



WIRE FEEDING SYSTEMS FOR WELDING APPLICATIONS

THE PRECISE
DRIVE PACKAGE
FOR DEMANDING
MANUFACTURING
PROCESSES

- ▶ Exact wire feeding
- ▶ Extremely short reaction times
- ▶ Modern drive concept
- ▶ Fully digitalized process control
- ▶ Detailed monitoring
- ▶ Maximum production reliability
- ▶ Robust
- ▶ Already very successfully in use in the automotive industry

DEAR CUSTOMERS, DEALERS AND PARTNERS,

In today's rapidly evolving world, where efficiency and speed are critical factors in selecting manufacturing technology, the ability to stay competitive is paramount. Tight production schedules necessitate the swift manufacturing of parts to meet delivery deadlines.

Laser welding emerges as the superior choice in this regard, owing to its remarkable welding speed. Compared to conventional welding methods, laser welding can efficiently join components in significantly less time.

When it comes to laser welding and brazing, our DINSE wire conveyor system has always been synonymous with speed and precision.

Now, with our latest generation comprising control, drive unit, wire straightening unit, optional hot wire power source, and other components, we are taking a significant leap forward in terms of both speed and quality.

This advancement revolutionizes response times in laser welding and soldering, propelling us into a new era of manufacturing efficiency.

What is the secret behind our exceptional performance?

Introducing the new and improved DIX FDE-150 control unit, meticulously optimized compared to its predecessor, the DIX FDE-

100. Equipped with a powerful industrial PC and a multi-core processor, this cutting-edge control unit unlocks a world of possibilities.

One of its standout features is the unprecedentedly short response times it offers, ensuring swift and precise operations.

Signal runtimes exhibit remarkable reproducibility, guaranteeing consistency in performance. **In fact, the new system boasts response times that are four to five times faster than the previous iteration!** Moreover, the wire feed speed seamlessly follows the robot speed in real-time, enhancing efficiency and synchronization.

To enhance the user experience, our new control system comes complete with a range of modules and additional components. These additions empower users to tailor the system to meet their unique challenges and requirements.

We are thrilled for you to explore the vast possibilities offered by our wire feeding system for lasers. Our team is eagerly waiting to provide you with expert advice and guidance for your specific application.

Jean-Marie Sandrock

Product Manager
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All suitable spare and wear parts can be found in our LASER product catalog.





- ① DIX LHZ 100 Torch Set
- ② DIX FD10xLS Front drive unit with water set
- ③ DIX VLSL 201 xx Supraliner
- ④ DIX WD 300 FD Wire feeder
- ⑤ DIX HW 300 PULS Hot wire power source and cooling module DIX CM 592 HW
- ⑥ DIX TR 150/300 Trolley
- ⑦ DIX FDE 150 Control unit



QUALITY AND PERFORMANCE - WITHOUT COMPROMISE

THE TOP CLASS SYSTEM FOR SOPHISTICATED PROCESSES

Complicated component geometries, weld seams in the visible area and special stability requirements demand the highest welding quality. This is where DINSE systems prove their worth.

Whether cold or hot wire: The use of filler wire provides decisive technological advantages in laser welding and soldering.

All system components of our modular wire feeding system are optimized for laser welding and soldering, perfectly matched to each other and have standardized interfaces as well as various connection options.

Torch head, torch set, drive unit, wire feeder, connection set, control unit, power source and cooling module are at the cutting edge of industrial technology, ensuring smooth production processes, perfect communication, fast signal conversion and detailed monitoring of the entire process.

CONTROL UNIT DIX FDE-150

CONVENIENT OPERATION AND CONTROL

The innovative control system with convenient touchscreen operation via the 7" color display regulates the complete hardware and software of the DINSE system. The extended process monitoring documents all relevant data.

OUR CONTROL DIX FDE-150 IS THE COMMUNICATION INTERFACE BETWEEN THE ROBOT CONTROL AND THE DINSE WIRE FEEDING SYSTEM.



THE RIGHT CONNECTION FOR EVERY SIGNAL:

Profinet, EtherCAT, EtherNet/IP, Profibus, analogue control

TECHNICAL DATA

| | |
|------------------------|---------------------------------------------------------------------------------|
| V Wire | 0,3-24 m/min |
| Mains voltage | 100/110/115/230 V _{AC} 400/480/500 V _{AC} 50 Hz - 60 Hz |
| Power consumption | 160 VA |
| Power consumption | T 6,3 A |
| Protection class | IP 54 |
| Dimensions (L / W / H) | 690 / 404 (201) / 440 mm |
| Weight | ca. 25 kg |

FASTER THAN THE REST PRECISE AS NEVER BEFORE!



4-5 TIMES FASTER RESPONSE TIME

- ✓ Increased productivity
- ✓ By far the fastest Industrial Ethernet technology



HIGH REPRODUCIBILITY OF SIGNAL RUNNING TIMES

- ✓ Reduction of rework



V-PROP CAPABLE

The wire conveyor speed follows the robot speed in real time

- ✓ Avoidance of welding defects and production scrap



MULTI-CORE PROCESSOR

Powerful industrial PC instead of a conventional PLC control

- ✓ Fast signal processing



INTERFACE FOR ALL FIELDBUS SYSTEMS

(optional analog control)

- ✓ Guaranteed compatible with your robot



LATEST OPERATING SYSTEM (WINDOWS 10 IOT)

- ✓ Innovative and latest technology



REMOTE MAINTENANCE

Remote access and maintenance possible from anywhere in the world

- ✓ Fast response times and avoidance of production downtime
- ✓ Access to the control possible at any time, without presence on site



MODULAR CONSTRUCTION

Standard components expandable

- ✓ Future-proof and always up-to-date
- ✓ Savings potential - despite the latest technology



INTEGRATED DINSE USV TECHNOLOGY

always keeps and backs up your parameters/data via HDD backup

- ✓ No data loss, even in the event of a hard shutdown or power failure
- ✓ Process reliability



MONITORING

- ✓ Management, diagnostics, error evaluation and quality assurance in one tool



HOT WIRE CAPABLE

- ✓ Compatible with your hot wire process

TOUCHSCREEN

THE MICROPROCESSOR-BASED CONTROL SYSTEM CAN BE OPERATED INTUITIVELY AND CONVENIENTLY VIA THE 7" COLOR DISPLAY WITH TOUCHSCREEN.

Optimized functions and the clear display of all relevant data on the system status display allow easy programming and editing of all production parameters.

CONVINCING FEATURES

- ▶ Setting and editing of up to 256 jobs
- ▶ Comprehensible documentation of the processes
- ▶ Error display in plain text, error memory with analysis, remote maintenance function
- ▶ Creation and management of freely definable maintenance intervals
- ▶ Multiple controllers can be assigned station information via IP address assignment
- ▶ User interface in six different languages: German, English, French, Polish, Chinese and Japanese
- ▶ Four different user levels: user, service, expert, administrator

STATUS

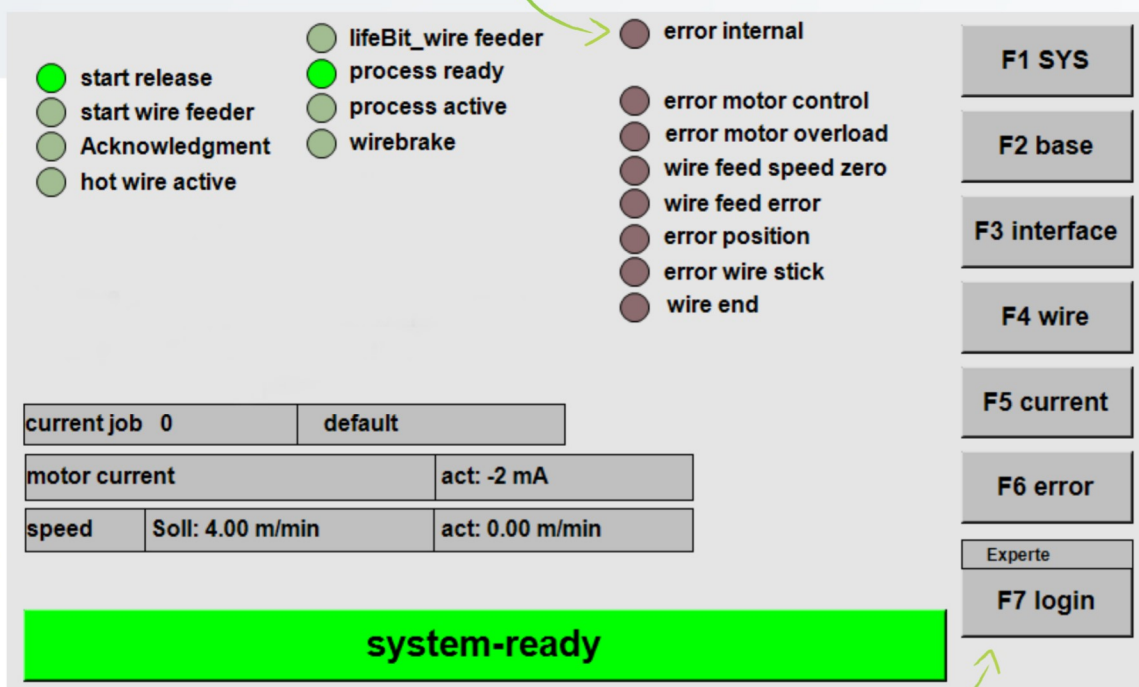
of the wire feeder, front drive, hot wire power source and cooling module

ERRORS OR FAULTS

INPUT SIGNALS

CURRENT TARGET AND ACTUAL VALUES

for wire feed speed and hot wire current height (optional)



- F1 System settings
- F2 Basic settings (motor selection; jobs; scaling)
- F3 Interface settings

- F4 Wire parameters
- F5 Hot wire parameters
- F6 Error overview
- F7 User levels

MONITORING

BOTH THE HARDWARE AND THE SOFTWARE ARE CONTINUOUSLY MONITORED BY THE DINSE DIAGNOSTIC TOOL AND COMPARED WITH SPECIFIED TARGET VALUES.

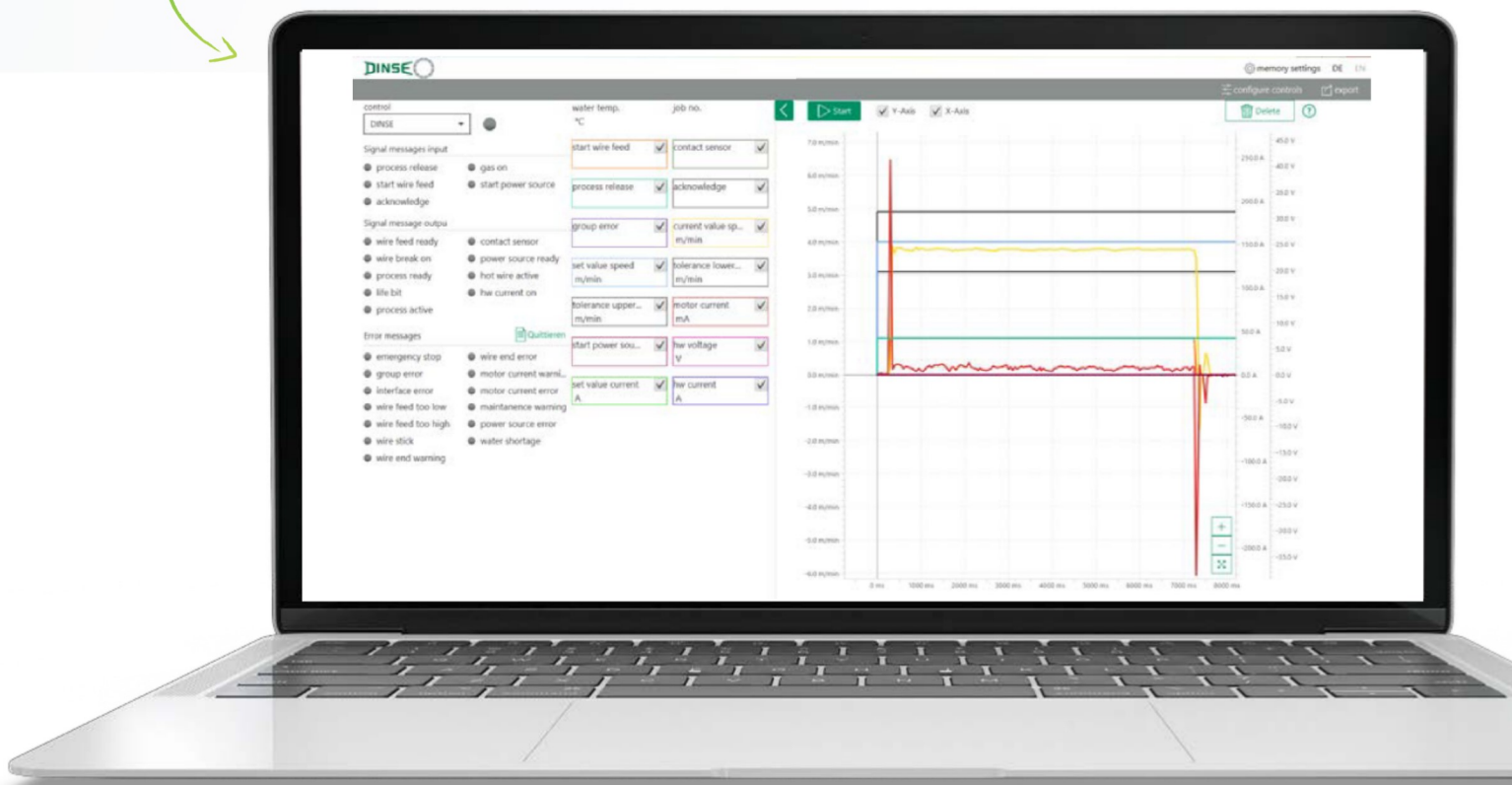
This allows irregularities to be detected at an early stage and potential sources of error to be eliminated in advance.

MANAGEMENT, DIAGNOSTICS, ERROR EVALUATION AND QUALITY ASSURANCE

combined in one tool

PROCESS CONTROL IN PERFECTION

- ▶ all parameters freely programmable (e.g. wire speed setpoint m/min, wire speed actual value m/min, process release or hot wire voltage)
- ▶ monitoring of wire run, gas or water by connectable sensors
- ▶ extended process documentation of performance and consumption data for component monitoring
- ▶ absolute transparency through continuous motor monitoring, warning messages and error logs that can be read out via SD card
- ▶ external PC monitoring with freely selectable parameters can be used in online display



FRONT DRIVE UNIT DIX FD 10x LS(-WB)

MAXIMUM PRECISION: FRONT DRIVE, WIRE FEED SENSOR AND WIRE BRAKE ARE COMBINED IN ONE DYNAMIC UNIT.

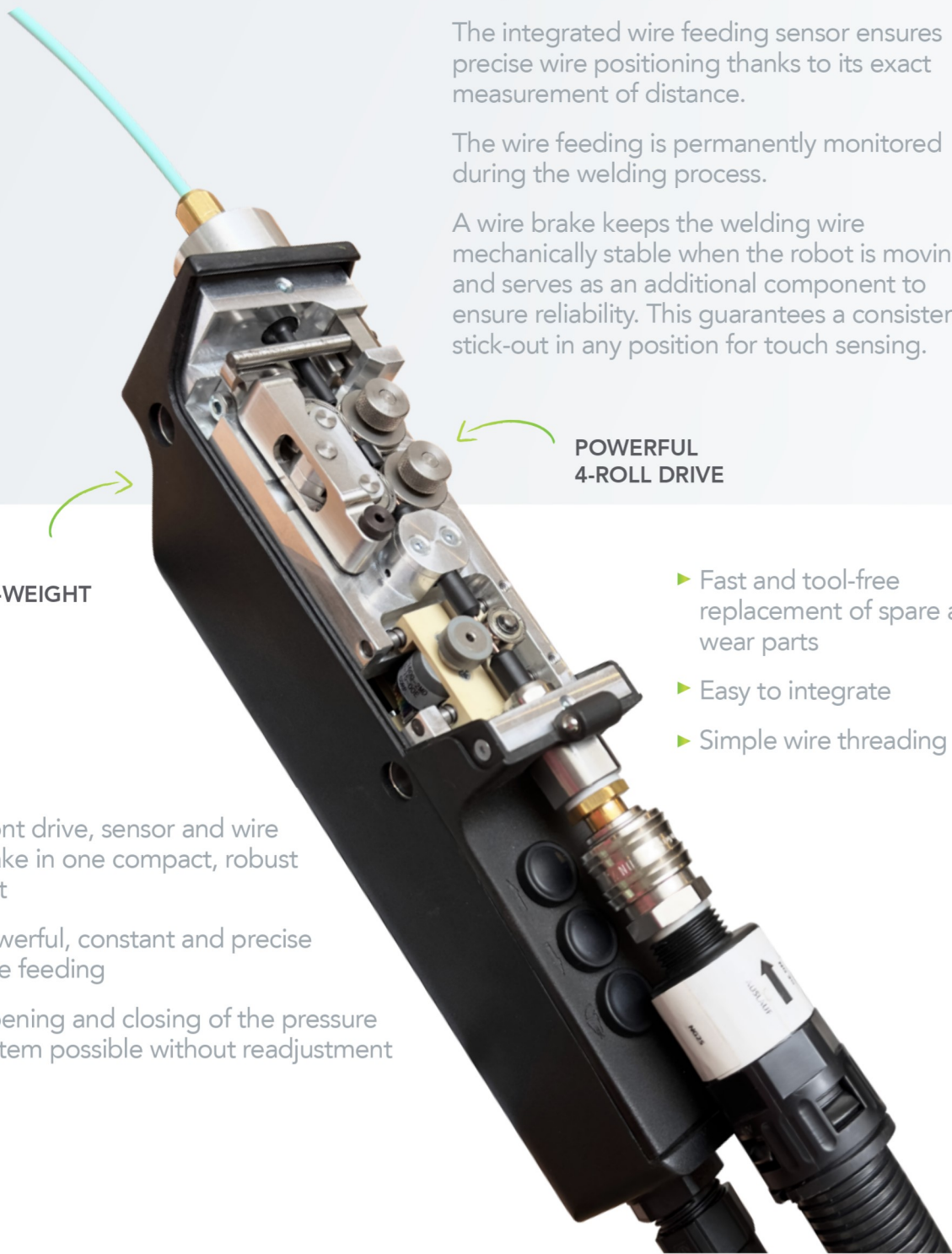
An innovative four-roll drive ensures even more powerful wire feeding.

The compact dimensions ensure a wide range of applications thanks to good component accessibility.

The integrated wire feeding sensor ensures precise wire positioning thanks to its exact measurement of distance.

The wire feeding is permanently monitored during the welding process.

A wire brake keeps the welding wire mechanically stable when the robot is moving and serves as an additional component to ensure reliability. This guarantees a consistent stick-out in any position for touch sensing.



**POWERFUL
4-ROLL DRIVE**

LOW-WEIGHT
1,8 kg

- ▶ Fast and tool-free replacement of spare and wear parts
- ▶ Easy to integrate
- ▶ Simple wire threading

- ▶ Front drive, sensor and wire brake in one compact, robust unit
- ▶ Powerful, constant and precise wire feeding
- ▶ Opening and closing of the pressure system possible without readjustment

SUPRALINER DIX VLSL 201

THE PERFECT COMPLEMENT: LOW-FRICTION CONVEYING OF WELDING WIRES WITH THE SUPRALINER

Instead of wire guide cores, the filler material slides over rollers, each of which is offset by 90°. This opens up a new dimension of uniform wire feeding - with significantly reduced amount of maintenance required.



WIRE FEEDING UP TO 55 METER

Individually customizable and
shortenable

- ▶ Ideal for highly dynamic movements
- ▶ No abrasion due to extremely low forces on the welding wire
- ▶ Low maintenance requirements due to low sliding friction
- ▶ Low weight
- ▶ Applicable for all types of wire, wire diameter: \varnothing 0,8-1,6 mm
- ▶ Bending radius min.: 250 mm
- ▶ Quick release fastener ensures simple and quick assembly and exchange

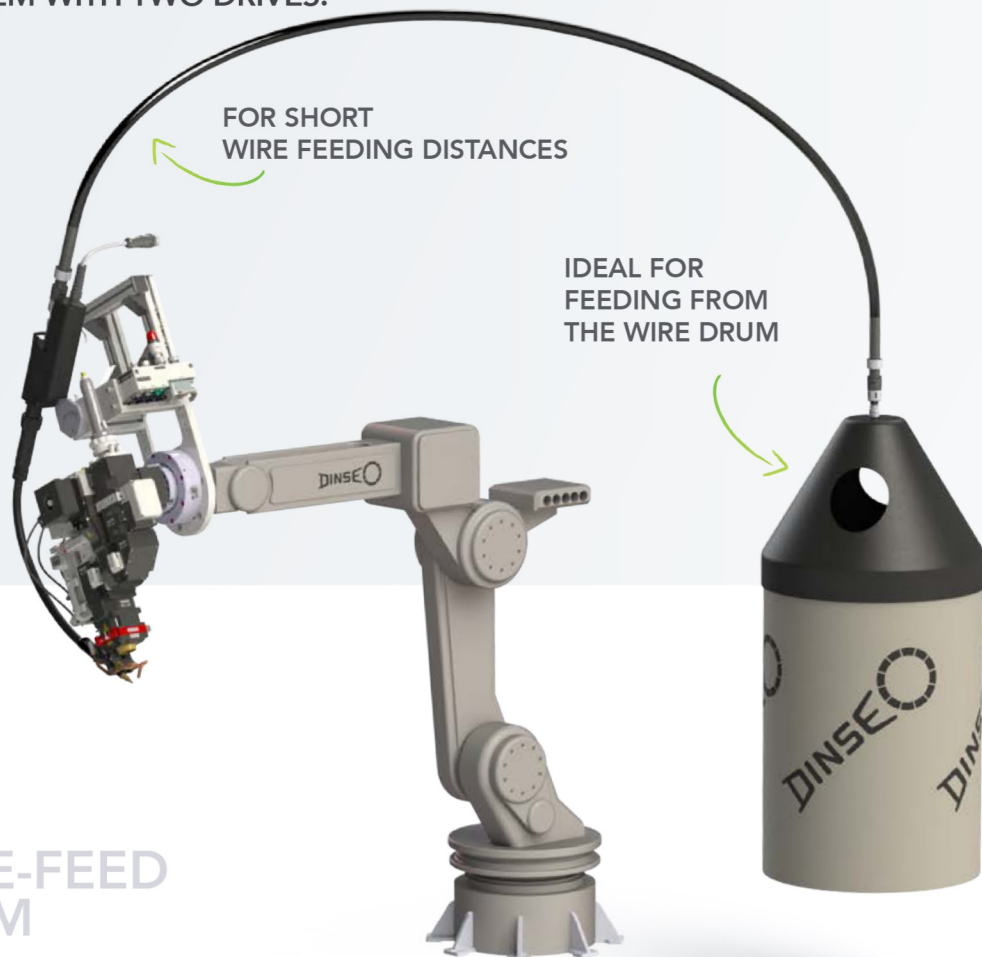
WIRE FEEDING CONCEPTS

DIFFERENT VARIANTS - ONE CLAIM:
PRECISE WIRE FEEDING.

THE OPTIMUM SOLUTION IS OFFERED BY
THE DINSE SINGLE-FEED WIRE FEEDING
CONCEPT WITH ONE DRIVE OR THE PUSH-
PUSH SYSTEM WITH TWO DRIVES.

THE PERFECT INTERACTION

DINSE wire feeding systems are flexible
adaptable to spool holders, large spools
and wire drums in various sizes.
The DINSE wire feed system is cold and
hot wire capable.



SINGLE-FEED SYSTEM

In the DINSE SINGLE-FEED system, the wire is fed directly from the barrel to the workpiece by the powerful 4-roll drive of the FD 10x LS drive unit.

This system design is suitable for wire feeding of CuSi, steel and stainless steel wires (Ø 0,4 – 1,6 mm). Thanks to the few components required

in the process, this wire feeding concept is cost-effective and easy to maintain - with highly precise wire feeding.