN AND TO NEW HARDNESS AND
SURFACES TREATMENTS TO AVOID
CORROSION.
PATENTED RELEASING SYSTEM



HIGH-POWER MOTOR
UP TO 0.8KW
HIGH CUTTING TORQUE



SWARVES COLLECTOR
BETTER PERFORMANCE WITH A
MOST POWERFUL PNEUMATIC
SUCTION DEVICE



NEW PILLAR BASED ON
NEW VW DESIGN



NEW EQUALIZATION SYSTEM
UP TO +/- 30MM RANGE
VERY SMOOTH MOVEMENTS
POSSIBILITY TO REGULATE THE
HARDNESS OF THE SPRINGS

SUITABLE FOR DIFFERENT TYPES OF ELECTRODES

NEW BIDIRECTIONAL RELEASING SYSTEM
PATENTED

POSSIBILITY TO RELEASE ELECTRODES
MOUNTED ON SCREWED HOLDER



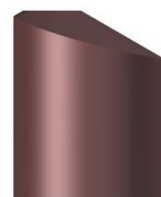
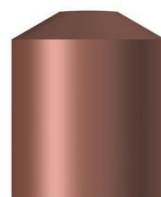
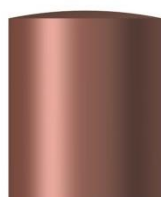
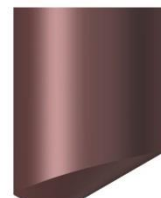
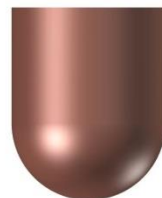
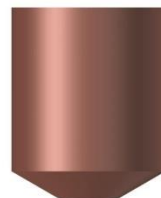
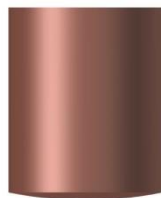
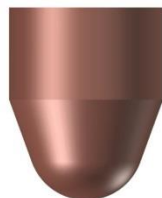
FLEXIBLE. IT'S POSSIBLE TO RELEASE
DIFFERENT TYPE OF ELECTRODES UPPER
AND LOWER SIDE IF WITH THE SAME DIAMETER

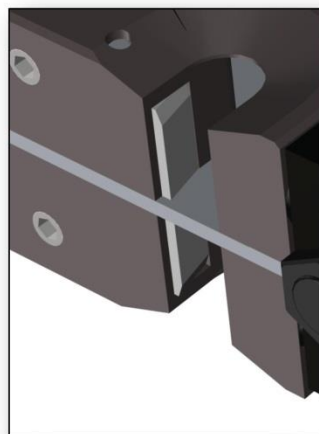
REDUCED TO A SINGLE AXE(Z)
THE RELEASING POINT FOR UPPER
AND LOWER ELECTRODES

THE RELEASING SYSTEM IS SELF-ADAPTIVE, THE TORQUE
APPLIED ON THE ELECTRODES CHANGES EVERYTIME
AND ADAPT ITSELF TO RELEASE SAFELY THE ELECTRODES
AVOIDING ANY DAMAGES ON THE HOLDER.

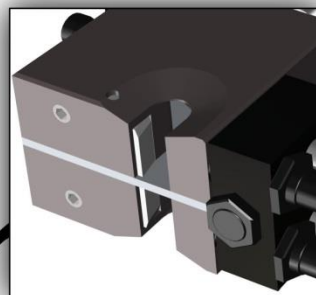


SUITABLE FOR DIFFERENT TYPES OF ELECTRODES

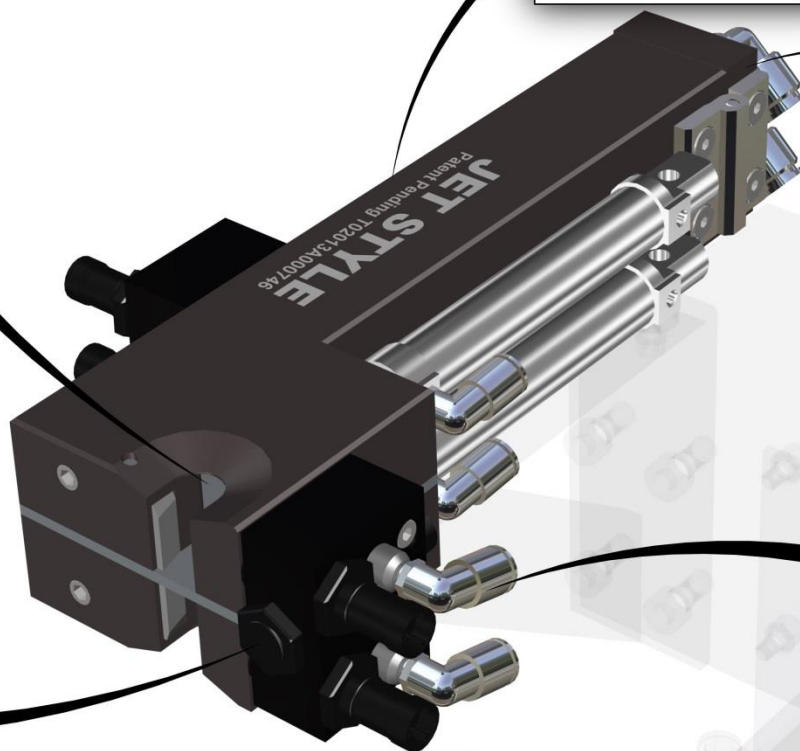




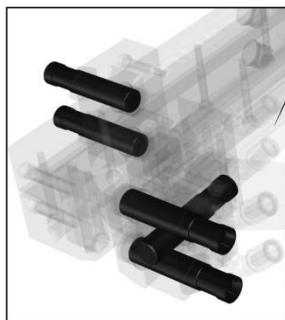
VERY FLEXIBLE MAGAZINE
IT'S POSSIBLE TO LOAD
DIFFERENT TYPED OF
ELECTRODES UPSIDE
AND LOWERSIDE



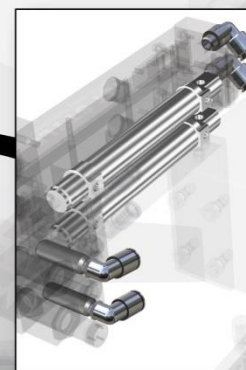
UP TO 14 ELECTRODES STORED
ELECTRODES PROTECTED
UNTIL THE LOADING



NEW SURFACE TREATMENTS
IMPROVED HARDNESS AND
CORROSION RESISTANCE

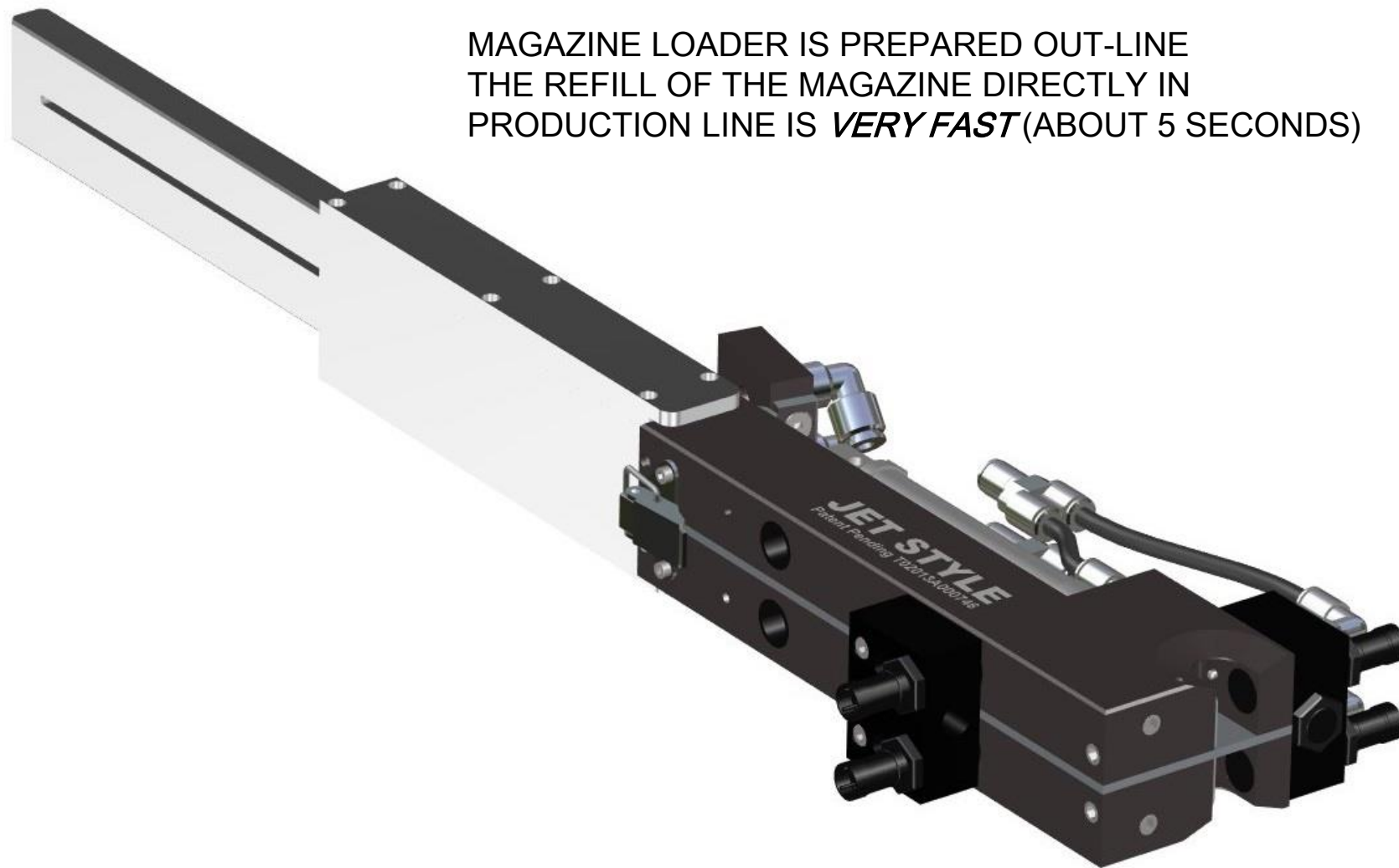


SENSORS USED IN THE LOADING PROCESS
HIGH SAFE CHANGING FOR WELDING GUN



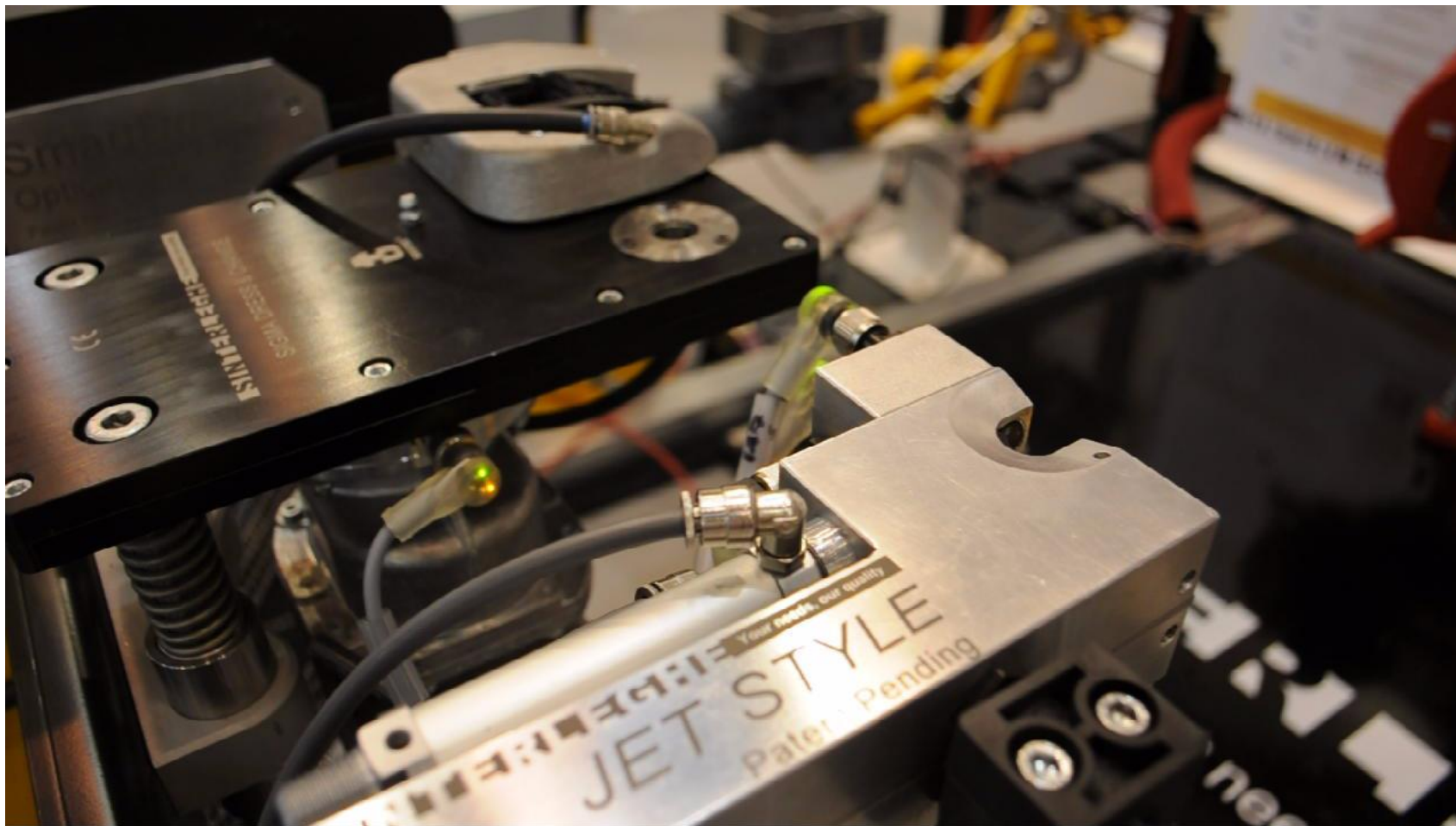
TOTAL PNEUMATIC MOVEMENTS
CONTROLLED BY WELDING ROBOT
SELF-CLEANING EACH LOADING BY AIR JET

MAGAZINE LOADER IS PREPARED OUT-LINE
THE REFILL OF THE MAGAZINE DIRECTLY IN
PRODUCTION LINE IS *VERY FAST* (ABOUT 5 SECONDS)

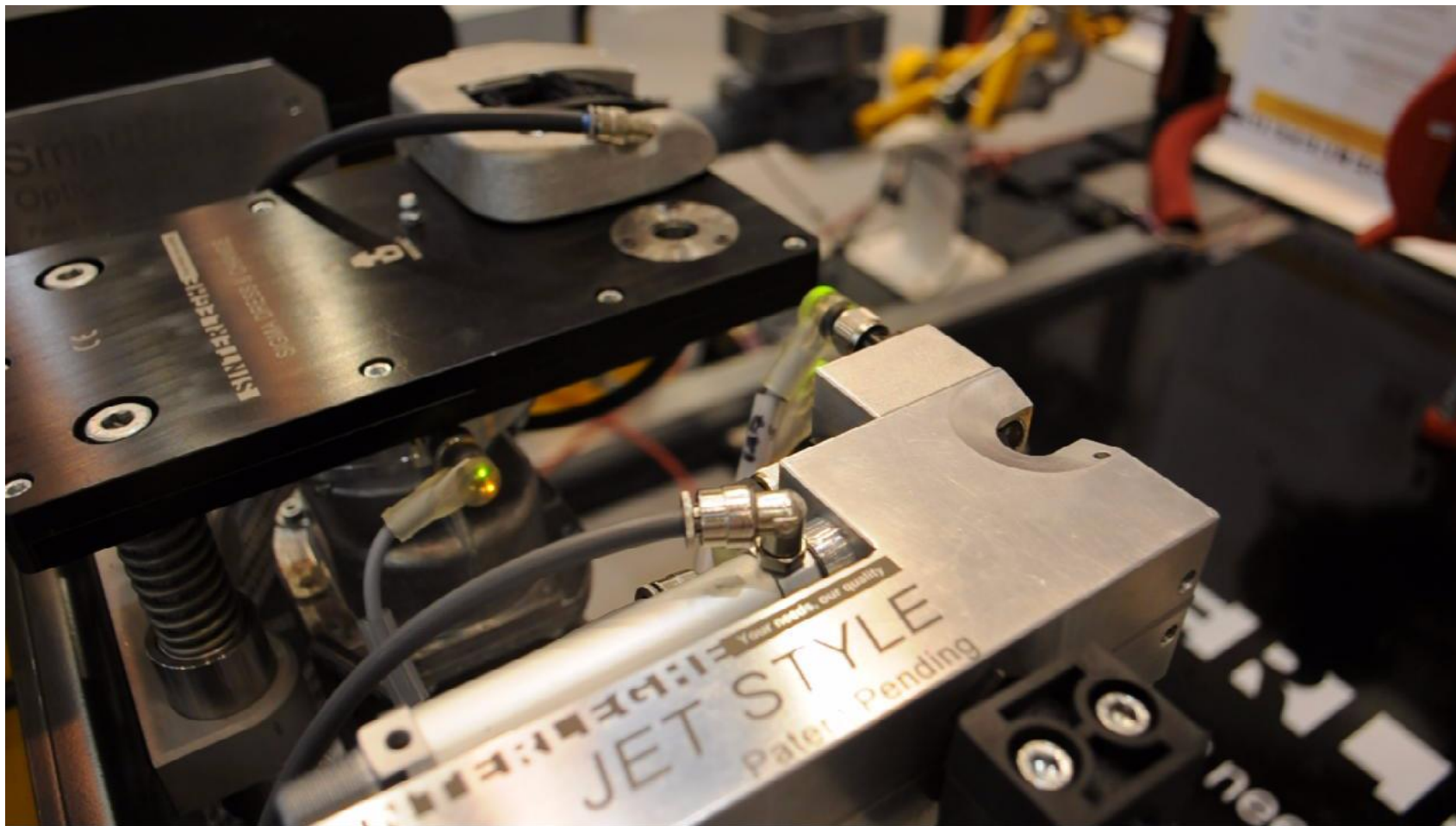




SIGMA CHANGER & DRESSER PATENT IT 0001338264 VIDEO HORIZONTAL POSITION



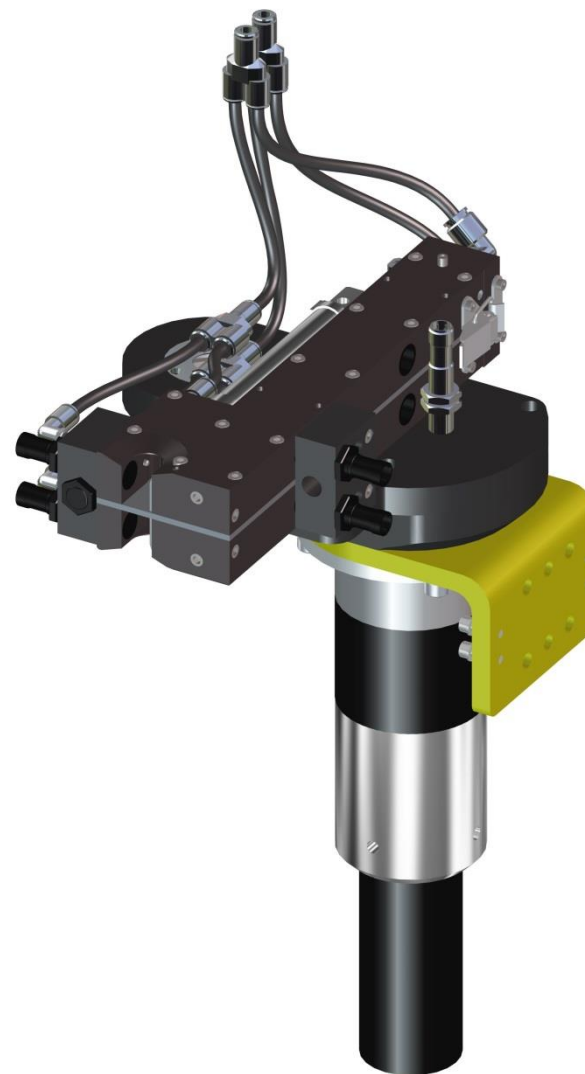
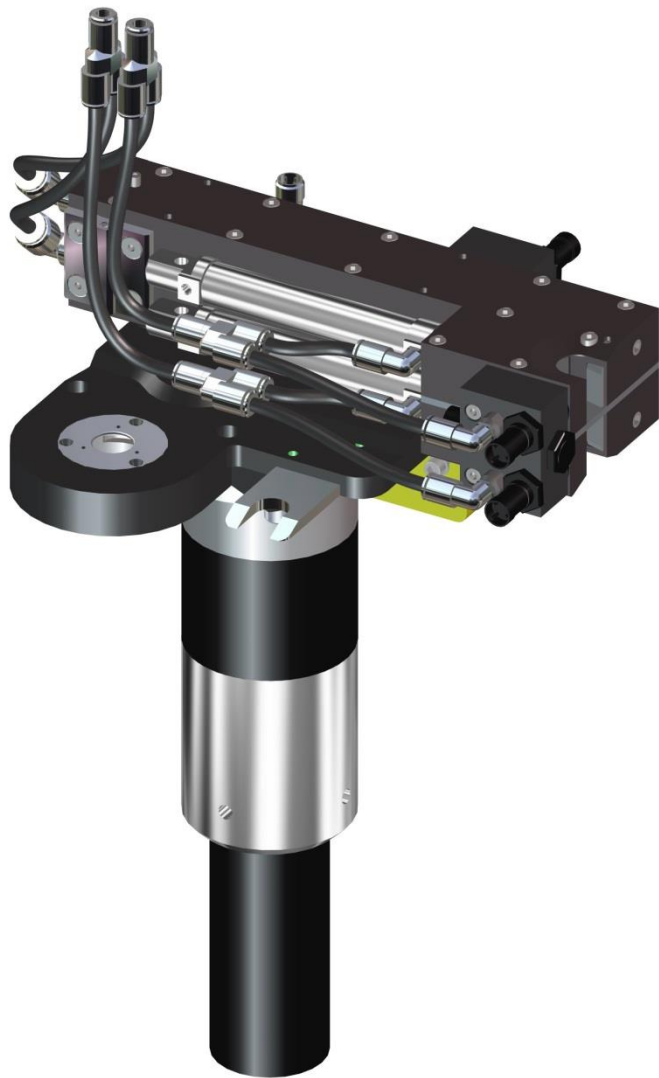
SIGMA CHANGER & DRESSER PATENT IT 0001338264 VIDEO VERTICAL POSITION





SIGMA TIP CHANGER FOR STATIONARY WELDING GUNS

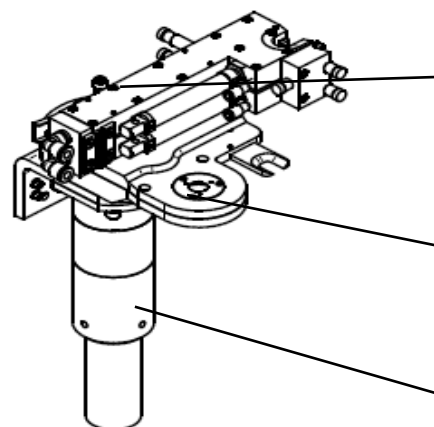
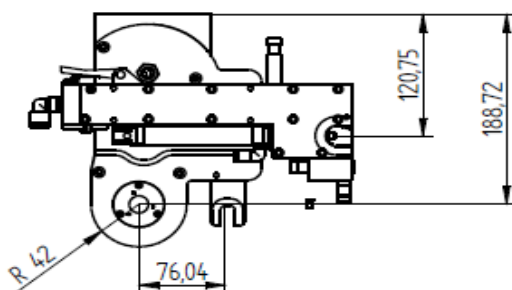
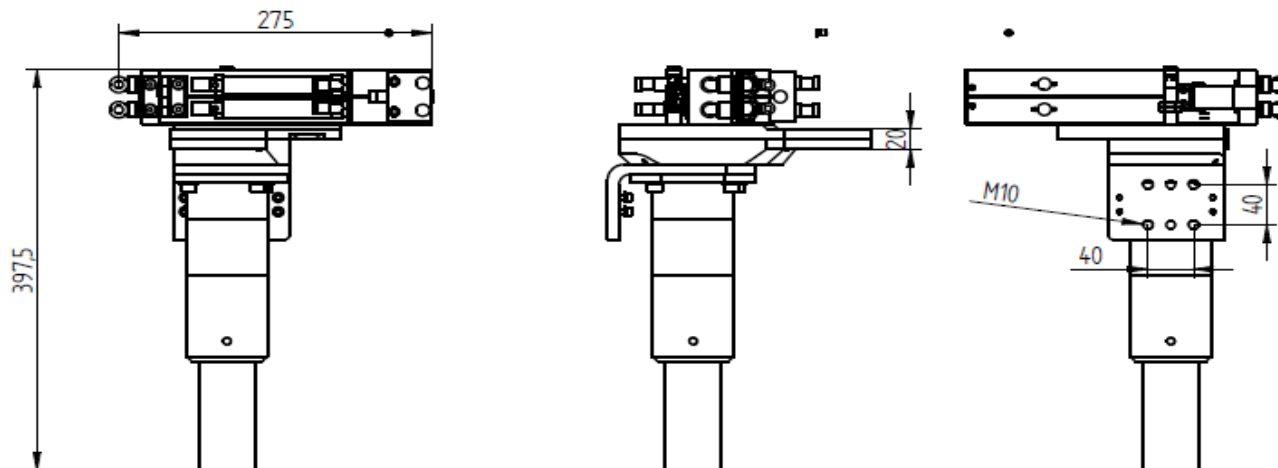
PATENT IT 0001338264



SIGMA TIP CHANGER FOR STATIONARY WELDING GUNS

PATENT IT 0001338264

Air supply = 5÷8 bar-ISO 8573 Class 3.4.3.
Air supply pipe minimum inner diameter = Ø 8,00mm
Interface: base plate/flange 4x M10 (40X40)



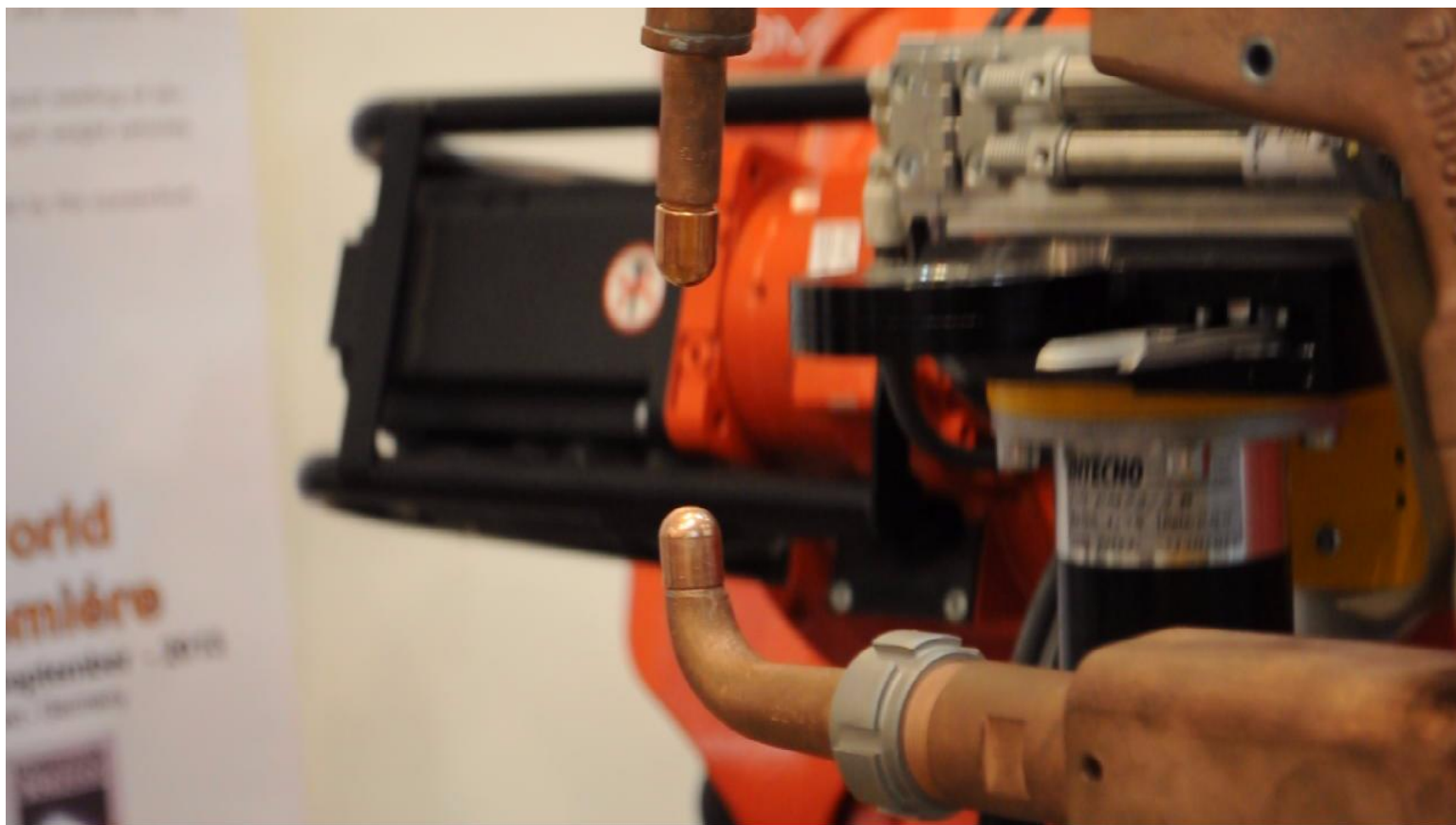
Storage for electrodes
Jet style
Patent pending
TO2013A000746

One system device for the
replacement of electrodes
Patent IT0001338844

Pneumatic motor 0,37 kw

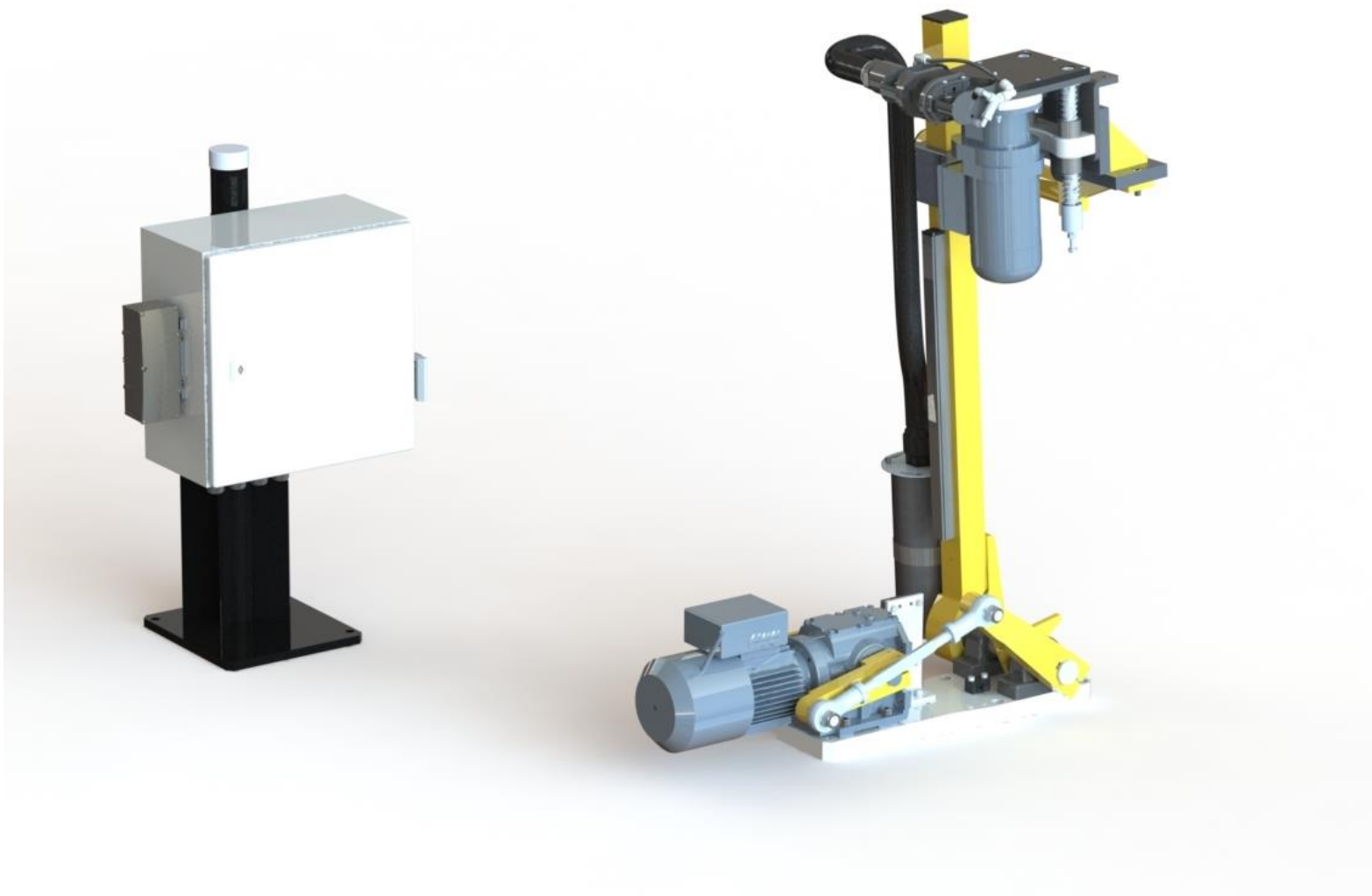


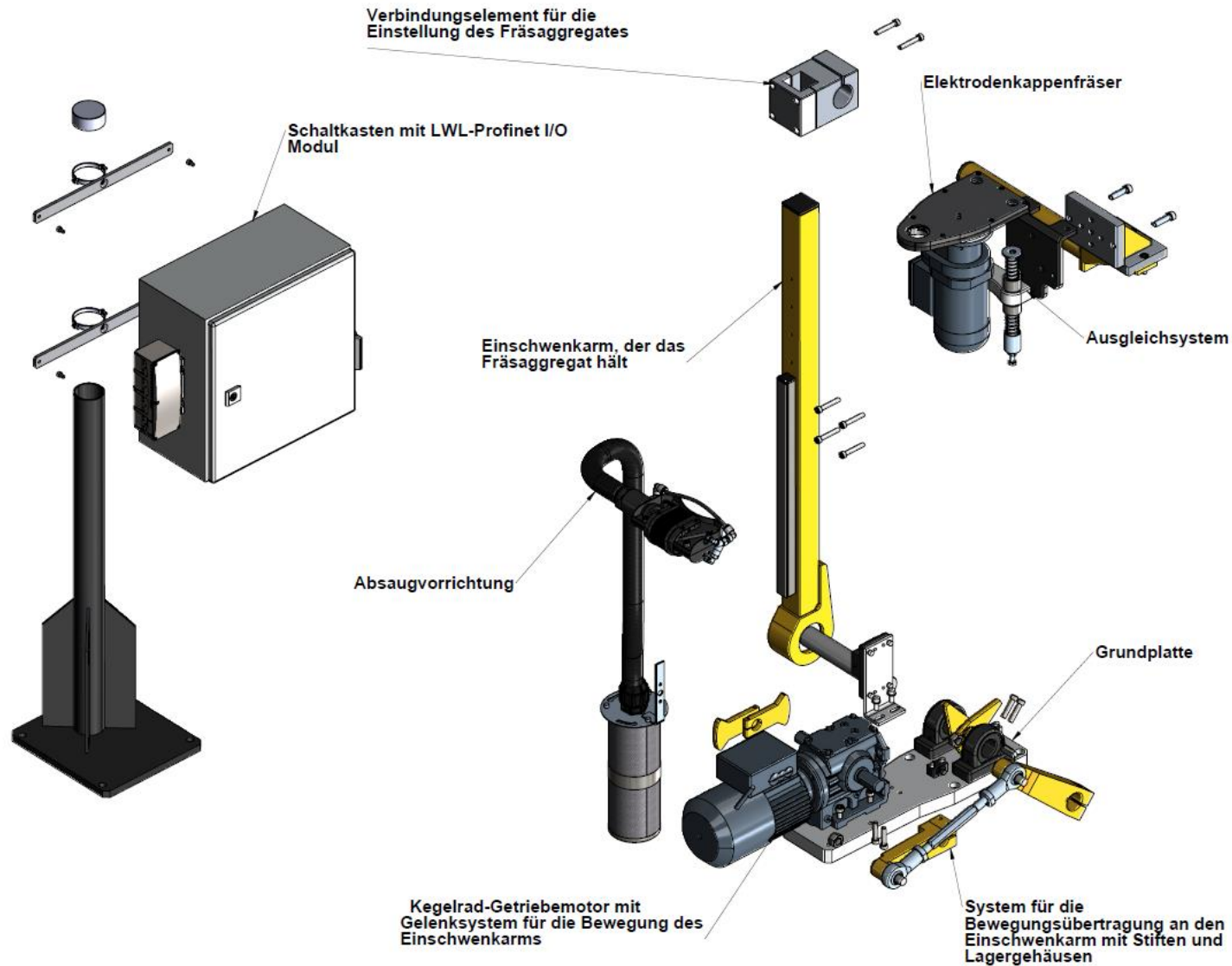
SIGMA TIP CHANGER FOR STATIONARY WELDING GUNS PATENT IT 0001338264 VIDEO



SINTERLEGHE S.r.l.

Your needs Our quality







TIP DRESSER FOR MANUAL WELDING GUNS



Cod.163R-03633
Ratchet Tip Dresser RRM



Pneumatic Tip Dresser
SRM EV



Cod .19PA-04380
Key release of galvanized
steel



Sigma Electric Tip Dresser Pedal Activated



Sigma Tip Dresser on cart



Cod .19PA-01372
Key release of steel -
chromium - vanadium



SALES ORGANIZATION

BRAZIL

SINTERLEGHE DO BRASIL S/A

São Paulo – SP, á Rua Fábio de Almeida Magalhães, nº 207 –Sala. 03 – Jardim Stº Elias – São Paulo - SP, CEP.

Mr. Pindaro R. Cacheiro

Tel + 55 11-98684294

e-mail: pindaro.cacheiro@sinterleghe.it



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Mr. Umberto Adami

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Fax +49 6421-360453

e-mail: umberto.adami@sinterleghe.com



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Ing. Victor Morales Rebollo

Tel +5221 442-141414

e-mail: victor.morales@automatics.com.mx



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Soldatgatan 14 18534 Vaxholm
Sweden

Mr. Stefan Borg

Tel +46 (0)8-6732330

Fax +46 (0)8-6732335

e-mail: stefan.borg@svetsradet.se





**THANK YOU FOR YOUR
KIND ATTENTION**