

**Hitachi Two-Stage Oil Flooded
Rotary Screw Compressor**



Asia & Oceania

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For more information, please consult Hitachi dealer nearest to you.

Due to product improvements, the specifications, appearance, etc. of the samples described in the manual are subject to change without notice.
The samples are presented in printed form and sometimes slightly different from actual products in color.

OIL-FLOODED SCREW NX2 series 90-250kW



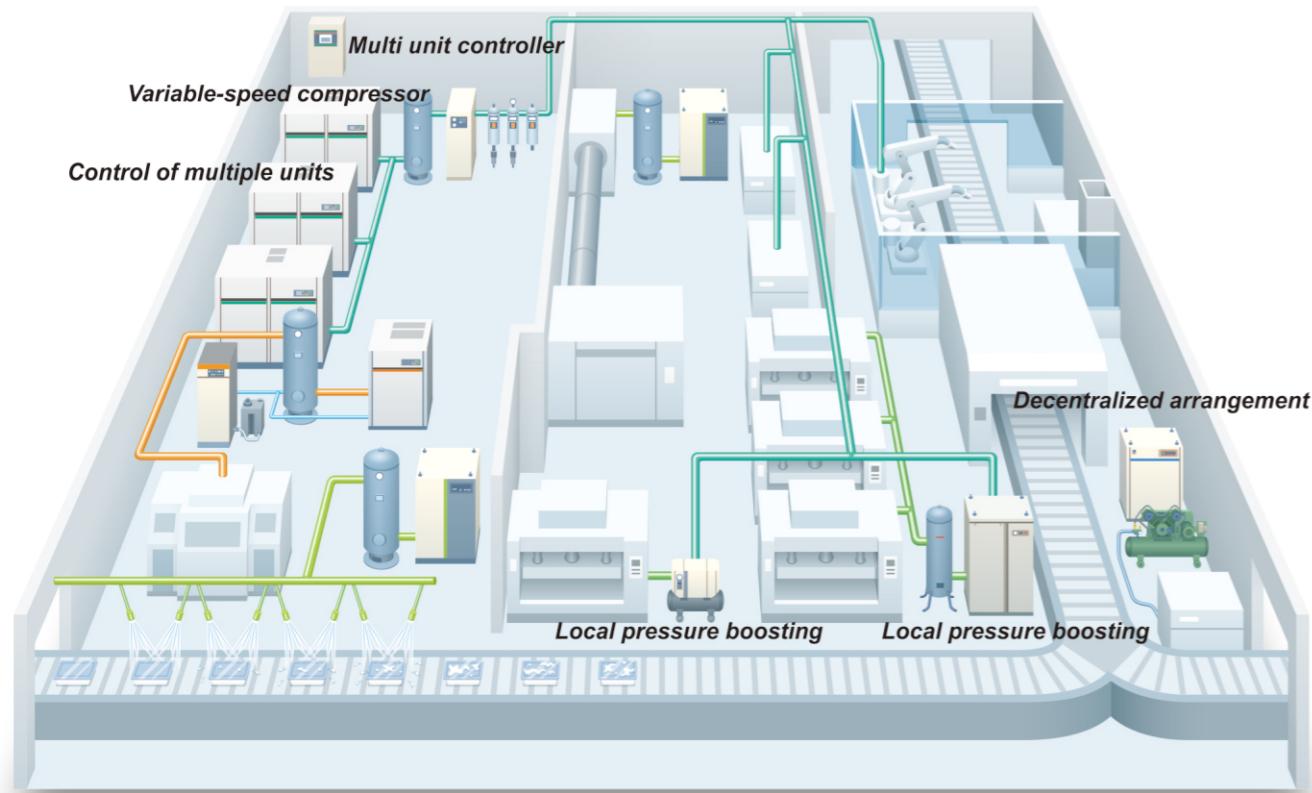
Hitachi – A Trusted Expert in Air Compressors

With a history of more than a century, Hitachi Compressor has always treated 100% customer satisfaction as the source of enterprise development.

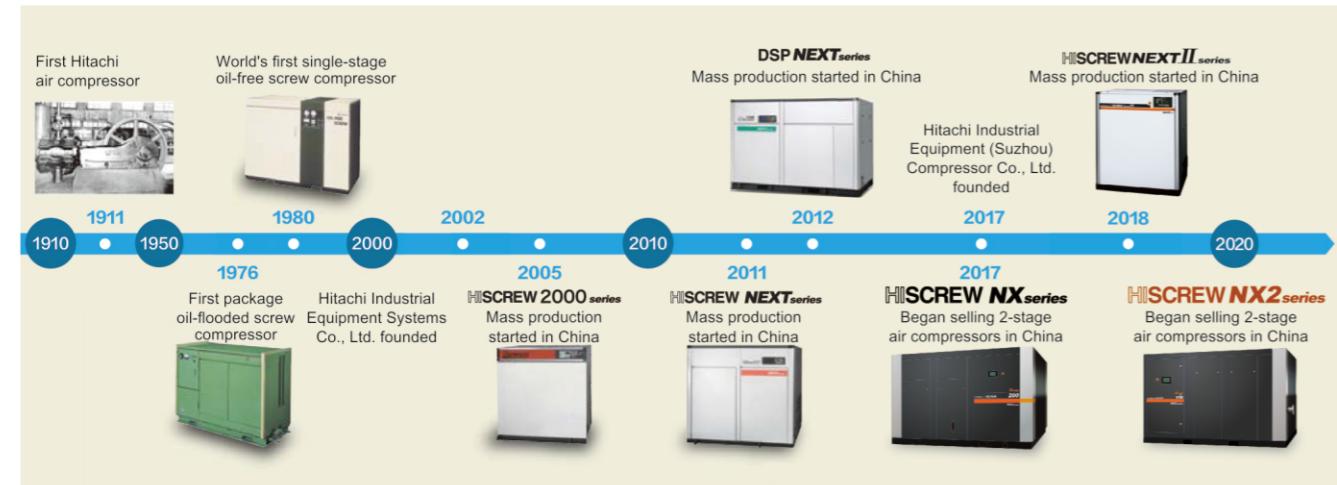
As the leading compressor manufacturer in Japan, we are committed to continuous technological innovation and development of air compressors to meet each customer's requirements. Our products are available in power from 0.2kW to 770kW and types of piston, scroll, screw, etc.

Hitachi can provide customers with the most suitable compressed air systems in both oil-flooded and oil-free applications.

We believe, with our high-quality and efficient air compressor products, multiple compressed air solutions and perfect pre-sales and after-sales services, Hitachi will become your most trusted compressed air expert.



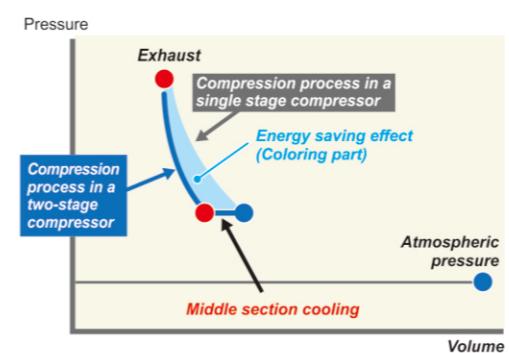
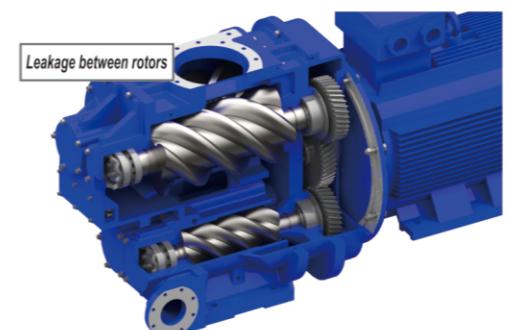
History of Hitachi Air Compressor



The latest interpretation of Hitachi air compressor's energy-saving technology

OSP NX2 series two-stage compressor

Features of two-stage compressor



Take the 0.8MPa specification machine as an example

- Single-stage compressor compresses the air from 0MPa (atmospheric pressure) to about 0.8MPa .
- Two-stage compressor compresses the air from 0MPa (atmospheric pressure) to 0.2MPa at the first stage airend, subsequently, the air is compressed from 0.2MPa to 0.8MPa at the second stage airend.

Compared with the single-stage compressor, the leakage between the rotors caused by the pressure difference in the respective airends is small because the two-stage compressor compresses the air in two-stages, thereby achieving the effect of energy saving.

*Pressure is gauge pressure.

In terms of cooling, the two-stage compressor cools the compressed air at the outlet of first stage airend.

After reducing the volume, it is sent to the second stage airend for second compression.

By reducing the volume, the load on the second stage airend is smaller than that of the uncooled load.

Compared with the one-time compressed air of the single-stage compressor,

the two-stage compressor cools the compressed air in the middle section.

It makes the volume smaller, reduces the load of the second stage airend, and also achieves the effect of high efficiency and energy saving.

Model list

Model	Nominal Output (kW)								
	V_{type}	90	110	132	160	185	200	220	250
Variable speed type		Air-cooled	Water-cooled	Air-cooled	Water-cooled	Air-cooled	Water-cooled	Air-cooled	Water-cooled
M_{type}	Air-cooled	Water-cooled	Air-cooled	Water-cooled	Air-cooled	Water-cooled	Air-cooled	Water-cooled	
	Fixed speed type	○	○	○	○	○	○	○	○

OSP NX2 series

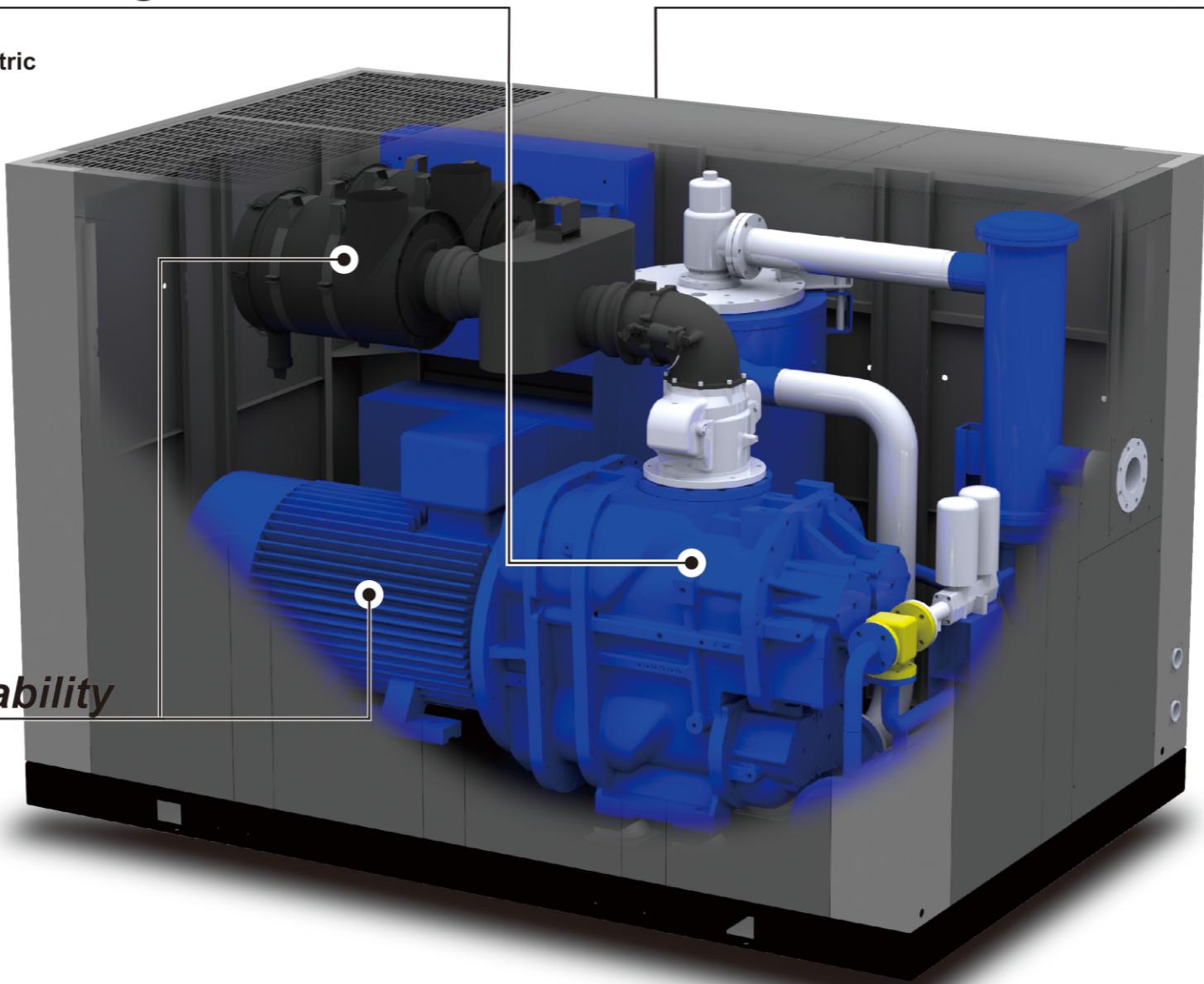
Variable speed type has been added to Hitachi's lineup of high performance, high efficiency two-stage compressor.

OSP NX2 series (90-250kW)

■ High-efficiency and Energy-saving Screw Airend

Optimal design of rotor profile can maximize volumetric 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



■ Industry-leading High Reliability

Equipped with high-quality motor

IP55 Protection Grade

- Effectively protect motor from dust and moisture.
- Enhance the reliability of motor and compressor.

Equipped with standard dust-proof suction filter

Efficient gear drive for high reliability

■ New Intelligent Control System

- Equipped with new LCD touch screen
- Easier operation
- Higher expandability

■ Dedicated Synthetic Oil

NEW HISCREW OIL NEXT

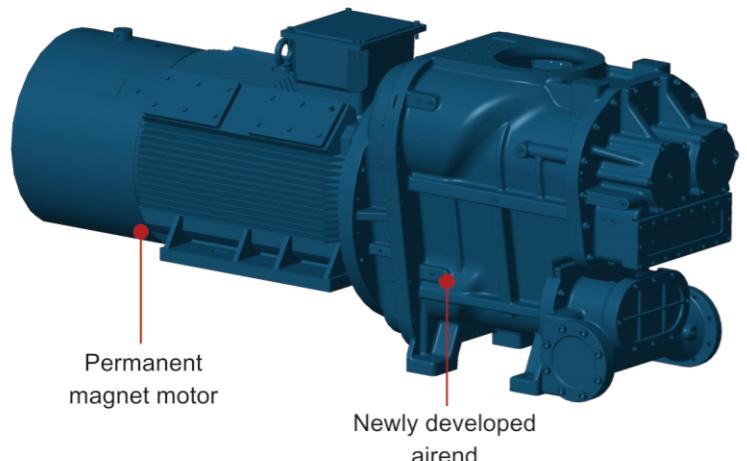
Dedicated synthetic oil developed for Hitachi screw compressors

- High-quality dedicated lubricating oil ensures stable operation of air compressors and improves the overall efficiency and reliability.
- Replacement cycle up to 2 years or 12,000 hours (subject to first reach) reduces operating costs.



OSP-250M5WTX2

Efficient motor and airend



Airend

- Equipped with newly developed airend(*)
- High efficiency and high performance
- (*)Excluding some models.

Main motor

- Permanent magnet motor for all models of inverter compressor
- Efficiency class: Equivalent to IE4
- Protection class: IP55

Multi-function touch screen

The new color touch screen comes standard and is easy to operate, allowing you to see the contents at a glance.

Simple operation of the touch screen allows you to obtain a wide range of information such as compressor operation information(discharge air pressure/discharge air temperature/current value), remaining time for maintenance, and fault history, as well as to set and change operating parameters.



Default interface after power on



Main interface



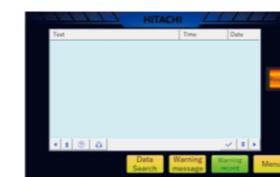
Operating conditions
(Pressure, temperature, current value)



Remaining time for maintenance



Parameter setting

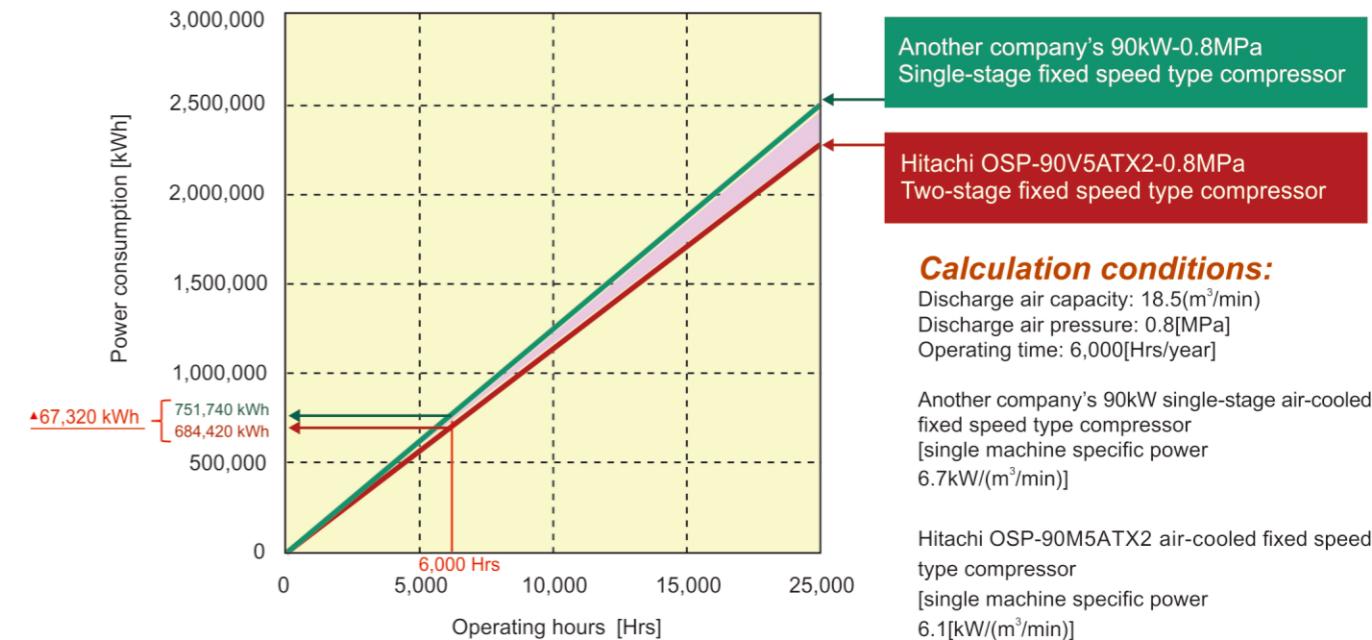


Fault history

Energy saving effect

Two-stage compressor vs Single-stage compressor

Replace the existing single-stage compressor with an efficient two-stage compressor, which reduces the cost of electricity. For example, in the case of a 90kW compressor as shown in the figure below, the maximum annual energy saving effect of **67,320kWh(Calculated value)**.



Calculation conditions:

Discharge air capacity: 18.5(m³/min)
Discharge air pressure: 0.8[MPa]
Operating time: 6,000[Hrs/year]

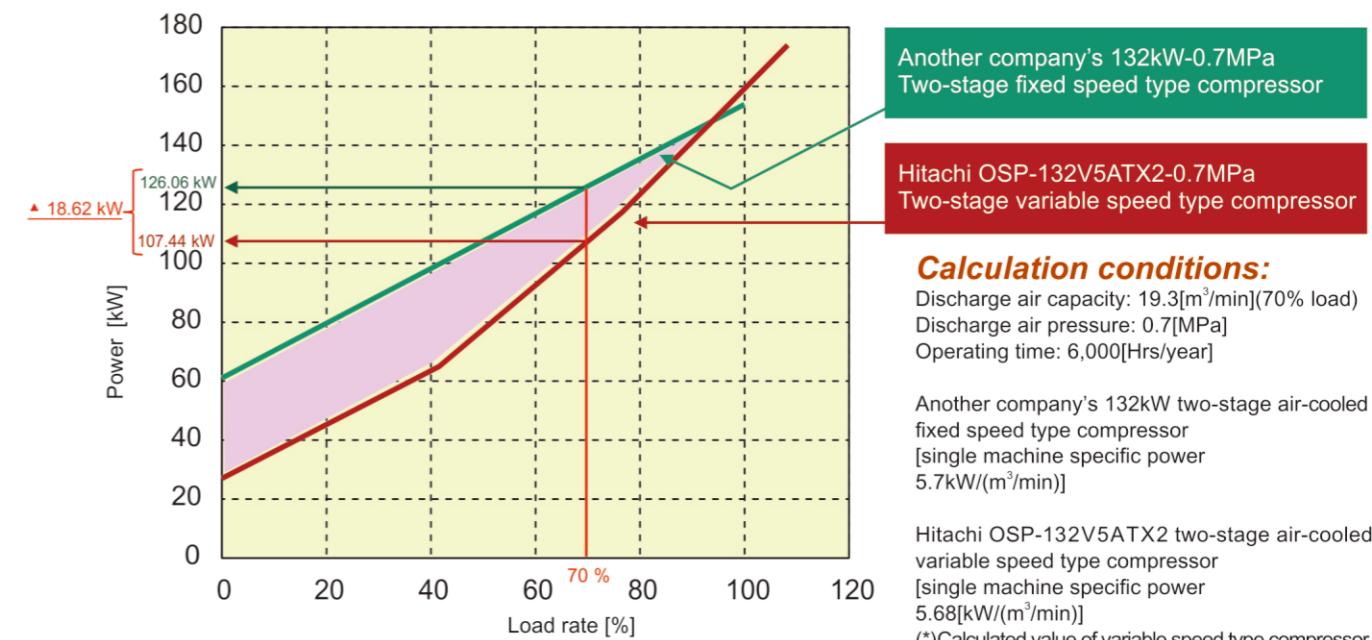
Another company's 90kW single-stage air-cooled fixed speed type compressor
[single machine specific power 6.7kW/(m³/min)]

Hitachi OSP-90M5ATX2 air-cooled fixed speed type compressor
[single machine specific power 6.1[kW/(m³/min)]]

Variable speed type compressor vs Fixed speed type compressor

Taking Hitachi 132kW two-stage variable speed type compressor to replace other brands' 132kW two-stage fixed speed type compressor.

As an example, the maximum power saving effect is **111,714kWh per year(Calculated value)**.



Calculation conditions:

Discharge air capacity: 19.3[m³/min](70% load)
Discharge air pressure: 0.7[MPa]
Operating time: 6,000[Hrs/year]

Another company's 132kW two-stage air-cooled fixed speed type compressor
[single machine specific power 5.7kW/(m³/min)]

Hitachi OSP-132V5ATX2 two-stage air-cooled variable speed type compressor
[single machine specific power 5.68[kW/(m³/min)]]

(*Calculated value of variable speed type compressor
(=Average load at 100/70/40% air volume)

Table of Standard Specifications

■ 90-132 kW M type

Model		OSP-90M5ATX2	OSP-90M5WTX2	OSP-110M5ATX2	OSP-110M5WTX2	OSP-132M5ATX2	OSP-132M5WTX2
Item		Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled
Cooling Method	-	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled
Voltage(50Hz)	V	380		380		380	
Nominal Output	kW	90※1		110※1		132※1	
Rated Discharge Pressure	MPa	0.7	0.8	-	0.7	0.8	1.0
Rated Discharge Air Capacity	m³/min	20.0	18.7	-	20.0	18.7	-
Intake Air Pressure / Temperature	-	Atmospheric Pressure / 0~45°C			Atmospheric Pressure / 0~45°C		
Discharge Air Temperature	°C	Ambient Temperature +15 or below	Cooling Water Temperature +13 or below	Ambient Temperature +15 or below	Cooling Water Temperature +13 or below	Ambient Temperature +15 or below	Cooling Water Temperature +13 or below
Starting Method	-	Star-Delta		Star-Delta		Star-Delta	
Driving Method	-	Gear drive		Gear drive		Gear drive	
Lubricating Oil	-	NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT	
Lubricating Oil Capacity	L	105		105		105	
Cooling Water Temperature	°C	-	32 or below	-	32 or below	-	32 or below
Cooling Water Flow Rate	L/min	-	167	-	200	-	234
Discharge Pipe Diameter	-	DN80		DN80		DN80	
Dimensions (Width x Depth x Height)	mm	3,050 X 1,850 X 2,120	2,850 X 1,850 X 2,120	3,050 X 1,850 X 2,120	2,850 X 1,850 X 2,120	3,050 X 1,850 X 2,120	2,850 X 1,850 X 2,120
Weight	kg	3,700	3,500	4,100	3,900	4,200	4,000
Recommended Air Receiver Volume	m³	3.0 or bigger		3.0 or bigger		4.0 or bigger	

■ 160-185 kW M type

Model		OSP-160M5ATX2	OSP-160M5WTX2	OSP-185M5ATX2	OSP-185M5WTX2		
Item		Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled		
Cooling Method	-	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled		
Voltage(50Hz)	V	380		380			
Nominal Output	kW	160※1		185※1			
Rated Discharge Pressure	MPa	0.7	0.8	1.0	0.7		
Rated Discharge Air Capacity	m³/min	33.5	32.7	26.4	33.5		
Intake Air Pressure / Temperature	-	Atmospheric Pressure / 0~45°C			Atmospheric Pressure / 0~45°C		
Discharge Air Temperature	°C	Ambient Temperature +15 or below	Cooling Water Temperature +13 or below	Ambient Temperature +15 or below	Cooling Water Temperature +13 or below		
Starting Method	-	Star-Delta		Star-Delta			
Driving Method	-	Gear drive		Gear drive			
Lubricating Oil	-	NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT			
Lubricating Oil Capacity	L	150	105	150	105		
Cooling Water Temperature	°C	-	32 or below	-	32 or below		
Cooling Water Flow Rate	L/min	-	300	-	334		
Discharge Pipe Diameter	-	DN100	DN80	DN100	DN100		
Dimensions (Width x Depth x Height)	mm	3,600 X 1,850 X 2,150	3,050 X 1,850 X 2,150	3,600 X 1,850 X 2,150	3,050 X 1,850 X 2,150		
Weight	kg	5,300	5,000	5,600	5,300		
Recommended Air Receiver Volume	m³	4.0 or bigger		5.0 or bigger			

- Note:
- Capacity is measured according to ISO 1217, Annex C.
 - For guaranteed capacity values, please contact your nearest sales representative.
 - Nominal output is a numerical value for the rough compressor capacity. Refer to installation drawings when you plan the compressor shaft power, installed motor output, and power supply equipment.
 - Discharge pressure is gauge pressure.
 - Temperature of discharge air may vary from different environments.

- Install the air compressor indoors and avoid flammable and corrosive environment, moisture and dust.
- Be sure to install an air tank with more than the recommended capacity.
- Earth leakage breaker is not built in the compressor. Prepare by customer.
- Dimensions do not include the pipes and protruding parts. Refer to the drawing for more details.
- Appearance and specifications are subject to change without notice.

■ 200-250 kW M type

Model		OSP-200M5ATX2	OSP-200M5WTX2	OSP-220M5ATX2	OSP-220M5WTX2	OSP-250M5ATX2	OSP-250M5WTX2
Item		Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled
Cooling Method	-	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled
Voltage(50Hz)	V	380		380		380	
Nominal Output	kW	200※1		220※1		250※1	
Rated Discharge Pressure	MPa	0.7	0.8	1.0	0.7	0.8	1.0
Rated Discharge Air Capacity	m³/min	44.0	41.5	35.5	44.0	41.5	35.5
Intake Air Pressure / Temperature	-	Atmospheric Pressure / 0~45°C			Atmospheric Pressure / 0~45°C		
Discharge Air Temperature	°C	Ambient Temperature +15 or less	Cooling water temperature +13 or less	Ambient Temperature +15 or less	Cooling water temperature +13 or less	Ambient Temperature +15 or less	Cooling water temperature +13 or less
Starting Method	-	Star-Delta		Star-Delta		Star-Delta	
Driving Method	-	Gear drive		Gear drive		Gear drive	
Lubricating Oil	-	NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT	
Lubricating Oil Capacity	L	170	150	170	150	170	150
Cooling Water Temperature	°C	-	32 or less	-	32 or less	-	32 or less
Cooling Water Flow Rate	L/min	-	334	-	383	-	416
Discharge Pipe Diameter	-	DN125	DN100	DN125	DN100	DN125	
Dimensions (Width x Depth x Height)	mm	4,200 X 2,150 X 2,250	3,400 X 2,150 X 2,250	4,200 X 2,150 X 2,250	3,400 X 2,150 X 2,250	4,200 X 2,150 X 2,250	3,400 X 2,150 X 2,250
Weight	kg	7,600		7,250		7,850	
Weight	kg	5,600		5,000		7,850	
Recommended Air Receiver Volume	m³	5.0 or bigger		6.0 or bigger		6.0 or bigger	

Note:

Model Implication

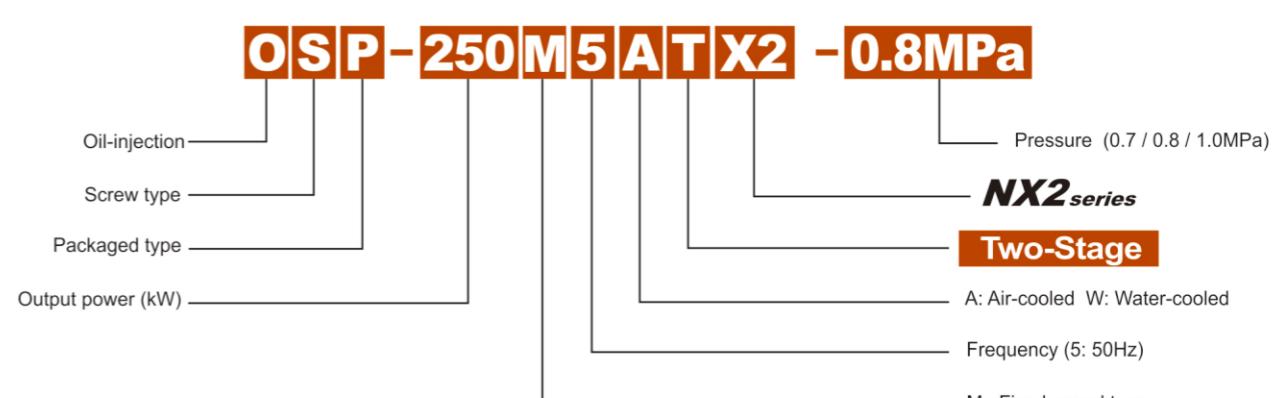


Table of Standard Specifications

■ 90-132 kW V_{type}

Model		OSP-90V5ATX2	OSP-90V5WTX2	OSP-110V5ATX2	OSP-110V5WTX2	OSP-132V5ATX2	OSP-132V5WTX2
Cooling Method	-	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled
Voltage(50Hz)	V	380		380		380	
Nominal Output	kW	90※1		110※1		132※1	
Rated Discharge Pressure	MPa	0.7	0.8	-	0.7	0.8	1.0
Rated Discharge Air Capacity	m ³ /min	20.0	18.7	-	20.0	18.7	-
Intake Air Pressure / Temperature	-	Atmospheric Pressure / 0~45°C			Atmospheric Pressure / 0~45°C		
Discharge Air Temperature	°C	Intake temperature +15 or less	Cooling water temperature +13 or less	Intake temperature +15 or less	Cooling water temperature +13 or less	Intake temperature +15 or less	Cooling water temperature +13 or less
Starting Method	-	Frequency conversion		Frequency conversion		Frequency conversion	
Driving Method	-	Gear drive		Gear drive		Gear drive	
Lubricating Oil	-	NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT	
Lubricating Oil Capacity	L	105		105		105	
Cooling Water Temperature	°C	-	32 or less	-	32 or less	-	32 or less
Cooling Water Flow Rate	L/min	-	167	-	200	-	234
Discharge Pipe Diameter	-	DN80		DN80		DN80	
Dimensions (Width x Depth x Height)	mm	3,200 X 1,850 X 2,120	3,000 X 1,850 X 2,120	3,200 X 1,850 X 2,120	3,000 X 1,850 X 2,120	3,200 X 1,850 X 2,120	3,000 X 1,850 X 2,120
Weight	kg	3,750	3,550	4,180	3,980	4,280	4,080
Recommended Air Receiver Volume	m ³	3.0 or bigger		3.0 or bigger		4.0 or bigger	

■ 160-185 kW V_{type}

Model		OSP-160V5ATX2	OSP-160V5WTX2	OSP-185V5ATX2	OSP-185V5WTX2			
Cooling Method	-	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled			
Voltage(50Hz)	V	380		380				
Nominal Output	kW	160※1		185※1				
Rated Discharge Pressure	MPa	0.7	0.8	1.0	0.7			
Rated Discharge Air Capacity	m ³ /min	33.5	32.7	26.4	33.5			
Intake Air Pressure / Temperature	-	Atmospheric Pressure / 0~45°C			Atmospheric Pressure / 0~45°C			
Discharge Air Temperature	°C	Intake temperature +15 or less	Cooling water temperature +13 or less	Intake temperature +15 or less	Cooling water temperature +13 or less	Intake temperature +15 or less	Cooling water temperature +13 or less	
Starting Method	-	Frequency conversion		Frequency conversion		Frequency conversion		
Driving Method	-	Gear drive		Gear drive		Gear drive		
Lubricating Oil	-	NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT		
Lubricating Oil Capacity	L	150	105	150	105	150		
Cooling Water Temperature	°C	-	32 or less	-	32 or less	-	32 or less	
Cooling Water Flow Rate	L/min	-	300	-	334	-	383	
Discharge Pipe Diameter	-	DN100	DN80	DN100	DN80	DN100	DN100	
Dimensions (Width x Depth x Height)	mm	3,900 X 1,850 X 2,150		3,350 X 1,850 X 2,150		4,200 X 2,150 X 2,250		
Weight		0.7/0.8MPa	1.0MPa	3,200 X 1,850 X 2,120	3,000 X 1,850 X 2,120	3,900 X 1,850 X 2,150	3,350 X 1,850 X 2,150	
Recommended Air Receiver Volume	m ³	5,560		5,260		8,000		
	kg	0.7/0.8MPa	1.0MPa	4,400	4,200	6,100	5,800	
		4,000		4,200		8,200		
	4.0 or bigger		5.0 or bigger		5.0 or bigger		7,800	

- Note:
- Capacity is measured according to ISO 1217, Annex C.
 - For guaranteed capacity values, please contact your nearest sales representative.
 - Nominal output is a numerical value for the rough compressor capacity. Refer to installation drawings when you plan the compressor shaft power, installed motor output, and power supply equipment.
 - Discharge pressure is gauge pressure.
 - Temperature of discharge air may vary from different environments.
 - Install the air compressor indoors and avoid flammable and corrosive environment, moisture and dust.
 - Be sure to install an air tank with more than the recommended capacity.
 - Earth leakage breaker is not built in the compressor. Prepare by customer.
 - Dimensions do not include the pipes and protruding parts. Refer to the drawing for more details.
 - Appearance and specifications are subject to change without notice.

■ 200-250 kW V_{type}

Model		OSP-200V5ATX2	OSP-200V5WTX2	OSP-220V5ATX2	OSP-220V5WTX2	OSP-250V5ATX2	OSP-250V5WTX2	
Cooling Method	-	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled	Air-Cooled	Water-Cooled	
Voltage(50Hz)	V	380		380		380		
Nominal Output	kW	200※1		220※1		220※1		
Rated Discharge Pressure	MPa	0.7	0.8	1.0	0.7	0.8	1.0	
Rated Discharge Air Capacity	m ³ /min	44.0	41.5	35.5	44.0	41.5	35.5	
Intake Air Pressure / Temperature	-	Atmospheric Pressure / 0~45°C			Atmospheric Pressure / 0~45°C			
Discharge Air Temperature	°C	Intake Air Temp. +15 or less	Cooling water temperature +13 or less	Intake Air Temp. +15 or less	Cooling water temperature +13 or less	Intake Air Temp. +15 or less	Cooling water temperature +13 or less	
Starting Method	-	Frequency conversion		Frequency conversion		Frequency conversion		
Driving Method	-	Gear drive		Gear drive		Gear drive		
Lubricating Oil	-	NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT		NEW HISCREW OIL NEXT		
Lubricating Oil Capacity	L	170		170		170		
Dimensions (Width x Depth x Height)	mm	150		150		150		
Cooling Water Temperature		-	32 or less	-	32 or less	-	32 or less	
Cooling Water Flow Rate	L/min	-	334	383	-	383	416	
Discharge Pipe Diameter	-	DN125	DN100	DN125	DN100	DN125		
Dimensions (Width x Depth x Height)	mm	4,200 X 2,150 X 2,250		3,400 X 2,150 X 2,250		4,200 X 2,150 X 2,250		
Weight		0.7/0.8MPa	1.0MPa	3,900 X 1,850 X 2,150	3,350 X 1,850 X 2,150	3,900 X 1,850 X 2,150	3,350 X 1,850 X 2,150	
Recommended Air Receiver Volume	m ³	8,000		7,600		8,100		
	kg	0.7/0.8MPa	1.0MPa	6,100	5,800	7,700	8,200	
		6,100		5,800		7,800		
	5.0 or bigger		6.0 or bigger		6.0 or bigger		6.0 or bigger	

Model Implication

