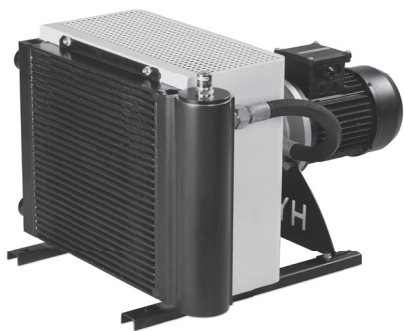
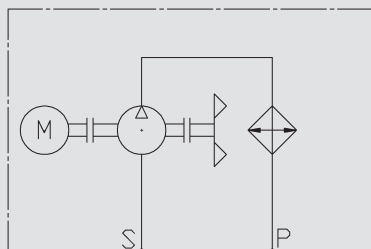


## Air Cooler Industry OSCA / OSCAF 0-3



### Symbol



### General

The low noise coolers of OSCA / OSCAF series are mostly used in small and medium hydraulic systems. Compact and efficient they offer high performance with a low noise level in a modular design.

The OSCA models with integrated oil circulation pump provide efficient off-line cooling of the hydraulic fluid. The OSCAF models with integrated (inside-outside) filter provide additional filtration, using the latest high capacity filter dirt holding development.

### Product Features

Installed off-line, the OSCAF provides efficient cooling and filtration of the hydraulic fluid regardless of the duty cycle of the hydraulic system. And, the cooler can be sized perfectly to the necessary cooling performance, rather than to the maximum return-line flow rate. Off-line installation will also eliminate flow variances of the hydraulic fluid and resulting pressure spikes which potentially could lead to a premature cooler failure.

### Operation Data

|                   |   |
|-------------------|---|
| Fluids            | Oils (mineral oils, synthetic oils, high viscosity oils, biological oils, phosphate ester)  |
| Viscosity         | 500 mm <sup>2</sup> /s  |
| Temperature range | <p>Minimum / maximum ambient temperature:<br/>-20 °C bis +40 °C (Standard)</p> <p>Minimum / maximum temperature of the medium:<br/>+20 °C bis +90 °C</p> <p>Please contact the technical sales department in the event of deviating temperatures for applications with water-glycol.</p> <p><b>Notice!</b><br/>Fan switching frequency at max. fan speed (max. volume of air) must be avoided when operating a cooler at which the temperature difference between the medium inlet at the cooler and the ambient temperature can be greater than 50 °C. Quick changes in the temperature of the cooling element material can lead to a significant reduction in service life or to direct damage of the cooling element due to thermal shock.<br/>Please contact the technical sales department to receive information about controlled fan drives.</p> |
| Fan               | Radial fan in suction version (standard)  |
| Motor             | <p>Three-phase motor</p> <p>Efficiency class IE2 (only ≥0.75 kW)</p> <p>Protection class IP55</p> <p>Insulation class F</p> <p>Other versions on request.</p>   |
| Pump              | <p>Screw pump</p> <p>Operating pressure: max. 10 bar</p> <p>Negative suction pressure of pump: max. -0,4 bar</p>  |
| Noise levels      | <p>See technical data.</p> <p>The noise levels are only reference values as the acoustic properties of a room, connections and reflection have an effect on the noise level.</p>  |

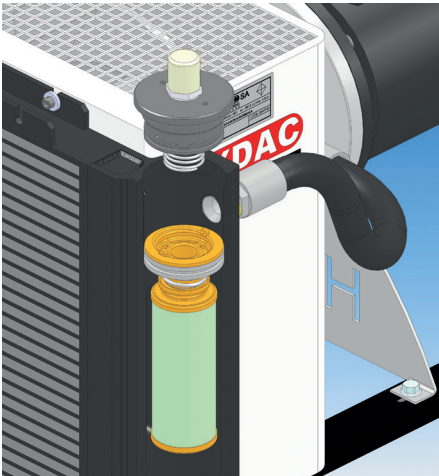
- Stable cooling and filtration (independent of the cycle times of the system)
- Avoidance of pressure surges in the cooling element
- Design of the cooler is in accordance with the cooling capacity required (not according to the maximum possible return flow volume)

#### Low noise

- Utilizes compact low noise screw pump

#### Compact

- Small in size and low in weight
- Easy to attach external exhaust ducts



Compact: filter integrated in heat exchanger

#### Efficient

- Integration of several features in one unit: pumping, cooling, filtration
- No additional piping; fewer potential leak points
- Integrated filter with inside-outside filter technology; magnetic particle trap and standard 2.5 bar pressure bypass included
- Low and easy maintenance (only one plug to remove for filter element change)

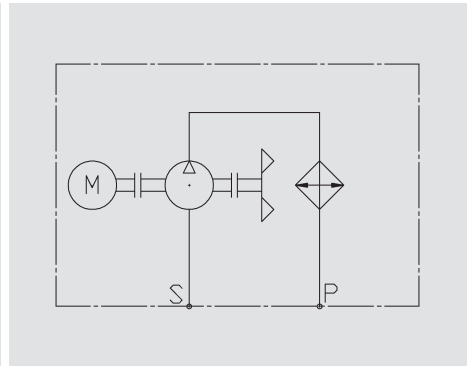
## Application Field

Systems with small and medium hydraulic systems, such as:

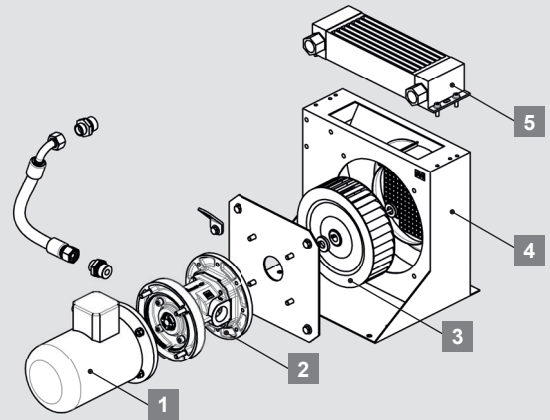
- Lubrication systems
- Machine tools
- Hydraulic presses
- Hydraulic systems
- Hydraulic lifts

## Design

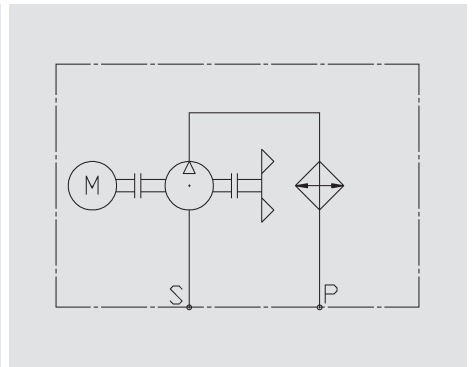
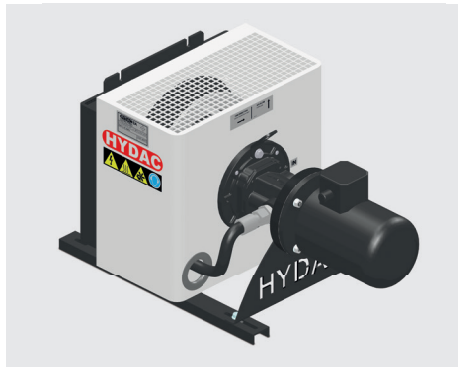
### OSCA 0



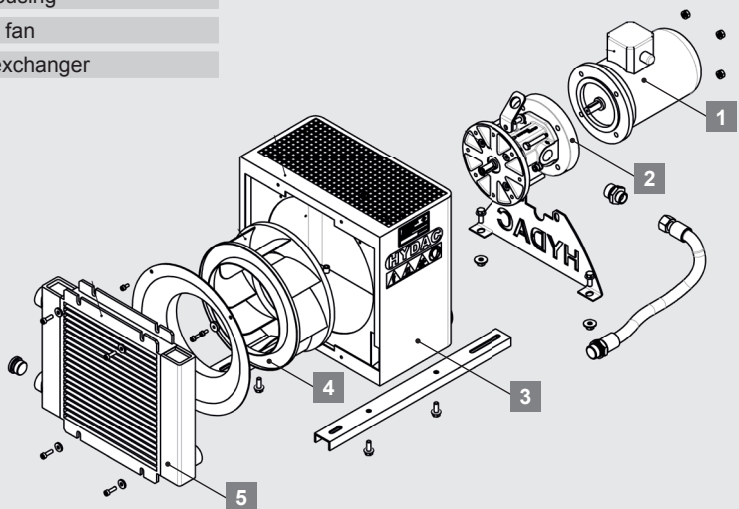
- 1 Motor
- 2 Screw pump
- 3 Radial fan
- 4 Fan housing
- 5 Heat exchanger



### OSCA 1-3

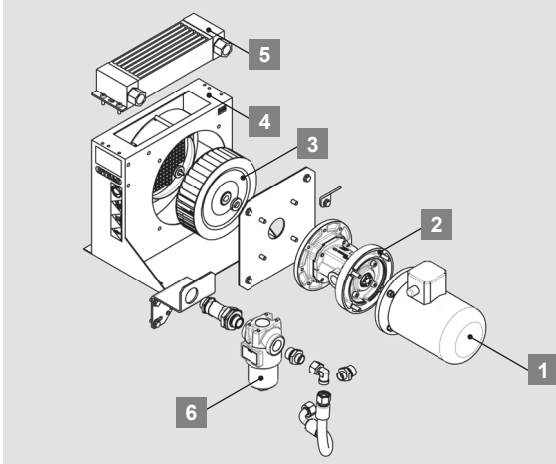
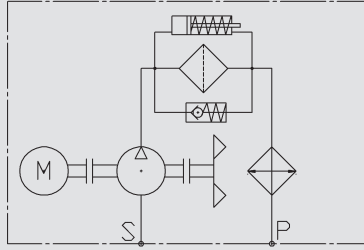
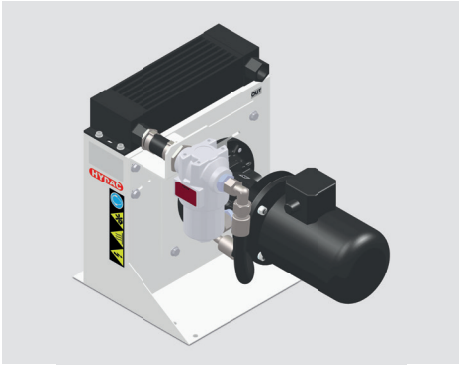


- 1 Motor
- 2 Screw pump
- 3 Fan housing
- 4 Radial fan
- 5 Heat exchanger



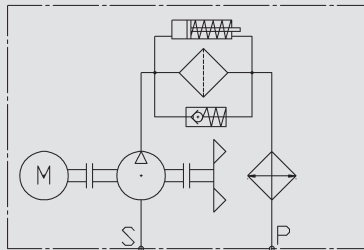
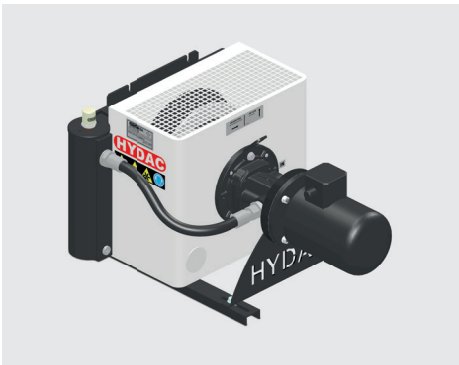
## Design

### OSCAF 0

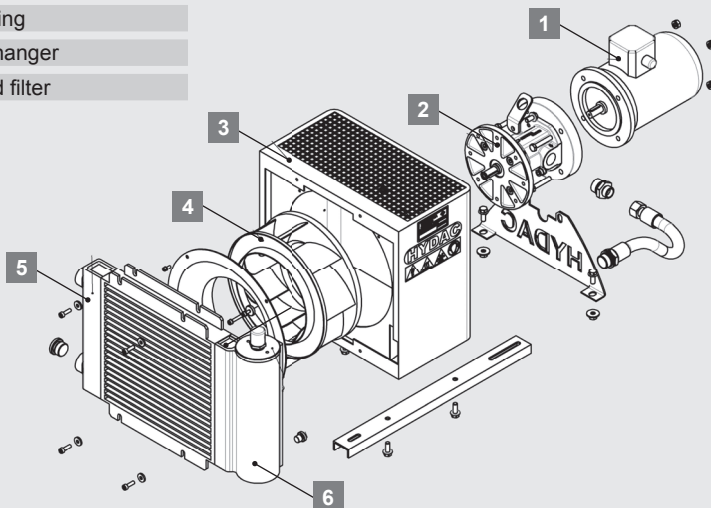


- 1 Motor
- 2 Screw pump
- 3 Radial fan
- 4 Fan housing
- 5 Heat exchanger
- 6 External filter

### OSCAF 1-3



- 1 Motor
- 2 Screw pump
- 3 Radial fan
- 4 Fan housing
- 5 Heat exchanger
- 6 Integrated filter



## Technical Data

### OSCA/OSCAF

| Type of cooler | P/N     | Heat dissipation<br>at $\Delta T = 40^\circ\text{C}$ [kW] <sup>1)</sup> | Pressure drop [bar]<br>at 30 mm <sup>2</sup> /s <sup>1)</sup> | Displacement [cm <sup>3</sup> /U] | Oil flow [l/min]<br>[40 cSt – 4 bar] | Air flow [m <sup>3</sup> /h] | Motor: N° of poles / Size | Motor: Power [kW] <sup>2)</sup> | Nominal current [A]<br>@ 400 V 50 Hz | Noise level at 1 m distance<br>at 50 / 60 Hz [dB (A)] | Size of filter [-] | Volume [l] <sup>3)</sup> | Weight [kg] <sup>4)</sup> |
|----------------|---------|---|---|-----------------------------------|--------------------------------------|------------------------------|---------------------------|---------------------------------|--------------------------------------|---|--------------------|--------------------------|---------------------------|
| OSCA 0L        | 3926218 | 1.5   | 0.11  | 10                                | 10                                   | 155                          | 6/71                      | 0.25                            | 1.0                                  | 56/60   | -                  | 0.5                      | 20                        |
| OSCA 0S        | 3926219 | 1.8   | 0.19  | 10                                | 15                                   | 300                          | 4/71                      | 0.37                            | 1.2                                  | 63/67   | -                  | 0.5                      | 20                        |
| OSCAF 0L       | 3926223 | 1.5   | 0.11  | 10                                | 10                                   | 155                          | 6/71                      | 0.25                            | 1.0                                  | 56/60   | LF60               | 0.5                      | 25                        |
| OSCAF 0S       | 3926222 | 1.8   | 0.19  | 10                                | 15                                   | 300                          | 4/71                      | 0.37                            | 1.2                                  | 63/67   | LF60               | 0.5                      | 25                        |
| OSCA 1L        | 3768893 | 3.7   | 0.08  | 10                                | 10                                   | 600                          | 4/71                      | 0.25                            | 1.0                                  | 59/63   | -                  | 0.9                      | 28                        |
| OSCA 1S        | 3684999 | 4.3   | 0.12  | 10                                | 15                                   | 870                          | 4/71                      | 0.37                            | 1.2                                  | 66/70   | -                  | 0.9                      | 28                        |
| OSCAF 1L       | 3769020 | 3.7   | 0.13  | 10                                | 10                                   | 600                          | 6/71                      | 0.25                            | 1.0                                  | 59/63   | NG080              | 1.6                      | 31                        |
| OSCAF 1S       | 3708807 | 4.3   | 0.18  | 10                                | 15                                   | 870                          | 4/71                      | 0.37                            | 1.2                                  | 66/70   | NG080              | 1.6                      | 31                        |
| OSCA 2L        | 3647770 | 7.0   | 0.30  | 28                                | 28                                   | 1,200                        | 6/90                      | 0.75                            | 2.0                                  | 60/64   | -                  | 1.4                      | 40                        |
| OSCA 2S        | 3647749 | 9.2   | 0.45  | 28                                | 40                                   | 1,750                        | 4/90                      | 1.10                            | 2.5                                  | 69/73   | -                  | 1.4                      | 40                        |
| OSCAF 2L       | 3647771 | 7.0   | 0.50  | 28                                | 28                                   | 1,200                        | 6/90                      | 0.75                            | 2.0                                  | 60/64   | NG080              | 2.4                      | 43                        |
| OSCAF 2S       | 3647750 | 9.2   | 0.85  | 28                                | 40                                   | 1,750                        | 4/90                      | 1.10                            | 2.5                                  | 69/73   | NG080              | 2.4                      | 43                        |
| OSCA 3L        | 3764555 | 11.6  | 0.25  | 28                                | 28                                   | 2,350                        | 6/90                      | 1.10                            | 2.7                                  | 67/71   | -                  | 2.0                      | 63                        |
| OSCA 3S        | 3672255 | 15.0  | 0.38  | 28                                | 40                                   | 3,400                        | 4/90                      | 1.80                            | 3.7                                  | 77/81   | -                  | 2.0                      | 63                        |
| OSCAF 3L       | 3764557 | 11.6  | 0.44  | 28                                | 28                                   | 2,350                        | 6/90                      | 1.10                            | 2.7                                  | 67/71   | NG080              | 3.3                      | 66                        |
| OSCAF 3S       | 3675061 | 15.0  | 0.75  | 28                                | 40                                   | 3,400                        | 4/90                      | 1.80                            | 3.7                                  | 77/81   | NG080              | 3.3                      | 66                        |

<sup>1)</sup> At 50 Hz

<sup>2)</sup> IE2 (only for  $\geq 0,75$  kW)

<sup>3)</sup> Fluid in cooling element

<sup>4)</sup> Unfilled

For other viscosities, the pressure loss must be multiplied by the conversion factor K:

|                                |      |     |      |    |     |     |     |     |
|--------------------------------|------|-----|------|----|-----|-----|-----|-----|
| Viscosity (mm <sup>2</sup> /s) | 10   | 15  | 22   | 32 | 46  | 68  | 100 | 150 |
| Factor K                       | 0.35 | 0.5 | 0.75 | 1  | 1.4 | 1.9 | 2.5 | 2.3 |

## Model Type

**OSCAF - 2L - 28 - 5.0 - B - M - A - NG080 - 10 - 1 - GP**

### Cooler type

- OSCA = Air cooler with integrated pump  
OSCAF = Air cooler with integrated pump and filter

### Baugröße / Motordrehzahl

- 0-3 = Size  
L = 6 pl (1,000 rpm)  
S = 4 pl (1,500 rpm)

### Displacement cm<sup>3</sup>/rev

- 10 = Screw pump (OSCA / OSCAF 0-1)  
28 = Screw pump (OSCA / OSCAF 2-3)

### Revision

### Clogging indicators (only OSCAF)

- A = Without clogging indicator  
B = With visual indicator (Standard)  
D = With electrical and optical indicator

### Fluids

- M = Mineral Oil

### Motor voltage

Standard voltages and frequencies for 3 phase motor

- A = 230/400 V – 50 Hz / 265/460 V – 60 Hz

(Tolerance voltage ± 10 %)

Other voltages on request.

### Size of filter (only OSCAF)

- LF60 = OSCAF 0  
NG080 = OSCAF 1-2-3

### Filtration rating in micron (only OSCAF)

#### OSCAF 0

- 5 = 5 µm Betamicron®-4-N (5 BN4HC)  
10 = 10 µm Betamicron®-4-N (10 BN4HC) (Standard)  
20 = 20 µm Betamicron®-4-N (20 BN4HC)

#### OSCAF 1-2-3

- 5 = 5 µm SHC (K-10174 NG080-5)  
10 = 10 µm SHC (K-10174 NG080-10) (Standard)  
20 = 20 µm SHC (K-10174 NG080-20)

### Color

- 1 = RAL 9002 (Standard)

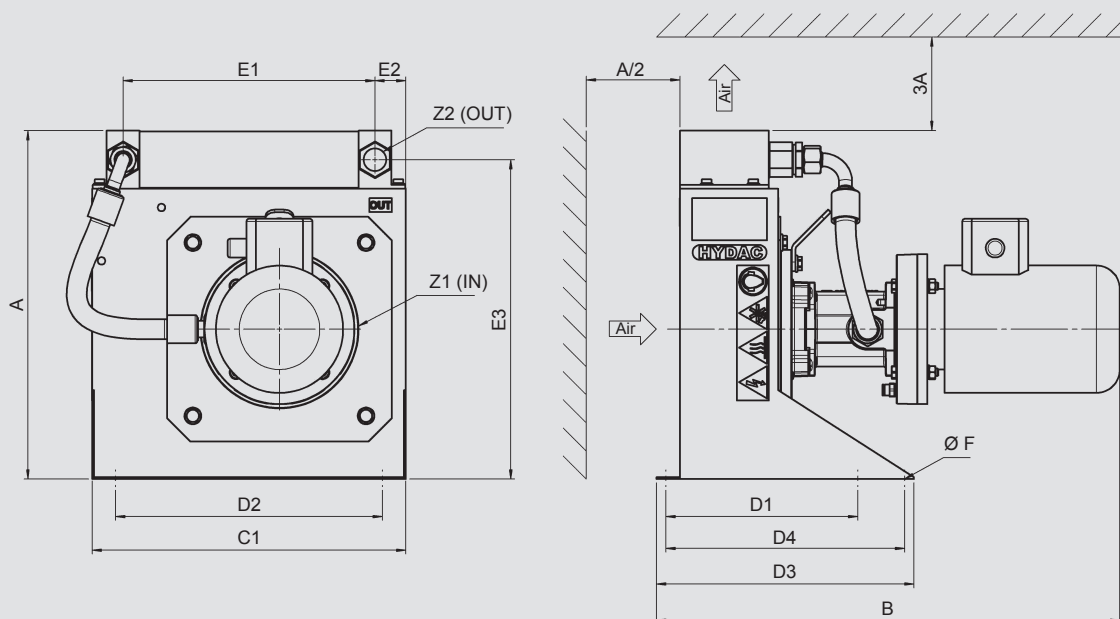
Other colors on request.

### Accessories

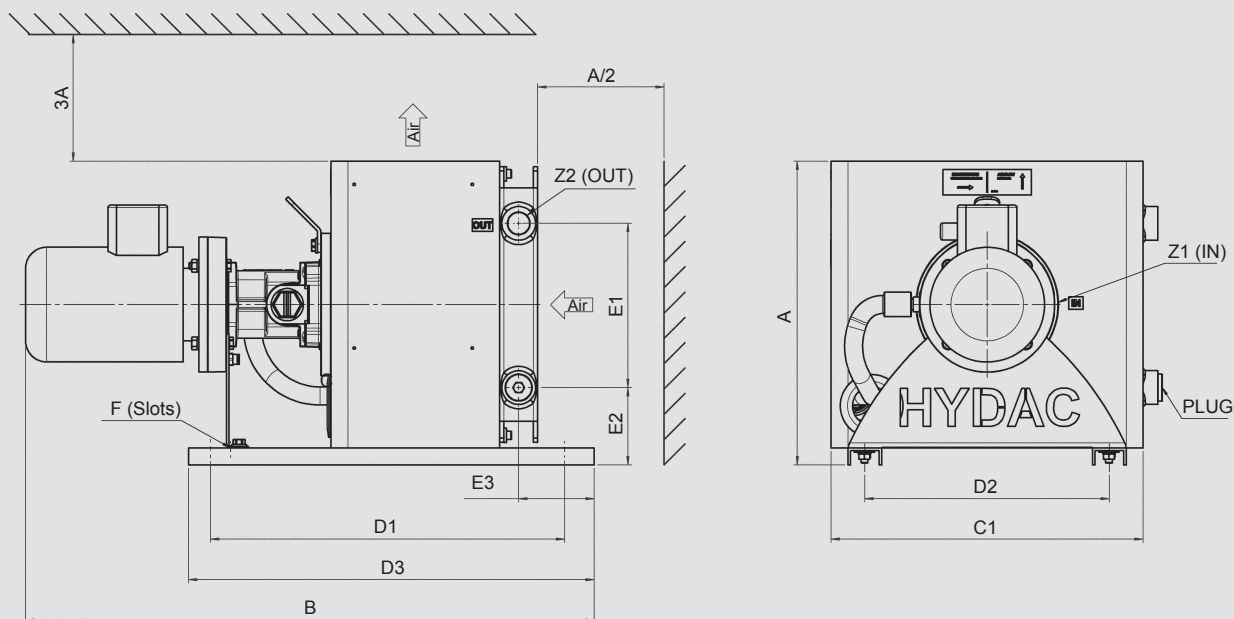
e.g. vibration absorber

## Dimensions

### OSCA 0

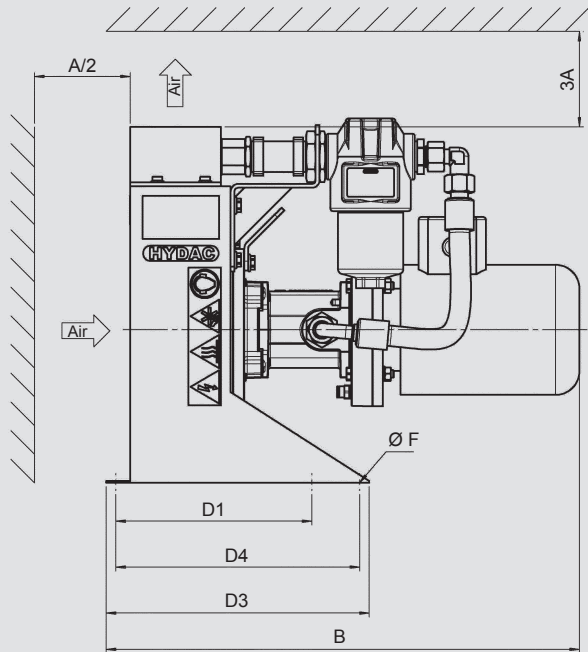
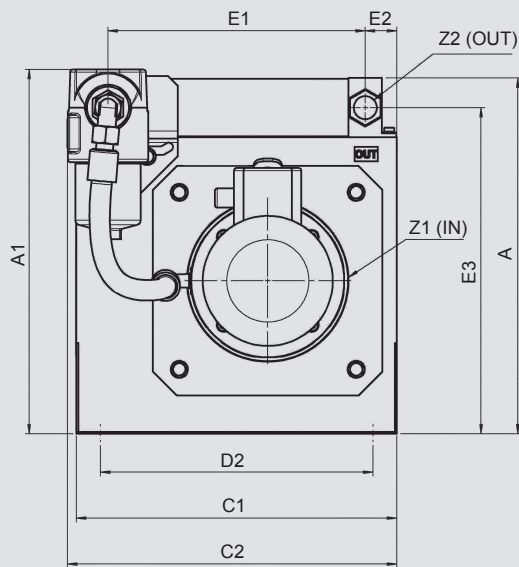


### OSCA 1-3

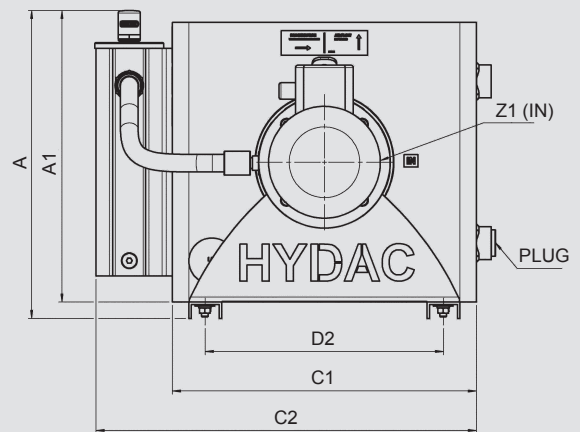
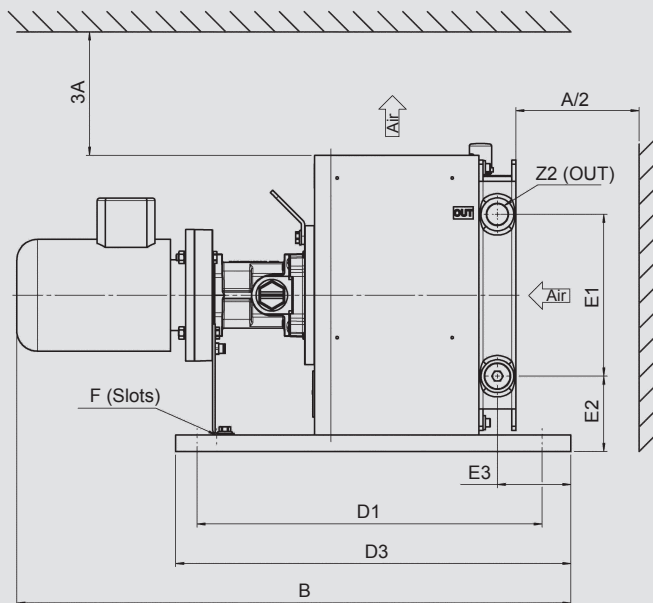


|               | A<br>±10 | B<br>±10 | C1<br>±10 | D1<br>±2 | D2<br>±2 | D3<br>±2 | D4<br>±2 | E1<br>±2 | E2<br>±2 | E3<br>±2 | F<br>Ø Slot | Z1<br>(IN) | Z2<br>(OUT) |
|---------------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|-------------|------------|-------------|
| <b>OSCA 0</b> | 372      | 495      | 335       | 205      | 285      | 275      | 255      | 269      | 33       | 341      | 9           | G1"        | G3/4"       |
| <b>OSCA 1</b> | 360      | 674      | 370       | 420      | 290      | 481      | -        | 195      | 91       | 54.5     | 9           | G1"        | G3/4"       |
| <b>OSCA 2</b> | 433      | 766      | 449       | 455      | 373      | 521      | -        | 288      | 83       | 37.5     | 9           | G1"        | G3/4"       |
| <b>OSCA 3</b> | 542      | 841      | 555       | 520      | 450      | 584      | -        | 404      | 79       | 59       | 9           | G1"        | G3/4"       |

## OSCAF 0



## OSCAF 1-3



|                | A<br>±10 | A1<br>±10 | B<br>±10 | C1<br>±10 | C2<br>±10 | D1<br>±2 | D2<br>±2 | D3<br>±2 | D4<br>±2 | E1<br>±2 | E2<br>±2 | E3<br>±2 | F<br>Ø Slot | Z1<br>(IN) | Z2<br>(OUT) |
|----------------|----------|-----------|----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|-------------|------------|-------------|
| <b>OSCAF 0</b> | 372      | 381       | 495      | 335       | 345       | 205      | 285      | 275      | 255      | 269      | 33       | 341      | 9           | G1"        | G3/4"       |
| <b>OSCAF 1</b> | 375      | 355       | 674      | 370       | 463       | 420      | 290      | 481      | -        | 195      | 91       | 54.5     | 9           | G1"        | G3/4"       |
| <b>OSCAF 2</b> | 453      | 433       | 766      | 449       | 540       | 455      | 373      | 521      | -        | 288      | 83       | 37.5     | 9           | G1"        | G3/4"       |
| <b>OSCAF 3</b> | 560      | 540       | 841      | 555       | 647       | 520      | 450      | 584      | -        | 404      | 79       | 59       | 9           | G1"        | G3/4"       |

**Note:**

We recommend maintaining a minimum distance to ensure an unimpeded air inlet and air outlet. This is half the height of the cooling element (A/2). Anything below the minimum distance can influence the cooling capacity and the noise emissions.

**Note**

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.



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