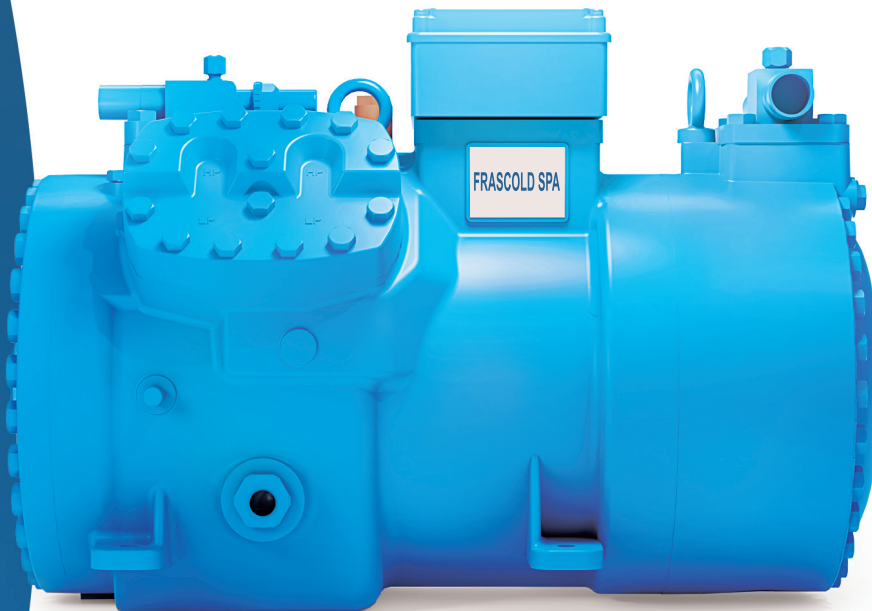


50 Hz & 60 Hz ●

CO₂ SERIES

SUBCRITICAL AND TRANSCRITICAL
SEMI-HERMETIC RECIPROCATING COMPRESSORS



富士豪[®]
FRASCOLD SPA

CO₂ SERIES

**SUBCRITICAL AND TRANSCRITICAL
SEMI-HERMETIC RECIPROCATING
COMPRESSORS**



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Standard equipment and optional accessories

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● Product information

FRASCOLD SOLUTION FOR CO₂ APPLICATIONS



In a certain segment of the refrigeration, air conditioning and heating market, **the growing demand for products with natural refrigerants** makes CO₂ one of the most interesting solution.

In addition to interesting energy efficiency values, CO₂ also has several advantages over other natural refrigerants: **it is not flammable, chemically inert and heavier than air.**

The solutions offered by Frascold for CO₂ applications include semi-hermetic reciprocating compressors for use **in both subcritical -SK3 SERIES- and transcritical -TK HD SERIES- conditions**, in single-stage, cascade and booster systems.

Frascold ensures **wide operating limits**, excellent performances and **high safety**. These compressors **are designed to withstand high standstill pressures (PSS)** allowing the immediate restart of the system in case of operation interruption.

● Product information

4

FEATURES & BENEFITS



HIGH EFFICIENCY & FLEXIBILITY



HEAVY DUTY OPERATION IN A WIDE APPLICATION ENVELOPE



LOW VIBRATION



OPTIMIZED LUBRICATION SYSTEM

CONFORMITY DECLARATION

Frascold CO₂ compressors are intended for installation in refrigeration systems. The machine or partly completed machines shall comply with local safety regulation and standards of the place of installation **(within the EU according to the EU Directives 2006/42/EC Machinery Directive, 2014/68/EU Pressure Equipment, 2006/95/EC Low Voltage Directive).**

The compressor may be put into operation only if it has been installed in accordance with the assembly instructions provided in the installation manual.

Commissioning is only possible if the entire system in which it is integrated has been tested and approved in accordance with legal requirements.

The standards applied are described within the manufacturer's declaration of incorporation, according to the Directive 2006/42/EC, available at: www.frascold.it

PERFORMANCE DATA - FSS3 SOFTWARE

Please refer to our FSS3 Frascold Selection Software to check the performance of all our compressors.



OPERATING LIMITS



TECHNICAL INFORMATION



COOLING CAPACITY



DRAWINGS



ALL OPERATING DATA WITH ANY KIND OF REFRIGERANT



MANUALS



EUROPEAN STANDARD EN12900 AT 50Hz



CATALOGUES AND CERTIFICATIONS

TRANSCRITICAL CO₂ CYCLE TOOL

Define and select the compressors for subcritical and transcritical application and **verify their performance** according to the considered refrigeration cycle.

In particular it's possible to:

- Easily design CO₂ transcritical systems
- Optimize system configuration for greater efficiency
- Choose the optimal gas cooler and intermediate pressure
- Find the best compressors combination
- Evaluate the feasibility of variable frequency drive
- Perform seasonal calculations!

6

Images of our Frascol Selection Software FSS3

SEASONAL CALCULATIONS

The new tool “Seasonal calculations”, developed in steady-state conditions, allows to **calculate the hourly performance of the system across a year.**

It evaluates COPs, compressor energy consumptions and thermal powers, in addition to mass flow rates, pressures and operating temperatures.

It is possible to choose between different system configurations, define load profiles (refrigeration loads and, if required, any thermal and/or conditioning loads) and select the temperature profile of many cities in the world.

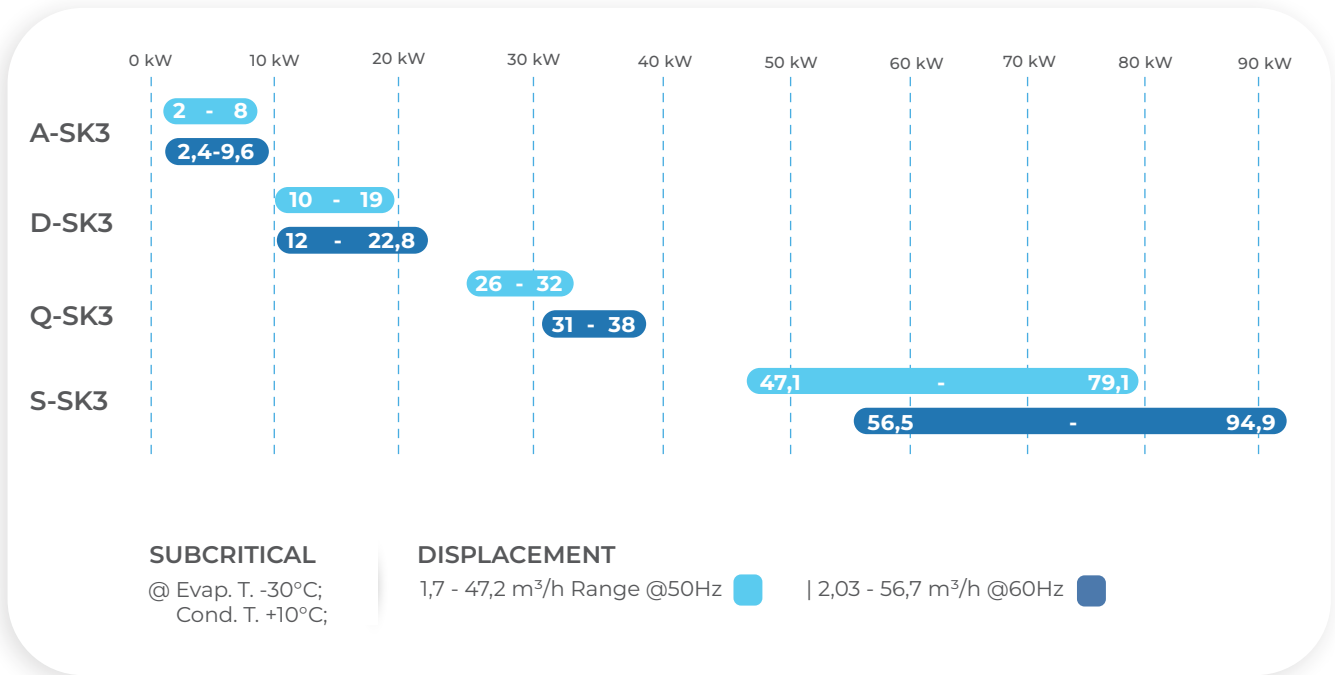
Images of our Frascol Selection Software FSS3

COOLING CAPACITY

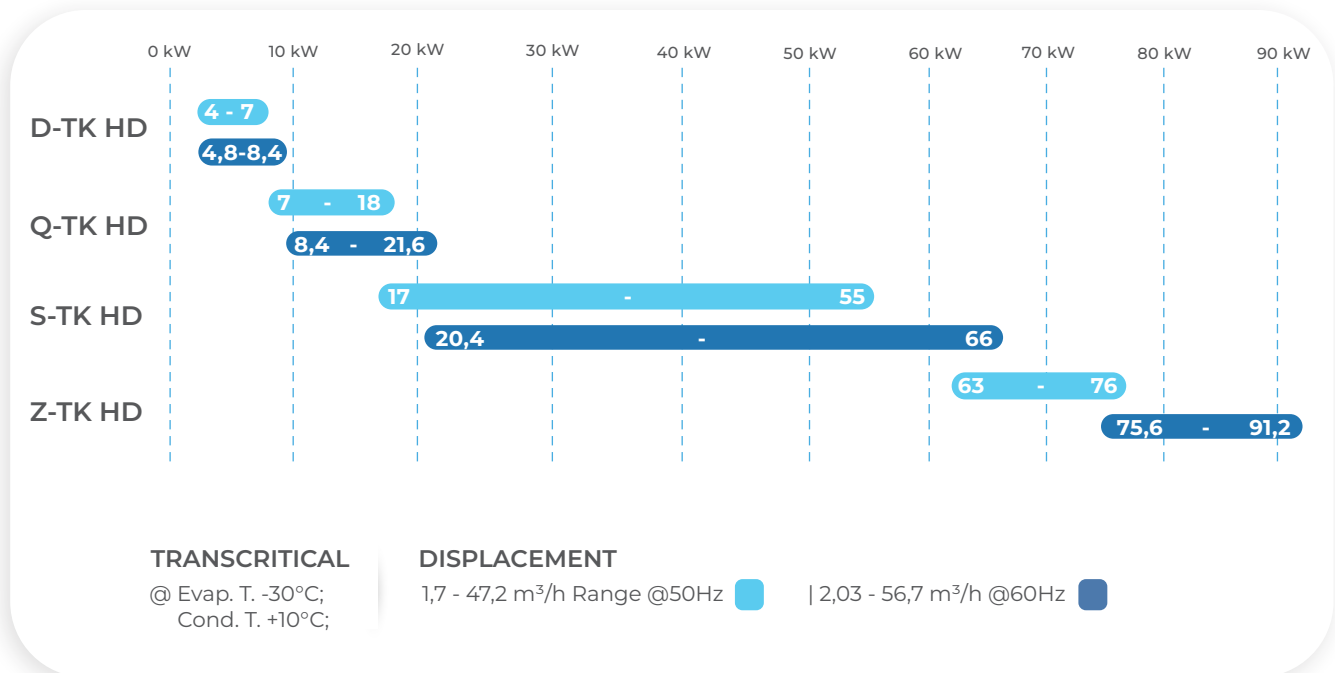


LEGAL DISCLAIMER: While Frascold has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications and performances could be subject to change without notice. You can find the most updated information in our Frascold Selection Software FSS3 at the link: <https://www.frascold.it/en/software>

Subcritical: 4 Sizes, 15 Models



Transcritical: 4 Sizes, 34 Models



PRODUCT RANGE

SK3 SUBCRITICAL

SIZE
A-SK3

2 Cylinders - 5 Models

0.7 - 2,5 HP

1,7 - 4,9 m³/h @50Hz

2,03 - 5,92 m³/h @60Hz

SIZE
D-SK3

2 Cylinders - 4 Models

3 - 5 HP

6,51 - 11,3 m³/h @50Hz

7,81 - 13,52 m³/h @60Hz

SIZE
Q-SK3

4 Cylinders - 2 Models

7 - 9 HP

15 - 19,8 m³/h @50Hz

17,94 - 23,72 m³/h @60Hz

SIZE
S-SK3

4 Cylinders - 4 Models

15 - 30 HP

28 - 47,2 m³/h @50Hz

33,6 - 56,6 m³/h @60Hz

TK HD TRANSCRITICAL

SIZE
D-TK HD

2 Cylinders - 7 Models

3 - 5 HP

1,9 - 3,5 m³/h @50Hz

2,26 - 4,18 m³/h @60Hz

SIZE
Q-TK HD

4 Cylinders - 10 Models

5 - 10 HP

3,8 - 9,6 m³/h @50Hz

4,54 - 11,54 m³/h @60Hz

SIZE
S-TK HD

4 Cylinders - 14 Models

8 - 40 HP

7,9 - 25,3 m³/h @50Hz

9,47 - 30,34 m³/h @60Hz

SIZE
Z-TK HD

6 Cylinders - 3 Models

40 - 50 HP

30,7 - 37,9 m³/h @50Hz

36,9 - 45,5 m³/h @60Hz

MODEL DESIGNATION

S | 40 | - | 26 | TK HD

Sizes of Models

SK3 | A - D - Q - S

TK HD | D - Q - S - Z

Motor size

SK3 | From 0,7 to 30 HP

TK HD | From 3 to 50 HP

Application

SK3 | Subcritical CO₂

TK HD | Transcritical CO₂

Capacity

Displacement (m³/h at 50Hz)

INFORMATION PLATE

All the important information to identify the compressor is displayed on the nameplate. The date of production is contained in the serial number. The user is responsible for indicating the refrigerant type.

Compressor model

↓

FRASCOLD SPA Type **S40-26TK HD**
Nr. **3Y001000**

Hz	Displ. m ³ /h	RPM	Max. Operating Disch. Pressure	bar
50	25,28	1450	Max. Operating Disch. Pressure	bar 140
60	30,34	1740	Max. Static Suct. Pressure	bar 80

Oil type: POE85/CO₂ 3~

Volt		Hz	MRA		LRA	
PWS	YY		PWS	YY	PWS	YY
380-420	380-420	50	81,6	81,6	159	273
440-480	440-480	60	81,6	81,6	159	273

FRASCOLD S.p.A. **S4026HD 34Y001000** MADE IN ITALY

Identification barcode Identification code Place of manufacturing

CONTROL PROTECTION DEVICE

The compressors are equipped with the **INT69® Diagnose control module by Kriwan**, this is a further development of the compressor's protection capability. The Diagnose technology is not limited to the protection of the compressor, it also provides specific functions of diagnostics aimed to:

- Prevent operating faults that may occur in the system through the historical data analysis,
- Plan maintenance actions,
- Adjust parameters for system optimization.

The additional protection capabilities help to extend the service life of the compressor. Through this technology applied to the compressors, users benefit from the increased reliability of the refrigeration system and the reduced operating and maintenance cost.

ADVANTAGES :

- Guarantee of optimal operation throughout the life cycle of the compressor
- Practical and with simple operation
- Immediate diagnosis and accurate problem-solving in case of error or failure
- Intelligent monitoring of the compressor operation
- Extends the service life of the refrigeration systems
- Improves the compressor protection
- Reduces operating and maintenance costs
- Automatically saves operational data and errors in a memory
- Technical sheet with retrieval of stored data
- Data download through DP port connection
- Remote communication through Modbus-Gateway and LAN-Gateway protocol
- Also applicable to already installed compressors

Power supply

Temperature control

Power-on identification

Motor parameters control

Alarm detector



INT69® DIAGNOSE

*INT69® Diagnose is intellectual property and trademarks ® of KRIWAN Industrie-Elektronik GmbH.

INT69® DIAGNOSE

● Product information

SK3 SUBCRITICAL CO₂ COMPRESSORS



The SK3 series of compressors for subcritical CO₂ applications is designed considering the latest developments in refrigeration technology for industrial and supermarket applications.

Our subcritical range consists of 4 main sizes with 15 models and displacements from 1.7 to 47.2 m³/h at 50 Hz, ideal for use in booster systems but also in cascade systems where LT compressors are required.

SK3 models can operate in a wide range of condensing (up to 20°C) and evaporating (up to -50°C) temperatures.

High standstill pressure (PSS) allows them to withstand higher ambient temperatures when the system is on standby or is shut down for maintenance.

● Product information

STANDARD EQUIPMENT AND OPTIONAL ACCESSORIES



Description	Sizes							
	A-SK3		D-SK3		Q-SK3		S-SK3	
	Std.	Opt.	Std.	Opt.	Std.	Opt.	Std.	Opt.
Electronic control module for protection and diagnoses (INT69 [®] Diagnose)	•		•		•		•	
Discharge temperature sensor						•		•
Relief valve for maximum standstill pressure (PSS)	•		•		•		•	
Suction and discharge valves	•		•		•		•	
Oil charge POE 85cSt	•		•		•		•	
Oil charge PAG 68cSt		•		•		•		•
Oil level sight glass (two for series Q)	•		•		•		•	
Crankcase oil heater (recommended due to the high solubility of the CO ₂ with the oil)		•		•		•		•
Rubber vibration dampers	•		•		•		•	

● Product information

TK HD TRANSCRITICAL CO₂ COMPRESSORS



The new Frascold TK HD series of compressors for transcritical CO₂ applications has been designed considering the most severe operating conditions in refrigeration, air conditioning and heating.

Our range consists of 4 series with 34 sizes and displacement from 1.9 to 37.9 m³/h at 50Hz.

Our compressors are designed for transcritical CO₂ applications, such as heat pumps and medium-temperature refrigeration systems, but also booster and cascade systems in combination with SK3 series compressors for subcritical CO₂ applications.

Their special construction allows them to work with high operating pressures (140 bar(a) at discharge) and a maximum standstill pressure (PSS) of 100 bar(a) for the D and Z sizes and 80 bar(a) for the Q and S sizes.

● Product information

STANDARD EQUIPMENT AND OPTIONAL ACCESSORIES



Description	Sizes							
	D-TK HD		Q-TK HD		S-TK HD		Z-TK HD	
	Std.	Opt.	Std.	Opt.	Std.	Opt.	Std.	Opt.
Electronic control module for protection and diagnoses (INT69® Diagnose)	•		•		•		•	
Discharge temperature sensor	•		•		•		•	
Standstill pressure relief valve	•		•		•		•	
Relief valve discharge side	•		•		•		•	
Suction and discharge valves	•		•		•		•	
Discharge valve with thread connection (ogive DIN3861) for steel pipes		•		•		•		•
POE 85 cSt oil charge	•		•		•		•	
PAG 68 cSt oil charge		•		•		•		•
Oil level sight glass (two for sizes Q, S and Z)	•		•		•		•	
Crankcase oil heater (recommended due to the high solubility of the CO ₂ in the oil)		•		•		•		•
Rubber vibration dampers	•		•		•		•	

SK3 SUBCRITICAL CO₂



Motor power supply³ 220-240V Δ / 380-420V 人 / 3 50Hz | 265-290V Δ / 440-480V / 3 60Hz | DOL connection

Models	Cylinders	Displacement		Oil charge ¹	Electrical Data				接管尺寸 ⁵				Sound Pressure @ 1 meter	Net weight ²
		50Hz	60Hz		Max operating current ⁴		Locked rotor current ⁴		Suction		Discharge			
		m ³ /h			Δ	Y	Δ	Y	[Inch]	[mm]	[Inch]	[mm]		
A07-1.6SK3	2	1.69	2.03	1	4.4	2.5	18.6	10.7	5/8"	16	1/2"	12.7	63.8	40
A1.2-5SK3	2	2.69	3.23	1	6.4	3.7	23.6	13.6	5/8"	16	1/2"	12.7	63.4	41
A1.5-3SK3	2	3.35	4.02	1	8.6	5.1	46.6	26.8	5/8"	16	1/2"	12.7	63.6	44
A2-4SK3	2	3.95	4.74	1	9.5	5.5	40.2	23.2	5/8"	16	1/2"	12.7	63.6	44
A2.5-5SK3	2	4.93	5.92	1	12.5	7.2	56.9	32.9	5/8"	16	1/2"	12.7	64	47
D3-6SK3	2	6.51	7.81	1.2	16.6	9.6	75.9	43.7	7/8"	22.2	5/8"	16	65.7	51
D4-8SK3	2	7.96	9.55	1.2	20.3	11.7	90.3	52	7/8"	22.2	5/8"	16	67.5	56
D4.5-9SK3	2	9.13	10.96	1.2	25.4	14.6	107	61.6	7/8"	22.2	5/8"	16	68.9	56
D5-11SK3	2	11.27	13.52	1.2	28.9	16.7	107	61.6	7/8"	22.2	5/8"	16	72.3	58
Q7-15SK3	4	14.95	17.94	1.6	36.9	21.3	152	87.3	1-1/8"	28.6	3/4"	19	68.2	79
Q9-20SK3	4	19.77	23.72	1.6	43.3	25	171	98.8	1-1/8"	28.6	3/4"	19	68.9	81

Motor power supply³ 80-420V 人 / 人 / 人 / 3 50Hz | 440-480V 人 / 人 / 人 / 3 60Hz | PWS connection

Models	Cylinders	Displacement		Oil charge ¹	Electrical Data				Pipe connection ⁵				Sound Pressure @ 1 meter	Net weight ²
		50Hz	60Hz		Max operating current MRA ⁴	Locked rotor current ⁴		Suction		Discharge				
		m ³ /h				[l]	[A]	PWS	DOL	[A]	[Inch]	[mm]		
S15-28SK3	4	28.02	33.62	2.5	37.3	82	140	13/8"	35.3	11/8"	28.8	68	184	
S20-33SK3	4	32.8	39.36	2.5	44.1	100	166	13/8"	35.3	11/8"	28.8	71.1	187	
S25-40SK3	4	40.34	48.41	2.5	58	112	189	13/8"	35.3	11/8"	28.8	71.2	187	
S30-47SK3	4	47.23	56.68	2.5	65.4	132	224	13/8"	35.3	11/8"	28.8	71.6	192	

1. Oil charged: POE 85cSt specific for CO₂. The use of a crankcase heater is recommended due to the high solubility of the CO₂ in the oil.
2. Net weight including: valves, oil charge, rubber vibration dampers.
3. Motor voltage tolerance ± 10% referred to the mean value of the voltage range. Other voltages are available on request.
4. The indicated data refers to standard motors. For other supply voltages refer to Frascold Selection Software FSS3. The size of the contactors, cables and fuses must take into account the maximum operating temperature and the maximum operating current. Use AC3 category contactors.
5. Soldering valve connections.

Find the most updated information and other supply voltage in our Frascold Selection Software FSS3 at the link: <https://www.frascold.it/software>

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TK HD TRANSCRITICAL CO₂

Motor power supply⁴ 380-420V Δ/ΔΔ/3 50Hz | 440-480V Δ/ΔΔ/3 60Hz | PWS connection

Models	Motor Version ¹	Cylinders	Displacement		Oil charge ²	Electrical Data				Pipe connection ⁶				Sound Pressure @ 1 meter	Net weight ³
			50Hz	60Hz		Max operating current ⁵		Locked rotor current ⁵		Suction		Discharge			
			m ³ /h	[l]		Δ	Y	Δ	Y	[Inch]	[mm]	[Inch]	[mm]		
D3-1.9TK HD	1	2	1.89	2.27	1.5	11	6.3	69	39.7	7/8"	22.2	3/4"	19	64.5	80
D3-2.2TK HD	2	2	2.19	2.63	1.5	10.3	5.9	69	39.7	7/8"	22.2	3/4"	19	64.6	80
D3.5-2.2TK HD	1	2	2.19	2.63	1.5	12.7	7.3	80.5	46.3	7/8"	22.2	3/4"	19	64.5	81
D3.5-3TK HD	2	2	3	3.6	1.5	13.9	8	80.5	46.3	7/8"	22.2	3/4"	19	65.3	81
D4-3TK HD	1	2	3	3.6	1.5	17.2	9.9	93.4	53.9	7/8"	22.2	3/4"	19	65.2	82
D4-3.5TK HD	2	2	3.48	4.18	1.5	16.7	9.6	93.4	53.9	7/8"	22.2	3/4"	19	64.8	82
D5-3.5TK HD	1	2	3.48	4.18	1.5	20	11.5	109	63.1	7/8"	22.2	3/4"	19	64.7	83
Q5-4TK HD	2	4	3.78	4.54	1.6	18.2	10.5	109	63.1	7/8"	22.2	3/4"	19	67.7	90
Q6-4TK HD	1	4	3.78	4.54	1.6	24.4	14.1	94.7	54.7	7/8"	22.2	3/4"	19	67.9	94
Q6-4.5TK HD	2	4	4.38	5.26	1.6	24.5	14.1	94.7	54.7	7/8"	22.2	3/4"	19	68.5	94
Q7-4.5TK HD	1	4	4.38	5.26	1.6	28.6	16.5	151	87.3	7/8"	22.2	3/4"	19	68.7	94
Q7-6TK HD	2	4	6	7.2	1.6	28	16.2	151	87.3	7/8"	22.2	3/4"	19	68.9	94
Q9-6TK HD	1	4	6	7.2	1.6	40.9	23.6	168	96.8	7/8"	22.2	3/4"	19	68.7	96
Q9-7TK HD	2	4	6.95	8.34	1.6	38.6	22.2	168	96.8	7/8"	22.2	3/4"	19	70.1	96
Q10-7TK HD	1	4	6.95	8.34	1.6	37.4	21.5	201	116	7/8"	22.2	3/4"	19	69.8	99
Q10-8TK HD	1	4	8.31	9.97	1.6	45.4	26.2	201	116	7/8"	22.2	3/4"	19	69.5	99
Q10-10TK HD	2	4	9.62	11.54	1.6	45.4	26.2	201	116	7/8"	22.2	3/4"	19	71.8	99

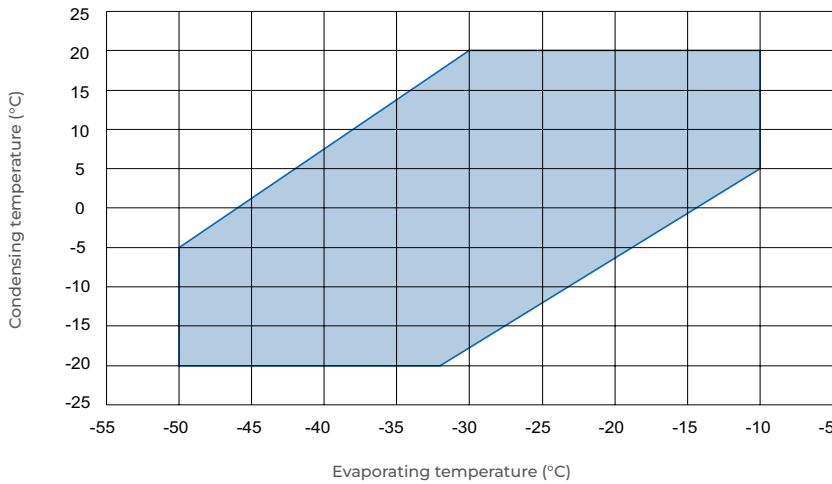
Motor power supply⁴ 220-240V Δ/380-420V Δ/3 50Hz | 265-290V Δ/440-480V Δ/3 60Hz | DOL Connection

Models	Motor Version ¹	Cylinders	Displacement		Oil charge ²	Electrical Data				Pipe connection ⁶				Sound Pressure @ 1 meter	Net weight ³
			50Hz	60Hz		Max operating current ⁵		Locked rotor current ⁵		Suction		Discharge			
			m ³ /h	[l]		[A]	[A]	PWS	DOL	[Inch]	[mm]	[Inch]	[mm]		
S8-8TK HD	2	4	7.89	9.47	3	19.6	53.1	90.4	1-1/8"	28.6	3/4"	19	68.3	181	
S10-8TK HD	1	4	7.89	9.47	3	26.6	60	102	1-1/8"	28.6	3/4"	19	68.2	183	
S10-10TK HD	2	4	9.64	11.57	3	23.5	60	102	1-1/8"	28.6	3/4"	19	68.4	181	
S15-10TK HD	1	4	9.64	11.57	3	30.4	69.1	119	1-1/8"	28.6	3/4"	19	68.4	183	
S15-12TK HD	2	4	11.84	14.21	3	31	69.1	119	1-1/8"	28.6	3/4"	19	68.3	183	
S20-12TK HD	1	4	11.84	14.21	3	40.9	102	171	1-1/8"	28.6	3/4"	19	68.6	187	
S20-14TK HD	2	4	14.46	17.35	3	40.6	102	171	1-1/8"	28.6	3/4"	19	68.7	187	
S25-14TK HD	1	4	14.46	17.35	3	49.7	112	189	1-1/8"	28.6	3/4"	19	68.9	187	
S20-18TK HD	2	4	17.84	21.4	3	51.8	102	171	1-1/8"	28.6	3/4"	19	69.6	187	
S30-18TK HD	1	4	17.84	21.4	3	60.4	132	224	1-1/8"	28.6	3/4"	19	69.5	204	
S25-21TK HD	2	4	20.5	24.59	3	61	112	189	1-1/8"	28.6	3/4"	19	70.3	187	
S35-21TK HD	1	4	20.5	24.59	3	69.5	145	239	1-1/8"	28.6	3/4"	19	70.5	215	
S30-26TK HD	2	4	25.28	30.34	3	70.4	132	224	1-1/8"	28.6	3/4"	19	71.1	201	
S40-26TK HD	1	4	25.28	30.34	3	81.6	159	273	1-1/8"	28.6	3/4"	19	71.5	220	
Z40-31TK HD	2	6	30.75	36.9	3.9	92	159	273	1-3/8"	35	1-1/8"	28.6	75	270	
Z50-31TK HD	1	6	30.75	36.9	3.9	104	189	321	1-3/8"	35	1-1/8"	28.6	75	274	
Z50-38TK HD	2	6	37.9	45.48	3.9	106	189	321	1-3/8"	35	1-1/8"	28.6	76	274	

1. Motor size (see operating limits on the next page)
2. Oil charged: POE 85cSt specific for CO₂. The use of a crankcase heater is recommended due to the high solubility of the CO₂ in the oil.
3. Net weight including: valves, oil charge, rubber vibration dampers.
4. Motor voltage tolerance ± 10% referred to the mean value of the voltage range. Other voltages are available on request.
5. The indicated data refers to standard motors. For other supply voltages refer to FSS3 Selection Software. For sizing of contactors, cables and fuses, consider the maximum operating current.
6. Soldering valve connections.

OPERATING LIMITS

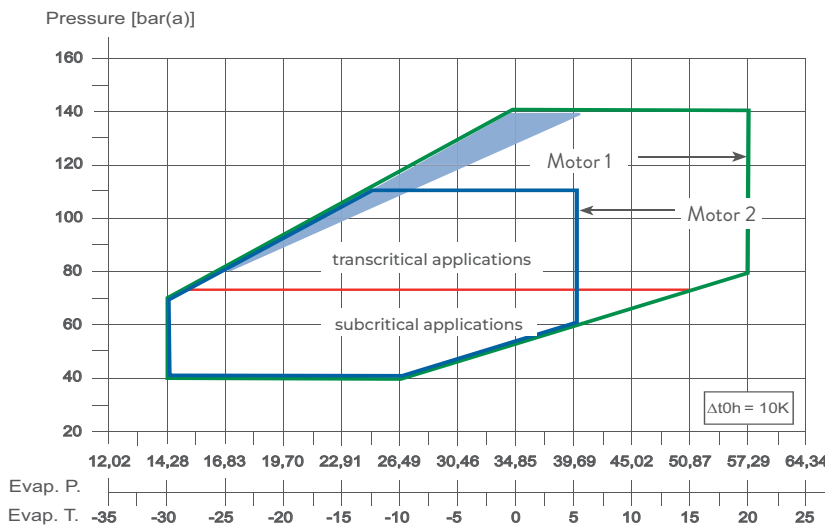
R744 CO₂



SK3 series

Standard application diagram for subcritical process

- Restrictions to operating limits may occur when the compressor is regulated by the inverter
- Compressor at 100% of the capacity
- ΔT_{0h} Considered suction superheating = 10K



TK HD Series

Standard application diagram for transcritical process

- Restrictions to operating limits may occur when the compressor is regulated by the inverter.
- Compressor at 100% of the capacity
- Ph [bar(a)] Delivery pressure (absolute)
- P0 [bar(a)] Suction pressure (absolute)
- T0 [°C] Evaporating temperature
- ΔT_{0h} Considered suction superheating = 10K

Area where additional cooling or discharge temperature reduction is needed.

Maximum allowed standstill pressure (PSS)

Size	Maximum standstill pressure	Max operating pressure
D-TK HD	100 bar(a)	155 bar(a)
Q-TK HD	80 bar(a)	140 bar(a)
S-TK HD	80 bar(a)	140 bar(a)
Z-TK HD	100 bar(a)	155 bar(a)

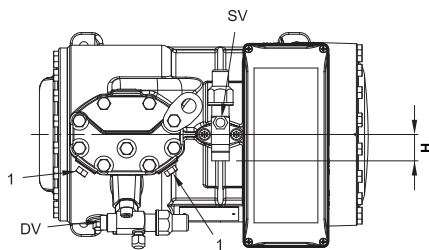
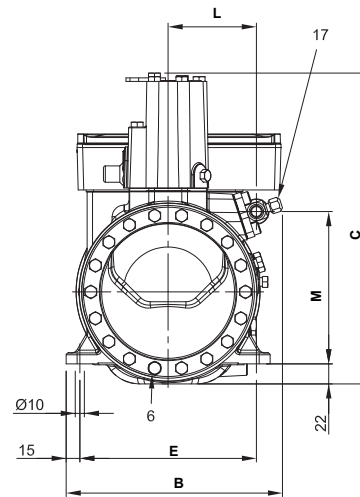
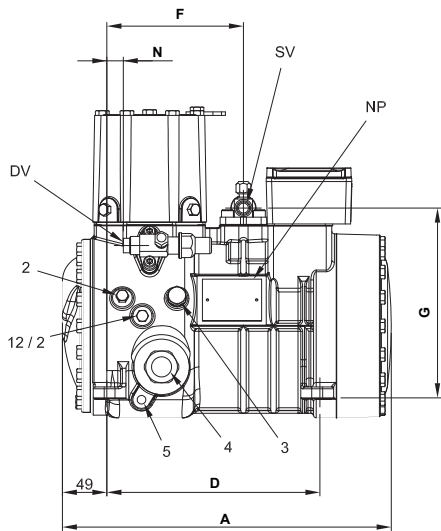
The operation of the compressors is allowed within the operating envelope shown on this page. Use the FSS3 Frascold Selection Software to verify the exact operating limits of each compressor.

TECHNICAL DRAWINGS AND DIMENSIONS

Subcritical CO₂ - R744

Size A-SK3

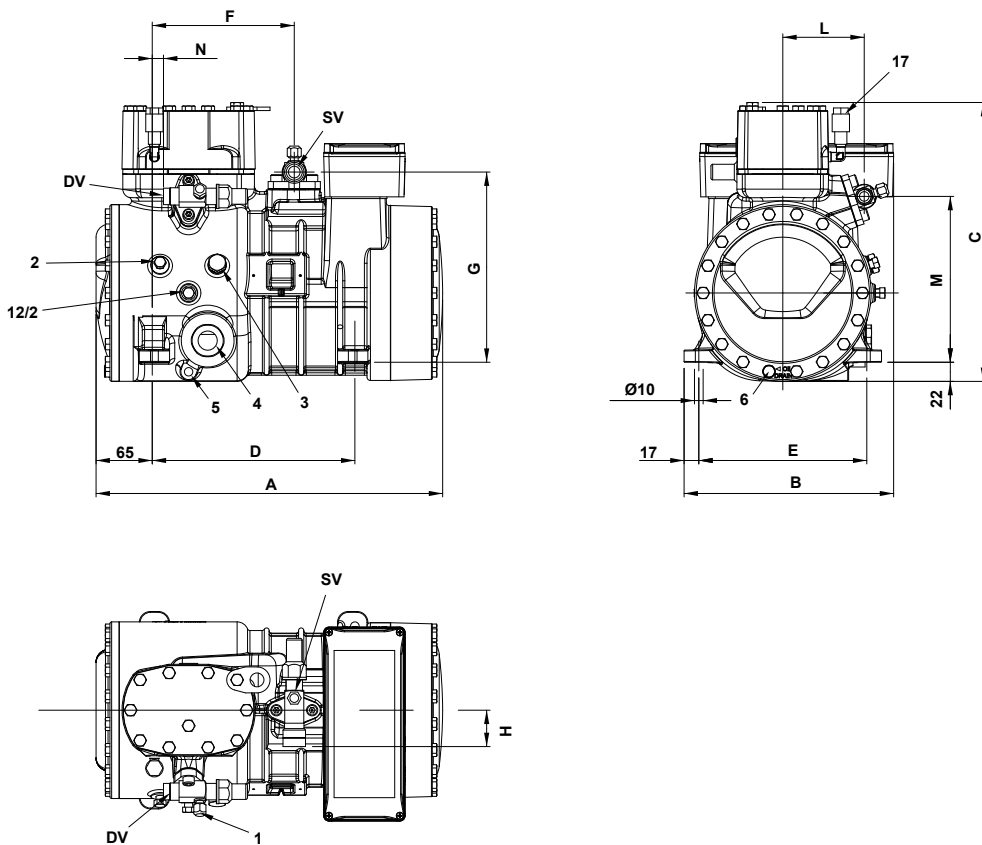
	Compressor					Valves position						Valves				Net weight [Kg]
	Lenght	Width	Height	Base mounting		Suction			Discharge			Suction		Discharge		
	A	B	C	D	E	F	G	H	L	M	N	Ø		Ø		
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	
A07-1.6SK3	361	238	342	234	194	150	209	29	97	167	18	16	5/8"	12,7	1/2"	40
A1-2.5SK3	361	238	342	234	194	150	209	29	97	167	18	16	5/8"	12,7	1/2"	41
A1.5-3SK3	361	238	342	234	194	150	209	29	97	167	18	16	5/8"	12,7	1/2"	44
A2-4SK3	361	238	342	234	194	150	209	29	97	167	18	16	5/8"	12,7	1/2"	44
A2.5-5SK3	361	238	342	234	194	150	209	29	97	167	18	16	5/8"	12,7	1/2"	47



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M8 x 18
12	Oil return plug	1/8" NPT
17	Relief valve	
DV	Discharge valve	
SV	Suction valve	
NP	Nameplate	

Subcritical CO₂ - R744

	Compressor					Valves position						Valves				Net weight [Kg]
	Lenght	Width	Height	Base mounting		Suction			Discharge			Suction		Discharge		
	A	B	C	D	E	F	G	H	L	M	N	Ø		Ø		
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	
D3-6SK3	400	242	322	234	194	164	220	42	94	192	13	22,2	7/8"	16	5/8"	51
D4-8SK3	400	242	322	234	194	164	220	42	94	192	13	22,2	7/8"	16	5/8"	56
D4.5-9SK3																
D5-11SK3	400	242	322	234	194	164	220	42	94	192	13	22,2	7/8"	16	5/8"	58

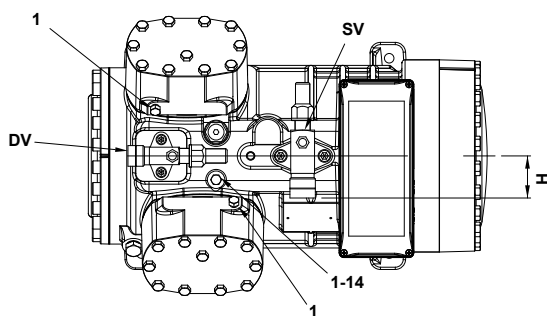
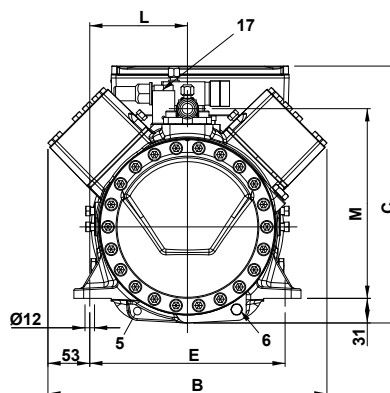
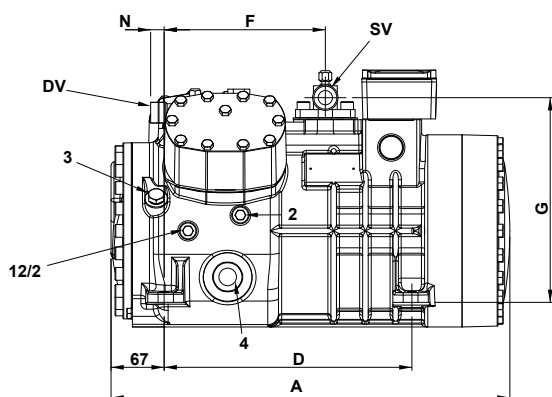


1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M8 x 18
12	Oil return plug	1/8" NPT
17	Relief valve	
DV	Discharge valve	
SV	Suction valve	
NP	Nameplate	

Subcritical CO₂ - R744

Compressor					Valves position						Valves				Net weight [Kg]
Lenght	Width	Height	Base mounting		Suction			Discharge			Suction		Discharge		
A	B	C	D	E	F	G	H	L	M	N	Ø		Ø		
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	

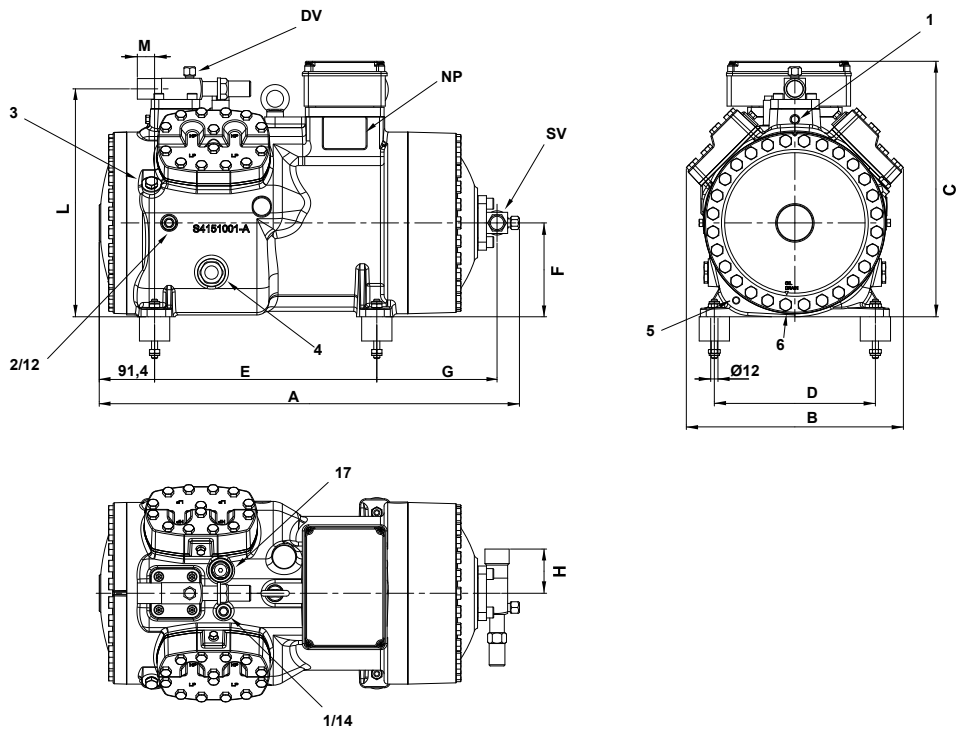
Q7-15SK3	502	351	324	312	246	203	258	53	123	239	12	28,6	1-1/8"	19	3/4"	79
Q9-20SK3	502	351	324	312	246	203	258	53	123	239	12	28,6	1-1/8"	19	3/4"	81



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M8 x 22
12	Oil return plug	1/8" NPT
14	Max discharge temperature sensor connection	1/8" NPT
17	Relief valve	
DV	Discharge valve	
SV	Suction valve	
NP	Nameplate	

Subcritical CO₂ - R744

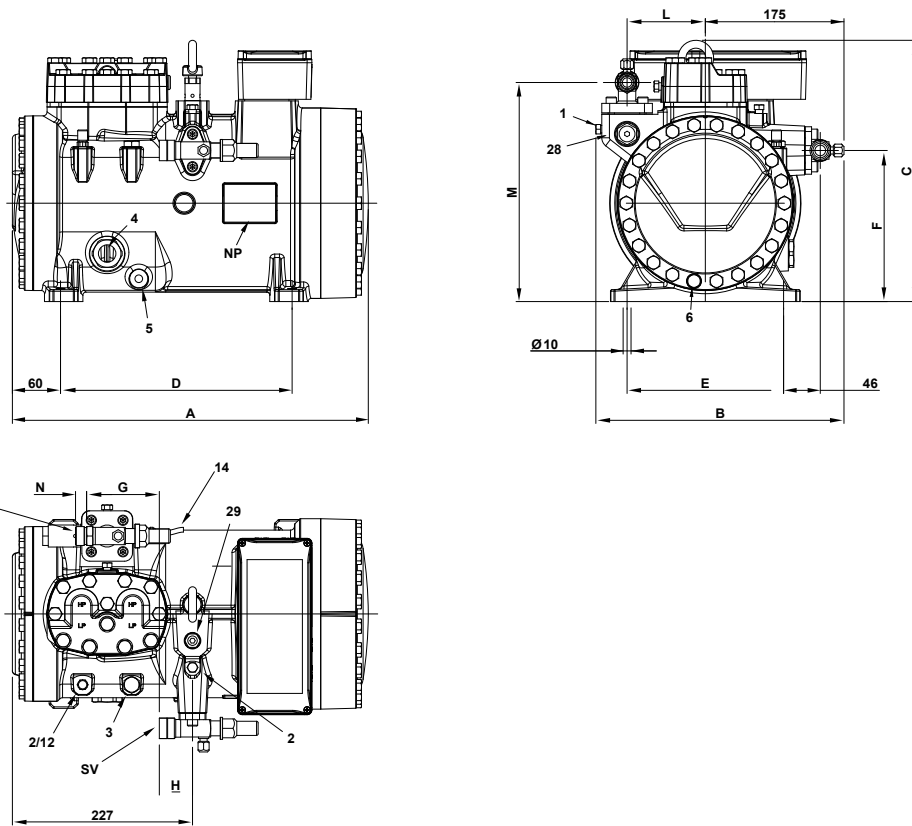
	Compressor					Valves position					Valves				Net weight [Kg]
	Lenght	Width	Height	Base mounting		Suction			Discharge		Suction		Discharge		
	A	B	C	D	E	F	G	H	L	M	∅		∅		
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	
S15-28SK3	695	356	422	266	367	155	199	73	377	28,5	35,3	1 3/8"	28,8	1 1/8"	184
S20-33SK3	695	356	422	266	367	155	199	73	377	28,5	35,3	1 3/8"	28,8	1 1/8"	187
S25-40SK3															
S30-47SK3	695	356	422	266	367	155	199	73	377	28,5	35,3	1 3/8"	28,8	1 1/8"	192



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M8 x 22
12	Oil return plug	1/8" NPT
14	Max discharge temperature sensor connection	1/8" NPT
17	Relief valve	
DV	Discharge valve	
SV	Suction valve	
NP	Nameplate	

Transcritical CO₂ - R744

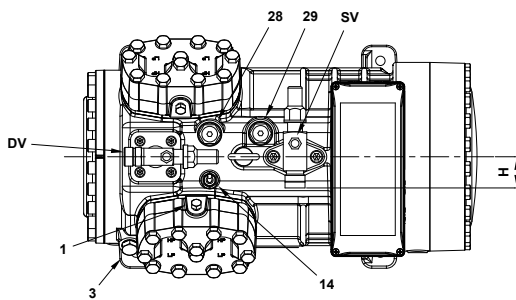
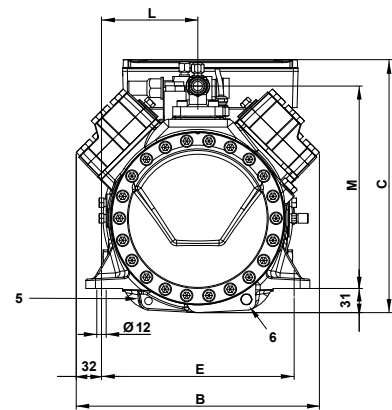
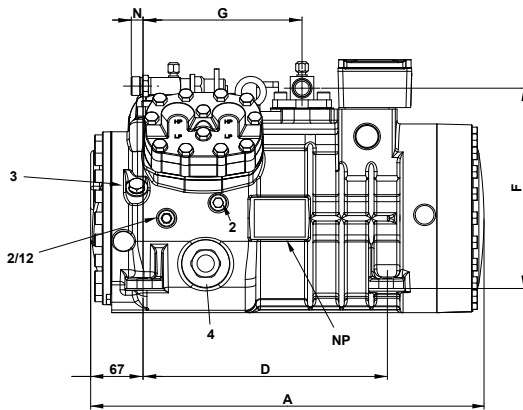
	Compressor					Valves position						Valves				Net weight [Kg]		
	Length		Width	Height	Base mounting		Suction			Discharge			Suction		Discharge			
	A	B	C	D	E	F	G	H	L	M	N	Øint	Øint	Øint (OGV)				
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]		[mm]	[inch]
D3-1.9TK HD	449	307	332	293	198	192	92	42	99	278	14	22,2	7/8"	19	3/4"	16	5/8"	80
D3-2.2TK HD	449	307	332	293	198	192	92	42	99	278	14	22,2	7/8"	19	3/4"	16	5/8"	81
D3.5-2.2TK HD	449	307	332	293	198	192	92	42	99	278	14	22,2	7/8"	19	3/4"	16	5/8"	82
D3.5-3TK HD	449	307	332	293	198	192	92	42	99	278	14	22,2	7/8"	19	3/4"	16	5/8"	83
D4-3TK HD	449	307	332	293	198	192	92	42	99	278	14	22,2	7/8"	19	3/4"	16	5/8"	82
D4-3.5TK HD	449	307	332	293	198	192	92	42	99	278	14	22,2	7/8"	19	3/4"	16	5/8"	83
D5-3.5TK HD	449	307	332	293	198	192	92	42	99	278	14	22,2	7/8"	19	3/4"	16	5/8"	83



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M8
12	Oil return plug	1/8" NPT
14	Max discharge temperature sensor connection	1/8" NPT
28	High pressure side relief valve	
29	Low pressure side relief valve	
DV	Discharge valve (available optional thread connection for steel pipes)	
SV	Suction valve	
NP	Nameplate	

Transcritical CO₂ - R744

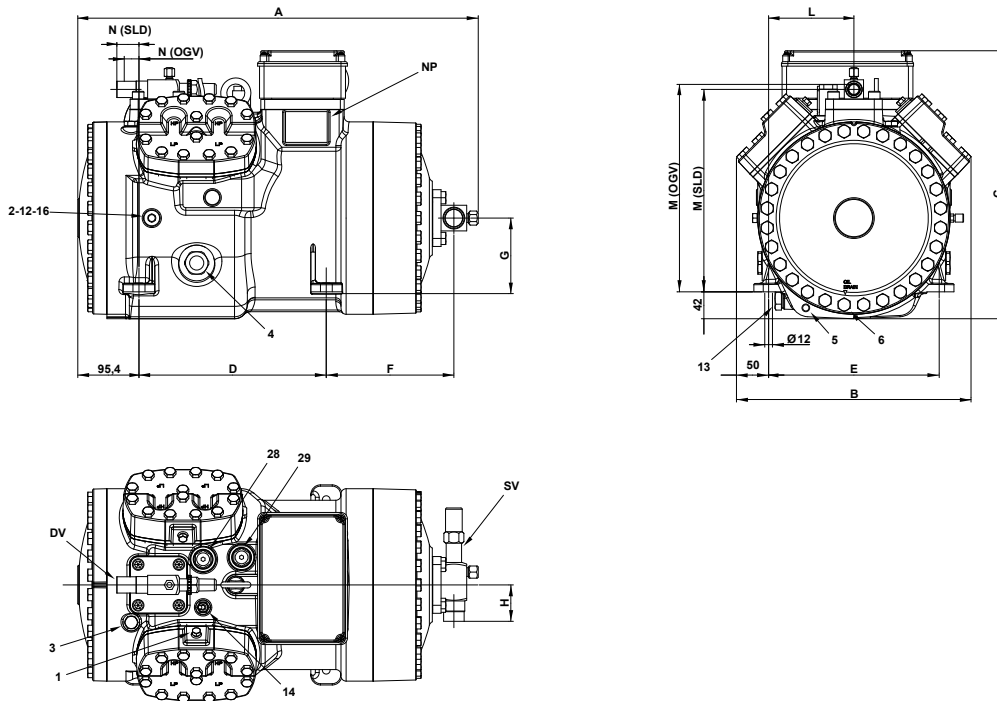
	Compressor					Valves position						Valves					Net weight [Kg]	
	Lenght		Width	Height	Base mounting		Suction			Discharge			Suction		Discharge			
	A	B	C	D	E	F	G	H	L	M	N	Øint		Øint (OGV)				
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	[mm]		[inch]
Q5-4TK HD	502	310	324	312	246	257	204	40	123	259	14	22,2	7/8"	19	3/4"	16	5/8"	90
Q6-4TK HD																		
Q6-4.5TK HD	502	310	324	312	246	257	204	40	123	259	14	22,2	7/8"	19	3/4"	16	5/8"	94
Q7-4.5TK HD																		
Q7-6TK HD																		
Q9-6TK HD	502	310	324	312	246	257	204	40	123	259	14	22,2	7/8"	19	3/4"	16	5/8"	96
Q9-7TK HD																		
Q10-7TK HD																		
Q10-8TK HD	502	310	324	312	246	257	204	40	123	259	14	22,2	7/8"	19	3/4"	16	5/8"	99
Q10-10TK HD																		



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M8
12	Oil return plug	1/8" NPT
14	Max discharge temperature sensor connection	1/8" NPT
28	High pressure side relief valve	
29	Low pressure side relief valve	
DV	Discharge valve (available optional thread connection for steel pipes)	
SV	Suction valve	
NP	Nameplate	

Transcritical CO₂ - R744

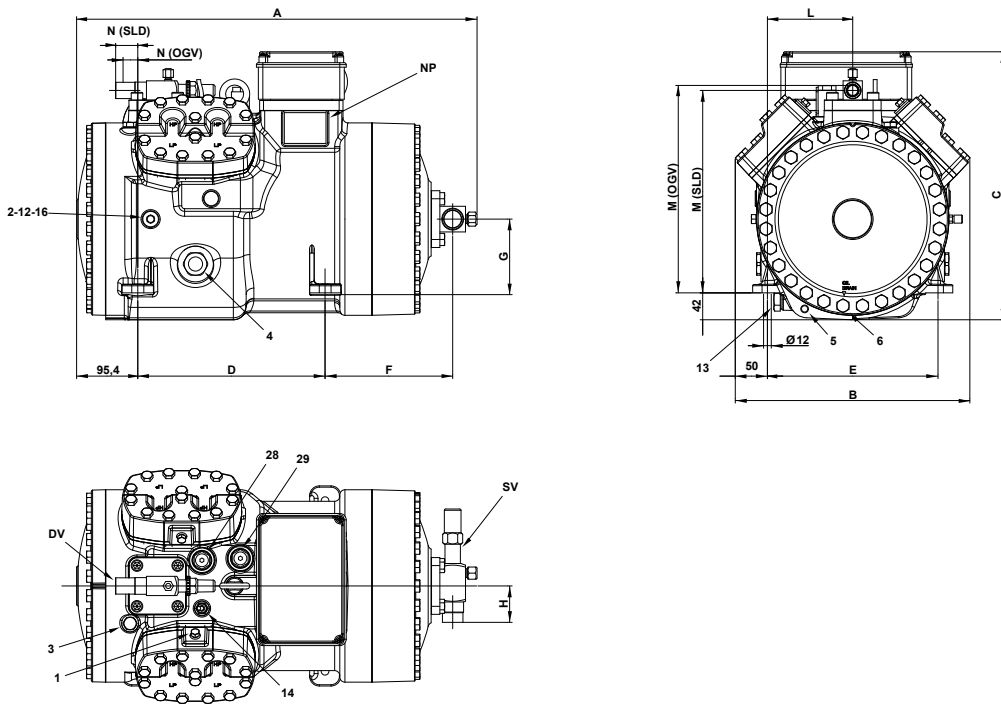
	Compressor					Valves position								Valves						Net weight [Kg]
	Length	Width	Height	Base mounting		Suction			Discharge					Suction		Discharge				
						F	G	H	L	M		N			∅int		∅int		∅int (OGV)	
	(OGV)	(SLD)	(OGV)	(SLD)	∅int					∅int	∅int (OGV)	∅int (OGV)								
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	
S8-8TK HD	648	366	423	292	266	221	115	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	181
S10-8TK HD	648	366	423	292	266	221	115	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	183
S10-10TK HD	648	366	423	292	266	221	115	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	181
S15-10TK HD	648	366	423	292	266	221	115	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	183
S15-12TK HD																				



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M12
12	Oil return plug	1/8" NPT
13	Magnetic plug	1/4" NPT
14	Max discharge temperature sensor connection	
16	Crankcase pressure plug	
28	High pressure side relief valve	
29	Low pressure side relief valve	
DV	Discharge valve (available optional thread connection for steel pipes)	
SV	Suction valve	
NP	Nameplate	

Transcritical CO₂ - R744

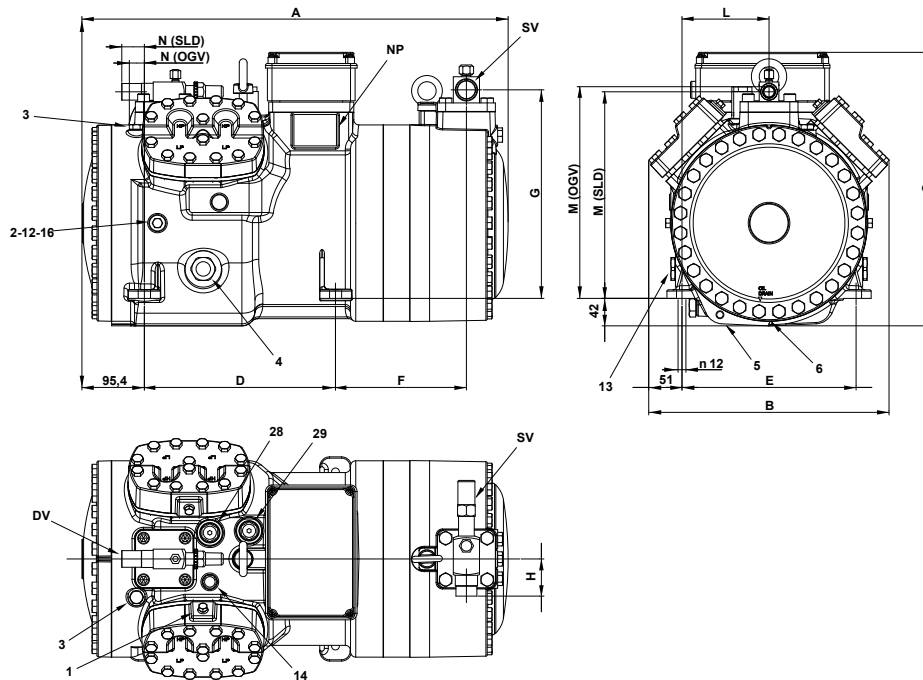
	Compressor					Valves position								Valves						Net weight [Kg]			
	Length		Width	Height		Base mounting			Suction			Discharge					Suction		Discharge				
	A	B	C	D	E	F	G	H	L	M		N			Øint		Øint		Øint (OGV)				
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	(OGV)	(SLD)	(OGV)	(SLD)	[mm]	[inch]	[mm]	[inch]	[mm]		[inch]		
S20-12TK HD																							
S20-14TK HD	648	366	423	292	266	221	115	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4	16	5/8"	187			
S25-14TK HD																							
S20-18TK HD																							



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M12
12	Oil return plug	1/8" NPT
13	Magnetic plug	1/4" NPT
14	Max discharge temperature sensor connection	
16	Crankcase pressure plug	
28	High pressure side relief valve	
29	Low pressure side relief valve	
DV	Discharge valve (available optional thread connection for steel pipes)	
SV	Suction valve	
NP	Nameplate	

Transcritical CO₂ - R744

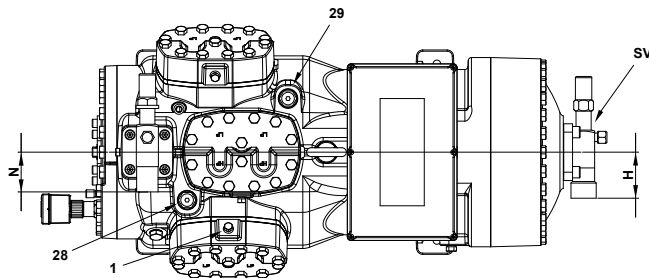
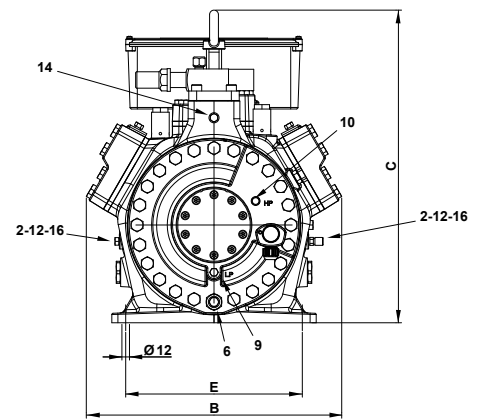
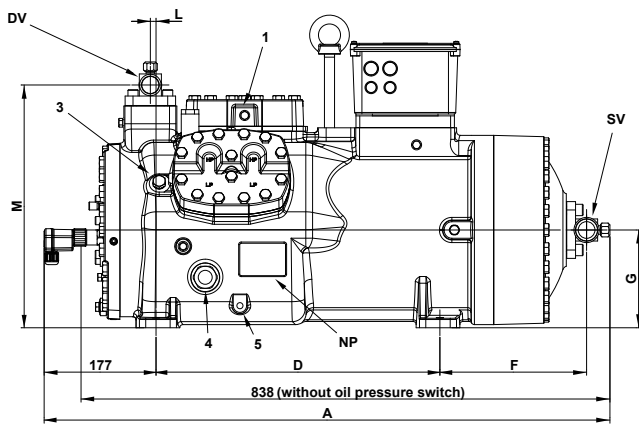
	Compressor					Valves position								Valves						Net weight [Kg]	
	Length	Width	Height	Base mounting		Suction			Discharge					Suction		Discharge					
									L	M		N				Øint		Øint			Øint (OGV)
	(OGV)	(SLD)	(OGV)	(SLD)	[mm]	[inch]	[mm]	[inch]		[mm]	[inch]										
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[Kg]
S30-18TK HD	611	366	423	292	266	160	319	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	204	
S25-21TK HD	611	366	423	292	266	160	319	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	187	
S35-21TK HD	651	366	423	292	266	200	319	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	215	
S30-26TK HD	611	366	423	292	266	160	319	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	201	
S40-26TK HD	651	366	423	292	266	200	319	55	133	324	316	10	34,5	28,6	1-1/8"	19	3/4"	16	5/8"	220	



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	M12
12	Oil return plug	1/8" NPT
13	Magnetic plug	1/4" NPT
14	Max discharge temperature sensor connection	
16	Crankcase pressure plug	
28	High pressure side relief valve	
29	Low pressure side relief valve	
DV	Discharge valve (available optional thread connection for steel pipes)	
SV	Suction valve	
NP	Nameplate	

Transcritical CO₂ - R744

	Compressor					Valves position						Valves				Net weight [Kg]
	Length	Width	Height	Base mounting		Suction			Discharge			Suction		Discharge		
	A	B	C	D	E	F	G	H	L	M	N	∅	∅	[mm]	[inch]	
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[mm]	[inch]	[Kg]
Z40-31TK HD	896	405	495	450	280	233	155	73	9	385	63	35	1-3/8"	28,6	1-1/8"	270
Z50-31TK HD	896	405	495	450	280	233	155	73	9	385	63	35	1-3/8"	28,6	1-1/8"	274
Z50-38TK HD																



1	High pressure connection	1/8" NPT
2	Low pressure connection	1/8" NPT
3	Oil charge plug	1/4" GAS
4	Oil level sight glass	1-1/8" UNEF
5	Crankcase heater seat	
6	Oil drain plug	1/8" GAS
9	Oil pressure switch connection (LP)	1/8" NPT
10	Oil pressure switch connection (HP)	1/8" NPT
12	Oil return plug	1/8" NPT
14	Max discharge temperature sensor connection	1/8" NPT
16	Crankcase pressure plug	
28	High pressure side relief valve	
29	Low pressure side relief valve	
DV	Discharge valve (available optional thread connection for steel pipes)	
SV	Suction valve	
NP	Nameplate	

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CHINA - FVR PRODUCTION PLANT

Frascold refrigeration equipment Co. Ltd
Block 10, Phase 3 of the Standard Building
in the General Free Trade Zone
no. 88 Weichuang road,
Taizhou city of Jiangsu province - China

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Frascold India Pvt Ltd.
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Ahmedabad 382220 Gujarat - India



We make
temperature