



## baelz 590

### DESCRIPTION

The baelz 590 is a steam/steam ejector (thermocompressor) with flange connection for recirculation and compression of exhaust vapor.

Housing: GJS-400-18-LT - 5.3103 / GP240GH - 1.0619 (PN 40)

Diffuser: DN 15: X14CrMoS17

DN 25...125: GJS-400-18-LT

≥ DN 150 and all PN 40: steel, welded

Plug stem and nozzle: stainless steel

### TECHNICAL SPECIFICATIONS

Flange: Special design according to EN 1092-1 possible

The plug type and the control characteristic are designed and manufactured to order.

Spindle seal: V-rings in PFTE

Option: baelz 590-K - with cooling tube

Option: silicone-free version

Working media: steam

#### Leakage class (EN 1349)

metal-to-metal seal: 0.004% Kvs (better than class IV)

#### Spindle Ø (mm)

|                  |         |
|------------------|---------|
| DN 15            | 10      |
| DN 25 - DN 80    |         |
| DN 100 - DN 125* | 16      |
| DN 150           | 16 / 22 |
| DN 200 - DN 250  | 22      |

#### Nozzle Ø (mm)

|           |    |
|-----------|----|
| 2,5 - 6,5 | 12 |
| 8 - 23    | 22 |
| 25-65     | 40 |
| 25-50     | 44 |
| 65-120    | 66 |

#### Stroke

\*recommended actuators for DN 100 and DN 125:

Stroke 22, Actuator 373-P21-L...; Stroke 40. Actuator 373-P22-L...

#### T max. (°C) / P max. (bar)

| Housing material           | GJS-400-18-LT - 5.3103 |                    | GP240GH - 1.0619   |
|----------------------------|------------------------|--------------------|--------------------|
|                            | PN 16                  | PN 25              | PN 40              |
| baelz 590 DN 15 - DN 125   | 240/14 ... 50/16       | 240/22 ... 50/25   | 240/30.9 ... 50/40 |
| baelz 590 DN 150 - DN 250  | 240/12.3 ... 50/16     | 240/19.3 ... 50/25 |                    |
| baelz 590-K DN 15 - DN 250 | 350/11.2 ... 50/16     | 350/17.5 ... 50/25 | 350/25.7 ... 50/40 |

#### Material diffusor

| Designation        | Nominal pressure | Material                               |
|--------------------|------------------|----------------------------------------|
| 590 DN 15          | PN 16 / 25       | X14CrMoS17 - 1.4104                    |
| 590 DN 25...DN 125 | PN 16 / 25       | GJS-400-18-LT - 5.3103                 |
| 590-DG. ab DN 150  | PN 16 / 25       | Welded steel, diffuser stainless steel |
| 590 DN 15...DN 250 | PN 40            | Welded steel, diffuser stainless steel |

#### Available nozzle diameters (mm)

| DN | 15  | 25  | 32   | 40   | 50   | 65   | 80   | 100 | 125 | 150 | 200 | 250 |
|----|-----|-----|------|------|------|------|------|-----|-----|-----|-----|-----|
| Ø  | 2.5 | 2.5 | 5    | 6.5  | 8    | 10   | 12.4 | 16  | 20  | 25  | 65  | 80  |
|    | 3.2 | 3.2 | 6.5  | 8    | 10   | 12.5 | 16   | 20  | 25  | 32  | 80  | 100 |
|    | 4   | 4   | 8    | 10   | 12.5 | 16   | 20   | 25  | 32  | 40  | 92  | 120 |
|    | 5   | 5   | 10   | 12.5 | 16   | 20   | 25   | 32  | 40  | 50  |     |     |
|    | 6.5 | 6.5 | 12.5 | 16   | 20   | 25   | 32   | 40  | 50  | 65  |     |     |
|    |     | 8   |      |      | 23   | 30   | 37   | 47  | 55  | 76  |     |     |
|    |     | 10  |      |      |      |      |      |     |     |     |     |     |

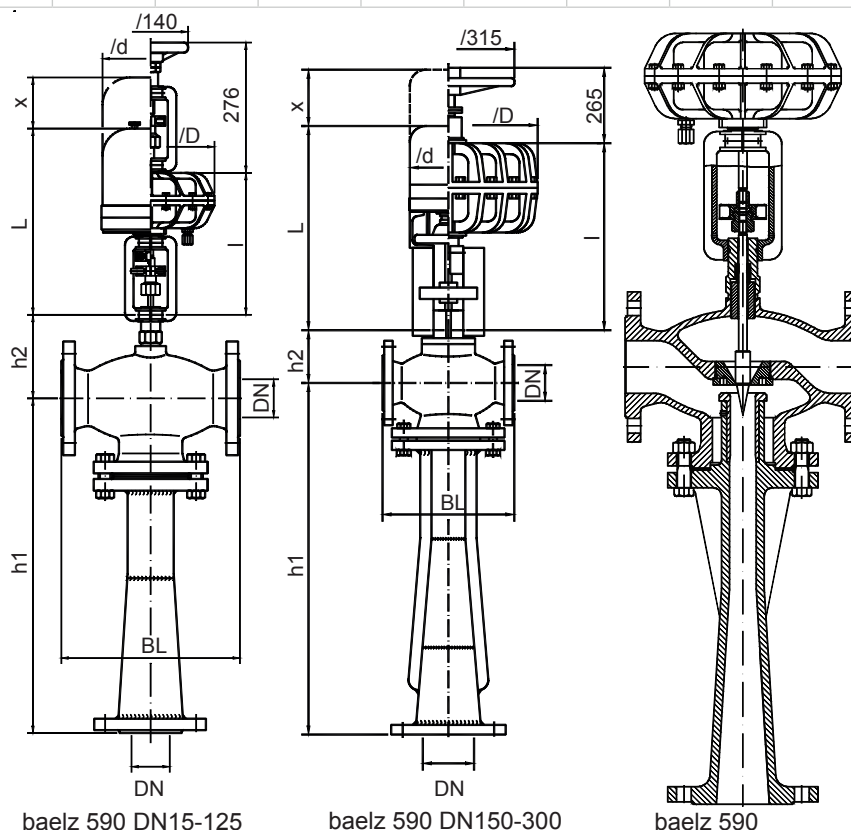
DN 150 - DN 250: The indicated nozzle diameters are our default values.

Any desired intermediate sizes are also possible (without additional cost).

| Weight of the baelz 590 (kg) |     |      |      |      |      |      |      |     |       |     |     |     |
|------------------------------|-----|------|------|------|------|------|------|-----|-------|-----|-----|-----|
| DN                           | 15  | 25   | 32   | 40   | 50   | 65   | 80   | 100 | 125   | 150 | 200 | 250 |
| Spheroid ductile iron        | 6.3 | 9.1  | 14.9 | 19.3 | 25.3 | 40.4 | 50.6 | 68  | 104.3 | 145 | 300 | 460 |
| Steel                        | 7.4 | 10.2 | 16   | 20.4 | 27   | 42   | 52.6 | 70  | 106.3 | 148 | 310 | 470 |

| baelz 590 dimensions (mm) |     |         |      |      |       |
|---------------------------|-----|---------|------|------|-------|
| DN                        | BL  | h1      |      | h2   |       |
|                           |     | PN16/25 | PN40 | 590  | 590-K |
| 15                        | 130 | 175     | 176  | 109  | 261   |
| 25                        | 160 | 202     | 229  | 110  | 262   |
| 32                        | 180 | 302     | 302  | 104  | 339   |
| 40                        | 200 | 358     | 358  | 114  | 349   |
| 50                        | 230 | 402     | 429  | 124  | 359   |
| 65                        | 290 | 539     | 573  | 144  | 379   |
| 80                        | 310 | 600     | 695  | 154  | 389   |
| 100                       | 350 | 624     | 912  | 169  | 404   |
| 125                       | 400 | 836     |      | 1066 | 189   |
| 150                       | 480 | 1260    |      | 244  | 234   |
| 200                       | 600 | 1651    |      | 268  | 258   |
| 250                       | 730 | 2070    |      | 317  | 307   |

| Dimensions of the baelz 373 actuators (mm) |     |     |     |     |     |
|--------------------------------------------|-----|-----|-----|-----|-----|
| Designation                                | L   | x   | Ød  | I   | ØD  |
| E 07                                       | 320 | 145 | 129 |     |     |
| E 45                                       | 560 | 150 | 175 |     |     |
| P 21                                       |     |     |     | 268 | 242 |
| P 21-V6                                    |     |     |     | 304 | 242 |
| P 22                                       |     |     |     | 322 | 242 |



The differential pressures specified here are limited by the nominal pressure of the housings, if this is lower.

Electric actuators. baelz 480. 590. 585. Plug closes in direction of flow.

| Actuator<br>baelz 373- | Power<br>(N) | Nozzle Ø (mm) / Maximum differential pressure ΔPmax (bar) |    |    |    |    |    |    |     |     |     |     |     |    |    |    |     |     |
|------------------------|--------------|-----------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|----|----|----|-----|-----|
|                        |              | ≤ 12.5                                                    | 16 | 20 | 23 | 25 | 30 | 32 | 37  | 40  | 47  | 50  | 60  | 65 | 80 | 90 | 100 | 120 |
| E07-                   | 2000         | 181                                                       | 75 | 47 | 36 | 30 | 21 | 18 | 14  | 13  | 9.7 | 8.5 | 5.9 |    |    |    |     |     |
| E65- 11-               | 1100         | 86                                                        | 36 | 22 | 17 | 14 | 10 | 9  | 6.8 | 6.8 | 4.6 | 4.1 | 2.8 |    |    |    |     |     |
| E65- 20-               | 2000         | 181                                                       | 75 | 47 | 36 | 30 | 21 | 18 | 14  | 14  | 9.7 | 8.5 | 5.9 |    |    |    |     |     |
| E45-                   | 4000         |                                                           |    | 97 | 73 | 62 | 43 | 38 | 29  | 29  | 19  | 17  | 12  | 11 |    |    |     |     |
| E66-                   | 15000        |                                                           |    |    |    |    |    |    |     |     | 76  | 67  | 46  | 43 | 27 | 21 | 17  | 11  |
| E88- 100-              | 10000        |                                                           |    |    |    |    |    |    |     |     | 50  | 44  | 30  | 28 | 17 | 14 | 11  | 7.7 |

Pneumatic actuators. baelz 480. 590. 585. Plug closes in direction of flow.

| Actuator<br>baelz 373- |    | Power<br>(N) | req. feed<br>pressure<br>(bar) | Nozzle Ø (mm) / Maximum differential pressure ΔPmax (bar) |     |     |     |     |    |     |     |     |     |     |     |    |     |    |  |
|------------------------|----|--------------|--------------------------------|-----------------------------------------------------------|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|----|-----|----|--|
|                        |    |              |                                | ≤ 20                                                      | 23  | 25  | 30  | 32  | 37 | 40  | 47  | 50  | 60  | 65  | 80  | 90 | 100 |    |  |
| P21-                   | 3- | 1020         | 3.0                            | 141                                                       | 106 | 90  | 63  | 56  | 42 | 40  | 29  | 25  | 17  |     |     |    |     |    |  |
| P21-                   | 6- | 2040         | 3.0                            | 123                                                       | 93  | 79  | 55  | 49  | 37 | 35  | 25  | 22  | 15  |     |     |    |     |    |  |
| P21-                   | 6- | 2040         | 6.0                            | 294                                                       | 223 | 189 | 133 | 117 | 89 | 83  | 60  | 53  | 36  |     |     |    |     |    |  |
| P22-                   | 3- | 1846         | 3.0                            |                                                           |     |     |     |     |    | 37  | 26  | 23  | 16  | 15  |     |    |     |    |  |
| P22-                   | 6- | 3692         | 6.0                            |                                                           |     |     |     |     |    | 73  | 52  | 46  | 32  | 30  |     |    |     |    |  |
| P31-                   | 3- | 2480         | 3.0                            |                                                           |     |     |     |     |    | 110 | 79  | 69  | 48  | 45  |     |    |     |    |  |
| P31-                   | 6- | 4960         | 3.0                            |                                                           |     |     |     |     |    | 93  | 67  | 59  | 41  | 38  |     |    |     |    |  |
| P31-                   | 6- | 4960         | 6.0                            |                                                           |     |     |     |     |    | 220 | 158 | 139 | 96  | 89  |     |    |     |    |  |
| P32-                   | 6- | 4402         | 3.0                            |                                                           |     |     |     |     |    |     |     | 61  | 42  | 39  | 25  | 19 | 15  | 11 |  |
| P32-                   | 6- | 4402         | 6.0                            |                                                           |     |     |     |     |    |     |     | 141 | 98  | 91  | 57  | 45 | 36  | 25 |  |
| P41-                   | 6- | 7530         | 6.0                            |                                                           |     |     |     |     |    |     |     | 281 | 195 | 180 | 114 | 89 | 71  | 49 |  |