MERKLE OptiMIG.
The MIG/MAG Industrial series!
MIG/MAG series OptiMIG

The series OptiMIG 350/450/550 consists of step controlled MIG/MAG welding units from 350 to 560 A welding current. The features are:

- Simple, self explanatory control panel with extra large function knobs.
- Precise setting of the welding current due to max. 42 steps.
- Synergic wire feed automatic as a standard: only turn the step selector to the required position and the wire feed speed will be adapted automatically.
- Setting and display of the wire trim by means of the TEDAC® torch.
- Storage of changed values: in each step the individual value trimmed by the TEDAC® torch is stored.
- Ignition and continuous setting of the wire burn back.
- Selector: 2-stroke/4-stroke/stitch/spot welding.
- Safety cut-off in 4-stroke operation.
- High speed wire insertion automatic.
- 4-roller drive wire feeder as a standard.
- Automatic switching of the fan.
- 2-stage choke mounted for reduced spatters.
- Digital read-out of the welding current, welding voltage, wire feed speed and material thickness, with pre-display and HOLD function.
- Integrated water cooling system with efficient water pump.
- Lowered galvanized gas bottle holder (10 l, 20 l or 50 l cylinders) assures a safe positioning of the cylinders.
- Approved for operation in confined areas, S-symbol.
- Easy handling of the unit due to big and robust swivel and carrier wheels.
- Connection for push pull torch or remote control in version DW (option).

Merkle OptiMIG
The OptiMIG product line.

Synergic wire feed as standard!

Technical data:

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<th>OptiMIG 350 KW</th>
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<th>OptiMIG 550 DW</th>
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<tr>
<td><strong>Primary:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply voltage</td>
<td>3 x 400 V</td>
<td>3 x 400 V</td>
<td>3 x 400 V</td>
</tr>
<tr>
<td>Frequency</td>
<td>50 Hz (60 Hz)</td>
<td>50 Hz (60 Hz)</td>
<td>50 Hz (60 Hz)</td>
</tr>
<tr>
<td>Continuous power</td>
<td>13.1 kVA</td>
<td>14.5 kVA</td>
<td>22.8 kVA</td>
</tr>
<tr>
<td>Continuous current</td>
<td>19 A</td>
<td>21 A</td>
<td>33 A</td>
</tr>
<tr>
<td>Max. current</td>
<td>22 A</td>
<td>36 A</td>
<td>52 A</td>
</tr>
<tr>
<td><strong>Secondary:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open circuit voltage</td>
<td>16 - 40 V</td>
<td>17 - 52 V</td>
<td>18 - 62 V</td>
</tr>
<tr>
<td>Welding voltage</td>
<td>15 - 32 V</td>
<td>15 - 36.5 V</td>
<td>15 - 42 V</td>
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<tr>
<td>Welding current</td>
<td>25 - 350 A</td>
<td>25 - 450 A</td>
<td>25 - 540 A</td>
</tr>
<tr>
<td>Duty cycle 60 % (10 min.)</td>
<td>350 A (60 °C)</td>
<td>450 A (60 °C)</td>
<td>540 A (60 °C)</td>
</tr>
<tr>
<td>Duty cycle 60 % (10 min.)</td>
<td>300 A (60 °C)</td>
<td>420 A (60 °C)</td>
<td>450 A (60 °C)</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 23</td>
<td>IP 23</td>
<td>IP 23</td>
</tr>
<tr>
<td>Isolation class</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Cooling</td>
<td>AF</td>
<td>AF</td>
<td>AF</td>
</tr>
<tr>
<td>Voltage setting</td>
<td>28 steps</td>
<td>42 steps</td>
<td>42 steps</td>
</tr>
<tr>
<td>Wire feed</td>
<td>automatic control</td>
<td>automatic control</td>
<td>automatic control</td>
</tr>
<tr>
<td>Operation mode</td>
<td>2-stroke/4-stroke/stitch/spot welding</td>
<td>2-stroke/4-stroke/stitch/spot welding</td>
<td>2-stroke/4-stroke/stitch/spot welding</td>
</tr>
<tr>
<td>Welding/intermission time</td>
<td>stepless control</td>
<td>stepless control</td>
<td>stepless control</td>
</tr>
<tr>
<td>Wire burn back</td>
<td>stepless control</td>
<td>stepless control</td>
<td>stepless control</td>
</tr>
<tr>
<td>Wire soft start</td>
<td>dynamic soft start automatic</td>
<td>dynamic soft start automatic</td>
<td>dynamic soft start automatic</td>
</tr>
<tr>
<td>Choke</td>
<td>2 stage 60 % and 100 %</td>
<td>2 stage 60 % and 100 %</td>
<td>2 stage 60 % and 100 %</td>
</tr>
<tr>
<td>Torch cooling</td>
<td>water cooled</td>
<td>water cooled</td>
<td>water cooled</td>
</tr>
<tr>
<td>Cooling system</td>
<td>integrated water cooler with efficient water pump</td>
<td>integrated water cooler with efficient water pump</td>
<td>integrated water cooler with efficient water pump</td>
</tr>
<tr>
<td>Torch connector</td>
<td>Euro connector</td>
<td>Euro connector</td>
<td>Euro connector</td>
</tr>
<tr>
<td>Wire feed system</td>
<td>4-roller drive DV-26 (0.5-25 m/min.)</td>
<td>4-roller drive DV-26 (0.5-25 m/min.)</td>
<td>4-roller high performance wire feeder DV-31 (0.5-30 m/min.) with wire straightener</td>
</tr>
<tr>
<td>Fan control</td>
<td>automatic</td>
<td>automatic</td>
<td>automatic</td>
</tr>
<tr>
<td>Display</td>
<td>digital for current/voltage/wire feed speed with pre-display and hold function</td>
<td>digital for current/voltage/wire feed speed with pre-display and hold function</td>
<td>digital for current/voltage/wire feed speed with pre-display and hold function</td>
</tr>
<tr>
<td>Push Pull torch (option)</td>
<td>DW version: socket</td>
<td>DW version: socket</td>
<td>socket</td>
</tr>
<tr>
<td>Remote control (option)</td>
<td>DW version: wire feed speed</td>
<td>DW version: wire feed speed</td>
<td>wire feed speed</td>
</tr>
<tr>
<td>Norm</td>
<td>EN 60974-1 &quot;S&quot; / CE</td>
<td>EN 60974-1 &quot;S&quot; / CE</td>
<td>EN 60974-1 &quot;S&quot; / CE</td>
</tr>
<tr>
<td>Gas bottle holder</td>
<td>for 10 l, 20 l or 50 l cylinders</td>
<td>for 10 l, 20 l or 50 l cylinders</td>
<td>for 10 l, 20 l or 50 l cylinders</td>
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<tr>
<td>Weight</td>
<td>190 kg, DW: 210 kg</td>
<td>200 kg, DW: 220 kg</td>
<td>250 kg</td>
</tr>
<tr>
<td>Dimensions l x w x h</td>
<td>KW: 990 x 510 x 845</td>
<td>KW: 990 x 510 x 845</td>
<td>990 x 510 x 1135</td>
</tr>
</tbody>
</table>

Technical details are subject to change.
Wire Feed Unit.
Perfect wire feeding!

Detailed features

1. Precise 4-roller drive gear with 4 motorized wire feeder rollers. Wire feed speed 0.5-25 m/min (model DV-26) or high performance drive 0.5-30 m/min (model DV-31).

2. Big wire feeder rings allow a constant wire feed speed at a low pressure. 2 grooves respectively for 2 different wire diameters.

3. Change of the wire feeder rings without any tools.

4. Easy wire insertion due to superb accessibility and snap lock mechanism.

5. Dust-tight drive motor guarantees a constant wire feed speed.


7. Reproducable pressure adjustment of the rollers.

8. Wire straightening device for perfect and constant wire feeding (model DV-31).

9. Cut away side panels facilitate easy insertion of the wire.

10. Gas hoses, water hoses and all cables are protected from environmental damage due to a unique close case design.

11. Consumables and spare part identification chart attached.

12. 2 x 4 rubber feet ensure operation in both the vertical and the horizontal position.

a: Version with 4 wheels.

b: Integrated handle, 2 x 4 rubber feet mounted on two sides.

c: Selectors for material and wire diameters.

d: Easy mounting of the connection cable.
Simply to mount, versatile in action.

Wire feeder with rotary device

Standard horizontal mounting on the rotary device.

Vertical mounting of the wire feeder can be achieved in seconds.

The picture shows the 4-roller drive system model DV-31.

Universal Applications

A: Placed on the work piece.
B: Mounted to a special track with suspension device (option).
C: With 4 wheels mounted.
D: Mounted on our balancer (option) with a wide working area.
E: Easy to carry due to the integrated handle.
Exciting Technology.
Perfection in detail!

Interchangeable electronics:
The complete electronic module for the adjustment of the welding functions is mounted in a drawer configuration at the front panel. An easy and quick exchange of this item is possible at any time due to plug-in connections on the rear of the module.

Dust protection filter:
We recommend the use of the optional filter especially at dusty working areas. The filter frame is easy to fit to the machine. It takes only seconds to exchange the filter. The system is available for all units.

Compact Units:
The compact units (version KW) are well arranged and space saving. The 4-roller drive system and the wire spool are mounted behind the side panel. Thus an easy accessibility of the wire feeding system for a quick change of the wire spool is achieved.

Units with separate wire feeder:
All units version DW are built with a separate wire feeder. The connection cable is clampable and pluggable at the machine and at the wire feeder. A maximum length of up to 20 m is available. The wire feeder can be mounted on a rotary device, in vertical or horizontal position or on wheels.
MERKLE TEDAC® system.
Control directly on the torch!

The Merkle TEDAC® system offers continuous wire feed control where it counts – directly on the torch itself.

Using the slide switch mounted on the top of the TEDAC® torch handle, the arc trim can be manually adjusted during the welding process. Using a visually good, multicolour LED indicator any arc trim modifications will be shown directly on the TEDAC® torch. The colours will change in a stepless sequence from green (the lowest setting) through yellow (low setting) through orange (medium setting) up to red (maximum setting). The TEDAC® torches are perfect for any work in hard to reach positions due to the fact that the operator can control the welding process from the TEDAC® system and does not need to return to the power source to change settings. Thanks to the standard EURO connector no additional control wires are required.

Continuous arc trim and indicator

Precise arc trim is realized through the slide switch mounted on the top of the torch handle before, during and after the welding process. The present conditions are shown through the stepless multi-coloured LED display mounted on the top of the torch handle.

Ergonomically formed handle, torch trigger with a micro switch for guaranteed more than 10 Mio. operations.

Standard Euro-connector, no further control cables are necessary.

The multi-coloured LED shows the current arc trim condition selected.
Create your future successfully.

With Merkle. Your specialist for welding units, welding machines, torches and intelligent quality control systems. With own subsidiaries and Merkle dealers in Germany, Europe and many other countries throughout the world.

Welcome to Merkle.

- MIG/MAG Welding Units
- Synergic Pulse Welding Units
- TIG Welding Units
- MMA / Stick Electrode Welding Units
- Plasma Welding and Cutting Units
- Turntables and Roller Drive Units
- Welding and Cutting Torches
- Automation Components and Solutions
- Merkle Robotics