

/ Perfect Welding / Solar Energy / Perfect Charging



Fronius International GmbH
Froniusplatz 1
4600 Wels, Austria

TPS/i CMT ROBOTICS

TPS/i ROBOTICS – WHAT DRIVES US

Intelligent complete system

Real-time
responsiveness

New processes

LSC, LSC Adv.,
PMC, CMT

Experience

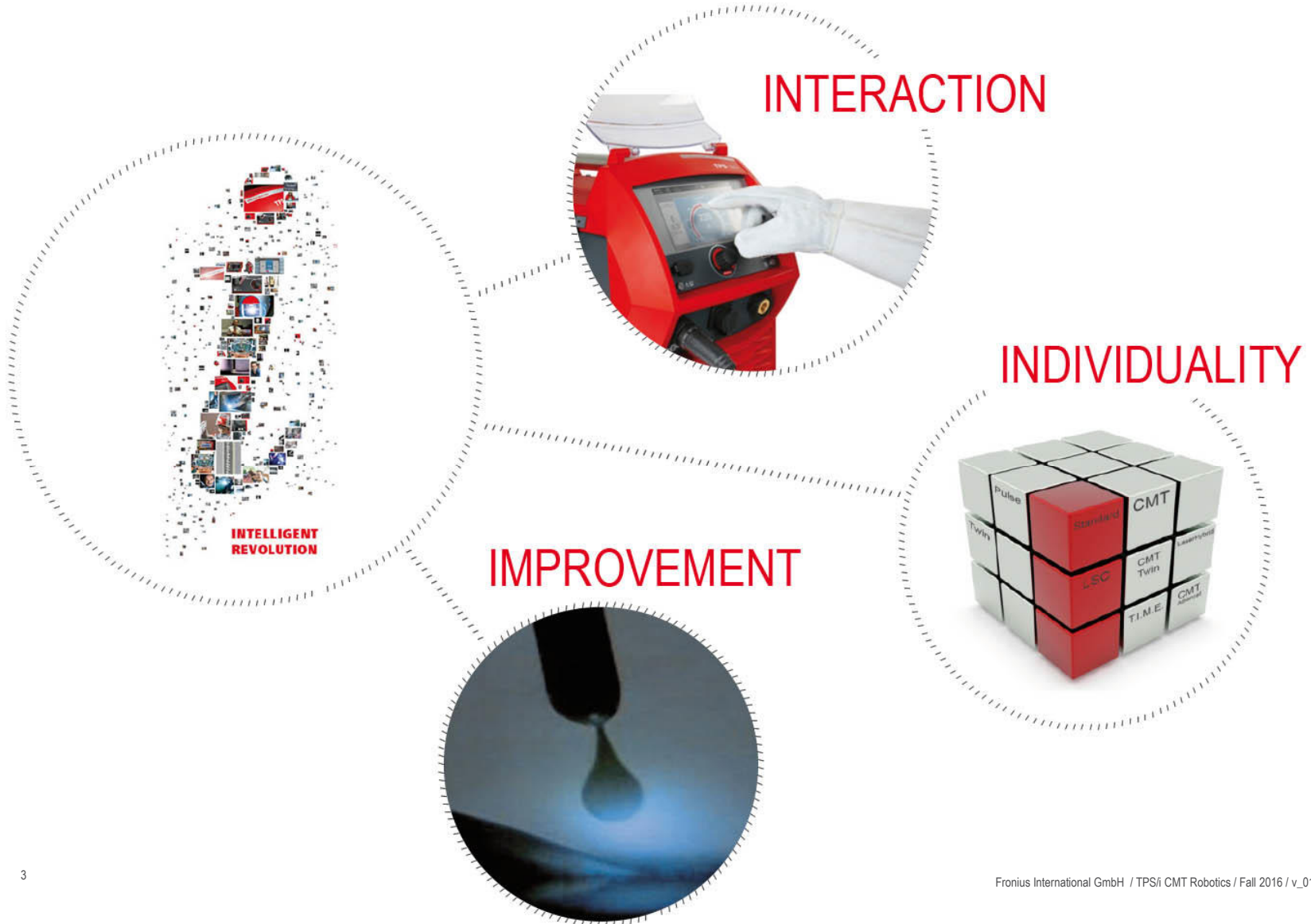
35 years of robotic application
expertise

Assistance systems

... provide support in the
background



MAIN FOCUS



MODULAR & ADAPTABLE



HARDWARE VERSIONS

Wire-feed unit



Welding torch



Power source



Cooling unit



Retainers

Options

etc.



APPLICATIONS



SERVICES

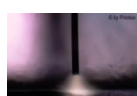
Maintenance
Calibration
Safety inspection
Order picking
Expert training
Extended warranty
and more

PROCESSES

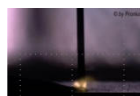
Standard



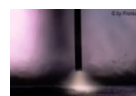
Pulse



LSC



PMC



CMT



etc.

/ Perfect Welding / Solar Energy / Perfect Charging

TPS/i CMT

...the Future of Welding

HIGHLIGHT

TPS/i and CMT

...through a Simple Upgrade

CMT UPGRADE



Upgrade TPS/i with CMT ...

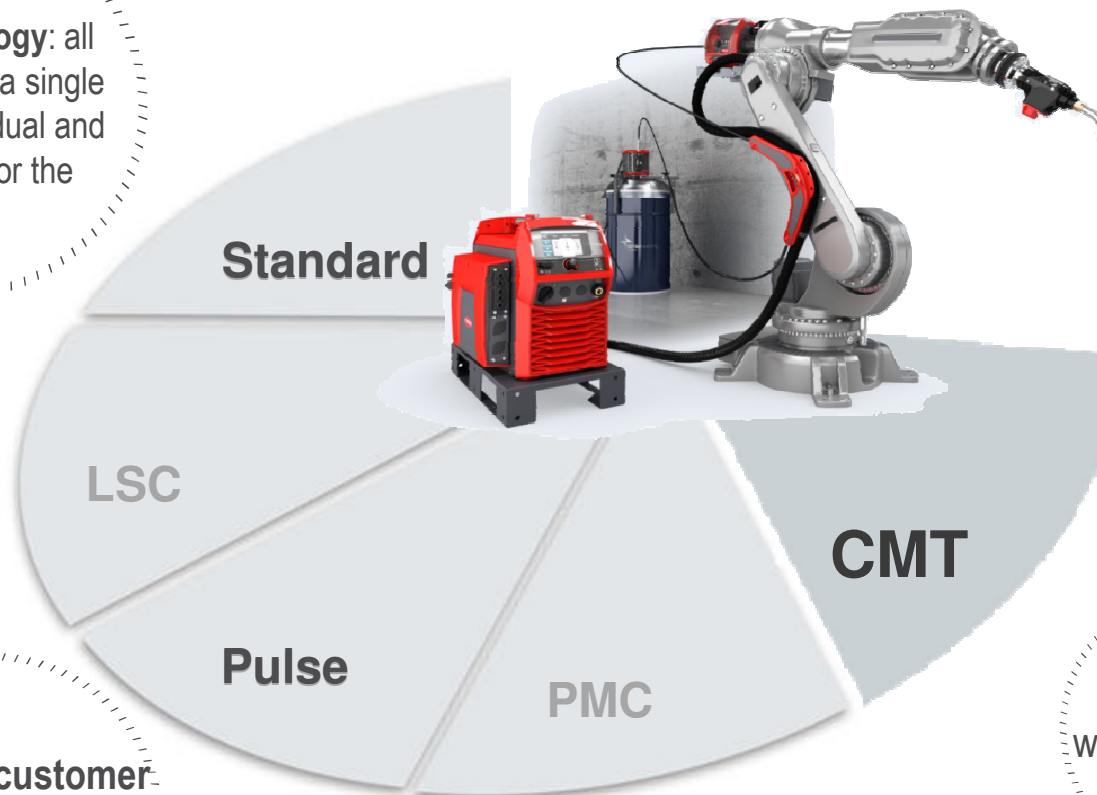


TPS/i CMT

TPS/i technology: all processes with a single system – individual and expandable for the future

Complete
TPS/i product
family

Power source can be
upgraded with **LSC**
and **PMC** welding
packages

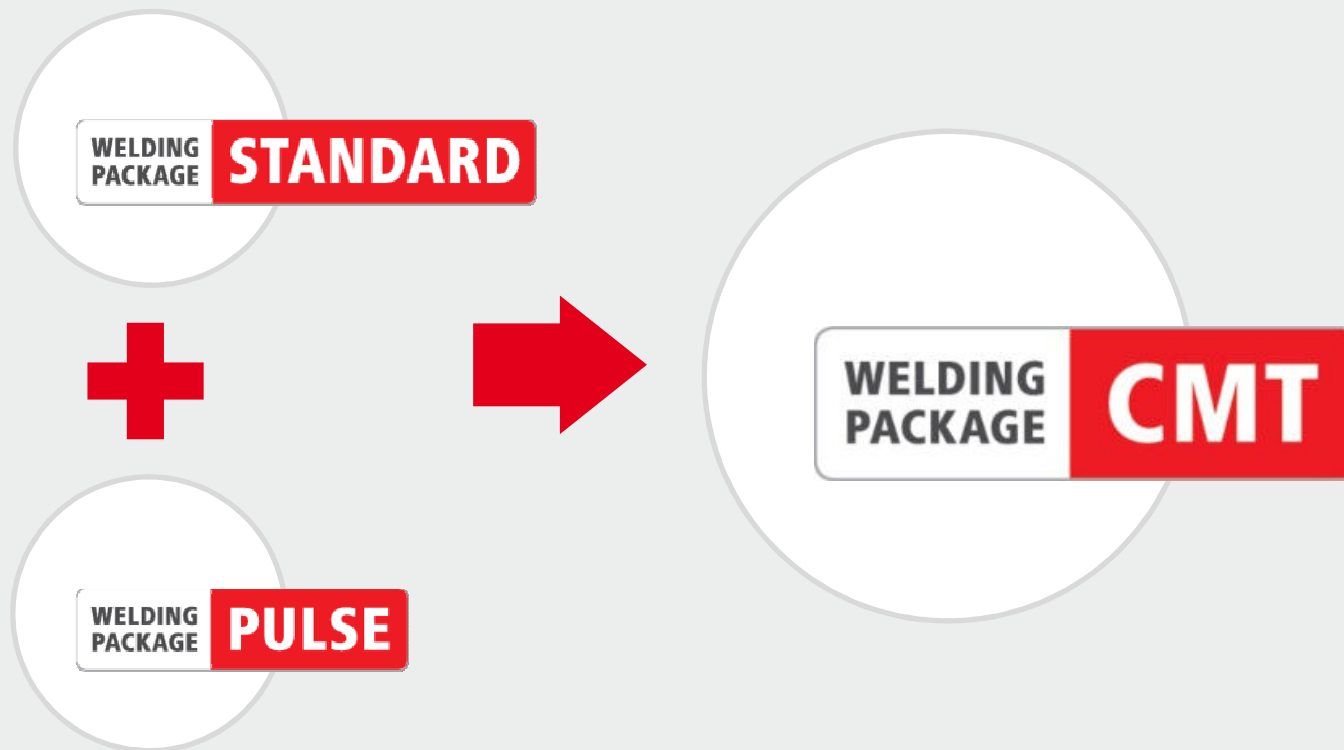


Focus on **customer needs:** fast, flexible, and individual

NEW: CMT
welding package

CMT WELDING PACKAGE

/ Basic requirements for CMT: WP Standard and WP Pulse



ADVANTAGES OF UPGRADING

/ TPS/i: the intelligent revolution – one system covering every possibility

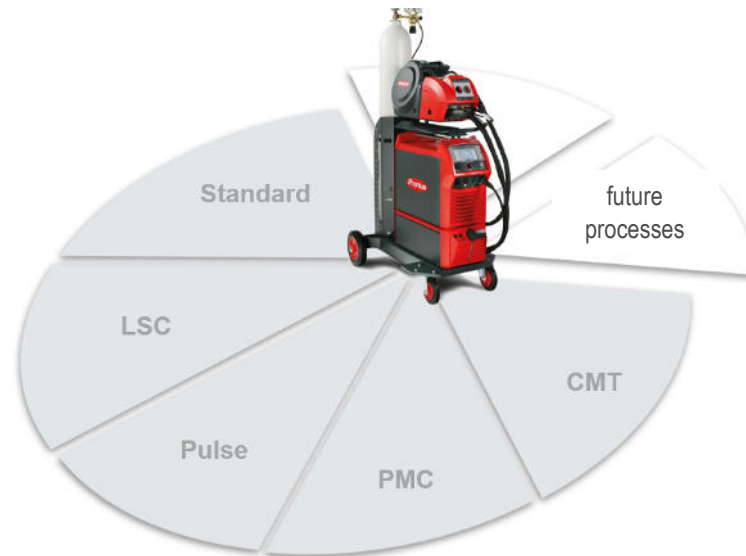
/ Clear customer orientation

/ High cost effectiveness

/ Available as an individual solution

/ Increased flexibility

/ Future expandability



HIGHLIGHT

The PUSH-PULL System

PUSH-PULL SYSTEM – CMT

- / Two perfectly synchronized wire-feed units
- / Ensure extremely precise wirefeeding and high process stability
- / Used for:
 - / Long wirefeeding distances & soft filler metals
- / Maximum welding quality with the CMT welding package



TPS/i ROBOTICS PUSH-PULL - SYSTEM



FSC (Fronius System Connector)

/ The FSC is a central connection point for all media. It lets users lock the hosepack simply and safely. Shorter maintenance times and quicker replacement of wearing parts are the result.

SPLITBOX

/ The SplitBox acts as a media connection point and control unit for push/pull systems.

REEL

/ The REEL unreeling wirefeeder supports the wirefeed with longer wirefeed-distances.



INTERFACE RI FB Inside

/ The internal robot interface is available for all standard interfaces.

WF 60i CMT DRIVE

/ Highly dynamic wire feed unit

/ Supports all processes from Standard to CMT



WIRE BUFFER

/ Used to process safety in highly dynamic welding processes. Ensures nearly powerless wire feeding for the CMT Drive - unit.

SPEEDNET

/ A 100 Mbit/s data bus carries the exchange of data between the components. SpeedNet guarantees quicker communication, more precise process control and all system statuses to be called up in real time.



HIGHLIGHT

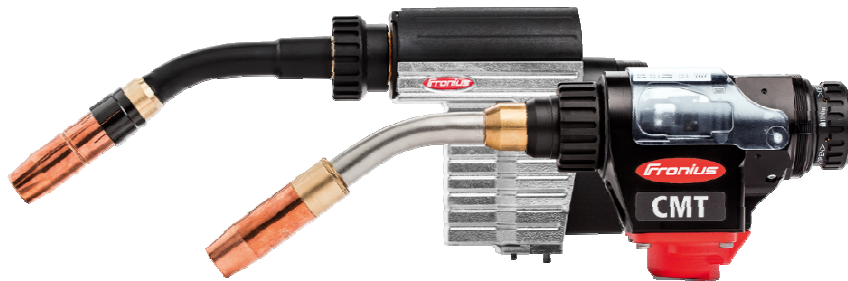
ROBACTA DRIVE CMT

... The Highest Level of Dynamics

WF 60i Robacta Drive CMT

- / Small and compact design for best accessibility
- / Low weight for usage with robots with low payload at high travel speed

Robacta Drive CMT TPS



Robacta Drive CMT TPS/i

ROBOTIC PUSH-PULL WELDING TORCH – COMPONENTS

Maximum compatibility

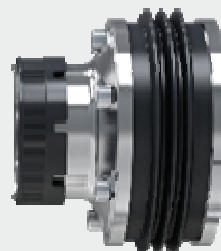
/ Robacta DRIVE G/W
PAP and CONV



/ Robacta DRIVE CMT
G/W PAP and CONV



/ CrashBox PAP G/W



/ Push-Pull hosepack PAP G/W



/ Push-Pull hosepack CONV G/W



/ CrashBox CONV G/W



/ Dummy
Mounting
bracket
/ Basic kits



HIGHLIGHT

COLD METAL TRANSFER

...the Technology of the Future

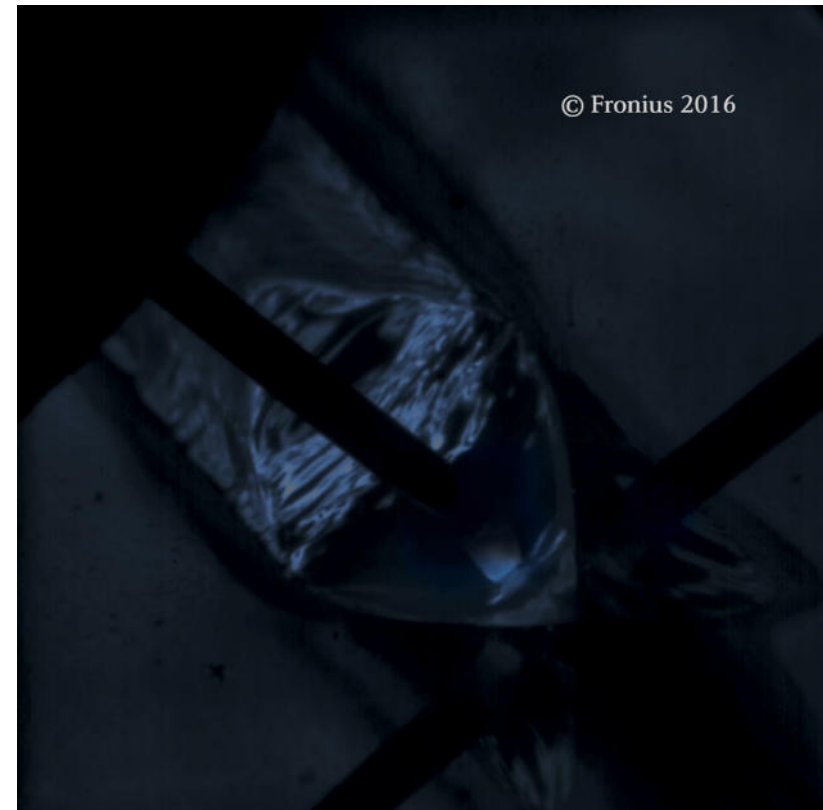
TECHNOLOGY

COLD METAL TRANSFER

With the CMT process, Fronius provides users with a highly dynamic welding process with the most stable arc in the world and minimal welding spatters. CMT is also no longer just “cold” but rather allows continuous regulation of heat input from cold to hot. This results in higher welding speeds and a broader range of applications with maximum welding quality.

TPS/i CMT PROCESS BENEFITS

- / Highly dynamic wire control
- / Extremely stable arc
- / Wider process window – up to the end of the intermediate arc
- / World's most stable process with minimal spattering (up to 200 cm/min)



CUSTOMER BENEFITS



- / Faster welding
- / Minimal spatters
- / More cost effective
- / Extremely simple parameter settings

AREAS OF APPLICATION

- / Joint welding (tailpipe industry, food industry)
- / Overlay welding
- / Brazing work – specifically with high demands in terms of heat input and process stability
- / Special joints, e.g., copper, zinc, steel aluminum, titanium

APPLICATIONS

- / Thin and medium sheet range 0.5 mm – 4 mm
- / Steel 100% CO2 welding
- / CrNi applications Galvanized steel applications
- / Root passes

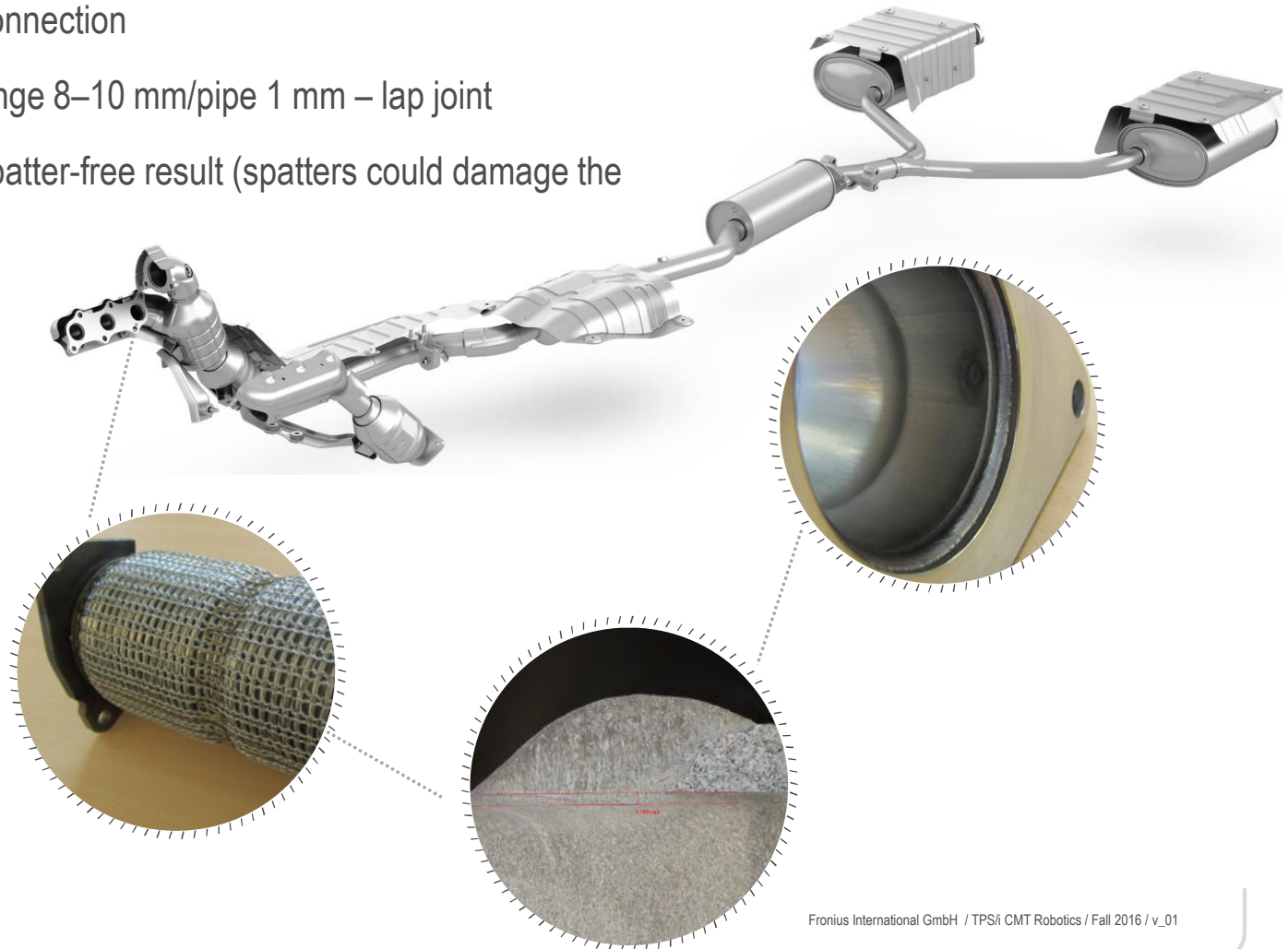
HIGHLIGHT

APPLICATION

... for Perfect Welding Results

CMT APPLICATION EXAMPLE

- / Flange/flexible pipe connection
- / Sheet thickness of flange 8–10 mm/pipe 1 mm – lap joint
- / Requires an almost spatter-free result (spatters could damage the catalytic converter)



FLANGE / FLEXIDER APPLICATION

Base material: ferritic chrome steel

Sheet thickness: 10mm (flange) / 1mm (pipe)

Filler material: Cr Ni 19 12 3 Ø: 1mm

Gas: Ar+2,5% CO₂

VS: 150 cm/min

VD: 12,7 m/min

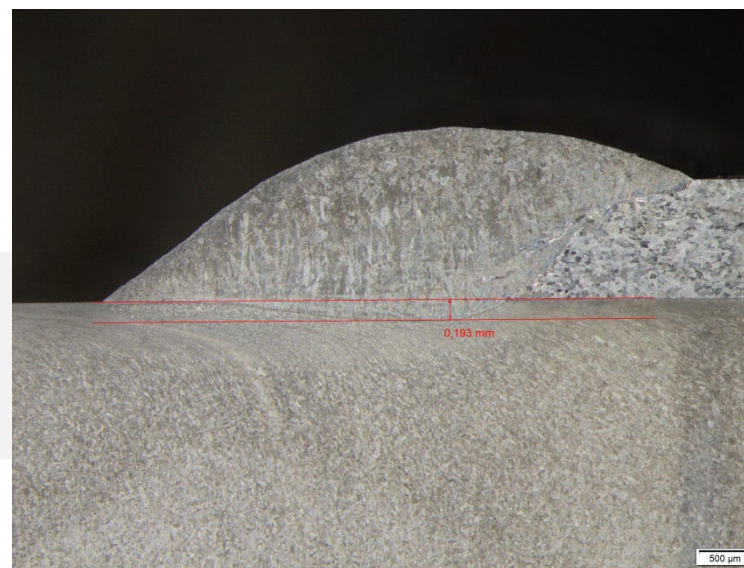
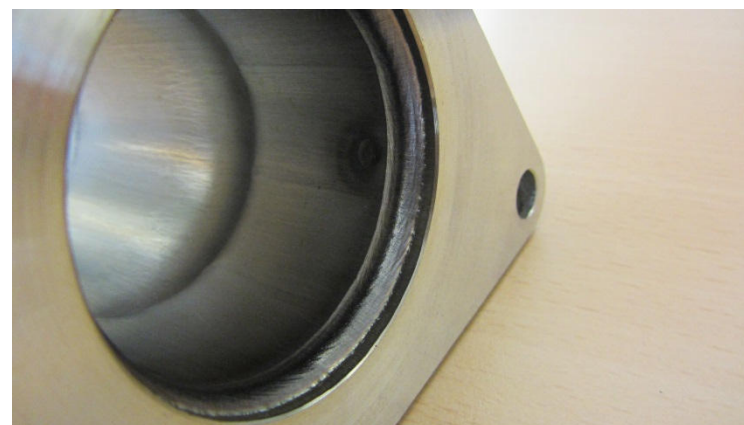
Current: 208 A

Voltage: 18,4 V

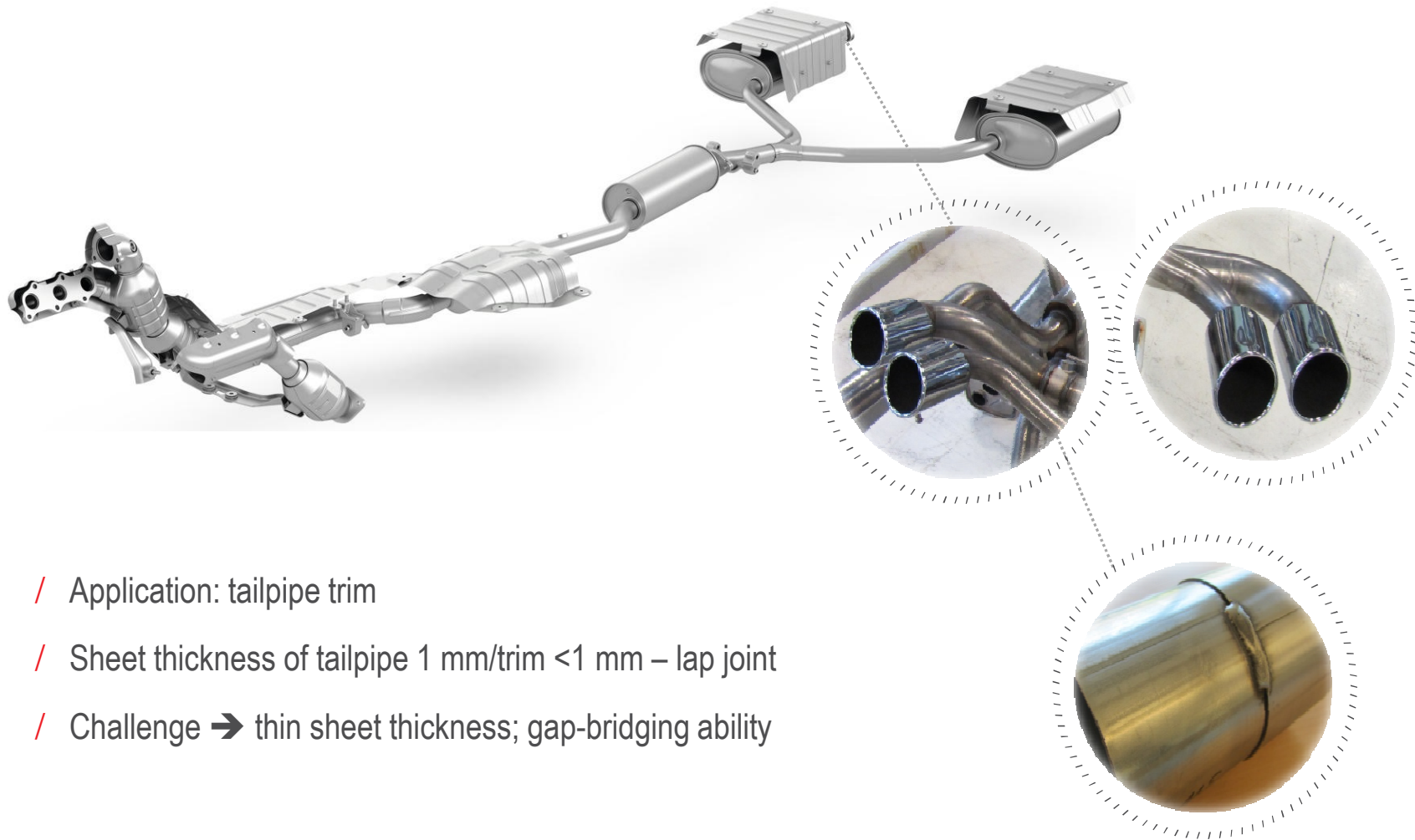
Synergic line: CMT 3268

Task: almost spatter-free welding result necessary;

→ if a spatter detaches this could damage the catalytic converter; very stable arc; high welding speed



CMT APPLICATION EXAMPLE



- / Application: tailpipe trim
- / Sheet thickness of tailpipe 1 mm/trim <1 mm – lap joint
- / Challenge → thin sheet thickness; gap-bridging ability

TAIL PIECE / EXHAUST PIPE APPLICATION

Base material: ferritic chrome steel

Sheet thickness: 1mm (exhaust) / <1mm (tail piece)

Filler material: Cr Ni 19 12 3 Ø: 1mm

Gas: Ar+2,5% CO₂

VS: 130 cm/min

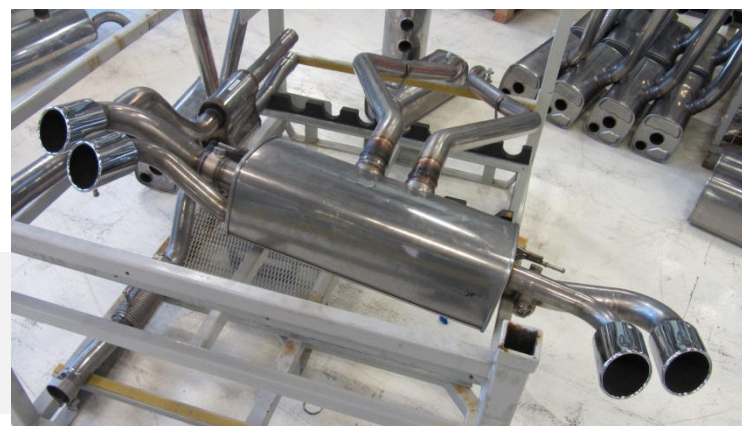
VD: 11,5 m/min

Current: 180 A

Voltage: 17,0 V

Synergic line: CMT 3268

Task: low material thicknesses; tail piece gets bended and slided over the exhaust pipe; due to the bending the thickness decreases and roundness is not given → gap bridge ability

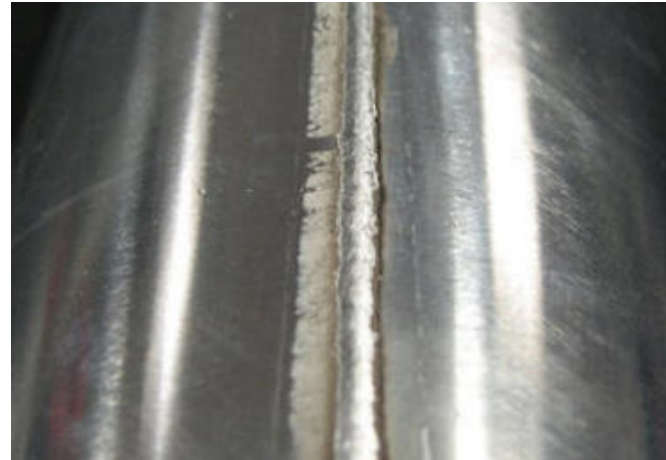


APPLICATION EXAMPLE

Gutter:

Base material: Aluminium

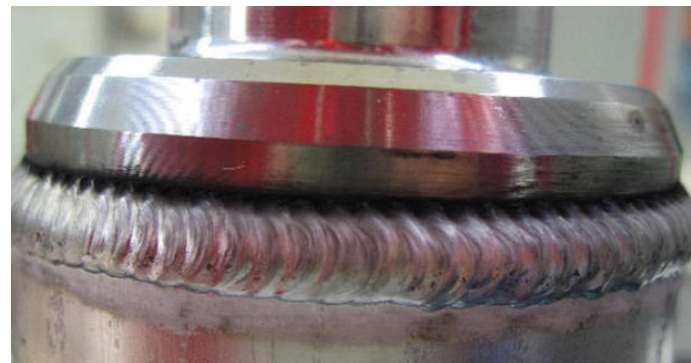
Sheet thickness: 1,0 - 2,5 mm



Driveshaft:

Base material: Aluminium

Sheet thickness: 6,1 – 10,0mm



APPLICATION EXAMPLE

Catalyst:

Base material: CrNi Stahl

Sheet thickness: 1,0 – 2,5 mm



Tube to plate welding:

Base material: CrNi Stahl

Sheet thickness: <1,0 mm



POSSIBILITIES

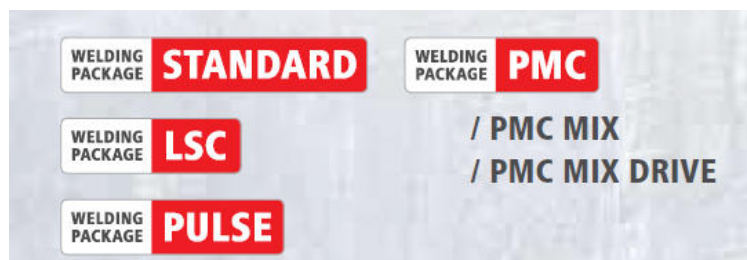
CMT READY

Modular Design provides Greater Flexibility

TPS/i CMT READY

- / Offers the option of using the revolutionary CMT process at any time simply by upgrading
- / Optimal use of all the process benefits of a PUSH-PULL system
- / CMT Ready = hardware without CMT welding package
- / No welding Packages necessary
 - / WP Standard & WP Pulse are recommended

- / Possible process scope with CMT Ready:
(Depending on configuration and activations)



UMSTIEG CMT READY ZU CMT



/ Welding Package Pulse & Welding Package Standard are both required.



TPS/i IS THE CROWNING ACHIEVEMENT OF WELDING

THANKS TO THE INTEGRATION OF CMT.
interaction improvement individuality

You can find more information about CMT
and manual welding

at <http://www.tps-i.com/>



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SHIFTING THE LIMITS

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