

J & E Hall International...

For more than 200 years, J & E Hall International has pioneered the development and application of refrigeration technologies. Today the company is recognised as a leading manufacturer and after sales provider for refrigeration and air-conditioning products worldwide.

Single Screw Technology

Key to the success of the HallScrew single screw compressor is its outstanding reliability. Only three basic moving parts are involved, a main rotor which meshes with two diametrically opposed star wheels and results in balanced compression. Compressors are extremely robust and boasts long bearing life over 100,000 hours.

The HallScrew also features a high efficiency capacity control mechanism to regulate the capacity with corresponding reduction in power input. For ease of maintenance, the side casing can be removed to give access to all parts without removing the machine from its installation.

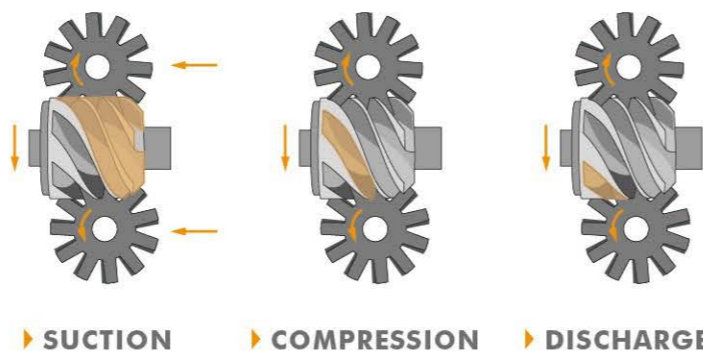
Star Wheel

J & E Hall use low friction composite material "HallPlas" in the compression process to ensure high efficiency and reliability. "HallPlas" material was developed using aerospace technology and can withstand the toughest operating conditions with all types of refrigerant.

Applications

J & E Hall manufactures screw compressors using state of the art production equipment for industrial refrigeration, air conditioning and heat pump systems. HallScrew open and semi-hermetic compressors are used in the most varied applications from deep freezing through to standard refrigeration in retail, brewing, process plant, petrochemical and more.

How single screw technology works...



Benefits

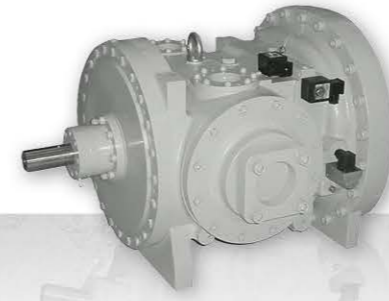
- ▶ Ease of installation
- ▶ Ease of maintenance
- ▶ Engineered for quiet operation
- ▶ Outstanding reliability
- ▶ Superior efficiency
- ▶ Wide ranging cooling capacities



Open Compressor Range

HSO Open Range designed for refrigeration, air conditioning and heat pump applications

▶ HSO 3200



- 4 sizes: 3216, 3218, 3220 and 3221
- Displacement at 50Hz: 286/343/415/471 m³/h

▶ HSO 4200



- 4 sizes: 4221, 4222, 4223 and 4224*
- Displacement at 50Hz: 504/611/716/828 m³/h

▶ HSO 2000



- 4 sizes: 2024, 2028, 2031 and 2035
- Displacement at 50Hz: 853/1273/1728/2486 m³/h

General information for the range

- Suitable for all refrigerants including ammonia
- Built in capacity control (except 2000 series)
- Economiser facility
- External or liquid injection cooling
- Single piece casing

Semi-Hermetic Compressor Range

HSM & HSL Semi-Hermetic Range designed for medium & low temperature applications

▶ HSM/L 3100



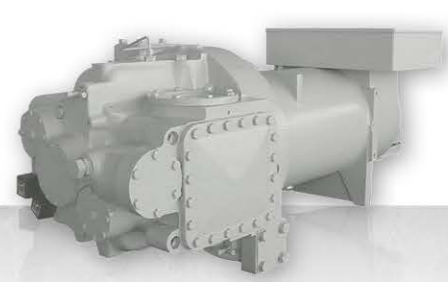
- 4 sizes: 3118, 3120, 3121 and 3122
- Displacement at 50Hz: 175/213/250/292 m³/h

▶ HSM/L 3200



- 4 sizes: 3216, 3218, 3220 and 3221
- Displacement at 50Hz: 286/343/415/471 m³/h
- Developed for parallel multi compressor systems

▶ HSM/L 4200



- 3 sizes: 4221, 4222, 4223 and 4224*
- Displacement at 50Hz: 504/611/716/828 m³/h
- Required external oil separator and oil support system for maximum efficiency

General information for the range

- Optimised for R404A, R507, & R134a
- High efficiency built in 3 phase, 2 pole motor 50/60Hz
- Motor designed for star/delta or direct on-line
- Built in capacity control
- Economiser facility
- Oil injected for maximum reliability

* Limited operating conditions

Semi-Hermetic Compressor Range

COMPRESSORS



HSS Semi-Hermetic Range designed for high temperature applications

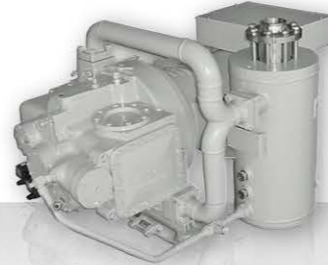
▶ HSS 3100



▶ HSS 3200



▶ HSS 4200



- 4 sizes: 3118, 3120, 3121 and 3122
- Displacement at 50Hz: 175/213/250/292 m³/h

- 4 sizes: 3216, 3218, 3220 and 3221
- Displacement at 50Hz: 286/343/415/471 m³/h
- Fitted stainless steel mesh type integral oil separator

- 4 sizes: 4221, 4222, 4223 and 4224*
- Displacement at 50Hz: 504/611/716/828 m³/h
- Required external oil separator and oil support system for maximum efficiency

General information for the range

- Optimised for R134a & R407C
- High efficiency built in 3 phase, 2 pole motor 50/60Hz
- Built in capacity control
- Balanced loading on main bearings
- Liquid injection connections
- Economiser facility
- Built in oil filter

Proven Capability

Pharmaceutical case study

Bespoke chillers using HallScrew compressors play a key role in drugs manufacture at a large pharmaceutical plant.

- ▶ 6 HallScrew 3100 series compressors
- ▶ Controls temperatures ranging from 50°C to -60°C

Food Processing case study

HallScrew compressors reduce cold store energy bills by more than 20%

- ▶ 100,000 sqft cold store
- ▶ Meat kept at -21°C
- ▶ 2 HallScrew compressors plus one standby



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J&E Hall
International

COMPRESSORS



HallScrew

COMPRESSOR RANGE

Single screw compressor technology for industrial refrigeration, air conditioning and heat pump systems



J&E Hall
International

APPLICATIONS			
COLD ROOMS	PROCESS PLANTS	ICE RINKS	DISTRICT COOLING
BLAST FREEZERS	PETROCHEMICAL	BREWERIES	HEAT PUMPS

Case Studies

District heating application for energy producer – Switzerland

The new HSO5228V compressor is a key part of an inverter driven ammonia-based heat pump system producing water at 70°C. The new compressor can condense vapour to water at much higher temperatures than before and has been installed to help supply low-cost hot water to homes and businesses.

- ▶ 2.4MW of heat output
- ▶ COPs of 4.2
- ▶ Highly efficient and low lifecycle costs
- ▶ Future proof natural refrigerants

Water chilling for dairy – Scotland

The new HSO4226V compressors are at the heart of three inverter driven air cooled ammonia Aquachills chilling water to +1.5°C.

This project required highly efficient compressors to satisfy the customers brief, which was to minimise running costs. A benefit of using this technology arrives from the variable volume ratio system. This contributes substantially to reduced power consumption in low ambient temperatures and part load conditions.

- ▶ 3 x 1000kW of chilled water
- ▶ Overall chiller COPs of 2.9
- ▶ Factory performance tested to guarantee performance
- ▶ Highly efficient and low lifecycle costs
- ▶ Future proof natural refrigerants



New variable volume ratio models from 898-2100 m³/h

NEW GENERATION

HallScrew Compressors

*Can be supplied with ATEX certified coils for A3 refrigerants



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HallScrew compressors



J & E Hall has added seven new models to the existing HallScrew range, which provide more intermediate capacities with a focus on compact design and efficiency.

The new HSO 4225/6/7, 5200 and 6200 series are the next generation of open drive single screw compressors. Reflecting the very latest innovations in screw compressor technology, the current range up to 2486m³/h now includes models 898 – 2100 m³/h with fixed or variable volume ratio. As with all HallScrew open drive compressors, the new models can operate on all refrigerants including natural refrigerant options.

Key to the HallScrew's success is its outstanding reliability, utilising only three basic moving parts. A main rotor which meshes with two diametrically opposed star wheels produces balanced compression resulting in extremely long main bearing life of over 100,000 hours and reduced lifecycle costs.



▶ **HSO 4225/6/7**

(pictured with optional suction stop/check/strainer assembly)

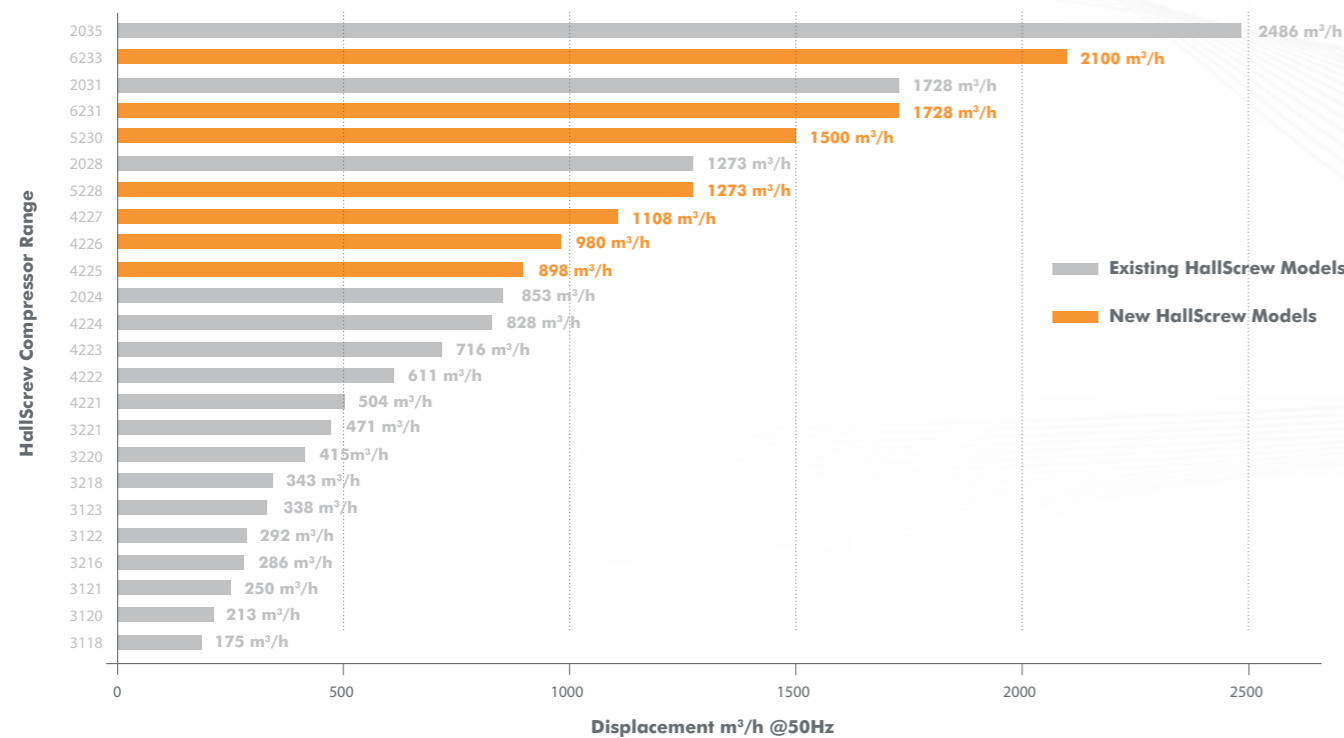


▶ **HSO 5200**



▶ **HSO 6200**

Additional HallScrew Models in Range



“The new compressors are designed to operate at a pressure of 40 bar allowing them to condense gases at a much higher temperature”

Capacities

Medium temperature

Non-economised applications at 50Hz

Model	Displacement m ³ /hr	Capacity kW	Shaft power kW
HSO4225	898	643	157
HSO4226	980	701	168
HSO4227	1108	793	191
HSO5228	1273	876	218
HSO5230	1500	1086	262
HSO6231	1728	1202	298
HSO6233	2100	1477	370

R717, SST -10°C, SDT 35°C, 0K superheat, 5K subcooling

Low temperature

Economised applications at 50Hz

Model	Displacement m ³ /hr	Capacity kW	Shaft power kW
HSO4225	898	297	128
HSO4226	980	325	137
HSO4227	1108	367	157
HSO5228	1273	399	179
HSO5230	1500	512	220
HSO6231	1728	552	244
HSO6233	2100	676	303

R717, SST -30°C, SDT 35°C, 0K superheat, flash economiser

Features & Benefits

Higher efficiency levels

New models are more efficient than current 2000 series

Additional models

Better capacity match, more cost competitive

Cost effective and simple solution for pack build

- Built-in capacity control solenoid valves
- No start-up oil pump required for high stage operation

40 bar design

Higher design pressure rating for high temperature ammonia heat pump application

Ease of maintenance

Can be serviced in-situ

Only one main oil injection connection

No external oil feeds to bearings or shaft seal required

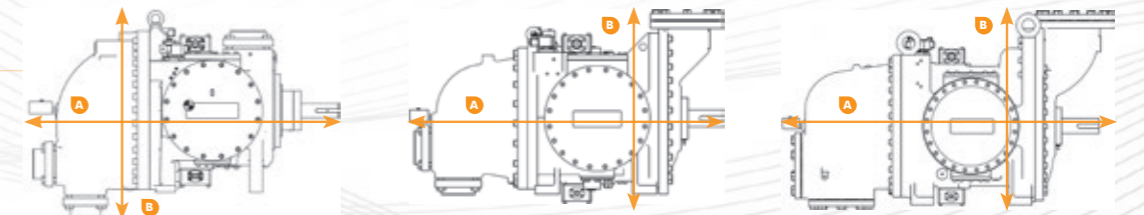
Spring return to minimum load

Allows for simplified control

Nodular iron casing as standard

Favoured by oil & gas industry

Specifications



	4225/6/7	5200	6200
Length mm (A)	1,187	1,314	1,554
Height mm (B)	792	754	892
Width mm	778	920	902
Weight kg	800	1,270	1,500