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The technical parameters shall be subject to order contract or technical appendix of the contract.

**RefComp**

## Screw Compressor

SW5L Series Semi-hermetic Screw Compressor



Advanced  
Screw  
Compressor  
Advanced  
Technology

Originated from Italy,  
advanced screw &  
reciprocating compressor  
technologies.

Global Service Hotline  
**400-109-6660**



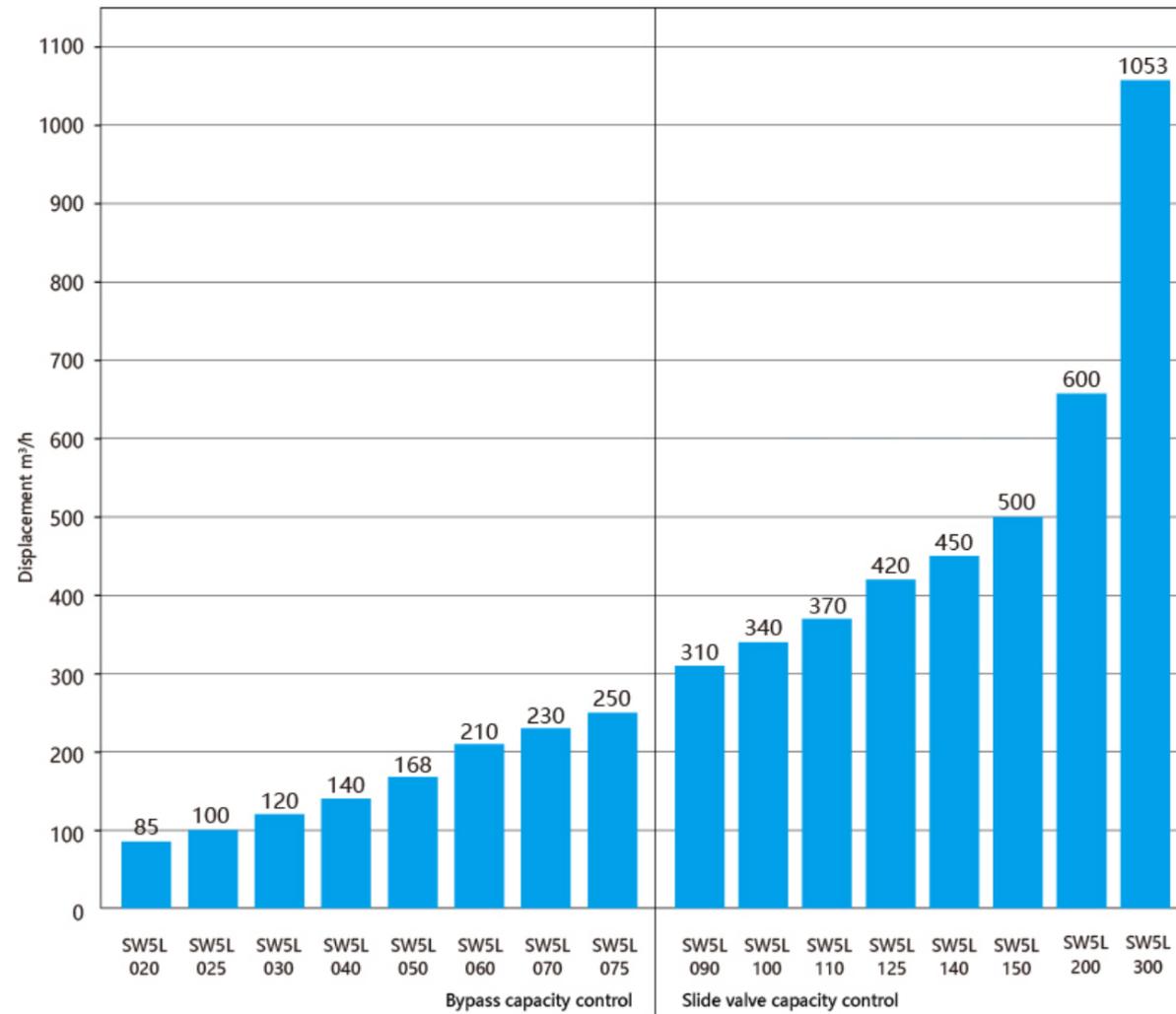
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## Product Profile

The SW5L series is the latest generation of semi-hermetic low temperature screw compressors, with a discharge range of 85-500m<sup>3</sup>/h (@2960rpm) power ranging from 20 to 150HP. Compatible with various green refrigerants including R507A, R404A, R448A and R449A, the series is widely used in ice storage projects, food processing and industrial freezing sectors. Ensuring the stable system and economical factors, the SW5L series is the ideal choice for applications that prioritize energy saving and emission reduction, as well as for commercial and industrial uses with high refrigeration quality requirements.

### Discharge Volume Distribution Chart



Note: The discharge volume is the theoretical number based on a speed of 2960 rpm.

## Product Features

### Efficient Rotor Design

The SRM's latest rotor design offers superior efficiency and operational stability compared to existing designs, significantly enhancing the compressor's cooling efficiency.

### High-Speed Variable Frequency Design

High-strength mechanical structure and high-precision bearings ensure the compressor operates efficiently and reliably at high speeds over the long term.

### Adjustable Internal Volume Ratio

All necessary components for the oil circuit (from oil separator to compressor) are provided as standard supplies. Additionally, all matching oil separators and oil coolers are also available.

### Low Vibration and Noise

Minimal vibration and no exhaust pulsation, hence no need for vibration dampers and flexible pipes.

### High Efficiency and Easy Maintenance

By using an economizer (ECO) cycle that increases the refrigerant liquid's superheat, the cycle efficiency (COP) can be further improved;  
Oil pressure-driven slide valve control allows the compressor to have high compression efficiency at partial loads.

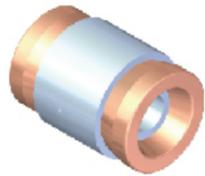
### Comprehensive Software and Documentation Support

For other refrigeration system component requirements, Refcomp offers optional configurations, including oil separators, oil coolers, and economizers.

## Structural Diagram

### Compressor Body

- High-strength metal engine body, designed to withstand pressures up to 28 bar.
- Low-pressure drop intake air channel design minimizes intake resistance while ensuring adequate cooling of the motor.
- The central straight-through air channel design reduces friction losses and exhaust losses.
- Highly integrated with temperature, pressure sensors, oil flow switches, oil pressure differential switches, oil circuit shutoff valves, and other components, effectively enhancing the equipment's level of intelligence.
- The built-in oil circuit design, equipped with an external oil cooler interface, offers simple and convenient installation, and allows for a wider range of controllable oil thermal loads.



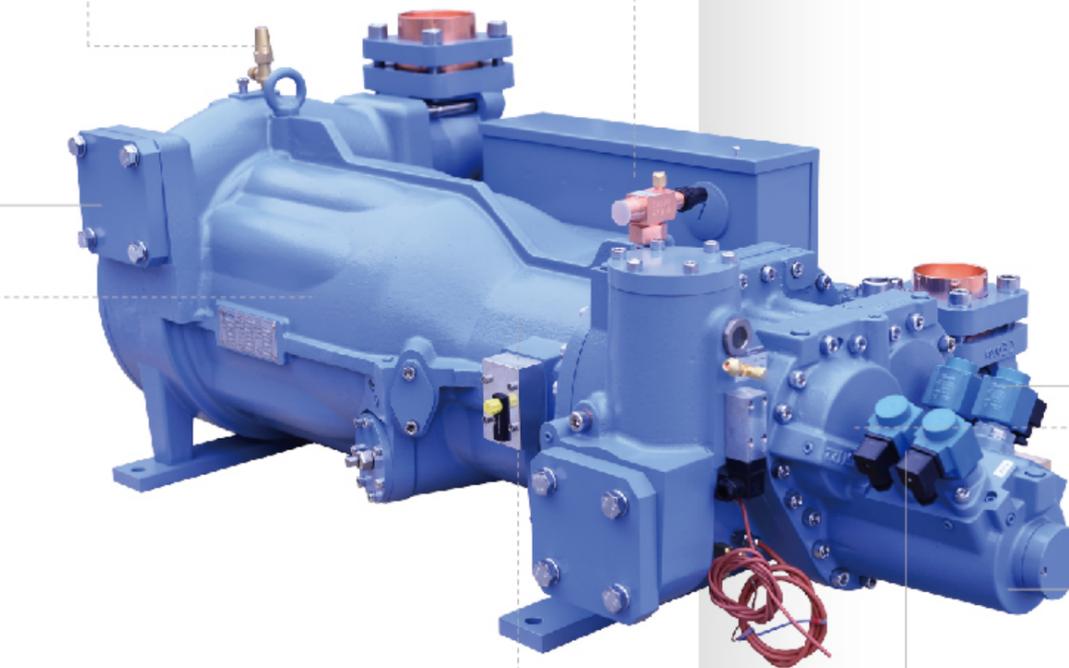
### Motor

- Uses a partial winding or Y-Δ start, low starting current, and low operating energy consumption.
- Capable of being equipped with a variable frequency motor to achieve vector control.
- Special custom materials are compatible with a variety of refrigerants including R404A, R507A, R290, and R410A.



### Suction filter

- Internal precision intake filter effectively filters out impurities from the refrigerant gas and protects the motor.
- Compact structure, easy to replace.



### Rotor

- Equipped with cutting-edge SRM rotor profiles, excellent tooth ratio, effectively improving refrigeration efficiency.
- High rigidity screw rotors are coaxially designed with the motor rotor, ensuring stable operation of the compressor and a compact structure.
- The processing achieves micrometer precision, tight meshing, uniform force distribution, and a long service life.

### Motor protection

- Equipped with the INT69 SNY motor protection module and six series-connected PTC thermistors.
- Dynamic monitoring and tracking of system operation information to achieve predictable alerts and safety protection.



### Cooling capacity control

- The refrigeration capacity can be adjusted according to the operating load, enabling stepped or variable capacity regulation (for SW5L090-150 series).
- SW5L020/025/030/040/050/060/070/075 models use bypass type refrigeration capacity control, while SW5L090/100/110/125/140/150 models use slide valve type refrigeration capacity control.



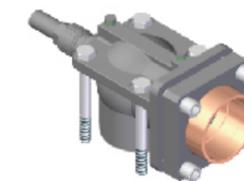
### Bearings

- High wear-resistant multi-bearing combination that can withstand high loads and ensure a long service life.
- High wear-resistant rolling elements and special profile rolling paths, designed for a lifespan of 80,000 hours.



### Shut-off valve

- Built-in discharge check valve, low resistance, effectively prevents refrigerant backflow when the machine is shut down.
- The stop valve is rotatable, easy to install, and flexible.
- Shut-off valves can be installed on both sides, offering more flexibility (for SW5L090-150 series).



### VI (Volume ratios)

- The VI adjustable technology allows for manual or automatic adjustment, effectively improving efficiency under various operating conditions.



## Models Description

Compressor		S	W	5	L	110
Type of compressor						
S	S- semi-hermetic compressor					
Series						
W	W series compressor					
Version						
5	5-The "5" version without internal oil separator.					
Specification						
L	Motor of low temperature compressor					
Rated power						
110	110HP, When the power is less than 100HP, add a zero before the code.					

(1) The model number ending with the letter "E" indicates a compressor that uses POE oil.

## Product Overview



SW5L020/025/030



SW5L040/050



SW5L060/070/075



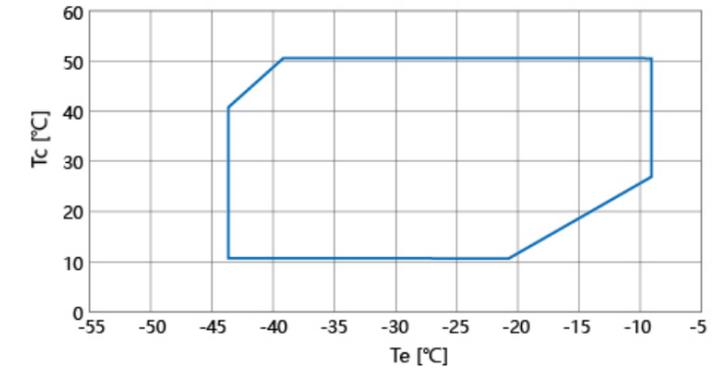
SW5L090/100/110



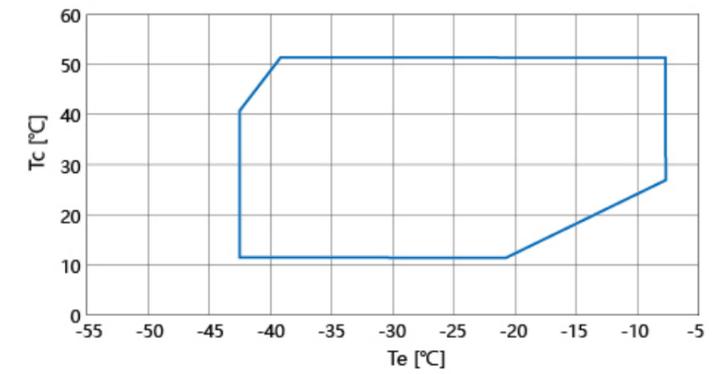
SW5L125/140/150

## Application Range

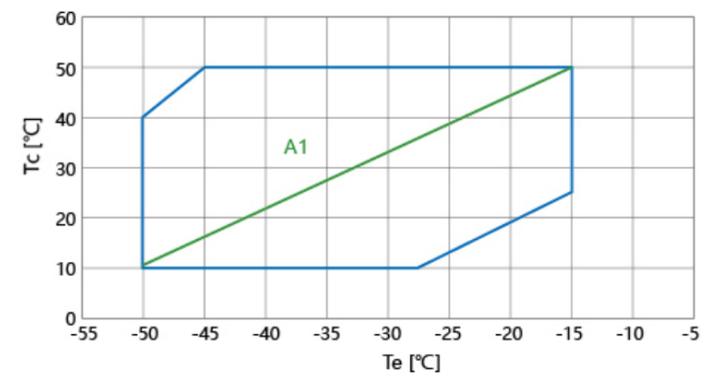
### R448A



### R449A



### R404A/R507A



Operation at full load under 50Hz  
 10K suction superheat  
 A1 area = Oil cooler should be installed

### Technical Parameters

SW5L Series Compressors		020	025	030	040	050	060	070	075	
Motor Nominal Power	HP/kW	25/18.5	30/22	35 /26	40/30	50/37	60/45	70/52	75/55	
Displacement 50/60[Hz]	m³/h	85/102	100/120	120/144	140/168	168/202	210/252	230/276	250/300	
Weight	kg	190	200	210	245	250	365	370	375	
Inner diameter of discharge pipe Ø	mm / inch	42/ 1 5/8"	42/ 1 5/8"	42/ 1 5/8"	42/ 1 5/8"	42/ 1 5/8"	54/ 2 1/8"	54/ 2 1/8"	54/ 2 1/8"	
Inner diameter of suction pipe Ø	mm / inch	54/ 2 1/8"	54/ 2 1/8"	54/ 2 1/8"	54/ 2 1/8"	54/ 2 1/8"	80/ 3 1/8"	80/ 3 1/8"	80/ 3 1/8"	
Oil Line Connector	mm / inch	3/8"SAE					Ø22/M26×1.5			
Capacity Regulation	Step: Full Load - 75% - 50%									
Protection Module	INT69SNY									
Standard Motor(1)	400V/3/50Hz or 460V/3/60Hz									
PW Partial Winding Start Current	A	140/215	175/271	200/308	277/398	303/406	262/422	280/459	351/580	
Star/Delta Start Current Star/Delta(2)	A	71/215	90/271	103/308	133/398	135/406	139/422	159/459	193/580	
Maximum Operating Current(2)	A	42	49	59	70	80	105	120	135	

SW5L Series Compressors		090	100	110	125	140	150	200	300	
Motor Nominal Power	HP/kW	90/66	100/75	110/82	125/90	140/105	150/112	200/150	300/225	
Displacement 50/60[Hz]	m³/h	310/372	340/408	370/444	420/504	450/540	500/600	660/792	1053/1264	
Weight	kg	505	510	515	680	690	700	1606.7	1100	
Inner diameter of discharge pipe Ø	mm / inch	67/ 2 5/8"	67/ 2 5/8"	67/ 2 5/8"	80/ 3 1/8"	80/ 3 1/8"	80/ 3 1/8"	80/ 3 1/8"	104.8/ 3 1/8"	
Inner diameter of suction pipe Ø	mm / inch	92/ 3 5/8"	92/ 3 5/8"	92/ 3 5/8"	104.8/ 4 1/8"	104.8/ 4 1/8"	104.8/ 4 1/8"	104.8/ 4 1/8"	134.8/Ø133	
Oil Line Connector	mm	Ø22/M26×1.5						Ø33.7/1 3/16"		
Capacity Regulation	Graded: full load -75%-50%-25% Stepless: full load -25%							step: 100%-75%-50%-min% None :100%-min%		
Protection Module	INT69SNY							INT69SNY		
Standard Motor(1)	400V/3/50Hz or 460V/3/60Hz							400V/3/50Hz		
PW Partial Winding Start Current	A	539/795	600/885	635/953	584/876	770/1155	770/1155	483	833	
Star/Delta Start Current Star/Delta(2)	A	265/795	295/885	318/953	276/876	354/1155	354/1155	1450	2500	
Maximum Operating Current(2)	A	142	154	170	185	200	220	335	580	

Note:  
 (1) Voltage allowable deviation range ±10%  
 (2) Based on Refcom selection software

### Performance Parameters

SW5L	R404A/R507A					
	Te=-15°C; Tc=30°C			Te=-20°C; Tc=20°C		
	Q <sub>0</sub> [kW]	Pa [kW]	COP	Q <sub>0</sub> [kW]	Pa [kW]	COP
SW5L020	54.5	19.8	2.75	50.8	16.4	3.1
SW5L025	63.3	22.6	2.8	58.9	18.6	3.17
SW5L030	76.3	27	2.83	71.1	22.3	3.2
SW5L040	88.4	29.4	3	82.3	24.3	3.39
SW5L050	103.3	34.1	3.03	96.2	28.1	3.42
SW5L060	123.4	41.5	2.97	115	34.2	3.36
SW5L070	136.8	45.1	3.03	127.4	37.2	3.43
SW5L075	151.5	49.5	3.06	141.2	40.8	3.46
SW5L090	192.6	62.9	3.06	179.4	51.9	3.46
SW5L100	210.4	68.7	3.06	196	56.7	3.46
SW5L110	227.3	73.4	3.09	211.7	60.6	3.49
SW5L125	263.2	82	3.21	245.2	67.6	3.63
SW5L140	283.3	87.4	3.24	263.9	72.1	3.66
SW5L150	320.7	97.2	3.3	298.7	80.2	3.73

## Product Supply

Standard configuration					
No.	Accessories	SW5L 020-050	SW5L 060-075	SW5L 090-110	SW5L 125-150
1	Compressor body	✓	✓	✓	✓
2	Stepped capacity control assembly	✓	✓	✓	✓
3	400V±10%-3-50Hz / 460V±10%-3060Hz Motor	✓	✓	✓	✓
4	IP54 terminal box	✓	✓	✓	✓
5	Electrical accessories, 230V-1-50/60Hz Standard voltage	✓	✓	✓	✓
6	Motor with 6 internal PTC temperature sensors	✓	✓	✓	✓
7	PTC Discharge temperature sensor	✓	✓	✓	✓
8	Electrical protection module INT69SNY (Monitors motor and discharge temperature, motor rotation direction, phase failure)	✓	✓	✓	✓
9	Internal safety valve	✓	✓	✓	✓
10	Check valve	✓	✓	✓	✓
11	Suction shut-off valve	✓	✓	✓	✓
12	Discharge shut-off valve	✓	✓	✓	✓
13	Suction filter	✓	✓	✓	✓
14	Rubber vibration damper	✓	✓	✓	✓
15	Replaceable oil filter		✓	✓	✓
16	Oil inlet connector	✓	✓	✓	✓
17	Oil sight glass		✓	✓	✓
18	Manual Vi adjustment device			✓	✓
19	Oil flow switch		✓	✓	✓
20	Oil shut-off valve		✓	✓	✓
21	Oil shut-off sensor		✓	✓	✓
22	Nitrogen purging	✓	✓	✓	✓

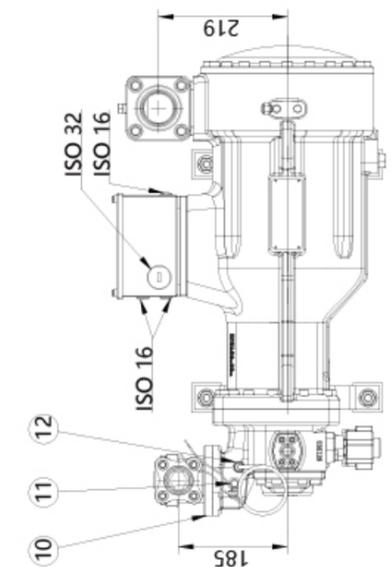
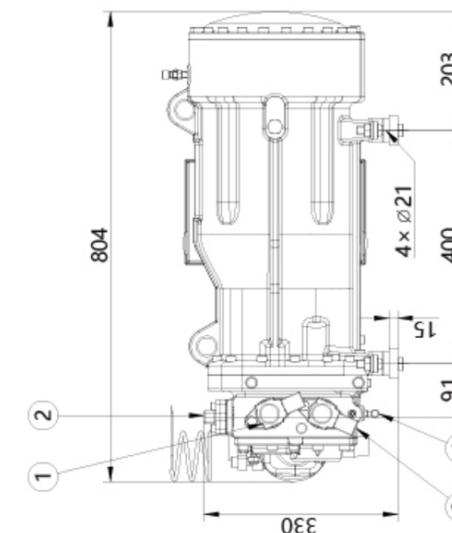
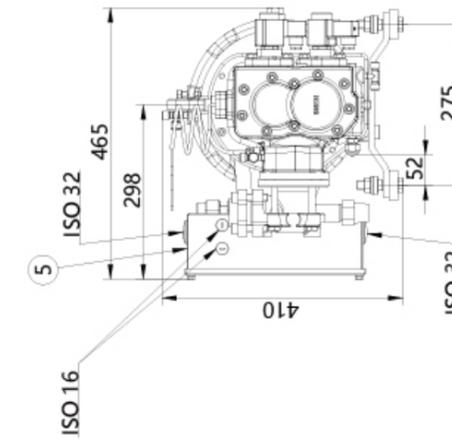
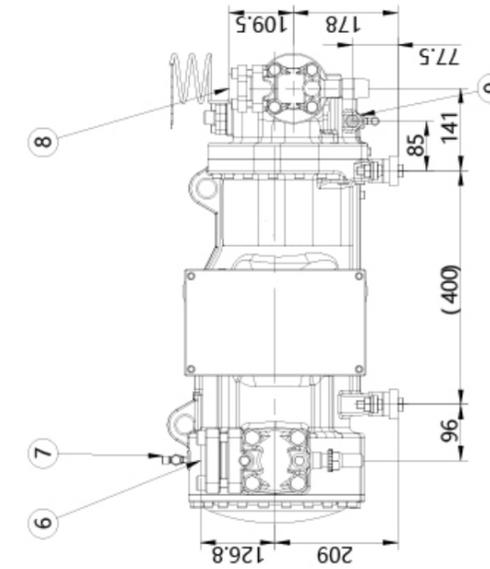
  

Optional configurations					
No.	Optional configurations	SW5L 020-050	SW5L 060-075	SW5L 090-110	SW5L 125-150
1	Special voltage motor	✓	✓	✓	✓
2	Automatic Vi regulation device			✓	✓
3	Capacity Displacement Sensor			✓	✓
4	Pressure differential switch		✓	✓	✓
5	Liquid interjection connector			✓	✓
6	Economical connector with check valve	✓	✓	✓	✓
7	Electrical accessories Different from Standard Voltage	✓	✓	✓	✓
8	Lubricating oil	✓	✓	✓	✓
9	External oil circuit (including oil flow switch, oil filter, etc.)	✓			

Note: 1. \*✓\* indicates available; 2. If optional parts are required, please specify when ordering.

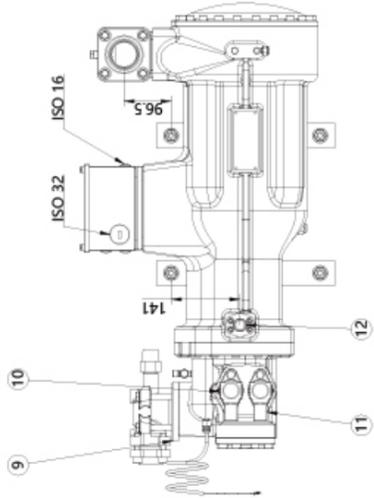
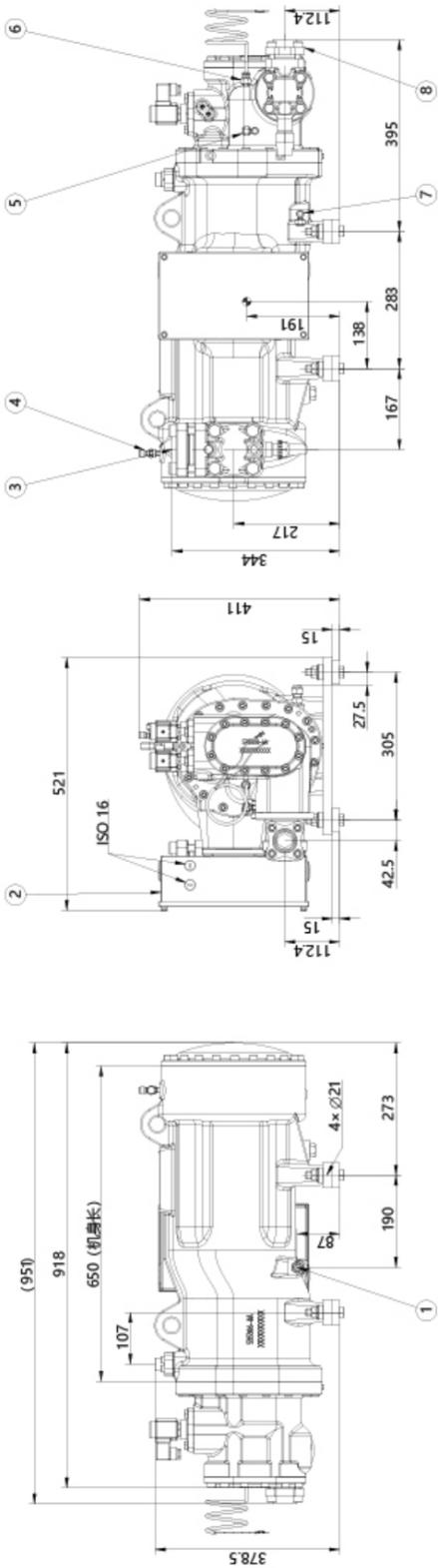
## Dimension Diagram

SW5L020\_025\_030



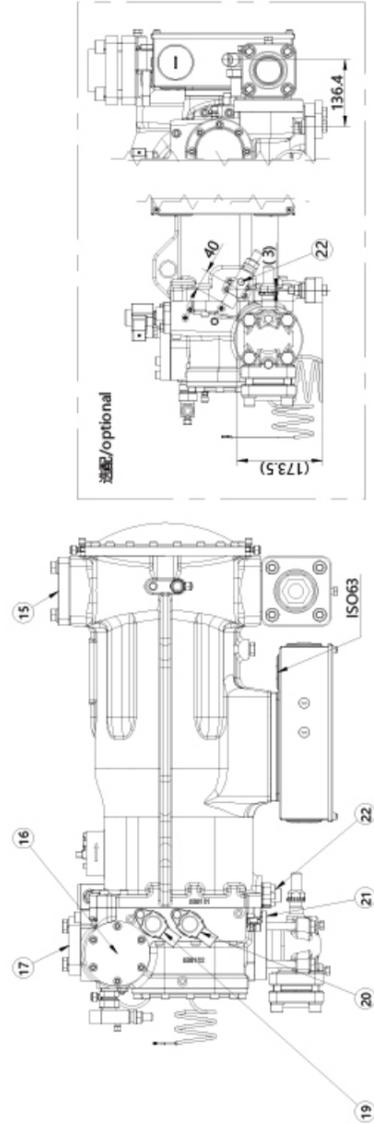
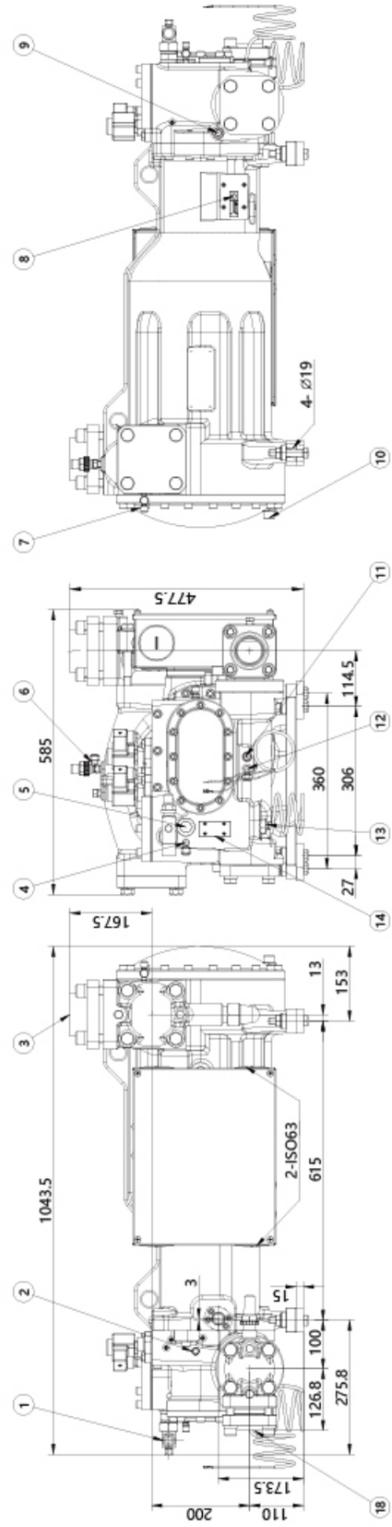
- Key:
- 01. 75% cooling capacity control solenoid valve
  - 02. economizer connection Ø16
  - 03. 50% cooling capacity control solenoid valve
  - 04. oil pressure connection 1/4" SAE-Flare
  - 05. terminal box
  - 06. suction shut-off valve Ø54 (2-1/8")
  - 07. low pressure connection 1/4" SAE-Flare
  - 08. discharge shut-off valve Ø42 (1-5/8")
  - 09. oil circuit connection 3/8" SAE
  - 10. check valve
  - 11. high pressure connection 1/4" SAE-Flare
  - 12. discharge temperature sensor 1/8" NPT PTC 140°C

SW5L040\_050



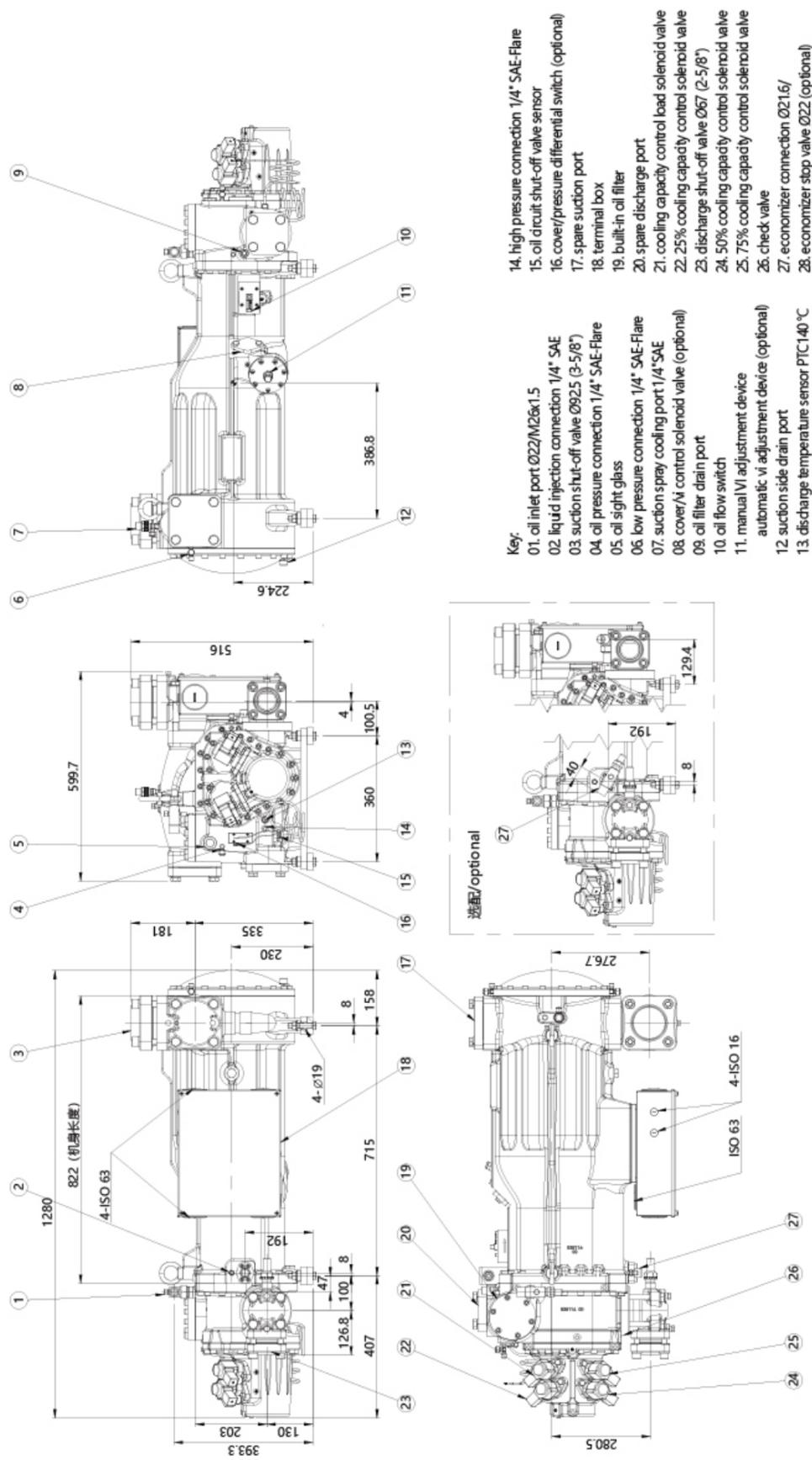
- Key:
- 01. oil circuit connection 3/8" SAE
  - 02. terminal box
  - 03. suction shut-off valve Ø54 (2-1/8")
  - 04. low pressure connection 1/4" SAE-Flare
  - 05. high pressure connection 1/4" SAE-Flare
  - 06. discharge temperature sensor 1/8" NPT PTC140°C
  - 07. oil pressure connection 1/4" SAE-Flare
  - 08. discharge shut-off valve Ø42 (1-5/8")
  - 09. check valve
  - 10. 50% cooling capacity control solenoid valve
  - 11. 75% cooling capacity control solenoid valve
  - 12. economizer connection Ø21.6/ economizer shut-off valve connection Ø22 (optional)

SW5L060\_070\_075



- Key:
- 01. oil inlet port Ø22/M26x1.5
  - 02. liquid injection connection 1/4" SAE
  - 03. suction shut-off valve Ø80 (3-1/8")
  - 04. oil pressure connection 1/4" SAE-Flare
  - 05. oil sight glass
  - 06. suction spray cooling port 1/4" SAE-Flare
  - 07. low pressure connection 1/4" SAE-Flare
  - 08. oil flow switch
  - 09. oil filter drain port
  - 10. suction side drain port
  - 11. discharge temperature sensor PTC 140 °C
  - 12. high pressure connection 1/4" SAE-Flare
  - 13. oil circuit shut-off valve sensor
  - 14. cover/ pressure differential switch (optional)
  - 15. spare suction port
  - 16. internal oil filter
  - 17. spare discharge port
  - 18. discharge shut-off valve Ø54 (2-1/8")
  - 19. 75% cooling capacity control solenoid valve
  - 20. 50% cooling capacity control solenoid valve
  - 21. check valve
  - 22. economizer shut-off valve Ø22 (optional)

SW5L090\_100\_110



SW5L125\_140\_150

