Srmtec Open Type Single Stage

Refrigeration Screw Compressor Package

SRMTec Europe

Address:
Hasenäcker 12, 88142 Wasserburg, Germany
Tel: +49 8382 9768220
info@srm-germany.de

www.srmtecgroup.com

CONTENT

SRMTec Open Type Single Stage Refrigeration Screw Compressor Package

Fully automatic control, excellent energy efficiency performance, reliable and safe design, wide temperature range and highly

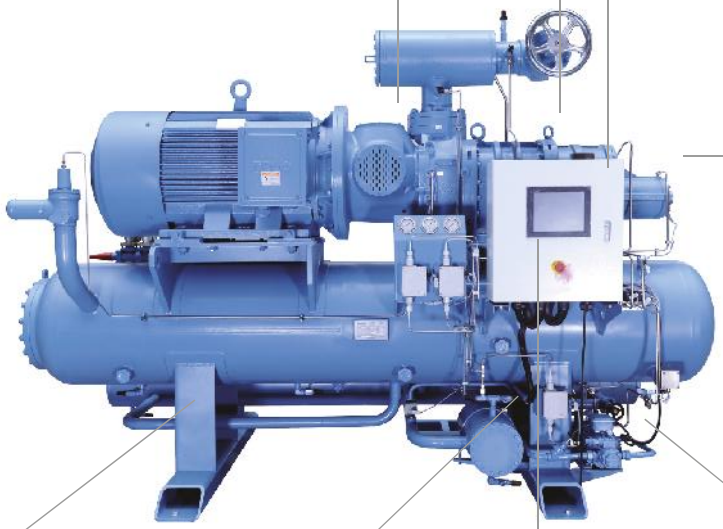
Flexible coupling

Multi-port oil injection system

Dynamic HMI

Best forged steel rotor, “i” profile with optimal 5+7 lobe configuration

High strength nodular cast iron housing



Efficient screw compressor

10%~100%
Step- less capacity control

High precision, high wear resistant roller bearing

Efficient heat exchanger

Large capacity oil filter, optionally as duo filter

Main Control Board

Pre- lubrication oil pump, for booster with permanent pump

Wear resistant shaft seal

Variable Vi Control, manual or automatic

Package Features

Advanced Intelligent Control Center

- User friendly interface, one button start- up, easy operation and intelligent control;
- Real- time unit monitoring. Historical data will be recorded and saved;
- Automatic capacity control allows package to run efficiently at different working conditions;
- Automatic oil temperature control;
- Automatic pressure control to keep discharge pressure and suction pressure within specified range;
- The package adopts vector inverter control to automatically control speed in accordance with capacity demand.
- Remote monitoring and operation by all popular bus- protocols.

Excellent Energy Efficiency Performance

- The package is equipped with SRMTec open screw compressor featuring the patented "i" screw rotor profile;
- Highly sensitive capacity control unit for 10%- 100% stepless capacity control
- Oil pump for pre-lubrication, which is stopped after the pressure difference takes over lubrication for energy saving. For booster systems permanent lubrication pumps are provided.
- For low temperature applications an economizer system is adopted for improved COP.
- Vi control for optimal pressure ratio to achieve high efficiency and smooth operation independent from the mechanical capacity regulation. At standard the Vi is manually adjustable to adapt to changing operating conditions. For highly fluctuating conditions like in air-cooled applications automatic Vi is available as an option.

Reliability

- Rotors with big shaft dimensions resist to flexing and provide strong torque at lowest vibration.
- Nodular cast iron is used for the strong housing for pressures up to 28 MPa.
- Extra-strong wear-resistant roller bearings feature a design life of 100.000 operating hours.
- Innovative shaft-seal structure for stable running with extended operating hours. The silicon carbide coating enables smooth operation for speed up to 10.000 rpm.
- Multiple oil injection ports for perfect lubrication and cooling with the right quantity of oil where it is needed.
- For low temperature applications an economizer system is adopted for improved COP
- Packages are equipped with oil coolers either as thermo-siphon or water-cooled design. Optional regulating valves ensure that oil is supplied at correct temperature to the compressor.

Safe And Reliable Design

- All components are well balanced and of high standard of reputable, international brands.
- SRMTec compressor packages comply to European standards and are CE certified.
- All pressure vessels are generously dimensioned and manufactured according to PED.
- The piping is designed to reduce the already low pulsation of the screw compressor and to withstand vibrations.

Wide Applicable Temperature Range

- Single stage screw compressor packages with inlet temperature range: - 45~+20 °C can be widely applied.

Highly Integrated Design

- Optimal structural design with high integration, small footprint, low transport cost and quick installation with minimised on-site cost.

Efficient Oil Separation System

- Highly efficient 3-stage oil separators ensure oil throw of 3 ppm to keep oil out of the refrigeration system with its negative effects to heat transfer.
- The vessels are supplied with sight glasses, oil heater and safety valves.

Filtration

- The package is fitted with a large suction filter which can easily be cleaned.
- Oil filters with 25 micrometer elements keep any harmful pollution out of the system. Dual oil filters are optionally available.

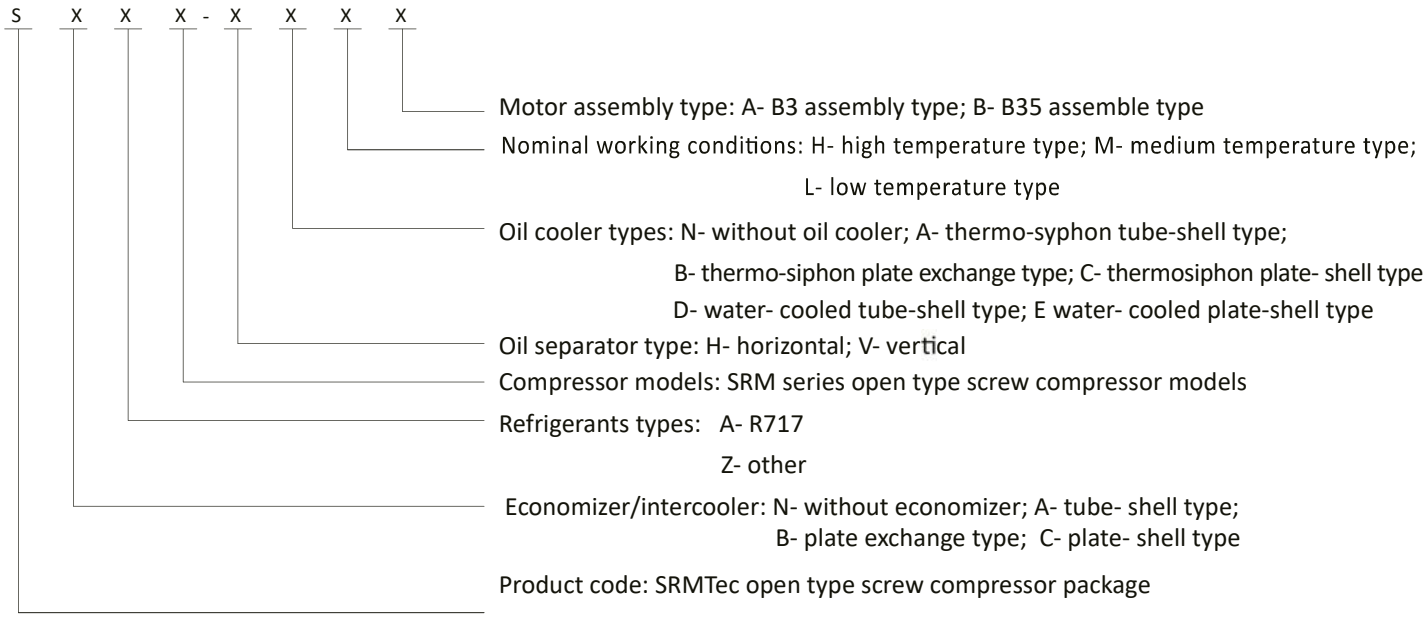
Valves and Piping

- The packages are equipped with check valves on suction and discharge side.
- A pressure holding valve after the oil separator ensures a quick build-up of pressure after start up for reliable lubrication.
- A back-pressure independent safety relief valve from high-to-low-pressure serves as a first line of defense in case of pressure rises beyond safe levels.
- Dual safety valves to atmosphere are mounted on the oil separator

Stable Product Quality

- Hundred years of SRM technology has been proven in applications all around the world.
- Rigorous checking of all welds in the piping system ensure compliance to certification and regulations.

Package model nomenclature



Package working conditions

Evaporating temperature: - 45°C~20°C
Discharge temperatue: ≤100°C
Oil supply temperature: 30°C~70°C
Ambient temperature: - 5°C~+40°C
Refrigerant oil: please refer to SRMTec recommendations

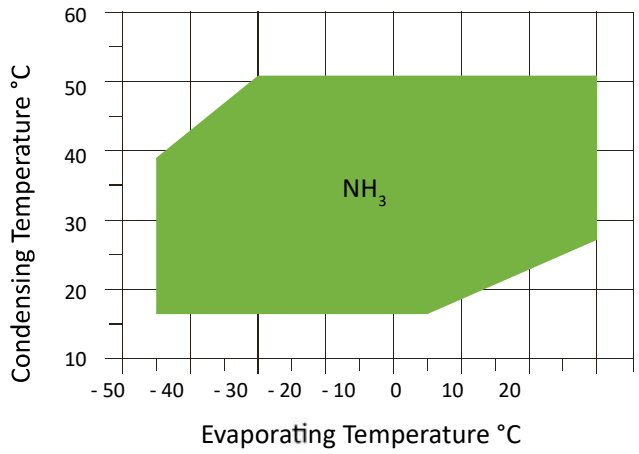
Package nominal working conditions instructions

High temperature working conditions: +5°C /+35°C
Medium temperature working conditions: - 15°C / +35°C
Low temperature working conditionss: -35°C / +35°C

Design Parameters

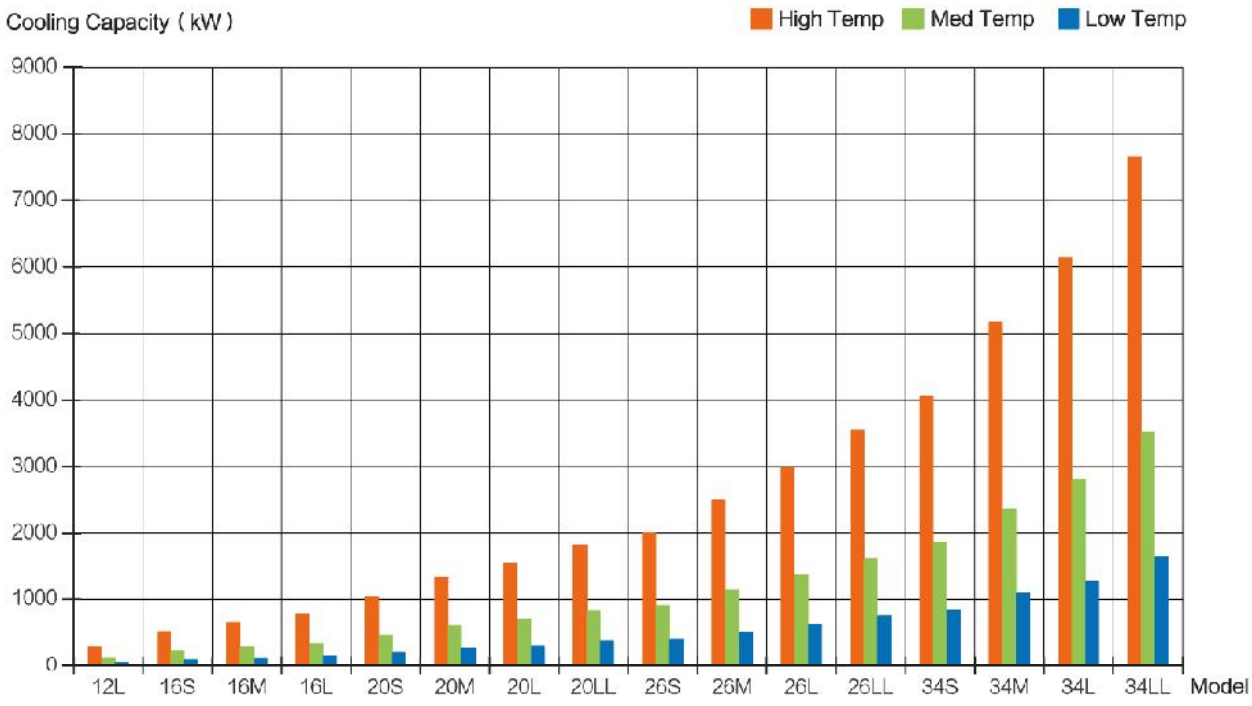
The design and manufactureing of the package conforms to standards and parameters below:
97/23/EC Pressure Equipment Directive
EN 378
CE-certification
ASME as option

Open Type Single Stage Screw Compressor Application Range



Open type single stage screw compressor application range

Capacity



Note: 1. 2960RPM, suction overheat 5℃, Refrigerant NH_3.

2. High Temp: +5℃ /+35℃ , Med Temp: −15℃ /+35℃ , Low Temp: −35℃ /+35℃ .

Applications

- Food industry
- Aquaculture
- Dairy industry
- Beverage industry and breweries
- Meat processing
- Cold storage and cold chain logistics
- Chemical/pharmaceutical processes
- Ice generating applications for process and leisure
- Agricultural processes like controlled atmosphere for ripening or maturing
- High temperature heat pump

12 series single stage compressor package parameters

Item				Unit	12 Series		
Compressor	Model					SRM- 12L	
	Displacement			m^3/h		265	
	Mechanical Capacity Control					Stepless regulation:10 ~ 100 %	
Refrigerant	Type					R717	
Refrigeration Capacity	H/T Application			kW		294	
	M/T Application			kW		132	
	L/T Application (ECO)			kW		58	
Motor	H/T Application			kW		55	
	M/T Application			kW		55	
	L/T Application (ECO)			kW		55	
	Power supply				3P, 380V, 50Hz		
	R.P.M			r/min	2960		
	Rotational direction				Face with motor shaft side: anti- clockwise		
Refrigeration Oil	Grade				refer to SRMTec recommendations		
	Standard						
	Charge volume			kg		120	
External Connecting Pipe Size	Suction pipe			mm		DN80	
	Discharge pipe		High/medium temperature	mm		DN50	
			Low temperature	mm		DN50	
	Economizer Liquid In/and Pipe			mm		DN32	
	Safety Valve Pipe			mm		DN32	
	Cooling Method	Working Medium Cooled	Liquid Inlet Tube	mm		DN32	
			Gas Outlet Pipe	mm		DN50	
			Working Medium Consumption Amount	kg/h		148	
		Water Cooled	Water Inlet Pipe	mm		DN40	
			Water Outlet Pipe	mm		DN40	
			Cooling Water Amount	m^3/h		10	
			pressure drop	bar		≤0.88	
Overall Dimension	High Temperature		L×W×H	mm		2800×1300×1800	
	Low Temperature		L×W×H	mm		2800×1300×1800	
Package Weight	Net Weight			kg		2500	
	Operation Weight			kg		2800	

Note: 1. Motor power equipped for package shall be selected according to shaft power under actual running conditions, shaft power parameters shall be obtained according to compressor selection software.
2. The design is subject to change, therefore the drawings are to be confirmed upon order.
3. Oil cooling method can be either water cooled or by refrigerant cooling as thermo-siphon; SRMTec recommends water/glycol cooling.
4. ECO means the package with economizer
5. Capacity calculation: H/T +5/+35°C; M/T -15/+35°C; L/T -35/+35°C, suction superheat 5K, 2960rpm/50Hz

16 series single stage compressor package parameters

Item				Unit	16 Series		
Compressor	Model				SRM- 16S	SRM- 16M	SRM- 16L
	Displacement			m^3/h	435	544	652
	Mechanical Capacity Control				Step- less capacity control: 10~100%		
Refrigerant	Type				R717	R717	R717
Refrigeration Capacity	H/T Application			kW	513	642	769
	M/T Application			kW	230	288	345
	L/T Application (ECO)			kW	103	130	155
Motor	H/T Application			kW	90	110	132
	M/T Application			kW	90	110	132
	L/T Application (ECO)			kW	75	75	110
	Power supply				3P, 380V, 50Hz		
	R.P.M			r/min	2960		
	Rotational direction				Face with motor shaft side: anti- clockwise		
Oil Pump	Model				GG4195	GG4195	GG4195
	Motor power			kW	0.75	0.75	0.75
Refrigeration Oil	Grade				refer to recommendations of SRMTec		
	Standard						
	Charge volume			kg	200	200	200
External Connecting Pipe Size	Suction pipe			mm	DN125	DN125	DN125
	Discharge pipe		High/medium temperature	mm	DN65	DN80	DN80
			Low temperature	mm	DN50	DN65	DN65
	Economizer Liquid In/and Pipe			mm	DN50	DN50	DN50
	Safety Valve Pipe			mm	DN32	DN32	DN32
	Cooling Method	Working Medium Cooled	Liquid Inlet Tube	mm	DN40	DN40	DN40
			Gas Outlet Pipe	mm	DN65	DN65	DN65
			Working Medium Consumption Amount	kg/h	246	246	246
		Water Cooled	Water Inlet Pipe	mm	DN50	DN50	DN50
			Water Outlet Pipe	mm	DN50	DN50	DN50
			Cooling Water Amount	m^3/h	15	15	15
			pressure drop	bar	≤0.88	≤0.88	≤0.88
Overall Dimension	High Temperature		L×W×H	mm	3450×1500×2300	3450×1500×2300	3450×1500×2300
	Low Temperature		L×W×H	mm	3450×1500×2200	3450×1500×2200	3450×1500×2200
Package Weight	Net Weight			kg	3000	3300	3600
	Operation Weight			kg	3800	4100	4400

Note: 1. Motor power equipped for package shall be selected according to shaft power under actual running conditions, shaft power parameters shall be obtained according to compressor selection software.
2. The design is subject to change, therefore the drawings are to be confirmed upon order.
3. Oil cooling method can be either water cooled or by refrigerant cooling as thermo-siphon; SRMTec recommends water/glycol cooling.
4. ECO means the package with economizer
5. Capacity calculation: H/T +5/+35°C; M/T -15/+35°C; L/T -35/+35°C, suction superheat 5K, 2960rpm/50Hz

20 series single stage compressor package parameters

Item			Unit	20 Series			
Compressor	Model			SRM- 20S	SRM- 20M	SRM- 20L	SRM- 20LL
	Displacement		m^3/h	850	1100	1270	1496
	Mechanical Capacity Control			Step- less capacity control: 10~100%			
Refrigerant	Type			R717	R717	R717	R717
Refrigeration Capacity	H/T Application		kW	1015	1313	1516	1786
	M/T Application		kW	459	598	691	825
	L/T Application (ECO)		kW	208	269	310	380
Motor	H/T Application		kW	180	220	250	280
	M/T Application		kW	180	220	250	260
	L/T Application (ECO)		kW	160	200	220	220
	Power supply			3P, 380V, 50Hz			
	R.P.M		r/min	2960			
	Rotational direction			Face with motor shaft side: anti- clockwise			
Oil Pump	Model			GG4195	GG4195	GG4195	GG4195
	Motor power		kW	0.75	0.75	0.75	0.75
Refrigeration Oil	Grade			refer to SRMTec recommendation			
	Standard						
	Charge volume		kg	360	360	360	360
External Connecting Pipe Size	Suction pipe		mm	DN150	DN150	DN150	DN150
	Discharge pipe	High/medium temperature	mm	DN100	DN100	DN100	DN125
		Low temperature	mm	DN65	DN80	DN80	DN80
	Economizer Liquid In/and Pipe		mm	DN50	DN50	DN50	DN50
	Safety Valve Pipe		mm	DN32	DN32	DN32	DN32
	Cooling Method	Working Medium Cooled: Liquid Inlet Tube	mm	DN50	DN50	DN50	DN50
		Working Medium Cooled: Gas Outlet Pipe	mm	DN80	DN80	DN80	DN80
		Working Medium Cooled: Working Medium Consumption Amount	kg/h	506	506	506	506
		Water Cooled: Water Inlet Pipe	mm	DN80	DN80	DN80	DN80
		Water Cooled: Water Outlet Pipe	mm	DN80	DN80	DN80	DN80
		Water Cooled: Cooling Water Amount	m^3/h	32	32	32	32
		Water Cooled: pressure drop	bar	≤0.88	≤0.88	≤0.88	≤0.88
Overall Dimension	High Temperature	L×W×H	mm	3750×1700×2600	3750×1700×2600	3750×1700×2600	3750×1700×2600
	Low Temperature	L×W×H	mm	3650×1650×2520	3650×1650×2520	3650×1650×2520	3650×1650×2520
Package Weight	Net Weight		kg	4200	4500	4800	5200
	Operation Weight		kg	5200	5500	5800	6200

Note: 1. Motor power equipped for package shall be selected according to shaft power under actual running conditions, shaft power parameters shall be obtained according to compressor selection software.
2. The design is subject to change, therefore the drawings are to be confirmed upon order.
3. Oil cooling method can be either water cooled or by refrigerant cooling as thermo-siphon; SRMTec recommends water/glycol cooling.
4. ECO means the package with economizer
5. Capacity calculation: H/T +5/+35°C; M/T -15/+35°C; L/T -35/+35°C, suction superheat 5K, 2960rpm/50Hz

26 series single stage compressor package parameters

Item				Unit	26 Series			
Compressor	Model				SRM- 26S	SRM- 26M	SRM- 26L	SRM- 26LL
	Displacement			m^3/h	1659	2075	2478	2940
	Mechanical Capacity Control				Step- less capacity control: 10~100%			
Refrigerant	Type				R717	R717	R717	R717
Refrigeration Capacity	H/T Application			kW	1981	2477	2958	3510
	M/T Application			kW	898	1121	1343	1642
	L/T Application			kW	411	517	627	769
Motor	H/T Application			kW	315	400	500	560
	M/T Application			kW	315	355	450	500
	L/T Application (ECO)			kW	250	315	355	450
	Power supply				3P, 380V, 50Hz			
	R.P.M			r/min	2960			
	Rotational direction				Face with motor shaft side: anti- clockwise			
Oil Pump	Model				HJ4195	HJ4195	HJ4195	HJ4195
	Motor power			kW	1.5	1.5	1.5	1.5
Refrigeration Oil	Grade				refer to SRMTec recommendation			
	Standard							
	Charge volume			kg	540	540	540	540
External Connecting Pipe Size	Suction pipe			mm	DN250	DN250	DN250	DN250
	Discharge pipe		High/medium temperature	mm	DN125	DN150	DN150	DN150
			Low temperature	mm	DN80	DN100	DN100	DN125
	Economizer Liquid In/and Pipe			mm	DN50	DN50	DN50	DN50
	Safety Valve Pipe			mm	DN32	DN32	DN32	DN32
	Cooling Method	Working Medium Cooled	Liquid Inlet Tube	mm	DN65	DN65	DN65	DN65
			Gas Outlet Pipe	mm	DN100	DN100	DN100	DN100
			Working Medium Consumption Amount	kg/h	903	903	903	903
		Water Cooled	Water Inlet Pipe	mm	DN100	DN100	DN100	DN100
			Water Outlet Pipe	mm	DN100	DN100	DN100	DN100
			Cooling Water Amount	m^3/h	50	50	50	50
			pressure drop	bar	≤0.88	≤0.88	≤0.88	≤0.88
Overall Dimension	High Temperature		L×W×H	mm	4900×2150×3550	4900×2150×3550	4900×2150×3550	4900×2150×3550
	Low Temperature		L×W×H	mm	4900×2150×3550	4900×2150×3550	4900×2150×3550	4900×2150×3550
Package Weight	Net Weight			kg	9000	9500	10000	10500
	Operation Weight			kg	10000	10500	11000	11500

Note: 1. Motor power equipped for package shall be selected according to shaft power under actual running conditions, shaft power parameters shall be obtained according to compressor selection software.
2. The design is subject to change, therefore the drawings are to be confirmed upon order.
3. Oil cooling method can be either water cooled or by refrigerant cooling as thermo-siphon; SRMTec recommends water/glycol cooling.
4. ECO means the package with economizer
5. Capacity calculation: H/T +5/+35°C; M/T -15/+35°C; L/T -35/+35°C, suction superheat 5K, 2960rpm/50Hz

34 series single stage compressor package parameters

Item			Unit	34 Series			
Compressor	Model			SRM- 34S	SRM- 34M	SRM- 34L	SRM- 34LL
	Displacement		m^3/h	3360	4280	5090	6350
	Mechanical Capacity Control			Step- less capacity control: 10~100%			
Refrigerant	Type			R717	R717	R717	R717
Refrigeration Capacity	H/T Application		kW	4011	5110	6076	7581
	M/T Application		kW	1836	2336	2786	3434
	L/T Application		kW	842	1092	1276	1609
Motor	H/T Application		kW	630	800	1000	1250
	M/T Application		kW	560	710	900	1120
	L/T Application (ECO)		kW	500	630	800	1000
	Power supply			3), 380V, 50 Hz or High voltage system			
	R.P.M		r/min	2960			
	Rotational direction			Face with motor shaft side: anti- clockwise			
Oil Pump	Model			HJ4195	HJ4195	HJ4195	HJ4195
	Motor power		kW	1.5	1.5	1.5	1.5
Refrigeration Oil	Grade			refer to SRMTec recommendation			
	Standard						
	Charge volume		kg	1100	1100	1100	1100
External Connecting Pipe Size	Suction pipe		mm	DN350	DN350	DN350	DN350
	Discharge pipe	High/medium temperature	mm	DN150	DN200	DN200	DN200
		Low temperature	mm	DN125	DN125	DN150	DN150
	Economizer Liquid In/and Pipe		mm	DN80	DN100	DN100	DN100
	Safety Valve Pipe		mm	2×DN32	2×DN32	2×DN32	2×DN32
	Cooling Method: Working Medium Cooled	Liquid Inlet Tube	mm	DN80	DN80	DN80	DN80
		Gas Outlet Pipe	mm	DN125	DN125	DN125	DN125
		Working Medium Consumption Amount	kg/h	2188	2188	2188	2188
	Cooling Method: Water Cooled	Water Inlet Pipe	mm	DN125	DN125	DN125	DN125
		Water Outlet Pipe	mm	DN125	DN125	DN125	DN125
		Cooling Water Amount	m^3/h	120	120	120	120
		pressure drop	bar	≤0.88	≤0.88	≤0.88	≤0.88
Overall Dimension	High Temperature	L×W×H	mm	5600×2350×4200	5600×2350×4200	5600×2350×4200	5600×2350×4200
	Low Temperature	L×W×H	mm	5600×2350×4000	5600×2350×4000	5600×2350×4000	5600×2350×4000
Package Weight	Net Weight		kg	14000	14500	15000	15500
	Operation Weight		kg	15500	16000	16500	17000

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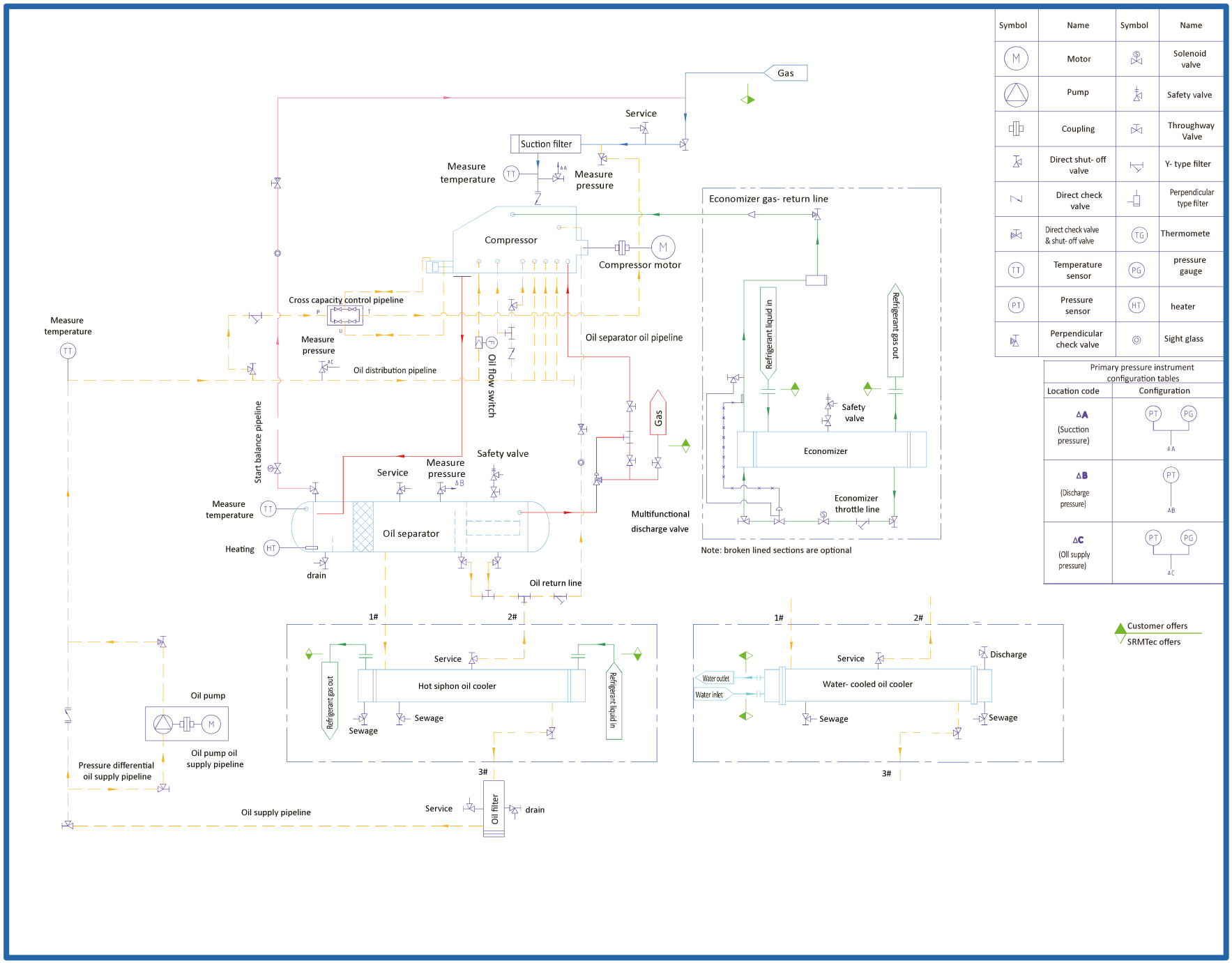
2. The design is subject to change, therefore the drawings are to be confirmed upon order.
3. Oil cooling method can be either water cooled or by refrigerant cooling as thermo-siphon; SRMTec recommends water/glycol cooling.
4. ECO means the package with economizer
5. Capacity calculation: H/T +5/+35°C; M/T -15/+35°C; L/T -35/+35°C, suction superheat 5K, 2960rpm/50Hz

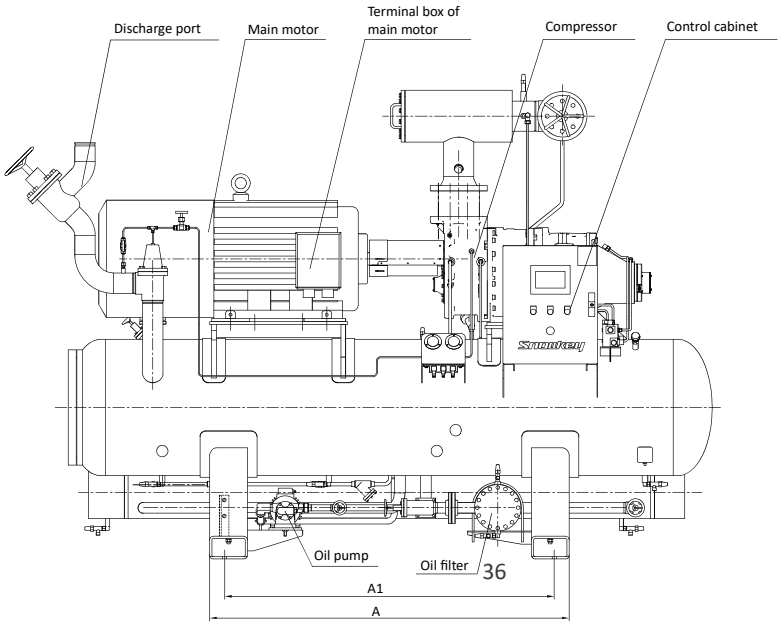
Single stage compressor package PID

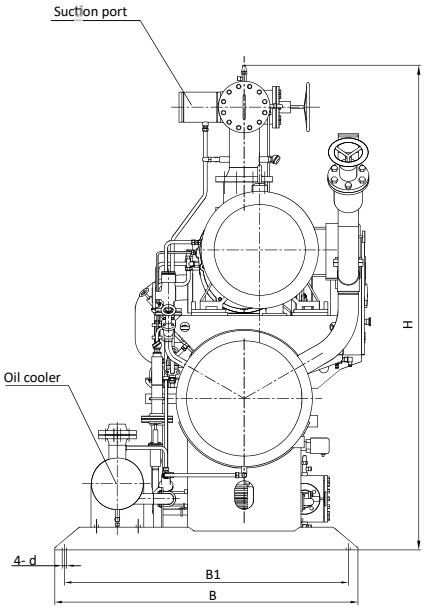


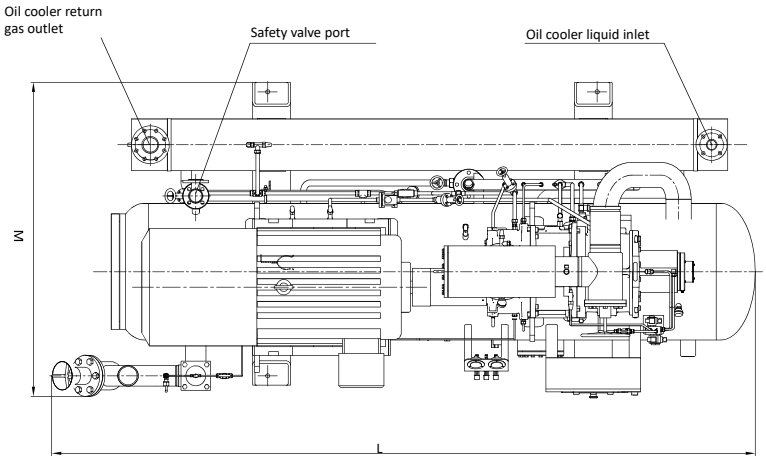
Symbol	Name	Symbol	Name
M	Motor		Solenoid valve
	Pump		Safety valve
	Coupling		Throughway Valve
	Direct shut- off valve		Y- type filter
	Direct check valve		Perpendicular type filter
	Direct check valve & shut- off valve	TG	Thermomete
TT	Temperature sensor	PG	pressure gauge
PT	Pressure sensor	HT	heater
	Perpendicular check valve		Sight glass

Primary pressure instrument configuration tables	
Location code	Configuration
ΔA (Sucction pressure)	PT PG ΔA
ΔB (Discharge pressure)	PT ΔB
ΔC (Oil supply pressure)	PT PG ΔC

Single Stage Compressor Overall Dimension (without economizer, thermo-siphon oil cooler)



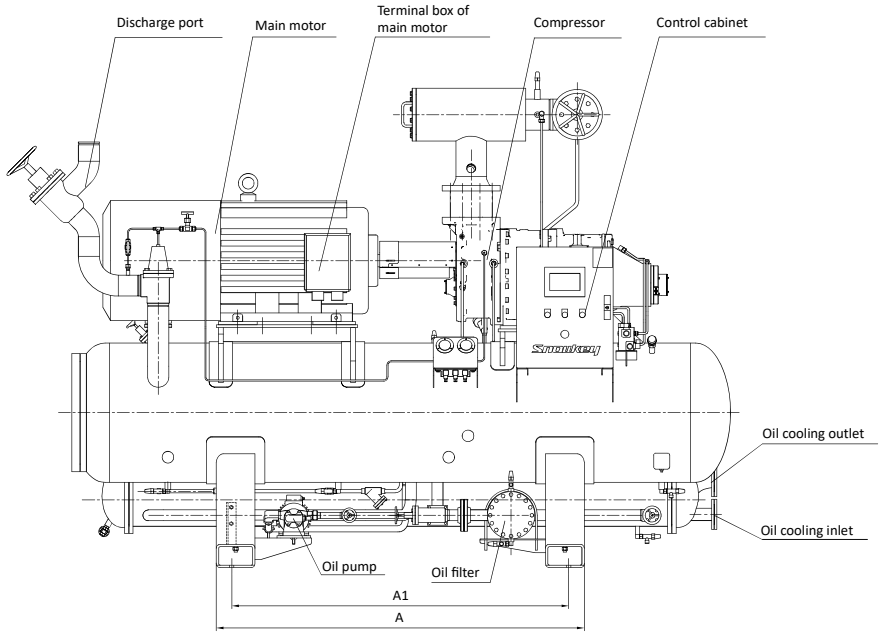


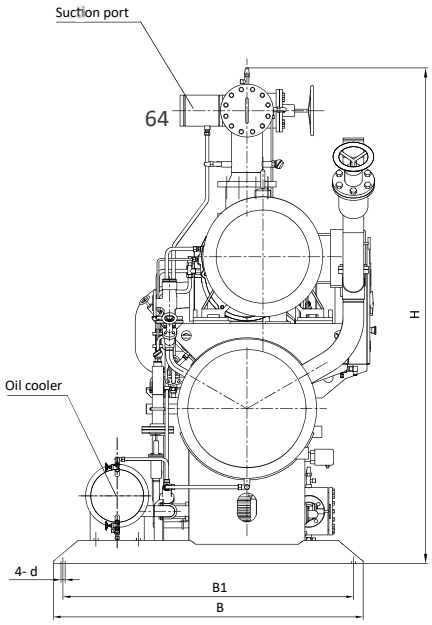


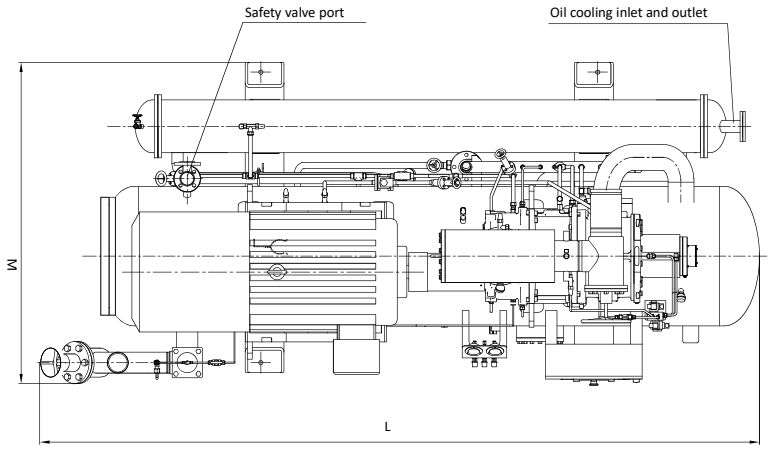
Dimension \ Model		12 Series	16 Series	20 Series	26 Series
Outer Dimension	L	2800	3450	3750	4900
	W	1300	1500	1900	2150
	H	1800	2300	2600	3550
	A	1650	1800	1900	2200
	A1	1490	1640	1740	2040
	B	1300	1400	1600	2000
	B1	1200	1300	1500	1900
	D	ϕ 22	ϕ 22	ϕ 22	ϕ 22

Note: This outline drawing is only for reference, actual dimensions might vary according to actual design.

Single Stage Compressor Overall Dimension (without economizer, water-cooled oil cooler)







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Dimension \ Model		12 Series	16 Series	20 Series	26 Series
Outer Dimension	L	2800	3450	3750	4900
	W	1300	1500	1700	2150
	H	1800	2300	2600	3550
	A	1650	1800	1900	2200
	A1	1490	1640	1740	2040
	B	1300	1400	1600	2000
	B1	1200	1300	1500	1900
	D	ϕ 22	ϕ 22	ϕ 22	ϕ 22

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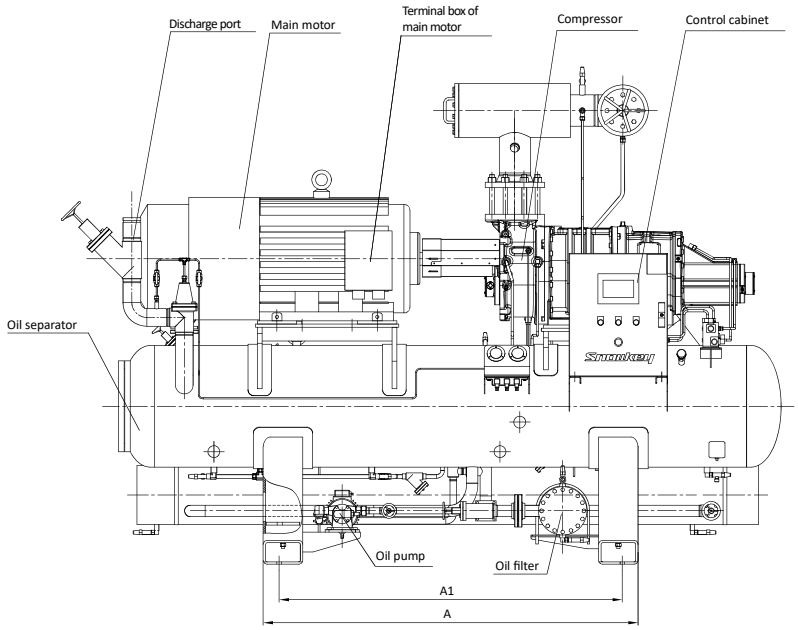
Note: This outline drawing is only for reference, actual dimensions might vary according to actual design.

Single stage compressor overall dimension (with economizer, thermo-siphon oil cooler)



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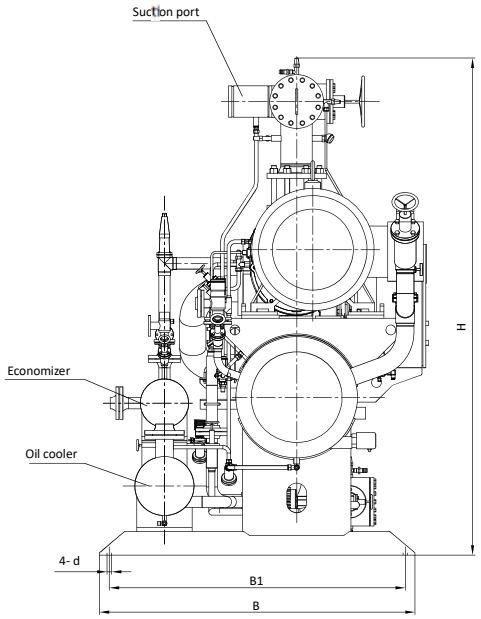

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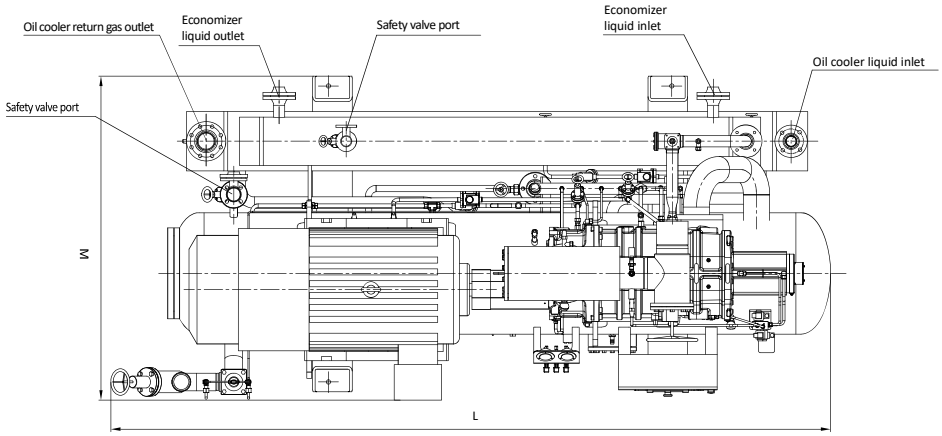
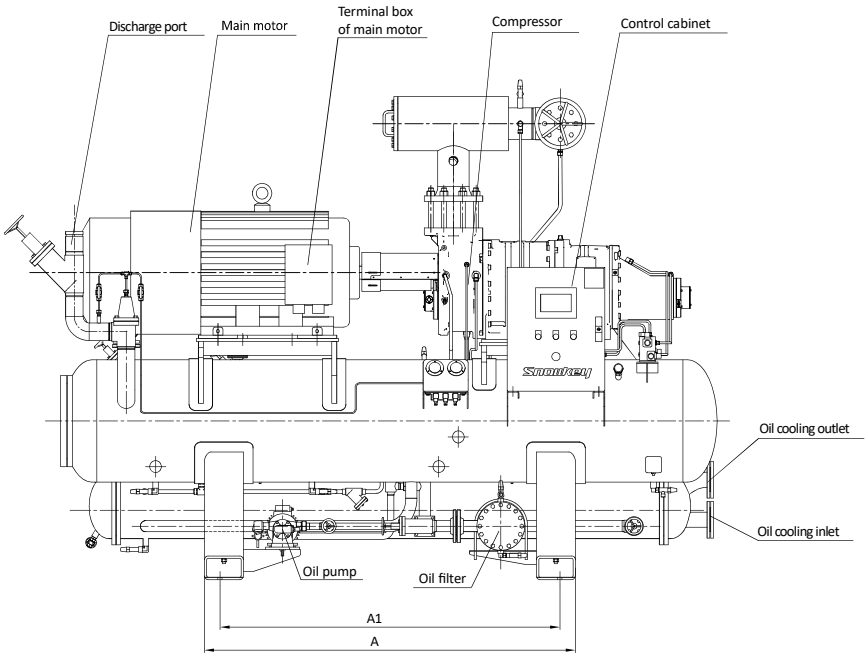
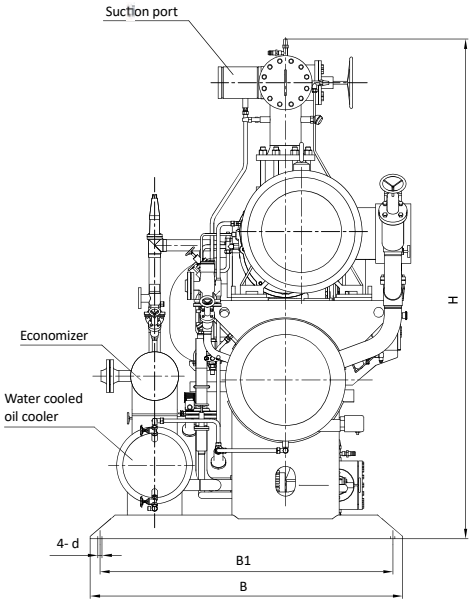


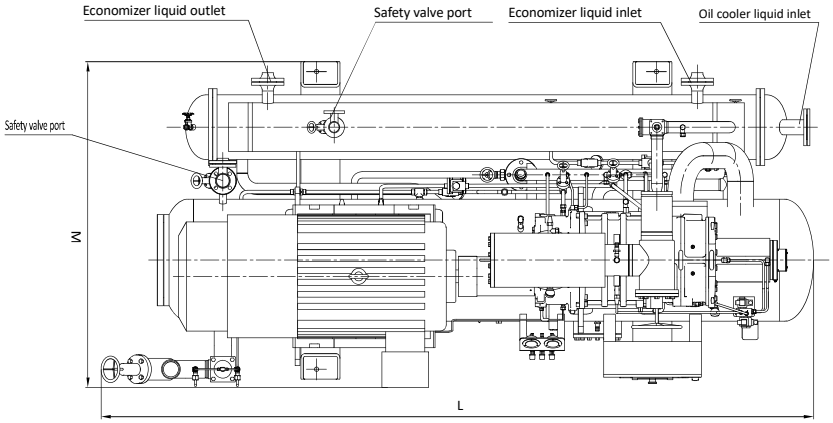
Dimension \ Model		12 Series	16 Series	20 Series	26 Series
Outer Dimension	L	2800	3450	3750	4900
	W	1300	1500	1900	2150
	H	1800	2300	2600	3550
	A	1650	1800	1900	2200
	A1	1490	1640	1740	2040
	B	1300	1400	1600	2000
	B1	1200	1300	1500	1900
	D	ϕ 22	ϕ 22	ϕ 22	ϕ 22

Note: This outline drawing is only for reference, actual dimensions might vary according to actual design.

Single stage compressor overall dimension (with economizer, water cooled oil cooler)



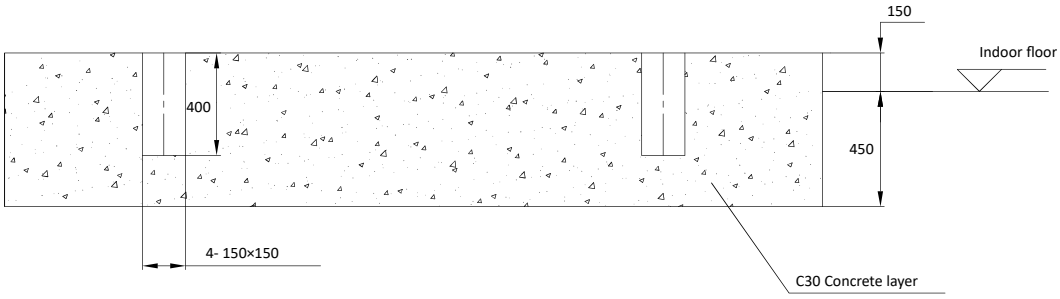


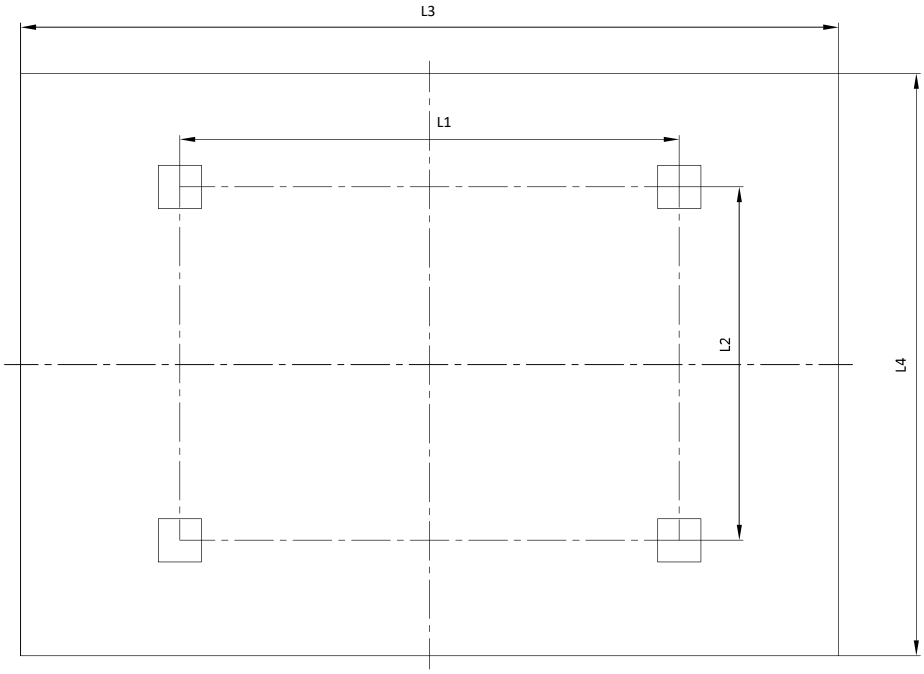


Dimension \ Model		12 Series	16 Series	20 Series	26 Series
outer dimension	L	2800	3450	3750	4900
	W	1300	1500	1700	2150
	H	1800	2300	2600	3550
	A	1650	1800	1900	2200
	A1	1490	1640	1740	2040
	B	1300	1400	1600	2000
	B1	1200	1300	1500	1900
	D	ϕ 22	ϕ 22	ϕ 22	ϕ 22

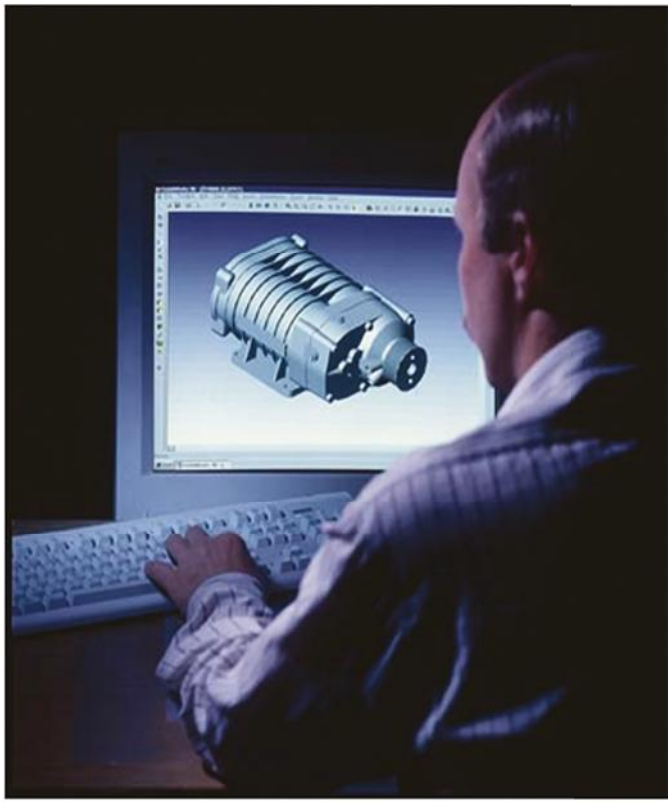
Note: This outline drawing is only for reference, actual dimensions might vary according to actual design.

Compressor Package Foundation





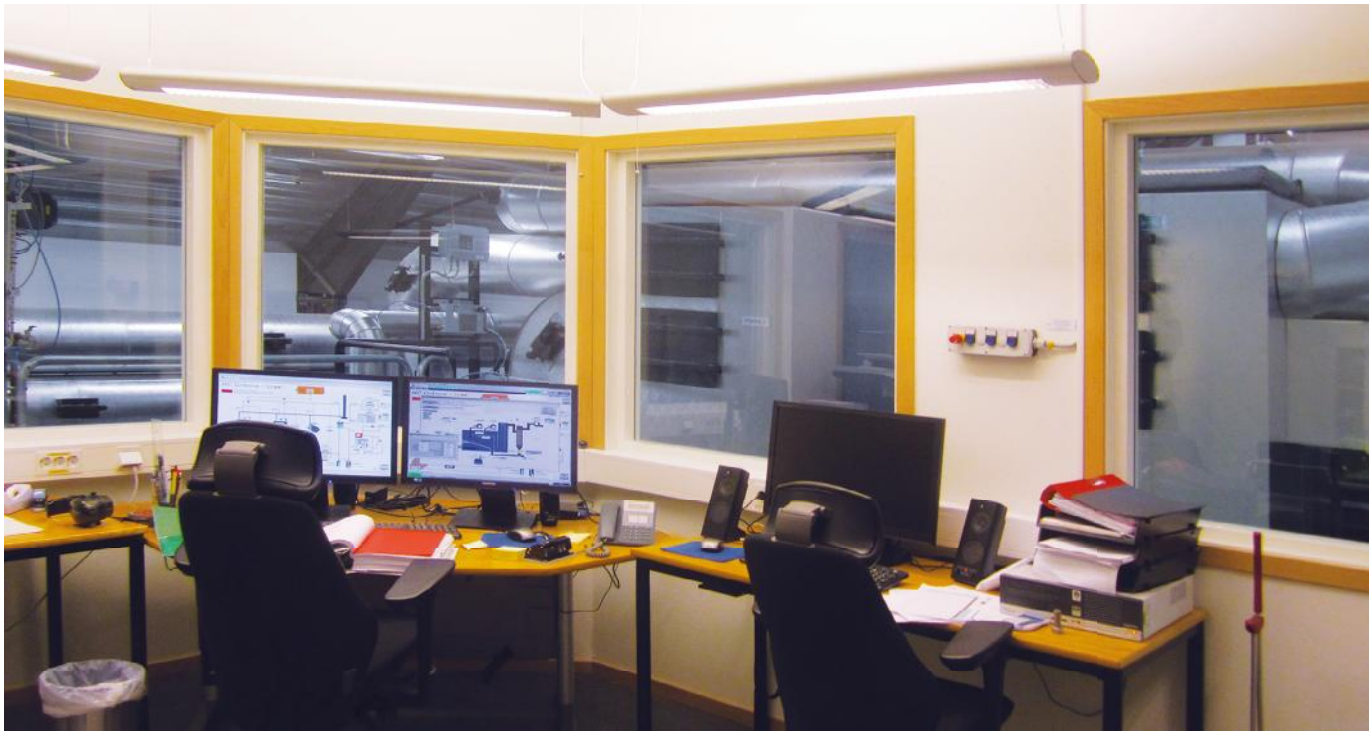
Package model	L1(mm)	L2(mm)	L3(mm)	L4(mm)
12 Series	1490	1200	1940	1650
16 Series	1640	1300	2100	1750
20 Series	1740	1500	2200	1950
26 Series	2040	1900	2500	2300

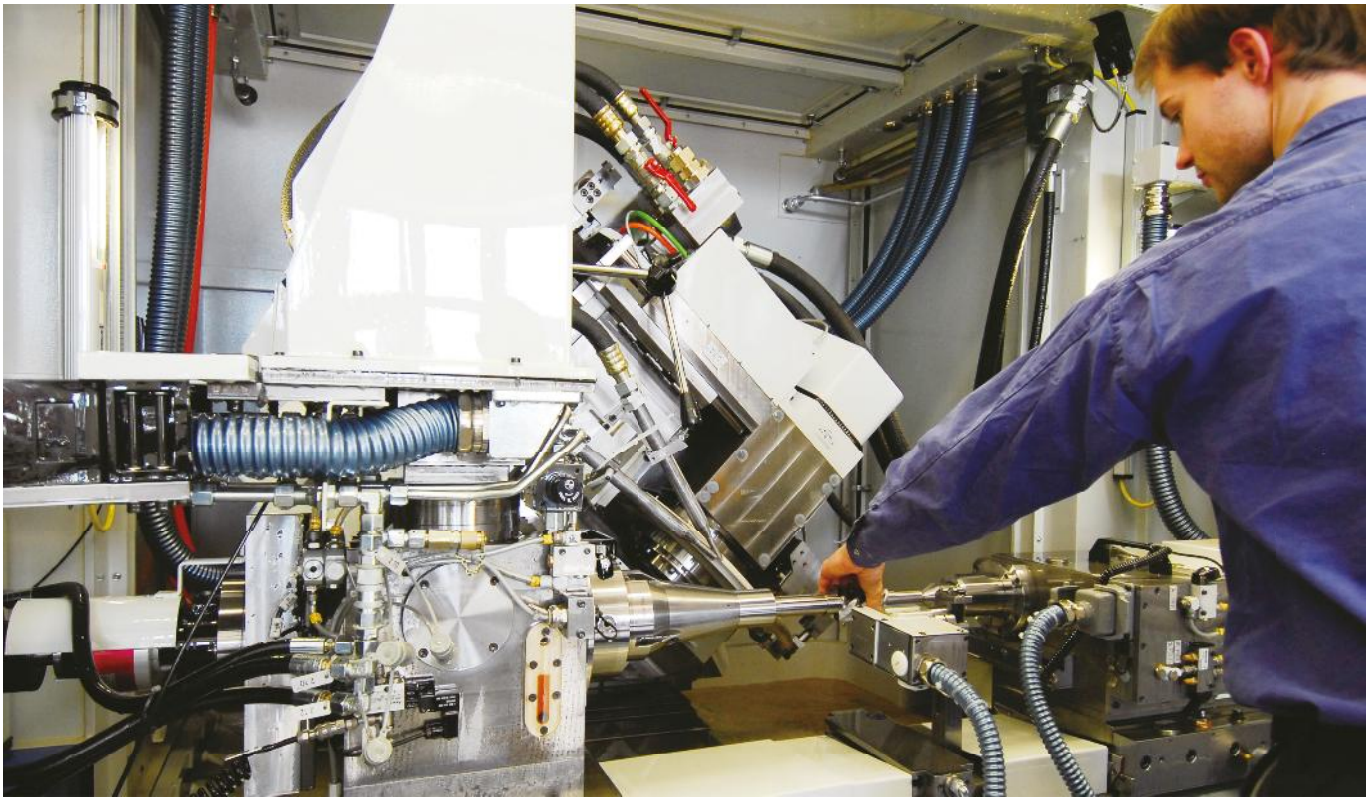


Compressor R&D technology

SRMTEC high- efficient and advanced screw compressors are developed based on SRM latest rotor “i” profile. The successful application of this “i” profile is the outcome of several generations of engineers work. Since the first refrigeration screw compressor was designed and licensed, hundreds of new generations of improvemnets were put into the market

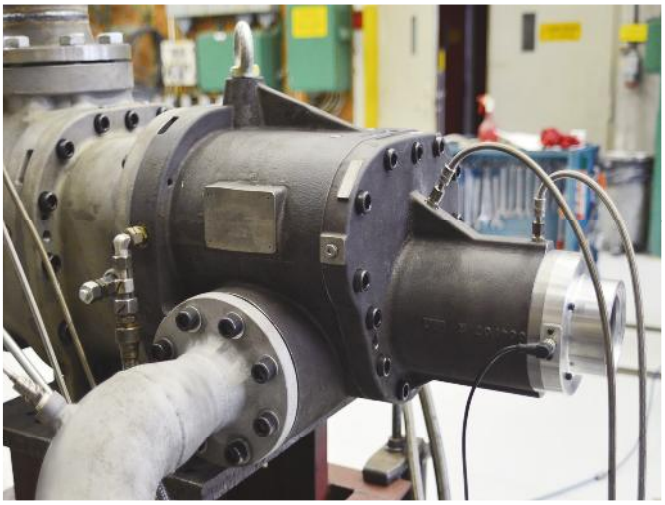
High speed screw compressor is the result of integration of contemporary technologies; it covers the mechanical design and manufacturing, power electronics, materials, automatic control, fluid mechanics, solid mechanics, chemistry and other multi-disciplinary efforts.





Compressor manufacture technology

The nodular iron casting housing has high breakdown pressure and toughness, and is applicable to a wide temperature range. Forged high-quality screw rotor material is selected for high speed and low wear.
The world's most advanced screw compressor machining facility, thorough manufacturing process and strict manufacturing management system as well as the high SRM quality standard together with more than 100 years of engineering experience are combined to produce these reliable and innovative compressors.



Full performance test technology

SRM Group's full performance test centers in locations all over the world feature 4 independent laboratories are used to test compressors and packages with capacities up to 2000 kW.
Tests are carried out in accordance with international standards. All parameters like capacity, efficiency, sound emmission, vibration and pulsation are carried out under real-life conditions.
Continuous improvement and innovation is in the genes of SRM since 1908.

7°C AC cooling water

The installation of central air- conditioning systems, comfort air conditioning applications in shopping malls, railway stations, airports, ships, hotels, office buildings, public places, which is not only conducive to people's physical and mental health, but it can also improve the efficiency of production and work.

0.5°C concrete cooling

When pouring large volumes of concrete it is neccessary to absorb heat of the chemical reaction for smooth curing to prevent cracks and improve the strength of the concrete.

- 10°C ice storage project

In making full use of hydro-power, gas and other resources during low demand periods saves operation cost. The application of dynamic or static ice storage is a clever way to operate facilities continuously and to store energy temporarily.

- 15°C Ice and ice sculptures

Ice produced as flake, plate, block or slurry ice is widely used in many processes like fish and seafood production, chemical and pharmaceutical industry. But it also brings joy to our life in leisure parks and by sculptures.

- 25°C Pharmaceutical and chemical industry

Pharmaceutical and chemical processes depend on precise cooling for high quality products.

- 35°C Low temperature cold storage

Food industry is one of the most important applications for refrigeration technology. Refrigeration plays a decisive role in food processing, cold storage, preservation. The invention and application of screw compressor, not only promoted the development of food industry, but also promoted the development and utilization of food resources.