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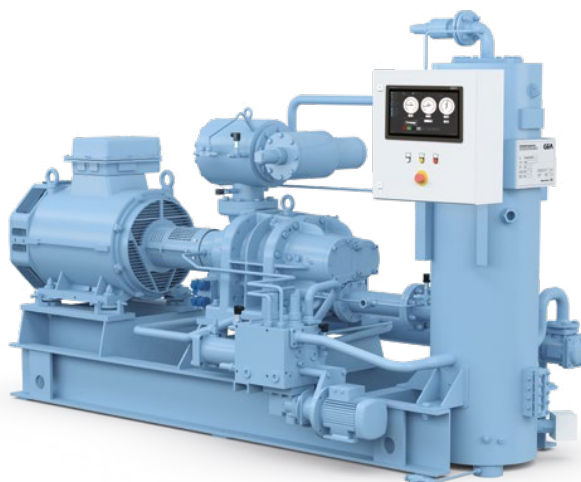
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Поршневые компрессоры GEA серии SP1, SP2, SPduo Технические характеристики



GEA Grasso SP1

Efficient. Reliable.

Versatile.

Screw compressor

- High efficient and compact design
- GEA specified rotor profile for industry leading COP
- Sleeve bearings: Infinite lifetime and inherently quiet

Enhanced safety measures

- Multi-stage safety chain for over pressure protection
- 3D-formed pipes reducing welding seams
- Continuous data monitoring with safety stop

Suction Filter Combination (SFC)

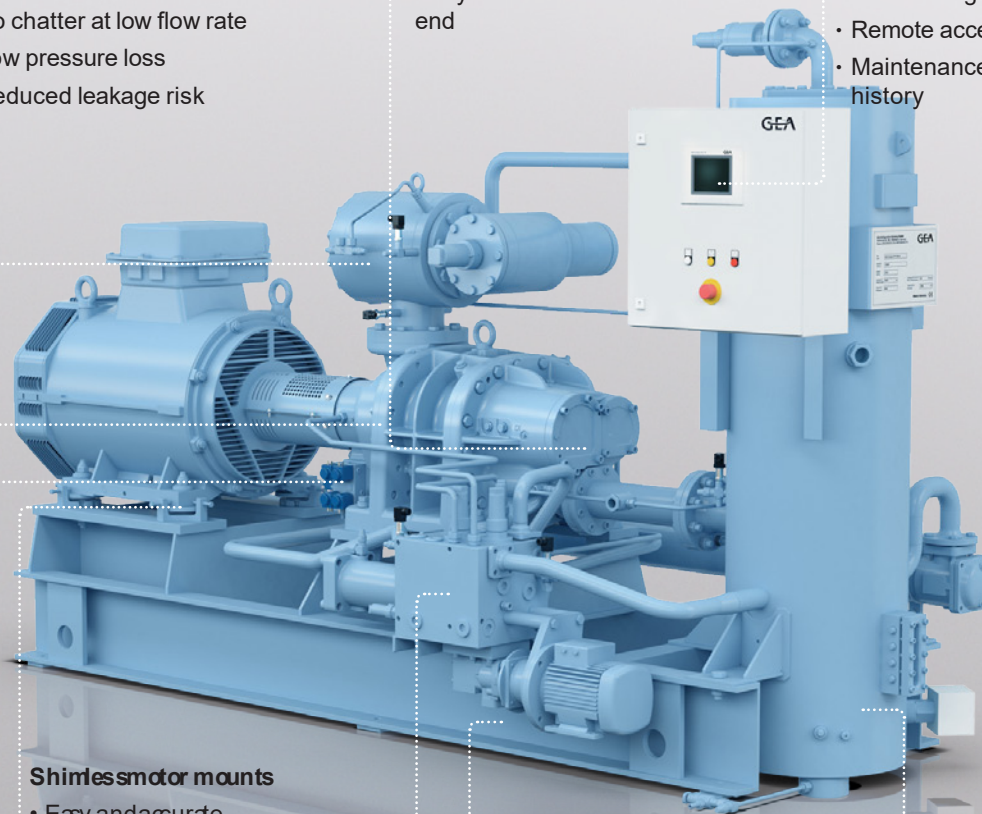
- Gas operated check valve for better COP
- No chatter at low flow rate
- Low pressure loss
- Reduced leakage risk

Compressor axial bearings

- Easy to replace
- Easy access from non drive end

Control unit GEA Grasso GSC TP

- User-friendly touch panel
- Ensures high plant availability
- Remote access via web browser
- Maintenance logs and full data history



Shimless motor mounts

- Easy and accurate motor alignment

Compressor capacity and Vi control

- Infinite capacity and Vi control for efficient operation in full and part load
- Capacity control via frequency inverter and/or capacity slide

Stable base frame

- Low noise and vibration level
- Longer lifetime of package components
- Service-friendly working height
- Low center of gravity

Oil Management Center (OMC)

- Centralized working area
- Reduced leakage risk
- Closable sections for easy service

3-stage oil separator

- Low oil charge
- Maximum 5 ppm oil carry over
- Reduced operating costs

GEA Grasso SP1 – Efficient, reliable, versatile

The single-stage series GEA Grasso SP1 is designed for medium to the largest capacity requirements and, thanks to the flexible set-up, for highly individual needs. Available are 16 models from 638 kW to 9,311 kW refrigeration capacity (R717 | –10 / +35 °C | 3,600 rpm).

With components fitted on a stable base frame, the packages operate at low noise and vibration levels and allow easy and comfortable access and service – a crucial advantage particularly for large capacities and large-sized components. The design also allows a multitude of options so that clients can customize the package to their individual needs, making the GEA Grasso SP1 series particularly attractive for its versatility.

The 16 models normally are all fitted with a vertical oil separator. Out of this range the first 9 models (638 to 2,667 kW) are also available in a more compact horizontal oil separator design (driveline mounted on top). This version, GEA Grasso SP1 horizontal, is more standardized but offers 15 to 20 % footprint reduction compared with its vertical counterpart – ideal for R717 standard applications where machine room space is limited.

UNIQUE FEATURES AND ADVANTAGES:

1. Efficient screw compressor

- Highly efficient, compact design
- GEA-specified rotor profile for industry-leading COP
- Sleeve bearings: infinite lifetime and inherently quiet
- Axial bearings: easy to replace, easy access from non-drive end

2. Injection Filter Combination (SFC)

- Gas-operated check valve for better COP
- No chatter at low flow rate
- Low pressure loss, reduced leakage risk

3. GEA Omni™ control panel

- High definition 15.6" display (1,366 × 768 pixel)
- Remote access via GEA OmniLink™
- Full data history via GEA OmniHistorian™
- Configurable Modbus TCP Ethernet communication

4. Capacity and Vi control

- Capacity control via frequency inverter and / or capacity slide
- Infinite capacity and Vi (internal volume ratio) control for efficient operation in full and part load

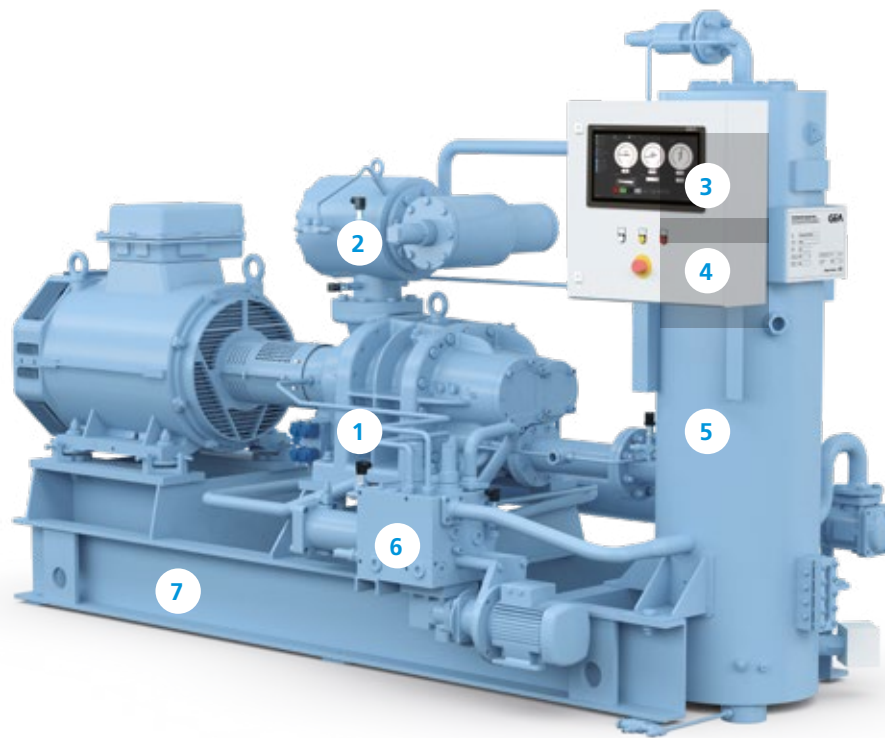
High pressure version GEA Grasso SP1 HP The SP1 HP (=high pressure) line is specifically designed for:

- R717 heat pump applications providing heating temperatures up to +85 °C.
- R744 freezing applications, with evaporation temperatures as low as –54 °C

Thanks to the robust high-pressure screw compressor design (52 bar), high differential pressures and temperatures are possible for combined cooling and heating applications or for running a CO₂ package at plus-condensing-temperatures in a defrosting mode.

At a glance

- Widest temperature and application range
- Refrigeration capacities over 9 MW
- Versatile design from standards to high customization degrees



GEA Grasso SP2 – The high performer

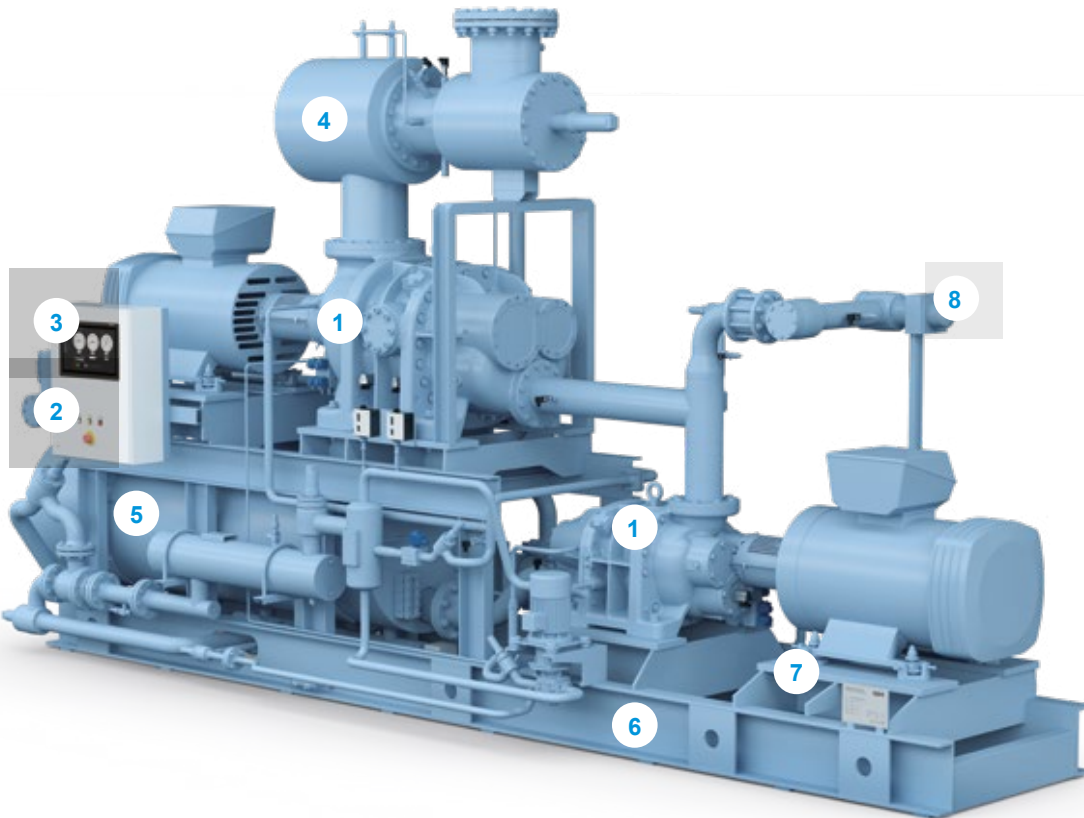
Designed for low evaporation temperatures and high temperature increases/high differential pressures, the two-stage screw compressor packages in the GEA Grasso SP2 series each include two serially mounted compressors for a low- and a high-pressure stage. Combined with intermediate load connection the package ensures most flexible and individual operation.

The series contains 18 package sizes (18 different low-stage screw compressors in combination with various high-stage compressors) and ranges from 95 to 1,770 kW refrigeration capacity (R717 | -40 / +35 °C | 2950 rpm).

A GEA Grasso SP2 package is the most efficient and flexible solution for high differential pressure operation. At the same time the package, based on a common base frame, oil circuit and common control, is easier to operate and requires less space than two separate single-stage packages.

At a glance

- Optimized for low temperatures and high differential pressure operations
- Flexible and individual operation of low-stage and high-stage compressors as well as intermediate load connection
- Common base frame, oil circuit and control for easy operation and minimized footprint



UNIQUE FEATURES AND ADVANTAGES:

1. Efficient screw compressors

- Highly efficient, compact design
- Proprietary rotor profile for industry-leading COP
- Sleeve bearings: infinite lifetime and inherently quiet
- Axial bearings: easy to replace, easy access from non-drive end

2. Capacity and Vi control

- Infinite capacity and Vi (internal volume ratio) control for efficient operation in full and part load

3. EA Omni™ control panel

- High-definition 15.6" display (1,366 × 768 pixel)
- Remote access via GEA OmniLink™
- Full data history via GEA OmniHistorian™
- Configurable Modbus TCP Ethernet communication

4. Action Filter Combination (SFC)

- Gas-operated check valve for better COP
- No chatter at low flow rate
- Low pressure loss

5. 3-stage oil separator

- Low oil charge
- Maximum 5 ppm oil carry-over
- Reduced operating costs

6. Common base frame

- Low noise and vibration level
- Service-friendly working height
- Low center of gravity
- Reduced package footprint and operating costs in comparison with single-stage packages

7. Shimless motor mounts

- Easy and accurate motor alignment

8. Intercooler connection

- Increased efficiency
- Additional intermediate load possible

GEA Grasso SPduo – Best efficiency with all loads

The packages in the GEA Grasso SPduo series feature two parallel-mounted screw compressors each. This solution is especially suited for part-load efficiency, flexible (part-load) operation and all applications where demands for machine availability and redundancy are most important.

Both screw compressors in the unit can be operated independently or at the same time in parallel to achieve top-level loads. You can equip one screw compressor with a variable speed drive motor and frequency converter to achieve part-loads down to 12 % without significant efficiency losses!

Compared to two separate single-stage packages, the GEA Grasso SPduo package requires less space, thanks to the common base frame, oil circuit and control, and it is also easier to operate. The SPduo series consist of 15 models with a capacity range from 262 to 3,170 kW (R717 | -40/+35 °C | 2950 rpm).

At a glance

- Optimized for highest efficiency in all load conditions
- Maximum machine availability, flexibility and redundancy – parallel or independent single compressor operation possible
- Common base frame, oil circuit and control for easy operation and minimized footprint

UNIQUE FEATURES AND ADVANTAGES:

1. Efficient screw compressors

- Highly efficient, compact design
- Proprietary rotor profile for industry-leading COP
- Sleeve bearings: infinite lifetime and inherently quiet
- Axial bearings: easy to replace, easy access from non-drive end

2. EA Omni™ control panel

- High-definition 15.6" display (1,366 × 768 pixel)
- Remote access via GEA OmniLink™
- Full data history via GEA OmniHistorian™
- Configurable Modbus TCP Ethernet communication

3. Capacity and Vi control

- Infinite capacity and Vi (internal volume ratio) control for efficient operation in full and part load
- Capacity control via frequency inverter and/or capacity slide

4. 2-stage oil separator

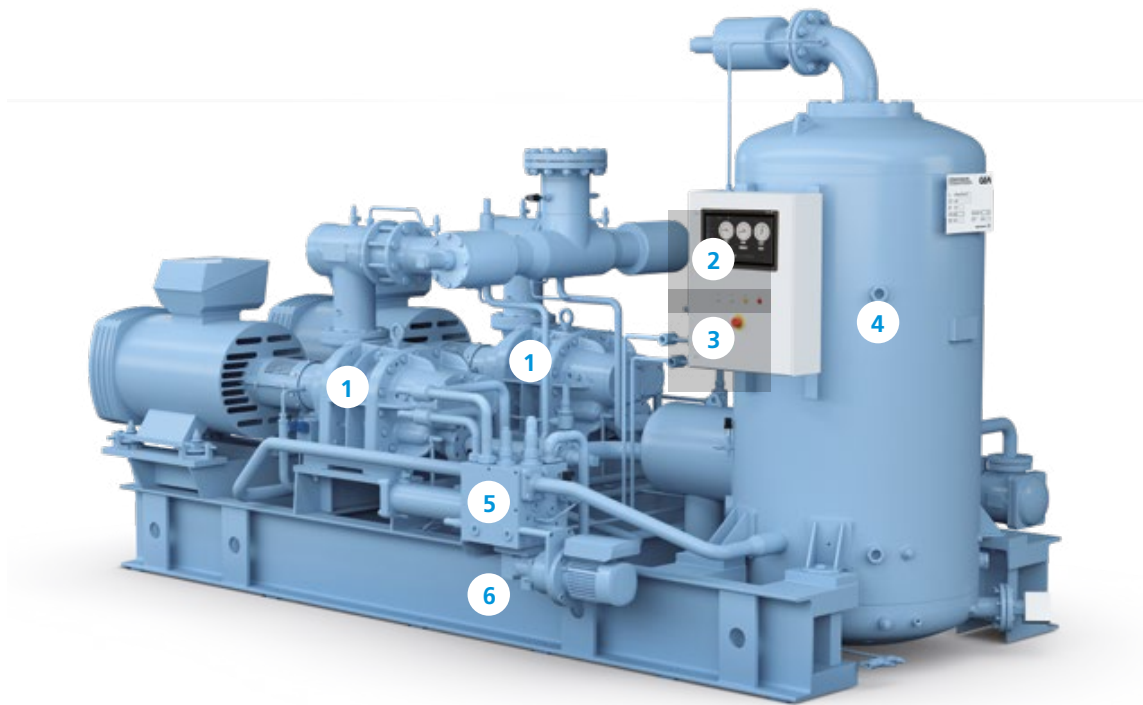
- Low oil charge
- Maximum 5 ppm oil carry-over
- Reduced operating costs

5. Oil Management Center (OMC)

- Centralized working area
- Reduced leakage risk
- Closable filter for easy service

6. Common base frame

- Reduced package footprint
- Low noise and vibration level
- Service-friendly working height
- Low center of gravity



Technical data

GEA Grasso SP1 model	Motor speed (rpm)	Cooling capacity ¹⁾ (kW)			Dimensions* (mm)			Weight* (kg) without motor
		R717 -10/+35°C	R717 -40/-10°C	R507 -10/+35°C	L	W	H	
GEA Grasso SP1-P	3,600	638	194	591	3,200	1,400	2,050	2,500
GEA Grasso SP1-R	3,600	825	251	764	3,500	1,400	2,050	2,750
GEA Grasso SP1-S	3,600	1,043	317	966	3,500	1,400	2,050	2,750
GEA Grasso SP1-T	3,600	1,169	356	1,083	3,550	1,450	2,100	2,900
GEA Grasso SP1-V	3,600	1,399	430	1,299	4,050	1,800	2,100	3,400
GEA Grasso SP1-W	3,600	1,600	492	1,485	4,050	1,800	2,100	3,400
GEA Grasso SP1-Y	3,600	1,941	597	1,801	4,100	1,800	2,150	3,500
GEA Grasso SP1-Z	3,600	2,255	694	2,093	4,450	1,800	2,190	4,000
GEA Grasso SP1-XA	3,600	2,667	820	2,475	4,450	1,800	2,190	4,100
GEA Grasso SP1-XB	3,600	3,374	1,067	3,131	5,550	1,820	2,775	7,500
GEA Grasso SP1-XC	3,600	3,981	1,225	3,694	5,650	1,820	2,975	7,900
GEA Grasso SP1-XD	3,600	4,711	1,449	4,372	6,050	1,820	2,975	8,900
GEA Grasso SP1-XE	3,600	5,821	1,791	5,402	7,700	1,820	3,150	10,400
GEA Grasso SP1-XF	3,600	6,950	2,138	6,450	7,700	1,820	3,150	11,400
GEA Grasso SP1-XG	3,600	7,962	2,468	7,389	8,100	1,820	3,250	12,750
GEA Grasso SP1-XH	3,600	9,311	2,886	8,641	9,100	2,020	3,450	14,750

¹⁾ The variant GEA Grasso SP1 horizontal provides identical performance data but slightly reduced length and width.

*Dimensions and weights are based on standard exemplary applications. Values can differ depending on the specific operating conditions!

GEA Grasso SP1 HP model (R717)	Motor speed (rpm)	Heating capacity (kW)		Dimensions* (mm)			Weight* (kg) without motor
		R717 +30/+75 °C	R717 -10/+60 °C	L	W	H	
GEA Grasso SP1 HP - C	3,600	648	235	3,050	1,400	2,000	2,075
GEA Grasso SP1 HP - D	3,600	768	270	3,050	1,400	2,000	2,075
GEA Grasso SP1 HP - E	3,600	919	341	3,050	1,400	2,000	2,075
GEA Grasso SP1 HP - G	3,600	1,088	389	3,250	1,400	2,000	2,100
GEA Grasso SP1 HP - H	3,600	1,417	474	3,650	1,400	2,000	2,300
GEA Grasso SP1 HP - L	3,600	1,636	545	3,750	1,450	2,010	2,500
GEA Grasso SP1 HP - M	3,600	2,233	714	3,900	1,450	2,010	2,750
GEA Grasso SP1 HP - N	3,600	2,740	878	3,900	1,450	2,090	2,800
GEA Grasso SP1 HP - P	3,600	2,551	837	3,200	1,400	2,050	2,500
GEA Grasso SP1 HP - R	3,600	3,258	1,081	3,500	1,400	2,050	2,750
GEA Grasso SP1 HP - S	3,600	4,047	1,356	3,500	1,400	2,050	2,750
GEA Grasso SP1 HP - T	3,600	4,552	1,512	3,550	1,450	2,100	2,900
GEA Grasso SP1 HP - V	3,600	5,450	1,776	4,050	1,800	2,100	3,400
GEA Grasso SP1 HP - W	3,600	6,209	2,030	4,050	1,800	2,100	3,400
GEA Grasso SP1 HP - Y	3,600	7,440	2,448	4,100	1,800	2,150	3,500
GEA Grasso SP1 HP - Z	3,600	8,567	2,839	4,450	1,800	2,190	4,000
GEA Grasso SP1 HP - XA	3,600	10,162	3,351	4,450	1,800	2,190	4,100
GEA Grasso SP1 HP - XB	3,600	–	4,292	5,550	1,820	2,775	7,500
GEA Grasso SP1 HP - XC	3,600	–	5,040	5,650	1,820	2,975	7,900
GEA Grasso SP1 HP - XD	3,600	–	5,934	6,050	1,820	2,975	8,900

*Dimensions and weights are based on standard exemplary applications. Values can differ depending on the specific operating conditions!

GEA Grasso SP1 HP model (R744)	Motor speed (rpm)	Cooling capacity (kW)		Dimensions* (mm)			Weight* (kg) without motor
		R744 -50/-5 °C	R744 -50/+10 °C	L	W	H	
GEA Grasso SP1 HP - C	3,600	273	221	3,050	1,400	2,000	2,075
GEA Grasso SP1 HP - D	3,600	324	262	3,050	1,400	2,000	2,075
GEA Grasso SP1 HP - E	3,600	390	303	3,050	1,400	2,000	2,075
GEA Grasso SP1 HP - G	3,600	448	348	3,250	1,400	2,000	2,100
GEA Grasso SP1 HP - H	3,600	618	481	3,650	1,400	2,000	2,300
GEA Grasso SP1 HP - L	3,600	714	555	3,750	1,450	2,010	2,500
GEA Grasso SP1 HP - M	3,600	907	742	3,900	1,450	2,010	2,750
GEA Grasso SP1 HP - N	3,600	1,129	912	3,900	1,450	2,090	2,800
GEA Grasso SP1 HP - P	3,600	1,011	817	3,200	1,400	2,050	2,500
GEA Grasso SP1 HP - R	3,600	1,306	1,076	3,500	1,400	2,050	2,750
GEA Grasso SP1 HP - S	3,600	1,652	1,334	3,500	1,400	2,050	2,750
GEA Grasso SP1 HP - T	3,600	1,869	1,510	3,550	1,450	2,100	2,900
GEA Grasso SP1 HP - V	3,600	2,220	1,811	4,050	1,800	2,100	3,400
GEA Grasso SP1 HP - W	3,600	2,538	2,071	4,050	1,800	2,100	3,400
GEA Grasso SP1 HP - Y	3,600	3,079	2,487	4,100	1,800	2,150	3,500
GEA Grasso SP1 HP - Z	3,600	3,577	2,861	4,450	1,800	2,190	4,000
GEA Grasso SP1 HP - XA	3,600	4,188	3,384	4,450	1,800	2,190	4,100

*Dimensions and weights are based on standard exemplary applications. Values can differ depending on the specific operating conditions!

GEA Grasso SP2 model	Motor speed (rpm)	Cooling capacity with intercooler ¹ (kW)		Dimensions* (mm)			Weight* (kg) without motor
		R717	R507	L	W	H	
		-40/+35 °C	-40/+35 °C				
GEA Grasso SP2-H	3,600	118	174	3,350	1,000	1,970	2,300
GEA Grasso SP2-L	3,600	135	196	3,350	1,000	1,970	2,400
GEA Grasso SP2-M	3,600	174	242	3,850	1,100	2,150	3,400
GEA Grasso SP2-N	3,600	210	285	3,850	1,100	2,150	3,400
GEA Grasso SP2-P	3,600	193	259	3,850	1,200	2,150	2,900
GEA Grasso SP2-R	3,600	248	329	3,850	1,200	2,330	3,100
GEA Grasso SP2-S	3,600	315	422	4,850	1,200	2,400	3,200
GEA Grasso SP2-T	3,600	354	474	4,850	1,200	2,400	3,350
GEA Grasso SP2-V	3,600	432	581	4,850	1,480	2,550	3,400
GEA Grasso SP2-W	3,600	467	676	4,850	1,480	2,550	4,000
GEA Grasso SP2-Y	3,600	592	786	4,850	1,480	2,550	4,200
GEA Grasso SP2-Z	3,600	691	913	4,850	1,480	2,550	4,400
GEA Grasso SP2-XA	3,600	822	1,096	5,650	1,550	2,670	5,950
GEA Grasso SP2-XB	3,600	1,055	1,383	6,250	1,700	3,350	9,150
GEA Grasso SP2-XC	3,600	1,213	1,604	6,350	1,800	3,350	11,250
GEA Grasso SP2-XD	3,600	1,431	1,883	6,350	1,800	3,350	13,200
GEA Grasso SP2-XE	3,600	1,765	2,308	7,150	1,800	3,650	14,200
GEA Grasso SP2-XF	3,600	2,100	2,628	7,150	1,800	3,650	14,600

¹⁾ With open flash intercooler

*Dimensions and weights are based on standard exemplary applications. Values can differ depending on the specific operating conditions!

GEA Grasso SPduo model	Motor speed (rpm)	Cooling capacity (kW)			Dimensions* (mm)			Weight* (kg) without motor
		R717	R717	R507	L	W	H	
		-10/+35 °C	-40/-10 °C	-10/+35 °C				
GEA Grasso SPduo-C	3,600 4,500	344 438	108 136	338 428	3,600	1,500	2,280	2,250
GEA Grasso SPduo-D	3,600 4,500	412 524	128 162	404 512	3,600	1,550	2,350	2,250
GEA Grasso SPduo-E	3,600 4,500	494 626	152 192	484 612	3,600	1,600	2,360	2,400
GEA Grasso SPduo-G	3,600 4,500	586 744	176 222	574 728	3,600	1,950	2,430	2,550
GEA Grasso SPduo-H	3,600 4,500	748 942	232 294	728 918	3,850	2,250	2,500	2,900
GEA Grasso SPduo-L	3,600 4,500	864 1,088	268 338	842 1,060	3,850	2,250	2,500	3,100
GEA Grasso SPduo-M	3,600 4,500	1,154 1,430	352 444	1,106 1,392	3,750	2,350	2,580	4,100
GEA Grasso SPduo-N	3,600 4,500	1,396 1,758	434 548	1,360 1,714	3,750	2,350	2,590	4,300
GEA Grasso SPduo-P	3,600	1,276	388	1,182	3,750	2,370	2,500	4,600
GEA Grasso SPduo-R	3,600	1,650	502	1,528	3,750	2,370	2,500	5,050
GEA Grasso SPduo-S	3,600	2,086	634	1,932	3,950	2,370	2,600	5,150
GEA Grasso SPduo-T	3,600	2,338	712	2,166	3,950	2,370	2,600	5,300
GEA Grasso SPduo-V	3,600	2,798	860	2,598	4,550	2,750	2,600	6,550
GEA Grasso SPduo-W	3,600	3,200	984	2,970	4,550	2,750	2,600	6,800
GEA Grasso SPduo-Y	3,600	3,882	1,194	3,602	4,550	2,750	2,600	7,250

*Dimensions and weights are based on standard exemplary applications. Values can differ depending on the specific operating conditions!

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