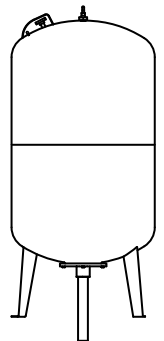
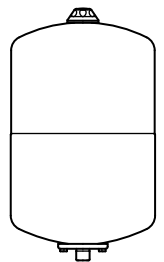
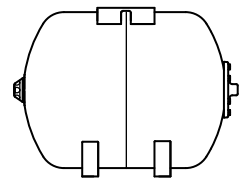


nema

MODELS AND ARTICLES 2018

Expansion Vessels for HVAC, Water Supply
and Sanitary Hot Water Applications



WINKELMANN BUILDING + INDUSTRY: A STRONG ALLIANCE

Based in Ahlen in the German region of Westphalia and managed family-owned in the 4th generation, Winkelmann Building+Industry is one of the three main business units of the Winkelmann Group. The company designs and manufactures products and components of the highest quality with maximum production efficiency at a total of 7 sites in locations including Germany, Turkey, Poland and China.

Thanks to in-house research and development, collaboration with research institutions and government standardisation bodies as well as the deployment

of state-of-the-art production methods, the affiliated companies are among the most innovative in their sector. Our products and solutions for applications in heating, cooling, energy and plant engineering are worldwide known for their efficiency, performance and reliability.

Leading products, optimised processes and qualified employees provide the basis for satisfying our customers in the industry, in plant engineering, by wholesale trade as well as by installers.

A SMART CHOICE FOR HYDRAULIC APPLICATIONS

Durable and reliable: As a manufacturer of high-quality diaphragm pressure expansion vessels, Nema Winkelmann is able to draw on the expertise and optimised processes of the Winkelmann Group. In its modern factory in the Turkish city of Düzce, the company produces a wide variety of high-performance pressure expansion vessels for heating and cooling systems, potable water and sanitary water systems as well as hot water storage systems.

Because Nema Winkelmann concentrates on what is really important, these products provide the perfect solutions to numerous challenges in building

technology applications involving the supply and delivery of water. Our vessels meet the most stringent requirements not only with regards to quality and reliability but also in terms of increasing cost sensitivity and time pressure during installation and assembly.

In accordance to ISO 9001:2015 Quality Management System, all processes have been streamlined with most attention to quality, hence customer satisfaction. All our products are designed, manufactured and certified according to EN 13831 and PED 2014/68/EU respectively.



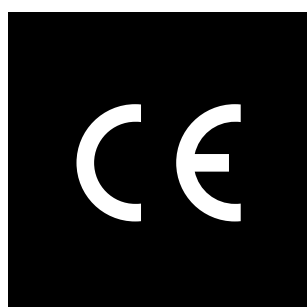
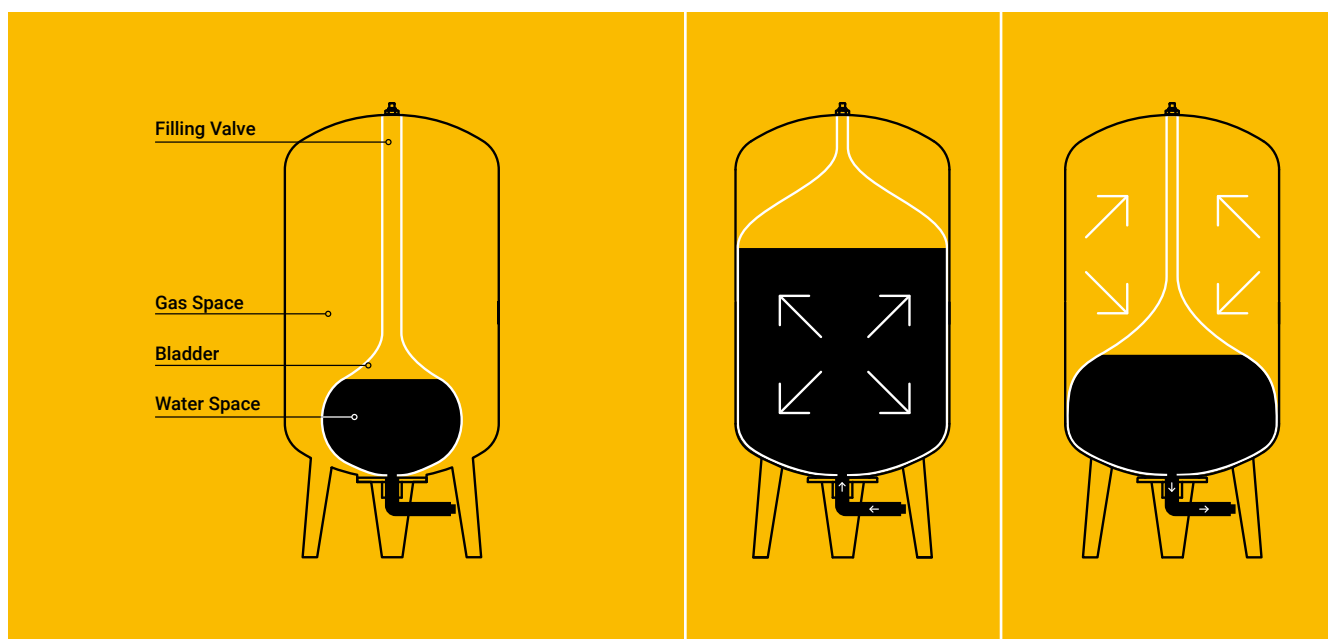
FUNCTION PRINCIPLE OF EXPANSION VESSELS

The correct pressure is a prerequisite for the proper operation of heating, solar power and cooling water systems as well as pressure booster systems. It is essential to maintain water at a stable balance, compensate for variations in volume at regulated pressure and prevent gas separation and cavitation.

Expansion vessels offer an easy but intelligent solution. No external energy is needed, neither electrical power, a compressor or a pump. The construction of an expansion vessel is simple:

A bladder divides the vessel into a water and a gas chamber and therefore prevents gas from diffusing into the water.

While the water chamber is linked to the system by a vessel connection, the correct pressure in the gas chamber is set by using a filling valve at the top of the expansion vessel. The gas pressure is needed to balance changing water volume or pressure differences.



CE MARKING AND DECLARATION OF CONFORMITY

CE marking is a part of the European Union's harmonisation legislation. It guarantees that products sold in the EEA have been assessed to meet high safety, health and environmental protection requirements.

Nema Winkelmann declares that all products meet the legal requirements for CE marking and can be sold throughout the EEA without restrictions.

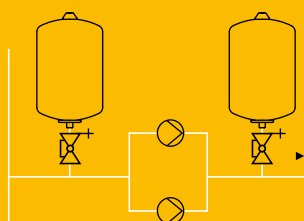
SCOPE OF APPLICATIONS



Water Supply
Applications

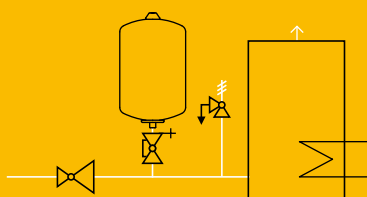
In booster systems, vessels are used as buffer tanks to intermediately store the difference between the pumped volume flow and the volume flow actually needed. Vessels are also required to decrease the switching frequency of a pump and reduce peak loads.

The pressurised cushion of air in the gas space is set approximately below the pump's switch-on pressure. When pressure falls below the switch-on pressure, the pump switches on and pumps water. If consumers remove a relatively small volume of water, the difference in the buffer vessel is stored until the pressurised cushion of air on the switch-off side has compressed and the booster system has switched off. When consumers take water, the interim water is taken from the buffer vessel until the pressurised cushion of air has fallen to the switch-on pressure and the booster system switches on again.



Sanitary Hot Water
Applications

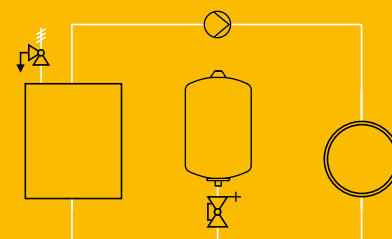
When heating sanitary water, pressure rises as the water expands. In the worst case, the excess pressure is decreased by a safety valve, losing valuable heated potable water. The use of a Nema expansion vessel remedies this situation by preventing the unnecessary opening of the safety valve and providing for a more efficient, resource-conserving operation of the system.





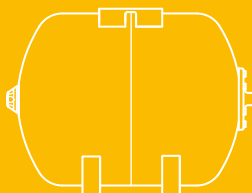



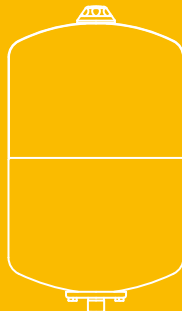



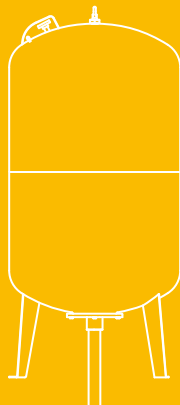
HVAC
Applications

In closed heating-cooling systems, the water expands or contracts as the system is heated up or cooled down. Expansion vessels are used to compensate for the fluctuations in volume between maximum and minimum temperature within a permissible range.

Nema expansion vessels are used to maintain pressure in heating, cooling and solar power systems. The pressurised cushion of gas supports the water column within the system and is set before a reserve of water is poured into the vessel. When the system heats up, the pressure rises and expansion water flows from the external system into the water space: the pressurised cushion of air in the gas space is compressed. When the system cools down and its pressure drops, this counter pressure pushes water from the membrane back into the system. This releases the pressurised cushion of air in the gas space.



MODEL RANGE

| | | |
|--|---|---|
| <div><div>MODEL</div><div>NEQ</div></div> <div><div></div><div></div></div> <div><div>Water Supply Applications</div><div>Sanitary Hot Water Applications</div></div> <div></div> | <div><div>MODEL</div><div>NEL</div></div> <div><div></div><div></div><div></div></div> <div><div>Water Supply Applications</div><div>Sanitary Hot Water Applications</div><div>HVAC Applications</div></div> <div></div> | <div><div>MODEL</div><div>NEX</div></div> <div><div></div><div></div><div></div></div> <div><div>Water Supply Applications</div><div>Sanitary Hot Water Applications</div><div>HVAC Applications</div></div> <div></div> |
| 24 – 100 lt | 5 – 60 lt | 50 – 5,000 lt |
| <div><div>BAR</div><div>10</div></div> | <div><div>BAR</div><div>6</div></div> — <div><div>BAR</div><div>25</div></div> | <div><div>BAR</div><div>6</div></div> — <div><div>BAR</div><div>25</div></div> |

CHOOSE YOUR PRODUCT

We have three ranges available for your requirement/project: NEQ, NEL and NEX. Our products can be customised based on volume, type of installation, pressure requirement, the correct diaphragm

and the colour of the vessel. Please use the structure outlined below to put together the order number for your selected product.

| 8. | 00008 | .01 | 06 | 1 0 | 1 0 |
|----|------------|--|----------------------|--|---------------------|
| | Volume | Type | PN rating | Bladder | Colour |
| 8. | 00008 | .01 | 06 | 1 0 | 1 0 |
| | 5-5,000 lt | 01 Vertical 02 Horizontal (NEQ) 03 Vertical without feet (NEL) 04 Sphere (NEL) 07 Vertical with hanger | 06 10 16 25 | 1 0 EPDM, Air 1 1 Butyl, Air 1 2 EPDM, Nitrogen 1 3 Butyl, Nitrogen | 1 0 Red 3 0 Blue |

ORDER PROCESS

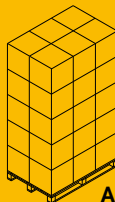
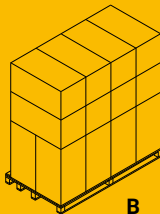

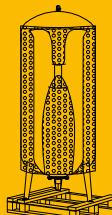

We look forward to hearing from you and would be delighted to provide additional information or answer any questions you might have in relation to your purchase order:

+90 (380) 745 11 29

info@nema-winkelmann.com.tr

NEMA WINKELMANN Isıtma ve Su Teknolojileri San. ve Tic. Ltd. Şti.
Yakabaşı Mah. | Kocaalan Mevkii | 81850 Gümüşova/Düzce | TURKEY

PACKAGING TYPES

| | | | | | |
|----|-------------|----------------------|---|---|---|
| A | carton box | 80 x 120 cm pallet |  |  |  |
| B | carton box | 100x220 cm pallet | | | |
| C1 | carton box | 68 x 101 cm pallet | | | |
| C2 | | 68 x 127 cm pallet | | | |
| C3 | | 74 x 156 cm pallet | | | |
| D1 | bubble wrap | 86 x 86 cm pallet |  |  | |
| D2 | | 95 x 95 cm pallet | | | |
| D3 | | 110 x 110 cm pallet | | | |
| E | bubble wrap | horizontal on pallet | | | |
| F1 | bulk method | 5 lt – 150 lt | | | |
| F2 | | 200 lt – 500 lt | | | |
| F3 | | 600 lt – 5,000 lt | | | |



TYPE
Horizontal

BLADDER COLOUR

EPDM Air

1 0

Butyl Air

1 1

EPDM N₂

1 2

Butyl N₂

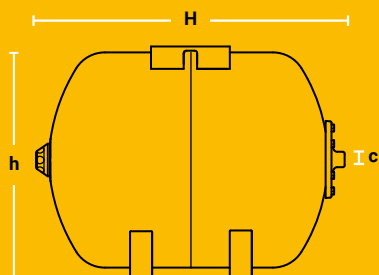
1 3

Red

1 0

Blue

3 0

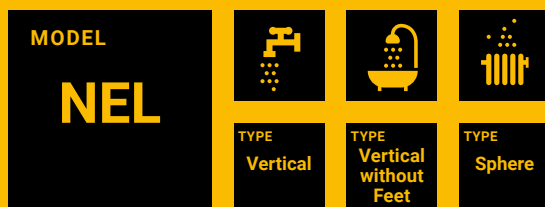


- In accordance to 2014/68/EU Pressure Equipment Directive and TS-EN 13831 standards
- Interchangeable bladder according to DIN 4807-3 norms, EPDM standard, Butyl optional
- Electrostatic Powder Coating
- Maximum working temperature for bladder: -10 °C–70 °C
- Maximum temperature allowed: +110 °C (+70 °C for sanitary hot water applications)
- Suitable for Water and Water-Glycol mixtures (max. 50% glycol, Fluid group 2 according to 2014/68/EU Directives)

| PN | Art. No. | V (lt) | Dia Ø (mm) | H (mm) | h (mm) | C (G ISO 228-1) | Weight (kg) | Precharge (bar) | Std. Pack (pcs.) | |
|-----------|----------------------|-----------|---------------|-----------|-----------|--------------------|----------------|--------------------|---------------------|----------|
| 10 BAR | 8.00024.0210 1 0 3 0 | 24 | 280 | 328 | 180 | 1" | 6.2 | 2 | 30 (A) | 90 (B) |
| | 8.00050.0210 | 50 | 410 | 454 | 238 | 1" | 10.0 | 4 | 16 (A) | 90 (B) |
| | 8.00060.0210 | 60 | 410 | 454 | 238 | | 11.0 | | 16 (A) | 40 (B)** |
| | 8.00080.0210 | 80 | 480 | 518 | 267 | | 15.0 | | 8 (A) | 16 (B) |
| | 8.00100.0210 | 100 | 480 | 518 | 267 | | 17.0 | | 8 (A) | 16 (B) |

* (Optional ¾")

** Pallet size: 120x220 cm



BLADDER COLOUR

EPDM Air

10

Butyl Air

11

EPDM N₂

12

Butyl N₂

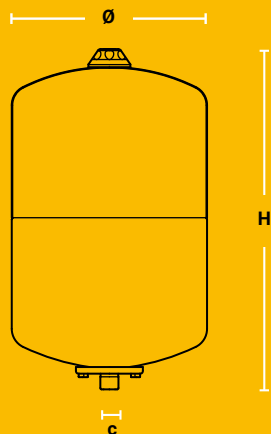
13

Red

10

Blue

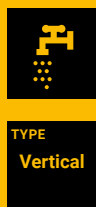
30



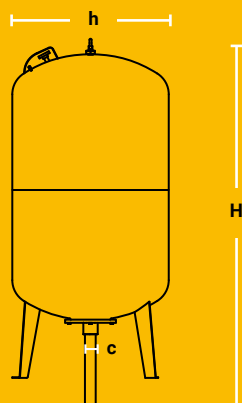
- In accordance to 2014/68/EU Pressure Equipment Directive and TS-EN 13831 standards
- Interchangeable bladder according to DIN 4807-3 norms, EPDM standard, Butyl optional
- Electrostatic Powder Coating
- Maximum working temperature for bladder: -10 °C – 70 °C
- Maximum temperature allowed: +110 °C (+70 °C for sanitary hot water applications)
- Suitable for Water and Water-Glycol mixtures (max. 50% glycol, Fluid group 2 according to 2014/68/EU Directives)

| PN | Art. No. | V (lt) | Dia Ø (mm) | H (mm) | h (mm) | C (G ISO 228-1) | Weight (kg) | Precharge (bar) | Std. Pack (pcs.) | |
|-----------|--------------|-----------|---------------|-----------|-----------|--------------------|----------------|--------------------|---------------------|---------|
| 6 BAR | 8.00005.0106 | 5 | 220 | 233 | – | 1"* | 2.5 | 2 | 120 (A) | N/A |
| | 8.00008.0106 | 8 | 220 | 296 | – | | 2.9 | | 80 (A) | N/A |
| | 8.00012.0106 | 12 | 220 | 410 | – | | 3.5 | | 80 (A) | N/A |
| | 8.00019.0106 | 19 | 280 | 434 | – | | 4.4 | | 36 (A) | 90 (B) |
| | 8.00024.0106 | 24 | 280 | 484 | – | | 4.8 | | 36 (A) | 90 (B) |
| | 8.00035.0306 | 35 | 354 | 465 | – | 1" | 5.8 | | 22 (A) | 90 (B) |
| | 8.00050.0306 | 50 | 410 | 523 | – | | 7.8 | | 15 (A) | 90 (B) |
| | 8.00060.0306 | 60 | 410 | 593 | – | | 8.6 | | 15 (A) | 40 (B)* |
| 10 BAR | 8.00005.0110 | 5 | 220 | 233 | – | 1"* | 2.5 | 2 | 120 (A) | N/A |
| | 8.00008.0110 | 8 | 220 | 296 | – | | 2.9 | | 80 (A) | N/A |
| | 8.00012.0110 | 12 | 220 | 410 | – | | 3.5 | | 80 (A) | N/A |
| | 8.00019.0110 | 19 | 280 | 434 | – | | 4.5 | | 36 (A) | 90 (B) |
| | 8.00024.0110 | 24 | 280 | 484 | – | | 4.9 | | 36 (A) | 90 (B) |
| | 8.00035.0310 | 35 | 354 | 465 | – | 1" | 6.0 | | 22 (A) | 90 (B) |
| | 8.00050.0310 | 50 | 410 | 523 | – | | 8.7 | | 15 (A) | 90 (B) |
| | 8.00060.0310 | 60 | 410 | 593 | – | | 9.5 | | 15 (A) | 40 (B)* |
| | 8.00024.0410 | 24 Sphere | 354 | 353 | – | 1" | 4.8 | 2 | 30 (A) | 90 (B)* |
| 16 BAR | 8.00019.0116 | 19 | 280 | 420 | – | 1" | 7.5 | 2 | 36 (A) | 90 (B) |
| | 8.00024.0116 | 24 | 280 | 484 | – | | 7.7 | | 36 (A) | 90 (B) |
| | 8.00050.0316 | 50 | 410 | 523 | – | | 14.0 | | 15 (A) | 90 (B) |
| 25 BAR | 8.00019.0125 | 19 | 280 | 426 | – | 1" | 11.0 | 2 | 36 (A) | 90 (B) |
| | 8.00024.0125 | 24 | 280 | 476 | – | | 13.0 | | 36 (A) | 90 (B) |
| | 8.00035.0325 | 35 | 354 | 451 | – | | 17.0 | | 22 (A) | 90 (B) |
| | 8.00050.0325 | 50 | 410 | 511 | – | | 23.0 | | 15 (A) | 90 (B) |

* Pallet size: 120x220 cm






































| BLADDER | COLOUR |
|----------------------|-----------|
| EPDM Air | Red |
| 10 | 10 |
| Butyl Air | Blue |
| 11 | 30 |
| EPDM N ₂ | |
| 12 | |
| Butyl N ₂ | |
| 13 | |



- In accordance to 2014/68/EU Pressure Equipment Directive and TS-EN 13831 standards
- Interchangeable bladder according to DIN 4807-3 norms, EPDM standard, Butyl optional
- Electrostatic Powder Coating
- Maximum working temperature for bladder: -10 °C – 70 °C
- Maximum temperature allowed: +110 °C (+70 °C for sanitary hot water applications)
- Suitable for Water and Water-Glycol mixtures (max. 50% glycol, Fluid group 2 according to 2014/68/EU Directives)
- Manometer (100 liters and above)

| PN | Art. No | V (lt) | Dia Ø (mm) | H (mm) | h (mm) | C (G ISO 228-1) | Weight (kg) | Precharge (bar) | Std. Pack (pcs.) | |
|-----------|--------------|-----------|---------------|-----------|-----------|--------------------|----------------|--------------------|---------------------|---------|
| 6 BAR | 8.00050.0106 | 50 | 410 | 650 | 130 | 1" | 7.8 | 2 | 15 (A) | 90 (B) |
| | 8.00060.0106 | 60 | 410 | 721 | 130 | 1" | 8.6 | 2 | 15 (A) | 40 (B)* |
| | 8.00080.0106 | 80 | 480 | 791 | 170 | 1" | 12.2 | 4 | 8 (A) | 16 (B) |
| | 8.00100.0106 | 100 | 480 | 899 | 170 | 1" | 14.4 | | 8 (A) | 16 (B) |
| | 8.00140.0106 | 140 | 480 | 1,137 | 175 | 1" | 18.0 | | 16 (B) | |
| | 8.00200.0106 | 200 | 634 | 1,008 | 150 | 1 ¼" | 29.0 | | 3 (C1) | |
| | 8.00250.0106 | 250 | 634 | 1,123 | 150 | | 33.0 | | 3 (C2) | |
| | 8.00300.0106 | 300 | 634 | 1,296 | 150 | | 36.0 | | 3 (C2) | |
| | 8.00400.0106 | 400 | 740 | 1,427 | 185 | | 52.0 | | 3 (C3) | |
| | 8.00500.0106 | 500 | 740 | 1,563 | 185 | | 56.0 | | 3 (C3) | |
| | 8.00600.0106 | 600 | 848 | 1,585 | 188 | | 99.0 | | 1 (D1) | |
| | 8.00750.0106 | 750 | 848 | 1,736 | 188 | | 106.0 | | 1 (D1) | |
| | 8.00800.0106 | 800 | 848 | 1,885 | 188 | | 119.0 | | 1 (D1) | |
| | 8.01000.0106 | 1,000 | 848 | 2,187 | 188 | 2" | 156.0 | | 1 (D1) | |
| 10 BAR | 8.00050.0110 | 50 | 410 | 650 | 130 | 1" | 9.2 | 2 | 15 (A) | 90 (B) |
| | 8.00060.0110 | 60 | 410 | 721 | 130 | 1" | 10.0 | 2 | 15 (A) | 40 (B)* |
| | 8.00080.0110 | 80 | 480 | 791 | 170 | 1" | 15.0 | 4 | 8 (A) | 16 (B) |
| | 8.00100.0110 | 100 | 480 | 899 | 170 | 1" | 17.0 | | 8 (A) | 16 (B) |
| | 8.00140.0110 | 140 | 480 | 1,137 | 170 | 1" | 24.0 | | 16 (B) | |
| | 8.00200.0110 | 200 | 634 | 1,008 | 150 | 1 ¼" | 36.0 | | 3 (C1) | |
| | 8.00250.0110 | 250 | 634 | 1,123 | 150 | | 41.0 | | 3 (C2) | |
| | 8.00300.0110 | 300 | 634 | 1,296 | 150 | | 45.0 | | 3 (C2) | |
| | 8.00400.0110 | 400 | 740 | 1,427 | 185 | | 65.0 | | 3 (C3) | |
| | 8.00500.0110 | 500 | 740 | 1,563 | 185 | | 70.0 | | 3 (C3) | |
| | 8.00600.0110 | 600 | 848 | 1,585 | 185 | 2" | 112.0 | | 1 (D1) | |
| | 8.00750.0110 | 750 | 848 | 1,736 | 185 | | 122.0 | | 1 (D1) | |
| | 8.00800.0110 | 800 | 848 | 1,881 | 185 | | 138.0 | | 1 (D1) | |
| | 8.01000.0110 | 1,000 | 848 | 2,187 | 185 | | 1,056.0 | | 1 (D1) | |
| | 8.01500.0110 | 1,500 | 958 | 2,250 | 200 | | 235.0 | | 1 (D2) | |
| | 8.02000.0110 | 2,000 | 1,100 | 2,395 | 290 | | 362.0 | | 1 (D3) | |

* Pallet size: 120x220 cm

| PN | Art. No. | V (lt) | Dia Ø (mm) | H (mm) | h (mm) | C (G ISO 228-1) | Weight (kg) | Precharge (bar) | Std. Pack (pcs.) | |
|-----------|--|-----------|---------------|-----------|-----------|--------------------|----------------|--------------------|---------------------|--------|
| 10 BAR | 8.02500.0110  | 2,500 | 1,100 | 2,750 | 280 | 2 ½" | 450.0 | 4 | 1 (E) | |
| | 8.03000.0110  | 3,000 | 1,200 | 2,800 | 270 | | 550.0 | | 1 (E) | |
| | 8.04000.0110  | 4,000 | 1,450 | 3,100 | 350 | 3" | 655.0 | | 1 (E) | |
| | 8.05000.0110  | 5,000 | 1,450 | 3,700 | 350 | | 830.0 | | 1 (E) | |
| 16 BAR | 8.00050.0116  | 50 | 410 | 650 | 125 | 1" | 15.0 | 2 | 15 (A) | 90 (B) |
| | 8.00080.0116  | 80 | 480 | 791 | 160 | | 22.0 | | 8 (A) | 16 (B) |
| | 8.00100.0116  | 100 | 480 | 899 | 160 | | 25.0 | | 8 (A) | 16 (B) |
| | 8.00140.0116  | 140 | 480 | 1,137 | 160 | | 31.0 | | 16 (B) | |
| | 8.00200.0116  | 200 | 634 | 1,008 | 145 | 1 ¼" | 56.0 | 4 | 3 (C1) | |
| | 8.00300.0116  | 300 | 634 | 1,296 | 145 | | 71.0 | | 3 (C2) | |
| | 8.00400.0116  | 400 | 740 | 1,427 | 180 | | 154.0 | | 3 (C3) | |
| | 8.00500.0116  | 500 | 740 | 1,563 | 180 | | 166.0 | | 3 (C3) | |
| | 8.00750.0116  | 750 | 800 | 1,981 | 180 | 2" | 223.0 | | 1 (D1) | |
| | 8.01000.0116  | 1,000 | 800 | 2,500 | 180 | | 285.0 | | 1 (D1) | |
| | 8.01500.0116  | 1,500 | 958 | 2,250 | 200 | | 319.0 | | 1 (D2) | |
| | 8.02000.0116  | 2,000 | 1,100 | 2,395 | 290 | | 538.0 | | 1 (D3) | |
| | 8.02500.0116  | 2,500 | 1,100 | 2,750 | 280 | 2 ½" | 705.0 | | 1 (E) | |
| | 8.03000.0116  | 3,000 | 1,200 | 2,800 | 270 | | 820.0 | | 1 (E) | |
| | 8.04000.0116  | 4,000 | 1,450 | 3,100 | 350 | | 980.0 | | 1 (E) | |
| | 8.05000.0116  | 5,000 | 1,450 | 3,700 | 350 | 3" | 1,200.0 | | 1 (E) | |
| 25 BAR | 8.00050.0125  | 50 | 410 | 600 | 140 | 3" | 28.0 | 4 | 15 (A) | 90 (B) |
| | 8.00080.0125  | 80 | 450 | 615 | 160 | | 39.0 | | 8 (A) | 16 (B) |
| | 8.00100.0125  | 100 | 450 | 949 | 160 | | 43.0 | | 8 (A) | 16 (B) |
| | 8.00140.0125  | 140 | 500 | 1,104 | 160 | | 56.0 | | 16 (B) | |
| | 8.00200.0125  | 200 | 600 | 1,015 | 140 | 1 ¼" | 115.0 | 5 | 3 (C1) | |
| | 8.00300.0125  | 300 | 640 | 1,305 | 140 | | 127.0 | | 3 (C2) | |
| | 8.00500.0125  | 500 | 750 | 1,498 | 185 | | 172.0 | | 3 (C3) | |
| | 8.00750.0125  | 750 | 750 | 1,945 | 175 | | 300.0 | | 1 (D1) | |
| | 8.01000.0125  | 1,000 | 800 | 2,498 | 210 | 2" | 330.0 | | 1 (D1) | |
| | 8.01500.0125  | 1,500 | 958 | 1,991 | 195 | | 480.0 | | 1 (D2) | |
| | 8.02000.0125  | 2,000 | 1,100 | 2,427 | 280 | | 680.0 | | 1 (D3) | |
| | 8.02500.0125  | 2,500 | 1,100 | 2,891 | 270 | | 835.0 | | 1 (E) | |
| | 8.03000.0125  | 3,000 | 1,200 | 2,451 | 260 | 2 ½" | 990.0 | | 1 (E) | |
| | 8.04000.0125  | 4,000 | 1,450 | 3,208 | 340 | | 1,200.0 | | 1 (E) | |
| | 8.05000.0125  | 5,000 | 1,450 | 3,833 | 340 | | 1,500.0 | | 1 (E) | |

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