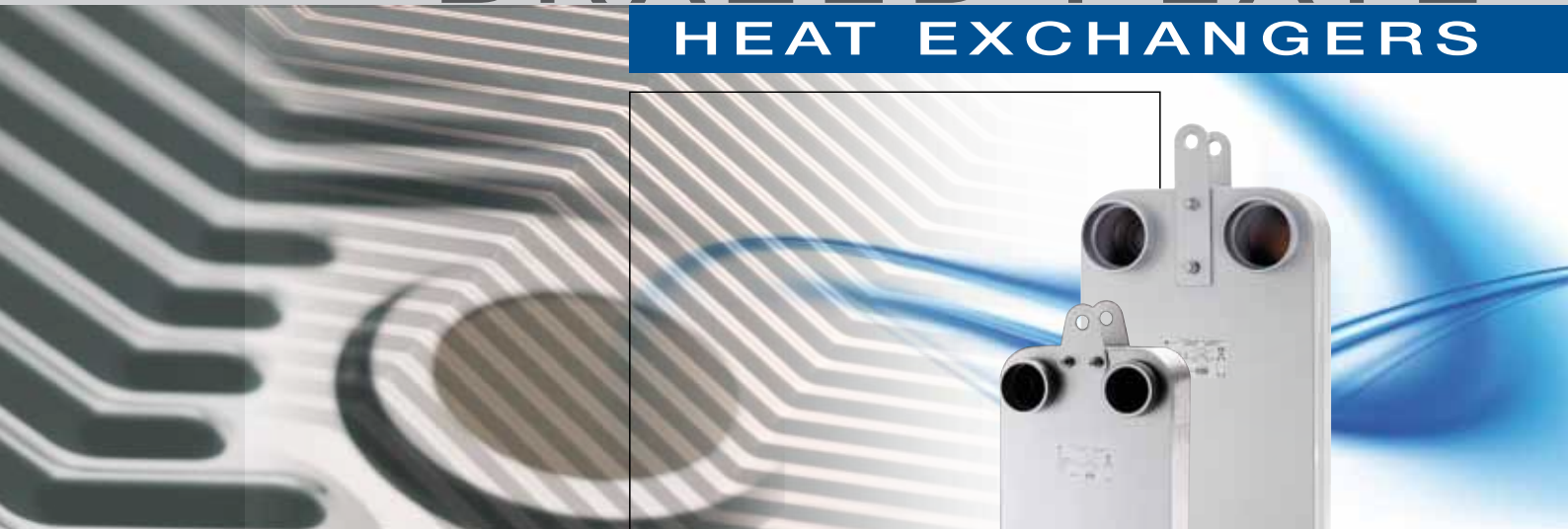


ADVANCED
HEAT TRANSFER
SOLUTIONS

BRAZED PLATE HEAT EXCHANGERS



ONDA is a leading company in Heat Exchange, partner of all main Chiller manufacturers. ONDA produces a complete range of Shell & Tube and Brazed 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 brazed 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 brazed plate heat exchangers satisfy the requirements of the 97/23/EC Directive (Pressure Equipment Directive).

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

Plate heat exchangers	Stainless steel thickness 0.0138" (316L type).
Connections	Stainless steel (304L type).
Brazing material	Copper

ACCESSORIES

Following optionals are available on request:

- Loose or welded mounting supports
- Insulation.

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



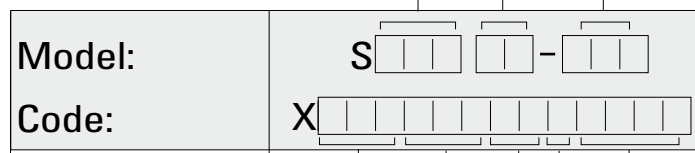
Configuration - connections SINGLE CIRCUIT								
FOUR connections								Code
F1	F2	W1	W2					AA
F1	F2			BW1	BW2			AB
F1	F2	W1			BW2			AC
F1	F2		W2	BW1				AD
	F2	W1				BF2		AE
	F2	W1			BW2	BF1		AF
F1			W2		BW2	BF1		AG
F1			W2	BW1		BF2		AH
FIVE connections								
F1	F2	W1	W2	BW1				BA
F1	F2	W1	W2			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	BF2	CB
F1	F2	W1	W2	BW1			BF2	CC
F1	F2	W1	W2		BW2	BF1		CD
SEVEN connections								
F1	F2	W1	W2	BW1	BW2	BF1	BF2	DA
Configuration - connections DUAL CIRCUIT								
SIX connections								
F1	F2	G1	G2			BW1	BW2	MA
F1	F2	G1	G2	W1	W2			MB
SEVEN connections								
F1	F2	G1	G2	W1		BW1	BW2	NA
F1	F2	G1	G2		W2	BW1	BW2	NB
F1	F2	G1	G2	W1	W2	BW1		NC
F1	F2	G1	G2	W1	W2		BW2	ND
EIGHT connections								
F1	F2	G1	G2	W1	W2	BW1	BW2	PA

Both circuits are PNEUMATICALLY tested, to avoid any humidity contamination.

Progressive number to identify size & type connections

Operating conditions D = evaporator with distributor H = High Pressure
HD = High Pressure with distributor

Model 09, 12, 22, 82, 182, 202, 222, 404, 424, 606



Model 09, 12, 22, 82, 182, 202, 222, 404, 424, 606

Numbers of plates

Configuration connections

Single circuit 0 = evaporator condensator 1 = evaporator with distributor
2 = High Pressure 3 = High Pressure with distributor
Dual Circuit: 4 = Cross circuit refrigerant 5 = Cross circuit refrigerant with distributor
6 = High Pressure refrigerant 7 = High Pressure refrigerant plus distributor

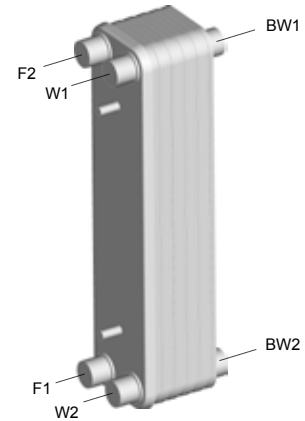
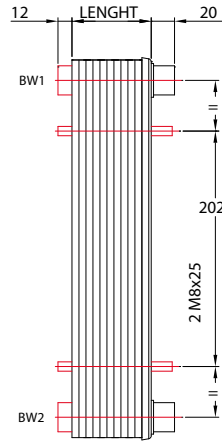
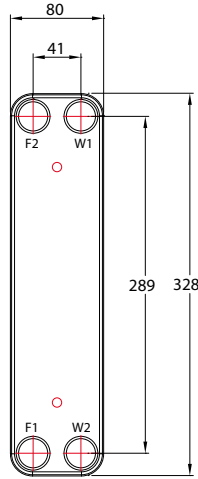
Progressive number to identify size & type connections

Made in Italy

PLEASE READ OPERATING AND INSTRUCTIONS MANUAL BEFORE USE

S09

SINGLE CIRCUIT



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

SPECIFICATIONS		S09			
PRESSURE RANGE (bar)		Vacuum to 45			
TEMPERATURE RANGE (°C)		-100°C to 120°C			
MAXIMUM CONNECTIONS AVAILABLE (mm)		18			
MAXIMUM FLOW RATE (m3/h)		5,22			
VOLUME / CHANNEL (liters)		0.047			
DIMENSIONS (mm)		80 x 328			
LENGHT CALCULATION (mm)		$N \times 2,45 + 12$			
WEIGHT CALCULATION (kg)		$N \times 0.09 + 1$			
CONNECTIONS TYPE					
	Soldering	Threaded M	Threaded F	Rotalock	
S8		C22	F22	R19	
S12		C27		R25	
S14		G22			
S16		G27			
S18		G30			
S19					
S20					
Standard connections: F1 S18 F2 S20 W1-W2 C22					

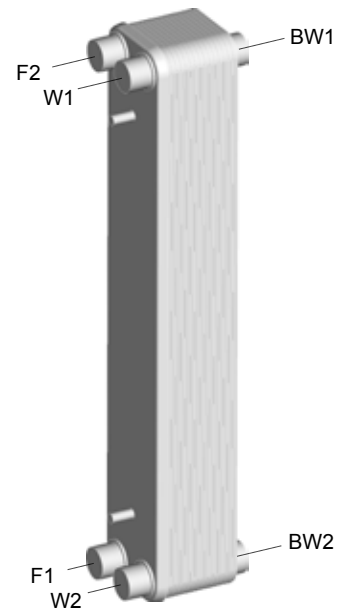
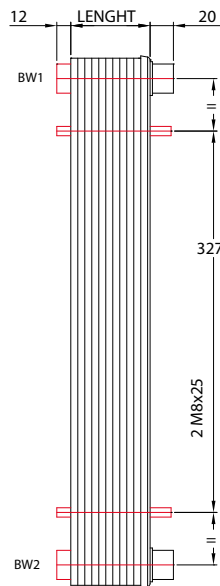
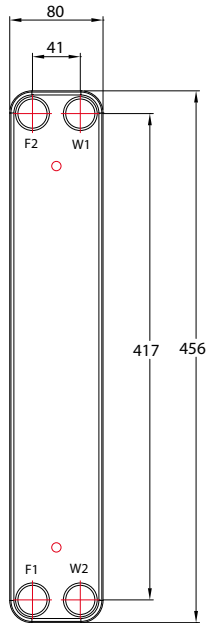
N Number of plates

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm

BRAZING MATERIAL Copper (Cu)



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

SPECIFICATIONS	S22	S22H	CONNECTIONS TYPE			
PRESSURE RANGE (bar)	Vacuum to 30	Vacuum to 45	Soldering	Threaded M	Threaded F	Rotalock
TEMPERATURE RANGE (°C)	-100°C to 120°C	-100°C to 120°C	S8	C22	F22	R19
MAXIMUM CONNECTIONS AVAILABLE (mm)	18	18	S12	C27		R25
MAXIMUM FLOW RATE (m3/h)	5,22	5,22	S14	G22		
VOLUME / CHANNEL (liters)	0.064	0.064	S16	G27		
DIMENSIONS (mm)	80 x 456	80 x 456	S18	G30		
LENGHT CALCULATION (mm)	$N \times 2,45 + 12$	$N \times 2,45 + 20$	S19			
WEIGHT CALCULATION (kg)	$N \times 0.13 + 1,5$	$N \times 0.13 + 3,5$	S20			
			Standard Connections:			
			F1 S18	F2 S20	W1-W2 C27	

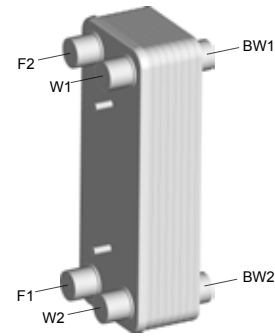
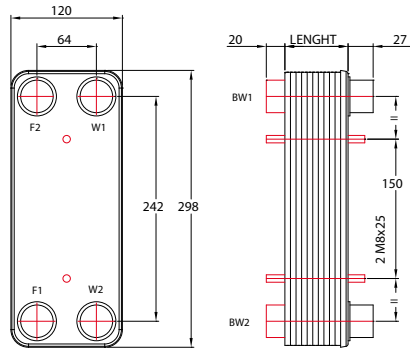
N Number of plates

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm

BRAZING MATERIAL Copper (Cu)



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

SPECIFICATIONS	S12	S12H
PRESSURE RANGE (bar)	Vacuum to 30	Vacuum to 45
TEMPERATURE RANGE (°C)	-100°C to 120°C	-100°C to 120°C
MAXIMUM CONNECTIONS AVAILABLE (mm)	30,1	30,1
MAXIMUM FLOW RATE (m3/h)	14,07	14,07
VOLUME / CHANNEL (liters)	0.072	0,072
DIMENSIONS (mm)	120 x 298	120 x 298
LENGHT CALCULATION (mm)	$N \times 2,45 + 12$	$N \times 2,45 + 20$
WEIGHT CALCULATION (kg)	$N \times 0.112 + 1,7$	$N \times 0.112 + 4$

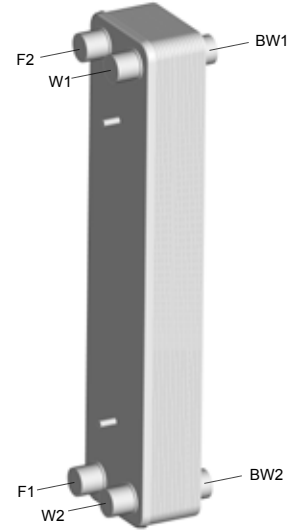
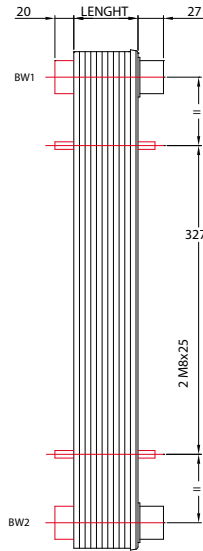
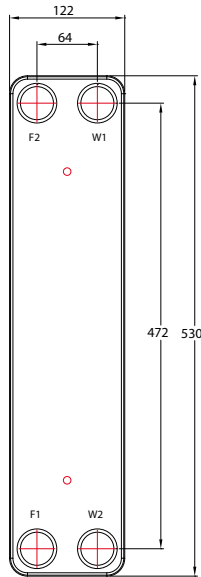
CONNECTIONS TYPE				
Soldering	Threaded M	Threaded F	Grooved	Rotalock
S8	C22	F22	V32	R19
S12	C27	F27	BV32	R25
S14	C32	F32	V40	R32
S16	C42	F42	BV40	R44
S18	G22			
S22	G27			
S28	G32			
S30	G42			
Standard Connections:				
F1 S22	F2 S28	W1-W2	C32	

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm
 BRAZING MATERIAL Copper (Cu)



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

SPECIFICATIONS	S82	S82H
PRESSURE RANGE (bar)	Vacuum to 30	Vacuum to 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)	0,113	0,113
DIMENSIONS (mm)	122 x 530	122 x 530
LENGHT CALCULATION (mm)	$N \times 2,25 + 12$	$N \times 2,25 + 20$
WEIGHT CALCULATION (kg)	$N \times 0.206 + 2,5$	$N \times 0.206 + 6,5$

CONNECTIONS TYPE				
Soldering	Threaded M	Threaded F	Grooved	Rotalock
S8	C22	F22	V32	R19
S12	C27	F27	BV32	R25
S14	C32	F32	V40	R32
S16	C42	F42	BV40	R44
S18	G22			
S22	G27			
S28	G32			
S30	G42			
Standard Connections:				
F1 S22	F2 S30	W1-W2	C42	

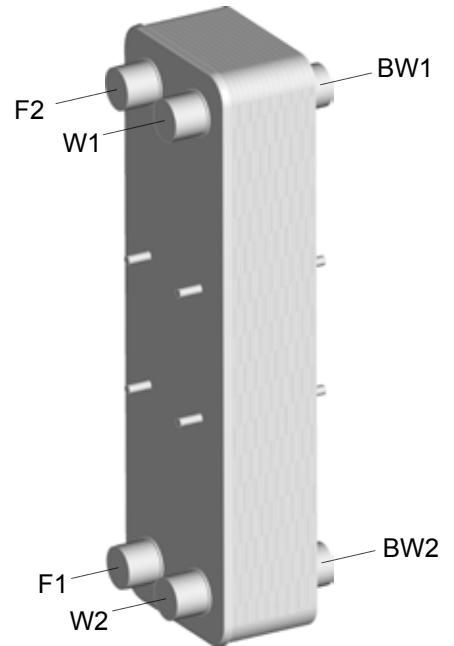
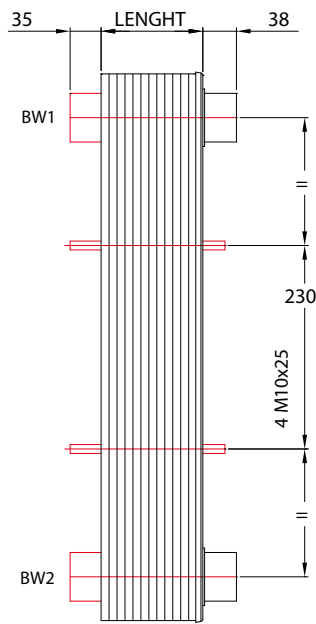
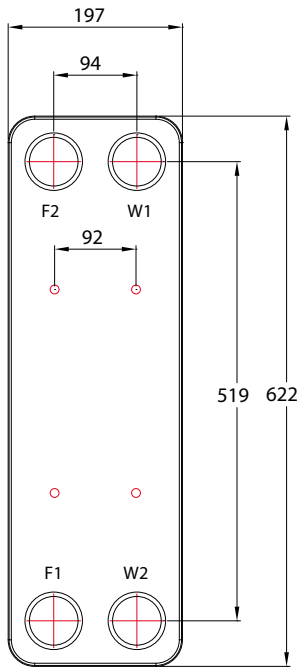
N Number of plates

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm
 BRAZING MATERIAL Copper (Cu)

S182 SINGLE CIRCUIT



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

SPECIFICATIONS	S182	S182H
PRESSURE RANGE (bar)	Vacuum to 30	Vacuum to 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)	0,254	0,254
DIMENSIONS (mm)	197 x 622	197 x 622
LENGHT CALCULATION (mm)	$N \times 2,45 + 12$	$N \times 2,45 + 28$
WEIGHT CALCULATION (kg)	$N \times 0.406 + 9,2$	$N \times 0.406 + 18$

CONNECTIONS TYPE				
Soldering	Threaded M	Threaded F	Grooved	Rotalock
S22	C48	F22	V50	R32
S28	C60	F27	V65	R44
S35	G48	F48	V72	R58
S42	G60	F60		
S54	G70			
S60				
Standard Connections:				
F1 S35		F2 S54		W1-W2 C60

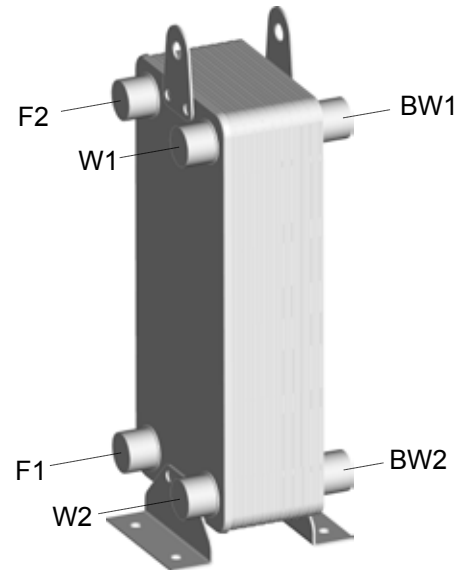
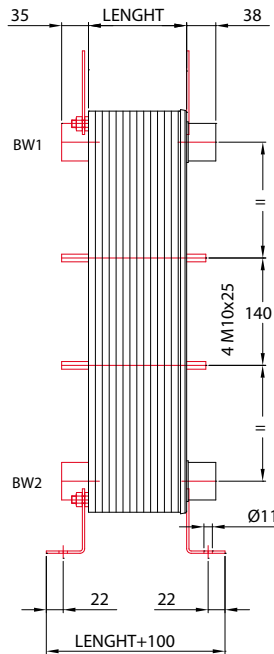
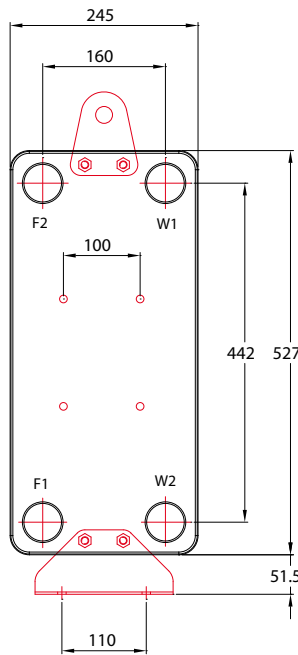
N Number of plates

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm
 BRAZING MATERIAL Copper (Cu)

S202 SINGLE CIRCUIT



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

SPECIFICATIONS	S202	S202H
PRESSURE RANGE (bar)	Vacuum to 30	Vacuum to 45
TEMPERATURE RANGE (°C)	-100°C to 120°C	-100°C to 120°C
MAXIMUM CONNECTIONS AVAILABLE (mm)	57	57
MAXIMUM FLOW RATE (m ³ /h)	50,62	50,62
VOLUME / CHANNEL (liters)	0,254	0,254
DIMENSIONS (mm)	245 x 527	245 x 527
LENGHT CALCULATION (mm)	$N \times 2,45 + 12$	$N \times 2,45 + 28$
WEIGHT CALCULATION (kg)	$N \times 0.406 + 9,2$	$N \times 0.406 + 18$

CONNECTIONS TYPE				
Soldering	Threaded M	Threaded F	Grooved	Rotalock
S22	C48	F22	V50	R32
S28	C60	F27	V65	R44
S35	G48	F48	V72	R58
S42	G60	F60		
S54	G70			
S60				
Standard Connections: F1 S35 F2 S54 W1-W2 C60				

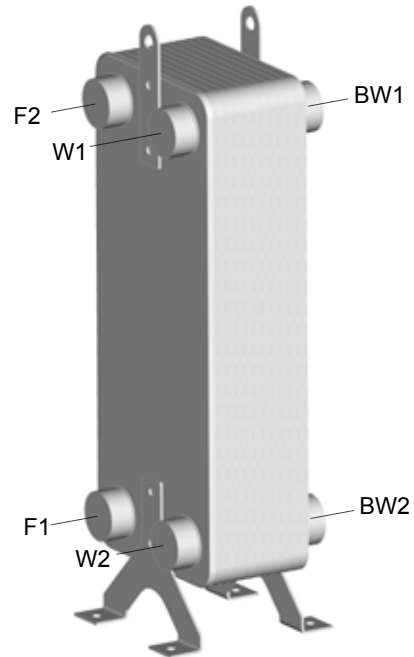
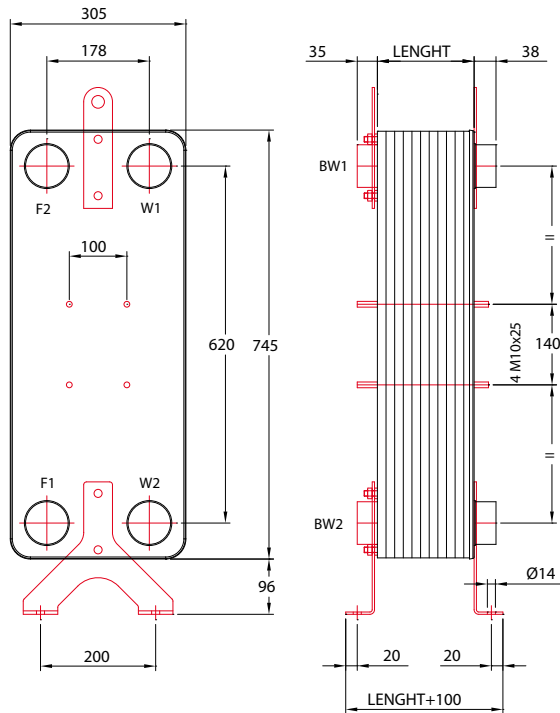
N Number of plates

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm
 BRAZING MATERIAL Copper (Cu)

S404 SINGLE CIRCUIT



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

SPECIFICATIONS	S404
PRESSURE RANGE (bar)	Vacuum to 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)	$N \times 2,95 + 12$
WEIGHT CALCULATION (kg)	$N \times 0,720 + 30$

CONNECTIONS TYPE					
Soldering	Threaded M	Threaded F	Grooved	Rotalock	Flanges
S54	C76	F22	V73	R58	NF80
S64	C90	F27	V80		
S76	G76		V90		
S90	G90				
Standard Connections:					
F1 S54		F2 S76		W1-W2 G90	

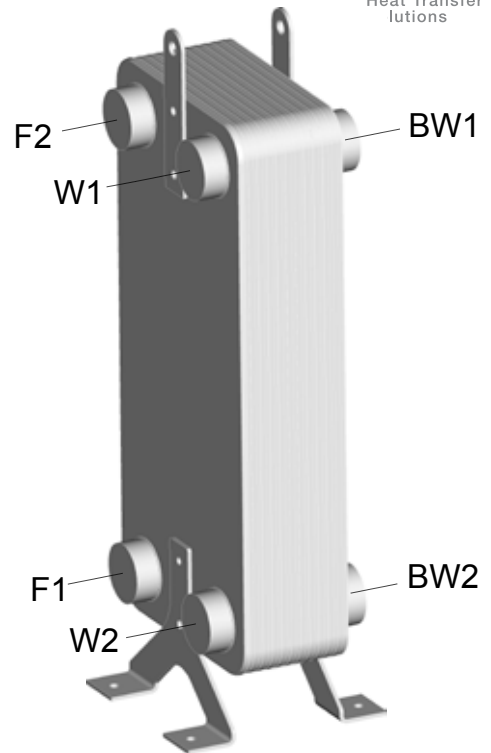
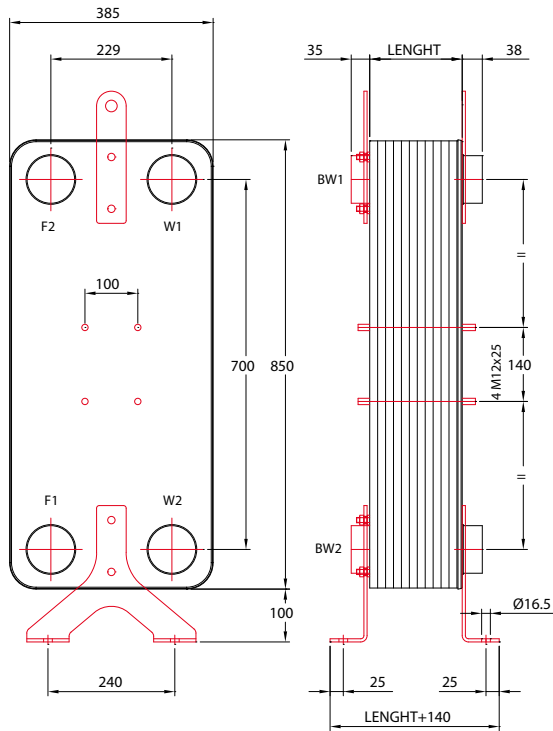
N Number of plates

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm
 BRAZING MATERIAL Copper (Cu)

S606 SINGLE CIRCUIT



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

SPECIFICATIONS	S606
PRESSURE RANGE (bar)	Vacuum to 20
TEMPERATURE RANGE (°C)	-100°C to 120°C
MAXIMUM CONNECTIONS AVAILABLE (mm)	110,1
MAXIMUM FLOW RATE (m ³ /h)	188,41
VOLUME / CHANNEL (liters)	0,79
DIMENSIONS (mm)	385 x 850
LENGHT CALCULATION (mm)	$N \times 2,95 + 12$
WEIGHT CALCULATION (kg)	$N \times 1 + 35$

CONNECTIONS TYPE				
Soldering	Threaded M	Threaded F	Grooved	Flanges
S54	C76	F22	V73	NF100
S64	C90	F27	V80	
S76	C100		V90	
S90	G76		V100	
S100	G90			
	G100			
Standard Connections:				
F1 S76		F2 S100		W1-W2 V100

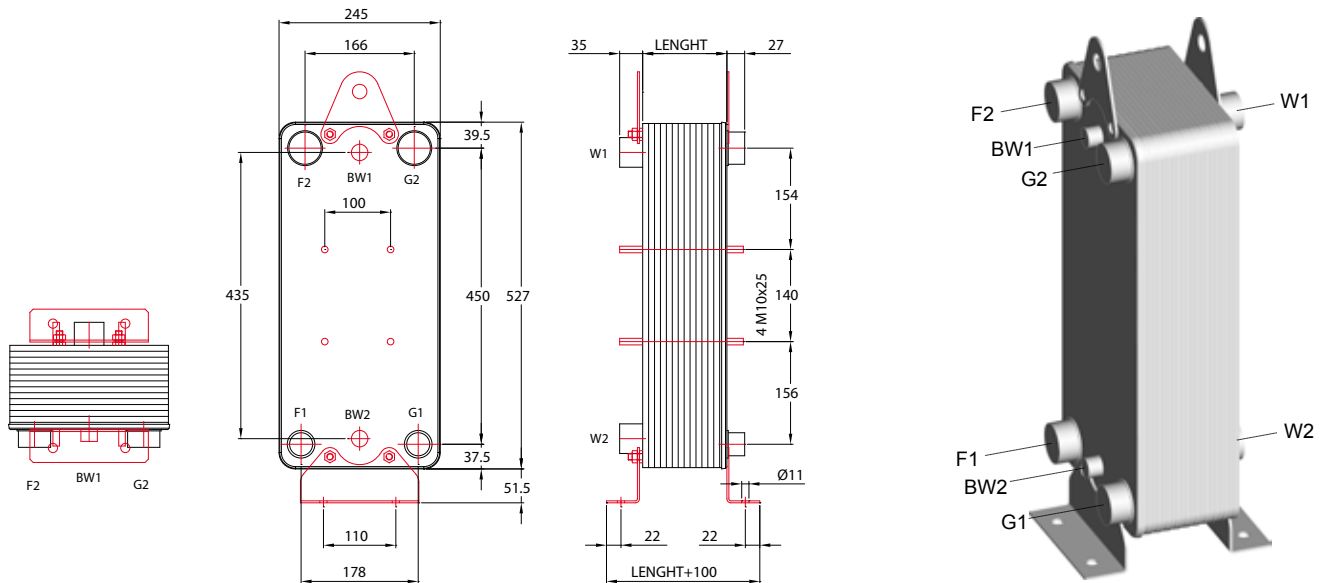
N Number of plates

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

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm
 BRAZING MATERIAL Copper (Cu)

S222 DUAL CIRCUIT



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	CONNECTIONS TYPE				
			Soldering	Threaded M	Threaded F	Grooved	Rotalock
PRESSURE RANGE (bar)	Vacuum to 30	Vacuum to 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)	0,223	0,223					
DIMENSIONS (mm)	245 x 527	245 x 527					
LENGHT CALCULATION (mm)	$N \times 2,45 + 12$	$N \times 2,45 + 28$					
WEIGHT CALCULATION (kg)	$N \times 0.406 + 9,2$	$N \times 0.406 + 18$					
			Standard Connections				
			F1-G1 S28	F2-G2 S42	W1-W2 G60	BW1-BW2 F22	

N Number of plates

LETTER TO IDENTIFY CONNECTIONS TYPE

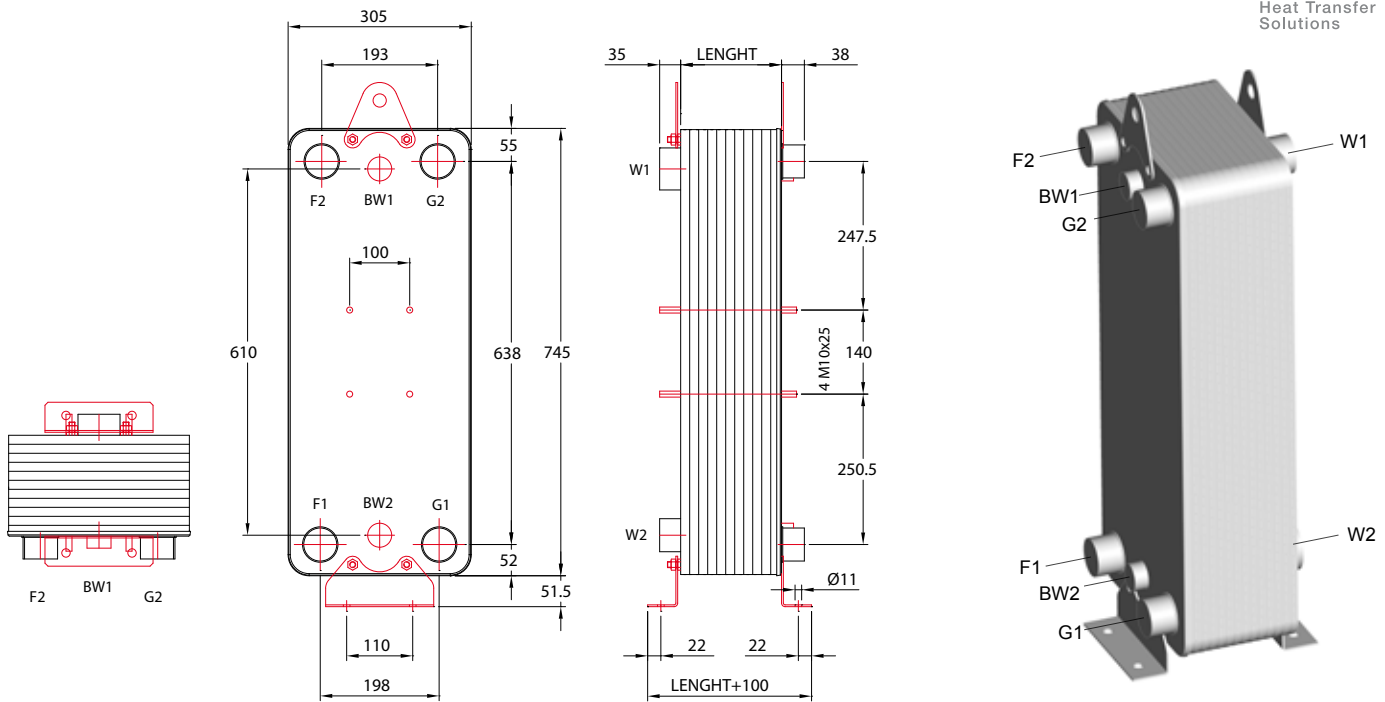
- S** Soldering Connections
- C** Conical Male Gas Threaded Connections
- G** Cylindric Male Gas Threaded Connections
- F** Female Gas Threaded Connections
- V - BV** Grooved System for Standard Flexible Coupling
- R** Rotalock Connections Male

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm

BRAZING MATERIAL Copper (Cu)

Criss-Cross Flow Pattern Available on Request

S424 DUAL CIRCUIT



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	CONNECTIONS TYPE							
PRESSURE RANGE (bar)	Vacuum to 30	Vacuum to 45	Soldering	Threaded M	Threaded F	Grooved	Rotalock	Flanges		
TEMPERATURE RANGE (°C)	-100°C to 120°C	-100°C to 120°C	S30	C76	F22	V73	R44	NF80		
MAXIMUM CONNECTIONS AVAILABLE (mm)	84,7	84,7	S42	C90	F27	V80	R58			
MAXIMUM FLOW RATE (m3/h)	111,68	111,68	S54	G76		V90				
VOLUME / CHANNEL (liters)	0,484	0,484	S64	G90						
DIMENSIONS (mm)	305 x 745	305 x 745	S76							
LENGHT CALCULATION (mm)	$N \times 2,95 + 12$	$N \times 2,95 + 28$	S90							
WEIGHT CALCULATION (kg)	$N \times 0,720 + 30$	$N \times 0,720 + 60$	Standard Connections: F1-G1 S54 F2-G2 S76 W1-W2 C90 BW1-BW2 F22							

N Number of plates

LETTER TO IDENTIFY CONNECTIONS TYPE

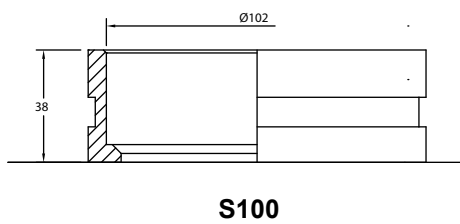
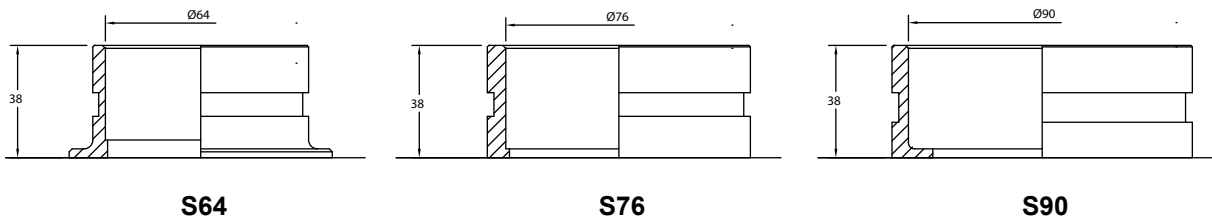
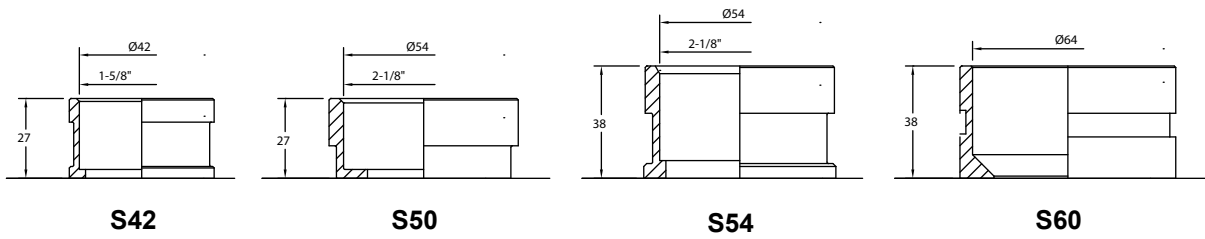
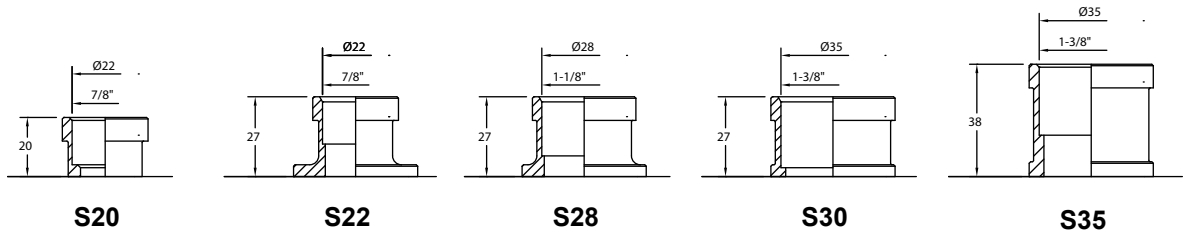
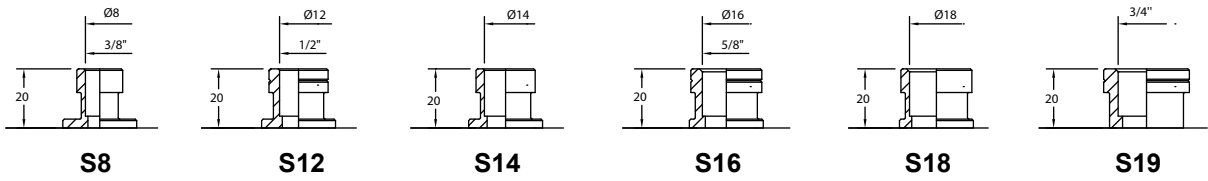
- S** Soldering Connections
- C** Conical Male Gas Threaded Connections
- G** Cylindric Male Gas Threaded Connections
- F** Female Gas Threaded Connections
- V - BV** Grooved System for Standard Flexible Coupling
- R** Rotalock Connections Male

PLATE HEAT EXCHANGER MATERIAL Stainless Steel 316L Thickness 0.35 mm

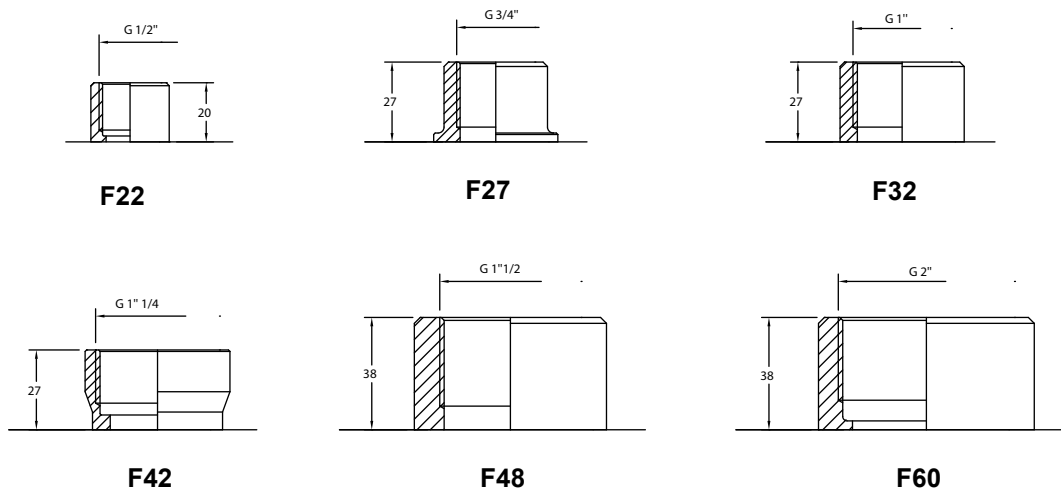
BRAZING MATERIAL Copper (Cu)

Criss-Cross Flow Pattern Available on Request

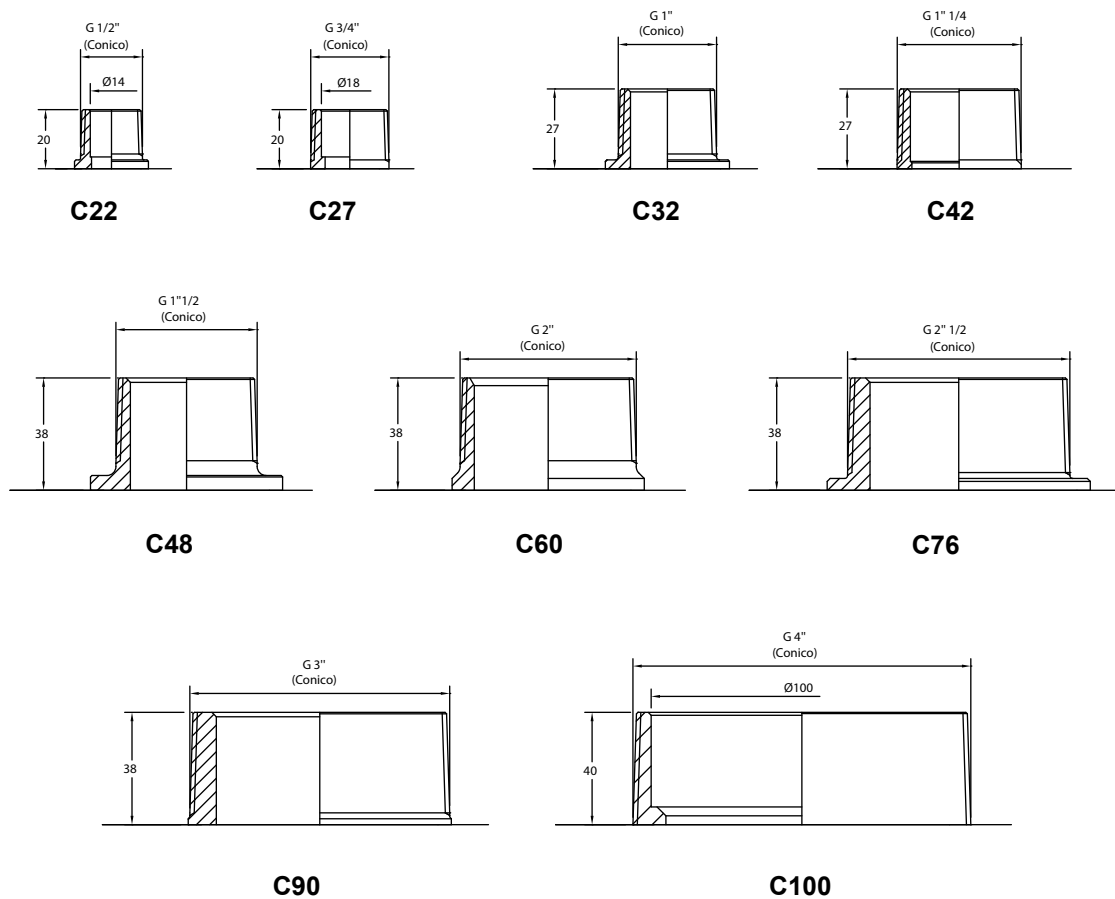
S Soldering connections



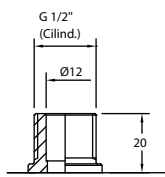
F Gas thread connections female



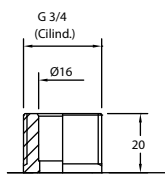
C Gas thread connections Male conical



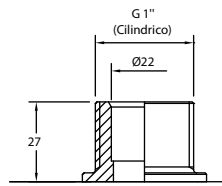
G Gas thread connections male cylindrical



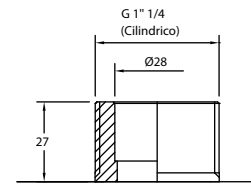
G22



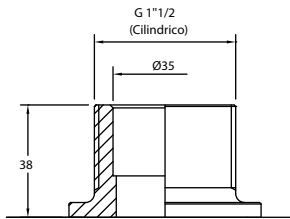
G27



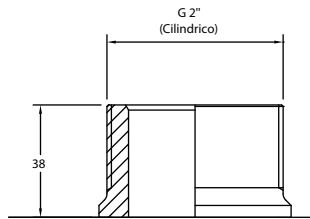
G32



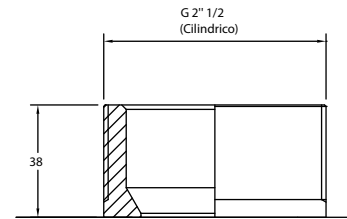
G42



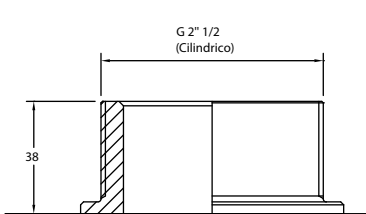
G48



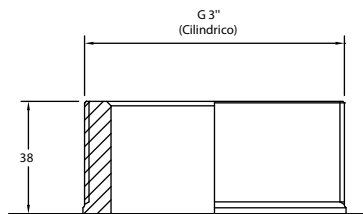
G60



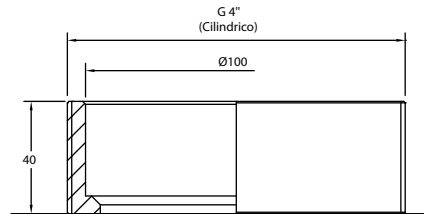
G70



G76

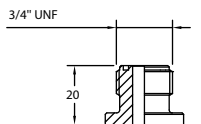


G90

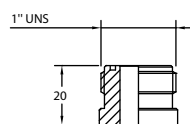


G100

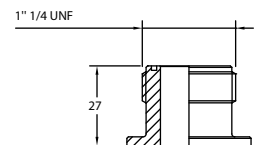
R Rotalock connections Male



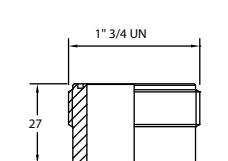
R19



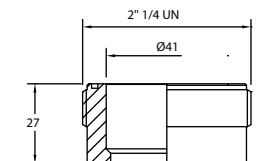
R25



R32

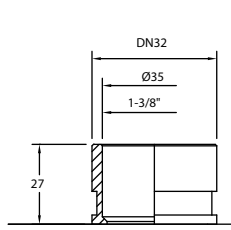


R44

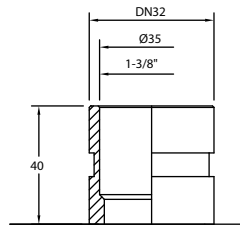


R58

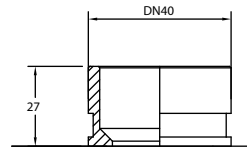
V-BV Growed fittings



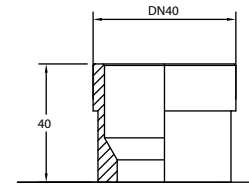
V32



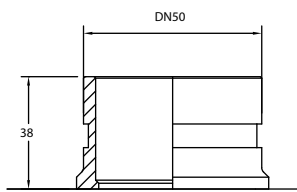
BV32



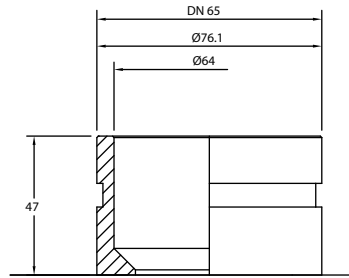
V40



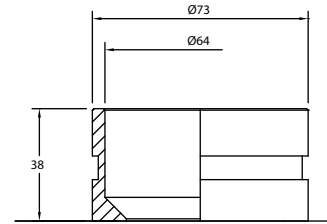
BV40



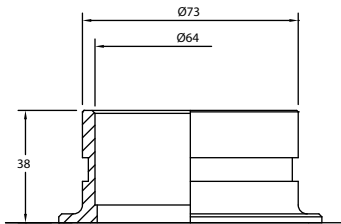
V50



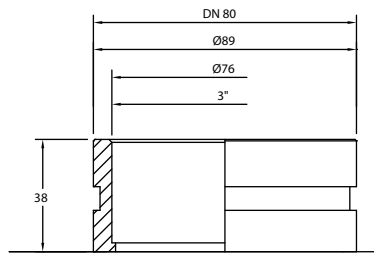
V65



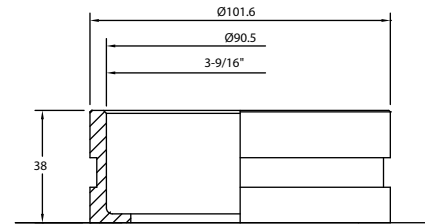
V72



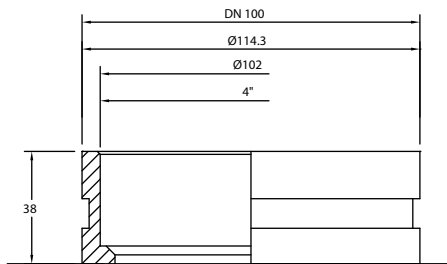
V73



V80

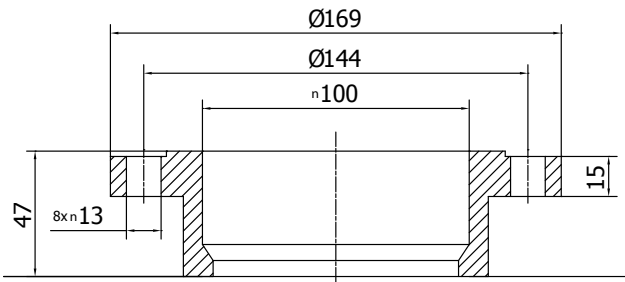


V90

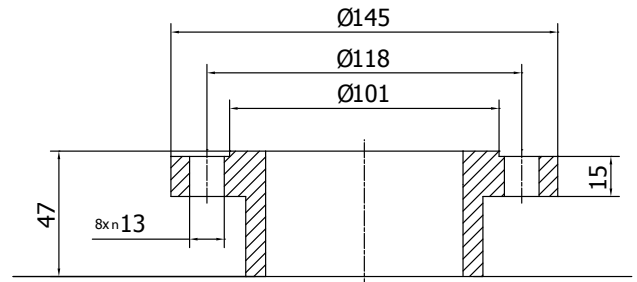


V100

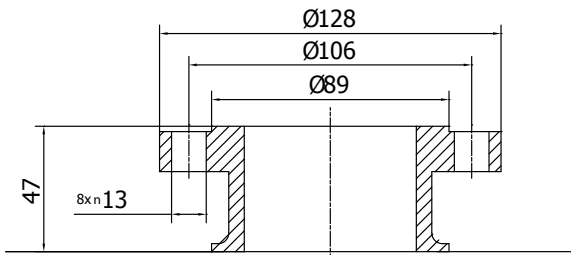
CF Compact Flange



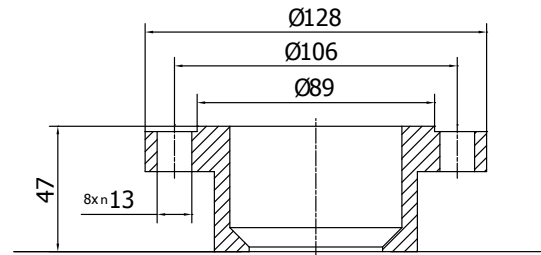
CF100



CF80

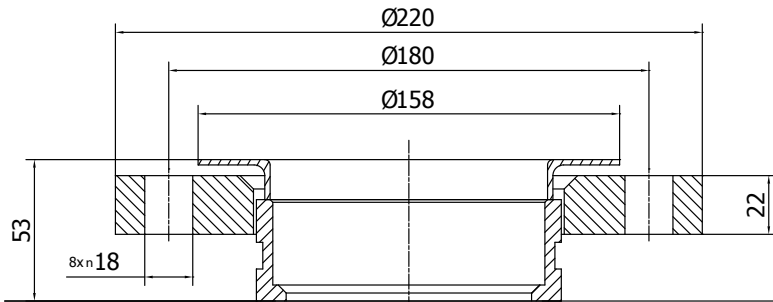


CF65

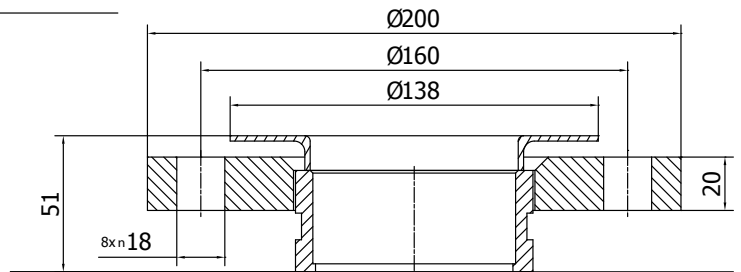


CF66

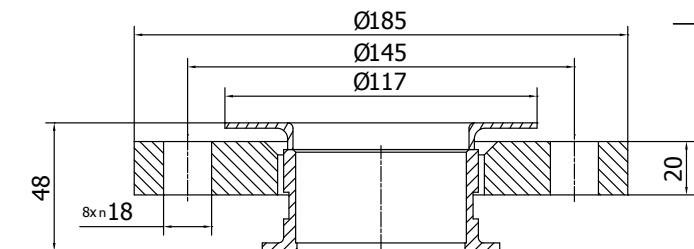
NF DIN Flange



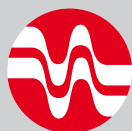
NF100



NF80



NF65



ONDA

Advanced
Heat Transfer
Solutions

Onda spa - Headquarter

via Lord Baden Powell, 11
36045 Lonigo (VI) Italy
T: +39 0444 720720
F. +39 0444 720721
www.onda-it.com
onda@onda-it.com

Plate Division

via Vittoria, 158 A
36065 Mussolente
(VI) Italy
T: +39 0424 87633
F. +33 0424 87744

Onda France S.A.R.L.

320, Avenue Berthelot
69371 Lyon France
T: +33 472784606
F. +33 472784807
www.onda-fr.com