



# ADVANCED HEAT EXCHANGERS

BRAZED PLATE

ONDA is a leading company in Heat Exchange, partner of all main Chiller manufacturers. ONDA produces a complete range of Shell & Tube and Braze Plate Heat Exchangers dedicated to Refrigeration and Air Conditioning. Our evaporators and condensers are available with different raw materials and well adapted to different refrigerants (R22, R134a, R410A...) from 3 to 850 Tons. All our products are manufactured under ISO 9001 with all the main worldwide certifications: ASME, GOST, GL, PED, RINA, UL.

## TECHNICAL INFORMATION

The main applications of our braze plate heat exchangers are the evaporation and the condensation of the refrigerant gas in the air conditioning and refrigeration plants, the hot water production in heat pumps, the heat recovery.

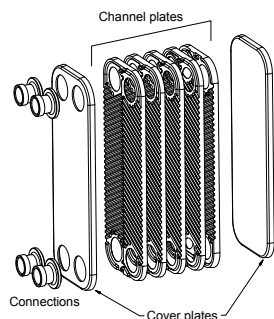
Suitable refrigerants are all HCFCs, HFCs and others, unless they are compatible with the manufacturing materials.

The dimensional data contained in this catalogue are to be intended indicative taking into account the manufacturing tolerances. We reserve the right to apply changes to this catalogue without prior notice.

## MATERIALS

The top quality materials used to manufacture the ONDA braze plate heat exchangers satisfy the requirements of the 2014/68/EU Directive (Pressure Equipment Directive).

The type construction of the braze plate heat exchangers consists of:



**Material of the BPHE :**  
 - Channel plates: Stainless steel AISI 316L  
 - Cover plates: Stainless steel AISI 304L  
 - Connections: Stainless steel AISI 304L  
 - Brazing material: Copper

## ACCESSORIES

Following optionals are available on request:

- Stud bolts (front / rear / front+rear)
- Mounting feet / brackets
- Insulation.

ONDA Braze plate heat exchangers carry the UL Mark for US and Canada (ref. no.SA32759)

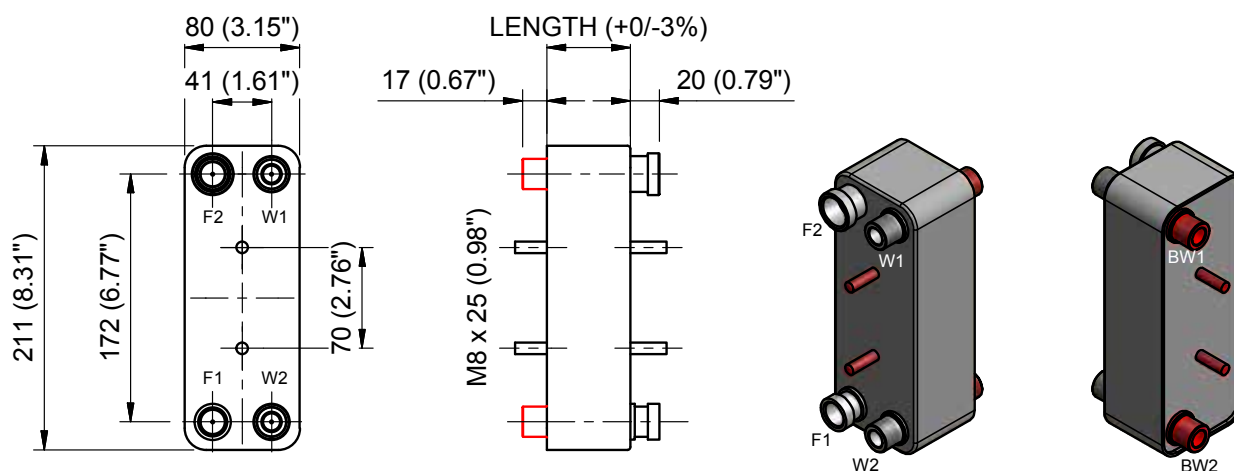


| Configuration - connections SINGLE CIRCUIT |    |    |    |     |     |     |      |
|--------------------------------------------|----|----|----|-----|-----|-----|------|
| FOUR connections                           |    |    |    |     |     |     | Code |
| F1                                         | F2 | W1 | W2 |     |     |     | AA   |
| F1                                         | F2 |    |    | BW1 | BW2 |     | AB   |
| F1                                         | F2 | W1 |    |     | BW2 |     | AC   |
| F1                                         | F2 |    | W2 | BW1 |     |     | AD   |
|                                            | F2 | W1 |    | BW1 |     | BF2 | AE   |
|                                            | F2 | W1 |    |     | BW2 | BF1 | AF   |
| F1                                         |    |    | W2 |     | BW2 | BF1 | AG   |
| F1                                         |    |    | W2 | BW1 |     | BF2 | AH   |
| FIVE connections                           |    |    |    |     |     |     |      |
| F1                                         | F2 | W1 | W2 | BW1 |     |     | BA   |
| F1                                         | F2 | W1 | W2 |     | BW2 |     | BB   |
| F1                                         | F2 | W1 |    | BW1 | BW2 |     | BC   |
| F1                                         | F2 |    | W2 | BW1 | BW2 |     | BD   |
| SIX connections                            |    |    |    |     |     |     |      |
| F1                                         | F2 | W1 | W2 | BW1 | BW2 |     | CA   |
| F1                                         | F2 | W1 | W2 |     |     | BF1 | CB   |
| F1                                         | F2 | W1 | W2 | BW1 |     | BF2 | CC   |
| F1                                         | F2 | W1 | W2 |     | BW2 | BF1 | CD   |
| EIGHT connections                          |    |    |    |     |     |     |      |
| F1                                         | F2 | W1 | W2 | BW1 | BW2 | BF1 | BF2  |
|                                            |    |    |    |     |     |     | DA   |
| Configuration - connections DUAL CIRCUIT   |    |    |    |     |     |     |      |
| SIX connections                            |    |    |    |     |     |     |      |
| F1                                         | F2 | G1 | G2 |     |     | BW1 | BW2  |
| F1                                         | F2 | G1 | G2 | W1  | W2  |     |      |
|                                            |    |    |    |     |     |     |      |
|                                            |    |    |    |     |     |     |      |
| SEVEN connections                          |    |    |    |     |     |     |      |
| F1                                         | F2 | G1 | G2 | W1  |     | BW1 | BW2  |
| F1                                         | F2 | G1 | G2 |     | W2  | BW1 | BW2  |
| F1                                         | F2 | G1 | G2 | W1  | W2  | BW1 |      |
| F1                                         | F2 | G1 | G2 | W1  | W2  |     | BW2  |
| EIGHT connections                          |    |    |    |     |     |     |      |
| F1                                         | F2 | G1 | G2 | W1  | W2  | BW1 | BW2  |
|                                            |    |    |    |     |     |     | PA   |

SEE PAGE 28 FOR THE DRAWINGS CONFIGURATIONS



# S06 SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S06                   | S06H                  | CONNECTIONS TYPE                                 |            |            |          |
|------------------------------------|-----------------------|-----------------------|--------------------------------------------------|------------|------------|----------|
| PS (bar)                           | 30                    | 45                    | Soldering                                        | Threaded M | Threaded F | Rotalock |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C      | -100°C to +120°C      | S6                                               | C22        | F22        | R19      |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 18                    | 18                    | S8                                               | C27        | IF22       | R25      |
| MAXIMUM FLOW RATE (m3/h)           | 5,22                  | 5,22                  | S12                                              | G22        | IF6        |          |
| VOLUME / CHANNEL (liters)          | 0,0346                | 0,0346                | S14                                              | G27        | IF8        |          |
| DIMENSIONS (mm)                    | 80 x 211              | 80 x 211              | S16                                              | IC22       |            |          |
| LENGHT CALCULATION (mm)            | $N \times 2,3 + 10$   | $N \times 2,3 + 10$   | S18                                              | IC27       |            |          |
| WEIGHT CALCULATION (kg)            | $N \times 0,06 + 0,5$ | $N \times 0,06 + 0,5$ | S19                                              |            |            |          |
|                                    | SAME "H" DESIGN       |                       | S20                                              |            |            |          |
|                                    |                       |                       | Standard connections:<br>F1 S18 F2 S20 W1-W2 C22 |            |            |          |
|                                    |                       |                       | FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |          |

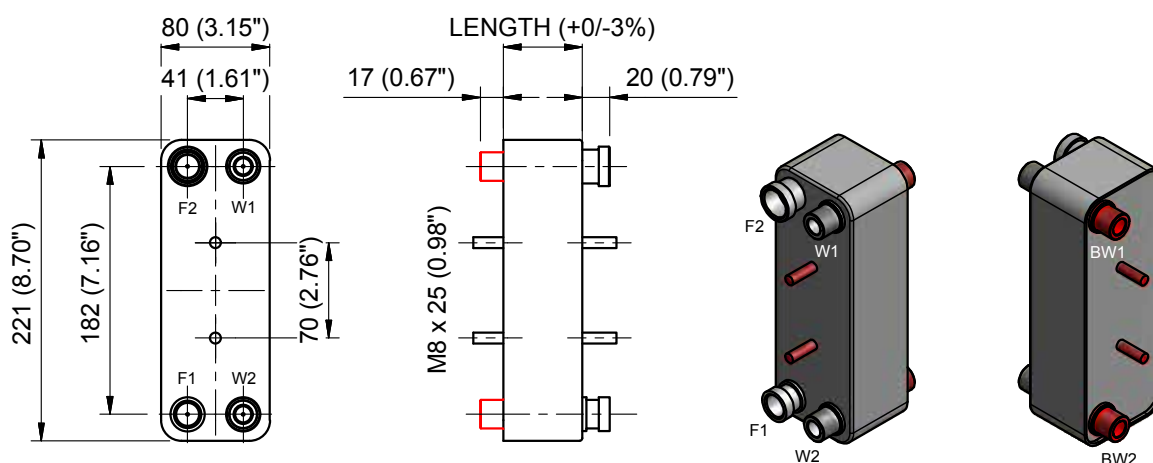
**N** Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)



### Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S07                   | S07H                  | CONNECTIONS TYPE                                 |            |            |          |
|------------------------------------|-----------------------|-----------------------|--------------------------------------------------|------------|------------|----------|
| PS (bar)                           | 30                    | 45                    | Soldering                                        | Threaded M | Threaded F | Rotalock |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C      | -100°C to +120°C      | S6                                               | C22        | F22        | R19      |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 18                    | 18                    | S8                                               | C27        | IF22       | R25      |
| MAXIMUM FLOW RATE (m³/h)           | 5,2                   | 5,2                   | S12                                              | G22        | IF6        |          |
| VOLUME / CHANNEL (liters)          | 0,036                 | 0,036                 | S14                                              | G27        | IF8        |          |
| DIMENSIONS (mm)                    | 80 x 221              | 80 x 221              | S16                                              | IC22       |            |          |
| LENGHT CALCULATION (mm)            | $N \times 2,3 + 10$   | $N \times 2,3 + 10$   | S18                                              | IC27       |            |          |
| WEIGHT CALCULATION (kg)            | $N \times 0,07 + 0,5$ | $N \times 0,07 + 0,5$ | S19                                              |            |            |          |
|                                    | SAME "H" DESIGN       |                       | S20                                              |            |            |          |
|                                    |                       |                       | Standard connections:<br>F1 S18 F2 S20 W1-W2 C22 |            |            |          |
|                                    |                       |                       | FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |          |

**N** Number of plates

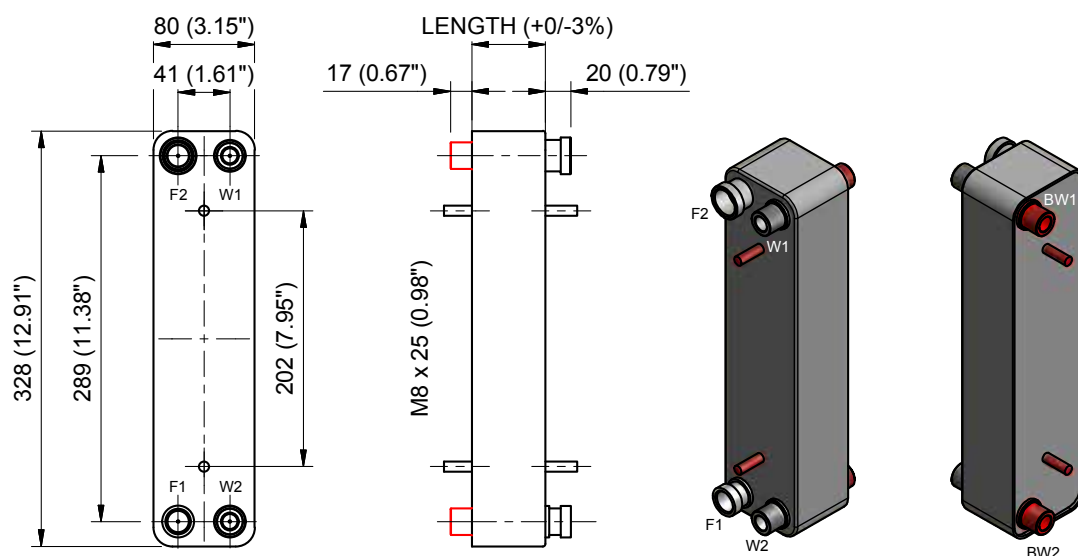
### LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S09 SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S09                   | S09H                  |
|------------------------------------|-----------------------|-----------------------|
| PS (bar)                           | 30                    | 45                    |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C      | -100°C to +120°C      |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 18                    | 18                    |
| MAXIMUM FLOW RATE (m3/h)           | 5,22                  | 5,22                  |
| VOLUME / CHANNEL (liters)          | 0,054                 | 0,054                 |
| DIMENSIONS (mm)                    | 80 x 328              | 80 x 328              |
| LENGHT CALCULATION (mm)            | $N \times 2,3 + 10$   | $N \times 2,3 + 10$   |
| WEIGHT CALCULATION (kg)            | $N \times 0,08 + 1,1$ | $N \times 0,08 + 1,1$ |
| SAME "H" DESIGN                    |                       |                       |

| CONNECTIONS TYPE                                 |            |            |          |
|--------------------------------------------------|------------|------------|----------|
| Soldering                                        | Threaded M | Threaded F | Rotalock |
| S6                                               | C22        | F22        | R19      |
| S8                                               | C27        | IF22       | R25      |
| S12                                              | G22        | IF6        |          |
| S14                                              | G27        | IF8        |          |
| S16                                              | IC22       |            |          |
| S18                                              | IC27       |            |          |
| S19                                              |            |            |          |
| S20                                              |            |            |          |
| Standard connections:<br>F1 S18 F2 S20 W1-W2 C22 |            |            |          |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |          |

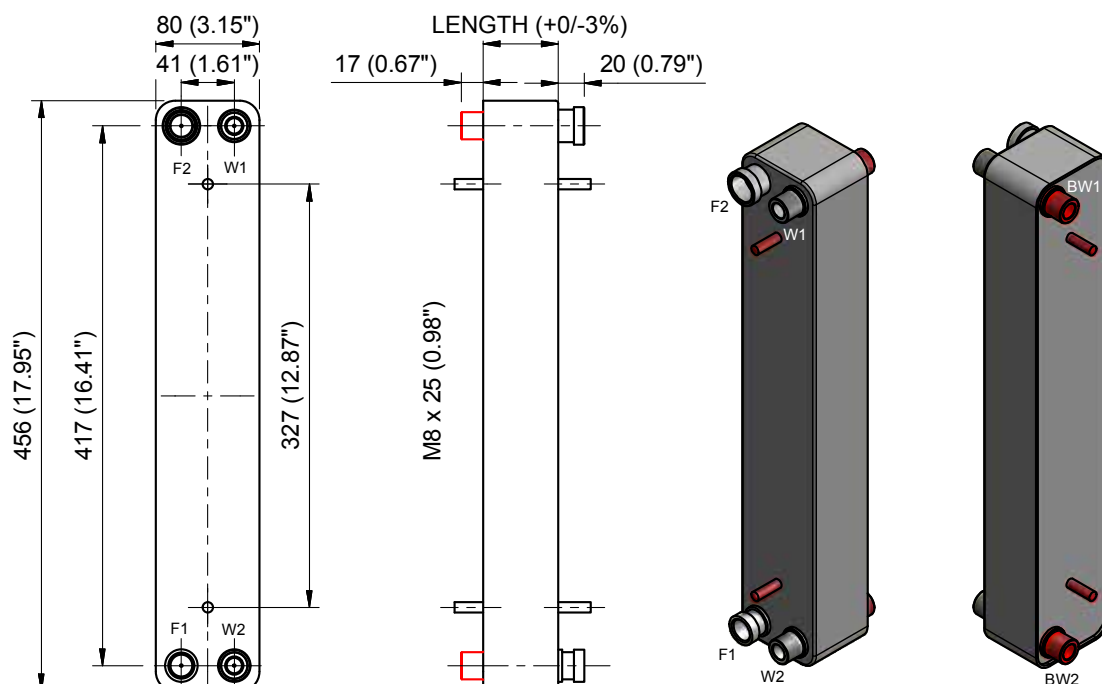
**N** Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                        | S22              | S22H             |
|---------------------------------------|------------------|------------------|
| PS (bar)                              | 30               | 45               |
| TEMPERATURE RANGE (°C)                | -100°C to +120°C | -100°C to +120°C |
| MAXIMUM CONNECTIONS AVAILABLE (mm)    | 18               | 18               |
| MAXIMUM FLOW RATE (m <sup>3</sup> /h) | 5,22             | 5,22             |
| VOLUME / CHANNEL (liters)             | 0,065            | 0,065            |
| DIMENSIONS (mm)                       | 80 x 456         | 80 x 456         |
| LENGHT CALCULATION (mm)               | N x 2,3 + 12     | N x 2,3 + 16     |
| WEIGHT CALCULATION (kg)               | N x 0,10 + 1,8   | N x 0,10 + 4     |

| CONNECTIONS TYPE                                 |            |            |          |
|--------------------------------------------------|------------|------------|----------|
| Soldering                                        | Threaded M | Threaded F | Rotalock |
| S6                                               | C22        | F22        | R19      |
| S8                                               | C27        | IF22       | R25      |
| S12                                              | G22        | IF6        |          |
| S14                                              | G27        | IF8        |          |
| S16                                              | IC22       |            |          |
| S18                                              | IC27       |            |          |
| S19                                              |            |            |          |
| S20                                              |            |            |          |
| Standard connections:<br>F1 S18 F2 S20 W1-W2 C22 |            |            |          |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |          |

**N** Number of plates

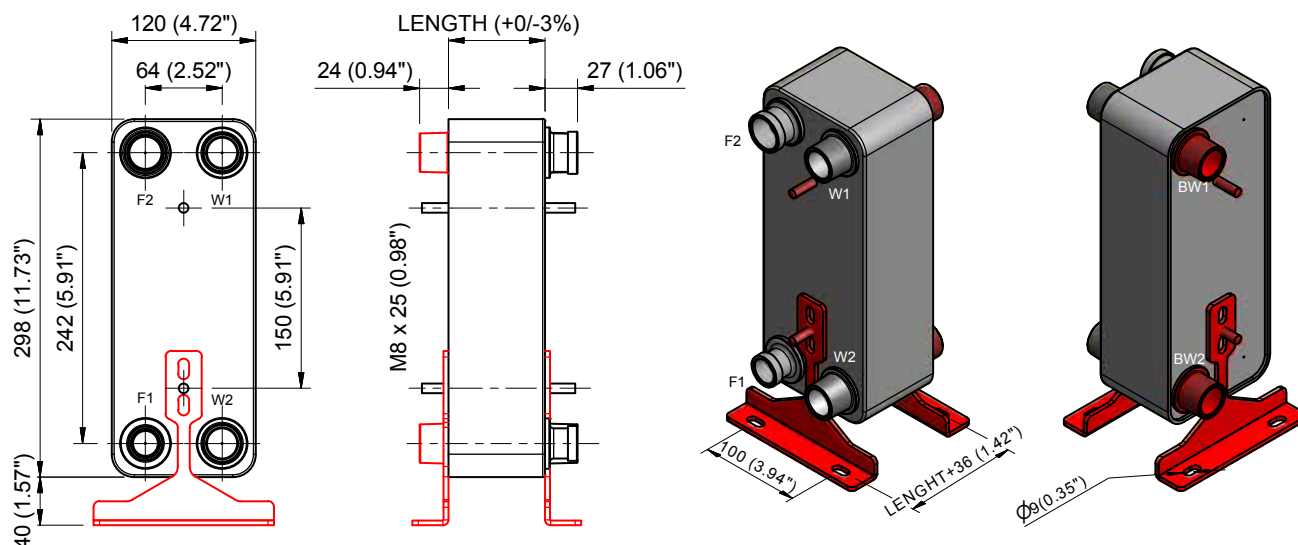
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S12-S12M SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S12              | S12H            |
|------------------------------------|------------------|-----------------|
| PS (bar)                           | 30               | 45              |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C | -100°C to +80°C |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 30,1             | 30,1            |
| MAXIMUM FLOW RATE (m3/h)           | 14,07            | 14,07           |
| VOLUME / CHANNEL (liters)          | 0,071            | 0,071           |
| DIMENSIONS (mm)                    | 120 x 298        | 120 x 298       |
| LENGHT CALCULATION (mm)            | N x 2,3 + 12     | N x 2,3 + 16    |
| WEIGHT CALCULATION (kg)            | N x 0,1 + 1,5    | N x 0,1 + 4     |

| CONNECTIONS TYPE                                 |            |            |         |          |
|--------------------------------------------------|------------|------------|---------|----------|
| Soldering                                        | Threaded M | Threaded F | Grooved | Rotalock |
| S6                                               | C22        | F22        | V32     | R19      |
| S8                                               | IC22       | F27        | BV32    | R25      |
| S12                                              | C27        | F32        | V40     | R32      |
| S14                                              | IC27       | F42        | BV40    | R44      |
| S16                                              | C32        | IF22       |         |          |
| S18                                              | IC32       | IF27       |         |          |
| S19                                              | C42        | IF32       |         |          |
| S22                                              | IC42       | IF42       |         |          |
| S28                                              | G22        |            |         |          |
| S35                                              | G27        |            |         |          |
|                                                  | G32        |            |         |          |
|                                                  | G42        |            |         |          |
| Standard Connections:<br>F1 S22 F2 S28 W1-W2 C32 |            |            |         |          |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |         |          |

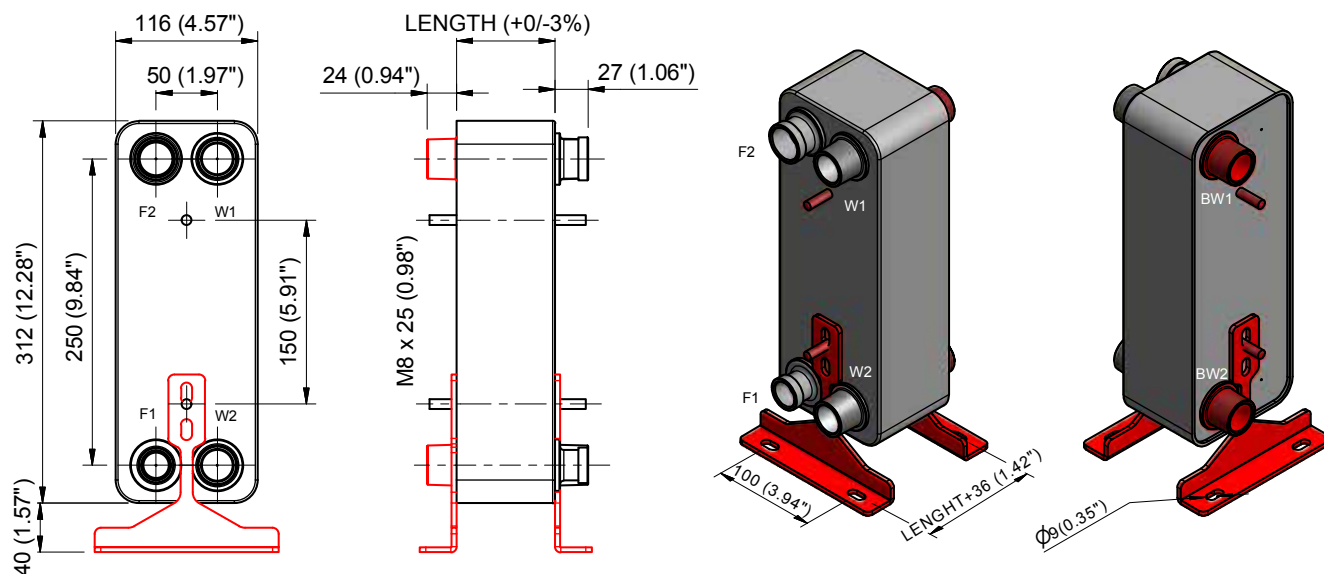
**N** Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant    W1-BW1 INLET Secondary Fluid  
 F2 OUTLET Refrigerant    W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                        | S16              | S16H            |
|---------------------------------------|------------------|-----------------|
| PS (bar)                              | 30               | 45              |
| TEMPERATURE RANGE (°C)                | -100°C to +120°C | -100°C to +80°C |
| MAXIMUM CONNECTIONS AVAILABLE (mm)    | 34               | 34              |
| MAXIMUM FLOW RATE (m <sup>3</sup> /h) | 14,07            | 14,07           |
| VOLUME / CHANNEL (liters)             | 0,08             | 0,08            |
| DIMENSIONS (mm)                       | 116 x 312        | 116 x 312       |
| LENGHT CALCULATION (mm)               | N x 2,3 + 12     | N x 2,3 + 16    |
| WEIGHT CALCULATION (kg)               | N x 0,1 + 1,5    | N x 0,1 + 4     |

| CONNECTIONS TYPE                                                                                            |            |            |         |          |
|-------------------------------------------------------------------------------------------------------------|------------|------------|---------|----------|
| Soldering                                                                                                   | Threaded M | Threaded F | Grooved | Rotalock |
| S6                                                                                                          | C22        | F22        | V32     | R19      |
| S8                                                                                                          | IC22       | F27        | BV32    | R25      |
| S12                                                                                                         | C27        | F32        | V40     | R32      |
| S14                                                                                                         | IC27       | IF22       | BV40    |          |
| S16                                                                                                         | C32        | IF27       |         |          |
| S18                                                                                                         | IC32       | IF32       |         |          |
| S19                                                                                                         | G22        |            |         |          |
| S22                                                                                                         | G27        |            |         |          |
| S28                                                                                                         | G32        |            |         |          |
| S35                                                                                                         |            |            |         |          |
| Standard Connections:<br>F1 S22    F2 S28    W1-W2 C32<br><br>FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22 |            |            |         |          |

**N** Number of plates

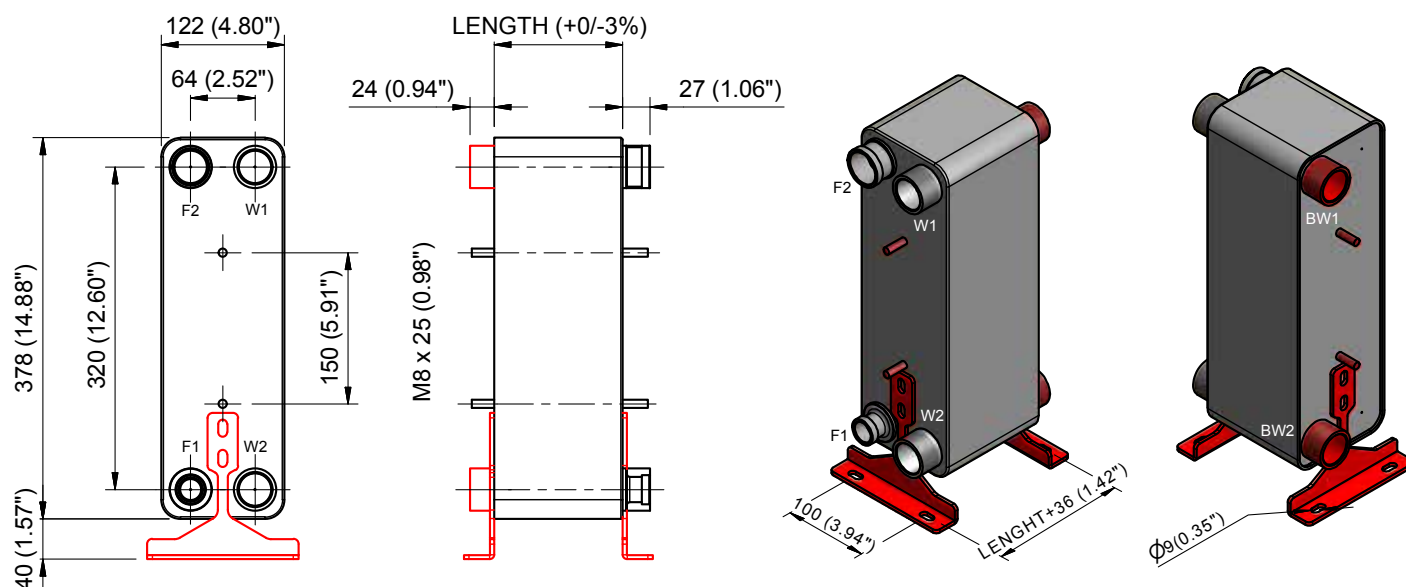
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL    Stainless Steel 316L

BRAZING MATERIAL    Copper (Cu)

# S62 SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S62              | S62H             |
|------------------------------------|------------------|------------------|
| PS (bar)                           | 30               | 45               |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C | -100°C to +120°C |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 38,9             | 38,9             |
| MAXIMUM FLOW RATE (m3/h)           | 23,6             | 23,6             |
| VOLUME / CHANNEL (liters)          | 0,08             | 0,08             |
| DIMENSIONS (mm)                    | 122 x 378        | 122 x 378        |
| LENGHT CALCULATION (mm)            | N x 2,15 + 12    | N x 2,15 + 16    |
| WEIGHT CALCULATION (kg)            | N x 0,12 + 2     | N x 0,12 + 4     |

| CONNECTIONS TYPE                                 |            |            |         |          |
|--------------------------------------------------|------------|------------|---------|----------|
| Soldering                                        | Threaded M | Threaded F | Grooved | Rotalock |
| S6                                               | C22        | F22        | V32     | R19      |
| S8                                               | IC22       | F27        | BV32    | R25      |
| S12                                              | C27        | F32        | V40     | R32      |
| S14                                              | IC27       | F42        | BV40    | R44      |
| S16                                              | C32        | IF22       |         |          |
| S18                                              | IC32       | IF27       |         |          |
| S19                                              | C42        | IF32       |         |          |
| S22                                              | IC42       | IF42       |         |          |
| S28                                              | G22        |            |         |          |
| S35                                              | G27        |            |         |          |
|                                                  | G32        |            |         |          |
|                                                  | G42        |            |         |          |
| Standard Connections:<br>F1 S22 F2 S35 W1-W2 C42 |            |            |         |          |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |         |          |

**N** Number of plates

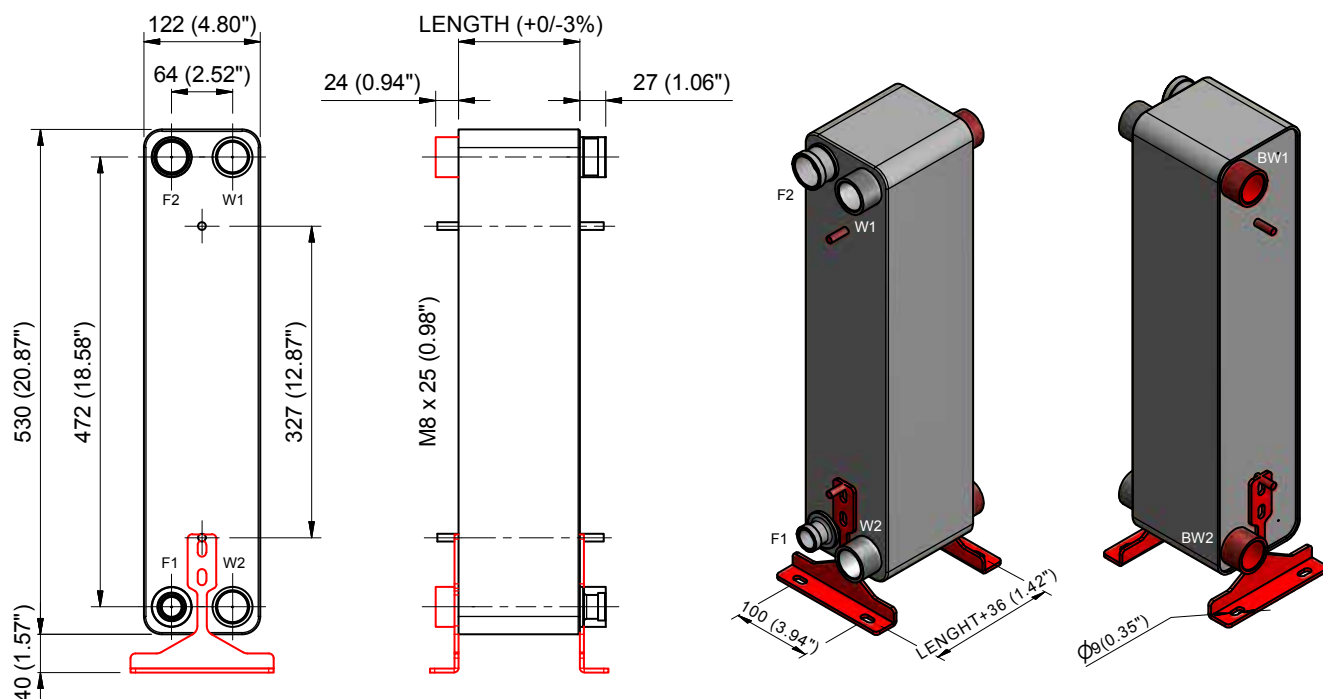
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S82-S82M SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S82                  | S82H                 |
|------------------------------------|----------------------|----------------------|
| PS (bar)                           | 30                   | 45                   |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C     | -100°C to +120°C     |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 38,9                 | 38,9                 |
| MAXIMUM FLOW RATE (m3/h)           | 23,6                 | 23,6                 |
| VOLUME / CHANNEL (liters)          | 0,122                | 0,122                |
| DIMENSIONS (mm)                    | 122 x 530            | 122 x 530            |
| LENGHT CALCULATION (mm)            | $N \times 2,15 + 11$ | $N \times 2,15 + 15$ |
| WEIGHT CALCULATION (kg)            | $N \times 0,17 + 2$  | $N \times 0,17 + 6$  |

| CONNECTIONS TYPE                                 |            |            |         |          |
|--------------------------------------------------|------------|------------|---------|----------|
| Soldering                                        | Threaded M | Threaded F | Grooved | Rotalock |
| S6                                               | C22        | F22        | V32     | R19      |
| S8                                               | IC22       | F27        | BV32    | R25      |
| S12                                              | C27        | F32        | V40     | R32      |
| S14                                              | IC27       | F42        | BV40    | R44      |
| S16                                              | C32        | IF22       |         |          |
| S18                                              | IC32       | IF27       |         |          |
| S19                                              | C42        | IF32       |         |          |
| S22                                              | IC42       | IF42       |         |          |
| S28                                              | G22        |            |         |          |
| S35                                              | G27        |            |         |          |
|                                                  | G32        |            |         |          |
|                                                  | G42        |            |         |          |
| Standard Connections:<br>F1 S22 F2 S35 W1-W2 C42 |            |            |         |          |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |         |          |

**N** Number of plates

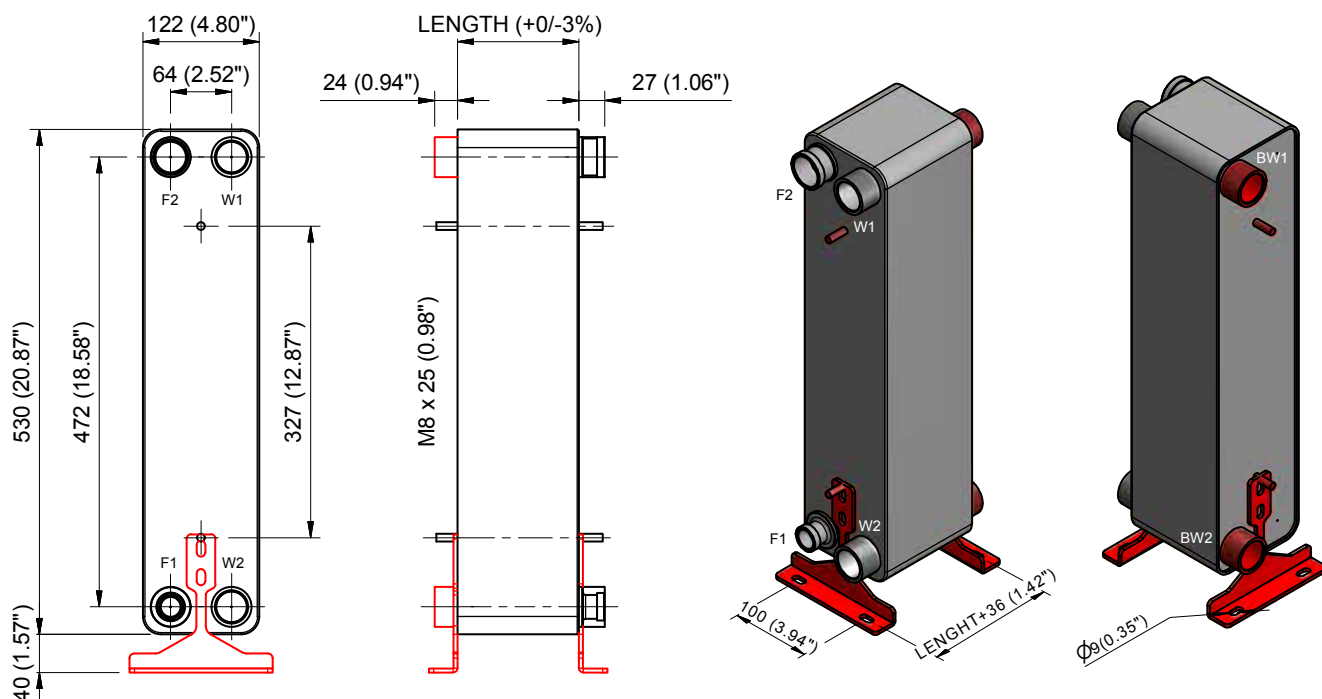
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S87 SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S87                  | S87H                 |
|------------------------------------|----------------------|----------------------|
| PS (bar)                           | 30                   | 45                   |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C     | -100°C to +120°C     |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 38,9                 | 38,9                 |
| MAXIMUM FLOW RATE (m3/h)           | 23,6                 | 23,6                 |
| VOLUME / CHANNEL (liters)          | 0,122                | 0,122                |
| DIMENSIONS (mm)                    | 122 x 530            | 122 x 530            |
| LENGHT CALCULATION (mm)            | $N \times 2,15 + 11$ | $N \times 2,15 + 15$ |
| WEIGHT CALCULATION (kg)            | $N \times 0,17 + 2$  | $N \times 0,17 + 6$  |

| CONNECTIONS TYPE                                 |            |            |         |          |
|--------------------------------------------------|------------|------------|---------|----------|
| Soldering                                        | Threaded M | Threaded F | Grooved | Rotalock |
| S6                                               | C22        | F22        | V32     | R19      |
| S8                                               | IC22       | F27        | BV32    | R25      |
| S12                                              | C27        | F32        | V40     | R32      |
| S14                                              | IC27       | F42        | BV40    | R44      |
| S16                                              | C32        | IF22       |         |          |
| S18                                              | IC32       | IF27       |         |          |
| S19                                              | C42        | IF32       |         |          |
| S22                                              | IC42       | IF42       |         |          |
| S28                                              | G22        |            |         |          |
| S35                                              | G27        |            |         |          |
|                                                  | G32        |            |         |          |
|                                                  | G42        |            |         |          |
| Standard Connections:<br>F1 S16 F2 S35 W1-W2 C42 |            |            |         |          |
| FOR SPECIAL CONNECTIONS SEE PAGE 21 AND 22       |            |            |         |          |

To optimize the evaporator S87D-S87HD performance refer to Onda' software HTC Brazed - nozzles at additional accessories page

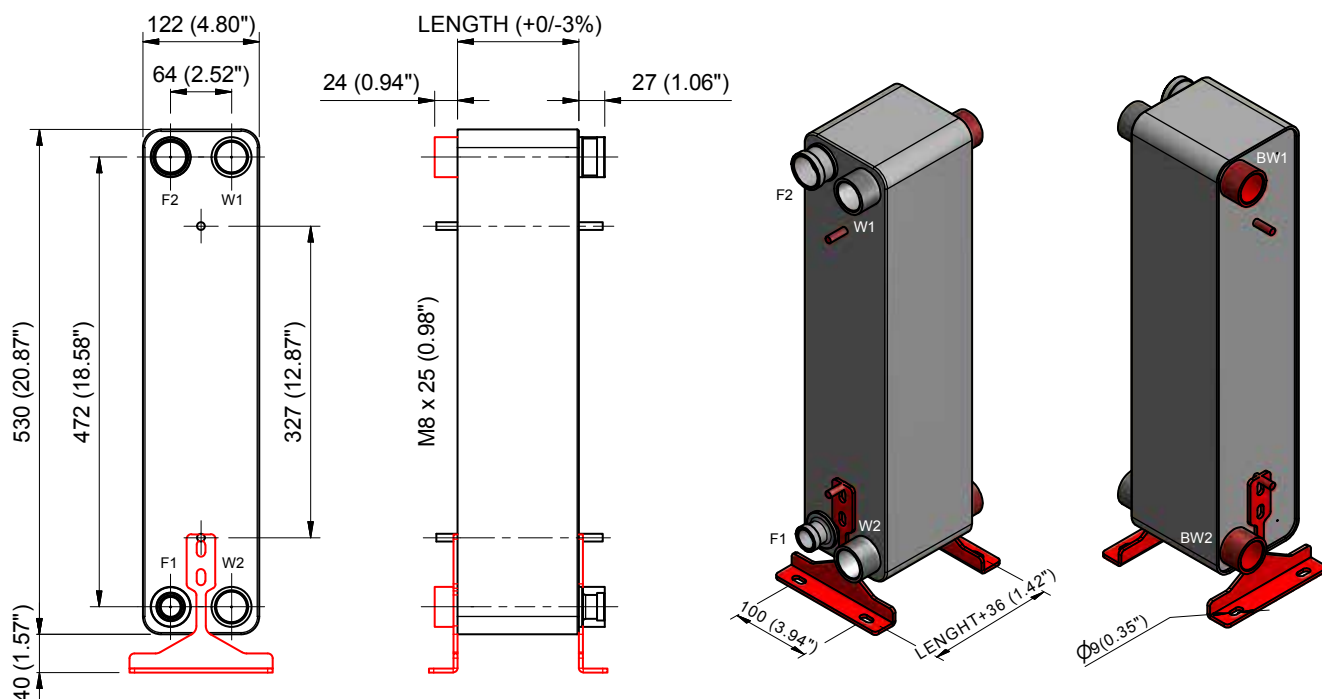
**N** Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant    W1-BW1 INLET Secondary Fluid  
 F2 OUTLET Refrigerant    W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S93                  | S93H                 |
|------------------------------------|----------------------|----------------------|
| PS (bar)                           | 30                   | 45                   |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C     | -100°C to +120°C     |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 38,9                 | 38,9                 |
| MAXIMUM FLOW RATE (m3/h)           | 23,6                 | 23,6                 |
| VOLUME / CHANNEL (liters)          | 0,122                | 0,122                |
| DIMENSIONS (mm)                    | 122 x 530            | 122 x 530            |
| LENGHT CALCULATION (mm)            | $N \times 2,15 + 11$ | $N \times 2,15 + 15$ |
| WEIGHT CALCULATION (kg)            | $N \times 0,17 + 2$  | $N \times 0,17 + 6$  |

| CONNECTIONS TYPE                                                                                     |            |            |         |          |
|------------------------------------------------------------------------------------------------------|------------|------------|---------|----------|
| Soldering                                                                                            | Threaded M | Threaded F | Grooved | Rotalock |
| S6                                                                                                   | C22        | F22        | V32     | R19      |
| S8                                                                                                   | IC22       | F27        | BV32    | R25      |
| S12                                                                                                  | C27        | F32        | V40     | R32      |
| S14                                                                                                  | IC27       | F42        | BV40    | R44      |
| S16                                                                                                  | C32        | IF22       |         |          |
| S18                                                                                                  | IC32       | IF27       |         |          |
| S19                                                                                                  | C42        | IF32       |         |          |
| S22                                                                                                  | IC42       | IF42       |         |          |
| S28                                                                                                  | G22        |            |         |          |
| S35                                                                                                  | G27        |            |         |          |
|                                                                                                      | G32        |            |         |          |
|                                                                                                      | G42        |            |         |          |
| Standard Connections:<br>F1 S16    F2 S35    W1-W2 C42<br>FOR SPECIAL CONNECTIONS SEE PAGE 21 AND 22 |            |            |         |          |

To optimize the evaporator S93D-S93HD performance refer to Onda' software HTC Brazed - nozzles at additional accessories page

**N** Number of plates

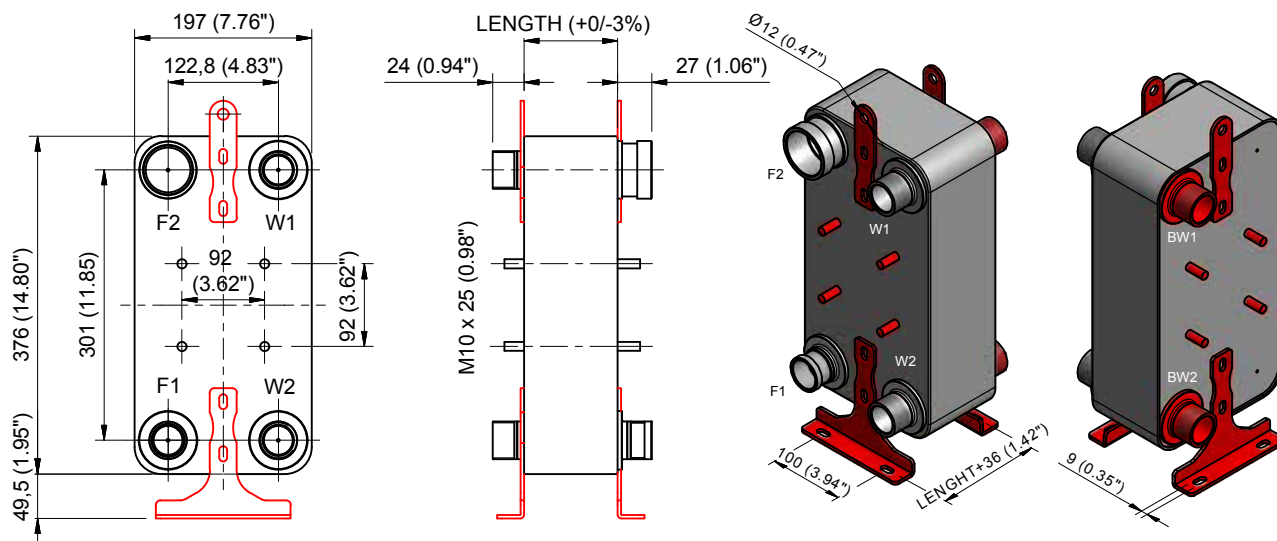
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S101 SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S101             | S101H            |
|------------------------------------|------------------|------------------|
| PS (bar)                           | 30               | 45               |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C | -100°C to +120°C |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 42               | 42               |
| MAXIMUM FLOW RATE (m3/h)           | 35               | 35               |
| VOLUME / CHANNEL (liters)          | 0,130            | 0,130            |
| DIMENSIONS (mm)                    | 197 x 376        | 197 x 376        |
| LENGHT CALCULATION (mm)            | N x 2,20 + 14    | N x 2,20 + 14    |
| WEIGHT CALCULATION (kg)            | N x 0,26 + 9     | N x 0,26 + 9     |
| SAME "H" DESIGN                    |                  |                  |

**N** Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

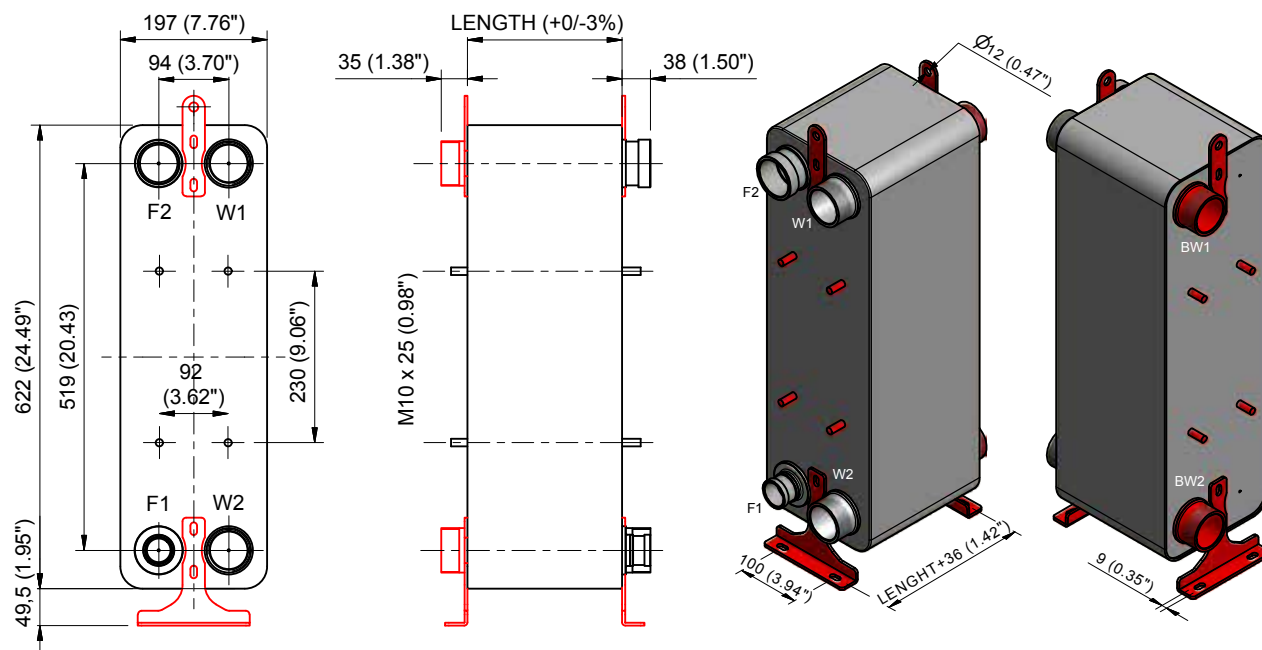
- S** Soldering Connections
- C** Conical Male Gas Threaded Connections
- G** Cylindric Male Gas Threaded Connections
- F** Female Gas Threaded Connections
- V-BV** Grooved System for Standard Flexible Coupling
- R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

| CONNECTIONS TYPE                                 |                                          |                                           |            |                   |
|--------------------------------------------------|------------------------------------------|-------------------------------------------|------------|-------------------|
| Soldering                                        | Threaded M                               | Threaded F                                | Grooved    | Rotalock          |
| S22<br>S28<br>S35<br>S42<br>S50                  | C32<br>C42<br>G32<br>G42<br>IC32<br>IC42 | F27<br>F32<br>F42<br>IF27<br>IF32<br>IF42 | V32<br>V40 | R32<br>R44<br>R58 |
| Standard Connections:<br>F1 S35 F2 S50 W1-W2 C42 |                                          |                                           |            |                   |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |                                          |                                           |            |                   |

# S182-S182M SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S182                 | S182H                |
|------------------------------------|----------------------|----------------------|
| PS (bar)                           | 30                   | 45                   |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C     | -100°C to +120°C     |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 57                   | 57                   |
| MAXIMUM FLOW RATE (m3/h)           | 50                   | 50                   |
| VOLUME / CHANNEL (liters)          | 0,269                | 0,269                |
| DIMENSIONS (mm)                    | 197 x 622            | 197 x 622            |
| LENGHT CALCULATION (mm)            | $N \times 2,35 + 18$ | $N \times 2,35 + 18$ |
| WEIGHT CALCULATION (kg)            | $N \times 0,36 + 12$ | $N \times 0,36 + 12$ |
| SAME "H" DESIGN                    |                      |                      |

| CONNECTIONS TYPE                                 |            |            |         |          |         |
|--------------------------------------------------|------------|------------|---------|----------|---------|
| Soldering                                        | Threaded M | Threaded F | Grooved | Rotalock | Flanges |
| S22                                              | C48        | F48        | V50     | R32      | CF66*   |
| S28                                              | IC48       | F60        | V65     | R44      |         |
| S35                                              | C60        | IF48       |         | R58      |         |
| S42                                              | IC60       | IF60       |         |          |         |
| S54                                              | IC70       |            |         |          |         |
| S60                                              | G48        |            |         |          |         |
|                                                  | G60        |            |         |          |         |
|                                                  | G70        |            |         |          |         |
| Standard Connections:<br>F1 S35 F2 S54 W1-W2 C60 |            |            |         |          |         |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22    |            |            |         |          |         |

**N** Number of plates

**\* ONLY IN W1/W2**

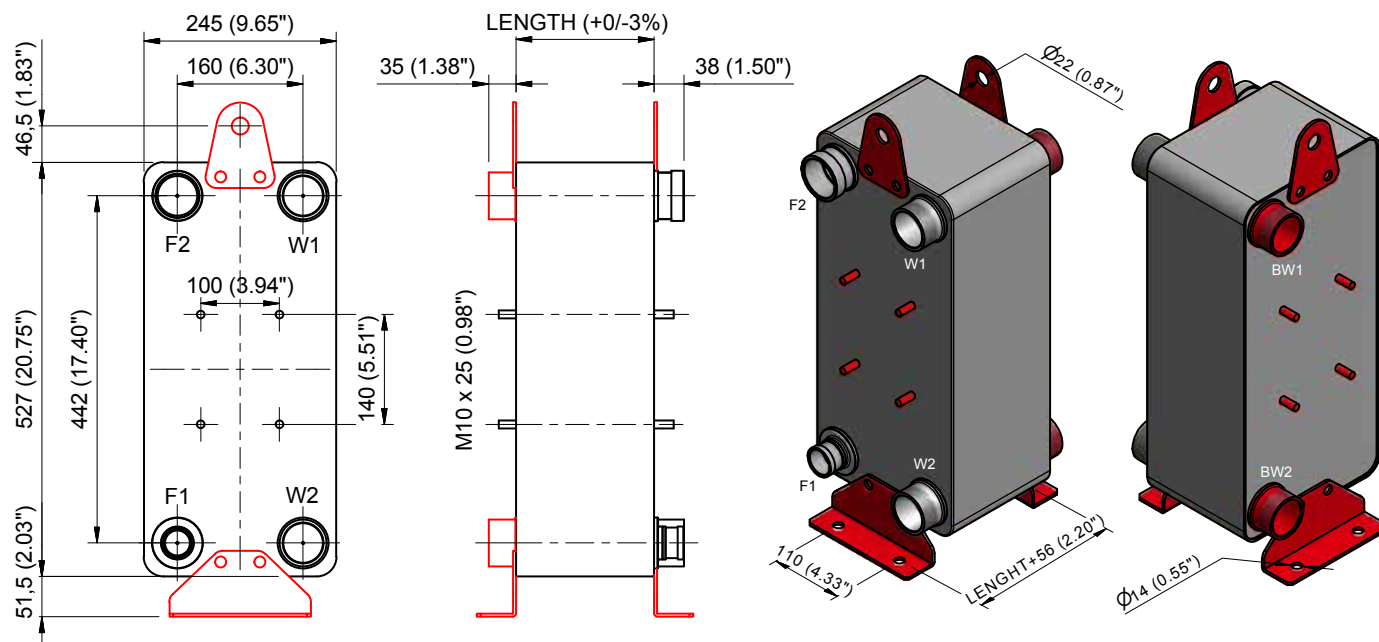
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S202-S202M SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S202                 | S202H                |
|------------------------------------|----------------------|----------------------|
| PS (bar)                           | 30                   | 45                   |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C     | -100°C to +120°C     |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 57                   | 57                   |
| MAXIMUM FLOW RATE (m3/h)           | 50,62                | 50,62                |
| VOLUME / CHANNEL (liters)          | 0,269                | 0,269                |
| DIMENSIONS (mm)                    | 245 x 527            | 245 x 527            |
| LENGHT CALCULATION (mm)            | $N \times 2,35 + 12$ | $N \times 2,35 + 16$ |
| WEIGHT CALCULATION (kg)            | $N \times 0,4 + 10$  | $N \times 0,4 + 14$  |

| CONNECTIONS TYPE                                                                                      |            |            |         |          |         |
|-------------------------------------------------------------------------------------------------------|------------|------------|---------|----------|---------|
| Soldering                                                                                             | Threaded M | Threaded F | Grooved | Rotalock | Flanges |
| S22                                                                                                   | C48        | F48        | V50     | R32      | CF66    |
| S28                                                                                                   | IC48       | F60        | V65     | R44      |         |
| S35                                                                                                   | C60        | IF48       |         | R58      |         |
| S42                                                                                                   | IC60       | IF60       |         |          |         |
| S54                                                                                                   | G48        |            |         |          |         |
| S60                                                                                                   | G60        |            |         |          |         |
|                                                                                                       | G70        |            |         |          |         |
| Standard Connections:<br>F1 S35 F2 S54 W1-W2 C60<br><br>FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22 |            |            |         |          |         |

**N** Number of plates

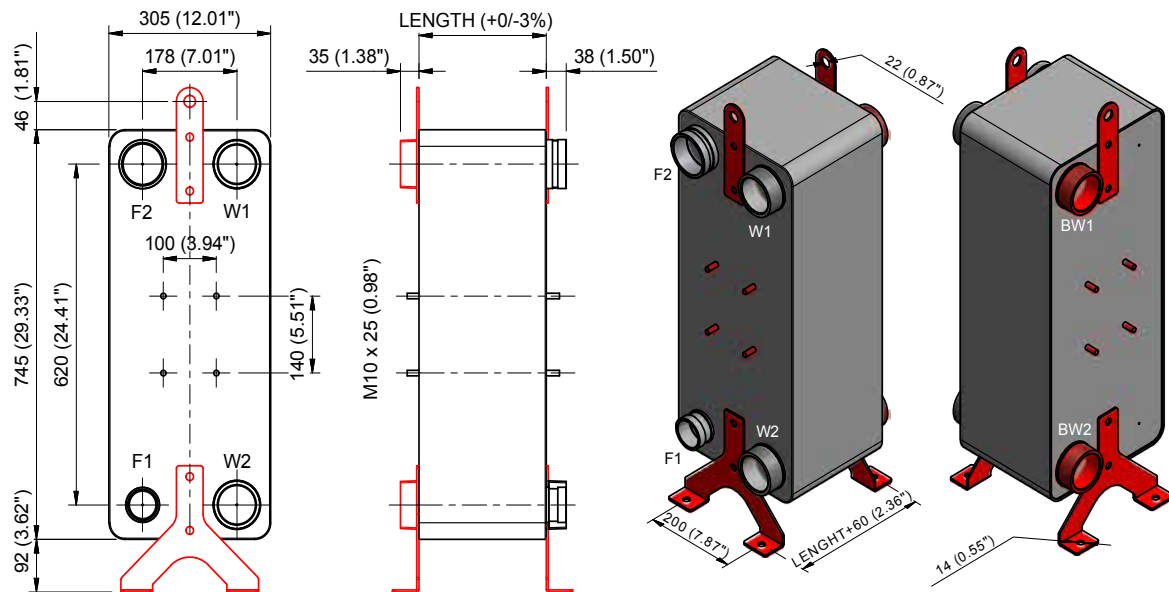
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S404-S404M SINGLE CIRCUIT



**Optional: stud bolts and mounting feet (mod. S424 available)**

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S404                 |
|------------------------------------|----------------------|
| PS (bar)                           | 30                   |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C     |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 84,7                 |
| MAXIMUM FLOW RATE (m3/h)           | 111,68               |
| VOLUME / CHANNEL (liters)          | 0,56                 |
| DIMENSIONS (mm)                    | 305 x 745            |
| LENGHT CALCULATION (mm)            | $N \times 2,85 + 20$ |
| WEIGHT CALCULATION (kg)            | $N \times 0,67 + 35$ |

| CONNECTIONS TYPE                                                                                  |            |            |         |          |         |
|---------------------------------------------------------------------------------------------------|------------|------------|---------|----------|---------|
| Soldering                                                                                         | Threaded M | Threaded F | Grooved | Rotalock | Flanges |
| S54                                                                                               | C76        | F22        | V76     | R58      | NF80*   |
| S64                                                                                               | IC73       | F27        | V80     |          | CF80    |
| S76                                                                                               | C90        | IF22       | V90     |          | CF65    |
| S90                                                                                               | IC90       | IF27       |         |          |         |
|                                                                                                   | G76        | IF32       |         |          |         |
|                                                                                                   | G90        |            |         |          |         |
| Standard Connections:<br>F1 S54 F2 S76 W1-W2 G90<br>FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22 |            |            |         |          |         |

**N** Number of plates

**\* ONLY IN W1/W2**

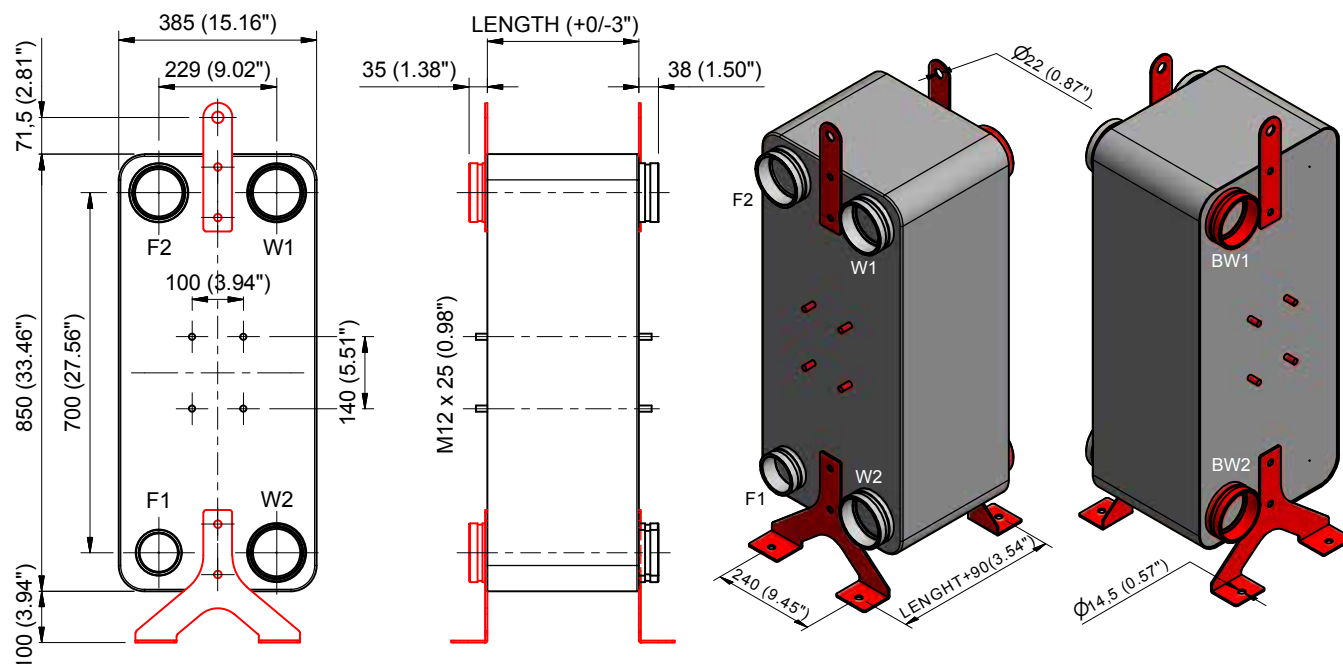
## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

# S606 - S606M SINGLE CIRCUIT



## Optional: stud bolts and mounting feet

F1 INLET Refrigerant W1-BW1 INLET Secondary Fluid  
F2 OUTLET Refrigerant W2-BW2 OUTLET Secondary Fluid

| SPECIFICATIONS                     | S606                 |
|------------------------------------|----------------------|
| PS (bar)                           | 20                   |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C     |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 110,1                |
| MAXIMUM FLOW RATE (m3/h)           | 188,41               |
| VOLUME / CHANNEL (liters)          | 0,79                 |
| DIMENSIONS (mm)                    | 385 x 850            |
| LENGHT CALCULATION (mm)            | $N \times 2,85 + 19$ |
| WEIGHT CALCULATION (kg)            | $N \times 0,86 + 50$ |

| CONNECTIONS TYPE                                   |            |            |         |         |
|----------------------------------------------------|------------|------------|---------|---------|
| Soldering                                          | Threaded M | Threaded F | Grooved | Flanges |
| S54                                                | C76        | F22        | V73     | NF100   |
| S64                                                | IC73       | F27        | V80     | NF80    |
| IS65                                               | C90        | IF22       | V90     | CF80    |
| S76                                                | IC90       | IF27       | V100    | CF100   |
| IS80                                               | C100       | IF32       |         |         |
| S90                                                | IC100      |            |         |         |
| IS92                                               | G76        |            |         |         |
| S100                                               | G90        |            |         |         |
|                                                    | G100       |            |         |         |
| Standard Connections:<br>F1 S76 F2 S100 W1-W2 V100 |            |            |         |         |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22      |            |            |         |         |

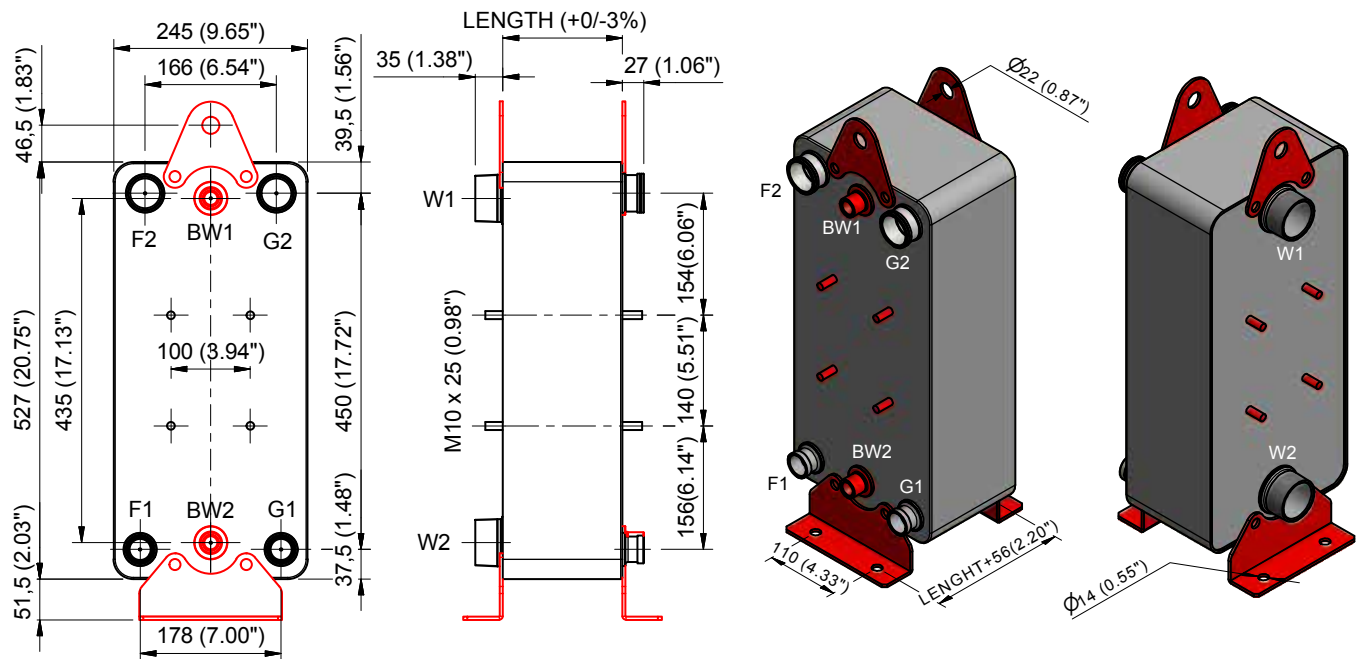
**N** Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

**S** Soldering Connections  
**C** Conical Male Gas Threaded Connections  
**G** Cylindric Male Gas Threaded Connections  
**F** Female Gas Threaded Connections  
**V-BV** Grooved System for Standard Flexible Coupling  
**R** Rotolock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)



## Optional: stud bolts and mounting feet

|           |                        |           |                       |
|-----------|------------------------|-----------|-----------------------|
| F1 INLET  | Refrigerant Circuit 1  | F2 OUTLET | Refrigerant Circuit 1 |
| G1 INLET  | Refrigerant Circuit 2  | G2 OUTLET | Refrigerant Circuit 2 |
| W1 INLET  | Secondary Fluid        | W2 OUTLET | Secondary Fluid       |
| BW1 - BW2 | Connections for Sensor |           |                       |

| SPECIFICATIONS                     | S222             | S222H            |
|------------------------------------|------------------|------------------|
| PS (bar)                           | 30               | 45               |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C | -100°C to +120°C |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 57               | 57               |
| MAXIMUM FLOW RATE (m3/h)           | 50,62            | 50,62            |
| VOLUME / CHANNEL (liters)          | 0,269            | 0,269            |
| DIMENSIONS (mm)                    | 245 x 527        | 245 x 527        |
| LENGHT CALCULATION (mm)            | N x 2,35 + 15    | N x 2,35 + 19    |
| WEIGHT CALCULATION (kg)            | N x 0,4 + 10     | N x 0,4 + 18     |

| CONNECTIONS TYPE                              |            |            |         |          |         |
|-----------------------------------------------|------------|------------|---------|----------|---------|
| Soldering                                     | Threaded M | Threaded F | Grooved | Rotalock | Flanges |
| S22                                           | C48        | F22        | V50     | R32      | CF66    |
| S28                                           | IC48       | F27        | V65     | R44      |         |
| IS29                                          | C60        | IF22       |         | R58      |         |
| S35                                           | IC60       | IF27       |         |          |         |
| S42                                           | G48        |            |         |          |         |
| IS41                                          | G60        |            |         |          |         |
| S50                                           |            |            |         |          |         |
| Standard Connections                          |            |            |         |          |         |
| F1-G1                                         | S28        | F2-G2      | S42     | W1-W2    | G60     |
| BW1-BW2 F22                                   |            |            |         |          |         |
| FOR SPECIAL CONNECTIONS<br>SEE PAGE 21 AND 22 |            |            |         |          |         |

**N** Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

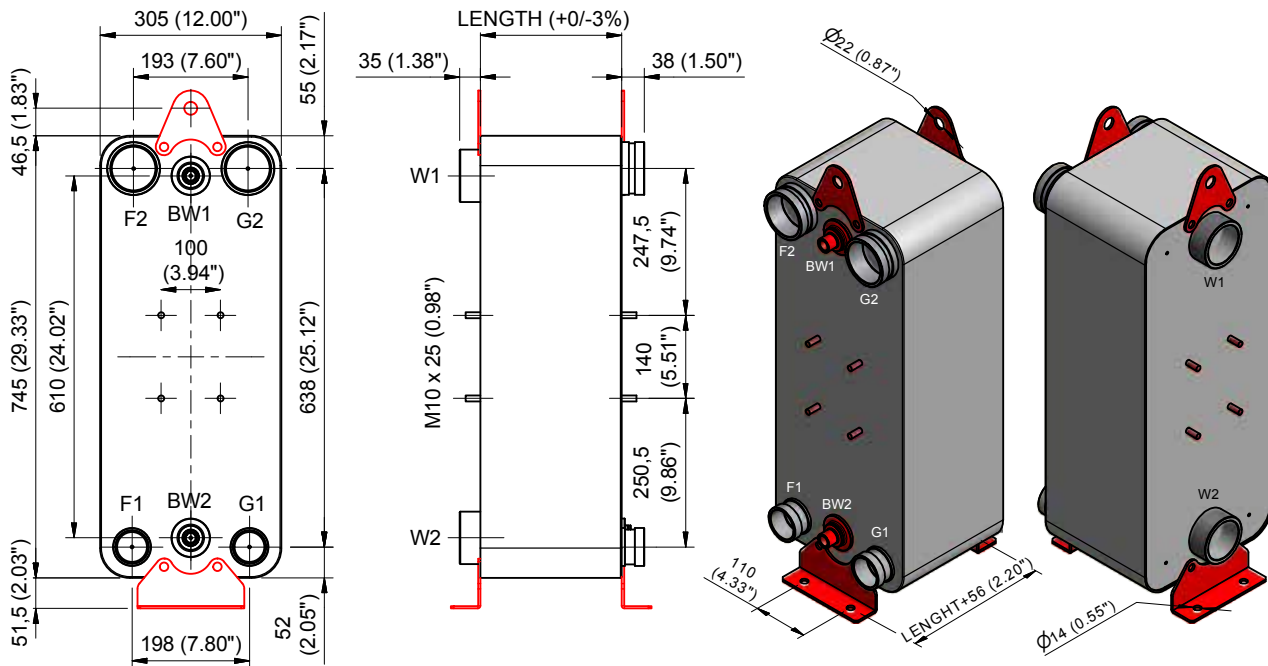
- S** Soldering Connections
- C** Conical Male Gas Threaded Connections
- G** Cylindric Male Gas Threaded Connections
- F** Female Gas Threaded Connections
- V - BV** Grooved System for Standard Flexible Coupling
- R** Rotalock Connections Male

EXCHANGE PLATE MATERIAL Stainless Steel 316L

BRAZING MATERIAL Copper (Cu)

Criss-Cross Flow Pattern Available on Request

# S424 DUAL CIRCUIT



### Optional: stud bolts and mounting feet

|                                  |       |                       |    |        |                       |
|----------------------------------|-------|-----------------------|----|--------|-----------------------|
| F1                               | INLET | Refrigerant Circuit 1 | F2 | OUTLET | Refrigerant Circuit 1 |
| G1                               | INLET | Refrigerant Circuit 2 | G2 | OUTLET | Refrigerant Circuit 2 |
| W1                               | INLET | Secondary Fluid       | W2 | OUTLET | Secondary Fluid       |
| BW1 - BW2 Connections for Sensor |       |                       |    |        |                       |

| SPECIFICATIONS                     | S424             | S424H            |
|------------------------------------|------------------|------------------|
| PS (bar)                           | 30               | 45               |
| TEMPERATURE RANGE (°C)             | -100°C to +120°C | -100°C to +120°C |
| MAXIMUM CONNECTIONS AVAILABLE (mm) | 84,7             | 84,7             |
| MAXIMUM FLOW RATE (m3/h)           | 111,68           | 111,68           |
| VOLUME / CHANNEL (liters)          | 0,484            | 0,484            |
| DIMENSIONS (mm)                    | 305 x 745        | 305 x 745        |
| LENGHT CALCULATION (mm)            | N x 2,85 + 20    | N x 2,85 + 24    |
| WEIGHT CALCULATION (kg)            | N x 0,67 + 33    | N x 0,67 + 38    |

| CONNECTIONS TYPE                                                      |            |            |         |          |         |
|-----------------------------------------------------------------------|------------|------------|---------|----------|---------|
| Soldering                                                             | Threaded M | Threaded F | Grooved | Rotalock | Flanges |
| S35                                                                   | C76        | F22        | V73     | R44      | NF80    |
| S42                                                                   | IC73       | F27        | V80     | R58      | NF65    |
| S54                                                                   | C90        | IF22       | V90     |          | CF65    |
| S64                                                                   | IC90       | IF27       |         |          |         |
| IS65                                                                  | G76        |            |         |          | CF80    |
| S76                                                                   | G90        |            |         |          |         |
| IS80                                                                  |            |            |         |          |         |
| S90                                                                   |            |            |         |          |         |
| Standard Connections:<br>F1-G1 S54 F2-G2 S76 W1-W2 C90<br>BW1-BW2 F22 |            |            |         |          |         |

**N**      Number of plates

## LETTER TO IDENTIFY CONNECTIONS TYPE

|               |                                               |
|---------------|-----------------------------------------------|
| <b>S</b>      | Soldering Connections                         |
| <b>C</b>      | Conical Male Gas Threaded Connections         |
| <b>G</b>      | Cylindric Male Gas Threaded Connections       |
| <b>F</b>      | Female Gas Threaded Connections               |
| <b>V - BV</b> | Grooved System for Standard Flexible Coupling |
| <b>R</b>      | Rotalock Connections Male                     |

EXCHANGE PLATE MATERIAL    Stainless Steel 316L

BRAZING MATERIAL                      Copper (Cu)

Criss-Cross Flow Pattern Available on Request

# ALL POSSIBLE CONNECTIONS FOR THESE CONNECTIONS CONTACT TECHNICAL DEPT

## S06 / S07 / S09 / S22

| Soldering | Threated M | Threated F | Rotalock R |
|-----------|------------|------------|------------|
| S6/20     | C22/20     | F22/20     | R19/20     |
| S8/20     | C27/20     | IF6/20     | R25/20     |
| S9/20     | IC22/20    | IF8/20     |            |
| S10/20    | IC27/20    | IF22/20    |            |
| S12/20    | G22/20     | IF26/20    |            |
| S14/20    | G27/20     |            |            |
| S16/20    |            |            |            |
| S18/20    |            |            |            |
| S19/20    |            |            |            |
| S20/20    |            |            |            |

## S16

| Soldering | Threated M | Threated F | Rotalock R | Grooved V |
|-----------|------------|------------|------------|-----------|
| S6/27     | C22/27     | F22/27     | R19/27     | V32/27    |
| S8/27     | C27/27     | F27/27     | R25/27     | V40/27    |
| S9/27     | C32/27     | F32/27     | R32/27     | BV32      |
| S10/27    | IC22/27    | IF6/27     |            | BV40      |
| S12/27    | IC27/27    | IF8/27     |            |           |
| S14/27    | IC32/27    | IF22/27    |            |           |
| S16/27    | G22/27     | IF27/27    |            |           |
| S18/27    | G27/27     | IF32/27    |            |           |
| S19/27    | G32/27     |            |            |           |
| S22/27    |            |            |            |           |
| S28/27    |            |            |            |           |
| S35/27    |            |            |            |           |

## S12 / S62 / S82 / S82M S87 / S93

| Soldering | Threated M | Threated F | Rotalock R | Grooved V |
|-----------|------------|------------|------------|-----------|
| S6/27     | C22/27     | F22/27     | R19/27     | V32/27    |
| S8/27     | C27/27     | F27/27     | R25/27     | V40/27    |
| S9/27     | C32/27     | F32/27     | R27/93     | BV32      |
| S10/27    | C42/27     | F42/27     | R32/27     | BV40      |
| S12/27    | IC22/27    | IF6/27     | R44/27     |           |
| S14/27    | IC27/27    | IF8/27     |            |           |
| S16/27    | IC32/27    | IF22/27    |            |           |
| S18/27    | IC42/27    | IF27/27    |            |           |
| S19/27    | G22/27     | IF32/27    |            |           |
| S22/27    | G27/27     | IF42/27    |            |           |
| S28/27    | G32/27     |            |            |           |
| S35/27    | G42/27     |            |            |           |

## S101

| Soldering | Threated M | Threated F | Rotalock R | Grooved V |
|-----------|------------|------------|------------|-----------|
| S6/27     | C22/27     | F22/27     | R19/27     | V32/27    |
| S8/27     | C27/27     | F27/27     | R25/27     | V40/27    |
| S9/27     | C32/27     | F32/27     | R32/27     | BV32      |
| S10/27    | C42/27     | F42/27     | R44/27     | BV40      |
| S12/27    | IC22/27    | IF6/27     | R58/27     |           |
| S14/27    | IC27/27    | IF8/27     |            |           |
| S16/27    | IC32/27    | IF22/27    |            |           |
| S18/27    | IC42/27    | IF27/27    |            |           |
| S19/27    | G22/27     | IF32/27    |            |           |
| S22/27    | G27/27     | IF42/27    |            |           |
| S28/27    | G32/27     |            |            |           |
| S35/27    | G42/27     |            |            |           |
| IS41/27   |            |            |            |           |
| S42/27    |            |            |            |           |
| S50/27    |            |            |            |           |

## S182/S182M/S202/S202M/S222

| Soldering | Threated M | Threated F | Rotalock R | Grooved V | Flanges F |
|-----------|------------|------------|------------|-----------|-----------|
| S6/38     | C22/38     | F22/38     | R19/38     | V32/38    | CF66      |
| S8/38     | C27/38     | F27/38     | R25/38     | V40/38    |           |
| S9/38     | C32/38     | F32/38     | R32/38     | V50/38    |           |
| S10/38    | C42/38     | F42/38     | R44/38     | V65/38    |           |
| S12/38    | C48/38     | F48/38     | R58/38     | BV32      |           |
| S14/38    | C60/38     | F60/38     |            | BV40      |           |
| S16/38    | IC22/38    | IF6/38     |            |           |           |
| S18/38    | IC27/38    | IF8/38     |            |           |           |
| S19/38    | IC32/38    | IF22/38    |            |           |           |
| S22/38    | IC42/38    | IF27/38    |            |           |           |
| S28/38    | IC48/38    | IF32/38    |            |           |           |
| S35/38    | IC60/38    | IF42/38    |            |           |           |
| IS41/38   | G22/38     | IF48/38    |            |           |           |
| S42/38    | G27/38     | IF60/38    |            |           |           |
| S54/38    | G32/38     |            |            |           |           |
| S60/38 *  | G42/38     |            |            |           |           |
|           | G48/38     |            |            |           |           |
|           | G60/38     |            |            |           |           |
|           | G70/38     |            |            |           |           |

\* NO S222

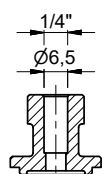
# ALL POSSIBLE CONNECTIONS FOR THESE CONNECTIONS CONTACT TECHNICAL DEPT

| S404 / S424 |            |            |            |           |           |
|-------------|------------|------------|------------|-----------|-----------|
| Soldering   | Threated M | Threated F | Rotalock R | Grooved V | Flanges F |
| S6/38       | C22/38     | F22/38     | R19/38     | V32/38    | CF65      |
| S8/38       | C27/38     | F27/38     | R25/38     | V40/38    | CF80      |
| S9/38       | C32/38     | F32/38     | R32/38     | V50/38    | NF65      |
| S10/38      | C42/38     | F42/38     | R44/38     | V65/38    | NF80      |
| S12/38      | C48/38     | F48/38     | R58/38     | V80/38    | IN65      |
| S14/38      | C60/38     | F60/38     |            | V80L      | IN80      |
| S16/38      | C76/38     | IF6/38     |            | BV32      |           |
| S18/38      | C90/38     | IF8/38     |            | BV40      |           |
| S19/38      | IC22/38    | IF22/38    |            |           |           |
| S22/38      | IC27/38    | IF27/38    |            |           |           |
| S28/38      | IC32/38    | IF32/38    |            |           |           |
| S35/38      | IC42/38    | IF42/38    |            |           |           |
| IS41/38     | IC48/38    | IF48/38    |            |           |           |
| S42/38      | IC60/38    | IF60/38    |            |           |           |
| S54/38      | IC70/38    | IF73/38    |            |           |           |
| S64/38      | IC90/38    |            |            |           |           |
| IS66/38     | G22/38     |            |            |           |           |
| S76/38      | G27/38     |            |            |           |           |
| IS80/38     | G32/38     |            |            |           |           |
| S90/38      | G42/38     |            |            |           |           |
| IS92/38     | G48/38     |            |            |           |           |
|             | G60/38     |            |            |           |           |
|             | G76/38     |            |            |           |           |

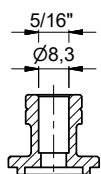
| S606/S606M |            |            |            |           |           |
|------------|------------|------------|------------|-----------|-----------|
| Soldering  | Threated M | Threated F | Rotalock R | Grooved V | Flanges F |
| S6/38      | C22/38     | F22/38     | R19/38     | V32/38    | CF65      |
| S8/38      | C27/38     | F27/38     | R25/38     | V40/38    | CF80      |
| S9/38      | C32/38     | F32/38     | R32/38     | V50/38    | CF100     |
| S10/38     | C42/38     | F42/38     | R44/38     | V65/38    | NF65      |
| S12/38     | C48/38     | F48/38     | R58/38     | V80/38    | NF80      |
| S14/38     | C60/38     | F60/38     |            | V80L      | NF100     |
| S16/38     | C76/38     | IF6/38     |            | V100/38   | IN65      |
| S18/38     | C90/38     | IF8/38     |            | BV32      | IN80      |
| S19/38     | IC22/38    | IF22/38    |            | BV40      | IN100     |
| S22/38     | IC27/38    | IF27/38    |            |           |           |
| S28/38     | IC32/38    | IF32/38    |            |           |           |
| S35/35     | IC42/38    | IF42/38    |            |           |           |
| IS41/38    | IC48/38    | IF48/38    |            |           |           |
| S42/38     | IC60/38    | IF60/38    |            |           |           |
| S54/38     | IC60/38    | IF73/38    |            |           |           |
| S64/38     | IC70/38    |            |            |           |           |
| IS66/38    | IC90/38    |            |            |           |           |
| S76/38     | IC100/38   |            |            |           |           |
| IS80/38    | G22/38     |            |            |           |           |
| S90/38     | G27/38     |            |            |           |           |
| IS92/38    | G32/38     |            |            |           |           |
| S100/38    | G42/38     |            |            |           |           |
| IS102/38   | G48/38     |            |            |           |           |
| IS108/38   | G60/38     |            |            |           |           |
|            | G76/38     |            |            |           |           |
|            | G90/38     |            |            |           |           |
|            | G100/38    |            |            |           |           |

Connections height : 20, 27, 38 mm  
Example S12/20, S28/27, G76/38

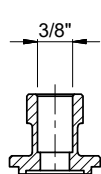
## S = Soldering connections



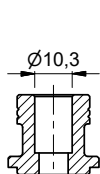
S6



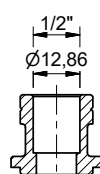
S8



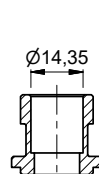
S9



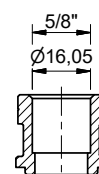
S10



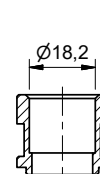
S12



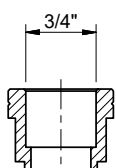
S14



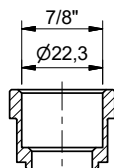
S16



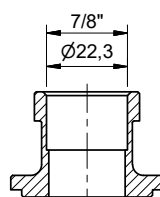
S18



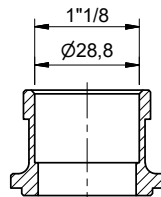
S19



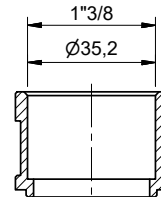
S20



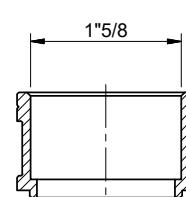
S22



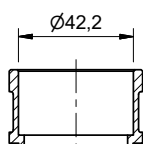
S28



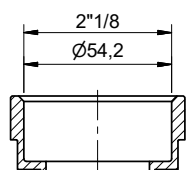
S35



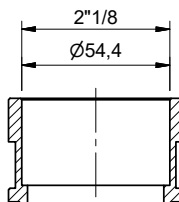
IS41



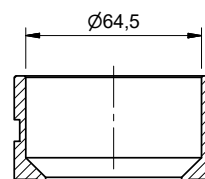
S42



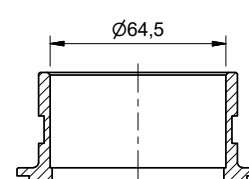
S50 (Model S101)



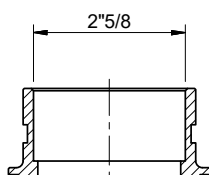
S54



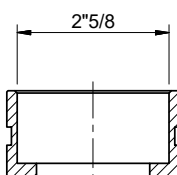
S60



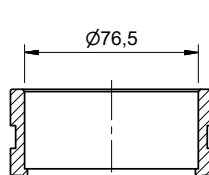
S64 (Model S404, S606)



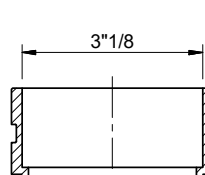
IS65



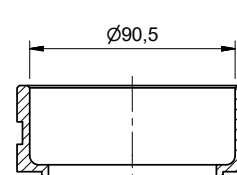
IS66



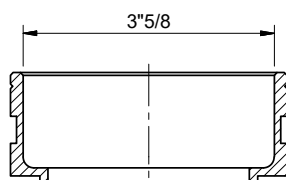
S76



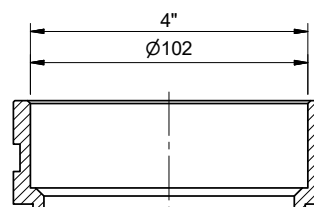
IS80



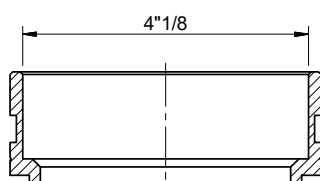
S90



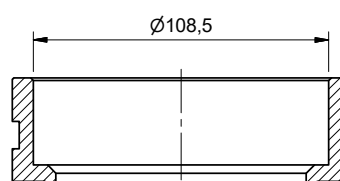
IS92



S100

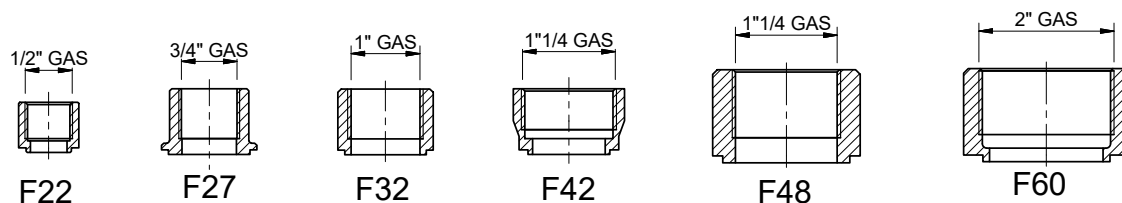


IS102

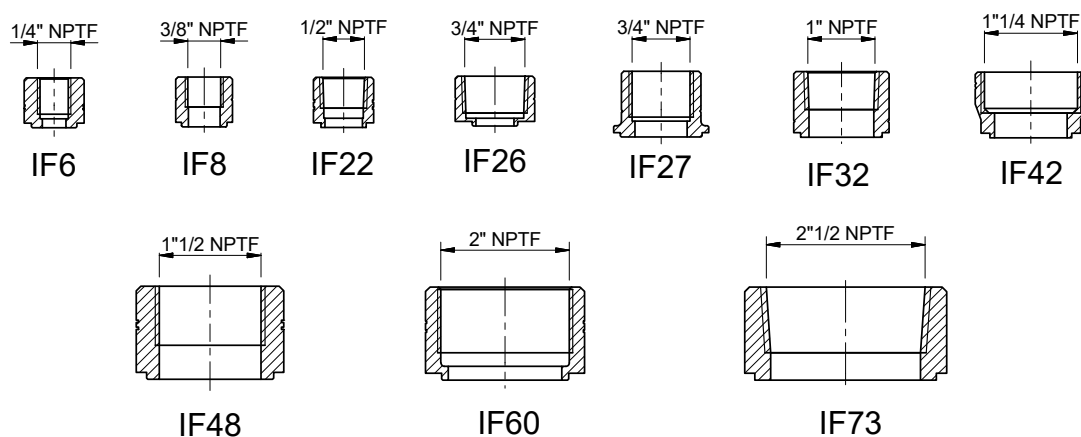


S108

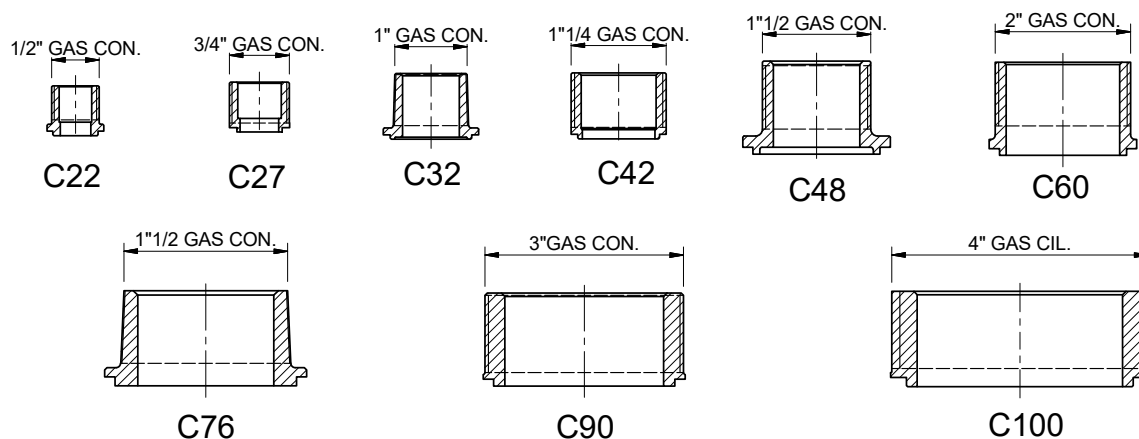
## F= Gas thread connections female



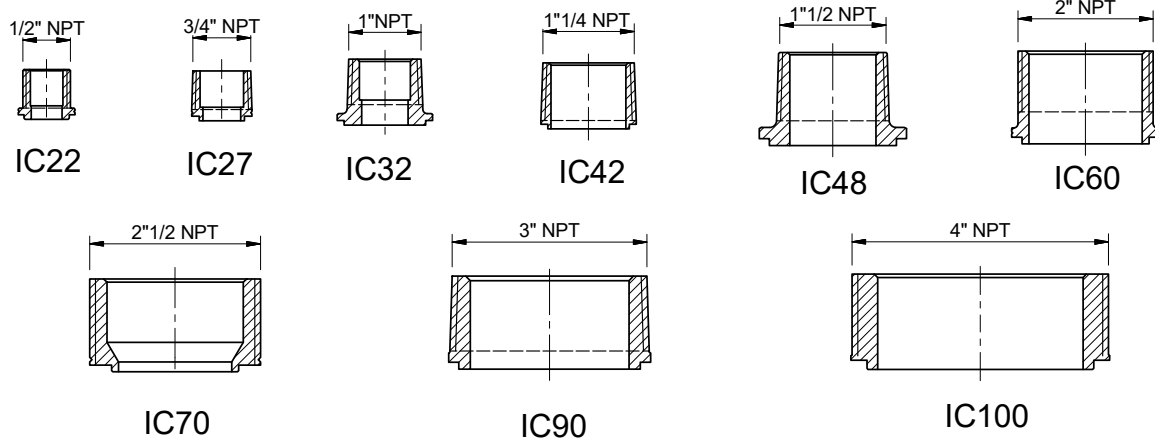
## IF= NPT thread connections female



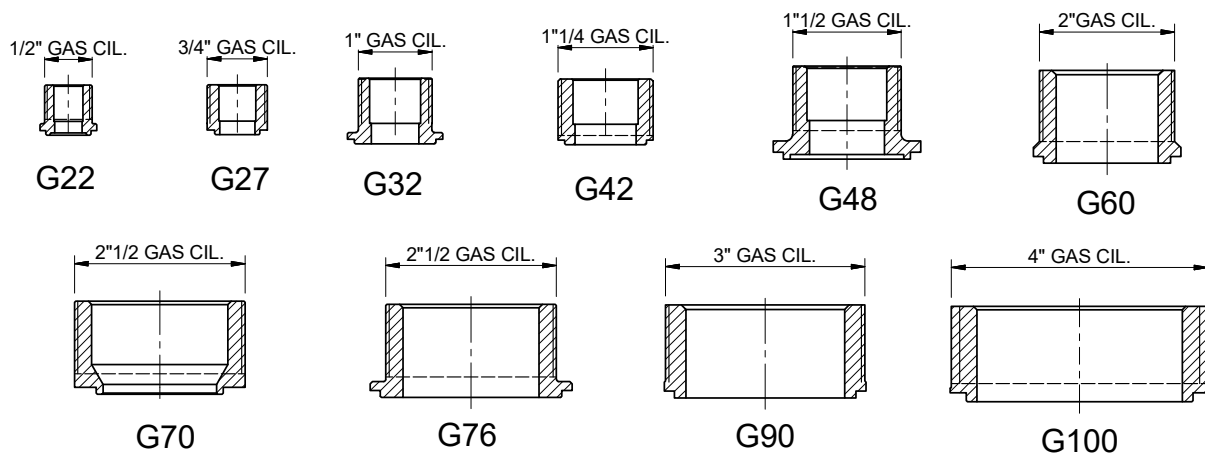
## C= Gas thread connections male conical



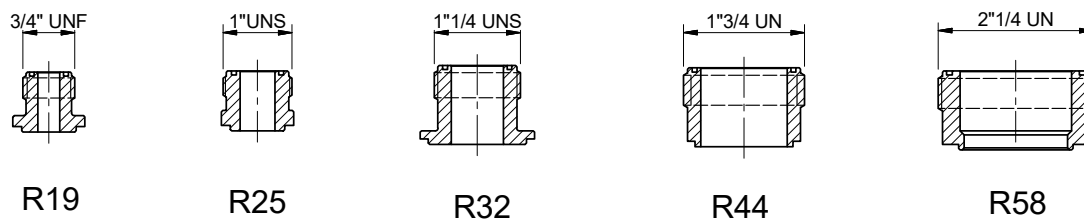
## IC= NPT thread connections male



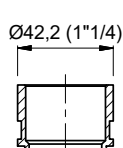
## G= Gas thread connections male cylindrical



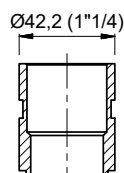
## R= rotalock connections male



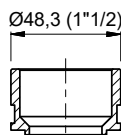
## V-VB Grooved fittings



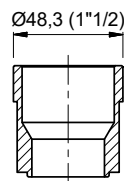
**V32**  
DN32



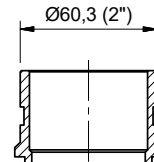
**BV32 (BACK)**  
DN32



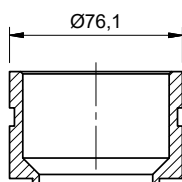
**V40**  
DN40



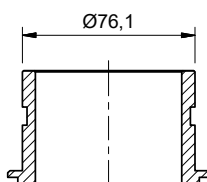
**BV40 (BACK)**  
DN40



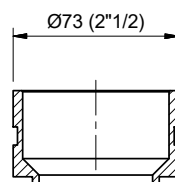
**V50**  
DN50



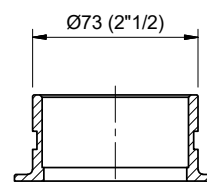
**V65**  
DN65



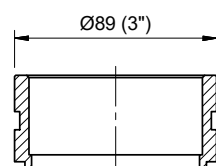
**V76**  
DN65



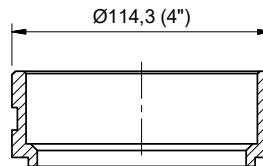
**V72 (USA)**



**V73 (USA)**

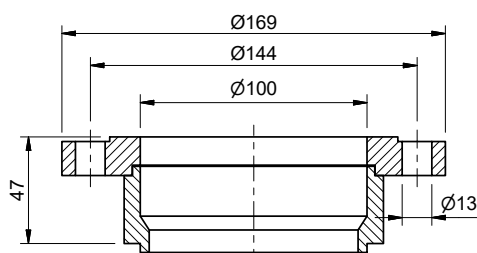


**V80**  
DN80

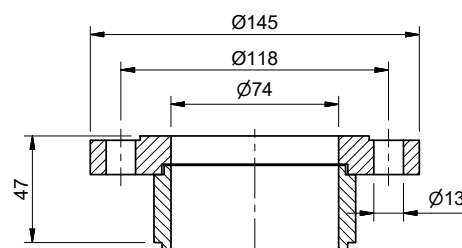


**V100**  
DN100

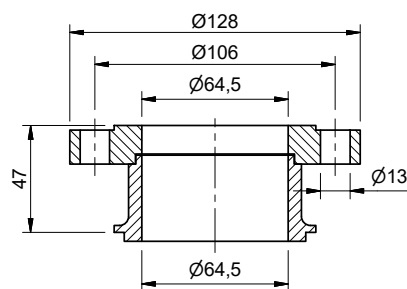
**CF= Compact flanges special Onda (need counterflanges)**



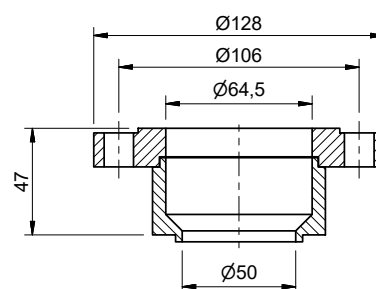
**CF100**



**CF80**

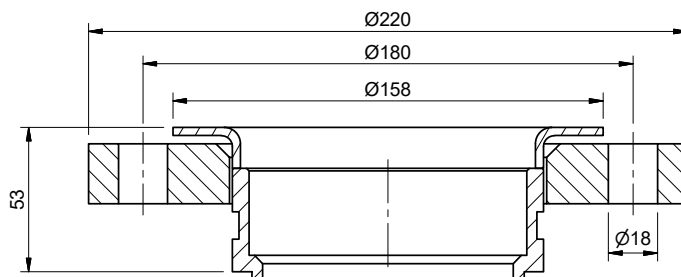


**CF65**

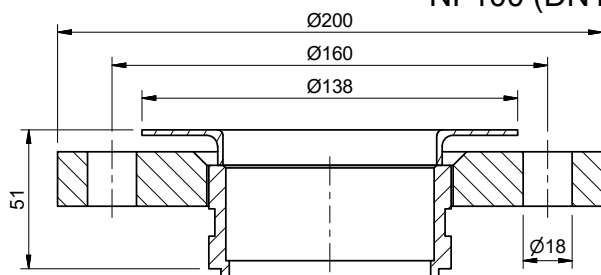


**CF66 (MODEL S182-S202)**

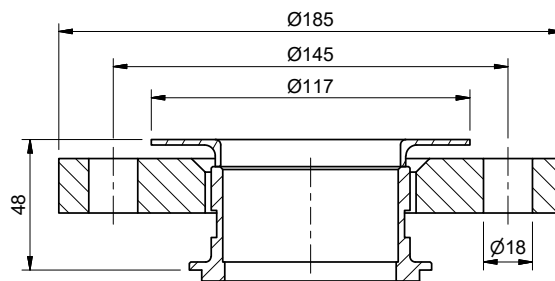
## NF= DIN flanges



NF100 (DN100 - PN10/PN16)

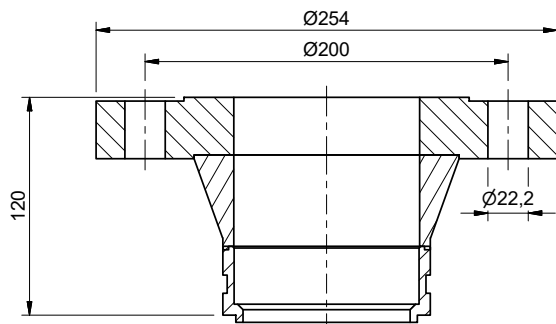


NF80 (DN80 - PN10/PN16)

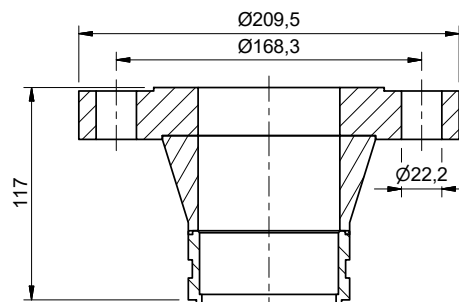


NF65 (DN65 - PN10/PN16)

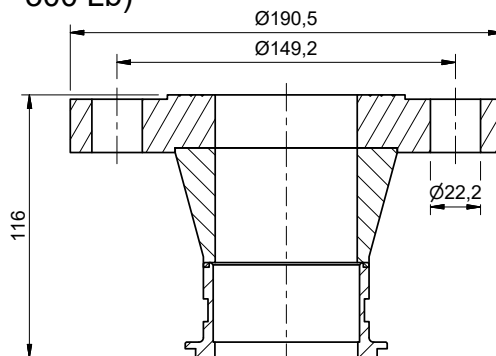
## IN= ANSI LAP JOINT FLANGES 300 Lb/sq.in.



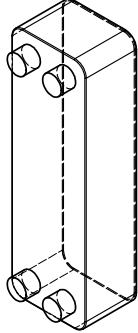
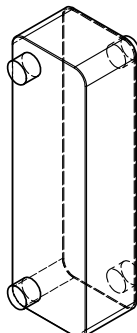
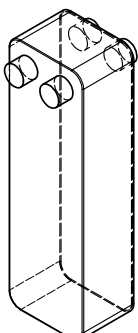
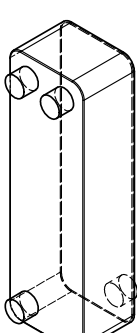
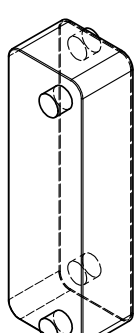
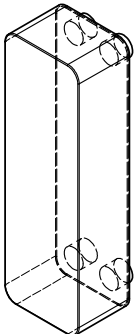
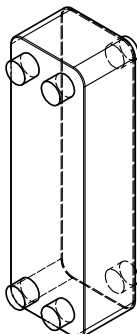
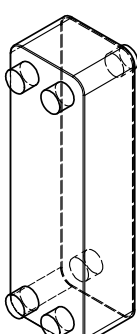
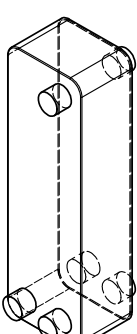
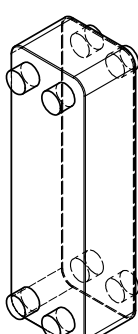
IN100 (4" - 300 Lb)

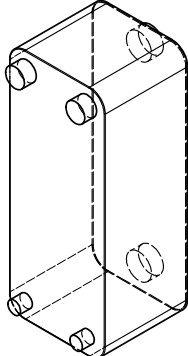
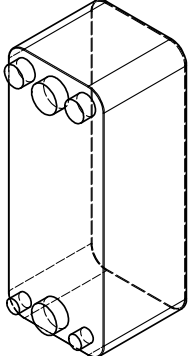
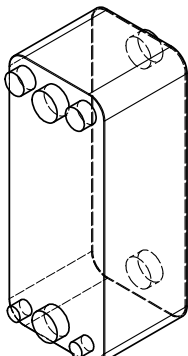


IN80 (3" - 300 Lb)



IN65 (2 1/2" - 300 Lb)

| Configuration : SINGLE CIRCUIT                                                                                        |                                                                                                                          |                                                                                                                          |                                                                                                                            |                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <p>AA<br/>F1-F2-W1-W2</p>            | <p>AB<br/>F1-F2-BW1-BW2</p>             | <p>AE<br/>F2-W1-BW1-BF2</p>             | <p>AC<br/>F1-F2-W1-BW2</p>               | <p>AI<br/>BF1-BF2-W1-W2</p>                     |
| <p>AM<br/>BF1-BF2-<br/>BW1-BW2</p>  | <p>CA<br/>F1-F2-W1-W2<br/>BW1-BW2</p>  | <p>CC<br/>F1-F2-W1-W2<br/>BW1-BF2</p>  | <p>CH<br/>F1-BF1-W1-W2<br/>BW1-BW2</p>  | <p>DA<br/>F1-F2-W1-W2<br/>BW1-BW2-BF1-BF2</p>  |

| Configuration : DUAL CIRCUIT                                                                                             |                                                                                                                            |                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <p>MB<br/>F1-F2-G1-G2-<br/>W1-W2</p>  | <p>MA<br/>F1-F2-G1-G2-<br/>BW1-BW2</p>  | <p>PA<br/>F1-F2-G1-G2-<br/>W1-W2-BW1-BW2</p>  |





## GARANZIA

**A** - Onda S.p.A. garantisce l'assenza di vizi e difetti nella lavorazione e nei materiali nei Prodotti per 18 mesi dalla data della consegna.

Pertanto ove, durante il periodo di garanzia, i contestati difetti dei Prodotti risultino oggettivamente fondati e siano riconosciuti per iscritto da Onda S.p.A., quest'ultima provvederà gratuitamente alla riparazione o, a sua discrezione, alla sostituzione dei Prodotti difettosi, con consegna effettuata franco fabbrica (Ex Works – Incoterms 2000) Stabilimento di Onda S.p.A. in Via Lord Baden Powell, 11 – 36045 Lonigo (VI).

**B** - Pena di decadenza dalla garanzia, il Cliente dovrà denunciare per iscritto, a mezzo raccomandata con ricevuta di ritorno, i vizi o i difetti riscontrati entro e non oltre 10 (dieci) giorni dal ricevimento dei Prodotti o evidenziati dalla messa in funzione dell'impianto, oppure, trattandosi di vizi e/o difetti occulti, entro e non oltre 10 (dieci) giorni dalla scoperta degli stessi. In questo caso, l'onere della prova della data della scoperta graverà sul Cliente.

**C** - Onda S.p.A. garantisce inoltre che i Prodotti sono fabbricati in conformità alle leggi italiane e alle normative comunitarie vigenti alla data di conferma da parte di Onda S.p.A. del relativo ordine del Cliente.

Salvo diverso accordo scritto tra le parti, tutte le altre spese accessorie agli interventi di sostituzione e/o di riparazione, saranno a carico e a rischio del Cliente.

**D** - La garanzia è esclusa qualora i vizi o difetti dei Prodotti siano stati determinati dalle seguenti cause:

- Naturale usura e deterioramento.
- Riparazioni, manomissioni o modifiche non autorizzate.
- Uso e applicazione impropri.
- Eccessiva sollecitazione termica, anche occasionale.
- Eccessiva sollecitazione elettrica o meccanica.
- Mancato rispetto dei parametri funzionali e ambientali indicati da Onda S.p.A. per il corretto impiego e funzionamento dei Prodotti.
- Installazione dei Prodotti difforme da quella indicata nelle specifiche tecniche fornite da Onda S.p.A.
- Mancata messa a terra dello scambiatore.
- Qualsiasi altra causa imputabile a negligenza del Cliente.

**E** - La garanzia è inoltre esclusa in caso di:

- Eventuale non conformità dei Prodotti a normative italiane e/o comunitarie entrate in vigore dopo la data della trasmissione della conferma d'ordine di Onda S.p.A.;
- Eventuale non conformità dei Prodotti a leggi e/o normative in vigore nel luogo in cui i Prodotti sono installati e/o assemblati dal Cliente e/o nel luogo di finale utilizzazione dei Prodotti, qualora il Cliente non abbia espressamente richiesto la conformità dei Prodotti a tali leggi e/o normative e non abbia regolarmente informato ONDA S.p.A. del loro contenuto prima della data di trasmissione della conferma d'ordine di quest'ultima. Resta inteso che la presente limitazione si intende efficace anche con riferimento a specifiche normative vigenti in Stati dell'Unione Europea ed applicabili in via autonoma rispetto alle normative comunitarie.

**F** - Il Cliente non dovrà vendere o commercializzare Prodotti non conformi alle leggi e/o normative indicate nella precedente lettera E. In caso contrario, il Cliente manleva ONDA S.p.A. da ogni danno e/o perdita dalla stessa sofferto in seguito a contestazioni, sollevate in via giudiziale o stragiudiziale, da qualsiasi soggetto terzo o da pubblica autorità in conseguenza della fabbricazione da parte di ONDA S.p.A. di prodotti non conformi alle summenzionate leggi e/o normative.

**G** - Ferma restando l'applicazione del DPR 224/1988, in materia di responsabilità per danno da prodotti difettosi, e la responsabilità di Onda S.p.A. in caso di dolo o colpa grave, quest'ultima non sarà in alcun caso responsabile per i danni diretti, indiretti o incidentali che dovessero in qualsiasi modo derivare dalla difettosità dei Prodotti.

## WARRANTY

**A** - Onda S.p.A. warrants that the Products shall be free from defects in material and workmanship for a period of 18 months from the date of the delivery.

Therefore, should Onda S.p.A., within the warranty period, acknowledge and recognise in writing the existence of the defects in the products and said defects be materially grounded, Onda S.p.A. shall, at its discretion, repair the defective Products at no costs for the Client or replace them by delivering the substitutive products Ex works (Incoterms 2000) at Onda S.p.A.'s premises (Via Lord Baden Powell, 11 – 36045 Lonigo (VI) – Italy).

**B** - Subject to loss of the warranty, notice of any defect shall be given by the Client in writing with return receipt registered letter within, and not later than, 10 (ten) days from the date of receipt of the products or from the start up of the plant. Subject to loss of the warranty, notice of any latent defect of the Products by the Client shall be given in writing, by return receipt registered letter, within and not later than 10 (ten) days from the date of the relevant discovery. It is hereby understood that the burden of the proof of the date of the discovery shall be borne by the Client.

**C** - Onda S.p.A. also warrants that the Products are manufactured in compliance with the Italian and European Laws and Regulations in force on the date of the confirmation by Onda S.p.A. of the relevant Client's order. Unless otherwise expressly agreed in writings by the parties, Client shall bear any other additional expenses related to the operations of repairing or replacing of the defective products.

**D** - This warranty shall not apply should the defects of the Products be caused by:

- Natural wear and tear.
- Unauthorised repairs, interventions or modifications.
- Unsuitable use or application.
- Thermal overexposure, also when occasional.
- Electrical or mechanical over-stress.
- Failure of respecting the functional and environmental parameters suggested by Onda S.p.A. for the correct use and exploitation of the products.
- Installation of the products not in compliance with the technical specifications provided by Onda S.p.A.
- Missing earth grounding.
- Any other cause due to the Client's negligence.

**E** - This warranty shall also not apply in case of:

- Non compliance of the Products with Italian and European Laws and/or Regulations entered in force after the date of transmission of the order confirmation by Onda S.p.A..
- Non compliance of the Products with Laws and/or Regulations in force in the place where the Products are installed and/or assembled by the Client and/or in the place of their final use, should the Client not expressly require the conformity of the Products to said Laws and Regulations and not duly inform Onda S.p.A. of their content before the date of transmission of the latter's order confirmation. This limitation of the warranty is also applicable with reference to peculiar Laws and Regulations valid and binding in States of the European Union independently of the European Laws and Regulations.

**F** - The Client shall not sell or market Products not in compliance with the Laws and Regulations mentioned under letter E above. In the negative, the Client shall keep ONDA S.p.A. harmless of any damage or loss suffered by the latter, due to any third party's and/or authority's claim raised as a consequence of the manufacture by ONDA S.p.A. of Products not in compliance with the above mentioned Laws and Regulations.

**G** - Without prejudice to the application of DPR 224/1988 on product liability and liability for gross negligence or wilful misconduct, Onda S.p.A. shall never be liable for direct, indirect or occasional damages which in any manner derived from defective products.



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