

P-Laser USA.

INDUSTRIAL LASER CLEANING

General Applications

P-Laser History

A FEW HIGHLIGHTS

Started its activities as a division of a large industrial cleaning company

2008

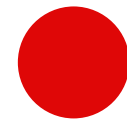


2013



P-Laser video goes viral on YouTube. 4 million views!

2016

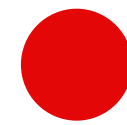


2017



Introducing P-Laser USA

2018



27 distributors in 32 countries

2019



2021



P-Laser becomes an independent company and begins manufacturing its own Laser cleaning systems

The distributor network is coming into shape: 10 distributors.

QF Compact Series Low Power

QF Compact Series Mid Power

P-Laser USA Interview with MSNBC



**27 distributors
in 32 countries**

POLAND
SWEDEN
NORWAY
DENMARK
FINLAND
RUSSIA
TURKEY
GREECE
SLOVENIA
KOREA
CHINA
JAPAN
AUSTRALIA
NEW-ZEALAND
ROMANIA
ITALY
USA
CANADA
LATIN AMERICA
VIETNAM
IRAN
TAIWAN
SWITZERLAND
AUSTRIA
SPAIN
PORTUGAL
SLOVAKIA
CZECH-REPUBLIC
ISRAEL
GERMANY
GCC ARABIA

General Safety Overview

At P-Laser USA, safety is our highest priority. Laser technology has become integral to our society, and it is not overstating its contributions to say that lasers have literally revolutionized the manufacturing industry. **Since Lasers are already here, this is what we recommend to maintain a safe environment for our clients.**

PPE & Other Requirements



When Laser is in operation always wear Eye Protection.



Laser can cause skin damage. FR rated Long Sleeves and gloves is recommended.



Fume Extractors with carbon and HEPA filters to remove fumes



If applicable use respirators to protect from remaining fumes



Trained Laser Safety Officer (P-Laser USA will provide training)

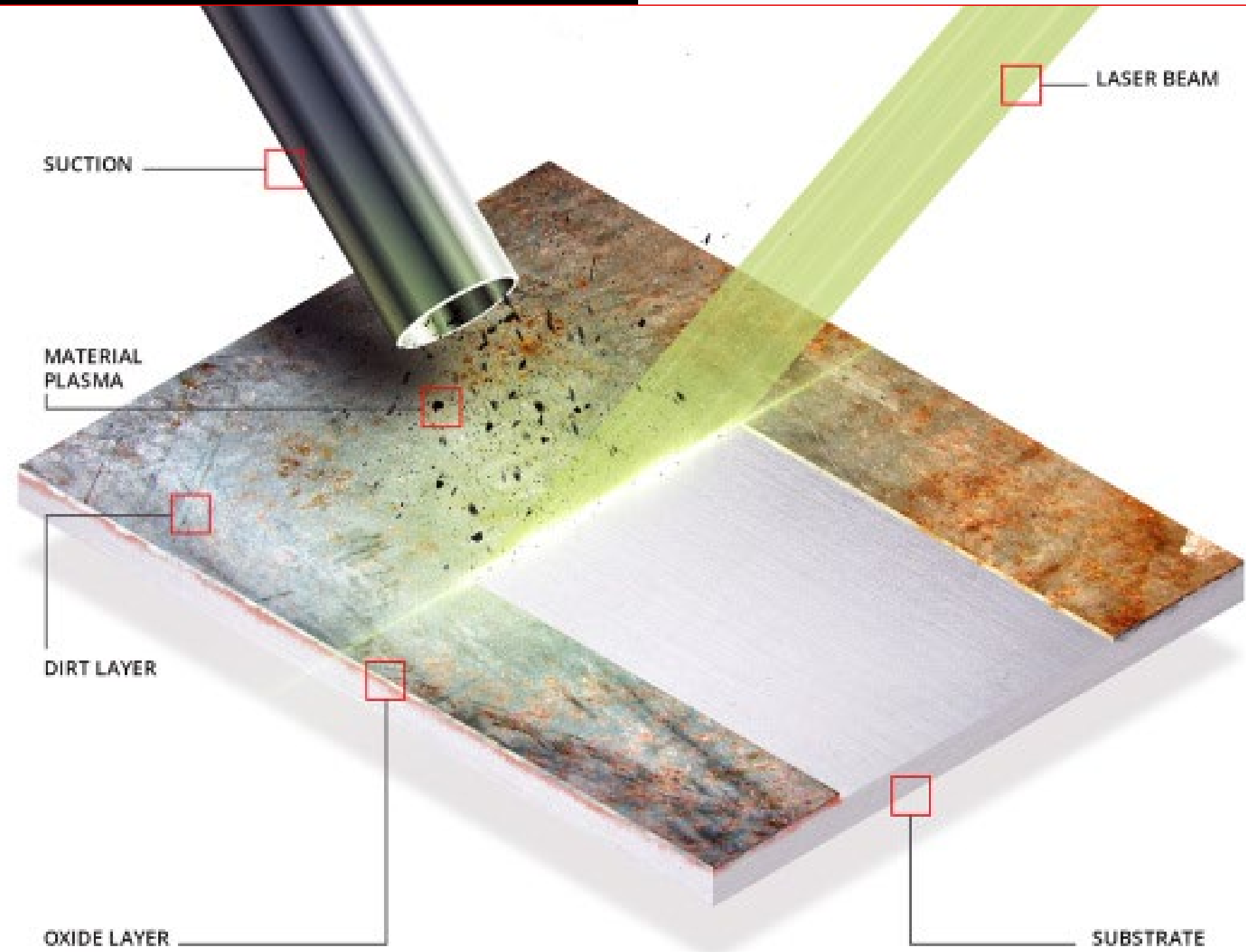


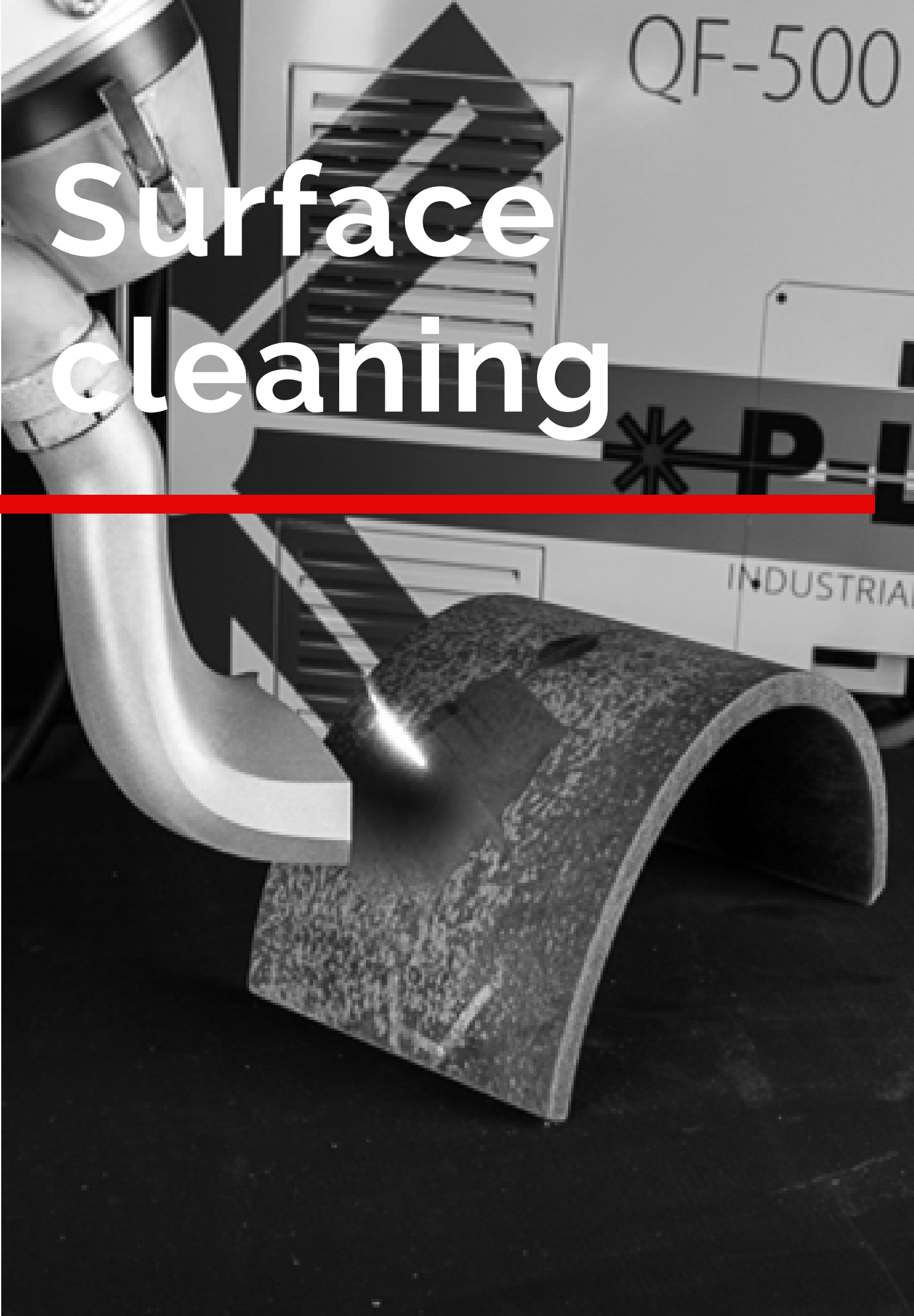
Laser Safety Curtains or a Dedicated room for enclosing laser activity.

Other Consideration

- Ear Plugs (for high power only)
- Automation: A completely enclosed cell is the safest approach (Laser Classification reduces from Class IV to Class I).

How does it work?





Surface cleaning

RUST REMOVAL

Our laser systems can be used to de-rust or deoxidize small machinery or materials.

REFERENCE INDUSTRIES:

Process & Production

Heavy Industry

Infrastructure

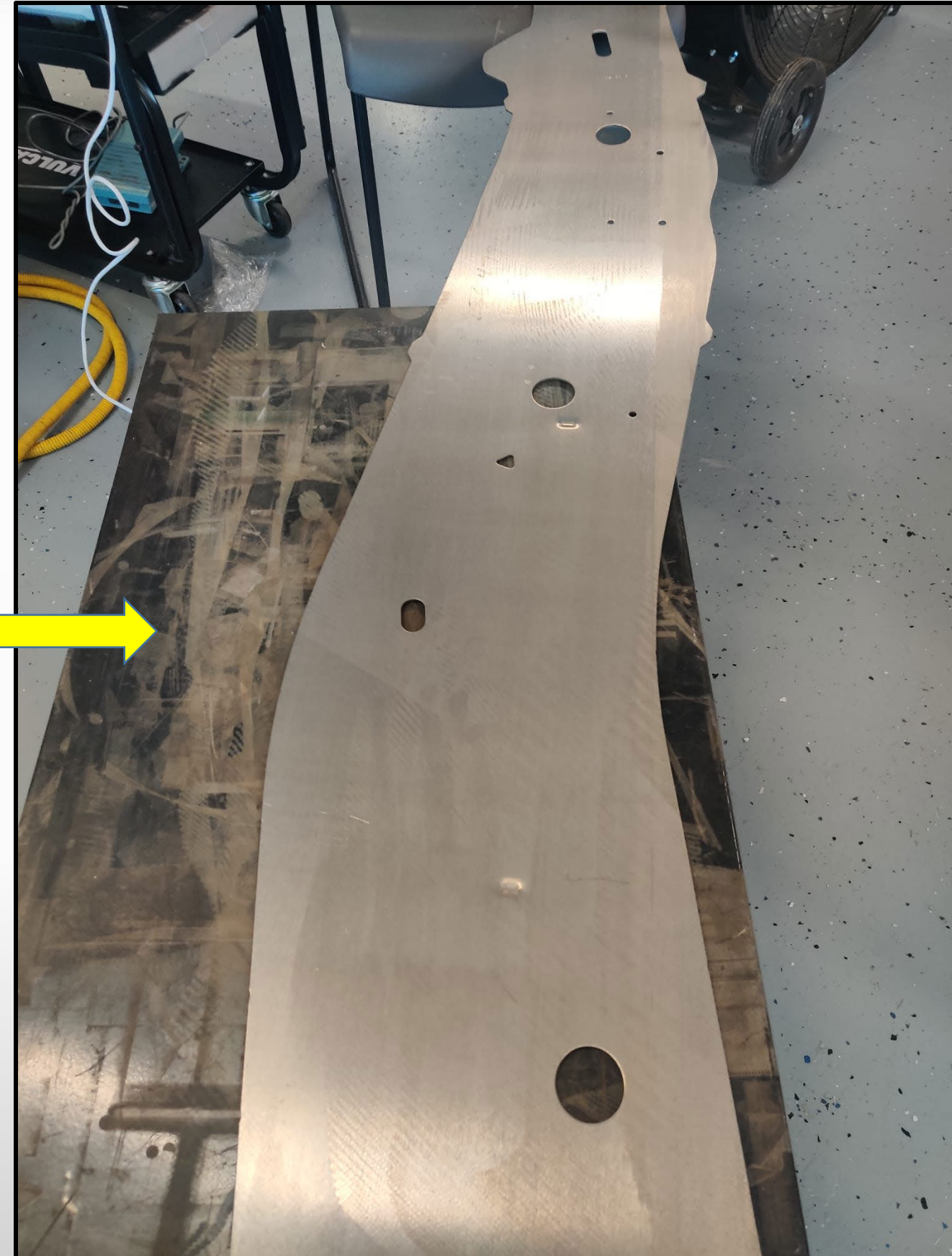
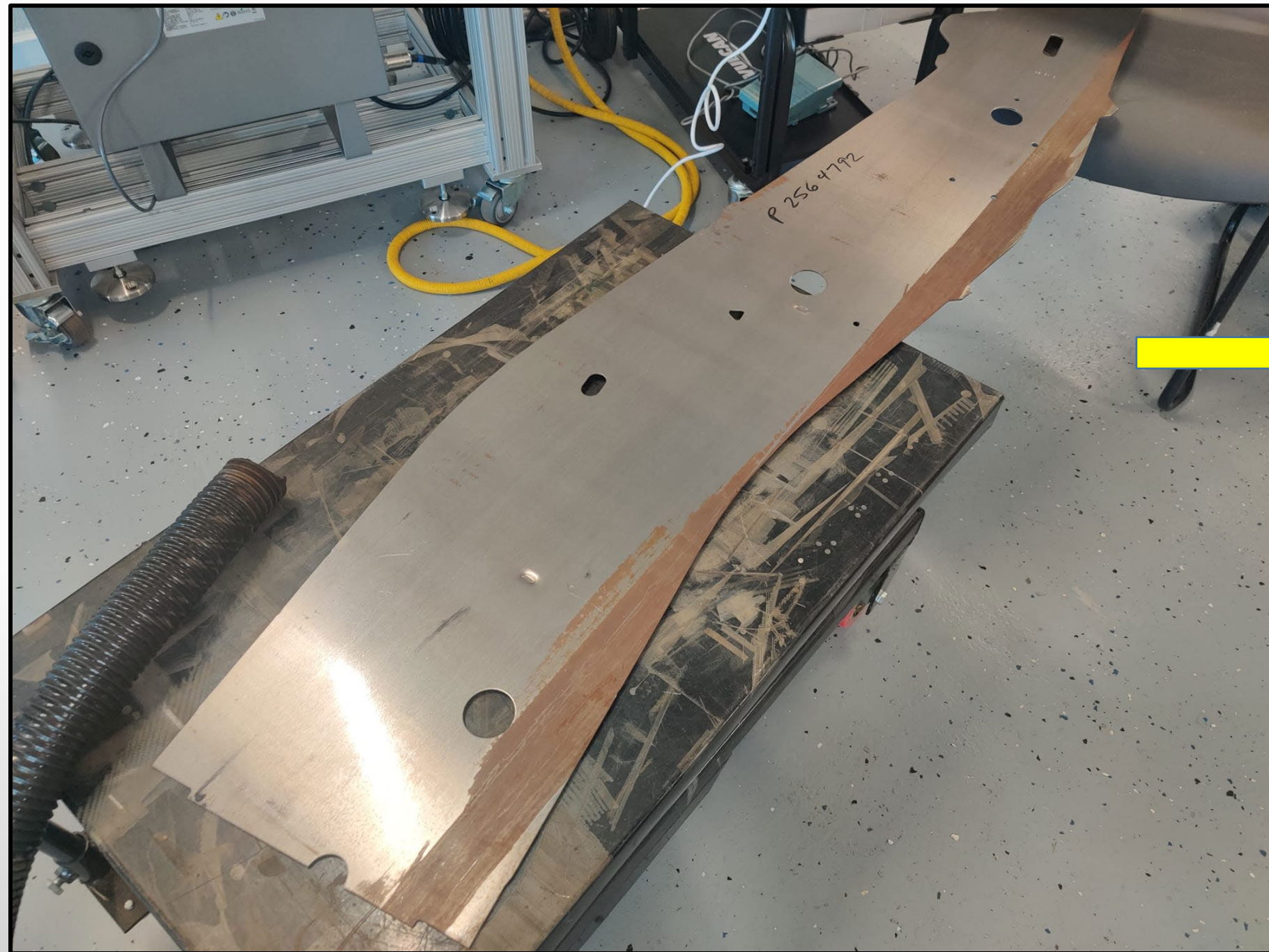
BEST SOLUTION

Low Power for small surfaces

High Power for larger surfaces

Cleaning with 500-Watt

Power = 100%
Pulse Energy = 50%
[Link to Video](#)



Cleaning with 100-Watt

Trial 2 (1 Pass)

RPM = 1 rev/min

Cleaning Time = 61 Seconds

[Click on link to Video](#)



Cleaning with 100-Watt

Laser (w)	100
Beam width(mm)	15
Lens (mm)	400
Power (%)	100
Pulse E (%)	60
Scan Speed (%)	50
Number of Passes	2
Rot Speed (Rev/min)	4
Time (Sec)	80

[Link to Video](#)



Before



After

Cleaning with 100-Watt: Magnified View



Rust remains only where there is pitting present



Surface cleaning

Removing Oil, Grease & Lubricants

Can be used to remove thin layers of grease.

REFERENCE INDUSTRIES:

Process & Production

BEST SOLUTION

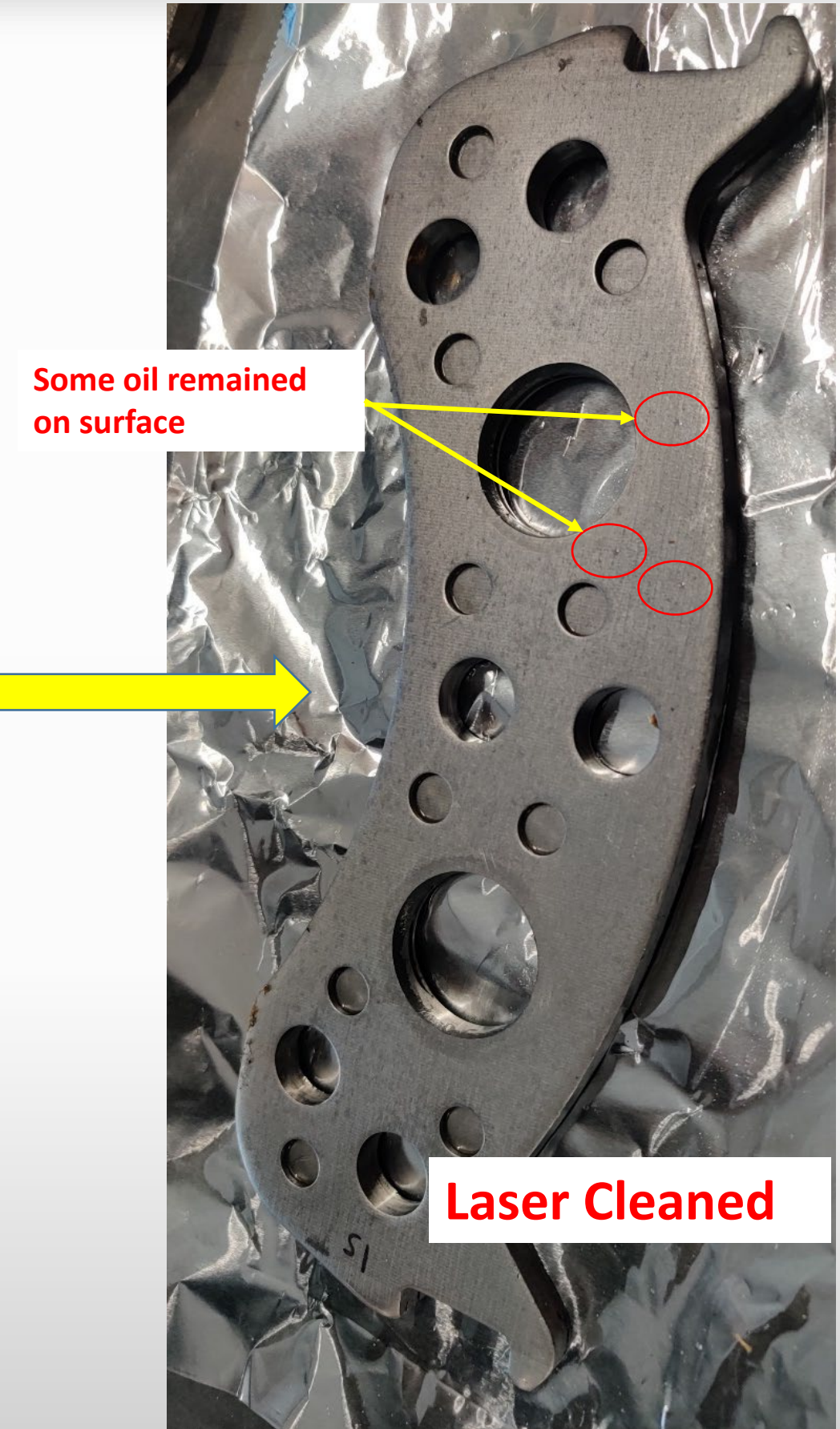
Low Power for degreasing smaller parts

High Power for degreasing of larger parts

Testing with 100 Watt

Lens = 500
Power = 100%
Pulse = 100%
Linear Speed = 20 mm/s

- Oil and grease was removed with minimal amount remaining
- **Note:** Sample may appear darker than its true color due to lighting and a shiny aluminum foil background
- [Click on the link for videos](#)



Testing with 100 Watt

Lens = 300
Power = 100%
Pulse = 100%
Linear Speed = 10 mm/s

- Oil and grease entirely removed
- [Click on the link for the video](#)



Cleaning with 100-Watt

Trial 3 (1 Pass)

RPM = 1 rev/min

Cleaning Time = 60 Seconds


[Click on link to Video](#)



- Lubricant Removal
- Reduces Surface Tension & Increases Adhesion



[Video](#)



Surface cleaning

Paint REMOVAL

- Thinner paints and coatings work best for the laser
- Reflective paints tend to be more difficult to remove
- Water based paints in general are easier
- Powder coatings tend to be difficult

REFERENCE INDUSTRIES:

Heavy Industry

Infrastructure

BEST SOLUTION

Low Power

High Power for larger machine parts

Testing Results

Initial Observations: The T-fitting was covered in black paint.

Testing Summary: The 100watt handheld Laser System effectively removed the black paint from the T-fitting while ensuring the metal substrate remain intact. Most traditional cleaning methods (example: hand grinding) eats into the metal and compromises the integrity of the metal.



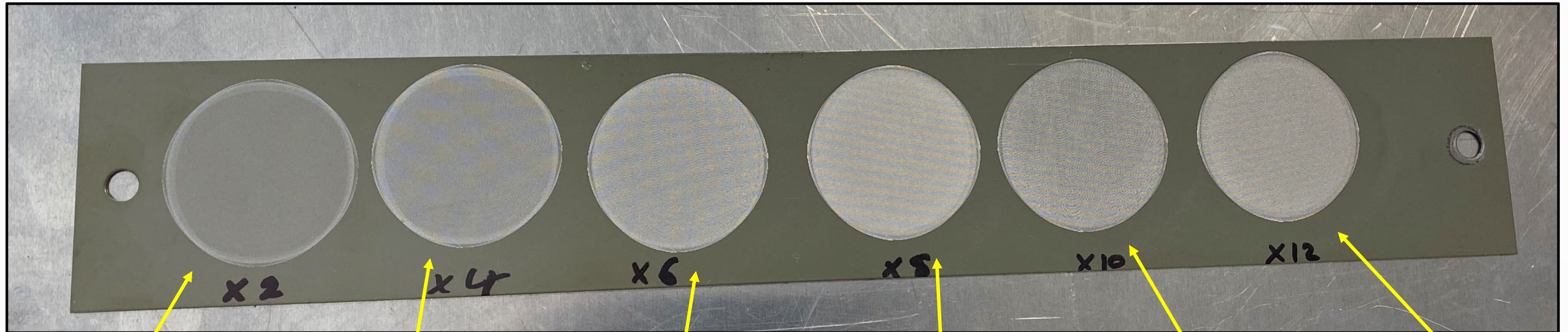
Before Laser Cleaning



After Laser Cleaning

[Video](#)

Selective Paint Removal



Laser Passes = 2
Clean time = 3 Secs
• [Click to See video of clean](#)

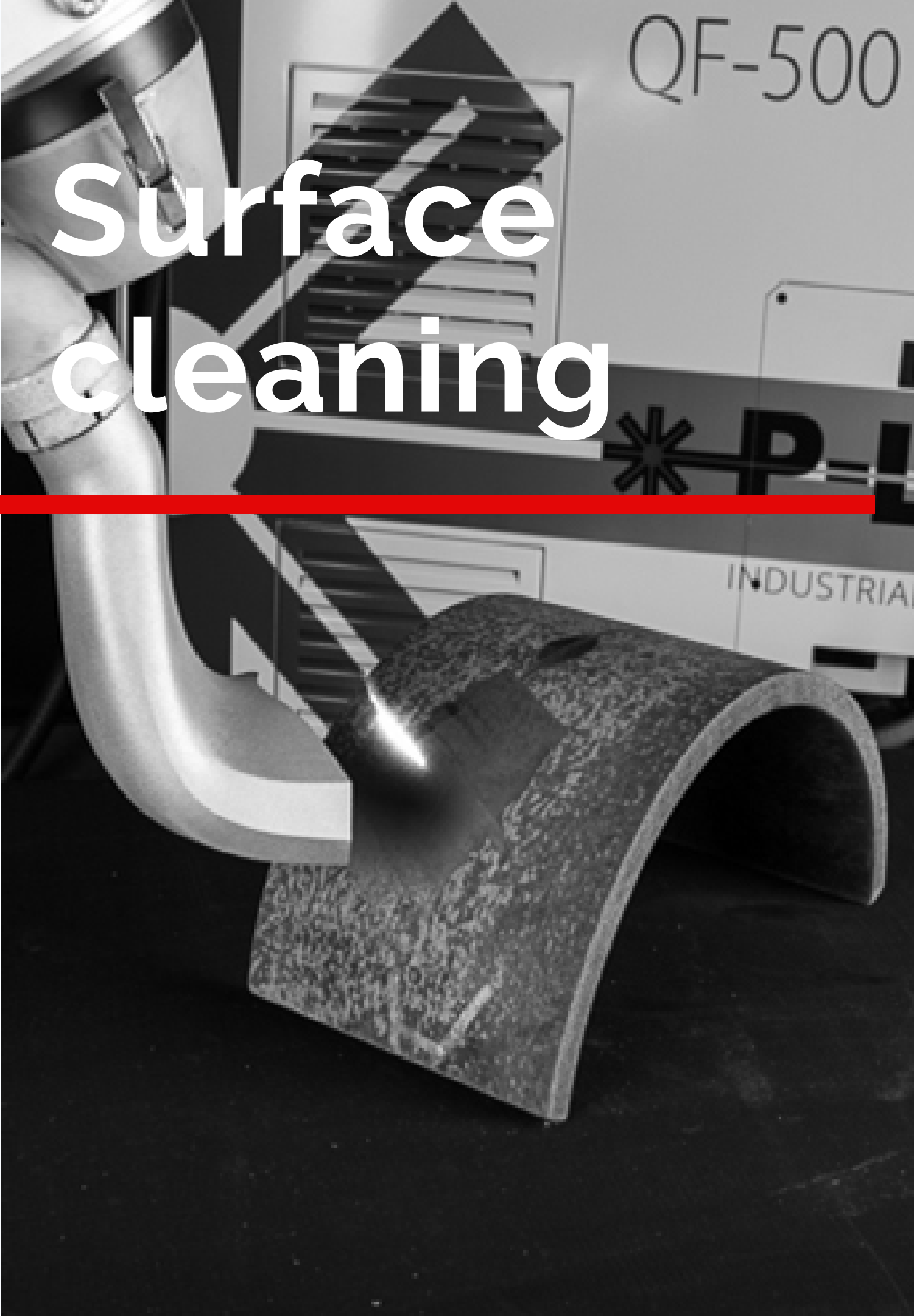
Laser Passes = 4
Clean time = 6 Secs
• [Click to See video of clean](#)

Laser Passes = 6
Clean time = 9 Secs
• [Click to See video of clean](#)

Laser Passes = 8
Clean time = 12 Secs
• [Click to See video of clean](#)

Laser Passes = 10
Clean time = 15 Secs
• [Click to See video of clean](#)

Laser Passes = 12
Clean time = 18 Secs
• [Click to See video of clean](#)



Surface cleaning

Weld Cleaning

Our laser systems can be used to remove weld discoloration and oxidation

REFERENCE INDUSTRIES:

Process & Production

Heavy Industry

Infrastructure

BEST SOLUTION

Low Power for small surfaces

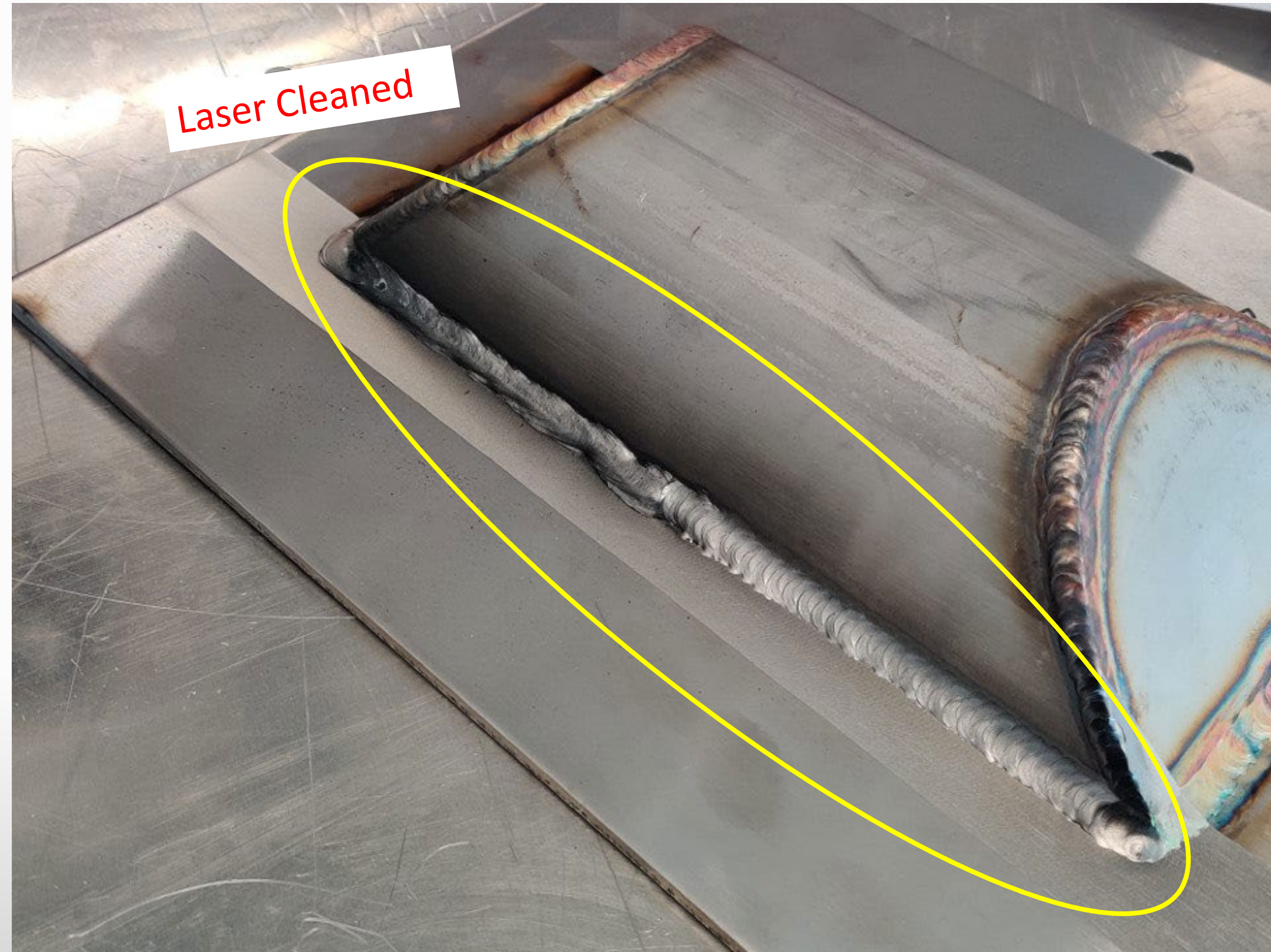
High Power for larger surfaces

[Video](#)

Weld Cleaning Testing

Lens = 500
Power = 100%
Pulse = 100%
Speed = 10 mm/s

- Weld discoloration removed
- [Click on the link for the video](#)

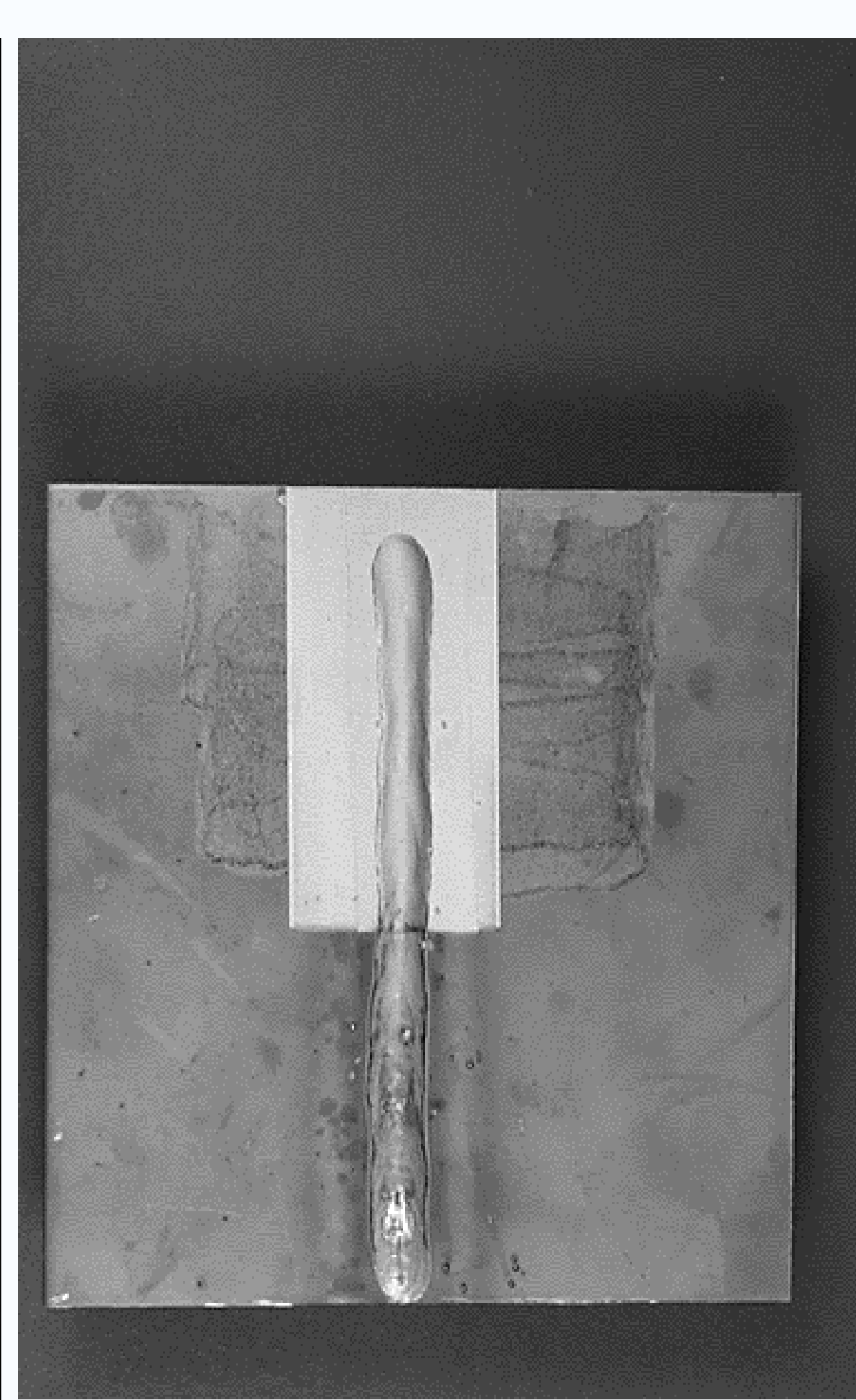
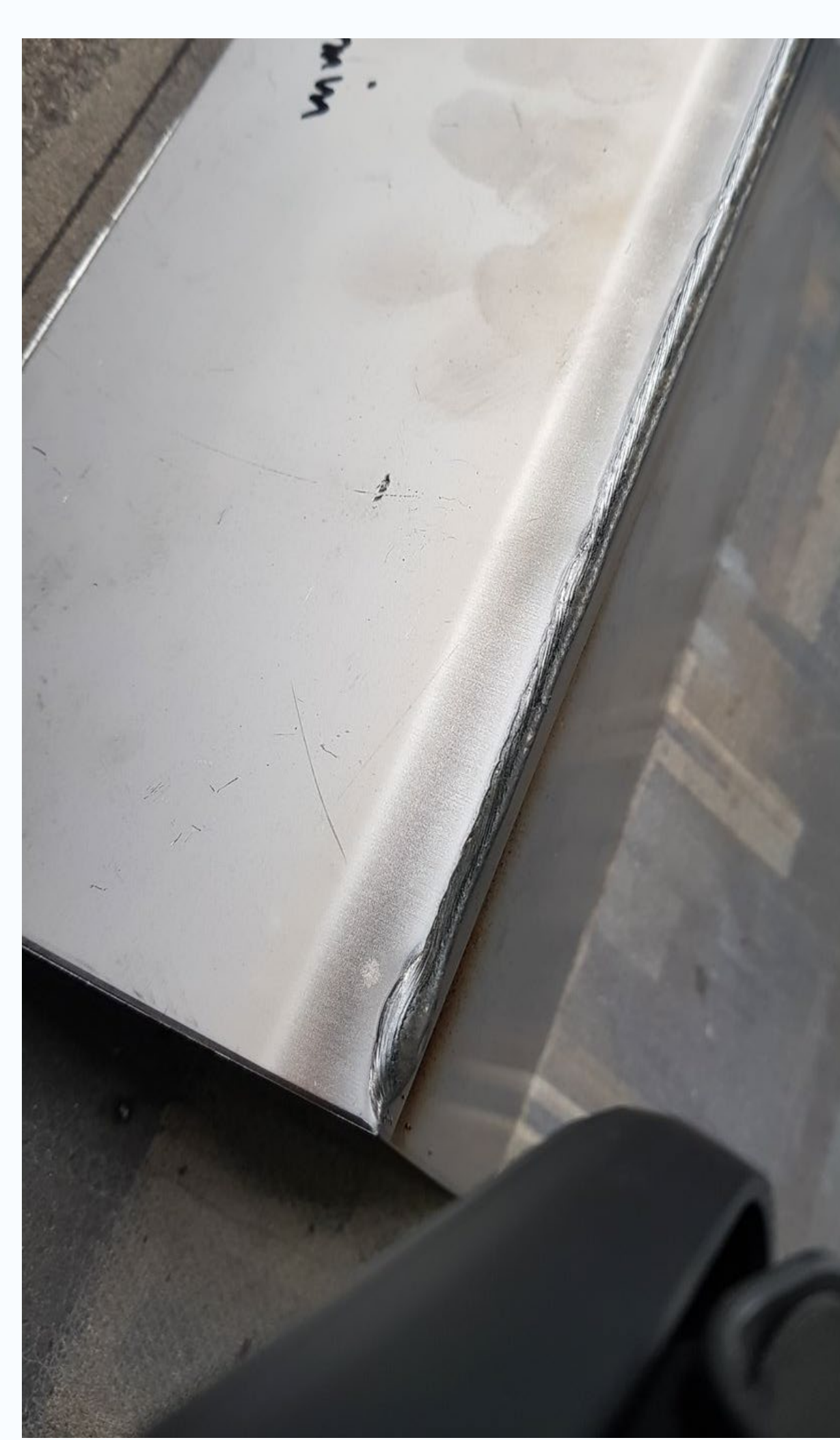


Weld Cleaning Testing

Lens = 500
Power = 100%
Pulse = 100%
Speed = 10 mm/s

- Weld discoloration removed





MOULD CLEANING





Mold cleaning

RUBBER

Speed is the decisive factor when it comes to rubber mold cleaning.

ADVANTAGES

Speed: 2m² in 1 hour instead of 8

Safe for aluminum

Cleans thick contaminations

BEST SOLUTION

High Power

Rubber Mold Cleaning

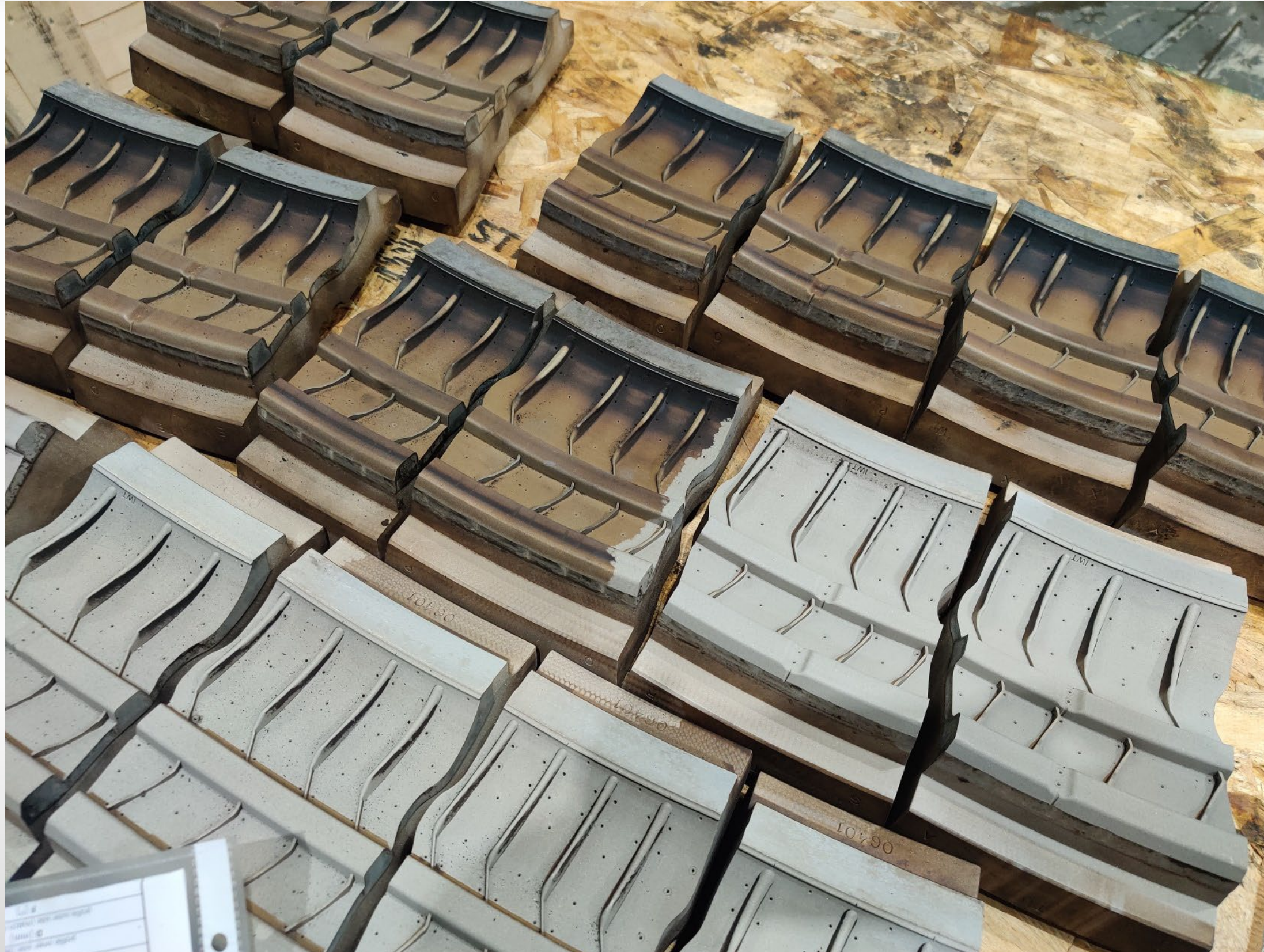


Dirty mold at press temperature



500-watt results at 100 % power

Rubber Mold Cleaning



Dirty mold at press temperature

500-watt results at 100 % power

Mold cleaning



GLASS

Glass molds have very specific needs: there can be no increase in volume.

ADVANTAGES

Base material can't be affected

Small air holes can be cleaned

BEST SOLUTION

High Power for higher speed

[Video](#)

P-Laser References



At your service



LET'S GET IN TOUCH!

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