HITACHI SCREW COMPRESSOR

HITACHI
Inspire the Next

HISCREW NX series

180 - 250kW Oil-flooded Rotary Screw Compressors

HISCREW NX series (180–250kW)

High-Standard Air End

Optimal design of rotor profile can maximize volume efficiency and improve Energy-Saving performance.

Reliability of compressor is guaranteed by high level of processing and assembly precision in addition to large, high-precision, heavy-duty bearings.

High-Quality and High-Efficiency Main Motor

Equipped with high-quality and high-efficiency main motor specially designed for compressor.

IP55 Protection Grade
– Effectively protect motor from dust and moisture.
– Enhance the reliability of motor and compressor.

Motor Specialized for Inverter (for VSD model ONLY)
– Special coil design
– Independent cooling fan

Optimized Layout and Structure

By adapting layout of separating spaces for cooling parts and hot parts,

– Maximize cooling effect for each component, which improve the reliability of the compressor.
– Enlarge internal space to facilitate routine maintenance for compressor.
– Optimized package design effectively decreases compressor noise, which satisfies clients' requirement of environment protection.

Capacity Control System

Newly designed capacity control system

Combination of inlet valve, pressure sensor and capacity control system provide multiple capacity control methods and satisfy clients' various requirements for compressed air.

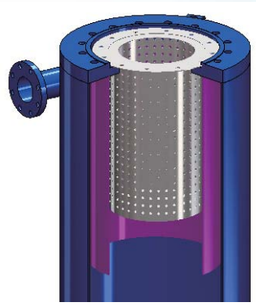
Suction Filter/Oil Separator

Industry leading suction filter is adopted.

– Low pressure losses enhance Energy-Saving efficiency of the compressor.
– High quality filter element improve the reliability of the compressor.

Built-in subsided oil separator is adopted.

– Built-in grounding prevents electrostatic fire, which contributes to reliability improvement.



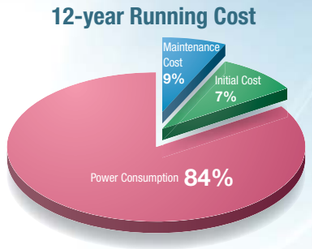
Hitachi Synthetic Lubricating Oil

NEW HISCREW OIL 2000

Synthetic lubricating oil specially developed for Hitachi Screw Air Compressor

– High quality lubricating oil ensures stable operation of air compressor, improves efficiency and reliability of the air compressor.
– Oil change cycle is every 2 years or 12,000 hr (which comes first). Total running cost is significantly reduced.

Most of Compressor Life-Cycle Cost is Power Consumption



Calculating condition: Take Hitachi 75kW oil-flooded screw compressor as an example and calculate under the condition of yearly running time of 6,000 hours, 100% load rate.
The figures above are only for reference.
The actual proportion varies from different countries.

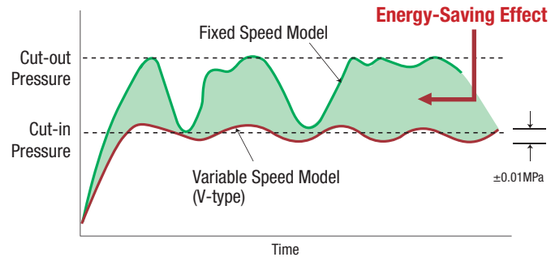
Calculations of running cost of compressor for a 12-year cycle

- **Initial cost shares about 7% of total cost.**
  (including purchase and installation fee of compressor and peripheral equipment fee)
- **Maintenance cost shares about 9% of total cost.**
  (regular maintenance fee)
- **Power consumption shares about 84% of total cost.**

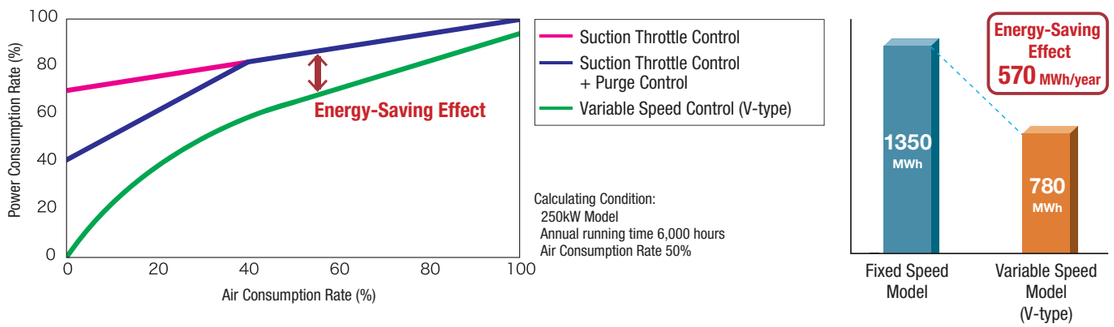
Hitachi Variable Speed Compressor-Ideal Operation of Energy-Saving

Constant Pressure Control

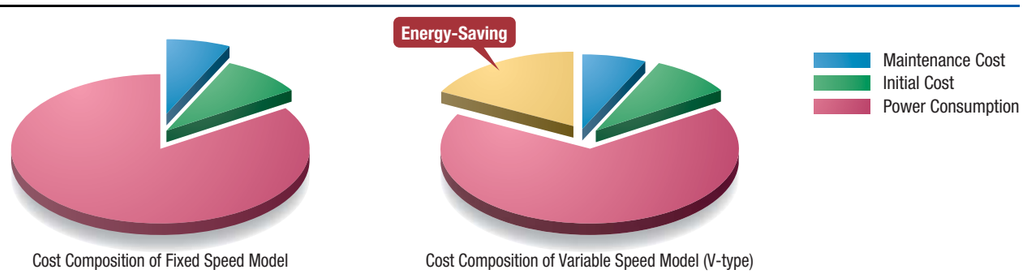
Compared to fixed speed compressor, variable speed control compressor can precisely change rotation speed of main motor to respond to the air consumption change and realize constant pressure control and Energy-Saving effect.



Energy-Saving Effect



Cost Comparison



Cost Composition of Fixed Speed Model

Cost Composition of Variable Speed Model (V-type)

Specifications

180kW

Item • Unit			M type								V type							
Model			OSP-180M5AX				OSP-180M5WX				OSP-180V5AX				OSP-180V5WX			
Cooling Method		–	Air-Cooled				Water-Cooled				Air-Cooled				Water-Cooled			
Nominal Output		kW	180								180							
Rated	Discharge Pressure	MPa	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25
	Discharge Capacity	m³/min	31.0	30.0	27.0	22.5	31.0	30.0	27.0	22.5	31.0	30.0	27.0	22.5	31.0	30.0	27.0	22.5
Suction Pressure		–	Atmospheric Pressure								Atmospheric Pressure							
Temperature of Discharge Air		˚C	Ambient Temp + 15 or below				Cooling Water Temp + 13 or below				Ambient Temp + 15 or below				Cooling Water Temp + 13 or below			
Starter Type		–	Star - Delta (3 Contactor)								Inverter							
Driving System		–	4-Pole TEFC Motor Gear Drive								4-Pole TEFC Motor Gear Drive							
Lubricating Oil		–	NEW HISCREW OIL 2000								NEW HISCREW OIL 2000							
Lubricating Oil Filling Amount		L	90								90							
Cooling Water	Temperature	˚C	——				32 or below				——				32 or below			
	Quantity (32˚C)	L/min	——				283				——				283			
Discharge Air Pipe Diameter		–	DN80								DN80							
Dimension (W×D×H)		mm	3,050 × 1,850 × 2,120				2,850 × 1,850 × 2,120				3,200 × 1,850 × 2,120				3,000 × 1,850 × 2,120			
Weight		kg	3,950				3,700				4,300				4,050			

200kW

Item • Unit			M type								V type							
Model			OSP-200M5AX				OSP-200M5WX				OSP-200V5AX				OSP-200V5WX			
Cooling Method		–	Air-Cooled				Water-Cooled				Air-Cooled				Water-Cooled			
Nominal Output		kW	200								200							
Rated	Discharge Pressure	MPa	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25
	Discharge Capacity	m³/min	35.0	33.5	32.0	26.5	35.0	33.5	32.0	26.5	35.0	33.5	32.0	26.5	35.0	33.5	32.0	26.5
Suction Pressure		–	Atmospheric Pressure								Atmospheric Pressure							
Temperature of Discharge Air		˚C	Ambient Temp + 15 or below				Cooling Water Temp + 13 or below				Ambient Temp + 15 or below				Cooling Water Temp + 13 or below			
Starter Type		–	Star - Delta (3 Contactor)								Inverter							
Driving System		–	4-Pole TEFC Motor Gear Drive								4-Pole TEFC Motor Gear Drive							
Lubricating Oil		–	NEW HISCREW OIL 2000								NEW HISCREW OIL 2000							
Lubricating Oil Filling Amount		L	140								140							
Cooling Water	Temperature	˚C	——				32 or below				——				32 or below			
	Quantity (32˚C)	L/min	——				340				——				340			
Discharge Air Pipe Diameter		–	DN100								DN100							
Dimension (W×D×H)		mm	3,600 × 1,850 × 2,120				2,850 × 1,850 × 2,120				3,600 × 1,850 × 2,120				2,850 × 1,850 × 2,120			
Weight		kg	4,400				4,150				4,650				4,400			

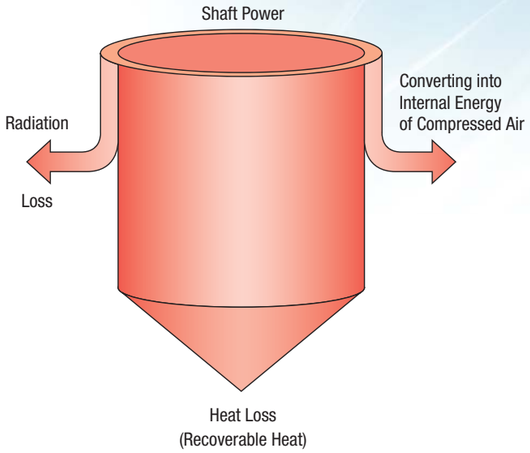
250kW

Item • Unit			M type								V type							
Model			OSP-250M5AX				OSP-250M5WX				OSP-250V5AX				OSP-250V5WX			
Cooling Method		–	Air-Cooled				Water-Cooled				Air-Cooled				Water-Cooled			
Nominal Output		kW	250								250							
Rated	Discharge Pressure	MPa	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25	0.7	0.8	1.0	1.25
	Discharge Capacity	m³/min	45.3	43.0	38.0	32.5	45.3	43.0	38.0	32.5	45.3	43.0	38.0	32.5	45.3	43.0	38.0	32.5
Suction Pressure		–	Atmospheric Pressure								Atmospheric Pressure							
Temperature of Discharge Air		˚C	Ambient Temp + 15 or below				Cooling Water Temp + 13 or below				Ambient Temp + 15 or below				Cooling Water Temp + 13 or below			
Starter Type		–	Star - Delta (3 Contactor)								Inverter							
Driving System		–	4-Pole TEFC Motor Gear Drive								4-Pole TEFC Motor Gear Drive							
Lubricating Oil		–	NEW HISCREW OIL 2000								NEW HISCREW OIL 2000							
Lubricating Oil Filling Amount		L	150								150							
Cooling Water	Temperature	˚C	——				32 or below				——				32 or below			
	Quantity (32˚C)	L/min	——				390				——				390			
Discharge Air Pipe Diameter		–	DN100								DN100							
Dimension (W×D×H)		mm	4,000 × 2,120 × 2,200				3,400 × 2,120 × 2,200				4,000 × 2,120 × 2,200				3,400 × 2,120 × 2,200			
Weight		kg	7,100				6,800				7,350				7,050			

Note : 1. Capacity is the converted value at its inlet condition. For guaranteed values, contact your nearest dealer or HITACHI local representative offices.
2. Pressure is indicated as the gauge pressure.
3. Use the air compressor at a place where ambient temperature is between 0 and 40˚C.
4. Temperature of discharge air may vary from different environments.
5. It is necessary to install a properly sized air receiver tank.
6. Earth leakage circuit breaker is NOT attached. Prepare it in advance.
7. Specifications and outside view are subject to change without notice.

Hitachi Heat Recovery Unit HHRseries

About Compressor Energy Recovery



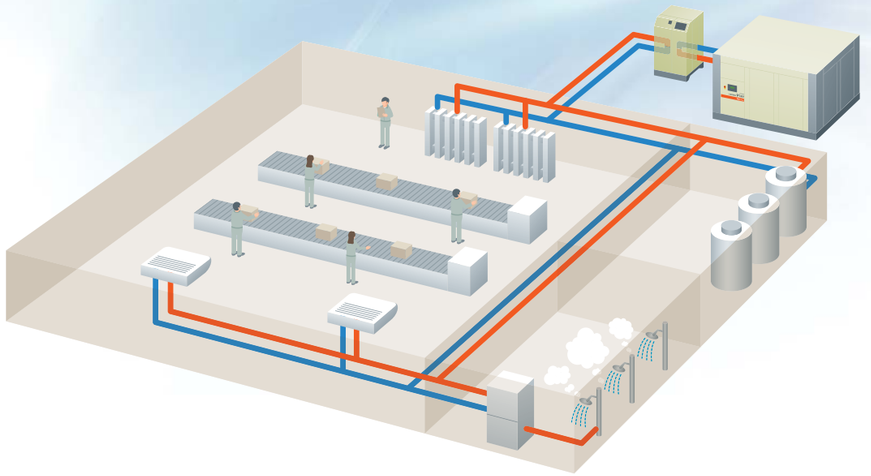
In fact, only small amount of power consumed in air compressor operation has been converted into compressed air for actual production while over 90% of power (indicated in the left diagram) emits into surrounding environment after being changed into heat.
In order to meet clients' requirement in terms of energy recovery, Hitachi has newly developed Hitachi Heat Recovery Unit (HHR), which is a complete energy recovery solution.

Hitachi Heat Recovery Unit (HHR), using water as carrier, realize heat recovery by changing heat between lubricating oil and water during compressor operation.
Recovery efficiency is up to 75-85%.

Specifications of Hitachi Heat Recovery Unit (HHR)

Model	Temperature of Inlet Water	Temperature of Outlet Water	Dimension (W×D×H)	Pipe Diameter (Inlet/Outlet)
–	˚C	˚C	mm	–
HHR-180	20	70	600×600×900	Rp1/Rp1
HHR-280				

Note: 1. Heat recovery capacity of HHR may vary from different system configurations.
2. It is necessary to install HHR indoor. Avoid installing HHR at a place subject to high humidity, powdered dust, or explosives and/or flammable gases.
3. Dimension above does NOT include protruding objects.
4. Specifications and outside view are subject to change without notice.



Hitachi Heat Recovery Unit Application

– Hot water in central air conditioning system
– Hot water for domestic use
– Process preheating
– Boiler hot water preheating

Combination of HHR and Hitachi Compressor

Model	Hitachi Compressor Applicable	Amount of Heat Recovery	Temperature of Outlet Water	Quantity of Heating Water
–	–	kW	˚C	t/h
HHR-180	OSP-180	129	70 max.	2.3
HHR-280	OSP-200 OSP-250	144 179	70 max.	2.5 3.2

Note: 1. Calculation is based on inlet water temperature as 20˚C.
2. In case of combining HHR with compressors other than Hitachi, contact your nearest dealer or HITACHI local representative offices for details.

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