



Future-proof
solutions

<https://fronius.com>



Per

Equipped Today for the Welding Challenges of Tomorrow

The TPS/i is one of the most state-of-the-art welding systems and, with its huge power capacity of up to 600 A, it meets the highest demands for steel, stainless steel, and aluminum applications. The intelligent equipment, modular structure, and multitude of expansion options provide the necessary flexibility and efficiency for all manner of applications.

With the TPS/i, you already have the perfect solution for tomorrow's challenges at your fingertips, so you can fully unleash your welding potential.





High performance



for Everyday
Challenges

TPS/i

The Series



The TPS/i is available in power categories 320, 400, 500 and 600 A, with gas or water-cooling.

Overview of the TPS/i Models:



TPS 320i C | gas-cooled



TPS 320i | water-cooled

TPS/i – The Advantages for You



Easy operation

Touch display with customizable screen in over 30 languages:

Thanks to the innovative touch display, you can set all welding parameters quickly and easily. The menu navigation is available in over 30 languages and has a user-friendly interface.



High weld seam quality

The support for penetration and arc length stabilizers ensures a high-quality result.



Maximum flexibility

Versatile expandability with welding software packages:

Thanks to its modular structure with customized software packages, the TPS/i can be easily adapted to suit individual welding requirements.



Future-proof welding

Thanks to the user-oriented, continuous development of application software, welding torches, and other components, the TPS/i adapts effortlessly to all welding challenges.



TPS 400i



TPS 500i



TPS 600i

Everything at a

Glance

Graphical,
Dynamic Operating
Concept



Turn/push button
for fast operation

Intuitive,
Reliable, and
Self-Explanatory

- **Customizable**
All required welding parameters are directly accessible
- **At a glance**
All work parameters can be accessed via the first menu level
- **Immediate access to 5 Easy Jobs and more**
Recurring welding tasks can be set quickly and easily
- **Just 2 clicks**
Quick change between characteristics/ process parameters

- Wire threading easier than ever before
- 7" color plain-text display and touchscreen
- Can be easily operated with welding gloves
- Over 30 languages can be selected for operation



Wire Threading

Operation at the touch of a button: Use the welding system, wire feeder, or torch trigger to feed the welding wire through the torch without opening the wire feed rollers. The wirefeeder stops automatically when the workpiece is touched.

Status indicator and quick change

Main parameters

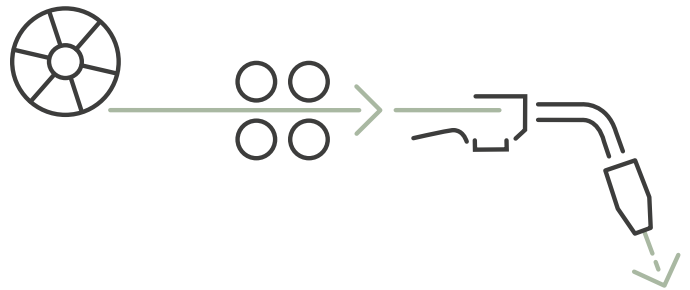
Touchscreen

Customizable full screen mode with Easy Jobs on demand

Wire-threading button

Gas test

NFC field, e.g., for user management and locking/unlocking the welding system with an NFC card or key fob



Quick and Easy Welding Parameter Setting



The Perfect Weld Seam:

The Goal
of Every
Professional Welder

For more details, please visit:
www.tps-i.com



Areas of Application	Standard Welding Package	LSC Welding Package	Pulse Welding Package	PMC Welding Package	CMT Welding Package
Sheet thickness up to 1 mm	●●●○○	●●●●○	●●○○○	●●●○○	●●●●●
Sheet thickness between 1–3 mm	●●●○○	●●●○○	●●●○○	●●●●○	●●●●●
Sheet thickness upwards of 3 mm	●●●○○	●●●●○	●●●●○	●●●●●	●●●○○
Welding in position	●●●○○	●●●●○	●●○○○	●●●●○	●●●●●
Welding speed	●●●○○	●●●●○	●●●●○	●●●●●	●●●●●
Welding with 100% CO ₂	●●●○○	●●●●○	○○○○○	○○○○○	●●●●●
Spatter prevention	●●○○○	●●●●○	●●●○○	●●●●○	●●●●●
Materials					
Steel	●●●●○	●●●●○	●●●●○	●●●●●	●●●●●
CrNi	●●●○○	●●●○○	●●●○○	●●●●●	●●●●●
Aluminum	●○○○○	●●○○○	●●●●○	●●●●●	●●●●●
Other materials	●●○○○	●●●○○	●●●○○	●●●●○	●●●●●

Total Flexibility

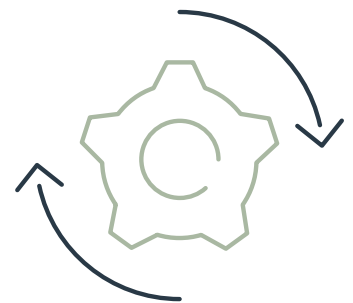
Quickly and easily get to the settings you need. Depending on the application, this is possible without any problems.

The modular structure and regular software updates expand the system's range of functions, providing the user with the perfect system configuration to suit every challenge.

The standard or pulse processes are available as basic packages. Advanced welding packages, such as LSC, PMC or CMT, are available for particularly demanding welding tasks.

The Right Characteristic for Every Application

Every welding application has its own special challenges, be it on aluminum or on unalloyed, low- or high-alloyed steels, which require customized solutions. Our welding packages therefore include different characteristics which are adapted to suit specific welding tasks. This eliminates the need for laborious and often lengthy device parameterization. Instead, you can conveniently set the pre-configured characteristic on the welding system, saving time and ensuring repeatable quality.



LSC

The Modified Dip Transfer Arc

Low Spatter Control (LSC)

The LSC principle of soft reignition represents a significant difference to the standard dip transfer arc. Here, the short circuit is resolved at a low current level. The result: a stable welding process.

The Advantages for You

Up to 75% less spatter*

- Less rework
- Lower consumption of filler material
- Fewer rejects
- Less cleaning required and savings on wearing parts

Weld up to 4.5x quicker**

- Very well suited for out-of-position welding
- Welding in the downhand position is optimally supported by the properties of LSC.
- The powerful arc ensures optimum root formation in overhead positions.





PMC

Optimized Pulsed Arc

PMC – Pulse Multi Control

With its optimized pulse characteristics, PMC equals high-quality welds at high welding speeds. With penetration and arc length stabilizers, gaining control over the arc has never been easier.

The Advantages for You

Optimized pulsed arc

- Increased process stability due to arc length and penetration stabilizers
- Spatter-free ignition (SFI)

Improved weld properties*

- 60% more penetration
- 15% higher welding speed
- 15% less heat input

High weld seam quality and appearance

- Optimized for welding vertical-up seams without pendulum movement due to PMC mix
- 100% control due to precise regulation
- TIG-like seam rippling thanks to PMC Ripple Drive

* Compared to a conventional pulsed arc.

CMT

Fast, Cold,

and

Virtually

Spatter-Free

Cold Metal Transfer (CMT)

Absolutely stable welding with cold metal transfer: The highly specific type of droplet detachment minimizes heat input. The reversing wire movements reduce spattering. Wherever adhesive or solder was used before, CMT welding can be used instead.

The Advantages for You

Stable arc

- Perfectly suited to high-strength steels
- Not susceptible to external influences (changes in stick out, or workpiece surface)
- Suited to 100% CO₂

Less rework

- 99% less spatter*
- 33% lower heat input reduces distortion*
- Spatter-free ignition (SFI)

Faster welding

- High speed but the same penetration
- Fast joining of thin sheets



Interval & SynchroPulse

for All Characteristics

SFI Comparison

Interval Welding

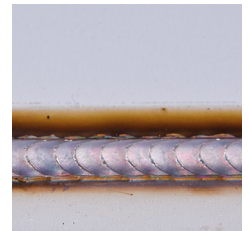
Stitch welding not only produces a rippled seam appearance, but adjustable, regular welding and pause times can further reduce heat input and thus material distortion in thin sheets. Safe and clean ignition is possible at every interval due to spatter-free ignition (SFI).

- For all materials up to 3 mm
- Position-independent (vertical up-seams are possible)
- Rippled seams and visible seams
- Even better and cleaner ignitions are possible with the PullMig welding torch

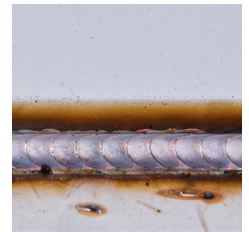
SynchroPulse

Out-of-position welding has never been easier. The fact that the energy input can be easily adjusted makes SynchroPulse particularly suited for welding aluminum, even in the most difficult positions.

- Switching the welding power between two operating points
- Rippled seam appearance
- Welding in all positions without parameter adjustment



With SFI
(spatter-free ignition)



Without SFI
(spatter-free ignition)



Two Welding Torches, Two Wire Spools, One Welding System

Dual Wire Feed



Single button operation

Change the process line with the touch of a button. This can be done via the torch trigger, directly on the wirefeeder, or on the welding system. Switching between torches occurs within a few milliseconds.

Increase the deposition rate

Thanks to stable wirefeeding of up to 25 m/min, a high deposition rate can be achieved without affecting the weld quality.



al re eeder

Thanks to its modular structure, the system can be configured to meet your specific requirements, either on the trolley, Trabant or crane.



Easy wire change

Two different wires at your fingertips. The dual wire feeder makes changing filler metals quick and easy. The choice to use 300 or 450 mm wire spools with a wire diameter of 0.8–1.6 mm means that you have the right welding material ready to meet every welding challenge.

Quickly and easily set welding parameters

Parameters are set and optimized either on the JobMaster welding torch, the welding system's display, or the RC panel. Maximum flexibility included!

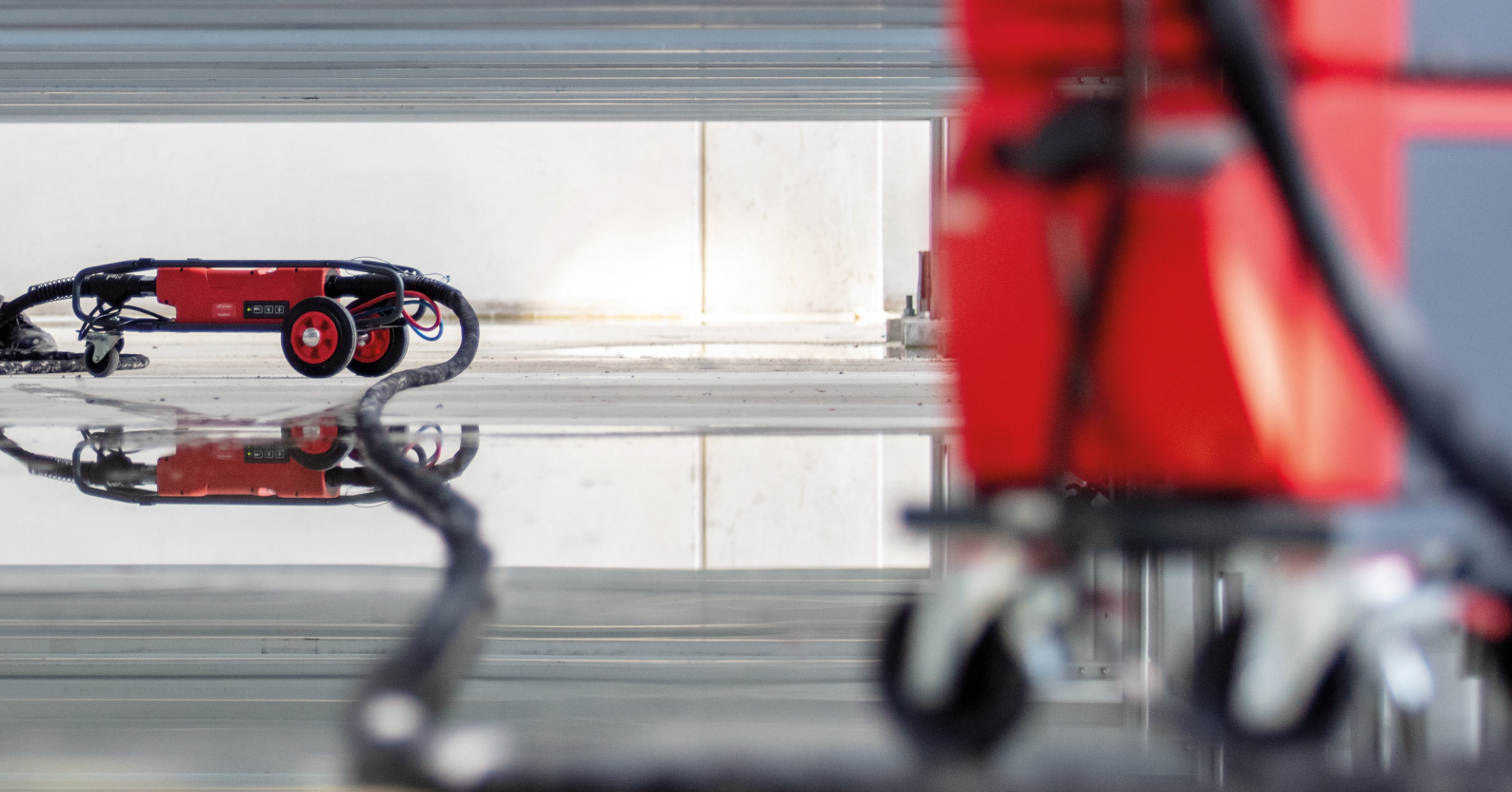


Flex Drive

Made
for Long
Distances

Wirefeeder 25i FlexDrive and TPS/i extends your sphere of action: As a small portable intermediate drive, the FlexDrive is located between the wirefeeder and the welding torch. The strengths of the FlexDrive are particularly evident in those applications where it is difficult to take the welding system and wirefeeder directly to the place of use.

- Up to 25 m distance between the main wirefeeder and welding point
- Flexible and compact: only 4.4 kg (without cage and wheels)
- Can be combined with all push manual welding torches of the TPS/i generation as standard, UpDown, or JobMaster versions.
- The cage has a tubular frame design and offers various possibilities for hanging the FlexDrive in suitable positions.
- The synchronized motors of the FlexDrive and the main wirefeeder guarantee optimum wirefeeding.





JobMaster

Users can configure the display and decide for themselves which functions and welding parameters should be shown and set.



PullMig CMT

This welding torch was specially developed for the CMT welding process. The dynamic drive motor enables the high process stability of CMT.

PullMig CMT	
Gas-cooled	Water-cooled
MHP 280i G PM CMT	MHP 400i W PM CMT
180 A 40% D.C. (CMT process)	280 A 100% D.C. (CMT process)
280 A 40% D.C. (Standard process)	400 A 100% D.C. (Standard process)

Overview of MIG/MAG Welding Torches



The Multilock interchangeable welding torch:

The Multilock systems can be fitted with different torch bodies and are available in gas-cooled or water-cooled versions. Different angles and lengths ensure maximum flexibility.



PullMig

30% lighter than comparable model: At a working height of 1 m, the PullMig welding torch weighs only 1.6 kg. Its compact design means there is barely any size difference to conventional welding torches. The PullMig is a favorite for aluminum applications and where long hosepacks are required (up to 15 m) – situations in which precision wirefeeding is essential.

PullMig	
Gas-cooled	Water-cooled
MHP 280i PullMig G 280 A 40% D.C.	MHP 320i PullMig W 320 A 100% D.C.

For more details, please visit:

www.tps-i.com





The Right
Welding Torch

for Every Application

Fronius welding torches represent the perfect fusion of technology and ergonomics. The ergonomic handle with anti-slip components lies comfortably and securely in the hand, allowing the torch to be guided with ease. The ball joint and optimal weight distribution prevent fatigue during welding.

Ready for the Future



Digital, Networked Welding

With the WeldCube software portfolio, we are expanding our manual welding systems across the entire welding technology production process. Simplified workflows, structured workflows, faster training of untrained workers, and standard-compliant welding all support users in manual welding production.

We are your partner for perfect welding quality, increased productivity, and transparency. With the correct welding system and the right software solution, you are already equipped for the challenges of tomorrow and can optimally unleash your welding potential.



WeldCube Navigator

Better control for better results:

Weldcube Navigator helps to standardize manufacturing processes, avoid errors, and thus increase production quality. Step-by-step instructions guide users visually through the welding task directly at the workstation and predefined welding parameters are set automatically. In the event of an error, alarm messages or the locking of the welding system prevent rejects and reworking.



WeldCube Premium

Minimal administration and

maximum overview: WeldCube Premium provides support in ensuring and evidencing stable production processes. Fleet management simplifies the efficient management of welding systems and the monitoring of welding parameters. Statistics and analysis functions increase efficiency and quality in welding technology production.



WeldCube Air

Future-proof welding:

WeldCube Air is the cloud-based software solution for companies that want to drive digitalization in welding technology operations. Overview and management of your internet-connected welding systems, simple component documentation, and the most important welding figures make WeldCube Air the perfect companion as you start digitalizing your welding data.

Centralized User Management

You can assign individual authorizations to each user via the authorization system integrated into every Fronius welding system. When someone logs in with a key card or fob, the system immediately knows what they are (and are not) allowed

to do. Wondering how you can assign and manage authorizations centrally for several welding systems? A standalone solution in the WeldCube portfolio, Central User Management, provides the answer. With just a few clicks, user rights

are set centrally for one or more welding systems. The relevant information is automatically sent to all connected systems.

For further information, visit:
www.fronius.com/weldcube





For more details, please
visit: www.tps-i.com

Customizable and Material-Saving

Thanks to its modular structure and customized software packages, the TPS/i can be easily adapted to suit individual welding requirements. Optimized welding processes such as cold metal transfer (CMT) or low splatter control (LSC) help to reduce weld spatter by up to 75%* and reduce the consumption of weld filler metal on the one hand and time-consuming and cost-intensive reworking on the other.

By using the latest technology, we help to take the pressure off people and the environment, and to safeguard the future for subsequent generations by making it one worth living in.

* With LSC in comparison to standard arc.

For Today, Tomorrow, and Beyond



Connected by welding | United by passion

We focus on connections—between people, industries, and metals. Find out more here.

www.fronius.com/welding/aboutus





	TPS 270i C	TPS 320i C	TPS 320i	TPS 400i	TPS 500i	TPS 600i
Mains voltage	3 x 400 V 3 x 380–460 V (/nc) 3 x 460–575 V (/S/nc) 3 x 200–460 V (/MV/nc)		3 x 400 V 3 x 380–460 V (/nc) 3 x 575 V (/600V/nc) 3 x 200–460 V (/MV/nc)	3 x 400 V 3 x 380–460 V (/nc) 3 x 575 V (/600V/nc) 3 x 200–460 V (/MV/nc)		3 x 400 V 3 x 380–460 V (/nc) 3 x 575 V (/600V/nc)
Mains frequency	50–60 Hz					
Cos phi	0.99					
MIG/MAG welding current range	3–270 A	3–320 A	3–320 A	3–400 A	3–500 A	3–600 A
10 min/40 °C (104 °F) 40 % D.C	270 A	320 A	320 A	400 A	500 A	600 A
10 min/40 °C (104 °F) 60 % D.C	220 A	260 A	260 A	360 A	430 A	600 A
10 min/40 °C (104 °F) 100 % D.C	190 A	220 A	240 A	320 A	360 A	500 A
Open circuit voltage	66 V 57 V 66 V (/nc) 68 V (/S/nc) 66 V (/MV/nc)	71 V 82 V (/nc) 85 V (/S/nc) 82 V (/MV/nc)	73 V 84 V (/nc) 67 V (/600V/nc) 68 V (/MV/nc)	75 V 83 V (/nc) 68 V (/600V/nc) 67 V (/MV/nc)	71 V 82 V (/nc) 71 V (/600V/nc) 68 V (/MV/nc)	71 V 85 V (/nc) 73 V (/600V/nc)
MIG/MAG working voltage	14.2–27.5 V	14.2–30 V	14.2–30 V	14.2–34 V	14.2–39 V	14.2–44 V
Protection class	IP23					
Dimensions l x w x h	687 x 276 x 445 mm			706 x 300 x 510 mm		

Technical Data

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