

STAINLESS  
STEEL  
SPECIALISTS<sup>®</sup>



NITTY-GRITTY.IT





# NITTY-GRITTY MAKE IT SHINE

The company's extraordinary experience and knowhow in the stainless steel field have turned Nitty-Gritty into a one-stop stainless steel specialist committed to improving its machines on an ongoing basis and to designing and building electrolyte weld cleaning machines for its customers.

Nitty-Gritty: stainless steel specialists.



06  
Clinox Surface X2



08  
Clinox Power X2



10  
Clinox Pro X2  
Clinox Air X2



12  
Clinox Eco X2



14  
Inserts and brushes

16  
Clinox Surface Plus X2

17  
E-Polishing box

18  
Marking

19  
Multi Mark

19  
Inox Mark

20  
Tester

21  
Passi Test Plus  
Inox test

22  
Finishing

23  
Pick&Clean

23  
Deox&Fit

24  
Custom machines  
Applications

**INVERTER TECHNOLOGY**

Inverter technology, powered by a microprocessor, cuts off any short circuits, thus avoiding micro-pitting.

**IN-BUILT TANK**

The first to have integrated an automatic pump to dose pickling liquid.

**VAPOUR SUCTION/BLOWING SYSTEM**

The only machines with a patented fumes suction/blowing system.

**TORCH WITH TANK**

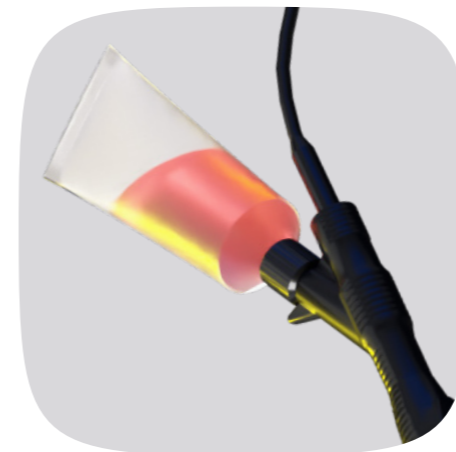
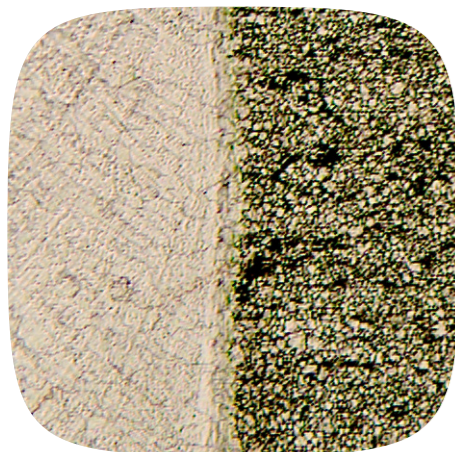
The only ones to have a patented secondary torch with in-built tank.

**ADJUSTABLE BRUSH**

Adjustable brush with fast connection and flow-through system.

**TECHNOPOLYMERIC PAD**

The only machines that use a patented technopolymeric pad.



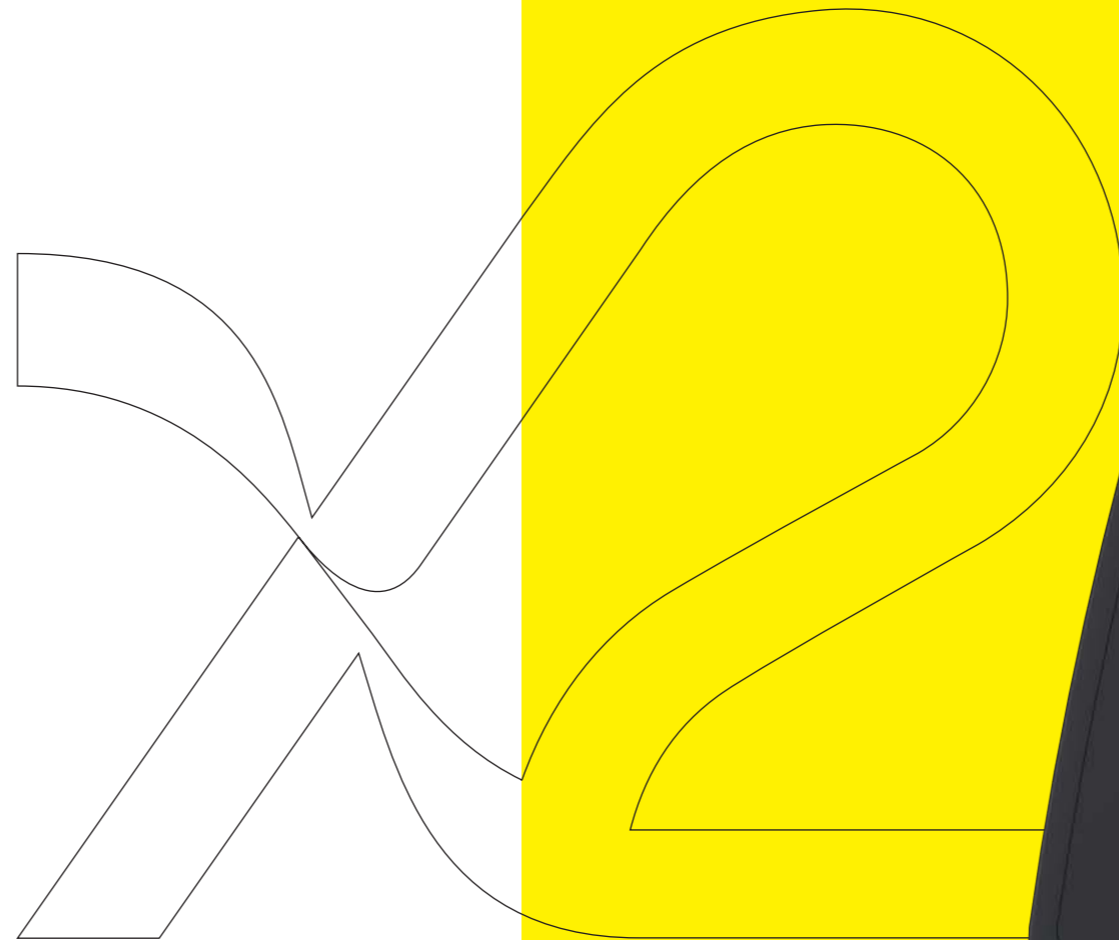
# PICKLING POLISHING PASSIVATION

Nitty-Gritty's Clinox line, born for weld cleaning on stainless steel, is the most complete, most advanced range of pickling machines available today in the world.

By drawing on their inverter technology, all Clinox machines can control the flow of current. This ensures optimal working conditions, on any type of surface, and avoids irreparable damage to the stainless steel. All Clinox machines ensure the best result without wasting time because they can both pickle and passivate. Pickling means removing ferric oxide - the typical blue or bronze-brown colour - thus protecting the steel's look and avoiding corrosion. Passivation is the restoration of the chromium oxide layer that protects the stainless steel from corrosion.

The process of weld polishing needs particular care when treating steel with special finishing. There are mainly two reasons why the polishing process is so important: the need to uniform the surface of the stainless steel after pickling, and the need to favour and improve the process of steel passivation.

Neutralization is the process that will stop the action of the chemical used for pickling and restores the original neutral pH, helping to start the passivation process. This process is actuated with Inox Fit, a chemical solution developed by Nitty-Gritty, which is sprayed after the pickling operation.



## NATURAL EVOLUTION

Discover the X2  
weld cleaning machine:  
**gentle when you need,  
powerful as you want.**





## POWER & CONTROL



Clinox Surface X2 is the perfect solution to deal with all types of weld: TIG, TIG with added material, MIG/MAG, Arc MIG, Submerged Arc (SAW), Laser, Resistance, Orbital, plasma. Clinox Surface's advanced technology, with an immediate electrochemical reaction, grants pickling, passivation and polishing on any weld on stainless steel, independently from the finishing, without wasting time, not leaving any halo and offering full safety for the operator. Clinox Surface X2 the professional system, designed for companies with big applications.

With a 2500W inverter, the stronger in the Clinox line, a range of inserts and pads up to 100mm wide and a 6 meter long cable, Clinox Surface X2 can be easily used also on big and heavy structures. In addition you can connect to the machine a big telescopic tool with a 300mm electrode, to remove oxidations on big areas, such as on silos used in the food or wine industry.

The machine is equipped with an air compressed fume abatement system.

power output	2400W			
power selection	30A	50A	100A	
tank	1,8l			
dimensions l x w x h - weight	543 mm	228 mm	315 mm	18,5kg
included torch	blowing torch with 6m cable			
optional torches	small	dip&work	marking	



# clinox POWER



## ENERGY & ELEGANCE

Clinox Power X2 is the ideal solution for the immediate eco-friendly treatment of TIG, TIG with filler metal, MIG/MAG, pulsed-arc MIG, submerged arc, laser, resistance, orbital, and plasma welding. The advanced technology of Clinox Power X2, through an immediate electrochemical reaction, ensures the pickling, passivation and polishing of any stainless steel

weld, irrespective of the finishing, without wasting time, without leaving haloes, and in complete safety for the operator.

**The machine is equipped with an air compressed fume abatement system.**



power output	1500W			
power selection	15A	30A	50A	
tank	1,8l			
dimensions l x w x h - weight	543 mm	228 mm	315 mm	16,5kg
included torch	blowing torch with 4m cable			
optional torches	small	dip&work	marcaturo	

## SKILL & EFFICIENCY

Clinox Pro X2 performs immediate ecofriendly treatment of TIG, pulsed-arc MIG, submerged arc, laser, resistance, orbital, plasma, and tack welding. The advanced technology of Clinox Pro X2, through an immediate electrochemical reaction, ensures pickling, passivation and polishing of any stainless steel weld, irrespective of the finishing, without wasting time, without leaving haloes, and in complete safety for the operator.

The machine is equipped with a fume abatement system through suction.



## FAST & PERFORMING

Clinox Air X2 performs immediate ecofriendly treatment of TIG, pulsed-arc MIG, submerged arc, laser, resistance, orbital, plasma, and tack welding. The advanced technology of Clinox Air X2, through an immediate electrochemical reaction, ensures pickling, passivation and polishing of any stainless steel weld, irrespective of the finishing, without wasting time, without leaving haloes, and in complete safety for the operator.

The machine is equipped with an air compressed fume abatement system.



clinox  
PRO



power output	900W			
power selection	15A	30A		
tank	1,8l			
dimensions l x w x h - weight	543 mm	228 mm	315 mm	18kg
included torch	torch through suction with 3m cable			
optional torches	small	dip&work	marking	

clinox  
AIR

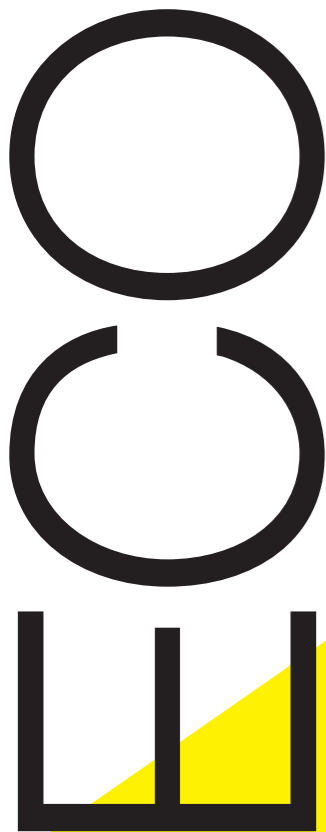


power output	900W			
power selection	15A	30A		
tank	1,8l			
dimensions l x w x h - weight	543 mm	228 mm	315 mm	16,5kg
included torch	blowing torch with 4m cable			
optional torches	small	dip&work	marking	

# LIGHT & EASY

Clinox Eco X2 performs immediate eco-friendly treatment of TIG, pulsed-arc MIG, laser, resistance, orbital, plasma, and tack welding. Clinox Eco X2, through an immediate electrochemical reaction, ensures pickling, passivation and polishing of any stainless steel weld, irrespective of the finishing, without wasting time, without leaving haloes, and in complete safety for the operator.

clinox



power output	900W			
power selection	30A			
tank	-			
dimensions l x w x h - weight	410 mm	170 mm	238 mm	6,8kg
included torch	small torch with integrated tank and 2m cable			
optional torches	dip&work	marking		



# INSERTS AND BRUSHES



BRUSHES

**S**  
ø 7



ECO | PRO | AIR | POWER | SURFACE

**M**  
ø 8



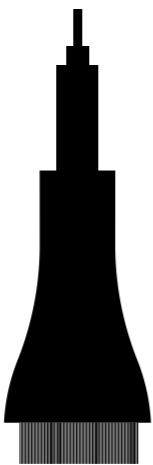
ECO | PRO | AIR | POWER | SURFACE

**L**  
ø 10



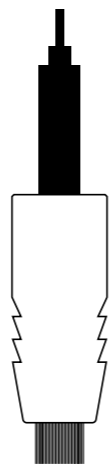
PRO | AIR | POWER | SURFACE

**L FLAT**



PRO | AIR | POWER | SURFACE

**XL**  
ø 12



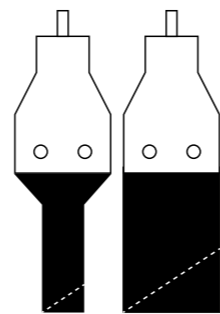
POWER | SURFACE

INSERTS

**11-22**

SMALL TORCH

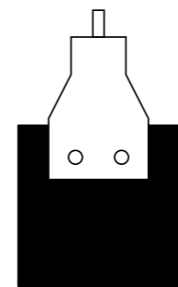
GRAPHITE  
60° 90°



**35**

SMALL TORCH

GRAPHITE  
90°



**22**

BLOWING/SUCTION  
TORCH

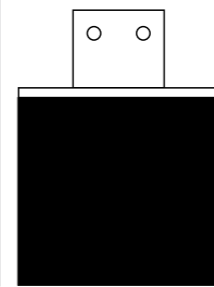
TUNGSTEN  
90°



**45**

BLOWING/SUCTION  
TORCH

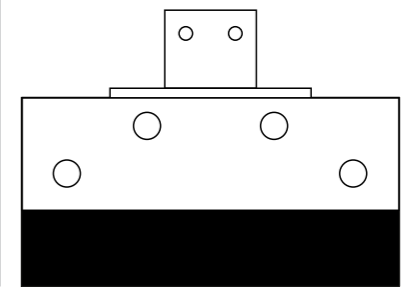
GRAPHITE  
90°



**100**

BLOWING/SUCTION  
TORCH

GRAPHITE  
90°

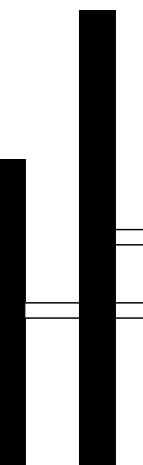


SURFACE

**200-300**

DIP & WORK TOOLS

SPECIAL 90°



SURFACE





## CLINOX SURFACE PLUS

Clinox Surface Plus X2 is a professional machine designed for companies that treat very large surfaces, for example silos in the food or wine industries. Fitted with a 9 metre cable telescopic rod connected to a patented adjustable 30 cm brush, able to adapt perfectly to any concave or convex surface, Clinox Surface Plus X2 – like all the other Clinox machines – is equipped with an integrated pump for automatic electrolyte transmission.

The brush doesn't need to be dipped in the reagent and the operator always works in complete safety.

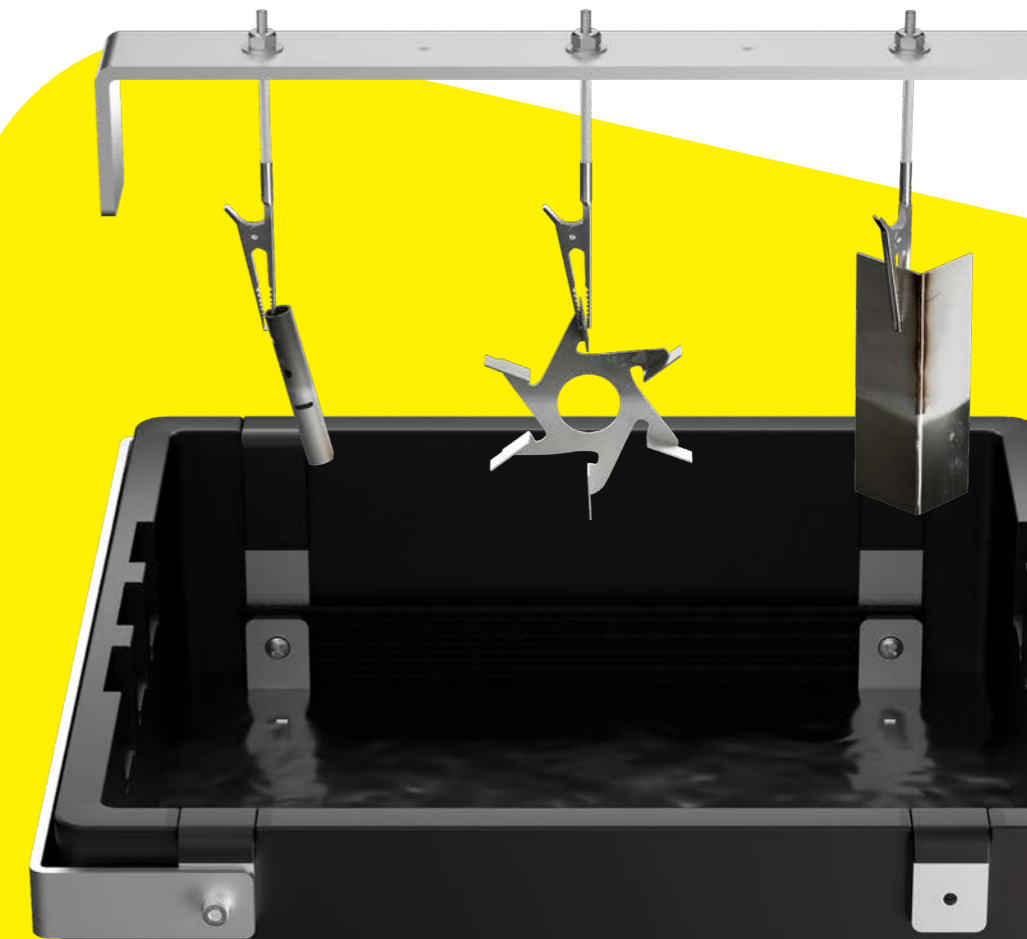
Furthermore, thanks to its powerful inverter and a special socket, Clinox Surface Plus X2 can be connected to a second torch with a brush for pickling, passivation, and polishing of stainless steel welds.



## E-POLISHING BOX

E-Polishing Box is an innovative pickling and electropolishing bath by Nitty-Gritty, designed to clean or polish small but geometrically complex items such as springs and screws. Thanks to its inverter technology, which controls current flow and passivates every kind of surfaces, E-Polishing Box is a pickling and polishing bath for stainless steel components that works thanks to an electrochemical reaction moderated by a special patented electrode. This increases production speed, which is up to three times faster than a bath working with traditional electrodes.

E-Polishing Box comes in two sizes: one with a 3-litre and the other with a 6-litre capacity. Both can be used with all Clinox X2 machines (for the 6-litre model, it is advisable to use Clinox Power/Surface).



*nitty gritty*

# MARKING

Electrochemical marking is ideal for large-scale industrial production because it is cheaper than laser and silk-screen marking. But cost savings are not the only benefit. Unlike silk-screening, electrochemical marking is permanent, and unlike laser marking, it does not damage the stainless steel surface, but rather increases its corrosion resistance.

Nitty-Gritty's machines are technologically advanced, handy, portable and easy to use. They perform permanent, quick and easy markings, not only in traditional black but also in white by means of erosion.



marking stainless steel

marking carbon steel

marking aluminium

blue marking titanium

marking galvanized steel

marking chrome plastic

erosion stainless steel

erosion carbon steel

erosion aluminium

gold marking titanium

marking copper

marking brass

## MULTI MARK

Multi Mark adopts a special process, for which a patent application has been filed, that makes it the first machine in the world to apply black markings on aluminium.

Multi Mark is fitted with inverter technology and a touch screen. An instant electrochemical reaction, which involves lower costs than silk-screening or laser marking, guarantees high definition markings on surfaces such as stainless steel, galvanized steel, chrome steel, carbon steel, chrome plastic, copper and titanium alloys. Multi Mark offers two types of markings: black and white (localized electric erosion). Titanium surface can be marked in two different colours.

## INOX MARK

Inox Mark makes use of an instant electrochemical reaction, which involves lower costs than silkscreening or laser marking, to ensure high definition markings on surfaces such as stainless steel and chrome plastic. Inox Mark offers two types of markings: black and white (localized electric erosion).



# TESTER

Nitty-Gritty is a stainless steel specialist. This means that our machines can not only restore the original, pre-weld look and corrosion resistance of steel; they can also measure its passivation level and identify the most common types of stainless steel on the market. This tells customers with absolute certainty the type of steel they have bought or are dealing with.



## PASSI TEST PLUS

Passi Test Plus is a tool designed to assess the real quality of stainless steel. It consists of a "probe pen", which contains the electrochemical solution, and an external storage unit. By pressing the probe pen on the surface, Passi Test Plus measures and stores data on the open-circuit potential and nobility of a metal, thus measuring its corrosion resistance.

The test, which is neither destructive nor damaging, is fast (the result is given in 15 seconds) and numerical: while other, purely chemical passivation tests are based on colour interpretation (ferrocyanide test), thus offering a strongly subjective result that is often distorted by superficial impurities, Passi Test Plus delivers an exact and indisputable numerical value.

## INOX TEST

Inox Test is designed to identify the most common stainless steel alloys. Small enough to fit in the palm of a hand, its liquids neither leak nor damage the product, and the result is provided in just 10/15 seconds. Inox Test identifies different stainless steel alloys by means of an electrochemical test and other quick and easy tests:

- Magnetic test: to identify AISI 400 stainless steel;
- Test to determine the presence of manganese and to distinguish AISI 200 stainless steel from AISI 300 stainless steel;
- Test to determine the presence of molybdenum and to distinguish AISI 300 stainless steel from AISI 316 stainless steel.





# FINISHING

There are three traditional systems for cleaning and finishing stainless steel:

1) Abrasives: these release fine dust particles that can be very harmful to health when inhaled;

2) Pickling gels: these are toxic and corrosive, and require long processing times; furthermore, they contaminate rinsing waters with acids and heavy metals, and these therefore must be stored and disposed of as special waste;

3) Electrolyte machines with inverter technology: these ensure excellent, fast results, with minimum waste; they do not need rinsing water, and can be used in small spaces.

Today, thanks to our expertise in electrolytic stainless steel cleaning and our ongoing investments in R&D, Nitty-Gritty is the only company in the world capable of offering alternative pickling solutions, based on an efficient system for weld cleaning and passivation and an innovative system for the immediate deoxidation of both steel and stainless steel.



## DEOX&FIT

Deox & Fit is an innovation developed by Nitty-Gritty for the deoxidation and passivation of stainless steel.

Designed for those who need to work on-site on fixed parts, Deox & Fit is easy to use: first, rub the Deox wipe on the stainless steel parts to be treated (in a few seconds, oxidation on the stainless steel surface will disappear); then, spray with Fit, which neutralises the surface and protects it from future corrosion; finally, remove with a dry cloth. These three quick steps make the treated surface shine, without oxidation, keeping it perfectly protected and as good as new.

The procedure is fast, safe and totally eco-friendly.

Also available in a version for the food and medical industries.

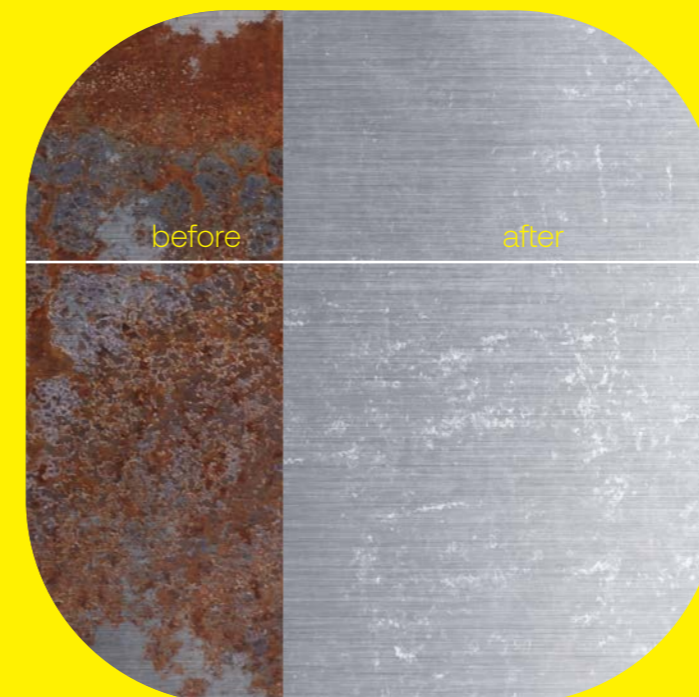
## PICK&CLEAN

Pick & Clean is Nitty-Gritty's eco-friendly solution for the pickling and passivation of stainless steel.

Ideal for those who need to work on on-site pieces, Pick & Clean is easy to use: first, apply the Pick strip on the welds to be treated to remove slags and oxidation caused by welding, thereby restoring the steel to its natural condition; then, after removing the pickling strip, spray with Clean, which neutralises the surface and protects it from future corrosion.

Once you remove Clean with a dry cloth, the stainless steel surface will be pickled and free of slag or oxidation.

Also available in a version for the food and medical industries.



# CUSTOM MACHINES

Nitty-Gritty through huge investments in R&D and highly trained and qualified staff has built a strong know-how, that we gladly offer to our customers in order to present customized solutions that go beyond our conventional range. We can study and realize customized projects on both pickling and marking applications, that can be integrated in any production chain.



MAKE IT SHINE

# APPLICATIONS

Water softeners.  
Bar/restaurant/shop furnishing.  
Kitchens, hoods, ovens, cooktops.



Pharmaceutical machinery.  
Food industry tanks.  
Stainless steel pumps.



Trucks, equipment and fitting.  
Flues.  
Bottle filling machines



Food industry.  
Stainless steel gas tank.  
Switchboards.



Boat interior fitting.  
Pool accessories.  
Packaging machinery.



Car and motorbike silencers.  
Drinks dispensers.  
Stainless steel adapters and fittings.



*nittygritty*





**NITTY-GRITTY.IT**  
make it shine

---

**NITTY-GRITTY srl**

via dei Marmorari 36  
41057 Spilamberto  
Modena  
Italia

t +39 059 785210  
f +39 059 7861612  
info@nitty-gritty.it  
VAT IT02316620364

