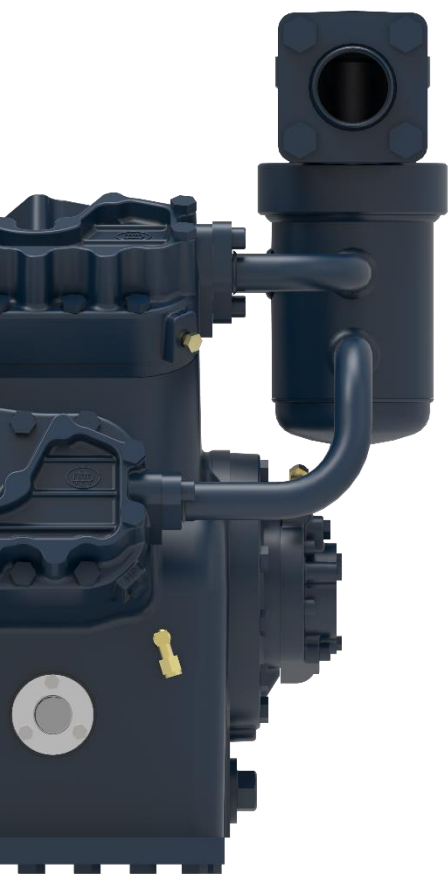




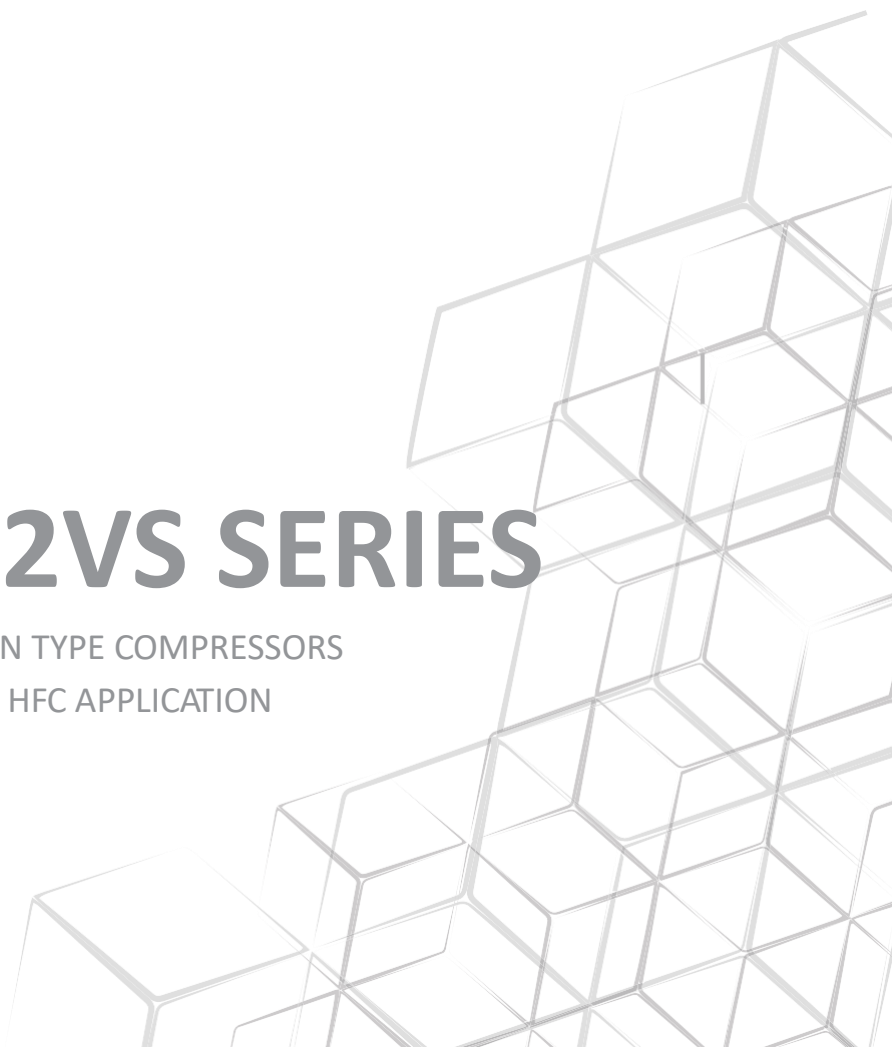
OFFICINE MARIO DORIN SINCE 1918

**DORIN**<sup>®</sup>  
INNOVATION

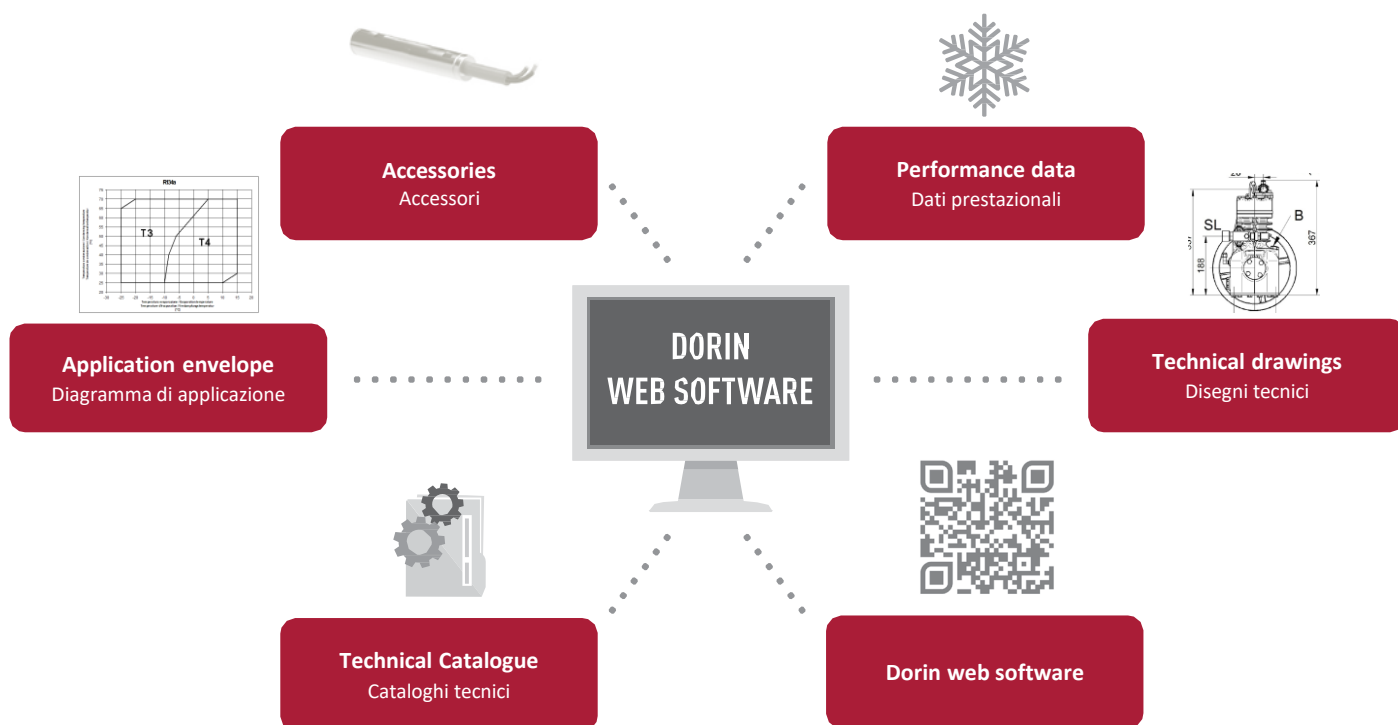


# VS & 2VS SERIES

OPEN TYPE COMPRESSORS  
HFC APPLICATION

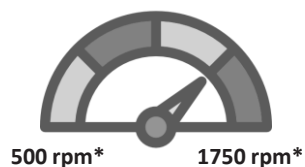


## DORIN Web Software



### RPM Range

Range giri al minuto



\* Minimum and maximum operating rpm to be checked in the following pages depending on the models

\* Controllare il numero minimo e massimo di giri al minuto nelle pagine seguenti in funzione del modello

### Refrigerants in DORIN software (GWP - AR4)

Refrigeranti disponibili nel software DORIN (GWP - AR4)

		SAFETY GROUP A1	
MT - HT		R134A (1430)	
MT - LT		R404A (3922)	R22 (1810)

For all the refrigerants not available in the software please contact DORIN for the calculations

Per tutti i refrigeranti non disponibili nel software si prega di contattare DORIN per il calcolo prestazionale

### Factory certifications

Certificazioni aziendali

ISO 45001:2018  
ISO 9001:2015

### Compressor certifications

Certificazioni di prodotto



## VS SERIES Features

Caratteristiche della gamma VS



1932

### Year of the first open type compressor produced from DORIN

Anno di produzione del primo compressore aperto DORIN



### Silent operations and low vibrations

Basse vibrazioni ed estrema silenziosità

### Crankshafts balanced individually, excellent fluid dynamics studies are our strengths

Ogni albero è bilanciato individualmente, studi CFD per ottimizzare i flussi interni



### Suitable for direct or belt drive at variable rpm

Possibilità di collegamento tramite cinghia o direttamente al motore a velocità variabile

$\eta$

### Highest levels of efficiency

Livelli di efficienza ai vertici per compressori aperti

### Using latest coating technologies for reducing frictions and improving lubrication

Trattamenti superficiali sui componenti in movimento per ridurre l'attrito e migliorare la lubrificazione



### 2 years standard warranty

2 anni di garanzia standard



### All open type compressors can be provided in accordance to Directive 2014/34/EU – ATEX

Tutti i compressori aperti possono essere forniti in accordo alla direttiva 2014/34/UE – ATEX

### Each compressor shows following ATEX marking: II 3G c IIB X

Ogni compressore riporta la seguente marcatura ATEX: II 3G c IIB X



### Models up to 52VS included are lubricated with oil slinger, the larger ones with oil pump

I modelli fino al 51 VS incluso sono lubrificati con disco olio, i più grandi con pompa olio

### The crankshaft for the models without oil pump has to rotate in the direction pointed out by the arrow, clearly marked on the compressor, the models with oil pump can rotate in both directions

L'albero per i modelli senza pompa deve ruotare nel senso indicato dalla freccia sul compressore, i modelli con pompa non hanno un senso preferenziale di rotazione

## VS SERIES Technical Features

Caratteristiche tecniche della gamma VS

1

### Extra reliability and efficiency of optimised valve plate design

Estrema affidabilità ed efficienza del disegno delle piastre valvole

2

### Flywheel as optional accessory

Volano venduto come accessorio optional

3

### Easy-to-change shaft seal for maintenance purposes

Estrema facilità di sostituzione del premistoppa per manutenzione

4

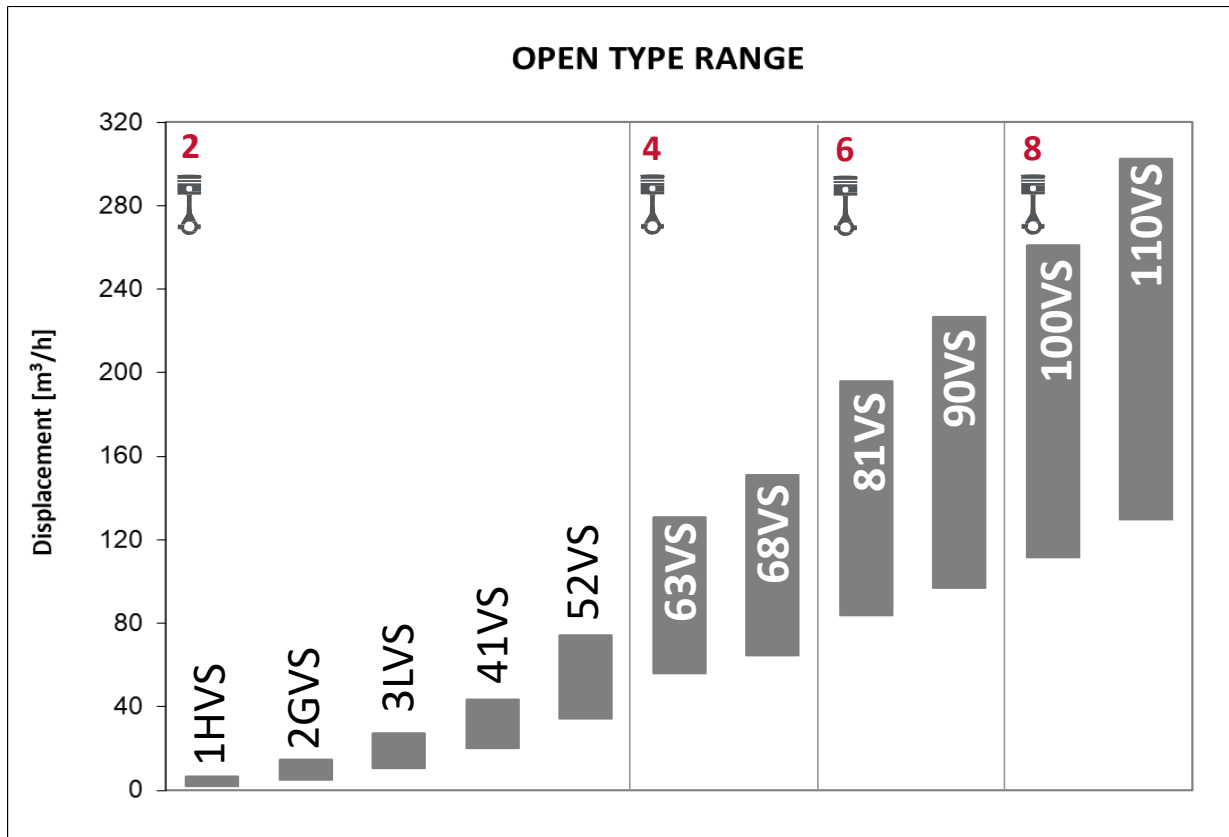
### High volume oil sump suitable for marine application

Generoso volume della coppa dell'olio per applicazioni marine



## VS range - Displacement

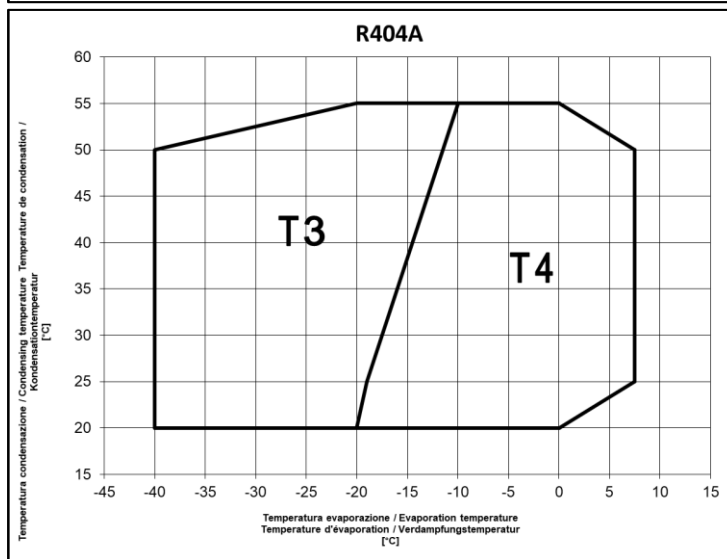
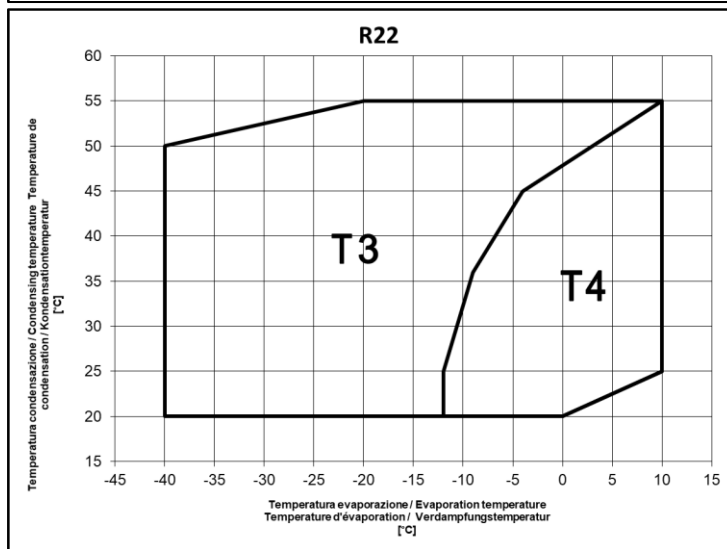
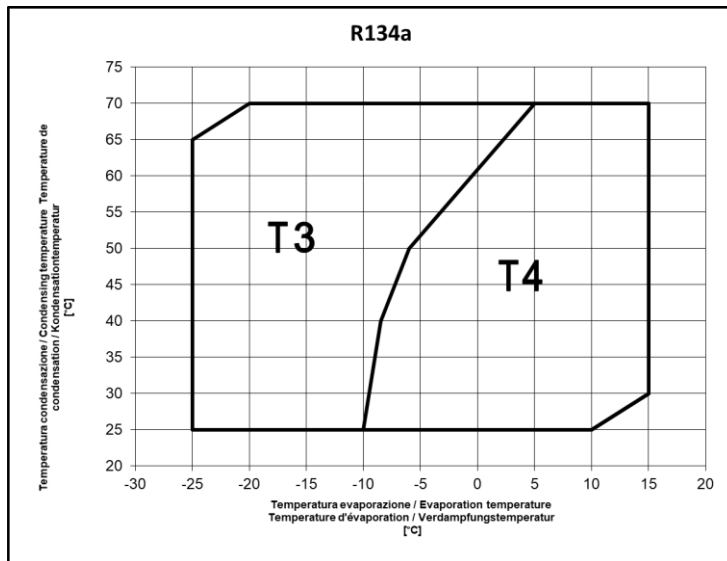
Serie VS - Spostamento volumetrico



**FROM 2,28 m³/h TO 302,61 m³/h**  
**FROM 76 cm³ to 2882 cm³ SWEEP VOLUME**

Application envelope

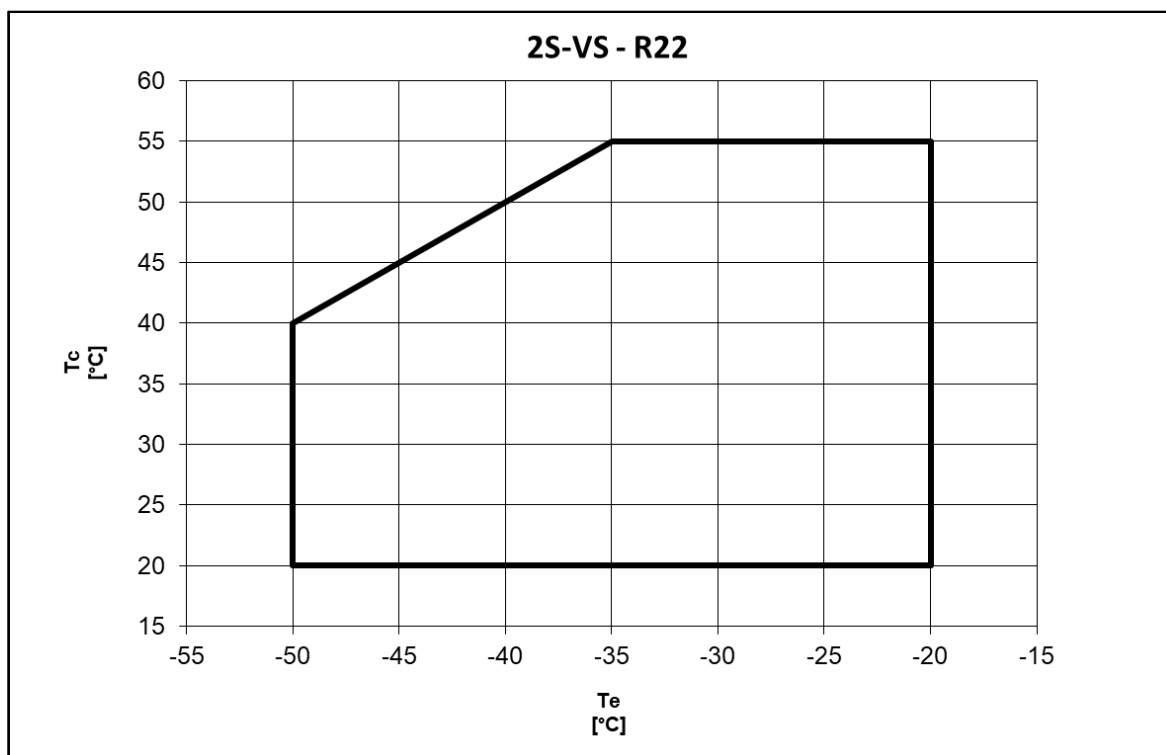
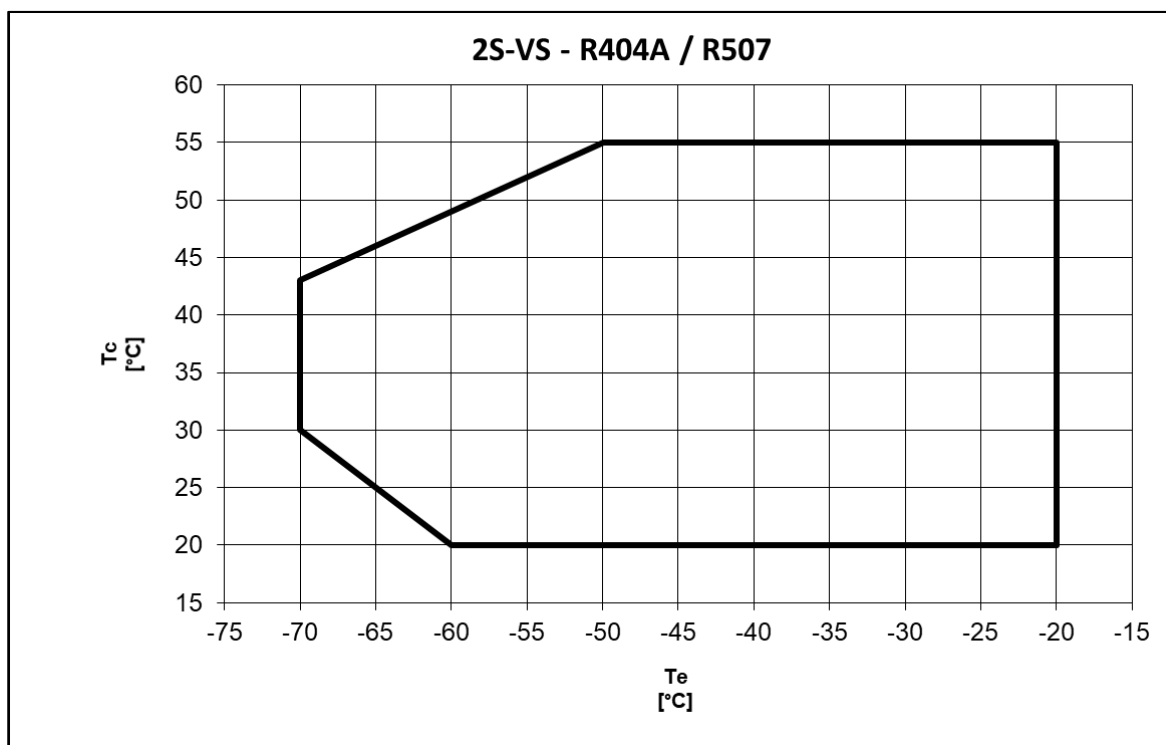
Diagramma di applicazione



T3 maximum surface temperature 200°C / T3 massima temperatura superficiale 200°C  
 T4 maximum surface temperature 135°C / T4 massima temperatura superficiale 200°C  
 Suction gas superheat < 30K / Surriscaldamento in aspirazione < 30K

## Application envelope 2 stage models

Diagramma di applicazione modelli doppio stadio



Use with R22 only where permitted by national legislation / Utilizzo con R22 solo dove permesso dalle legislazioni nazionali

## Standard and Optional Accessories

Accessori standard ed optional



● STANDARD ○ OPTIONAL	<b>Flywheel (FW)*</b> Volano	<b>Crankcase heater (CH)*</b> Riscaldatore olio	<b>Head fan (BF)</b> Ventilatore su testa	<b>Water cooled head (WU)*</b> Teste raffreddate ad acqua	<b>Capacity control (CR)*</b> Controllo di capacità	<b>Unloaded start (US)*</b> Partenza a vuoto
1HVS	○	○				
2GVS	○	○				
3LVS	○	○	○			
41VS	○	○	○	○		
52VS	○	○	○	○		
63VS/63VSC	○	○	○	○	○	○
68VS	○	○	○	○	○	○
81VS	○	○	○	○	○	○
90VS	○	○	○	○	○	○
100VS	○	○	○	○	○	○
110VS	○	○	○	○	○	○
2S-81VS	○	○	○	○	○	○
2S-90VS	○	○	○	○	○	○

**All models are charged after the production line with POE, PAG or mineral oil**  
 Tutti i compressori sono caricati dopo la linea di produzione con POE, PAG o olio minerale

**\*Available for the ATEX version**

\*Disponibili per la versione ATEX

## Application VS SERIES

Applicazioni della gamma VS



### Refrigerated transport

Trasporto refrigerato



### Marine Application

Applicazioni navali e off-shore

## Technical features

Caratteristiche tecniche

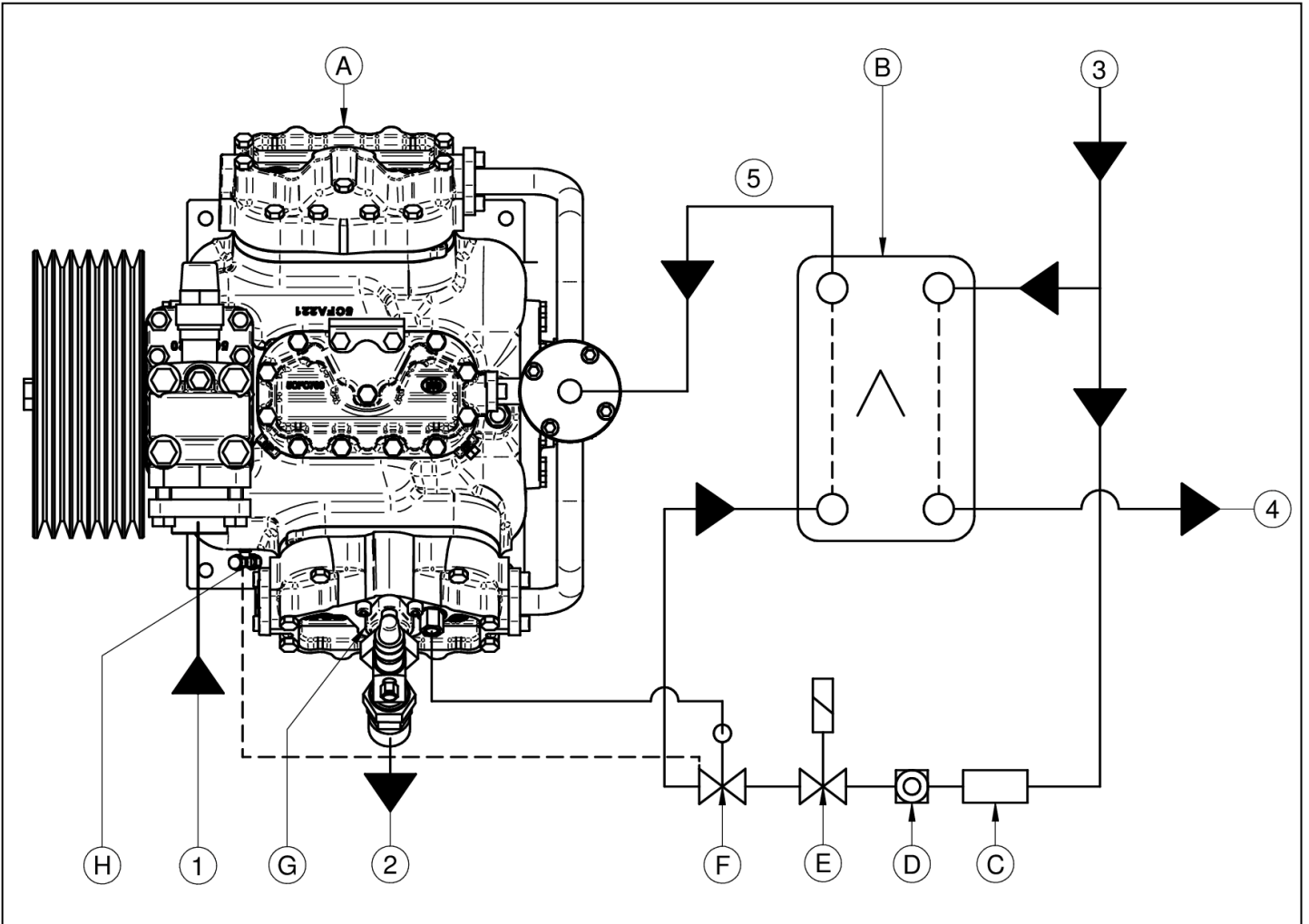
MODELLO MODELLO	NUMBER OF CYLINDERS NUMERO DI CILINDRI	BORE ALESAGGIO	STROKE CORSA	SWEPT VOLUME CILINDRATA	DISPLACEMENT VOLUME SPOSTATO	SUCTION ASPIRAZIONE	DISCHARGE SCARICO	FLYWHEEL VOLANO	OIL CHARGE CARICA OLIO	WEIGHT PESO	RPM		ABSORBED POWER POTENZA ASSORBITA
		[mm]	[mm]	[cm <sup>3</sup> ]	[m <sup>3</sup> /h]	SL [mm]	DL [mm]	[mm] *	[kg]	[kg] **	min	max	HP
1HVS	2	45	24	76,0	6,64 @ 1450	5/8" - 16	1/2"-12	160-2A	0,5	17	500	1450	0,75 - 4
2GVS	2	60	30	169,5	14,75 @ 1450	3/4" - 18	5/8" - 16	160-2A	1,0	22	500	1450	2 - 7,5
3LVS	2	61	60	350,7	27,35 @ 1300	28S	3/4" - 18	270-3A	1,5	38	500	1300	4 - 15
41VSR	2	74	65	560,0	43,68 @ 1300	28S	22S	303-3B	3,0	78	600	1300	5,5 - 20
41VSM/3B	2	74	65	560,0	43,68 @ 1300	35S	28S	303-3B	3,0	78	600	1300	5,5 - 20
41VSM/4B	2	74	65	560,0	43,68 @ 1300	35S	28S	303-4B	3,0	82	600	1300	5,5 - 20
52VSR	2	88	78	949,0	74,02 @ 1300	35S	28S	335-4B	4,0	118	600	1300	10 - 30
52VSM	2	88	78	949,0	74,02 @ 1300	42S	35S	335-4B	4,0	118	600	1300	10 - 30
63VS/4B	4	78	65	1245,0	108,32 @ 1450	42S	2 X 28S	310-4B	5,5	156	750	1750	15 - 50
63VS/6B	4	78	65	1245,0	108,32 @ 1450	42S	2 X 28S	310-6B	5,5	156	750	1750	15 - 50
63VSC/6B	4	78	65	1245,0	108,32 @ 1450	42S	35S	310-6B	5,5	156	750	1750	15 - 50
68VS/4B	4	84	65	1440,0	125,28 @ 1450	54S	35S	310-4B	5,5	156	750	1750	15 - 75
68VS/6B	4	84	65	1440,0	125,28 @ 1450	54S	35S	310-6B	5,5	156	750	1750	15 - 75
81VS	6	78	65	1865,0	162,26 @ 1450	54S	42S	310-6SPB	6,5	203	750	1750	15 - 100
90VS	6	84	65	2160,0	187,92 @ 1450	54S	42S	310-6SPB	6,5	203	750	1750	15 - 100
100VS	8	78	65	2485,0	216,20 @ 1450	80S	54S	310-6SPB	8,5	240	750	1750	20 - 125
110VS	8	84	65	2882,0	250,73 @ 1450	80S	54S	310-6SPB	8,5	240	750	1750	20 - 125



## 2S-VS SERIES Technical Features

Caratteristiche tecniche della gamma 2S-VS

MODELLO MODELLO	NUMBER OF CYLINDERS NUMERO DI CILINDRI		BORE ALESAGGIO [mm]	STROKE CORSA [mm]	SWEEP VOLUME CILINDRATA [cm <sup>3</sup> ]		DISPLACEMENT VOLUME SPOSTATO [m <sup>3</sup> /h] @ 1450		SUCTION ASPIRAZIONE SL [mm]	DISCHARGE SCARICO DL [mm]	FLYWHEEL VOLANO [mm] *	OIL CHARGE CARICA OLIO [kg]	WEIGHT PESO [kg] **		RPM min max	ABSORBED POWER POTENZA ASSORBITA HP
	LP	HP			LP	HP	LP	HP					min	max		
2S-81VS	4	2	78	65	1242	621	108,05	54,03	54s	42s	310-6SPB	6,5	216	750	1750	15 - 100
2S-90VS	4	2	84	65	1440	720	125,28	62,64	54s	42s	310-6SPB	6,5	216	750	1750	15 - 100



- A** – Compressor - Compressore
- B** – Liquid subcooler - Sottoraffreddatore liquido
- C** – Filter - Filtro
- D** – Indicator - Spia liquido
- E** – Solenoid valve - Valvola solenoide
- F** – Expansion valve - Valvola termostatica
- G** – Non return valve - Valvola di ritegno
- H** – Low pressure tap - Presa bassa pressione

- 1** – From Evaporator - Dall'evaporatore
- 2** – To condenser - Al condensatore
- 3** – From liquid line - Dalla linea del liquido
- 4** – To evaporator - All'evaporatore
- 5** – To II stage suction - All'aspirazione del II stadio

## 2S-VS SERIES

### 2S-VS SERIES Preliminary performance data with R404A/R507

Dati preliminari delle performance della gamma 2S-VS con R404A/R507

RANGE SERIE	MODEL MODELLO	RPM	T COND	Q [W]		REFRIGERATION CAPACITY CAPACITA' FRIGORIFERA					
						EVAPORATING TEMPERATURE TEMPERATURA DI EVAPORAZIONE					
			[°C]	-25	-30	-35	-40	-45	-50	-55	-60
2S-VS Without Liquid Subcooler	2S-81VS	1450	30	38380	31660	25660	20370	16100	12500	9500	7070
			40	33510	27450	21850	16950	13380	10620	8090	6030
			50	28200	22840	18030	13590	10750	8380	6350	-
	2S-90VS		30	44520	36720	29760	23630	18670	14490	11000	8200
			40	38860	31720	25340	19630	15510	12030	9170	6830
			50	32670	26490	20900	15750	12470	9700	7370	-
2S-VS With Liquid Subcooler	2S-81VS	1450	30	43770	37300	31260	25690	21030	16850	13230	10200
			40	41100	34850	28900	23250	19060	15250	12050	9280
			50	38500	32340	26510	20770	17120	13870	10920	-
	2S-90VS		30	50750	43250	36250	29800	24400	19520	15350	11820
			40	47660	40420	33520	27000	22100	17700	13980	10760
			50	44680	37500	30750	24080	19840	16080	12650	-

### 2S-VS SERIES Preliminary performance data with R22

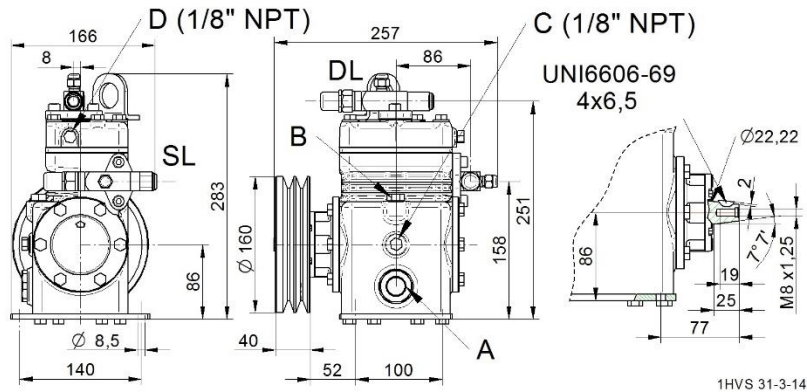
Dati preliminari delle performance della gamma 2S-VS con R22

RANGE SERIE	MODEL MODELLO	RPM	T COND	Q [W]		REFRIGERATION CAPACITY CAPACITA' FRIGORIFERA					
						EVAPORATING TEMPERATURE TEMPERATURA DI EVAPORAZIONE					
			[°C]	-25	-30	-35	-40	-45	-50	-55	-60
2S-VS Without Liquid Subcooler	2S-81VS	1450	30	38270	32830	26750	21740	16430	11830	8700	5440
			40	36180	31260	25900	21550	15740	10780	8620	5390
			50	36570	30000	25300	21400	14770	10060	8560	5350
	2S-90VS		30	43890	38050	30800	24850	18770	13510	9940	6220
			40	41350	35900	29460	24150	18040	12620	9660	6050
			50	40920	34170	28480	23690	16820	11850	9480	5810
2S-VS With Liquid Subcooler	2S-81VS	1450	30	42560	37800	31400	26000	20200	15000	10400	6500
			40	41700	37100	30800	25350	19500	14000	10140	6350
			50	40900	36410	30210	24800	18850	13640	9900	6230
	2S-90VS		30	49400	43850	36420	30200	23450	17400	12080	7550
			40	48380	42980	35690	29400	22560	16220	11760	7350
			50	47450	42220	35030	28740	21850	15810	11480	7200

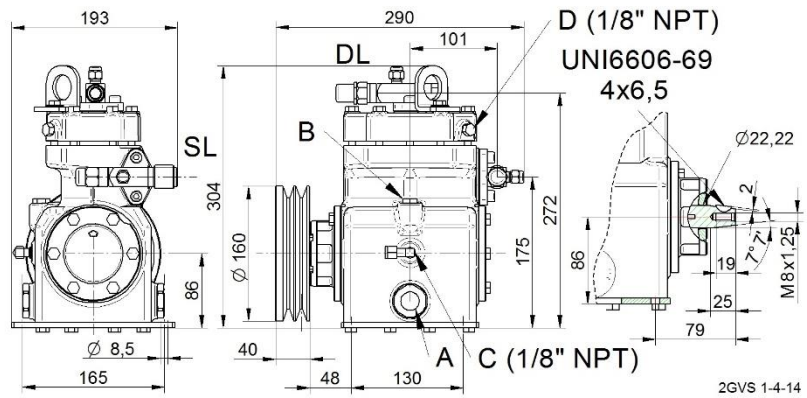
Technical Drawings

Disegni tecnici

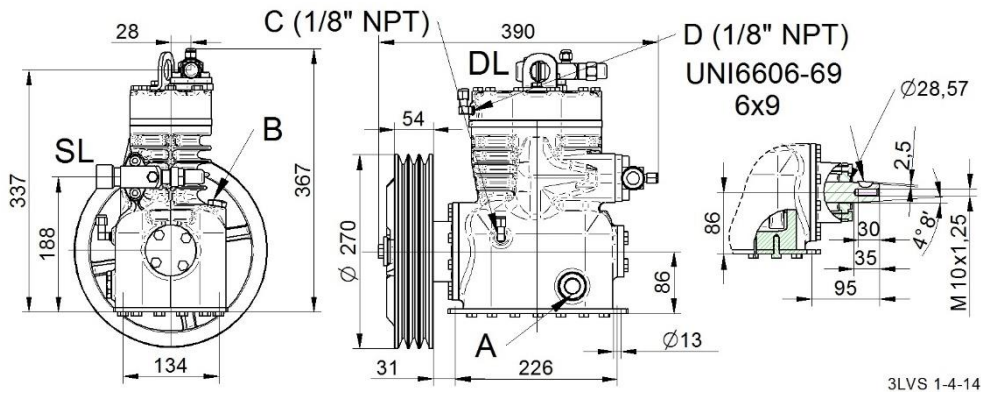
1HVS



2GVS

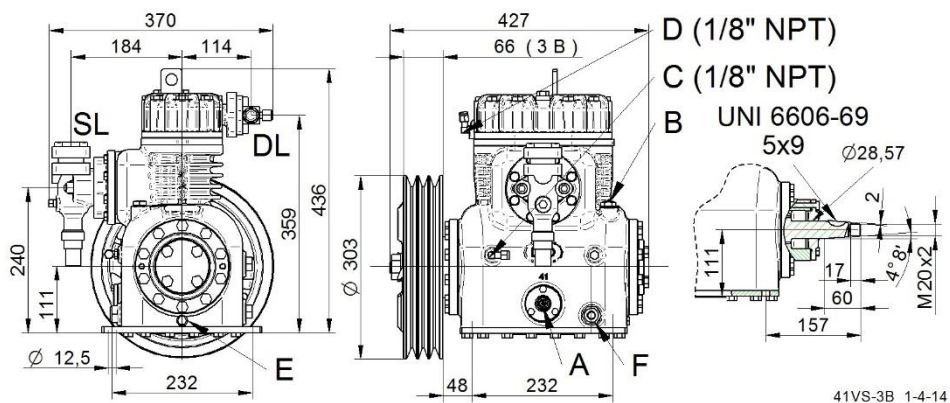


3LVS



41VSR

41VSM/3B



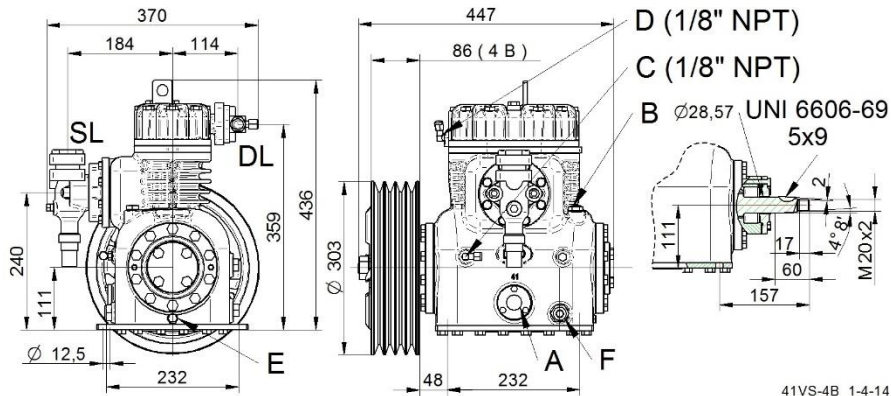
- A – Oil sight glass - Spia olio
- B – Oil charge plug - Tappo carica olio
- C – Low pressure tap - Presa bassa pressione
- D – High pressure tap – Presa alta pressione

- E – Oil drain plug - Tappo scarica olio
- F – Crankcase heater - Resistenza carter
- DL – Discharge service valve - Rubinetto compressione
- SL – Suction service valve – Rubinetto Aspirazione

Technical Drawings

Disegni tecnici

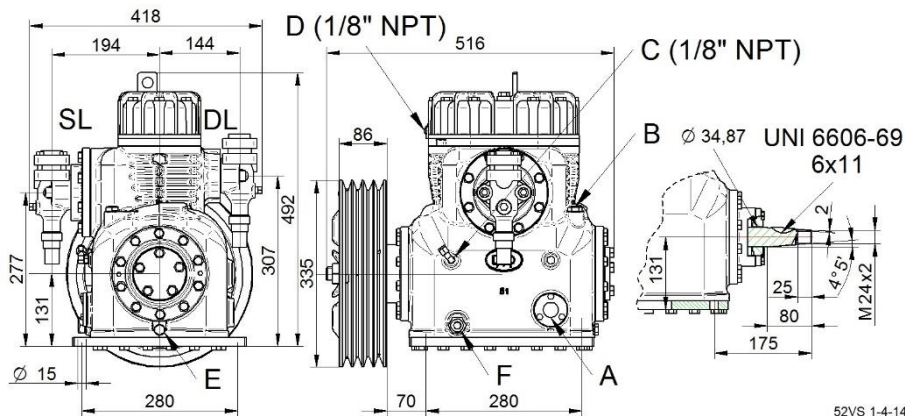
41VSM/4B



41VS-4B 1-4-14

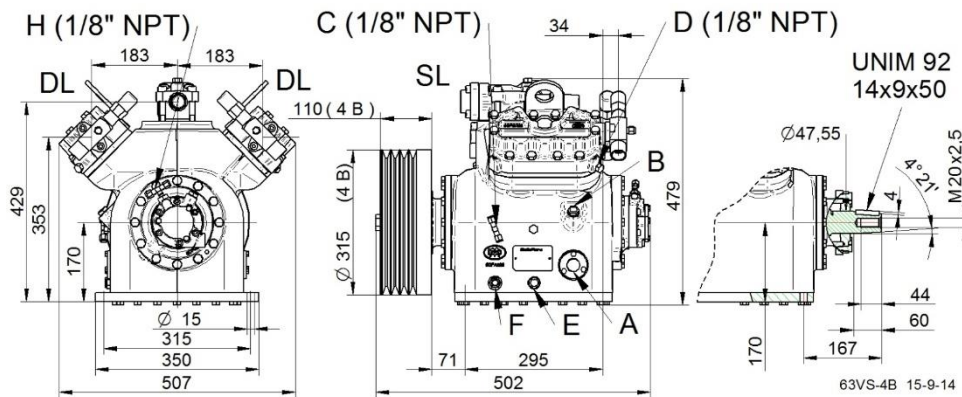
52VSR

52VSM



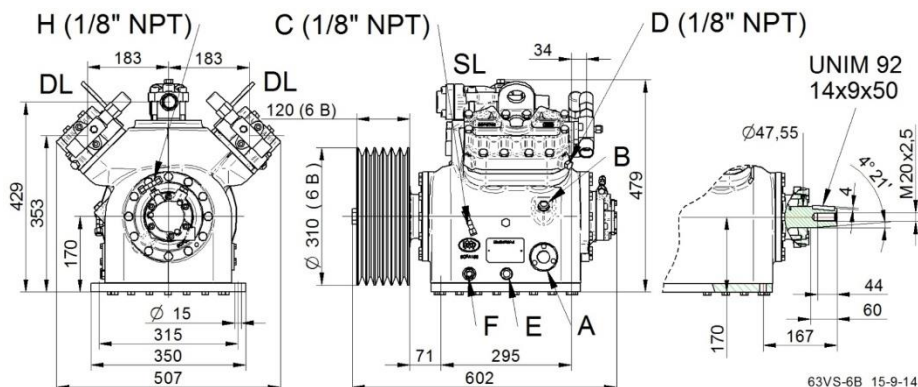
52VS 1-4-14

63VS/4B



63VS-4B 15-9-14

63VS/6B



63VS-6B 15-9-14

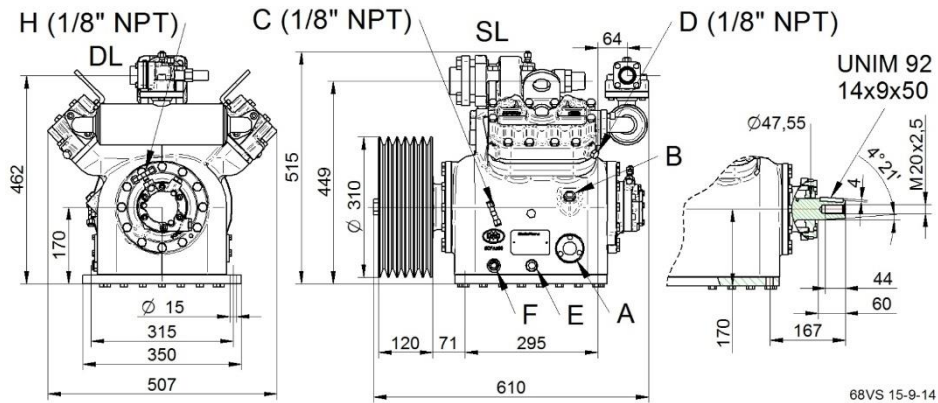
- A – Oil sight glass - Spia olio
- B – Oil charge plug - Tappo carica olio
- C – Low pressure tap - Presa bassa pressione
- D – High pressure tap - Presa alta pressione
- E – Oil drain plug - Tappo scarica olio

- F – Crankcase heater - Resistenza carter
- H – Oil pressure tap - Presa alta pressione pompa
- DL – Discharge service valve - Rubinetto compressione
- SL – Suction service valve - Rubinetto Aspirazione

Technical Drawings

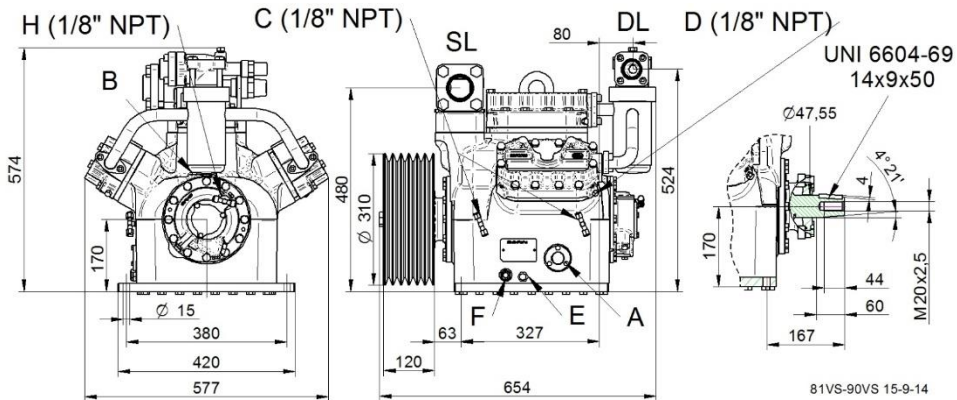
Disegni tecnici

68VS



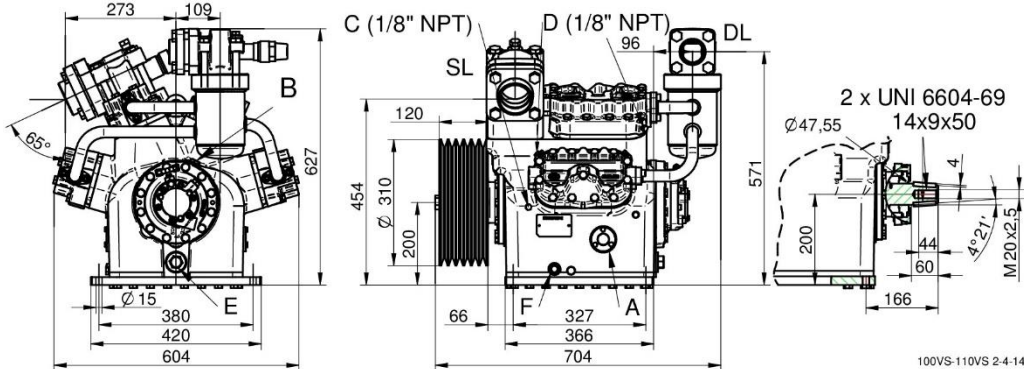
81VS

90VS



100VS

110VS



- A – Oil sight glass - Spia olio
- B – Oil charge plug - Tappo carica olio
- C – Low pressure tap - Presa bassa pressione
- D – High pressure tap - Presa alta pressione
- E – Oil drain plug - Tappo scarica olio

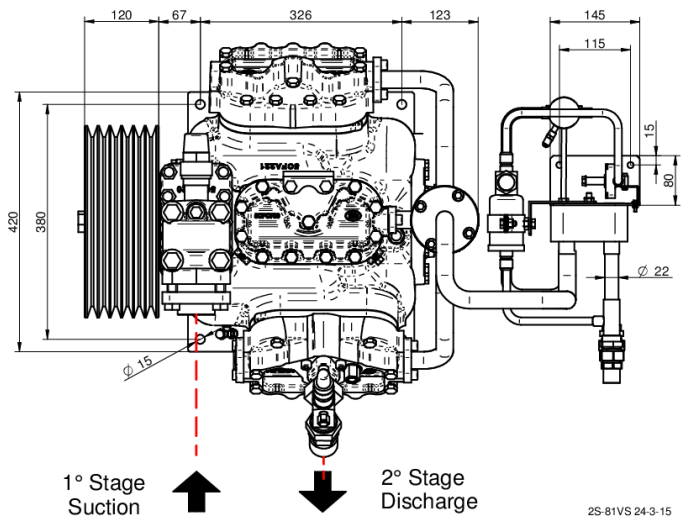
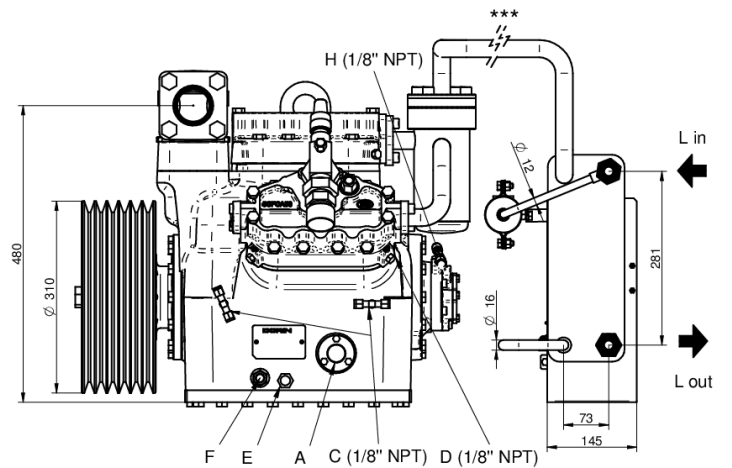
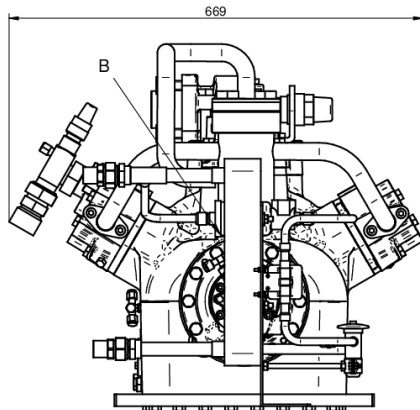
- F – Crankcase heater - Resistenza carter
- H – Oil pressure tap - Presa alta pressione pompa
- DL – Discharge service valve - Rubinetto compressione
- SL – Suction service valve - Rubinetto Aspirazione

Technical Drawings

Disegni tecnici

2S-81VS

2S-90VS



2S-81VS 24-3-15

- Subcooler kit supplied loose. Position defined by customer
- Kit sottoraffreddatore fornito sciolto. Posizione definita dal cliente

\*\*\* Interstage injection line (not supplied)

\*\*\* Linea di iniezione interstadio (non fornita)

- A** – Oil sight glass - Spia olio
- B** – Oil charge plug - Tappo carica olio
- C** – Low pressure tap - Presa bassa pressione
- D** – High pressure tap - Presa alta pressione
- E** – Oil drain plug - Tappo scarica olio
- F** – Crankcase heater - Resistenza carter

- H** – Oil pressure tap - Presa alta pressione pompa
- DL** – Discharge service valve - Rubinetto compressione
- SL** – Suction service valve - Rubinetto Aspirazione
- Lin** – Liquid inlet – Ingresso liquido
- Lout** – Liquid outlet – Uscita liquido





### **DORIN WEB SOFTWARE**

**Open the camera app on your device and point it at the QR code to scan it. Make sure that all the four corners of the QR code are in view. A pop-up notification will appear on your screen, tap the notifications to launch the code.**

Aprire l'app della Fotocamera sul proprio dispositivo ed inquadrare il codice QR per scannerizzarlo. Tutti i quattro angoli del codice devono essere visibili. Una notifica pop-up apparirà sullo schermo, cliccare sulla notifica per eseguire il comando



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