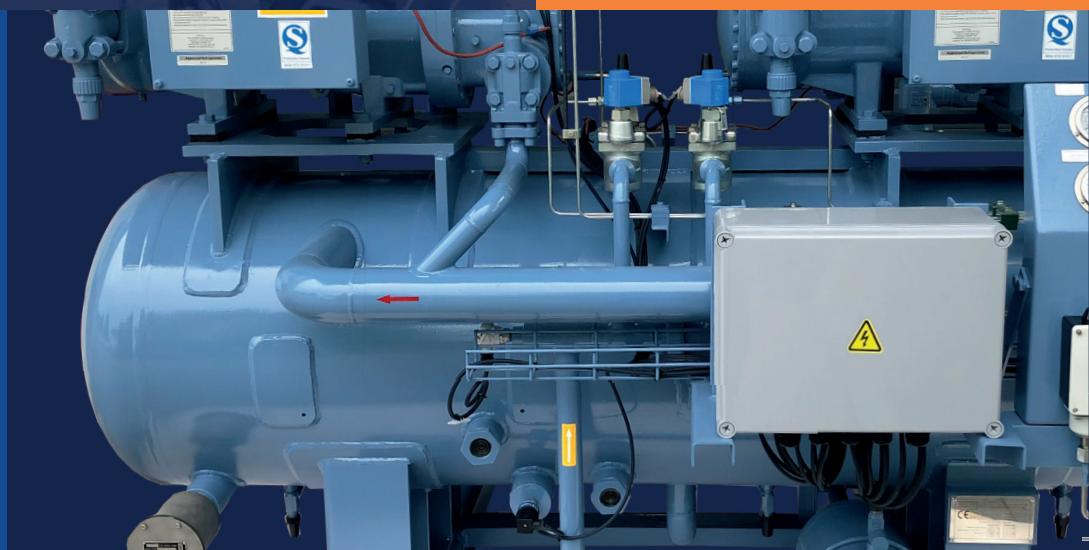


# SRM TEC

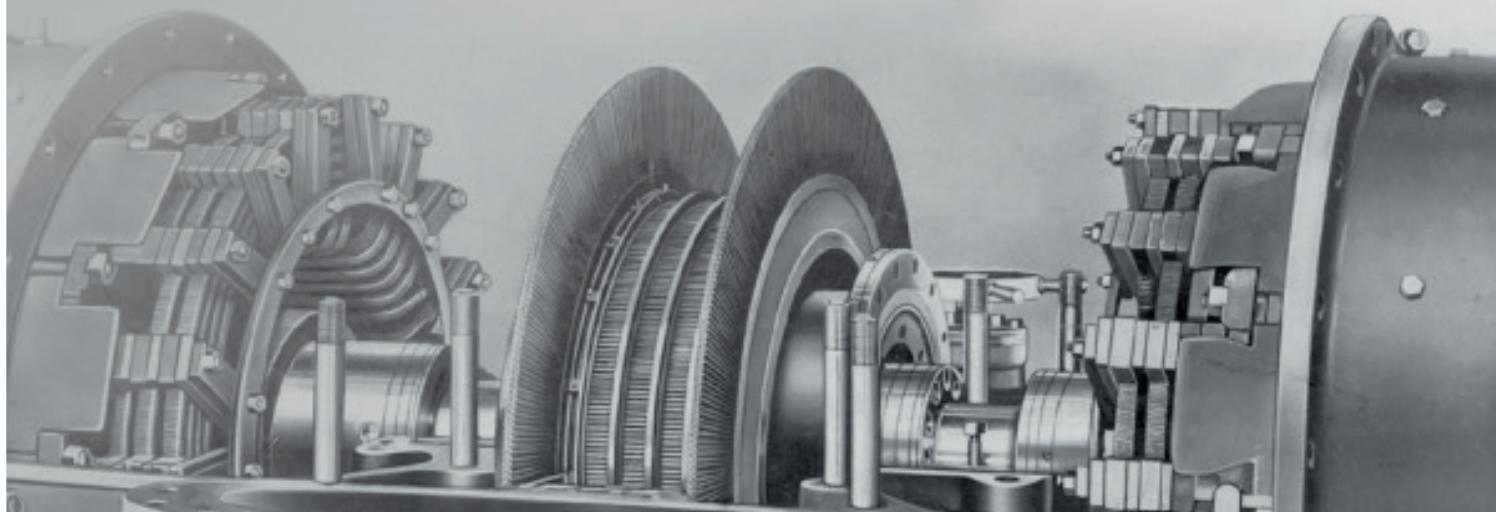


THE INVENTOR &  
LEADER OF SCREW  
COMPRESSORS



# More than 110 years legacy of technical quality & energy efficiency

Founded in 1908 in Stockholm, Sweden, the original company was named AB Ljungströms Angturbin. The founder of SRM, Birger Ljungström, invented the world's first double-helical turbine, unveiling its prelude to becoming a pioneer in technology creation and innovation.

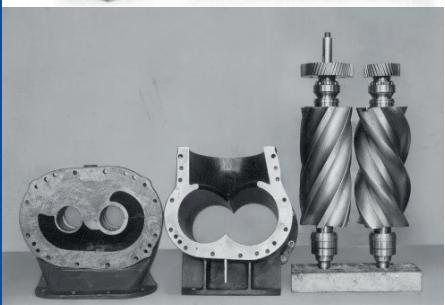
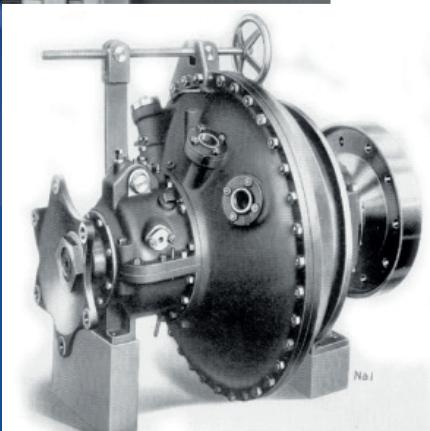


Since the invention of the screw compressor in 1934 SRM was pioneering the development of screw compressors and is with 120+ inventions and 800+ patents the leading engineering company in this field. Development of compressors and pumps for various applications such as refrigeration, process gases, raw biogas, industrial air and vacuum are core business of SRM.

After SRM was granting the first license to Howden Howden in 1954 many very well known international manufacturers of screw compressors followed and made SRM the mother of 9 out of 10 screw compressors in the world.

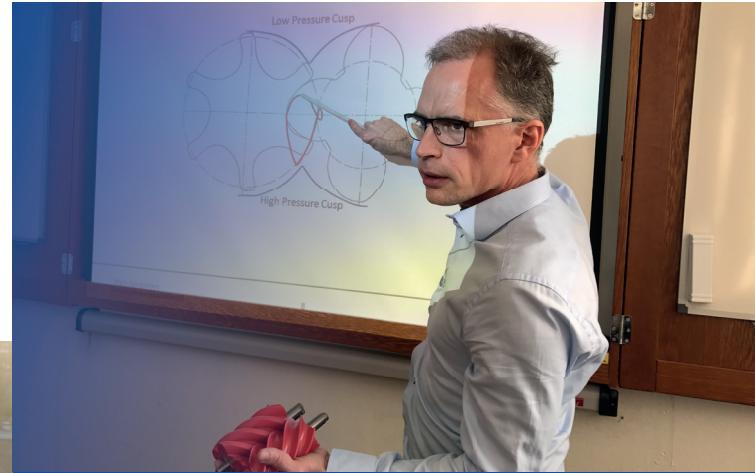
New demands and changes constantly ask for new designs and upgrade of existing products and systems. SRM is on the forefront to provide the efficient tools to operate cooling, refrigeration and process applications with natural refrigerants and highest energy efficiency to contribute to the mitigation of climate change.

Since 2015 SRM is part of the Snowman Group and has developed based on more than 110 years of experience a new range of industrial refrigeration compressors branded SRMTec which is totally dedicated to Natural Refrigerants like Ammonia, CO2 and Hydrocarbons.



## More than 110 years of Swedish Engineering Experience

The experience of engineering is obvious and prevalent to any visitor of the brand-new Ljungström Laboratory of SRM in Sweden, the cradle of the Screw Compressor.



Constantly new compressor designs and features are being researched and thoroughly tested to improve refrigeration and cooling processes.

The result is most complete and wide Screw Compressor Portfolio for Refrigeration.

### SRMTEC SCREW COMPRESSORS $\text{NH}_3 + \text{CO}_2$

Open-type single-stage ( $\text{NH}_3$ )	SRM-12	SRM-16	SRM-20	SRM-26	SRM-34	SRM-41			
Open-type double-stage ( $\text{NH}_3$ )	SRM-1612	SRM-2016	SRM-2620	SRM-3426					
Open-type single-stage high-pressure ( $\text{NH}_3 + \text{CO}_2$ )	SRH-12	SRH-16	SRH-18	SRH-20	SRH-26				
Semi-hermetic single-stage ( $\text{NH}_3$ )	SRS-08	SRS-10	SRS-12	SRS-14	SRS-16				
Semi-hermetic single-stage compact ( $\text{NH}_3$ )	SRS-C12S	SRS-C14S	SRS-C17S						
Semi-hermetic double-stage ( $\text{NH}_3$ )	SRS-1008	SRS-1210	SRS-1612						
Displacement @50Hz (m <sup>3</sup> /h)	100	200	400	800	1,500	2,000	4,000	6,000	10,000

## Excellent Manufacturing and dedicated EU Production Line

Highly automated precision machinery and quality control ensure the high quality of our rotor manufacturing and compressor assembly.

The high-class production and package assembly line (EU Production Line) is subject to rigorous in-process and final quality controls. All pressure vessels are certified to PED/ ASME standards and all components are of reputable international brands. Each weld is executed by dedicated and registered welders and non-destructive testing is conducted and documented according to the applicable standards. CE certification for assembled packages is verified by notified bodies.



**SRM TEC**

## SRM Open-type Single-stage Screw Compressor

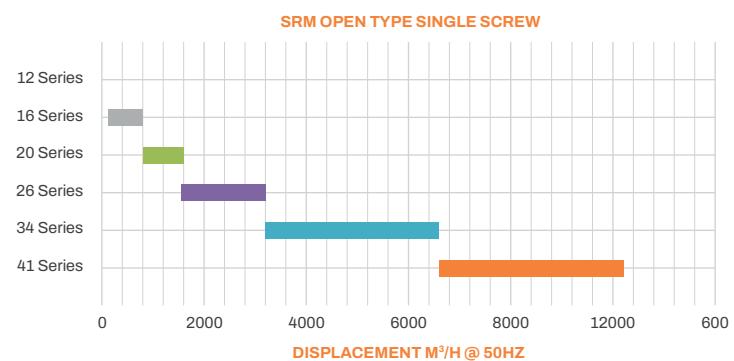
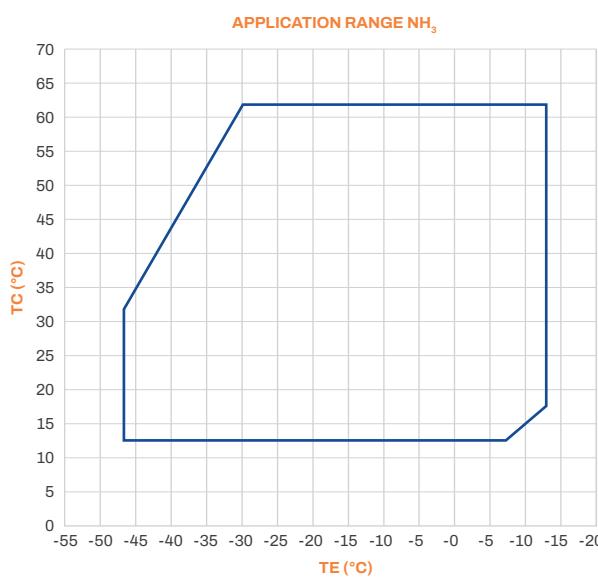
The open-drive SRM screw compressor remains the reliable workhorse for its versatility and robustness. Upgraded by the new i-profile rotors with 5/7 lobes and further improved by extra-strong bearings the SRM Series still is the benchmark of industrial refrigeration and perfectly suited for natural and environment friendly refrigerants such as R717, R290, R1270 etc.



Series	Model	Suction Line Diameter (mm)	Discharge Line Diameter (mm)	Diameter (mm)			Cool Capacity (kW)	
				L	W	H	NH <sub>3</sub> -35 / +35°C	NH <sub>3</sub> -15 / +35°C
12	SRM-12L	80	50	956	381	454	51	129
	SRM-16S	125	80	1,039	445	523	88	232
16	SRM-16M	125	80	1,125	445	523	110	291
	SRM-16L	125	80	1,205	445	523	131	348
20	SRM-20S	150	125	1,188	558	599	176	465
	SRM-20M	150	125	1,317	558	599	230	605
	SRM-20L	150	125	1,398	558	599	265	699
	SRM-20LL	150	125	1,676	558	599	317	835
26	SRM-26S	250	200	1,491	707	843	347	908
	SRM-26M	250	200	1,606	707	843	434	1,134
	SRM-26L	250	200	1,717	707	843	522	1,359
	SRM-26LL	250	200	1,846	707	843	640	1,662
34	SRM-34S	350	250	1,920	869	961	715	1,858
	SRM-34M	350	250	2,073	869	961	910	2,364
	SRM-34L	350	250	2,210	869	961	1,087	2,820
	SRM-34LL	350	250	2,428	869	961	1,351	3,507
41	SRM-41S	500	400	2,485	1,046	1,261	1,436	3,735
	SRM-41M	500	400	2,660	1,046	1,261	1,785	4,636
	SRM-41L	500	400	2,852	1,046	1,261	2,136	5,519

### FEATURES

- Rotor of high-quality forged steel machined at micron-level accuracy for high wear resistance and long durability.
- Housing is made of ductile iron for pressure up to 2.8 Mpa.
- Innovative shaft seal with wear-resistant sealing surface of silicon carbide.
- Integrated and designated oil channels for secure lubrication of all critical spots within the compressor.
- High-precision and wear-resistant roller bearings for designed life of up to 80.000 operating hours.
- Manual or automatic Vi control to adapt to various working conditions.
- Step-less mechanical capacity control (10-100%).



## SRM Open-type Two-stage Screw Compressor

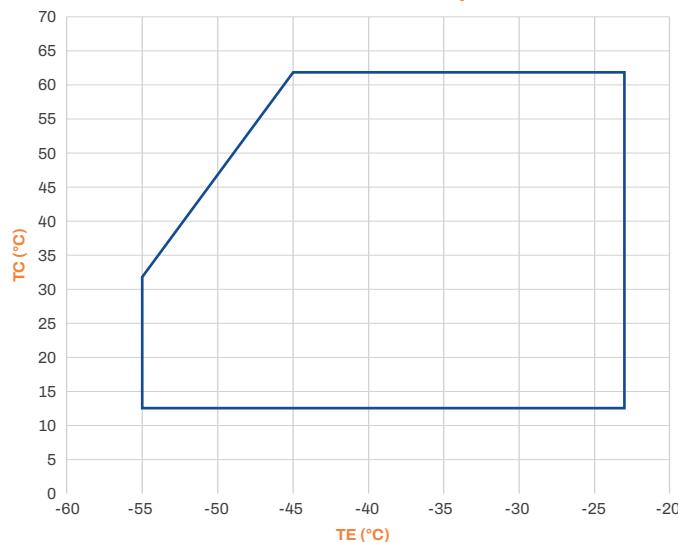
For low temperature applications where no side-load on the high stage is needed, like a dedicated package to a spiral freezer, the double stage SRM compressor offers a high efficient solution with lowest footprint compared to a booster system with two packages. Applicable for natural and environment-friendly refrigerants such as R717, R290, R1270 etc.



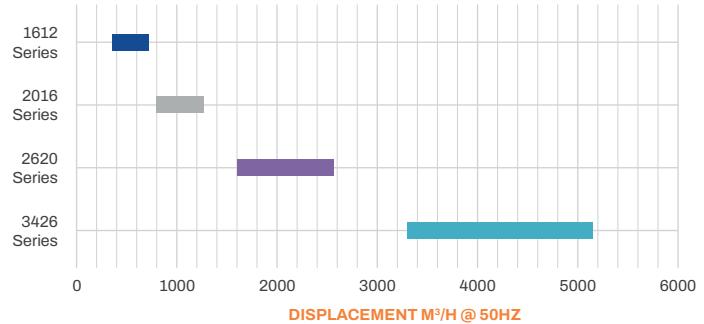
### FEATURES

- Rotor with 5/7 lobe ratio and i-profile of high-quality forged steel machined at micron-level accuracy for high wear resistance and long durability.
- Housing is made of ductile iron for pressure up to 2.8 Mpa.
- Innovative shaft seal with wear-resistant sealing surface of silicon carbide.
- Integrated and designated oil channels for secure lubrication of all critical spots within the compressor.
- High-precision and wear-resistant roller bearings for designed life of up to 80.000 operating hours.
- Manual or automatic Vi control to adapt to various working conditions.
- Step-less mechanical capacity control (10-100%).

Series	Model	Suction Line Diameter (mm)	Discharge Line Diameter (mm)	Diameter (mm)			Cool Capacity (kW)	
				L	W	H	NH <sub>3</sub> -50/+35°C	NH <sub>3</sub> -40/+35°C
1612	SRM-1612MS	125	65	1471	657	586	60	103
	SRM-1612LS	125	65	1521	657	586	71	122
2016	SRM-2016MS	150	80	2032	525	563	126	217
	SRM-2016LS	150	80	2121	525	563	144	247
2620	SRM-2620MS	250	125	2246	708	805	244	418
	SRM-2620LS	250	125	2335	708	805	286	491
3426	SRM-3426LS	350	200	2885	839	920	574	984

APPLICATION RANGE NH<sub>3</sub>

SRM OPEN TYPE TWO STAGE SCREW



# SRH Open-type High-pressure Screw Compressor

The tough brother of the SRM compressor sets the pressure benchmark to 63 bar. Thanks to glide bearings and a 4/6 lobe ratio with stronger rotor diameter this compressor range is perfectly suited to operate Ammonia Heatpumps and CO<sub>2</sub> cascade systems with their demanding conditions.

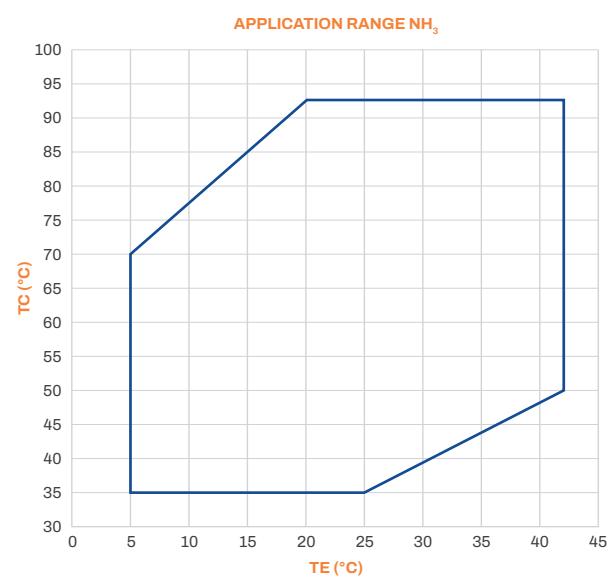
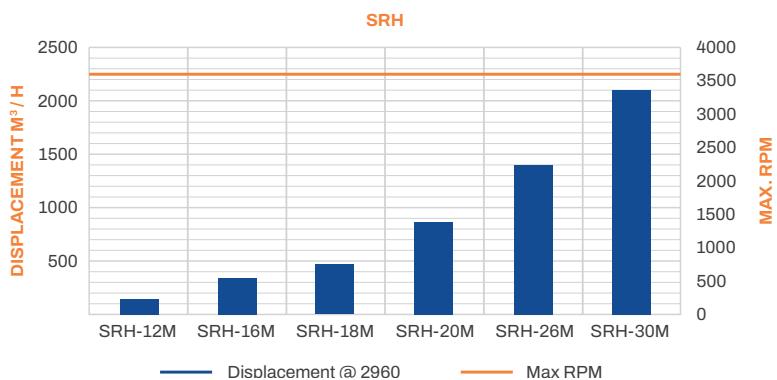
With displacements from 161 to 1409 m<sup>3</sup>/h these compressors are capable to operate heat pumps dependent on the heat source of more than 3 MW and CO<sub>2</sub> low temperature cascade systems of approx. 2 MW.



## FEATURES

- Rotor of high-quality forged steel machined at micron-level accuracy for high wear resistance and long durability.
- Housing is made of ductile iron for pressure up to 6.3 Mpa.
- Innovative shaft seal with wear-resistant sealing surface of silicon carbide.
- Integrated and designated oil channels for secure lubrication of all critical spots within the compressor.
- High-precision and wear-resistant roller bearings for designed life of 80.000 operating hours.
- Manual or automatic Vi control to adapt to various working conditions.
- Step-less mechanical capacity control (10-100%).

Series	Model	Suction Line Diameter (mm)	Discharge Line Diameter (mm)	Diameter (mm)			Cool Capacity (kW)	
				L	W	H	CO <sub>2</sub> -40/0°C	NH <sub>3</sub> +20/+90°C
12	SRH-12M	100	50	1033	526	633	232	178
16	SRH-16M	125	65	1180	579	671	459	362
18	SRH-18M	150	80	1250	644	675	680	545
20	SRH-20M	150	100	1453	669	751	1222	980
26	SRH-26M	250	150	1671	934	1031	2026	1624
30	SRH-30M	350	250	1967	1064	1164	3020	2421



## SRS Semi-hermetic Single-stage Screw Compressor

Again SRMTec is writing history by the introduction of the semi-hermetic screw compressor suitable for Ammonia supporting the conversion from environment harming substances like CFC's to Natural Refrigerants.

Equipped with the i-profile and a permanent magnet motor these compressors make no compromises on energy efficiency. The aluminium windings of the motor take no chances of deterioration compared to insulated copper windings. Without shaft-seal this technically permanent leak-proof solution is perfectly suited for applications in or close to residential areas where apprehension against Ammonia might prevail. That makes this compressor predestined for commercial process cooling or comfort cooling/heating.

The semi-hermetic Ammonia compressors offer the solution for smaller capacity ranges or where a technical permanent leak-proof system is the choice.



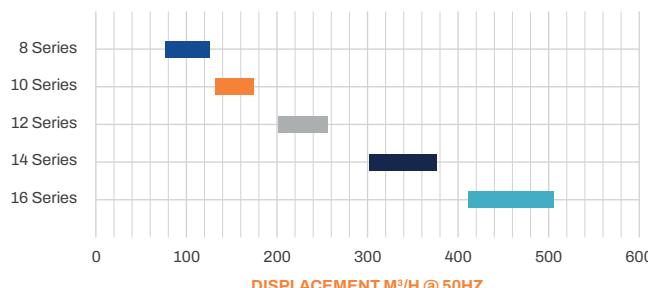
### FEATURES

- Aluminium windings of the PM Motor
- Rotor with 5/7 lobe ratio and i-profile of high-quality forged steel machined at micron-level accuracy for high wear resistance and long durability.
- Housing is made of ductile iron for pressure up to 2.8 Mpa.
- Integrated and designated oil channels for secure lubrication of all critical spots within the compressor.
- High-precision and wear-resistant roller bearings for designed life of up to 80.000 operating hours.
- Manual or automatic Vi control to adapt to various working conditions.
- Side-exchangeable and 360° turn-able suction and discharge ports for easy mounting and connection in multiple compressor systems.

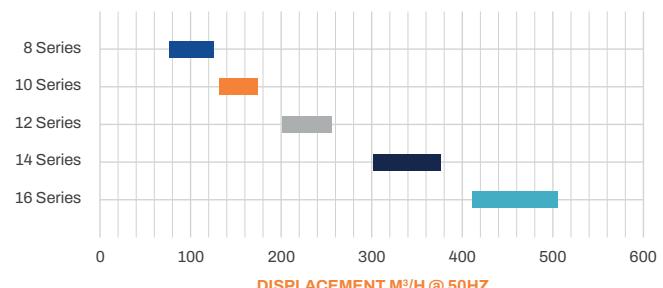
Series	Model	Suction Line Diameter (mm)	Discharge Line Diameter (mm)	Diameter (mm)			Cool Capacity (kW)	
				L	W	H	50Hz NH <sub>3</sub> -15/+35°C	60Hz NH <sub>3</sub> -15/+35°C
8	SRS-08SH	54	42	804	572	392	46	56
	SRS-08MH	54	42	804	572	392	54	64
	SRS-08LH	54	42	804	572	392	65	78
10	SRS-10SH	57	42	951	626	409	80	95
	SRS-10LH	57	42	951	626	409	92	110
12	SRS-12SH	76	57	1034	708	478	112	135
	SRS-12MH	76	57	1034	708	478	126	149
	SRS-12LH	76	57	1034	708	478	137	164
14	SRS-14SM	89	65	1280	718	516	169	203
	SRS-14MM	89	65	1280	718	516	187	224
	SRS-14LM	89	65	1280	718	516	202	242
16	SRS-16SM	108	76	1348	920	586	232	278
	SRS-16MM	108	76	1348	920	586	247	296
	SRS-16LM	108	76	1348	920	586	275	329

Series	Model	Suction Line Diameter (mm)	Discharge Line Diameter (mm)	Diameter (mm)			Cool Capacity (kW)	
				L	W	H	50Hz NH <sub>3</sub> -5/+35°C	60Hz NH <sub>3</sub> -5/+35°C
8	SRS-08SI	54	42	804	572	392	68	82
	SRS-08ML	54	42	804	572	392	80	96
10	SRS-10SL	57	42	951	626	409	113	136
12	SRS-12SL	76	57	1034	708	478	171	205
	SRS-12ML	76	57	1034	708	478	188	226
14	SRS-14SR	89	65	1280	718	516	257	308
	SRS-14MR	89	65	1280	718	516	288	346
16	SRS-16SR	108	76	1348	920	586	347	416
	SRS-16MR	108	76	1348	920	586	372	446

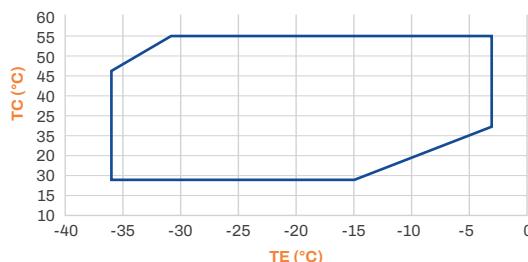
SRS LOW TEMPERATURE



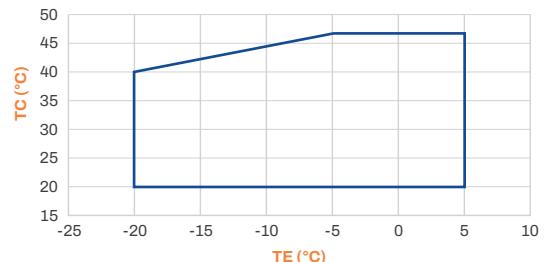
SRS HIGH TEMPERATURE



APPLICATION RANGE L/T



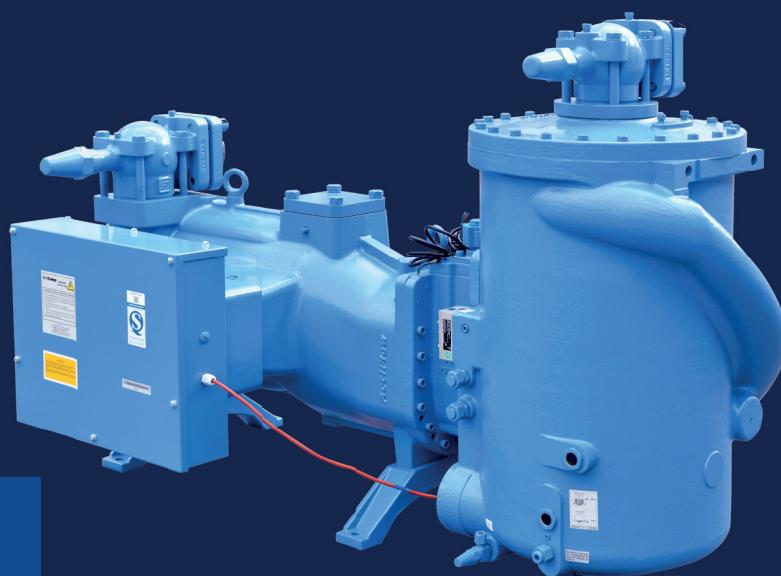
APPLICATION RANGE H/T



# SRS Semi-hermetic Single-stage Screw Compact Compressor

Compact, high efficient and natural solution for chillers for process-cooling, air-conditioning & data centre cooling.

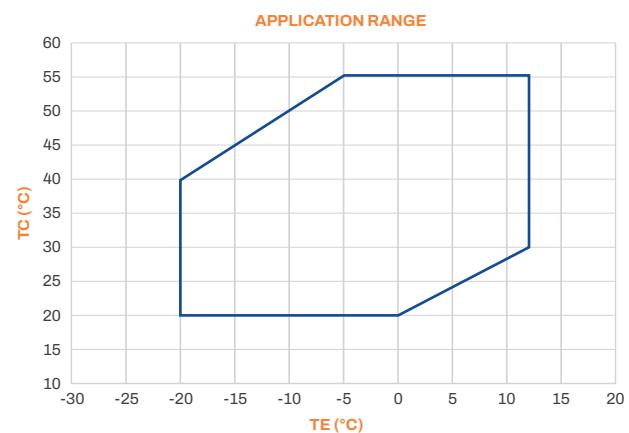
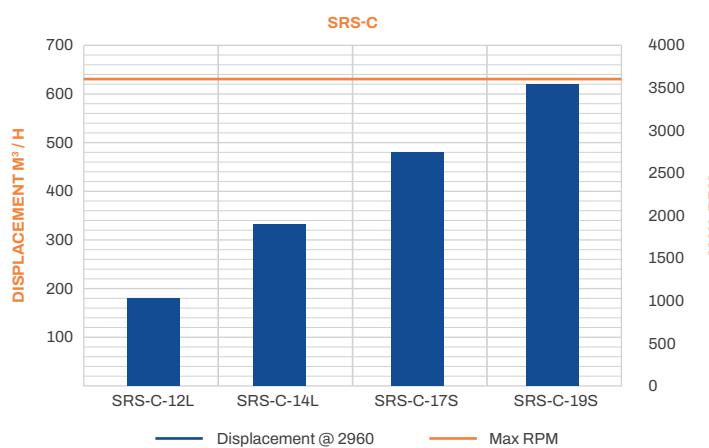
This most innovative compressor for Ammonia chiller applications is revolutionizing traditional design:



## FEATURES

- The integrated oil separator makes to the most compact chillers possible, reducing oil charge, pipes and connections thus reducing potential leakages and cost.
- Equipped with ActiFlow only the oil needed at the actual operation point is utilized within the compressor thus improving efficiency of the whole system.
- The mechanical automatic Vi which needs no external input or control is ensuring continuous operation at best efficiency.

Series	Model	Suction Line Diameter (mm)	Discharge Line Diameter (mm)	Diameter (mm)			Cool Capacity (kW)	
				L	W	H	50Hz NH <sub>3</sub> 4/+38	60Hz NH <sub>3</sub> 4/+38
12	SRS-C-12L	54	42	1.194	503	784	191	230
14	SRS-C-14L	92	54	1.472	572	896	360	432
17	SRS-C-17S	105	80	1.644	671	1.037	553	663
19	SRS-C-19S	105	80	1.665	699	844	714	857



## SRS Semi-hermetic Two-stage Screw Compressor

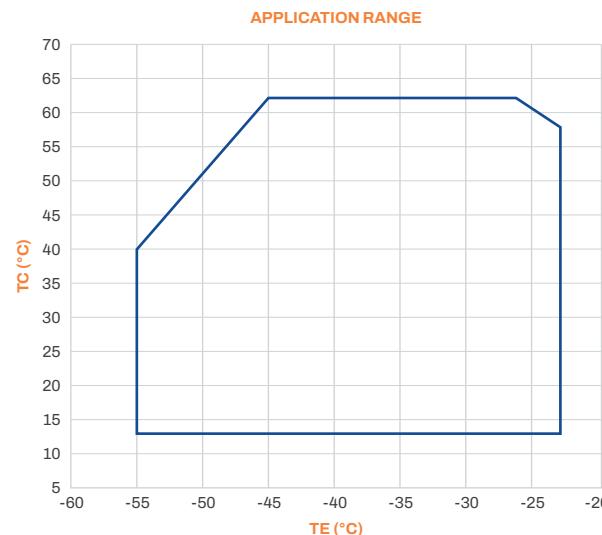
SRS Semi-hermetic Two-stage Screw Compressors are combining the advantages of compound compressors and semi-hermetic design: compact, efficient and low maintenance. These compressors are a perfect match for spiral/tunnel freezers where space is premium.



Series	Model	Suction Line Diameter (mm)	Discharge Line Diameter (mm)	Diameter (mm)			Cool Capacity (kW)
				L	W	H	
1008	SRS-1008SS	65	50	1342	636	465	32
	SRS-1008LL	65	50	1458	636	465	53
1210	SRS-1210SS	80	50	1475	750	455	79
	SRS-1210LL	80	50	1627	750	455	111
1612	SRS-1612MS	125	65	1932	819	686	132
	SRS-1612LS	125	65	1986	819	686	155

### FEATURES

- Aluminium windings of the PM Motor
- Rotor with 5/7 lobe ratio and i-profile of high-quality forged steel machined at micron-level accuracy for high wear resistance and long durability.
- Housing is made of ductile iron for pressure up to 2.8 Mpa.
- Integrated and designated oil channels for secure lubrication of all critical spots within the compressor.
- High-precision and wear-resistant roller bearings for designed life of up to 80.000 operating hours.
- Manual or automatic V<sub>i</sub> control to adapt to various working conditions.



## Open-type Screw Compressor Unit

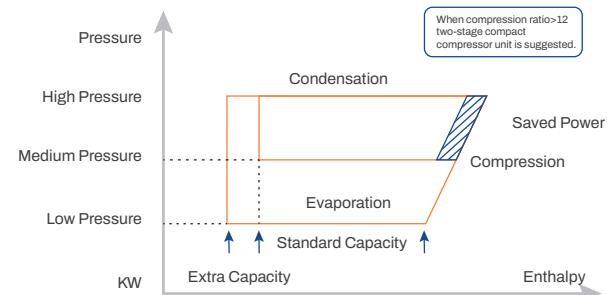
SRMTec open-drive packages feature our famous work-horse, the SRM compressor. Robust and reliable, built to last for your process-security. We do offer a range of standard packages with horizontal three-phase separation (3 to 5 ppm) oil separators in a wide capacity range from 130kW to more than 5MW (@-15°/+35°). All components are of reputable brands and readily available on a world-wide basis to ensure the longevity of your project.

For low-temperature installations where a side-load on the high-temperature stage of a booster-system is not needed, SRMTec offers SRM double-stage packages for compact size and highest efficiency.



### FEATURES OF SRM SINGLE STAGE COMPRESSOR PACKAGES:

- SRM high- efficiency screw compressor: higher EER than the same type of compressor units.
- Open asynchronous motor with high efficiency and low noise; motors with isolated bearings for frequency speed control are available for selection.
- Differential-pressure oil supply system with a start-up only oil pump: energy saving and reliable.
- Economizers (open-flash or closed HX) for low temperature applications are available.
- PLC with data-interfaces are optionally available for real-time control and analysis and remote monitoring.



### FEATURES OF SRM 2-STAGE COMPRESSOR PACKAGES:

- SRM high- efficiency double-stage screw compressor for small footprint.
- Easy to operate like an economized package
- Perfectly suited as dedicated driver of freezer application

## Open-type Heatpump (NH3) or Subcritical (CO2) Cascade Package

SRH high-pressure screw compressors are the heart of the Ammonia Heatpump or CO2 Packages.

SRMTec offers customized heat pump packages with condensing temperatures up to 93°C making it possible to supply 90°C hot water for district heating or industrial processes.

Please contact SRMTec engineering for your customized design according your heat source and working parameters.



For CO2/NH3 Cascades SRMTec offers packages and combination of packages which are perfectly suitable for cold storage applications with multiple air-coolers operating on pipe diameter saving natural refrigerant CO2. Suction super heaters can be supplied according to the design parameters.

Please contact SRMTec engineering for your customized design according your working parameters.



## Semi-hermetic Compact Screw Compressor Unit

The semi-hermetic SRS compressor allows extremely compact solutions and is targeted for installations near domestic areas where permanent technically leak-proof compressors are the choice to reduce the apprehension against ammonia. Another perfectly suiting application area are installations, which are subject to seasonal/periodical use like ice rinks, wine processing or back-up systems. Here the shaft-seal of an open-drive compressor might dry up during the idle period and cause leakages or extended service.

Our double-stage SRS compressors are the perfect match to smaller capacity freezer applications especially in confined spaces like fishing boats.

The packages can be water-cooled or air-cooled and can be the base to convert them to chillers when heat-exchangers are added. Please contact your SRMTec engineering team to adapt the system to your operating parameters



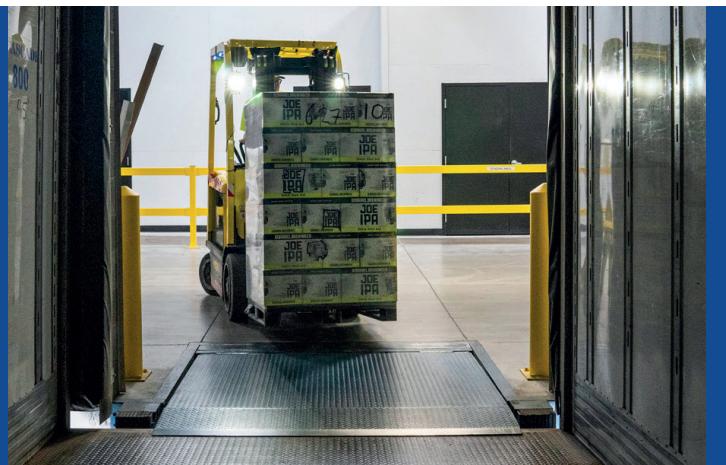
### FEATURES OF SRS SCREW COMPRESSOR PACKAGES:

- SRS single and double-stage screw compressor with aluminium windings permanent magnet synchronous motor.
- Compressors can be mounted lengthwise or across the oil separator.
- Compact multiple compressor units for process safety due to redundancy
- Low part load by multiple compressors plus wide range of speed operation
- Economizer options are available for efficient low temperature applications
- PLC with data interface are optionally available for real-time control and analysis as well as remote monitoring.



## Cold Storage / Logistics

Cold Storage and Logistics means keeping produce and products in stable and healthy conditions of preservation for safe human consumption or usage. HACCP is not only a theoretical concept, it must be lived in hardware but also in operational practices. SRMTec is making this easy by their reliable and feature-packed compressor packages.



### SRM LOW TEMPERATURE BOOSTER PACKAGES

The extension of cooling facility of Salmon processing company in Northern Germany is based on SRMTec technology. The combination of 1 x SRM26M and 1 x SRM20M compressor-pack as booster system assures a maximum of flexibility with several side loads and is ready for future extensions.

The low stage booster pack provides 500kW for spiral freezer, ice machine and cold storage at (-)40° C which is condensed against the high-stage at (-)2°C. The side-load consists of cooling of ante-rooms and processes.

**Technical data:**

Cooling capacity Qo: 500 KW L/T: 1.230 KW M/T  
Evaporation To: -40° C; -3°C  
Condensing Tc: -2°C; +32° C  
Commissioning: 08/2018



### SRS SINGLE & DOUBLE-STAGE PACKAGES FOR COLD STORAGE

A new installation of the SWIRE Group is based on semi-hermetic ammonia compressors:

1 x SRMTec C2NA16L-HAHV semi-hermetic duo-compressor-pack with Qo: 695 kW capacity cools via propylene glycol as secondary coolant the storage temperature zone 0 bis 12 ° C.

2 x SRMTec CAA1612LS-HALV semi-hermetic two-stage compressor packs with Qo: 550 kW capacity are operating via CO2/R744 as secondary coolant storage temperature zone -35° to -25 ° C.

**Technical data:**

Cooling capacity Qo: 695 KW M/T; 550 KW M/T  
Commissioning: 04/2017

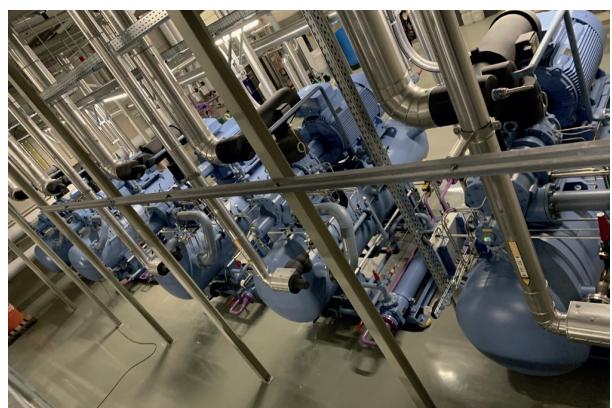


### SRM PACKAGES

The new distribution centre in Germany operates with 5 x SRM20M compressor systems to provide storage of fresh produce and frozen food for a German supermarket.

**Technical data:**

Cooling capacity Qo: 2 x 366 kW Booster, 3 x 976 kW Medium Temp.  
Evaporation To: -34° C, -10°C  
Condensing Tc: -10° C, +33  
Commissioning: 10/2020



## Food Processing; Dairy

Dairy processes require quick pull down capacity for milk to provide the hygienic conditions and stable, thoroughly controlled conditions for maturing processes to achieve not only healthy but also regional specialty products like cheeses and yogurts.



### SRM PACKAGE FOR PROCESS COOLING & COLD STORAGE

The biggest Dairy Producer in Serbia, Montenegro and Macedonia expanded the milk processing capacity to 300.000 liters in their factory in Subotica. The objective is to guarantee uninterrupted cooling for their cold storage and to build up an ice storage as energy buffer.

The Contractor selected the screw compressor SRM20M for its reliability and efficiency. The compressor is driven by a frequency inverter between 1500 and 3600 rpm to continuously match the cooling demand.

#### Technical data:

Cooling capacity Qo: 974 kW  
 Evaporation To: -8°C  
 Condensing Tc: +35°C  
 Commissioning: 02/2020



### SRM PACKAGE FOR PROCESS COOLING

The recent upgrade of the cooling facility of a large dairy company in the Basque region of Spain is based on SRMTec technology. The SRM26M open-drive compressor package was replacing an old compressor system which was causing increasingly high maintenance and service cost.

The new system can pro-actively adapt to the seasonal fluctuation of the ambient conditions to bring condensing and evaporation temperatures in line to achieve best performance and energy savings.

#### Technical data:

Cooling capacity Qo: 1.500kW  
 Evaporation To: -9.5°C  
 Liquefaction Tc: 35°C  
 Installation: 10 / 2017



### SRM PACKAGES

Regional dairy cooperative of 600+ Austrian farmers with focus on sustainability like short supply distances, non-genetically modified ingredients and care for the local culture, flora and fauna expands their cheese maturing rooms. Natural refrigerant ammonia and semi-hermetic compressors, which are leak-proof, were chosen due to proximity to residential areas.

The contractor designed and built two duo-packs for small footprint and easy serviceability.

#### Technical data:

Cooling capacity Qo: 2 x 223 kW  
 Evaporation To: -8.5°C  
 Condensing Tc: +40.5°C  
 Commissioning: 03/2019



## Food Processing; Meat, Poultry and Seafood

Stable and reliable conditions for all stages of processing, freezing and storage be it for chicken, turkey, pork or beef are guaranteed by SRMTec refrigeration systems. The holistic approach of heating and cooling as both sides of the equation for energy savings and environment protection is encompassed by our offering of hybrid solutions of refrigeration systems interconnected with heat pumps to generate sanitary hot water.

### SRS TWO-STAGE DUO-PACKAGE

The first semi-hermetic two-stage 2 x SRS1612LS Ammonia compressor Duo Package in Europe is successfully commissioned in a cold storage facility in North Germany. The compact system was easily fitted within a standard container as plant room. This guaranteed low on-site cost of installation.

In case of further extension this solution is highly flexible for the future.

#### Technical data:

Cooling capacity Qo: 380 kW  
 Evaporation To: -35° C  
 Condensing Tc: +45° C  
 Commissioning: 08 /2018



### SRS QUADRO-PACK 4 x SRS1210SS FOR BLAST FREEZER

A Meat Processing Factory near ATHENS, Greece is retrofitting the already existing Meat Freezing production equipment which were 3 Static Freezers and to add a new Linear Belt Inline Freezer for Gyros.

The customer needs to keep the existing R449A DX for operational reasons but wants to future-proof the new installation by preparing a conversion to R717 Ammonia with minor modifications. High fluctuation of operational capacity requires 4 x SRS1210SS double stage screw compressors.

#### Technical data:

Cooling capacity Qo: 4 x 58 KW  
 Evaporation To: -50° C  
 Condensing Tc: +40° C  
 Commissioning: 08 /2020



### SRM DOUBLE STAGE COMPRESSOR PACKAGE

A leading integrated meat works company in Germany extends their palette freezer line by dedicated compressor packages.

The packages are equipped with SRM2016LS two-stage compressors for highest efficiency and smallest footprint.

The compressors are inverter speed controlled to match the load demand closely and operate up to 4200 rpm. The oil cooling cycle is equipped with heat reclaim to avoid any wastage of energy.

#### Technical data:

Cooling capacity Qo: 3 x 322 KW  
 Evaporation To: -42° C  
 Condensing Tc: +35° C  
 Installation: 03 / 2019





### CO2/AMMONIA CASCADE

One of the largest agricultural companies in Spain operate their Meat Processing and Cold Storage Facility in an energy efficient and environmental sustainable way.

They decide to apply CO2/Ammonia Cascade systems with SRMTec compressors. Main technical driver is the compact construction of the compressor systems and the versatile use of CO2 for several temperature levels and small pipe diameters within their cold storage facility. This enables the operation with very small refrigerant charges of Ammonia within the plant room and CO2 within the processing and storage facility.

3 x SRM26M plus 3 x SRH18M

**Technical data:**

Evaporation To: -50°C/-28°C/-10°C

Condensing of CO2 Tc: -10°C

Condensing of Ammonia: +35°C

Installation: 02/2020



### INTEGRATED REFRIGERATION HEAT PUMP SOLUTION

Germany's leading meat processing company's choice for an Integrated Refrigeration Heat Pump Solution stems from an holistic approach to anticipate heating and cooling as the two sides of the same coin. Instead of emitting the condensing heat of the refrigeration system to the atmosphere unused, this energy is harvested and brought up to a higher level by means of a heat pump.

Hence fossil fuel with its high CO2-footprint is not needed anymore to generate the hot water in a boiler for sanitary purposes.

2 x SRM26L Booster Packages + 2 x SRM20LL High Stage Packages  
1 x SRH16M Heatpump Package

**Technical data:**

Refrigeration:

L/T: Te: -42°C/Tc: -13°C; Qo: 1120 KW

M/T: Te: -13°C/Tc: +25°C to +33°C; Qo: 2330KW

Heating: Te: +25°C to +33°C/Tc: +81°C QH: 1113KW

Commissioning: 12/2020



### INTEGRATED REFRIGERATION HEAT PUMP SOLUTION

In Spain a Meat Processing Company constantly needs 70 °C hot water for defrost, produce thawing and sanitary purposes. Their new refrigeration installation of 1.1 MW cooling is complemented by a SRH Package of SRMTec to provide this heating load without fossil fuel.

2 x SRM20S Packages  
1 x SRH16M Heatpump Package

**Technical data:**

Refrigeration:

M/T: Te: -11°C/Tc: +25°C Qo: 1100KW

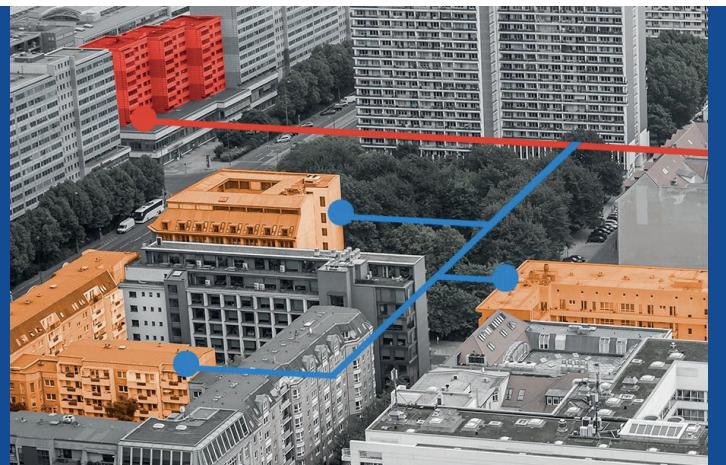
Heating: Te: +25°C / Tc: +72°C QH: 550KW

Commissioning: 01/2022



## Heat pump

Heat pumps are the new tool for the quest of de-carbonization. Powered by sustainable energy in combination with natural refrigerant ammonia they play a vital role in our future.



### SRM LOW TEMPERATURE BOOSTER PACKAGES

The quest of the district heating complex on the Danish island Fyn is to upgrade the used energy mix to become 100% renewable by 2025. Tapping into the exhaust stack of the bio-mass incinerator to use this otherwise wasted energy becomes the heat source of the heat pump which operates with nature identical Ammonia. Two independent heat pumps ensure uninterrupted supply of hot water to the community.

2 x SRM34S Heatpump packages

**Technical data:**

Heating capacity QH: 5100 KW  
Evaporation To: +9° C  
Condensing Tc: +62° C COP: 4,74  
Installation: 12/2020



### SRS CHILLER AND HEAT PUMP

The world-wide first semi-hermetic Ammonia chiller/heat pump combination is successfully commissioned in Eindhoven, Netherlands converting defunct industrial area into a sustainable office and residential complex.

Natural refrigerant Ammonia applied by semi-hermetic SRS14SR compressors of SRMTec without shaft seals are the perfect solution.

**Technical data:**

Cooling capacity Qo: 400 KW  
Evaporation To: +3,5° C  
Condensing Tc: +42° C  
Heating capacity QH: 426 KW  
Evaporation To: -3,5° C  
Condensing Tc: +42° C  
Commissioning: 08 /2018



### SRH AMMONIA HEAT PUMP

Therme Straubing is operated by the city utility provider of Straubing since 16 years as a district heating service. The heat source is thermal ground water of 36°C from which 7K energy is extracted to feed the heating loop of 70°C.

Previously the system was driven by an industrial piston compressor set which has reached the end of its operational lifespan. As replacement the industrial screw compressor of SRMTec is chosen due to its reliability.

SRH18M

**Technical data:**

Heating capacity QH: 1200 KW  
Evaporation To: 26° C  
Condensing Tc: 72° C  
Installation: 11/2016



## Beverages

Beverage industry needs to be flexible in production for best taste results but also must ensure stable processes and hygienic conditions to produce authentic and healthy nourishment.



### SRS DUOPACK FOR PROCESS COOLING

F-Gas Regulation and the drive to reduce the CO2-Footprint are the motivation to replace R404A by Ammonia for a famous wheat-beer brewery in Bavaria. Featuring no shaft-seal is allowing to shut down the system for longer periods (usage as backup system) without the risk of drying up the shaft seal and leakages of Ammonia. Due to its compactness and small foot-print the package fits into a narrow passage way and is a perfect solution for low on-site cost of installation. Ammonia as natural refrigerant assures to be future-proof at highest efficiency.

SRS10L Duo-Package

**Technical data:**

Cooling capacity Qo:  $2 \times 160$  KW  
Evaporation To:  $-6^\circ\text{C}$   
Condensing Tc:  $+45^\circ\text{C}$   
Commissioning: 01/2018



### SRS CHILLER FOR PROCESS COOLING

The expansion of beer production requires additional cooling capacity for a family owned brewery in Bavaria, Germany. SRMTEC's screw compressor SRS08S is selected for its efficiency and small footprint as the plant room could not be enlarged. Together with a plate heat exchanger and shell & tube condenser a compact package of 2050x1200x1920 mm could be achieved. The permanent technical leak-free technology of the semi-hermetic compressor was an additional feature for the location within the residential area of the town. The compressor is driven by a frequency inverter between 1500 and 3600 rpm to continuously match the cooling demand.

1 x SRS08S chiller

**Technical data:**

Cooling capacity Qo: 70.2 KW  
Evaporation To:  $-10^\circ\text{C}$   
Condensing Tc:  $+35^\circ\text{C}$   
Commissioning: 06/2019



### PROCESS COOLING BY SRS DUOPACK

Breweries in Bavaria, Germany generally are small, but with excellent reputation for their quality and consideration of the environment.

The compact construction and the redundancy of a dual compressor system for process security were the winning features for the choice of 2xSRS10L semi-hermetic compressors of SRMTEC. Easy installation and smooth commissioning plus energy efficient operation reduces total cost of ownership. Ammonia as natural refrigerant fits perfectly to the breweries image of sustainability and commitment to regional produce.

SRS10L Duo-Package

**Technical data:**

Cooling capacity Qo:  $2 \times 145$  KW  
Evaporation To:  $-8^\circ\text{C}$   
Condensing Tc:  $+45^\circ\text{C}$   
Commissioning: 01/2020





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