

–weishaupt–



SC **MONDOCOM** SRL

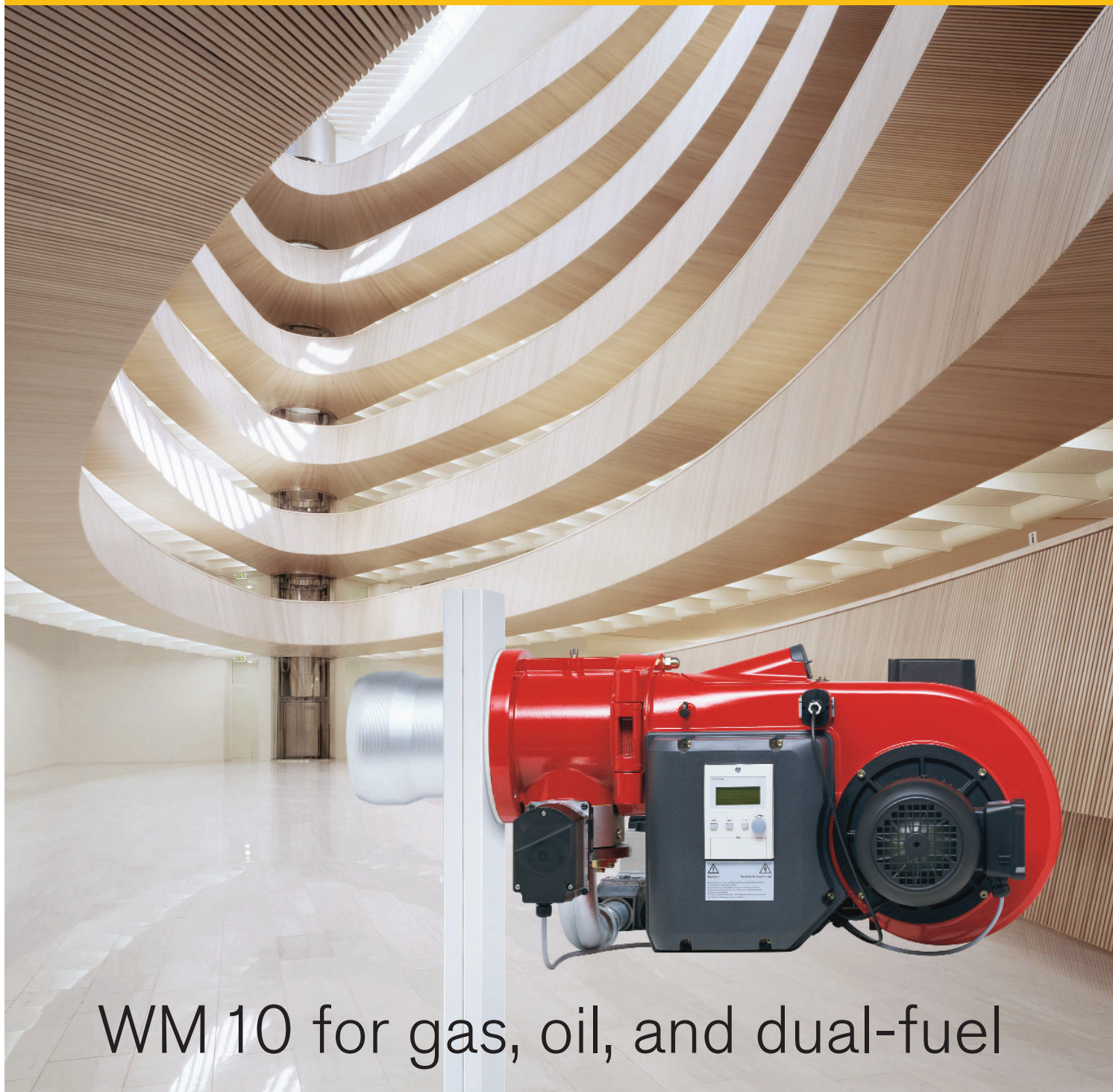
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# product

Information on gas, oil, and dual-fuel burners



## WM 10 for gas, oil, and dual-fuel

WM 10 monarch® burners (55–1250 kW) • versatile performance

# Overview of burner control

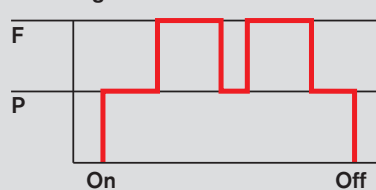
## Model designation

### Gas and oil-fired operation

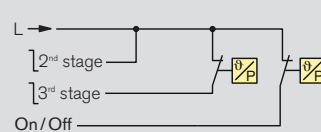
#### Two-stage control (Z)

- Two-term switching (e.g. temperature or pressure stat) causes actuators to drive the burner to partial load or full load in response to heat demand. Single-stage control with low-impact start can also be effected.

#### Two-stage



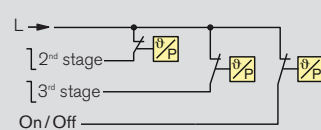
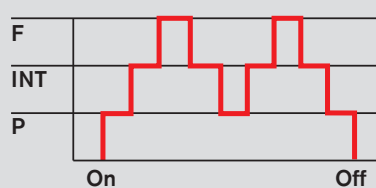
#### Control <sup>1)</sup>



#### Three-stage control (T)

- Two-term switching (e.g. temperature or pressure stat) for each load point causes actuators to drive the burner to partial load, intermediate load, or full load in response to heat demand. Two-stage control with low-impact start or changeover can also be effected.

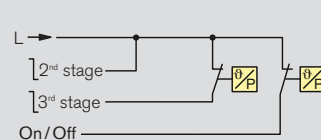
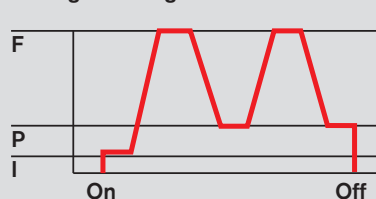
#### Three-stage



#### Sliding-two-stage control (ZM, R)

- Two-term switching (e.g. temperature or pressure stat) causes actuators to drive the burner to partial load or full load in response to heat demand. There is a gradual change between both load points. There are no sudden, large changes in fuel throughput.

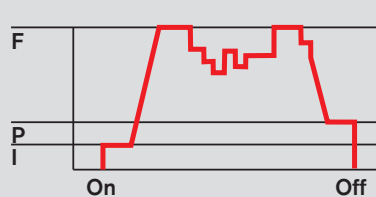
#### Sliding-two-stage



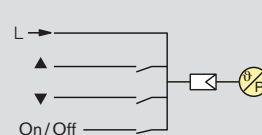
#### Modulating control (ZM, R)

- An electronic load controller causes actuators to make infinitely variable load adjustments in response to heat demand.
- Available modulation control options:
  - W-FM 100 with an optional integral load controller
  - W-FM 200 with its standard integral load controller
- Alternatively, a PID controller can be fitted into the burner controls cover or into a control panel.

#### Modulating



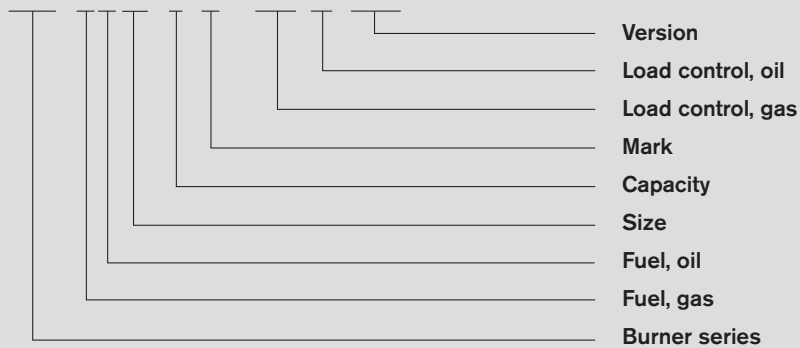
F = Full load (nominal load)  
 INT = Intermediate load  
 P = Partial load (minimum load)  
 I = Ignition load



<sup>1)</sup> Alternatively, staged control can also be effected by an electronic PID controller. In this case, appropriate temperature sensors or pressure transducers will be required.

## Model designation

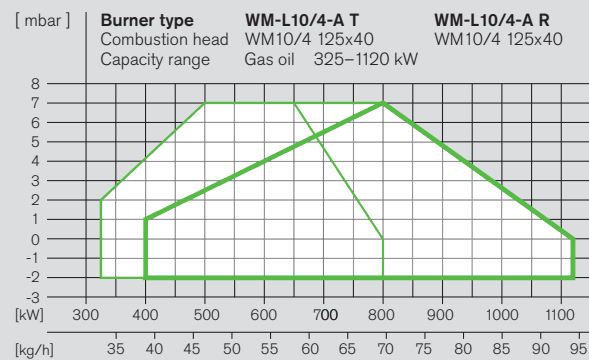
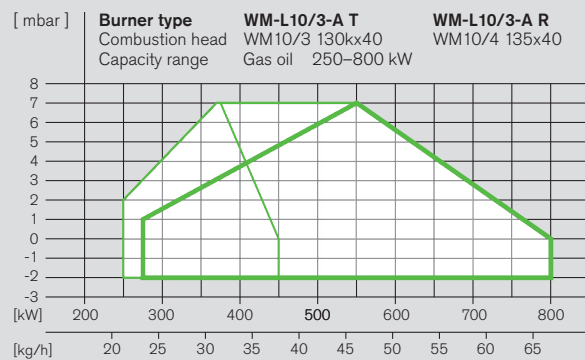
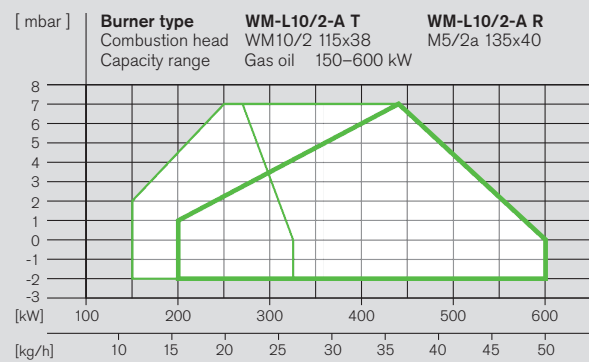
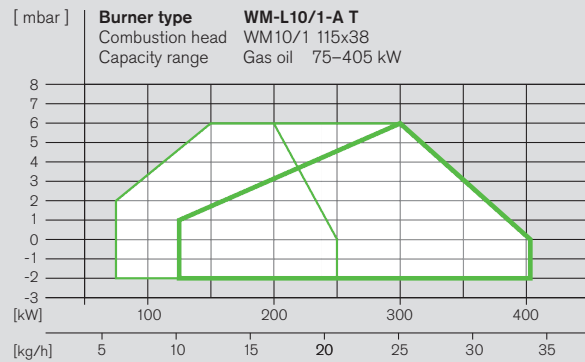
**WM-GL10/2-A    ZM-Z-3LN**



| Details        | Code                     | Meaning                                                                                                                   | Associated fuel                 |
|----------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Series         | WM                       | Weishaupt monarch® burner                                                                                                 |                                 |
| Fuel *         | G<br>L                   | Gas<br>Class D/Class A2 gas oil                                                                                           |                                 |
| Load control * | Z<br>T<br>R<br>ZM<br>ZMI | Two-stage<br>Three-stage<br>Sliding-two-stage / modulating<br>Sliding-two-stage / modulating<br>ZM with extended turndown | Oil<br>Oil<br>Oil<br>Gas<br>Gas |
| Version        | –<br>LN<br>3LN           | Standard<br>Low-NO <sub>x</sub><br>multiflam®                                                                             | Gas / oil<br>Gas<br>Gas / oil   |

\*) Dual-fuel burners use a combination of codes (GL, ZM-T, ZM-R).

# Burner selection WM-L 10, versions T and R



Gas oil: Capacity with combustion head

Closed ———  
Open ———

Please refer to page 15 for notes on the capacity graphs.

# Technical data

## Oil burners

| Oil burners                                                                                             |                | WM-L10/1-A T          | WM-L10/2-A T<br>WM-L10/2-A R | WM-L10/3-A T<br>WM-L10/3-A R | WM-L10/4-A T<br>WM-L10/4-A R |
|---------------------------------------------------------------------------------------------------------|----------------|-----------------------|------------------------------|------------------------------|------------------------------|
| Burner motor                                                                                            | Weishaupt type | WM-D 90/90-2/1K0      | WM-D 90/90-2/1K0             | WM-D 90/110-2/1K5            | WM-D 90/110-2/1K5            |
| Motor power output                                                                                      | kW             | 0.9                   | 0.9                          | 1.5                          | 1.5                          |
| Nominal current                                                                                         | A              | 2.2                   | 2.2                          | 3.2                          | 3.2                          |
| Burner without VSD:                                                                                     |                |                       |                              |                              |                              |
| Motor protection switch <sup>1)</sup><br>or motor prefusing <sup>1)</sup><br>(with overload protection) | type (e.g.)    | PKE12/XTU - 4         | PKE12/XTU - 4                | PKE12/XTU - 4                | PKE12/XTU - 4                |
|                                                                                                         | A minimum      | 10 A gG/T (by others) | 10 A gG/T (by others)        | 16 A gG/T (by others)        | 16 A gG/T (by others)        |
| Burner with VSD:                                                                                        |                |                       |                              |                              |                              |
| Motor protection switch <sup>2)</sup><br>or motor prefusing <sup>2)</sup>                               | type (e.g.)    | PKE12/XTU - 4         | PKE12/XTU - 4                | PKE12/XTU - 12               | PKE12/XTU - 12               |
|                                                                                                         | A minimum      | 10 A gG/T (by others) | 10 A gG/T (by others)        | 10 A gG/T (by others)        | 10 A gG/T (by others)        |
| Speed (50 Hz)                                                                                           | rpm            | 2900                  | 2900                         | 2900                         | 2900                         |
| Combustion manager                                                                                      | type           | W-FM50                | W-FM50                       | W-FM50                       | W-FM50                       |
| Flame monitoring                                                                                        | type           | QRB                   | QRB                          | QRB                          | QRB                          |
| Air damper / oil actuator                                                                               | type           | STE 50                | STE 50                       | STE 50                       | STE 50                       |
| Integral pump<br>max. flow rate                                                                         | type           | AL 75C                | AL 75C                       | AL 95C                       | AL 95C                       |
|                                                                                                         | l/h            | 130                   | 130                          | 130                          | 150                          |
|                                                                                                         | type           | –                     | AJV4                         | AJV6                         | AJV6                         |
|                                                                                                         | l/h            | –                     | 200                          | 290                          | 290                          |
| NO <sub>x</sub> Class per EN 267                                                                        |                | 2                     | 2                            | 2                            | 2                            |
| Oil hoses                                                                                               | DN / length    | 8 / 1000              | 8 / 1000                     | 8 / 1000                     | 8 / 1000                     |
| Mass                                                                                                    | kg (T)         | approx. 51            | approx. 51                   | approx. 54                   | approx. 54                   |
|                                                                                                         | (R)            | –                     | approx. 59                   | approx. 62                   | approx. 62                   |

<sup>1)</sup> The necessary motor protection can be provided either by a motor protection switch (supplied and fitted into a panel by others), or with integral motor overload protection (see special equipment).

<sup>2)</sup> The necessary motor protection can be provided either by a motor protection switch or with motor prefusing (supplied and fitted into a panel by others).

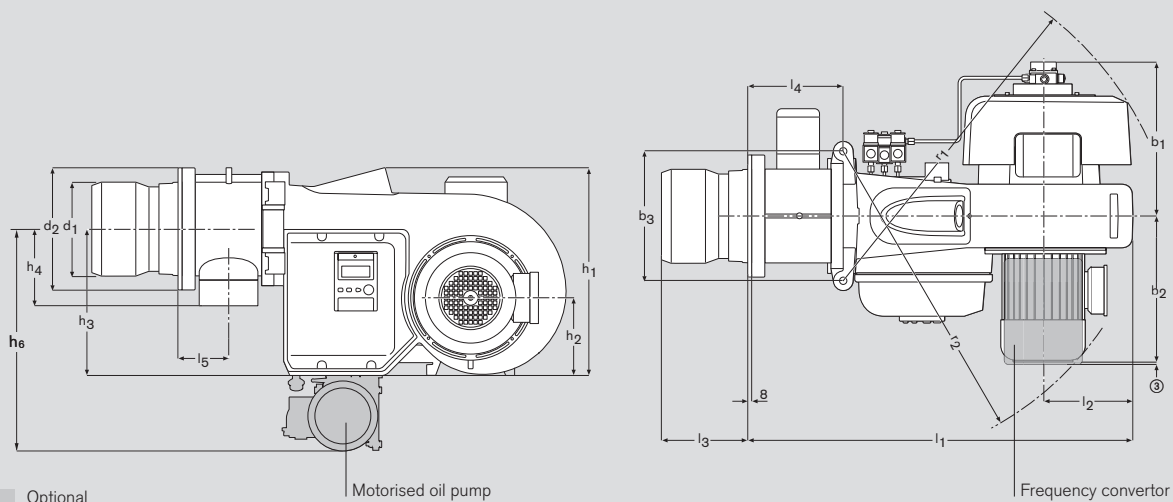
### Voltages and frequencies:

The burners are equipped as standard for three-phase alternating current, 400 V, 3 ~, 50 Hz. Other voltages and frequencies are available on application.

### Standard burner motor:

Insulation Class F, IP 55 protection.  
IE3 Premium Efficiency.

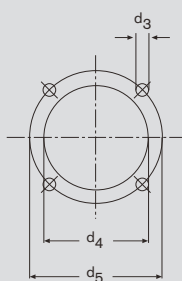
# Dimensions



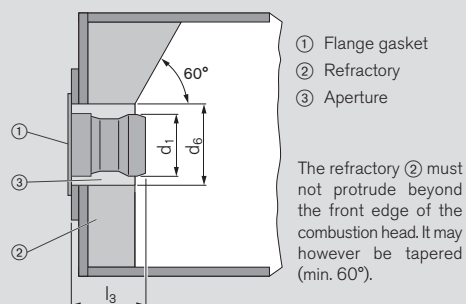
| Burner type      | Dimensions in mm |                |                |                |                |                             |                |                |                |                |                |                |                |                |
|------------------|------------------|----------------|----------------|----------------|----------------|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                  | l <sub>1</sub>   | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | l <sub>5</sub> | b <sub>1</sub> <sup>①</sup> | b <sub>2</sub> | b <sub>3</sub> | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>4</sub> | h <sub>5</sub> | h <sub>6</sub> |
| WM-L10/1-A T     | 659              | 205            | 118-138        | 38             | -              | 323                         | 307            | 270            | 445            | 167            | 313            | -              | 153            | 470            |
| WM-L10/2-A T     | 659              | 205            | 127-147        | 38             | -              | 323                         | 307            | 270            | 445            | 167            | 313            | -              | 153            | 470            |
| WM-L10/3-A T     | 659              | 205            | 147-167        | 38             | -              | 323                         | 335            | 270            | 445            | 167            | 313            | -              | 153            | 470            |
| WM-L10/4-A T     | 659              | 205            | 148-168        | 38             | -              | 323                         | 335            | 270            | 445            | 167            | 313            | -              | 153            | 470            |
| WM-L10/2-A R     | 659              | 205            | 131-146        | 38             | -              | 352                         | 307            | 270            | 445            | 167            | 313            | -              | 153            | 480            |
| WM-L10/3-A R     | 659              | 205            | 156-171        | 38             | -              | 352                         | 335            | 270            | 445            | 167            | 313            | -              | 153            | 480            |
| WM-L10/4-A R     | 659              | 205            | 151-166        | 38             | -              | 352                         | 335            | 270            | 445            | 167            | 313            | -              | 153            | 490            |
| WM-G10/1-A ZM    | 813              | 205            | 171-178        | 188            | 98             | 279                         | 307            | 270            | 445            | 167            | 313            | 140            | 153            | -              |
| WM-G10/2-A ZM    | 813              | 205            | 158-178        | 188            | 98             | 279                         | 307            | 270            | 445            | 167            | 313            | 140            | 153            | -              |
| WM-G10/3-A ZM    | 833              | 205            | 199-224        | 208            | 108            | 279                         | 335            | 270            | 445            | 167            | 313            | 162            | 153            | -              |
| WM-G10/4-A ZM    | 833              | 205            | 199-224        | 208            | 108            | 279                         | 335            | 270            | 445            | 167            | 313            | 162            | 153            | -              |
| WM-G10/1-A ZM-LN | 793              | 205            | 129-144        | 169            | 88             | 279                         | 307            | 270            | 445            | 167            | 313            | 130            | 153            | -              |
| WM-G10/2-A ZM-LN | 813              | 205            | 132-143        | 188            | 98             | 279                         | 307            | 270            | 445            | 167            | 313            | 140            | 153            | -              |
| WM-G10/3-A ZM-LN | 833              | 205            | 177-197        | 208            | 108            | 279                         | 335            | 270            | 445            | 167            | 313            | 162            | 153            | -              |
| WM-G10/4-A ZM-LN | 833              | 205            | 177-197        | 208            | 108            | 279                         | 335            | 270            | 445            | 167            | 313            | 162            | 153            | -              |
| WM-GL10/1-A ZM-T | 813              | 205            | 171-178        | 188            | 98             | 323                         | 307            | 270            | 445            | 167            | 313            | 140            | 153            | 470            |
| WM-GL10/2-A ZM-T | 813              | 205            | 158-178        | 188            | 98             | 323                         | 307            | 270            | 445            | 167            | 313            | 140            | 153            | 470            |
| WM-GL10/3-A ZM-T | 833              | 205            | 199-224        | 208            | 108            | 323                         | 335            | 270            | 445            | 167            | 313            | 162            | 153            | 470            |
| WM-GL10/4-A ZM-T | 833              | 205            | 199-224        | 208            | 108            | 323                         | 335            | 270            | 445            | 167            | 313            | 162            | 153            | 470            |
| WM-GL10/2-A ZM-R | 813              | 205            | 158-178        | 188            | 98             | 482 <sup>②</sup>            | 307            | 270            | 445            | 167            | 313            | 140            | 153            | 480            |
| WM-GL10/3-A ZM-R | 833              | 205            | 199-224        | 208            | 108            | 482 <sup>②</sup>            | 335            | 270            | 445            | 167            | 313            | 162            | 153            | 480            |
| WM-GL10/4-A ZM-R | 833              | 205            | 199-224        | 208            | 108            | 482 <sup>②</sup>            | 335            | 270            | 445            | 167            | 313            | 162            | 153            | 490            |

① Excluding electromagnetic clutch (pump with electromagnetic clutch: plus 130 mm) ② Including electromagnetic clutch ③ Projection of frequency converter approx. 20 mm

Mounting-plate  
drilling dimensions



Heat generator preparation



| Burner<br>type   | Dimensions in mm |                |                |                |                |                |                |                | Nominal diameter<br>of gas butterfly |
|------------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------------------------|
|                  | r <sub>1</sub>   | r <sub>2</sub> | d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> | d <sub>4</sub> | d <sub>5</sub> | d <sub>6</sub> |                                      |
| WM-L10/1-A T     | 718              | 682            | 140            | 242            | M10            | 165            | 186            | 170            | –                                    |
| WM-L10/2-A T     | 718              | 682            | 140            | 242            | M10            | 165            | 186            | 170            | –                                    |
| WM-L10/3-A T     | 718              | 698            | 160            | 242            | M10            | 185            | 210            | 190            | –                                    |
| WM-L10/4-A T     | 718              | 698            | 180            | 242            | M10            | 185            | 210            | 220            | –                                    |
| WM-L10/2-A R     | 718              | 682            | 160            | 242            | M10            | 165            | 186            | 170            | –                                    |
| WM-L10/3-A R     | 718              | 698            | 180            | 242            | M10            | 185            | 210            | 190            | –                                    |
| WM-L10/4-A R     | 718              | 698            | 180            | 242            | M10            | 185            | 210            | 220            | –                                    |
| WM-G10/1-A ZM    | 718              | 682            | 160            | 212            | M10            | 165            | 186            | 190            | DN40                                 |
| WM-G10/2-A ZM    | 718              | 682            | 160            | 212            | M10            | 165            | 186            | 190            | DN40                                 |
| WM-G10/3-A ZM    | 718              | 698            | 200            | 260            | M10            | 210            | 235            | 240            | DN50                                 |
| WM-G10/4-A ZM    | 718              | 698            | 218            | 260            | M10            | 220            | 235            | 250            | DN50                                 |
| WM-G10/1-A ZM-LN | 718              | 682            | 127            | 195            | M8             | 135            | 160 – 170      | 160            | DN25                                 |
| WM-G10/2-A ZM-LN | 718              | 682            | 160            | 212            | M10            | 165            | 186            | 190            | DN40                                 |
| WM-G10/3-A ZM-LN | 718              | 698            | 200            | 260            | M10            | 210            | 235            | 240            | DN50                                 |
| WM-G10/4-A ZM-LN | 718              | 698            | 200            | 260            | M10            | 210            | 235            | 240            | DN50                                 |
| WM-GL10/1-A ZM-T | 718              | 682            | 160            | 212            | M10            | 165            | 186            | 190            | DN40                                 |
| WM-GL10/2-A ZM-T | 718              | 682            | 160            | 212            | M10            | 165            | 186            | 190            | DN40                                 |
| WM-GL10/3-A ZM-T | 718              | 698            | 200            | 260            | M10            | 210            | 235            | 240            | DN50                                 |
| WM-GL10/4-A ZM-T | 718              | 698            | 218            | 260            | M10            | 220            | 235            | 250            | DN50                                 |
| WM-GL10/2-A ZM-R | 764              | 682            | 160            | 212            | M10            | 165            | 186            | 190            | DN40                                 |
| WM-GL10/3-A ZM-R | 764              | 698            | 200            | 260            | M10            | 210            | 235            | 240            | DN50                                 |
| WM-GL10/4-A ZM-R | 764              | 698            | 218            | 260            | M10            | 220            | 235            | 250            | DN50                                 |

All dimensions are approximate. Weishaupt reserve the right to make changes in light of future developments.