






DAS HERZ DER FRISCHE

HERMETIC SCROLL COMPRESSORS

50/60 Hz // ESP-130-9 EN



ORBIT // ORBIT+ // ORBIT FIT

-  AIR
CONDITIONING
-  HEAT
PUMPS
-  PROCESS
COOLING



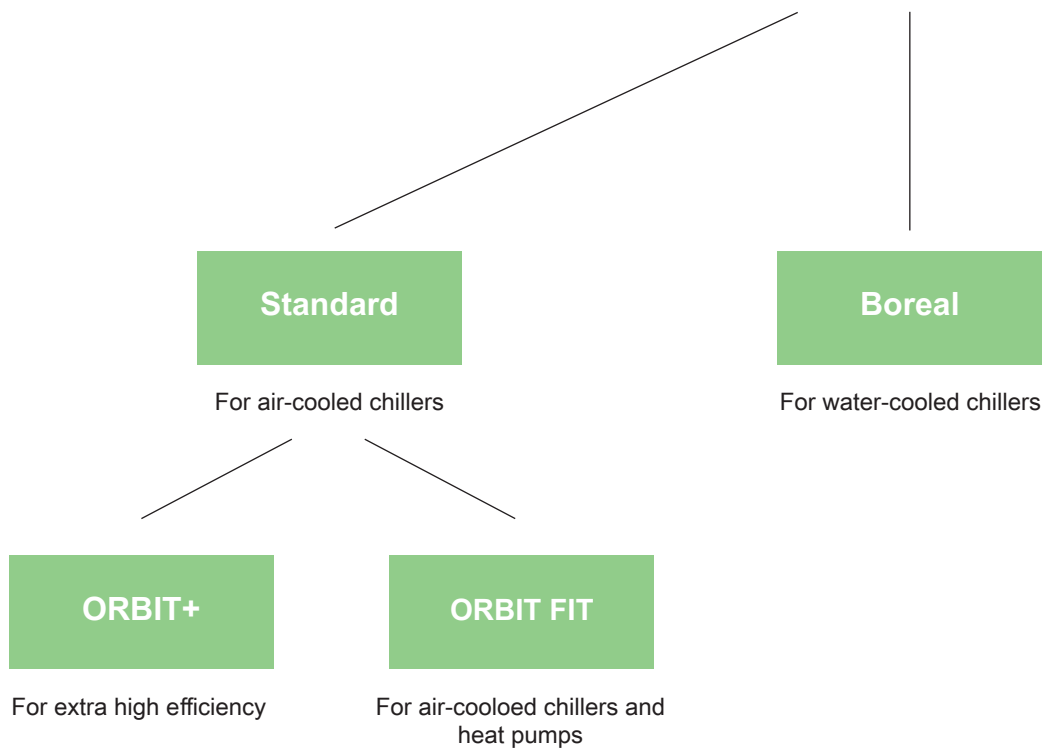
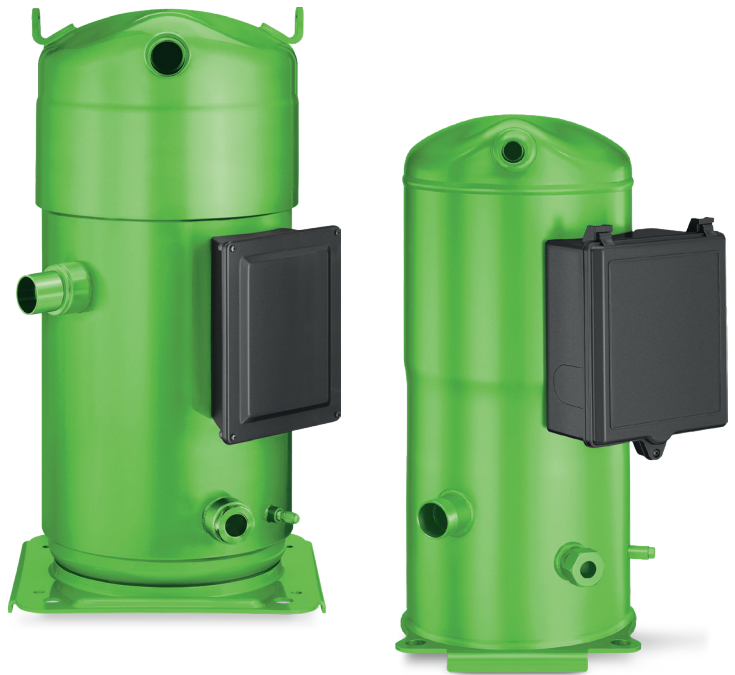
ORBIT scroll compressors

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Product overview

The ORBIT platform

- // ORBIT
- // ORBIT Boreal optimized for low condensing temperature applications
- // ORBIT+ featuring Line Start Permanent Magnet (LSPM) motor
- // ORBIT FIT featuring economizer for vapor injection
- // available in two family sizes
- // covering 10–40 HP nominal capacity
- // designed for R410A, R454B, R452B, R32
- // ready for variable speed operation 35–75 Hz
- // released for tandem and trio compounds



HFO BLEND READY



Explanation of model designation

Example

G S D 8 0295 V A B 4 3 2

Model
G: Scroll

Series
6: 6 Series
8: 8 Series

Oil type
V: PVE-BVC32

Connection type
B: Brazed
R: Rotalock

Motor protection
Customized

Application
D: HFC – R410A
U: ORBIT+ (LSPM)

Application optimisation
A: air-cooled, A1 compliant
W: water-cooled, A1 compliant
L: air-cooled, A2L (R454B, R452B, R32) compliant
B: water-cooled, A2L (R454B, R452B, R32) compliant

Design variable

Configuration
E: Economized
S: Vertical
T: Tandem
Y: Trio
M: Mixed
U: Uneven

Cooling capacity in kBtu/h according to ARI 540
0120 (10t)
0137 (12t)
0154 (13t)
0182 (15t)
0235 (20t)
0295 (25t)
0385 (32t)
0421 (35t)
0485 (40t)

Motor code
2 = 208/230 – 60 Hz
 200-220 – 50 Hz
3 = 380 – 60 Hz
4 = 460 – 60 Hz
 380-420 – 50 Hz
5 = 575 – 60 Hz
 500 – 50 Hz
6 = 380 – 50 Hz

Contact BITZER for availability of specific option combinations.

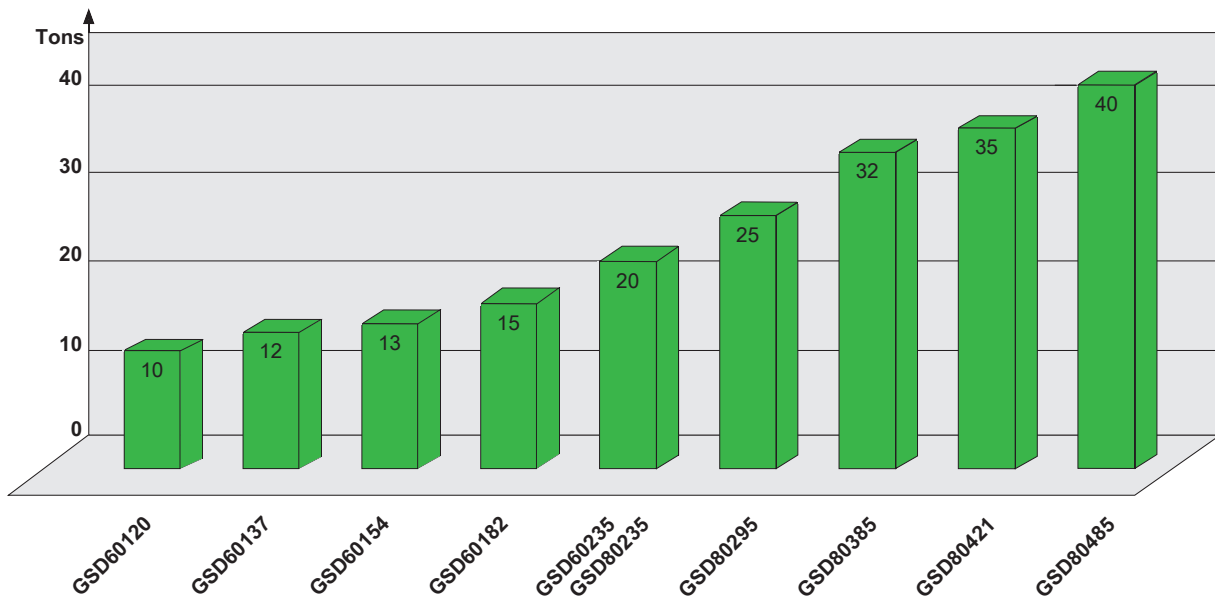
The ORBIT Series

The scroll compressors of the ORBIT series have been developed especially for air conditioning and heat pumps. They are characterized by high efficiency, smooth running and reliability. With respect to the typical seasonal operating mode of A/C applications – primarily in part load operation – special focus has been put on low energy consumption also at reduced condensing temperatures.

Moreover the compressor design has been optimized for low sound emissions, achieving the lowest level in its class. Additionally, the ORBIT series geometry, as it relates to fitting locations and mounting configuration, matches typical competitors' layout for ease of substitution.



The ORBIT capacity range*



The unique technical features

- // Large standard application limit
 - Ideally suited to both air conditioning and heat-pumps
 - Expanded to higher evaporation temperatures for telecom and data center applications
- // High energy efficiency at part and full load
 - Optimized for lowest annual operating costs
 - Especially high EER, SEER/ IPLV and SCOP values
- // Low sound levels
 - Optimized design for lowest sound levels in its capacity class
- // Isolated sump design enables BITZER Advanced Header Technology (BAHT) piping and unique compounding options like fixed plus variable speed tandems, without difficult to manage restrictor washers.
- // Operation with frequency inverter from 35 to 75 Hz
 - Customer selectable drive
- // Especially low oil carry over rate
- // Integrated PTC motor protection

* based on AHRI540 conditions and R410A

ORBIT+ series with LSPM motor

BITZER has developed the ORBIT+ series featuring the line start permanent magnet motor technology (LSPM) in order to address the new needs of the scroll chiller market in terms of efficiency. From January 2018 (Tier 1) and 2021 (Tier 2) on, air conditioning chillers must meet the requirements of the EU Ecodesign Regulation 2016/2281. For placing a product on the market, the Minimum Energy Performance Standards (MEPS) must be complied with and declared by the manufacturer. In its new ORBIT+ series BITZER has an easy to apply solution to comply with or even exceed these efficiency criteria.

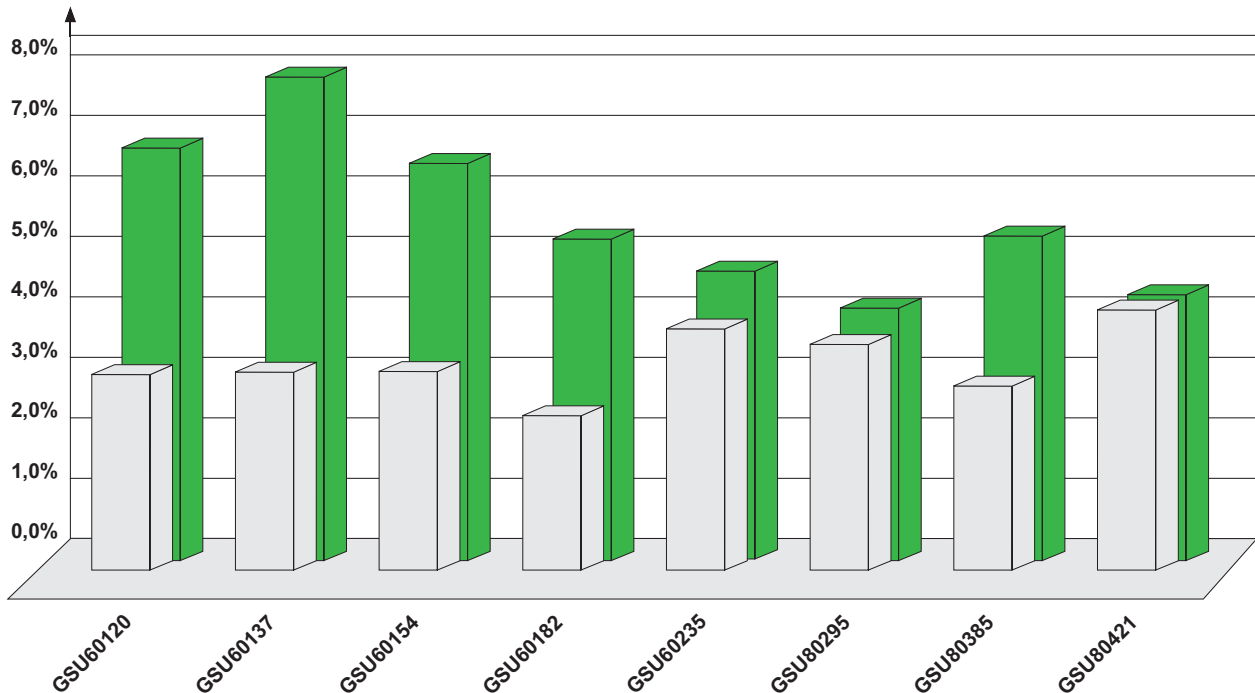
The LSPM motor takes the compressor efficiency to a new level and increase the seasonal performance. The technology combines the efficiency of a permanent magnet motor with the robustness and easy use of an asynchronous (induction) motor.

With there being no slip and the rotor of the LSPM motor being synchronized to the net frequency, the operation speed is improved, supporting the efficiency increase of the compressor. The LSPM motor can either be connected directly to the power supply system or it can be operated with a frequency inverter.

Due to this intelligent improvement, the new ORBIT+ series helps to fulfil the EU Ecodesign requirements without making changes to the chiller platform necessary. Whereas the cooling capacity is increased by 3-5% in air- and water-cooled systems, the seasonal performance (SEER/IPLV) is increased even by 5-8%. A high seasonal performance reduces the TEWI (Total Equivalent Warming Impact) and operating costs and thus minimizes the A/C industry's contribution to global warming.



Increased cooling capacity and SEER/IPLV of ORBIT+ compared to ORBIT



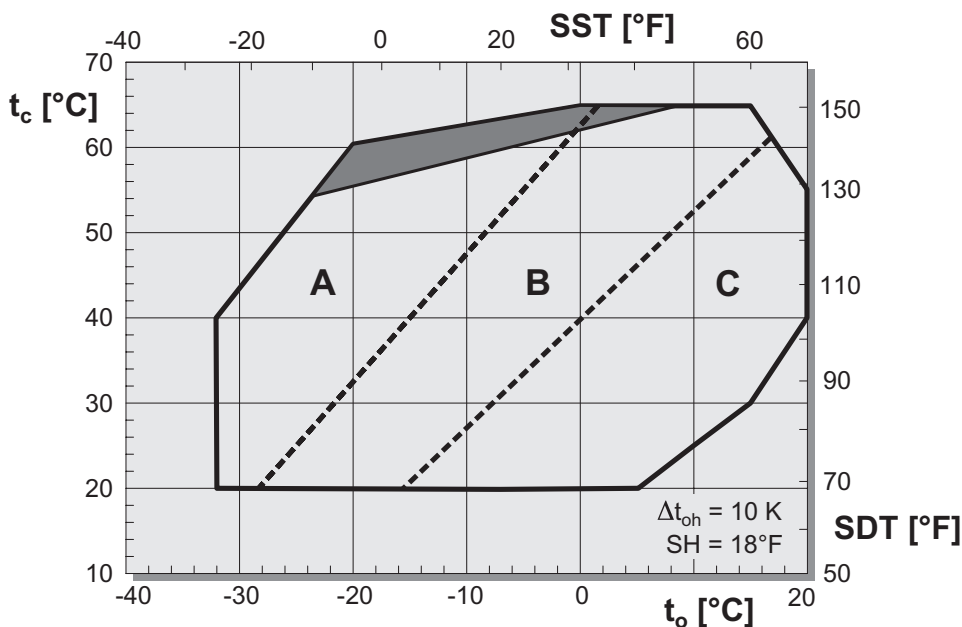
□ Cooling Capacity
■ SEER/IPLV

SEER: Seasonal Energy Efficiency Ratio according to EN 14825
IPLV: Integrated Part Load Value according to AHRI550/590

ORBIT FIT series for economizer operation

BITZER's Flexible Injection Technology (FIT) enables economized vapor injection in a whole new class of scroll HVAC systems with both today's and tomorrow's refrigerants. System designers can realize up to 20% additional cooling capacity, and around 8% increase in full load efficiency in cooling only systems. And, in reversible and heat pump applications, the benefits can more than double.

Economizer Performance Improvement

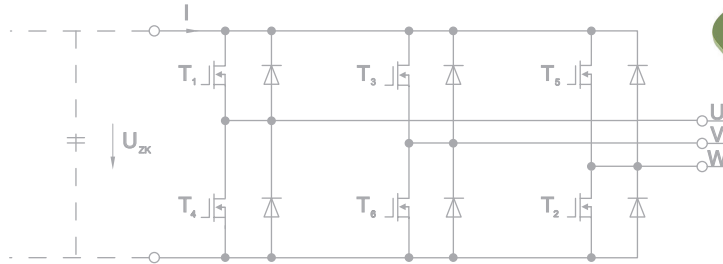
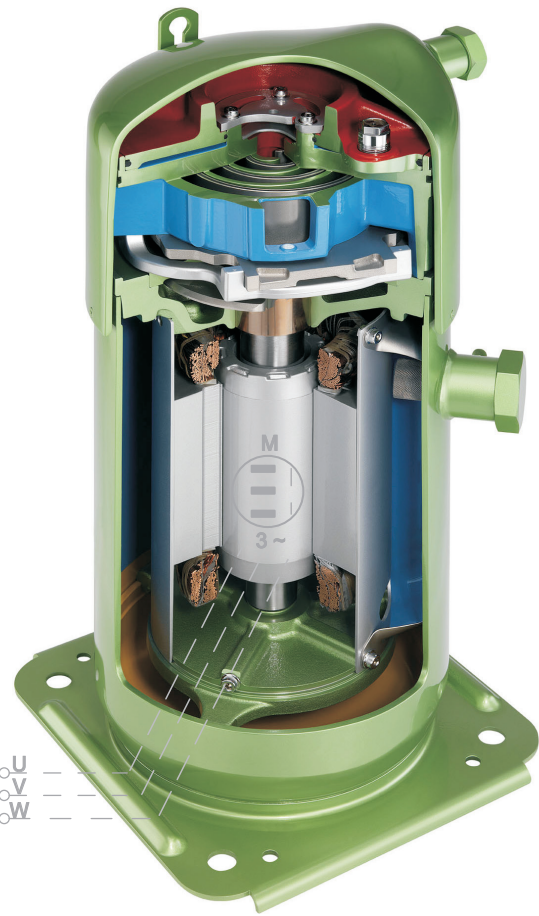


Application	COP	Cooling Capacity
A Heat pump applications	6–26%	18–48%
B Air-conditioning	1–26%	12–48%
C Process cooling	1–14%	3–29%

- t_o Evaporating temperature [°C]
- t_c Condensing temperature [°C]
- Δt_{oh} Suction superheat [K]
- SST Saturated suction temp. (°F)
- SH Suction superheat (°F)
- SDT Saturated discharge temp. (°F)
- Suction gas superheat $\leq 5\text{K}$

Variable speed drive (VSD)

While the scroll compressors of the ORBIT, ORBIT+ and ORBIT FIT series are characterized by high full load and seasonal efficiency, low sound levels, and high reliability, they are also suitable for use with variable speed drives. VSD capable scroll compressors from BITZER give system designers more solutions to the challenge of maintaining full load and rating point efficiency levels, while also increasing efficiency at part load conditions where equipment operates during most of the year. Using the overspeed potential of the ORBIT gives the option of downsizing the nominal compressor displacement to cover the VSD costs. The wide speed range of 35 to 75 Hz allows for capacity reduction together with low condensing pressure operation, e.g. in comfort air-conditioning applications, for high system efficiencies. Coupled with BITZER's unique lower condensing temperature optimization, system designers have never had so many options to satisfy their customers' needs.



User Selectable Drives

The ORBIT, ORBIT+ and ORBIT FIT series can be used with BITZER's intelligent VARIPACK drive, which are pre-configured with relevant parameters and may be easily modified with the BEST software (BITZER Electronics Service Tool). Alternatively, users can choose any drive from their own existing and preferred suppliers.



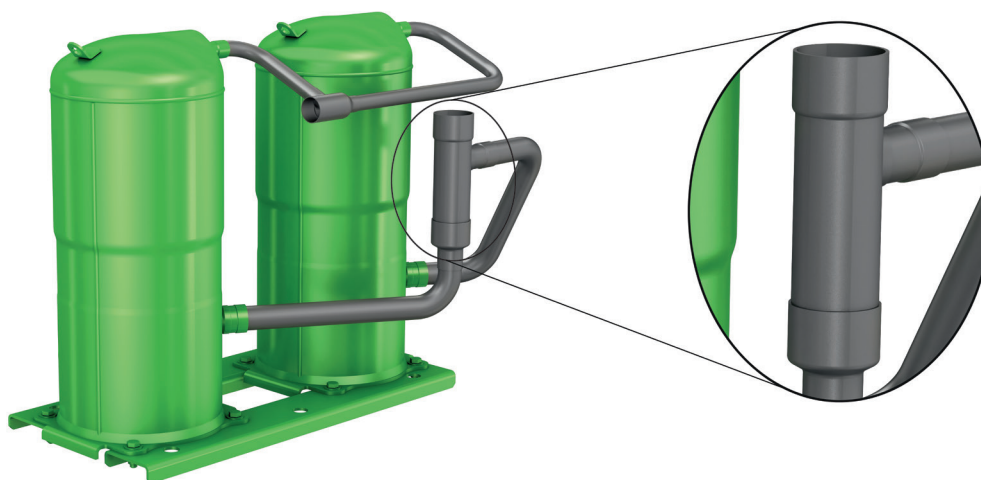
OPTIONAL VARIPACK

Design flexibility with reduced inventory costs

Since ORBIT compressors are also VSD capable in compound systems, system designers have many options, like uneven tandems and fixed and variable speed tandems, for example. When used with BITZER Advanced Header Technology, it is possible in many cases to offer different efficiency versions of the system with common piping and construction, which greatly reduces factory complexity and inventory carrying costs. Such simple and efficient capacity staging solutions provide benefits for sales, technology, manufacturing and financial functions.

Compound compressor assemblies

ORBIT Tandem and Trio scroll compressor assemblies consist of two or three compressors, respectively, connected in a parallel configuration. The simple, robust and efficient capacity control offers advantages over a single larger compressor with higher capacity with VSD operation. They are characterized by innovative technical features and very high energy efficiency especially adapted to the annual load characteristics of air conditioning systems and heat pumps. The compressor design has been optimized for low sound emissions, smooth running and reliability.



Typical challenges faced by system builders

- // Highly variable piping configurations from model to model caused by differences in compressor interface points.
- // Difficulty maintaining oil balance in all phases of unit operation (particularly in heat-pump applications).
- // Control restrictions (starting/sequencing) imposed by the compressor manufacturer.
- // Operational challenges in the factory caused by the small and difficult to control restrictor washers needed in conventional piping packages.

BITZER Advanced Header Technology

Our engineers have addressed these challenges and have developed the BITZER Advanced Header Technology. This technology takes advantage of the unique design characteristics of the ORBIT series compressors. Isolated oil sump design and highly miscible PVE oil provide the foundation for BITZER's solution by operating with low oil carry-over rates. Advanced header technology then operates by ensuring that small differences in pressure drop in header tubing do not impact oil balance in low mass-flow situations, like those found in many air-to-water heat-pumps. BITZER Advanced Header Technology offers concrete advantages and benefits to the OEM customer.

- // Innovative oil equalization system.
- // Compressors mounted directly to solid frame rails for low vibration levels (no spacers required).
- // Four unique piping kits covering numerous tandem and trio compounds.

- // Common Piping
 - Supports the OEM's lean-production initiatives with less inventory and working capital tied up in piping
- // No Restrictor Washers
 - Less chance of mistakes in factory assembly
- // No restriction in start-up, capacity control, or lead-lag control sequences
 - Does not require costly changes to unit firmware
- // Enables a wide range of creative application solutions for full- and part-load capacity and efficiency optimization*
 - Even, uneven or mixed Tandems (e.g. ORBIT 6 + ORBIT 8)
 - Even, uneven or mixed Trios
 - Fixed + variable speed Tandems
 - Suitable for VSD operation.
- // Operating characteristics of the Advanced Header Technology
 - Enables tubing to be produced to normal tolerances
 - Enables in-house, or outsourced tubing production without concern for small pressure drop differences

* Restrictions apply depending on compressor combination. Please consult BITZER for application guidance.

Accessories

Scope of standard delivery

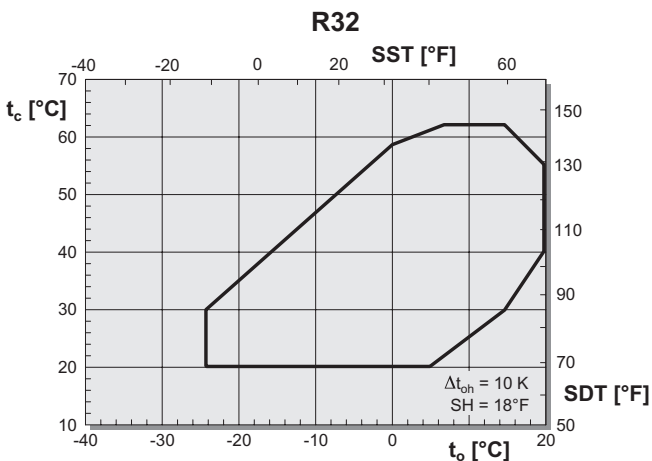
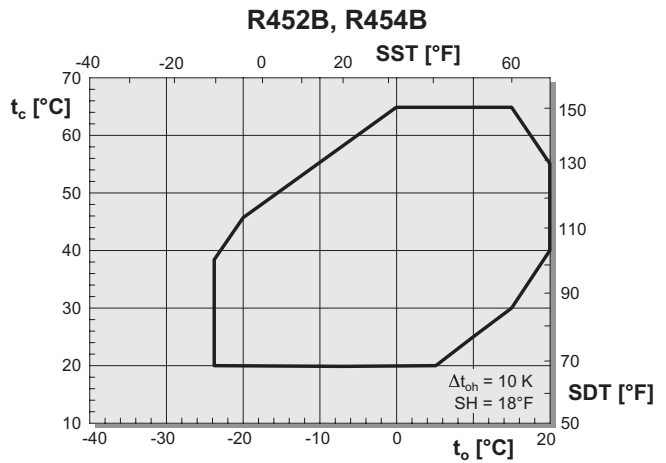
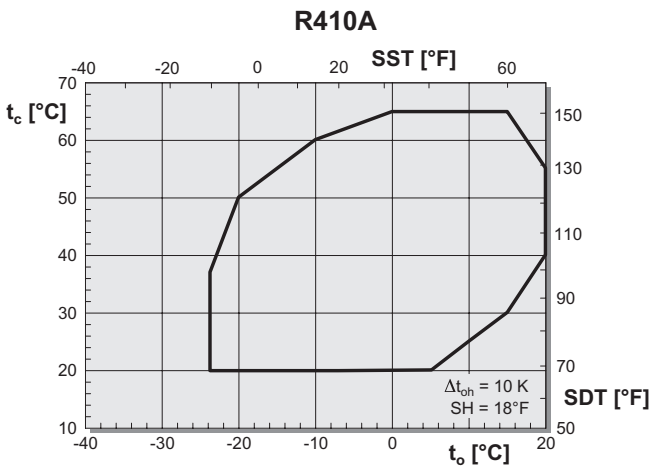
Built-in motor (for voltages see “Technical data”), electronic motor protection, stub tubes for brazed connections, integrated discharge check valve, oil sight glass, oil service port, terminal box with enclosure class IP54, polyvinyl ether oil charge, nitrogen holding charge.

Accessories (optional)

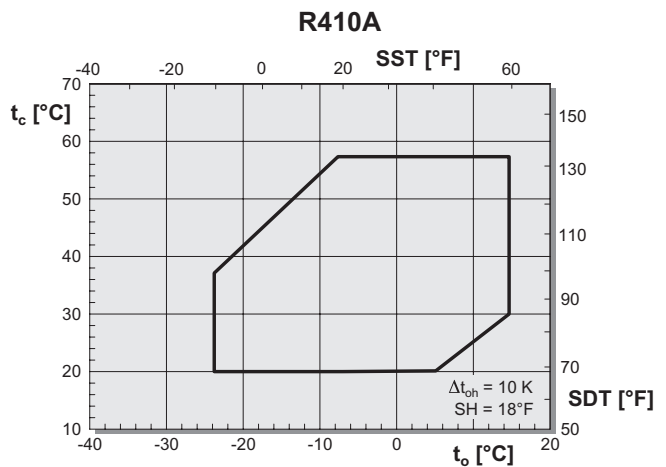
Band type oil heater, discharge gas temperature switch (clamp-on types), anti-vibration mountings with sleeves, Rotalock adaptors, Rotalock shut-off valves, Rotalock pipe adapters, BITZER Advanced Header Technology piping packages and mounting rail kits.

Application limits

ORBIT



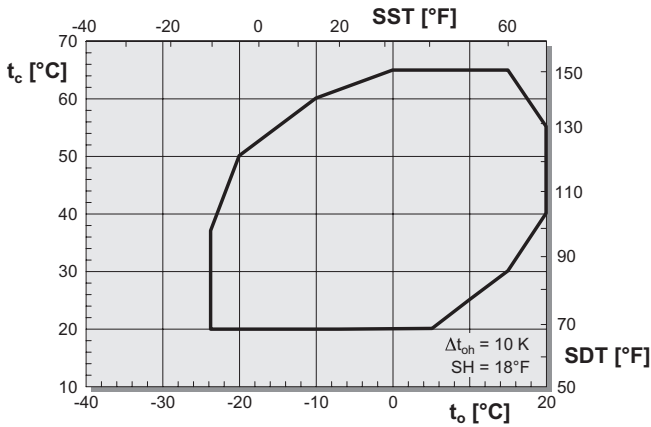
ORBIT 8 Boreal for systems with low condensing temperatures



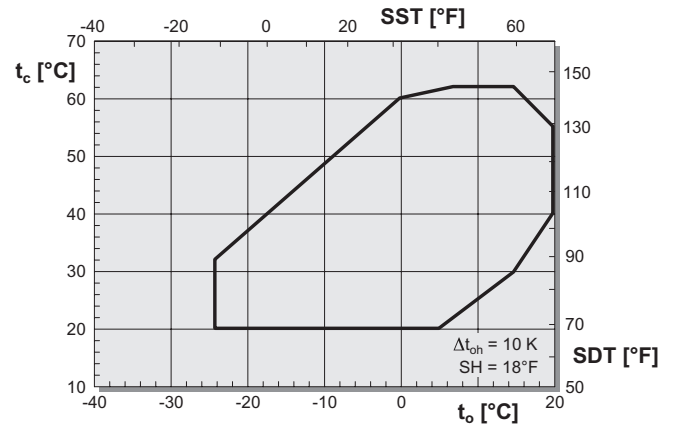
Application limits

ORBIT+

R410A, R452B, R454B

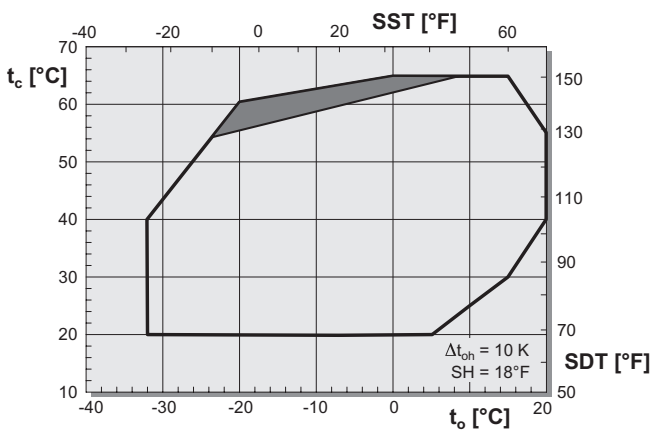


R32

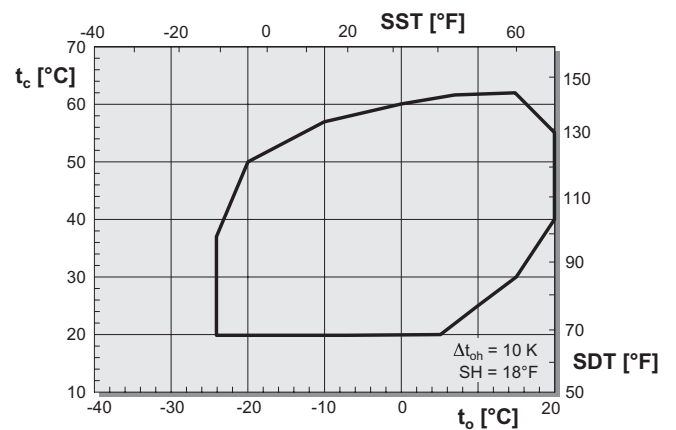


ORBIT FIT

R410A, R452B, R454B



R32



- t_o Evaporating temperature [°C]
- t_c Condensing temperature [°C]
- Δt_{oh} Suction superheat [K]
- SST Saturated suction temp. (°F)
- SH Suction superheat (°F)
- SDT Saturated discharge temp. (°F)
- Suction gas superheat $\leq 5\text{K}$

Performance data



The BITZER SOFTWARE is available in many languages as a download for Windows or online version. The online version is compatible with all browsers and always up to date. The program is ideal for tablets and smartphones.

The BITZER SOFTWARE covers:

- // Performance data for all common refrigerants at freely selectable operating conditions
- // Exportable performance polynomials
- // All relevant technical data
- // Calculation results and individually designed performance tables for compressors
- // Seasonal calculation
- // Parallel compounds
- // Available accessories and their selection
- // All relevant technical documents
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Scroll-Compressor

Mode: Refrigeration and Air con

Refrigerant: R452B

Reference temperature: Dew point temp.

Compressor type: Single Compressor

Series: ORBIT FIT

Compressor selection: GED80295VL (100%)

Operating point: Evaporating SST: 0 °C, Condensing SDT: 50 °C

Operating conditions: with Economiser

Capacity control: without

Power supply: Power frequency: 50Hz, Power voltage: 400V-Y (4)

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Result Limits Technical Data Dimensions Information Documentation

Tentative Data
*according to EN12900 (10K suction gas superheat, 0K liquid subcooling)

Compressor	GED80295VL_4
Capacity steps	100%
Cooling capacity	63,9 kW
Cooling capacity *	65,8 kW
Evaporator capacity	63,9 kW
Power input	21,3 kW
Current (400V)	33,9 A
Voltage range	380-420V
Condenser Capacity	85,2 kW
COPEER	3,00
COPEER *	3,06
Mass flow LP	1070 kg/h
Mass flow HP	1274 kg/h
Operating mode	Economizer
Liquid temp. (sc)	30,1 °C
Mass flow ECO	204 kg/h
sub cooler load	10,52 kW
sat. ECO Temp.	20,1 °C
ECO pressure	13,54 bar(a)
Discharge gas temp. w/o cooling	96,2 °C

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Performance data - 50 Hz

Performance data are based on the European Standard EN 12900 and 50 Hz operation with 10 K suction gas superheat – running-in period 72 hours.

All data do **not** include liquid subcooling. For Economizer operation no subcooling at the Economizer inlet and 5 K temperature difference at the heat exchanger is set. Based on EN 12900 the rated cooling capacity and efficiency (COP) show therefore lower values in comparison to data based on 5 or 8.3 K subcooling.

Technical data/Performance data - 50 Hz

ORBIT

Compressor type ③	Displacement 50 Hz m ³ /h	Speed range	Oil charge ① dm ³	Weight kg	Cooling capacity Q _o t _o /t _c 5°C/50°C kW				COP t _o /t _c 5°C/50°C W/W				Motor connection ②	Electrical data ③		
					R410A	R454B④	R452B④	R32④	R410A	R454B④	R452B④	R32④		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GSD60120V	19,8	35..75 Hz	2,7	82	26,7	26,0	26,2	29,2	3,27	3,48	3,39	3,35	380..420 V/3/50 Hz 440..480 V/3/60 Hz	21,3	12,3	123
GSD60137V	22,2		2,7	82	30,0	29,2	29,8	32,8	3,26	3,55	3,43	3,35		24,1	13,9	138
GSD60154V	24,8		2,7	82	33,7	32,8	33,4	36,8	3,28	3,50	3,45	3,37		25,7	15,5	145
GSD60182V	29,2		2,7	82	39,7	38,4	39,0	43,6	3,32	3,43	3,43	3,38		30,2	17,9	172
GSD60235V	37,6		2,7	82	51,3	49,8	50,4	56,3	3,23	3,29	3,29	3,24		39,9	24,0	211
GSD80235V	38,6		5,5	140	52,0	–	–	–	2,98	–	–	–		44,0	26,0	210
GSD80295V	48,3		5,5	142	64,9	62,6	63,6	70,5	3,17	3,28	3,30	3,24		53,0	32,0	210
GSD80385V	61,8		5,5	144	85,6	83,1	83,5	93,2	3,18	3,34	3,31	3,26		66,0	39,0	326
GSD80421V	67,6		5,5	143	91,4	88,8	89,5	100,6	3,16	3,29	3,30	3,25		76,0	44,0	326
GSD80485V	77,2		5,5	160	104,4	100,9	101,1	113,4	3,19	3,37	3,29	3,23		81,0	49,0	295

ORBIT Boreal

Compressor type ③	Displacement 50 Hz m ³ /h	Speed range	Oil charge ① dm ³	Weight kg	Cooling capacity Q _o t _o /t _c 5°C/38°C kW	COP t _o /t _c 5°C/38°C W/W	Motor connection ②	Electrical data ③		
					R410A	R410A		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GSD80235V	38,6	35..75 Hz	5,5	140	63,1	4,96	380..420 V/3/50 Hz 440..480 V/3/60 Hz	38,0	22,0	210
GSD80295V	48,3		5,5	142	76,2	4,97		46,0	28,0	210
GSD80385V	61,8		5,5	144	97,4	4,95		58,0	34,0	274
GSD80421V	67,6		5,5	143	107,6	4,87		67,0	39,0	326
GSD80485V	77,2		5,5	160	122,9	4,87		75,0	44,0	326

Subject to change

Technical data/Performance data - 50 Hz

ORBIT+

Compressor type ③	Displacement 50 Hz m³/h	Speed range	Oil charge ① dm³	Weight kg	Cooling capacity Q _o t _o /t _c 5°C/50°C kW				COP t _o /t _c 5°C/50°C W/W				Motor connection ②	Electrical data ③		
					R410A	R454B④	R452B④	R32④	R410A	R454B④	R452B④	R32④		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GSU60120V	20,5	35...75 Hz	2,7	82,7	27,5	26,7	26,9	30,2	3,45	3,62	3,54	3,51	380...420 V/3/50 Hz 440...480 V/3/60 Hz	16,9	11,8	95
GSU60137V	23,0		2,7	82,7	30,8	30,0	30,3	33,9	3,50	3,66	3,51	3,48		19,7	13,1	101
GSU60154V	25,7		2,7	82,7	34,6	33,7	34,0	38,1	3,48	3,65	3,57	3,54		23,2	14,6	109
GSU60182V	30,2		2,7	82,7	40,8	39,6	40,2	45,2	3,44	3,58	3,59	3,57		27,3	16,7	123
GSU60235V	38,9		2,7	83,7	53,1	51,6	52,2	58,7	3,34	3,49	3,49	3,45		40,2	23,3	153
GSU80295V	50,0		5,5	143,5	67,0	64,9	66,0	73,7	3,33	3,48	3,52	3,47		46,0	29,0	192
GSU80385V	63,9		5,5	145,5	87,9	86,2	86,1	96,8	3,34	3,53	3,49	3,45		65,0	37,3	245
GSU80421V	69,9		5,5	144,5	94,9	92,0	92,9	105,0	3,34	3,48	3,50	3,48		71,0	40,6	245

ORBIT FIT

Compressor type ③	Displacement 50 Hz m³/h	Speed range	Oil charge ① dm³	Weight kg	Cooling capacity Q _o t _o /t _c -20°C/50°C kW				COP t _o /t _c 5°C/50°C W/W				Motor connection ②	Electrical data ③		
					R410A	R454B④	R452B④	R32④	R410A	R454B④	R452B④	R32④		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GED60120V	19,8	35...75 Hz	2,7	82	14,1	13,4	13,3	13,8	1,58	1,65	1,59	1,49	380...420 V/3/50 Hz 440...480 V/3/60 Hz	25,7	12,3	138
GED60137V	22,2		2,7	82	16,9	16,1	16,1	16,8	1,69	1,79	1,69	1,60		29,0	13,9	145
GED60154V	24,8		2,7	82	18,8	17,8	17,9	18,7	1,69	1,76	1,70	1,60		35,1	15,5	211
GED60182V	29,2		2,7	82	22,1	19,7	21,3	22,4	1,73	1,61	1,76	1,66		38,6	17,9	211
GED60235V	37,6		2,7	83	27,5	26,7	27,1	28,7	1,66	1,66	1,67	1,57		47,6	24,0	211
GED80295V	48,3		5,5	144	36,4	34,1	34,2	36,3	1,55	1,56	1,55	1,47		57,4	32,0	326
GED80385V	61,8		5,5	159	48,5	45,3	45,8	48,6	1,61	1,64	1,63	1,53		74,3	39,0	295
GED80421V	67,6		5,5	159	49,9	47,7	47,9	50,5	1,55	1,58	1,58	1,48		80,6	44,0	295
GED80485V	77,2	5,5	164	58,0	53,2	54,2	55,1	1,60	1,61	1,59	1,45	87,0	53,1	385		

① Charged with polyvinyl ether BVC32.

② Other voltages and electrical supplies upon request.

③ For the selection of contactors, cables and fuses the max. operating amps (MOA) and the max. power consumption must be considered ("Electrical data").
Contactors: operational category AC3.

④ Low GWP refrigerants belonging to the safety group A2L, according to ISO 817. Follow all applicable national and local regulations. See BITZER Refrigerant Report A-501 for more information.

Oil heater (option)

ORBIT 6: 90 W, 115 V/230 V/460 V/575 V.

ORBIT 8: 140 W, 115 V/230 V/460 V/575 V.

Pipe connections:

ORBIT 6:

SL: 1 3/8 inch

DL: 7/8 inch

ORBIT 8:

SL: 1 5/8 inch

DL: 1 3/8 inch

Contact BITZER for information on Rotalock connections.

Further performance data see BITZER SOFTWARE.

Subject to change

Performance data - 60 Hz

Performance data are based on the latest edition of AHRI540 and 60 Hz operation with 20°F suction gas superheat and 15°F subcooling – running-in period 72 hours.

Saturated suction and discharge temperatures correspond to "dew point" conditions (saturated vapor). For Economizer operation data based on 18°F temperature difference at the heat exchanger and 15°F subcooling in the condenser.

Technical data/Performance data - 60 Hz

ORBIT

Compressor type ③	Dis- place- ment 60 Hz CFM	Speed range	Oil charge ① fl.oz	Weight lbs	Cooling capacity Q _o SST/SDT 45°F/130°F kBtu/h				EER SST/SDT 45°F/130°F Btu/W				Motor connec- tion ②	Electrical data ③		
					R410A	R454B④	R452B④	R32④	R410A	R454B④	R452B④	R32④		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GSD60120V	14.1	35..75 Hz	91	181	124.0	118.9	119.0	134.3	11.42	12.01	11.68	11.77	380..420 V/3/50 Hz 440..480 V/3/60 Hz	21.9	14.6	122
GSD60137V	15.8		91	181	138.0	132.8	133.1	149.7	11.32	12.13	11.70	11.75		24.3	16.4	137
GSD60154V	17.6		91	181	154.7	148.2	149.3	167.8	11.36	11.87	11.70	11.82		26.3	18.3	145
GSD60182V	20.7		91	181	183.6	175.2	177.5	199.8	11.40	11.61	11.82	11.86		31.7	21.5	180
GSD60235V	26.7		91	183	236.0	226.0	228.0	257.0	11.26	11.31	11.36	11.44		40.7	28.2	211
GSD80235V	28.0		185	309	244.0	–	–	–	10.20	–	–	–		49.0	32.0	213
GSD80295V	34.0		185	313	304.0	286.0	288.0	325.0	11.05	11.12	11.24	11.34		54.0	37.0	212
GSD80385V	44.0		185	317	395.0	377.0	376.0	423.0	11.04	11.27	11.33	11.42		66.0	45.0	316
GSD80421V	48.1		185	316	425.0	401.0	402.0	455.0	10.99	11.16	11.18	11.25		75.0	50.0	316
GSD80485V	55.0		185	352	482.0	459.0	455.0	515.0	10.99	11.47	11.14	11.25		85.0	57.0	298

ORBIT Boreal

Compressor type ③	Dis- place- ment 60 Hz CFM	Speed range	Oil charge ① fl.oz	Weight lbs	Cooling capacity Q _o SST/SDT 40°F/100°F kBtu/h	EER SST/SDT 40°F/100°F Btu/W	Motor connec- tion ②	Electrical data ③		
					R410A	R410A		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GSD80235V	28.0	35..75 Hz	185	309	277.0	17.92	380..420 V/3/50 Hz 440..480 V/3/60 Hz	39.0	27.0	213
GSD80295V	34.0		185	313	332.0	17.90		47.0	32.0	212
GSD80385V	44.0		185	317	426.0	17.98		60.0	41.0	277
GSD80421V	48.1		185	316	496.0	17.93		66.0	45.0	316
GSD80485V	55.0		185	352	525.0	17.80		74.0	51.0	316

Subject to change



Technical data/Performance data - 60 Hz

ORBIT+

Compressor type ③	Displacement 60 Hz CFM	Speed range	Oil charge ① fl.oz	Weight lbs	Cooling capacity Q _o SST/SDT 45°F/130°F kBtu/h				EER SST/SDT 45°F/130°F Btu/W				Motor connection ②	Electrical data ③		
					R410A	R454B④	R452B④	R32④	R410A	R454B④	R452B④	R32④		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GSU60120V	14.6	35..75 Hz	91	182.5	127.30	121.90	122.1	138.40	11.91	12.27	12.00	12.12	380..420 V/3/50 Hz 440..480 V/3/60 Hz	17.8	14.1	95
GSU60137V	16.4		91	182.5	141.90	136.10	136.6	154.30	12.02	12.36	12.00	12.08		20.6	15.4	109
GSU60154V	18.2		91	182.5	159.10	152.40	153.6	173.50	11.94	12.30	12.26	12.34		24.6	17.0	108
GSU60182V	21.5		91	182.5	189.50	181.10	183.5	207.80	11.94	12.22	12.51	12.63		27.9	19.9	124
GSU60235V	27.7		91	184.5	244.50	234.40	236.0	266.60	11.65	11.97	12.09	12.15		40.4	27.2	152
GSU80295V	35.5		194	316.3	311.10	297.40	299.0	341.30	11.46	11.79	11.96	12.20		49.0	34.8	207
GSU80385V	45.5		194	320.3	401.70	388.80	387.0	438.70	11.45	11.84	11.95	12.15		66.0	44.5	271
GSU80421V	49.7		194	319.3	434.70	414.80	415.0	473.50	11.47	11.81	11.88	12.09		72.0	48.4	271

ORBIT FIT

Compressor type ③	Displacement 60 Hz CFM	Speed range	Oil charge ① fl.oz	Weight lbs	Cooling capacity Q _o SST/SDT 5°F/95°F kBtu/h				EER SST/SDT 5°F/95°F Btu/W				Motor connection ②	Electrical data ③		
					R410A	R454B④	R452B④	R32④	R410A	R454B④	R452B④	R32④		max. operat. amps (MOA) Amp.	max. power consumption kW	Starting current LRA Amp.
GED60120V	14.1	35..75 Hz	91	181	76.7	71.9	71.5	79.0	10.00	10.35	9.92	9.92	380..420 V/3/50 Hz 440..480 V/3/60 Hz	26.1	14.6	137
GED60137V	15.8		91	181	87.6	82.7	81.9	90.7	10.18	10.79	10.22	10.21		28.9	16.4	145
GED60154V	17.6		91	181	97.9	91.6	91.5	101.5	10.20	10.48	10.27	10.26		34.0	18.3	211
GED60182V	20.7		91	181	116.2	107.3	109.3	121.3	10.40	10.23	10.29	10.34		38.2	21.5	211
GED60235V	26.7		91	183	146.3	138.3	139.6	155.5	9.96	9.89	9.99	10.02		47.4	28.2	211
GED80295V	34.0		194	318	192.5	178.5	179.0	198.4	10.23	10.25	10.25	10.29		57.8	37.0	316
GED80385V	44.0		194	351	249.0	234.0	232.0	259.0	10.16	10.26	10.28	10.35		74.1	45.0	298
GED80421V	48.0		194	351	266.0	247.0	248.0	274.0	10.09	10.06	10.11	10.12		81.5	50.0	298
GED80485V	55.0	194	362	307.0	284.0	283.0	314.0	10.36	10.54	10.24	10.26	85.0	60.5	387		

① Charged with polyvinyl ether BVC32.

② Other voltages and electrical supplies upon request.

③ For the selection of contactors, cables and fuses the max. operating amps (MOA) and the max. power consumption must be considered ("Electrical data").
Contactors: operational category AC3.

④ Low GWP refrigerants belonging to the safety group A2L, according to ISO 817. Follow all applicable national and local regulations. See BITZER Refrigerant Report A-501 for more information.

Oil heater (option)

ORBIT 6: 90 W, 115 V/230 V/460 V/575 V.
ORBIT 8: 140 W, 115 V/230 V/460 V/575 V.

Pipe connections:

ORBIT 6:

SL: 1 3/8 inch

DL: 7/8 inch

ORBIT 8:

SL: 1 5/8 inch

DL: 1 3/8 inch

Contact BITZER for information on Rotalock connections.

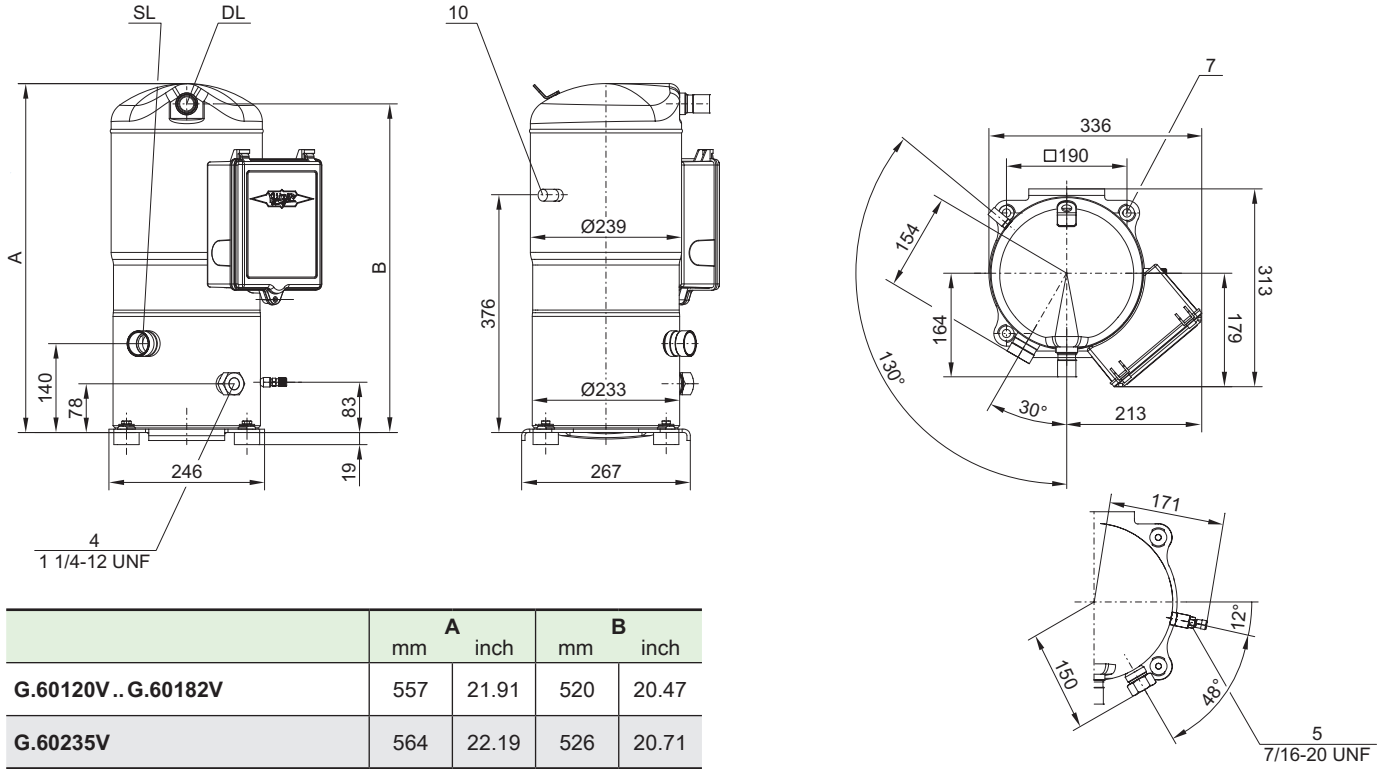
Further performance data see BITZER SOFTWARE.

Subject to change

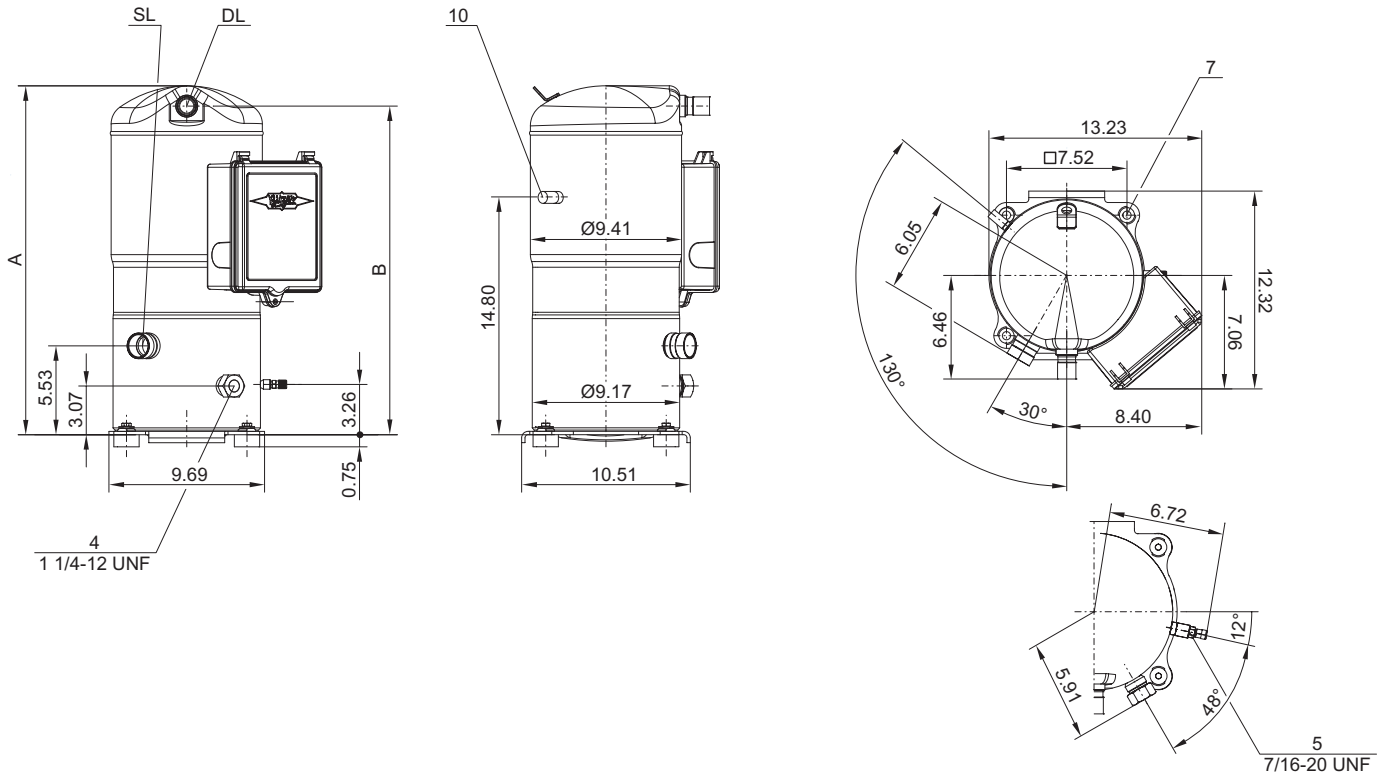
Dimensional drawings

ORBIT 6

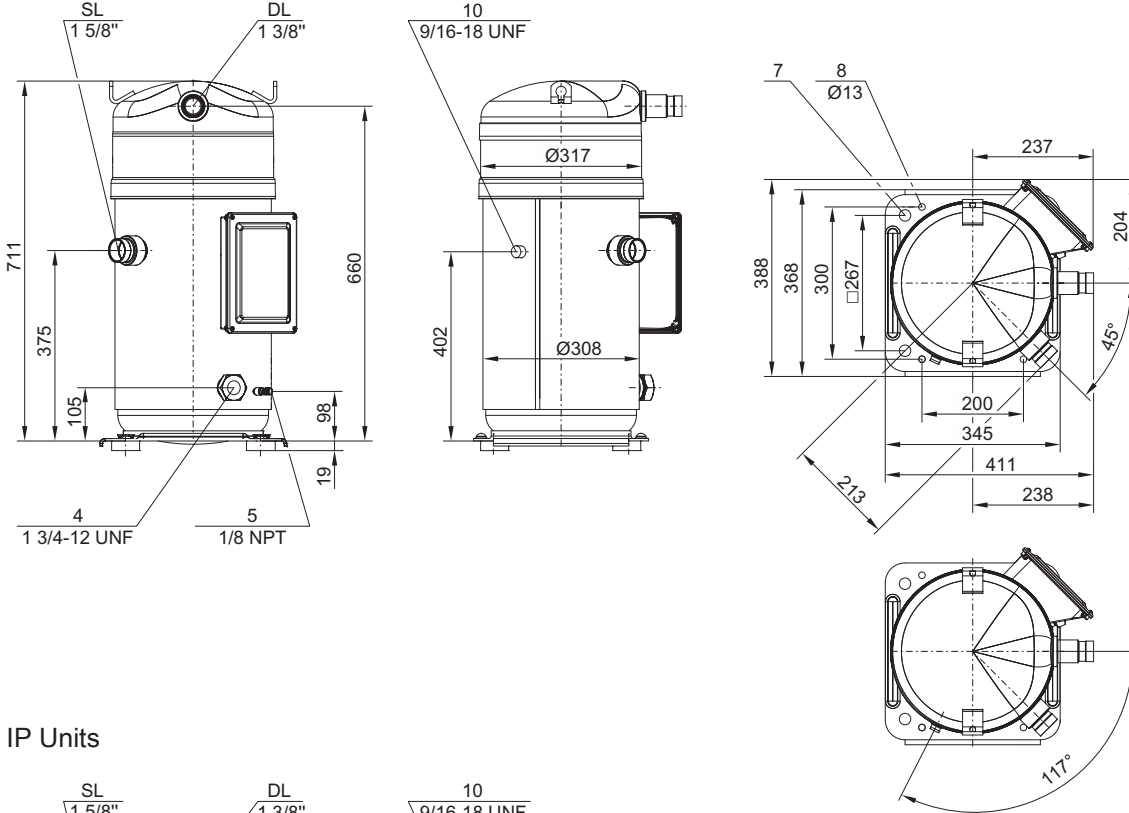
SI Units



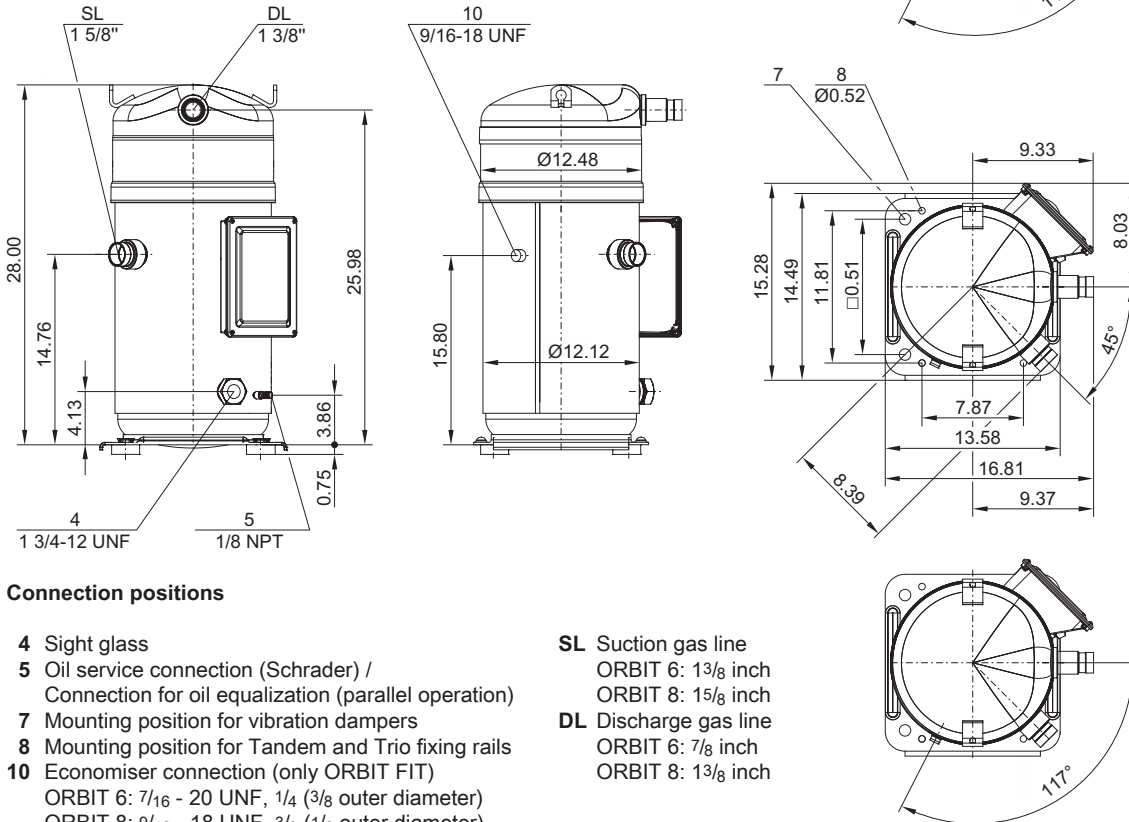
IP Units



ORBIT 8 SI Units



IP Units

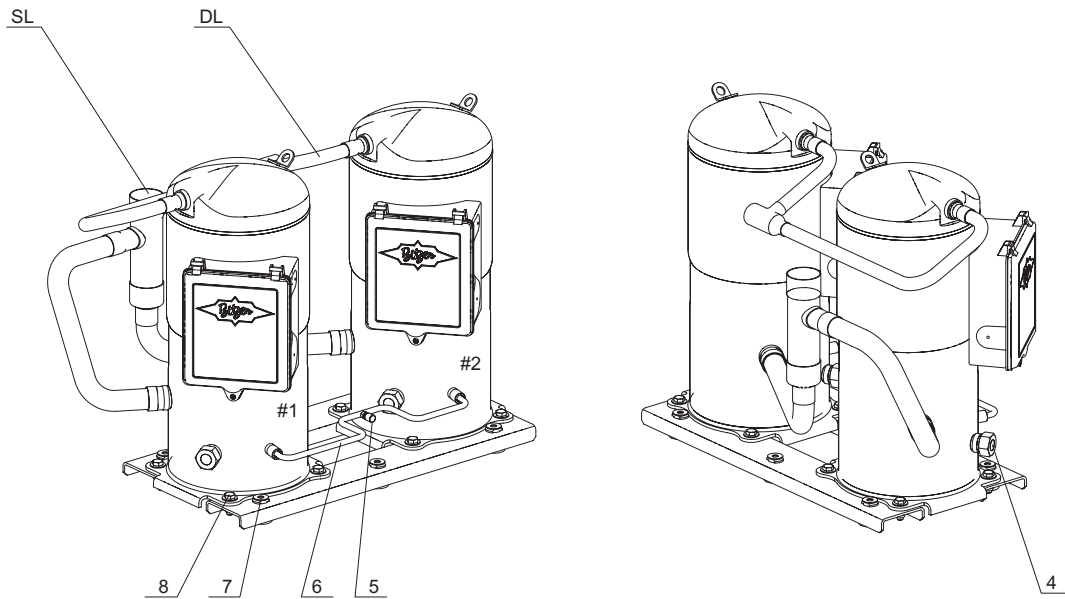


Connection positions

- 4 Sight glass
- 5 Oil service connection (Schrader) /
Connection for oil equalization (parallel operation)
- 7 Mounting position for vibration dampers
- 8 Mounting position for Tandem and Trio fixing rails
- 10 Economiser connection (only ORBIT FIT)
ORBIT 6: 7/16 - 20 UNF, 1/4 (3/8 outer diameter)
ORBIT 8: 9/16 - 18 UNF, 3/8 (1/2 outer diameter)
- SL Suction gas line
ORBIT 6: 13/8 inch
ORBIT 8: 15/8 inch
- DL Discharge gas line
ORBIT 6: 7/8 inch
ORBIT 8: 13/8 inch

Contact BITZER for information on Rotalock connections.

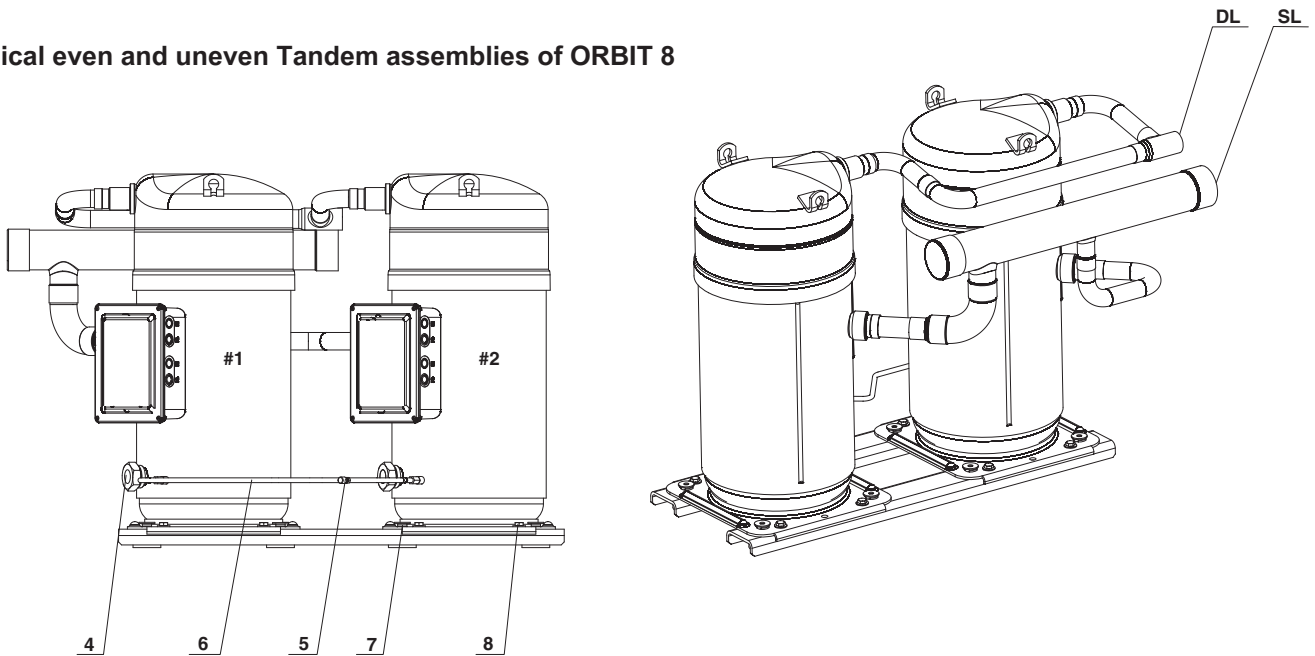
Typical even and uneven Tandem assemblies of ORBIT 6



Note: Shown above is a typical even or uneven Tandem assembly of ORBIT 6 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.

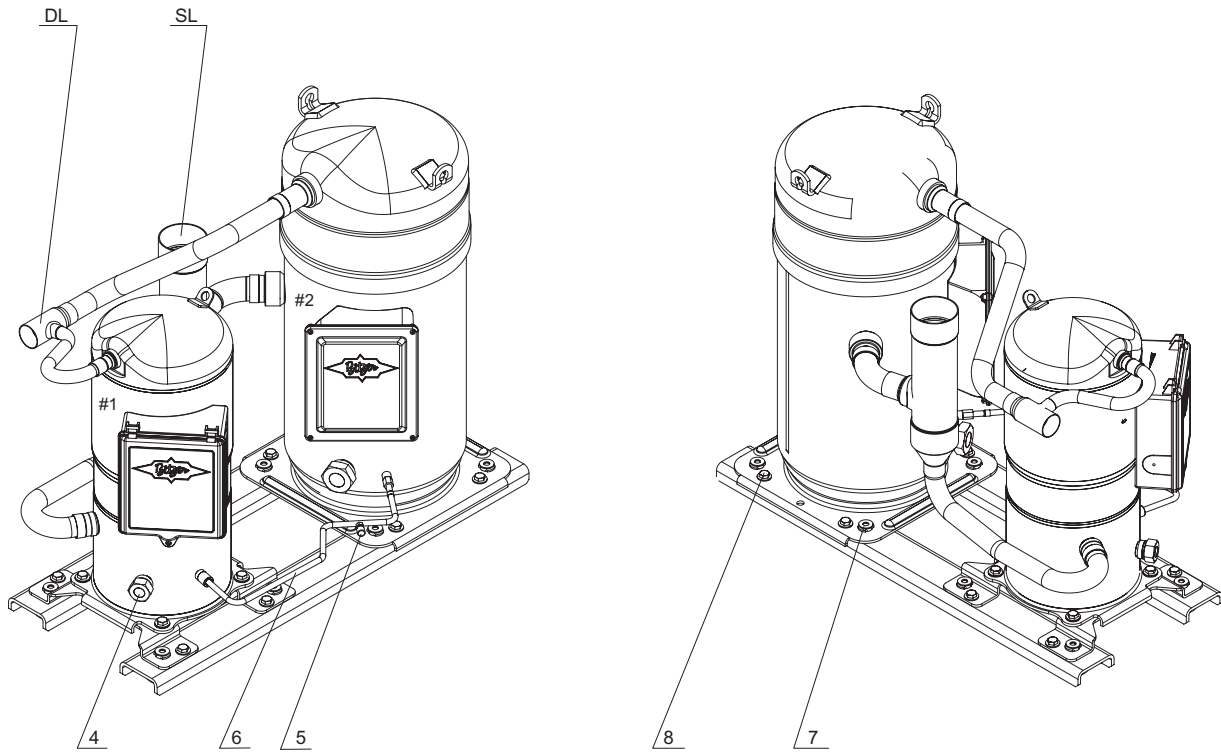
Typical even and uneven Tandem assemblies of ORBIT 8



Note: Shown above is a typical even or uneven Tandem assembly of ORBIT 8 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.

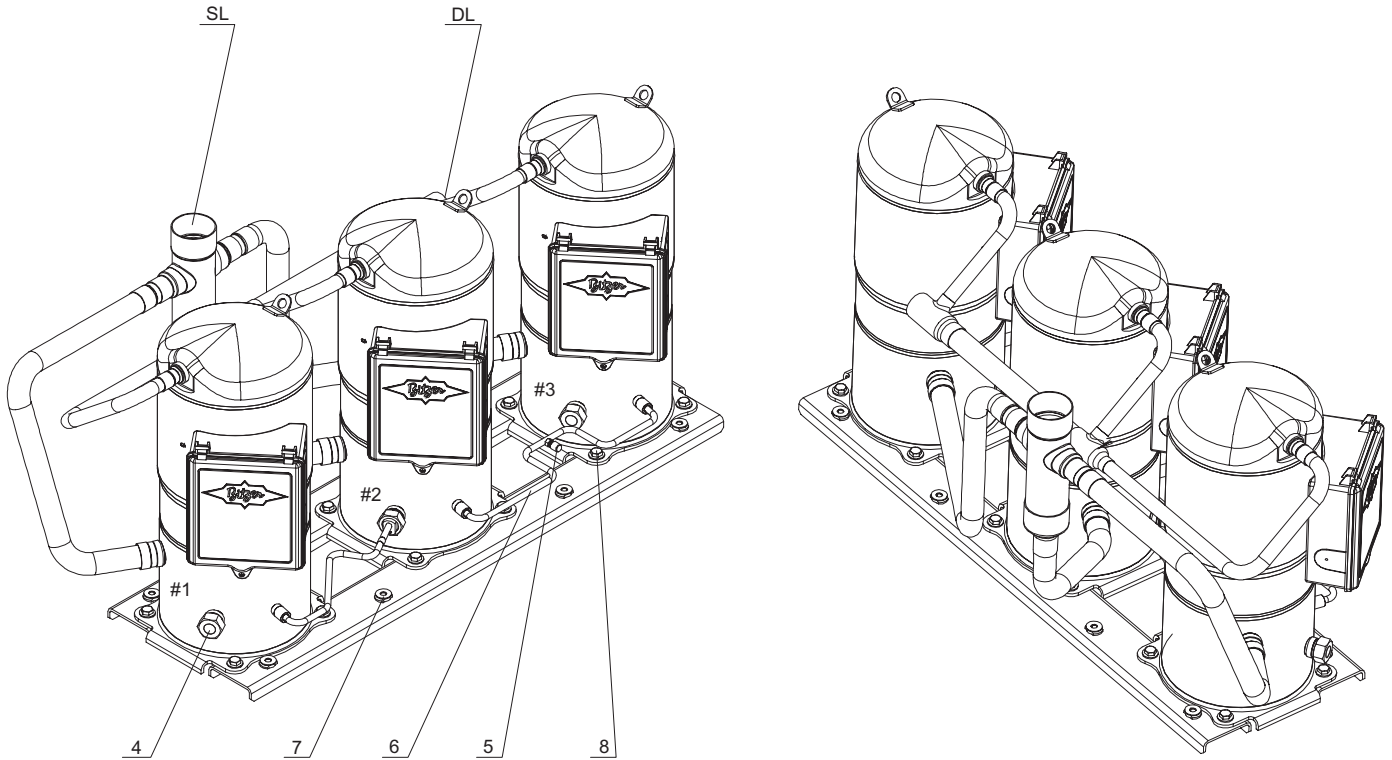
Typical mixed Tandem assemblies of ORBIT 6 and ORBIT 8



Note: Shown above is a typical mixed Tandem assembly of ORBIT 6 and ORBIT 8 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.

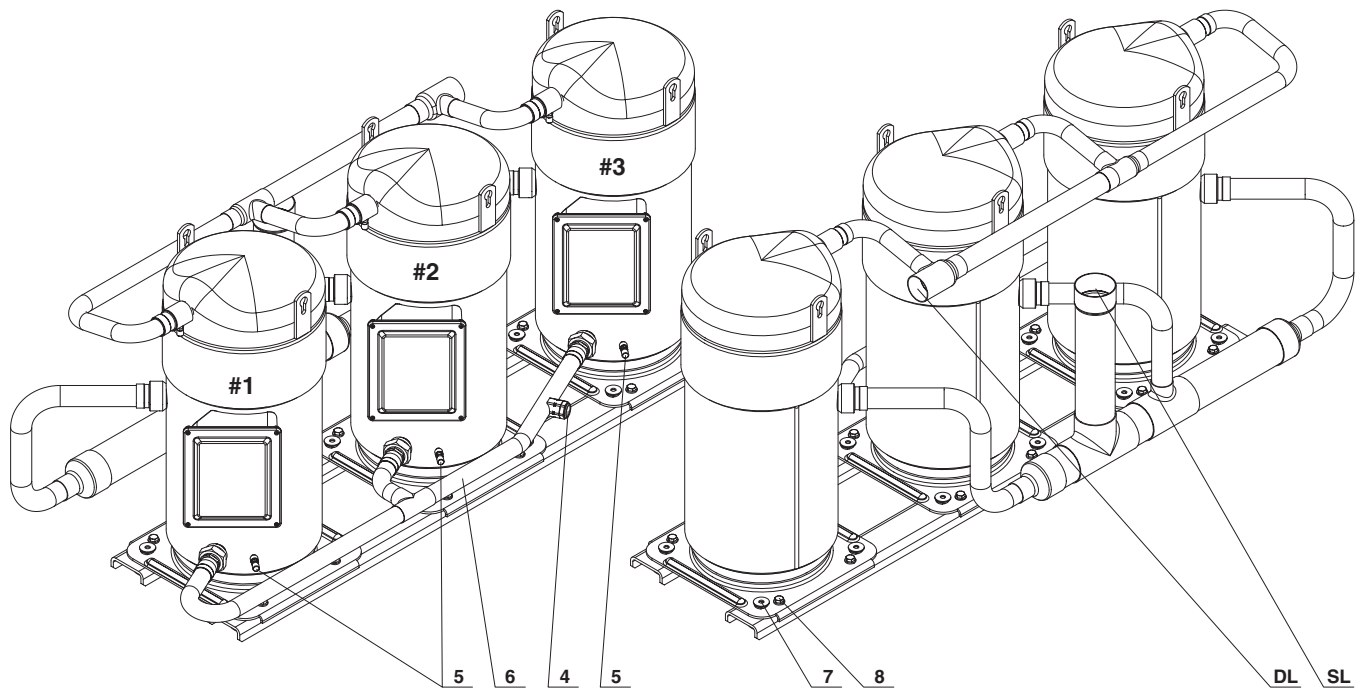
Typical even Trio assemblies of ORBIT 6



Note: Shown above is a typical even Trio assembly of ORBIT 6 compressors with BITZER Advanced Header Technology.

Contact BITZER for dimensional information, other versions, and application information.

Typical even Trio assemblies of ORBIT 8



Note: Shown above is a typical even Trio assembly of ORBIT 8 compressors with conventional piping.

Contact BITZER for dimensional information, other versions, and application information.

Connection positions

- 4 Sight glass
- 5 Oil service connection
- 6 Oil equalizing line
- 7 Mounting position for vibration dampers
- 8 Mounting position for Tandem and Trio fixing rails

SL Suction gas line
 ORBIT 6 Tandem: $2\frac{1}{8}$
 ORBIT 6 Trio: $2\frac{5}{8}$
 ORBIT 8 Tandem: $3\frac{1}{8}$
 ORBIT 8 Trio: $3\frac{1}{8}$
 ORBIT 6 + 8 Tandem: $3\frac{1}{8}$

DL Discharge gas line
 ORBIT 6 Tandem: $1\frac{3}{8}$
 ORBIT 6 Trio: $1\frac{5}{8}$
 ORBIT 8 Tandem: $1\frac{5}{8}$
 ORBIT 8 Trio: $2\frac{1}{8}$
 ORBIT 6 + 8 Tandem: $1\frac{5}{8}$

Contact BITZER for information on Rotalock connections.

Notes

A large grid of small green dots for taking notes, consisting of 25 columns and 35 rows.



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