Ergonomic, robust and perfect –

MIG/MAG pulse welding of the highest quality

PHOENIX 301 PHOENIX 301;351;421 PHOENIX 301;351;421;521

MIG/MAG IMPULS **MIG/MAG pulse welding**

MIG/MAG forceArc **EWM forceArc welding**

MIG/MAG STANDARD **MIG/MAG standard welding**

STICK DC **MMA welding**

TIG DC **TIG welding**
Liftarc

MAG HIGH-SPEED **High performance MAG welding HIGH-SPEED®**
(only PHOENIX 521 and DRIVE 4 in HIGHSPEED version)

HIGHLIGHTS

- Maximum efficiency for all requirements with reproducible welding results and low-spatter welding thanks to the fully digital inverter welding technology
- EWM-*forceArc* – the high-pressure arc – up to 30% faster welding with thick panels
- Self-explanatory, intuitive operating concepts for everyone – your choice of various control concepts – optimised for the target group and the application
- Optimum preset JOBs (welding tasks) and synergic operation – so that you can concentrate fully on your welding task
- Maximum mobility: Easily movable thanks to large wheels, fits through standard doors, easy loading and unloading thanks to the even wheel gauge, can be lifted by crane and moved on a fork lift
- Multifunctional and ergonomic grip system: Effort-less mobility, practical holder for tube packages, impact protection
- Intelligent casing design with optimised air guidance for longer duty cycle and ventilation control for less contamination in the machine
- PROGRESS, EXPERT: Ideal for robot, industrial bus and mechanised applications and documentation via optional interfaces
- Powerful cooling system for the torch, with centrifugal pump, cooler with large surface area and an extra-large tank (12 litres)
- PHOENIX 521 PULS EXPERT *forceArc HIGHSPEED:* Efficient MAG welding with significantly higher fusion performance and welding speed as well as excellent weld seam quality thanks to low-spatter welding with deep and wide fusion penetration

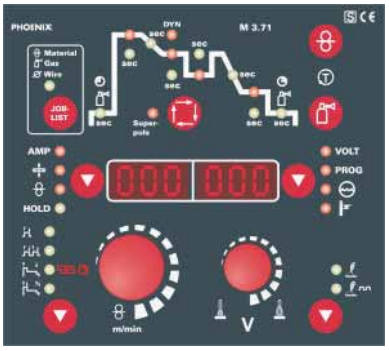
AREA OF APPLICATIONS

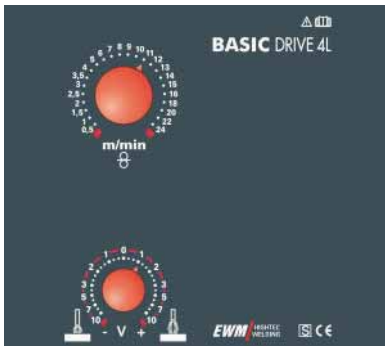
- Unalloyed, low-alloy and high-alloy steels, aluminium alloys, copper and its alloys, special alloys
- Solid and fluxed-core wire electrodes (0.8-2.4 mm), coated electrodes: Rutile, basic
- Production and repair work: Chemical and food industries, machine and plant construction, vehicle, automobile, railway vehicle and ship construction, container, closed container and equipment construction, steel and metal construction work, offshore, etc.

SELF-EXPLANATORY, INTUITIVE SYNERGIC OPERATING CONCEPTS FOR EVERY USER

Welding machine **Wire feed unit**

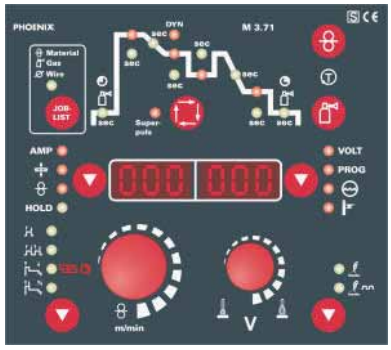
BASIC





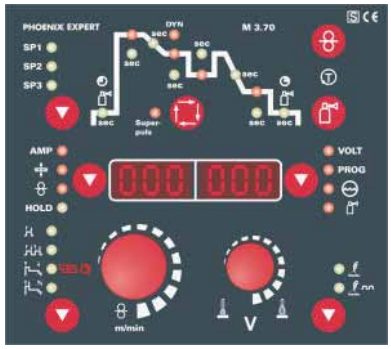
115 optimum pre-programmed JOBs (welding tasks) for selection on the welding machine – only the most important welding parameters immediately accessible on the wire feed.

PROGRESS

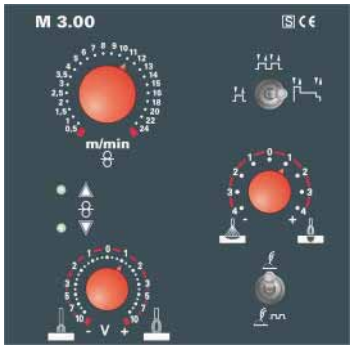


115 optimum pre-programmed JOBs (welding tasks) for selection on the wire feed/ welding machine – everything immediately accessible on the wire feed,
16 welding programs

EXPERT*



ALTERNATIVELY



Maximum ease-of-use – 256 optimum pre-programmed JOBs (welding tasks), including 128 for customised programming with immediate access – all welding parameters immediately accessible both from the welding machine and from the wire feed, 16 welding programs

* Version decompact only

TECHNICAL DATA

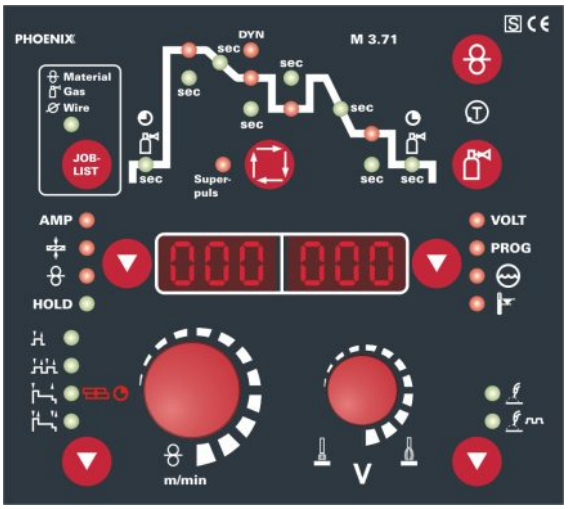
CE | IP23 | S | IEC/EN 60974 | EN 50199

Welding machine, gas / water cooled	PHOENIX 301 PULS		PHOENIX 301 PULS		PHOENIX 351 PULS		PHOENIX 421 PULS		PHOENIX 521 PULS	
Setting range Welding current	5 A-300 A		5 A-300 A		5 A-350 A		5 A-420 A		5 A-520 A	
Duty cycle (dc) at 40° C ambient temperature	20 °C	40 °C	20 °C	40 °C	20 °C	40 °C	20 °C	40 °C	20 °C	40 °C
60 % dc	-	300 A	-	300 A	-	350 A	-	420 A	-	520 A
80 % dc	300 A	-	300 A	-	-	-	420 A	-	520 A	-
100 % dc	270 A	250 A	270 A	250 A	350 A	300 A	380 A	360 A	450 A	420 A
Mains Voltage (tolerances)	3 x 400 V (-25 % – +20 %)		3 x 400 V (-25 % – +20 %)		3 x 400 V (-25 % – +20 %)		3 x 400 V (-25 % – +20 %)		3 x 400 V (-25 % – +20 %)	
Mains Frequency	50/60 Hz		50/60 Hz		50/60 Hz		50/60 Hz		50/60 Hz	
Mains fuse (safety fuse, slow-blow)	3 x 16 A		3 x 16 A		3 x 25 A		3 x 35 A		3 x 35 A	
Max. connected power	14,3 kVA		14,3 kVA		17,8 kVA		23,1 kVA		31,6 kVA	
Recommended generator rating	19,3 kVA		19,3 kVA		24,0 kVA		31,2 kVA		42,8 kVA	
Max. flow rate / Max. output pressure	- / -		5 l/min / 3,5 bar							
Tank apacity	-		12 l							
Wire feed speed	0,5 m/min - 24 m/min									
Design	compact		compact	decompact	compact	decompact	compact	decompact	decompact	
Dimensions welding machine L x W x H [mm]	930 x 455 x 730		1100 x 455 x 950		1100 x 455 x 950		1100 x 455 x 950		1100 x 455 x 950	
Dimensions wire feed unit L x W x H [mm]	-		-	690 x 300 x 410	-	690 x 300 x 410	-	690 x 300 x 410	690 x 300 x 410	
Weight welding machine approx. gas /water cooled	69,5kg / -		- / 108kg	84kg / 100kg	96kg / 112kg	92kg / 108kg	104kg / 120kg	100kg / 116kg	- / 125kg	
Weight wire feed unit approx.				18kg		18kg		18kg	18kg	

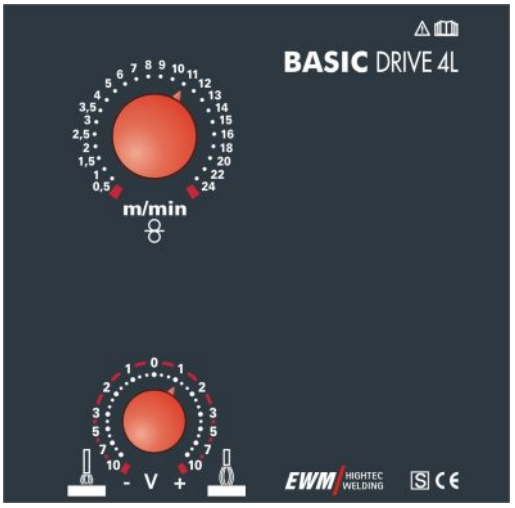
Control

PHOENIX BASIC

DC



Welding machine



Wire feed

Checklist of Machine Functions

Functions
Selection on welding machine

General
- MIG/MAG standard, pulse and forceArc welding, TIG (Liftarc) and MMA welding
- Non-latched, latched, special non-latched, special latched, MIG spot
- Superpulse
- Automatic cut-out
- Synergic one-dial operation
- Preselection of welding task using material type, seam type, electrode diameter via a job list
- 115 JOBs
- 3 special JOBs, can be programmed for customised applications
- 16 programs per JOB
- Hold function
- Currentless gas test and wire inching

Displays
- 2 displays for welding parameters before, during and after welding: Welding current and voltage, wire speed, panel thickness, program number, job number, etc.
- LEDs: Faults, welding parameters

Welding parameters (infinite adjustable)
Set on welding machine

MIG
- Wire speed
- Arc length correction
- Choke effect/dynamics
- Wire burn-back
- Wire creep
- Gas pre-flow and post-flow times
- Slope times, main, reduced main and end program
- Ignition, main, reduced main and end programs per job
- Superpulse: Pulse and pause program

TIG
- Welding current
- Gas pre-flow and post-flow times
- Up and down slope times
- Ignition, welding, secondary and end currents

MMA
- Welding current
- Hotstart time
- Hotstart current
- Arcforcing

Programmable
- Various torch and function modes

Welding parameter (infinite adjustable)
Set on wire feed

MIG
- Wire speed
- Arc length correction

Accessories/Options

Torch
- MIG standard
- TIG combo

Remote control
- Manual remote control: Current

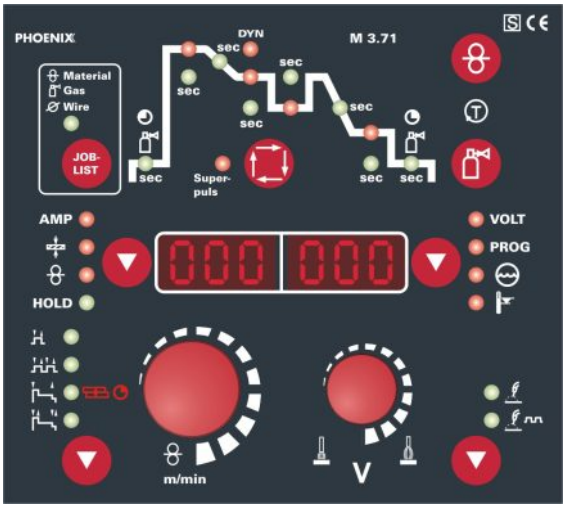
Options
- Dinse central connector
- Phoenix DRIVE: Wheel set
- Star handle for wire feed
- Reinforced pump
- Dirt filter
- Holders for accessories

Software
- PC300 welding parameter software
- Welding data documentation for Q-DOC9000 software
- WELDQAS welding data monitoring and documentation system

Control

PHOENIX PROGRESS

DC



Wire feed

Checklist of Machine Functions

Funktions
Select on wire feed

General
- MIG/MAG standard, pulse and forceArc welding, TIG (Liftarc) and MMA welding
- Non-latched, latched, special non-latched, special latched, MIG spot
- Superpulse
- Automatic cut-out
- Synergic one-dial operation
- Preselection of welding task using material type, seam type, electrode diameter via job list
- 115 JOBs
- 3 special JOBs, can be programmed for customised applications
- 16 programs per JOB
- Hold function
- Currentless gas test and wire inching
- Connection capability for intermediate drive

Display
- 2 displays for welding parameters before, during and after welding: Welding current and voltage, wire speed, panel thickness, program number, job number, etc.
- LEDs: Faults, welding parameters

Welding parameters (infinite adjustable)
Set on wire feed

MIG
- Wire speed
- Arc length correction
- Choke effect/dynamics
- Wire burn-back
- Wire creep
- Gas pre-flow and post-flow times
- Slope times, main, reduced main and end program
- Ignition, main, reduced main and end programs per job
- Superpulse: Pulse and pause program

TIG
- Welding current
- Gas pre-flow and post-flow times
- Up and down slope times
- Ignition, welding, secondary and end currents

MMA
- Welding current
- Hotstart time
- Hotstart current
- Arcforcing

Programmable
- Various torch and function modes

Accessories/Options

Torch
- Up/ Down
- Program/job selection
- RETOX: Up/down with display
- Push/Pull
- TIG combo

Remote control
- Manual remote control: Current
- Program remote control

Options
- Key switch
- Dinse central connector
- Phoenix DRIVE: Wheel set
- Star handle for wire feed
- Reinforced pump
- Dirt filter
- Holders for accessories

Interfaces
- Analogue interface for mechanised welding
- Digital interfaces: PC, robot, industrial bus, wire feed, documentation

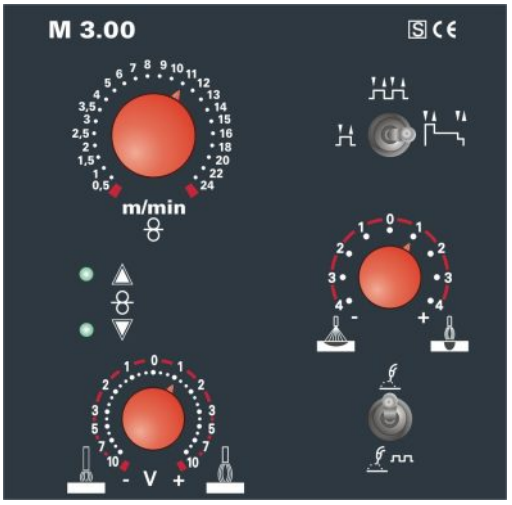
Software
- PC300 welding parameter software
- Welding data documentation for Q-DOC9000 software
- WELDQAS welding data monitoring and documentation system

Control

PHOENIX EXPERT

DC

Welding machine



Wire feed

Checklist of Machine Functions

Functions

General

Select on wire feed

- MIG/MAG pulse/standard
- Non-latched/latched, special latched
- Synergic one-dial operation
- Automatic cut-out

Select on welding machine

- MIG/MAG and forceArc welding, TIG (Liftarc) and MMA welding
- Preselection of welding task using material type, seam type, electrode diameter on the welding machine
- 256 JOBs: 128 preset and 128 freely programmable for customised applications
- 3 special JOBs
- 16 programs per JOB
- Superpulse
- Hold function
- Currentless gas test and wire inching
- Connection capability for intermediate drive

Displays

- M310, M370: 2 displays for welding parameters before, during and after welding: Welding current and voltage, wire speed, panel thickness, program number, job number, operating hours, motor current, etc.
- M310: LEDs: Faults, current type

Welding parameters (infinite adjustable)

Set on wire feed

MIG

- Wire speed
- Arc length correction
- Choke effect/dynamics

TIG / MMA

- Welding current

Set on welding machine

MIG

- Wire burn-back
- Wire creep
- Gas pre-flow and post-flow times
- Slope times, main, reduced main and end program
- Ignition, main, reduced main and end programs per job
- Superpulse: Pulse and break times

TIG

- Gas pre-flow and post-flow times
- Up and down slope times
- Ignition, welding, secondary and end currents

MMA

- Hotstart time
- Hotstart current
- Arcforcing

Programmable

- Various torch and function modes
- Expert mode for creating customised characteristics

Accessories/Options

Torch

- Up/ Down
- Program/job selection
- RETOX: Up/down with display
- Push/Pull
- TIG combo

Remote control

- Manual remote control: Current
- Program remote control

Options

- Key switch
- Dinse central connector
- Phoenix DRIVE: Wheel set
- Star handle for wire feed
- Reinforced pump
- Dirt filter
- Holders for accessories

Interfaces

- Analogue interface for mechanised welding
- Digital interfaces: PC, robot, industrial bus, wire feed, documentation

Software

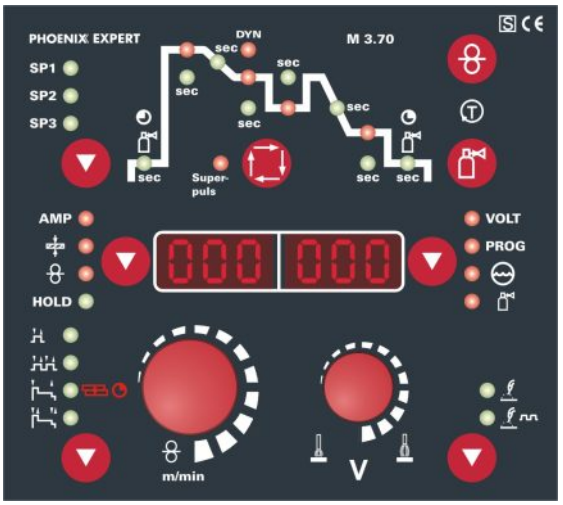
- PC300 welding parameter software
- Welding data documentation Software Q-DOC 9000
- WELDQAS welding data monitoring and documentation system

Control

PHOENIX EXPERT

DC

Welding machine



Wire feed

Checklist of Machine Functions

Functions
Select on wire feed

General
- MIG/MAG standard, pulse and forceArc welding, TIG (Liftarc) and MMA welding
- Non-latched, latched, special non-latched, special latched, MIG spot
- Superpulse
- Automatic cut-out
- Synergic one-dial operation
- Preselection of welding task using material type, seam type, electrode diameter on the welding machine
- 256 JOBs: 128 preset and 128 freely programmable for customised applications
- 3 special JOBs
- 16 programs per JOB
- Hold function
- Currentless gas test and wire inching
- Connection capability for intermediate drive
- Operating hour counter

Displays
- M310, M370: 2 displays for welding parameters before, during and after welding: Welding current and voltage, wire speed, panel thickness, program number, job number, operating hours, motor current, etc.
- M310: LEDs: Faults, current type

Welding parameters (infinite adjustable)
Set on wire feed

MIG
- Wire speed
- Arc length correction
- Choke effect/dynamics
- Wire burn-back
- Wire creep
- Gas pre-flow and post-flow times
- Slope times, main, reduced main and end program
- Ignition, main, reduced main and end programs per job
- Superpulse: Pulse and pause program

TIG
- Welding current
- Gas pre-flow and post-flow times
- Up and down slope times
- Ignition, welding, secondary and end currents

MMA
- Welding current
- Hotstart time
- Hotstart current
- Arcforcing

Programmable
- Various torch and function modes
- Expert Mode for creating customised characteristics

Zubehör/Optionen

Torch
- Up/ Down
- Program/job selection
- RETOX: Up/down with display
- Push/Pull
- TIG combo

Remote control
- Manual remote control: Current
- Program remote control

Options
- Key switch
- Dinse central connector
- Phoenix DRIVE: Wheel set
- Star handle for wire feed
- Reinforced pump
- Dirt filter
- Holders for accessories

Interfaces
- Analogue interface for mechanised welding
- Digital interfaces: PC, robot, industrial bus, wire feed, documentation

Software
- PC300 welding parameter software
- Welding data documentation-Software Q-DOC 9000
- Welding data monitoring and documentation system WELDQAS software