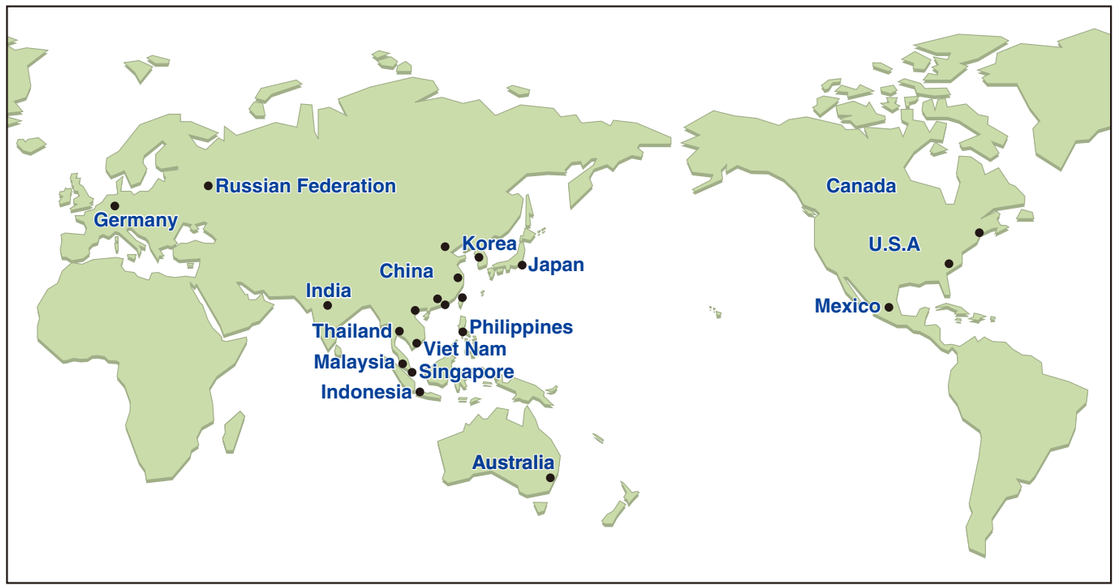

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Product appearances and specifications in this catalog are subject to change with or without notice, as Hitachi continues to develop the latest technologies and products for its customers.

Hitachi Industrial Equipment Systems Co., Ltd.

For further information, please contact your nearest sales representative.

ISO14001 ISO9001 JQA-QM3443

Hitachi Screw Compressor is manufactured at a factory approved by Environmental Standard (ISO 14001) and Quality Standard (ISO9001) of International Organization for Standardization.

Printed in Thailand(H) **HC-E102V** 0812

HITACHI OIL-FREE SCREW COMPRESSOR

HITACHI
Inspire the Next

OIL FREE SCREW

SINGLE STAGE / TWO STAGE

Class Zero
ISO 8573-1

■ ISO 8573-1 : 2010
CLASS 0 TÜV Approval

Energy-Saving, User-Friendly HITACHI High Standard Oil Free Rotary Screw Compressor for Both Environment and Productivity

'Further Energy-Saving and User-Friendly' is the concept for HITACHI oil free screw compressor, DSP series.
Variable speed model achieved further energy saving by constant pressure control, and customer can choose from wide line up.

- **Environmentally friendly, oil free rotary screw compressor**
- **Easy operation by large LCD monitoring display**
- **Advanced functions and performance by scheduled operation and efficient maintenance**
- **Contribution to cost saving and productivity**

Ultimate Air Quality

True Oil-free Air at Class 0 Level

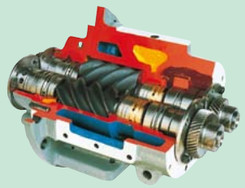
Test and analysis of condensation of oil in the discharge air of Hitachi Oil-free Screw Compressor (DSP) are implemented by third party (TÜV) based on ISO8573-1 standard. By the test result, oil contained in the discharge air of Hitachi DSP is proved and certified as the highest level of quality air "Class 0".

Class Zero ISO-8573-1

■ ISO8573-1:2010 CLASS 0 TÜV Certification

TÜV (The Technische Überwachungs Verein), a Germany based international test service provision third-party on aspects of technical safety and quality evaluation, is globally well-reputed on its neutrality and expertise as well as its strictness in testing.

High Performance Air End



Stainless Steel Fine Rotor

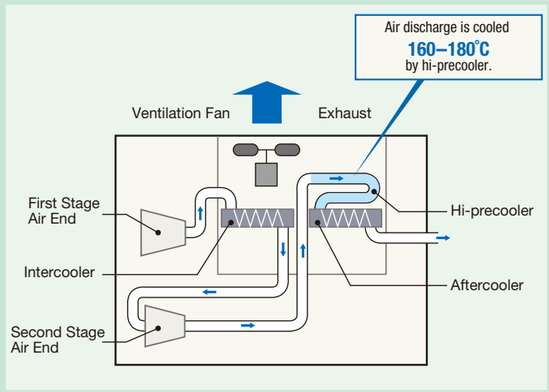
Particular stainless steel, which is superior in corrosion resistance and durability, is applied for rotor with highly accurate grinding. Furthermore, to reduce internal leakage, mirror finished surface enables to keep appropriate clearance, including thermal expansion during operation.

● High Performance Rotor Profile

The rotor enlarges significantly due to thermal expansion. Heat expansion of the rotor occurs since it exposes 300˚C discharge air to the single-stage model. (200˚C even for the two-stage model) HITACHI original 3D correction technology is used to keep the most appropriate clearance.

Hi-precooler System

Hi-precooler system cools down high temperature discharge air down to 180˚C and below before entering aftercooler. This enables aftercooler to be less than the upper temperature limit. HITACHI applied this system to large size, air-cooled model and improved reliability.



Model List

■ DSP Fixed Speed Series

(kW)

		Dryer	15	22	30	37	45	55	75	90	100	120	132 – 240*1
Single-stage	Air-cooled	—	●	●		●		●					
		Built-in	●	●		●		●					
	Water-cooled	—	●	●		●	●	●					
Two-stage	Air-cooled	—		●	●	●	◉	◉	◉	◉	◉	◉	●
		Built-in		●	●	●	◉	◉	◉				
	Water-cooled	—					◉	◉	◉	◉	◉	◉	◉
		Built-in					◉	◉	◉				

■ DSP V-type with Variable Speed Drive

(kW)

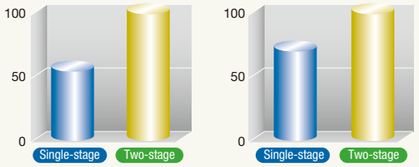
		Dryer	15	22	30	37	45	55	75	90	100	120	132 – 240*1
Single-stage	Air-cooled	—		●		●		◉					
		Built-in		●		●		◉					
	Water-cooled	—				●		●					
Two-stage	Air-cooled	—				●		◉	◉		◉		
		Built-in				●		◉	◉				
	Water-cooled	—						◉	◉		◉		◉*2
		Built-in						◉	◉				

● : V plus ◉ : NEXT Series

*1 132, 145, 160, 200 and 240kW
*2 160 and 240kW

Single-stage, oil free screw compressor is HITACHI original.

Cut Down Maintenance and Initial Cost



Comparison of Maintenance Cost (%) (Annual average)

Comparison of Initial Cost (%)

*Example of Hitachi 55kW without dryer model

Comparison of cost with the same class motor output

Because there is only one air end for DSP single-stage model, the initial cost is lower than two-stage model. The maintenance cost is about half the price of two-stage for the same reason.

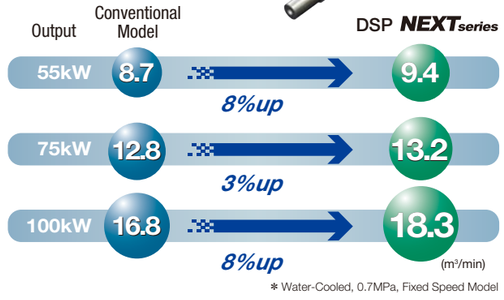
Thorough Reduction of Loss due to the New Air-End
Large Air Delivery and Energy-Saving by DSP NEXTseries

*The above picture shows the internal structure of the new NEXTseries DSP-75kW V-type, Water-Cooled model.

High Capacity

Equipped with New Air-End

High capacity is realized by newly developed Air-End.



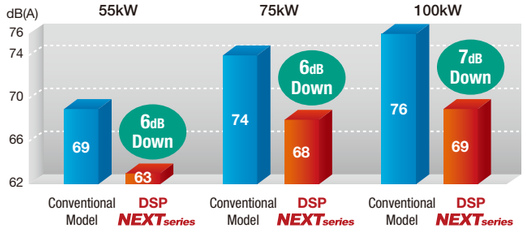
* Water-Cooled, 0.7MPa, Fixed Speed Model

Low Noise

Low Noise Design

Low noise achieved by the low-noise rotor profile, adoption of vibration-proof driving system and low-noise structure of suction and exhaust.

■ Air-Cooled, 0.7MPa, Fixed Speed Model



Line-Up of Variety

High Discharge Pressure Available

Maximum pressure changes from 0.88MPa to 0.93MPa. A variation of series composition due to high discharge pressure makes possible of various system design of variety.

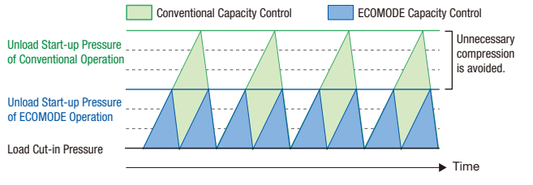
Pursuit of Energy-Saving

ECOMODE

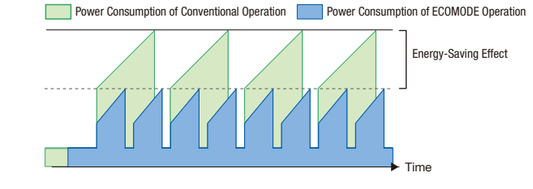
Responding to the load rate of compressor, unnecessary compression is avoided by automatically lowering the unload start-up pressure. Energy-Saving is achieved. Taking 75kW water-cooled, 0.7MPa SPEC, Fixed Speed model as an example, in case of 70% load rate 11.3MWh is saved annually, and in case of 90% load rate 28MWh is saved annually.

(Calculation condition: air receiver tank of 2.26m³ is installed, 8,000h/year operation)

Pressure



Power

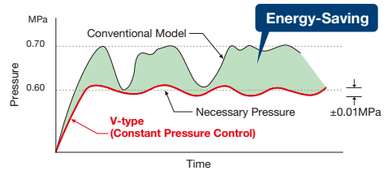


Energy-Saving due to Variable Speed Drive (V-type)

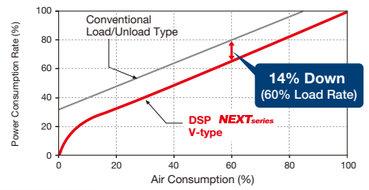
Enlarged Energy-Saving Effect due to Original Capacity Control

For V-type model, variable speed drive and air capacity control are all originally designed by Hitachi. Control system which enables to control the discharge pressure within ±0.01MPa, not only makes high response to the load possible, but also achieve great effect of Energy-Saving together with outstanding stability.

Significant Energy-Saving due to Constant Pressure Control



Energy-Saving Achieved by Variable Speed Drive



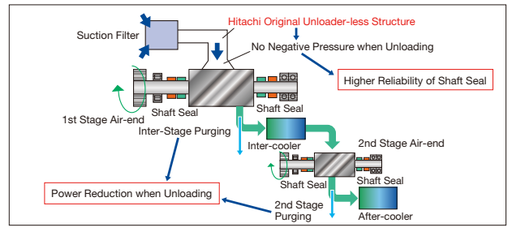
About 83MWh Annual Energy-Saving

Calculation condition:
75kW V-type (0.7MPa SPEC),
0.6MPa as necessary pressure,
8,000h/year operation, 60% load rate

Power Reduction and Reliability Improvement during Unload Operation due to Hitachi Original Unloader-less and Inter-Stage Purge Technology

Patented (JP 3817420)

Significant power reduction and reliability improvement of shaft seal during unload operation are secured due to Hitachi original technology of purging on both inter-stage and 2nd stage.
And, because of unloader-less structure, maintenance of unloader (suction throttle valve) is unnecessary.



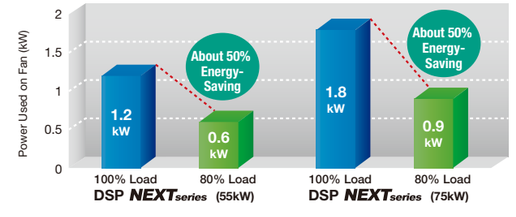
DCBL Drive System for 55/75kW (JP 3255213 others)

Japan Regional Award

- Cascade Vector Control (in line form) as the DCBL motor control system achieve both significant Energy-Saving and excellent reliability.
- Retry function when minor failure occurs is equipped as standard on DCBL controller. Retry is performed up to 3 times according to the judgment by itself when the motor trips. So it is possible to eliminate the influence to the operation of the compressor from outside disturbance.

Cooling Fan (45/55/75kW Air Cooled Models)

Newly developed turbo fan is controlled by inverter. Responding to the air delivery change, the rotation speed of cooling fan is automatically lowered to achieve Energy-Saving. At the same time, noise from cooling fan is lowered too.

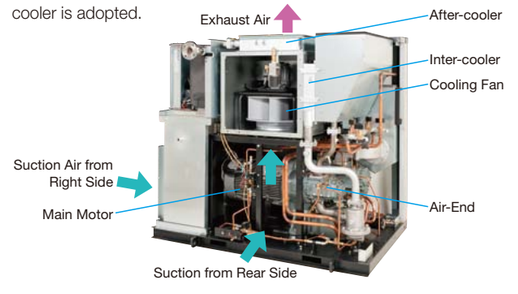


Standard Response to Ambient Temperature up to 45˚C

Continuous operation under up to 45˚C and long maintenance cycle are possible by adoption of new internal structure which minimizes the internal temperature rise.

Continuous Operation under Ambient Temperature of up to 45˚C + **Same as the conventional model (respond up to 40˚C) in maintenance cycle**

- Ventilation Structure of Air Cooled Model
  Compulsory ventilation structure inside the unit due to the wind from cooler is adopted.



Environment Response

Oil Mist Remover (OMR) and Auto Drain Valve installed as Standard Equipment

Oil Mist Remover (OMR), which recaptures the oil mist from gear case and recycle, is standard equipment.
Also, auto drain valves for inter-cooler and after-cooler are standard equipments to drain intermittently without air loss.

Oil Mist Remover (OMR)

Auto Drain Valves for Inter-cooler/After-cooler (without Built-in Dryer Model ONLY)

Air Dryer (Built-in Dryer Type)

Low Pressure Drop Stainless Heat Exchanger

Low pressure drop, stainless heat exchanger is newly developed. Loss due to pressure drop is minimized together with improvement in durability.

Improvement of Reliability

Compared to the conventional model, the performance when operated in high temperature environment is significantly improved.

Improvement in Reliability and Maintenance

Adoption of Totally Enclosed Flange Motor

Reliability is improved due to the adoption of totally enclosed flange motor. Maintenance also becomes easier due to the removal of coupling.

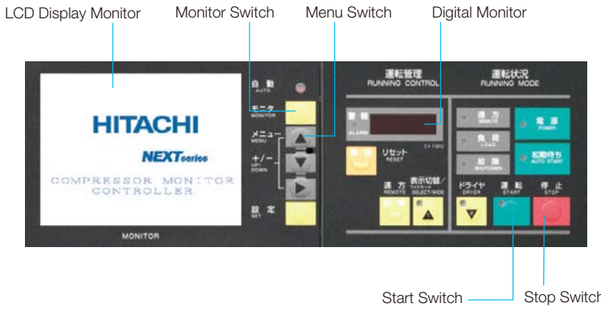
Improvement in Maintenance

Maintenance-friendly layout is adopted, which makes filter change and cleaning of cooler much easier.

Versatility of Control Design

Large LCD Display Monitor with Easy Command Interface

Large LCD display monitor is equipped as standard. Various functions can be easily set by control panel. In case of trouble, the information of status of compressor is displayed so that it is possible to quickly carry out the Troubleshooting.



Standard Function

- 3 Languages Available (English, Japanese, Chinese)
- ECOMODE
- Maintenance Time Notification
- Alarm and Trouble History Display
- Schedule Operation
- Operation Data Memory
- Instantaneous Power Interruption (IPI) Restart etc.

Option

- Dual Operation
- Multi-Unit Control Operation
- AUTO Operation
- Communication Function

Specifications

Variable Speed Drive

Item・Unit		Model	DSP-55VAT[R]N	DSP-75VAT[R]N	DSP-100VA5MN / DSP-100VA6MN				DSP-55VWT[R]N	DSP-75VWT[R]N	DSP-100VW5MN / DSP-100VW6MN			
Cooling Method		—	Air-cooled						Water-cooled					
Discharge Pressure		MPa	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93
Capacity		m³/min	9.3	7.7	12.6	10.9	18.0	15.4	9.5	8.0	12.9	11.4	18.3	15.6
Capacity @ PQ WIDEMODE ON at 0.6MPa		m³/min	9.6	9.3	13.0	12.6	—		9.8	9.5	13.4	13.0	—	
Nominal Output		kW	55		75		100		55		75		100	
Motor Type		—	DCBL Motor				2-Pole TEFC Flange Motor		DCBL Motor				2-Pole TEFC Flange Motor	
Intake Air Press. / Temp.		—	Atmospheric Pressure / 0 – 45℃ [5 – 45℃]						Atmospheric Pressure / 0 – 45℃ [5 – 45℃]					
Discharge Temperature		℃	Ambient Temperature + 15 or below						Cooling Water Temperature + 13 or below					
Discharge Pipe Diameter		B	2 (Flange)						2 (Flange)					
Amount of Cooling Water		L/min	—						90	120	160			
Cooling Water Temperature		℃							35 or below					
Cooling Water Pipe Diameter		B							1・1/4		1・1/2			
Starting Type		—	Soft Start				Inverter		Soft Start				Inverter	
Driving Method		—	Direct Connection with Motor + Gear Driving						Direct Connection with Motor + Gear Driving					
Lubricating Oil Capacity		L	25 (Not filled)				26 (Not filled)		15 (Not filled)				16 (Not filled)	
Cooling Fan Motor Output		kW	1.5		2.2		1.5 × 2		0.05 × 2				0.2 × 2	
[Air Dryer]	P.D.P	℃	[10 (Under Pressure)]				—		[10 (Under Pressure)]				—	
	Refrigerator Nominal Output	kW	[2.2]		[3.0]				[2.2]		[3.0]			
	Refrigerant	—	[R407C]						[R407C]					
Weight		kg	1,340 [1,490]		1,560 [1,730]		2,350		1,320 [1,470]		1,410 [1,580]		2,200	
Dimensions (W×D×H)		mm	2,000×1,300×1,800		2,250×1,300×1,800		2,150×1,520×1,975		2,000×1,300×1,800				2,150×1,520×1,825	
Sound Level (1.5m from front side)		dB(A)	63	65	67	68	69	71	63	65	66		67	69

Fixed Speed Series (45/55/75 kW)

Item・Unit		Model	DSP-45AT[R]5N / DSP-45AT[R]6N		DSP-55AT[R]5N / DSP-55AT[R]6N		DSP-75AT[R]5N / DSP-75AT[R]6N		DSP-45WT[R]5N / DSP-45WT[R]6N		DSP-55WT[R]5N / DSP-55WT[R]6N		DSP-75WT[R]5N / DSP-75WT[R]6N	
Cooling Method		—	Air-cooled						Water-cooled					
Discharge Pressure		MPa	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93
Capacity		m³/min	7.4 / 7.8	6.2 / 6.5	9.2	7.2 / 7.7	13.0	10.5 / 11.1	7.5 / 7.9	6.4 / 6.7	9.4	7.4 / 7.9	13.2	10.7 / 11.3
Nominal Output		kW	45		55		75		45		55		75	
Motor Type		—	2-Pole TEFC Flange Motor						2-Pole TEFC Flange Motor					
Intake Air Press. / Temp.		—	Atmospheric Pressure / 0 – 45℃ [5 – 45℃]						Atmospheric Pressure / 0 – 45℃ [5 – 45℃]					
Discharge Temperature		℃	Ambient Temperature + 15 or below						Cooling Water Temperature + 13 or below					
Discharge Pipe Diameter		B	2 (Flange)						2 (Flange)					
Amount of Cooling Water		L/min	—						90				120	
Cooling Water Temperature		℃							35 or below					
Cooling Water Pipe Diameter		B							1・1/4					
Starting Type		—	Star-Delta (3 contact)						Star-Delta (3 contact)					
Driving Method		—	Direct Connection with Motor + Gear Driving						Direct Connection with Motor + Gear Driving					
Lubricating Oil Capacity		L	15 (Not filled)						15 (Not filled)					
Cooling Fan Motor Output		kW	0.05 × 2						0.05 × 2					
[Air Dryer]	P.D.P	℃	[10 (Under Pressure)]						[10 (Under Pressure)]					
	Refrigerator Nominal Output	kW	[2.2]				[3.0]		[2.2]				[3.0]	
	Refrigerant	—	[R407C]						[R407C]					
Weight		kg	1,480 [1,630]				1,640 [1,810]		1,480 [1,630]				1,640 [1,810]	
Dimensions (W×D×H)		mm	2,000×1,300×1,800						2,000×1,300×1,800					
Sound Level (1.5m from front side)		dB(A)	63		63		65	66	63		63		65	66

Fixed Speed Series (90/100/120 kW)

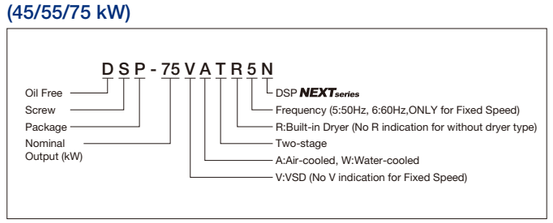
Item・Unit		Model	DSP-90A5L(M)N / DSP-90A6L(M)N		DSP-100A5L(M)N / DSP-100A6L(M)N		DSP-120A5MN / DSP-120A6MN		DSP-90W5L(M)N / DSP-90W6L(M)N		DSP-100W5L(M)N / DSP-100W6L(M)N		DSP-120W5MN / DSP-120W6MN	
Cooling Method		—	Air-cooled						Water-cooled					
Discharge Pressure		MPa	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93	0.70	0.93
Capacity		m³/min	16.6	13.9	18.0	15.4	20.5	17.3	16.8	14.0	18.3	15.6	21.0	17.6
Nominal Output		kW	90		100		120		90		100		120	
Motor Type		—	2-Pole TEFC Flange Motor						2-Pole TEFC Flange Motor					
Intake Air Press. / Temp.		—	Atmospheric Pressure / 0 – 45℃						Atmospheric Pressure / 0 – 45℃					
Discharge Temperature		℃	Ambient Temperature + 15 or below						Cooling Water Temperature + 13 or below					
Discharge Pipe Diameter		B	2 (Flange)						2 (Flange)					
Amount of Cooling Water		L/min	—						160				180	
Cooling Water Temperature		℃							35 or below					
Cooling Water Pipe Diameter		B							1・1/2					
Starting Type		—	Star-Delta (3 contact)						Star-Delta (3 contact)					
Driving Method		—	Direct Connection with Motor + Gear Driving						Direct Connection with Motor + Gear Driving					
Lubricating Oil Capacity		L	26 (Not filled)						16 (Not filled)					
Cooling Fan Motor Output		kW	1.1 × 2			1.5 × 2			L : 0.2 × 2, M : 0.05 × 3				0.05 × 3	
Weight		kg	2,250			2,400			2,100				2,250	
Dimensions (W×D×H)		mm	2,150×1,520×1,975						2,150×1,520×1,825					
Sound Level (1.5m from front side)		dB(A)	68	70	69	71	72	73	66	68	67	69	69	70

NOTE:

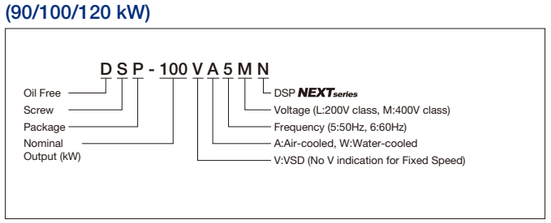
1. Capacity is converted value at its inlet condition (atmospheric pressure).
2. Sound Level is value at 1.5m in front and 1m height in an anechoic room. It may vary in different operating conditions and/or different environment with echo of actual field installations.
   Sound level might be increased by 2dB at PQ WIDEMODE ON.
3. P.D.P is measured at 30 degree C of intake air temperature and rated discharge pressure.
   P.D.P might be much worse at 0.4MPa or less of discharge pressure.
   P.D.P might be 13 degree C at PQ WIDEMODE ON and 0.6MPa of discharge pressure.
4. Capacity of Built-in Dryer model may decrease by up to 3% when drain condensates.
5. Earth leakage circuit breaker is out of scope of supply from Hitachi.
6. DSP NEXTseries compressors are not designed, intended or approved for breathing air applications.
7. Pressures are indicated as the gauge pressure.
8. DSP NEXTseries can not run in excess of 45℃ of ambient temperature. Ventilation and/or air conditions should be considered to maintain the compressor room temperature.
9. For the quality of the cooling water, contact your nearest dealer or Hitachi local representative offices.
10. Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.
11. Select 3.5-4.5 ton duty fork truck for transportation of DSP-90/100/120 NEXTseries.
12. Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

Model Nomenclature

(45/55/75 kW)



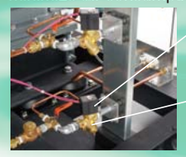
(90/100/120 kW)



Debut of DSP *NEXT series* V-type in Large Class (160/240kW) water-cooled
Enlarged Line-up of DSP *NEXT series* in 132–240kW Range

Air Intake Filter
Dual layout filter element provides higher reliability.

Auto drain solenoid valves for condensate of both intercooler and aftercooler minimize air consumption.

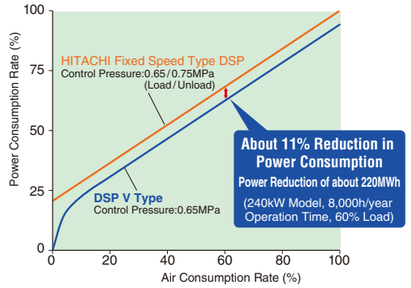


AC/IC Auto Drain Solenoid Valve

Strainer

Energy-Saving (V-type)

Further Energy-Saving is achieved by DSP *NEXT series* with Built-in Inverter.



*Compared to conventional Load/Unload Control Type, lower pressure setting is possible due to the stable pressure control.

High Capacity by Equipping New NEXT series Air-End

Low Noise and Vibration

Compact Design by Optimized Layout of Components

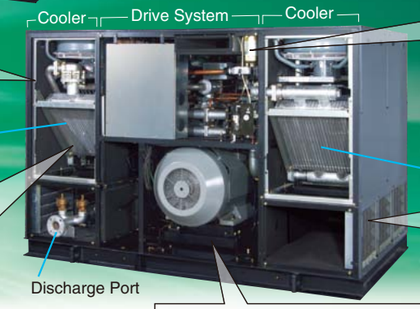
High Discharge Pressure Available (up to 1.0MPa)

Specifications

Item・Unit	Model	DSP-132W5N / DSP-132W6N		DSP-145W5N / DSP-145W6N		DSP-160W5N / DSP-160W6N		DSP-200W5N / DSP-200W6N		DSP-240W5N / DSP-240W6N		DSP-160VW5N / DSP-160VW6N		DSP-240VW5N / DSP-240VW6N	
Cooling Method	—	Water-cooled													
Control Method	—	Fixed Speed Type										V type (VSD)			
Discharge Pressure	MPa	0.75	0.93	0.75	0.93	0.75	0.93	0.75	0.93	0.75	0.93	0.75	0.93	0.75	0.93
Capacity	m³/min	23.4	20.7	26.0	22.2	28.5	24.8	37.0	32.2	40.5	35.0	28.5	24.8	40.5	35.0
Nominal Output	kW	132		145		160		200		240		160		240	
Motor Type	—	4-Pole TEFC Flange Motor													
Intake Air Press. / Temp.	—	Atmospheric Pressure / 0 – 40°C													
Discharge Temperature	°C	Cooling Water Temperature + 13 or below													
Discharge Pipe Diameter	B	2 1/2 (Flange)						3 (Flange)				2 1/2 (Flange)		3 (Flange)	
Starting Type	—	Star-Delta										Inverter			
Driving Method	—	Direct Connection with Motor + Gear Driving													
Lubricating Oil Capacity	L	40 (Not filled)						50 (Not filled)				40 (Not filled)		50 (Not filled)	
Cooling Fan Motor Output	kW	0.4													
Weight	kg	3,800						4,800				4,000		5,100	
Dimensions (W×D×H)	mm	2,500×1,600×1,925						2,800×1,800×1,950				2,500×1,600×1,925		2,800×1,800×1,950	
Sound Level (1.5m from front side)	dB(A)	68	69	69	70	69	70	69	70	70	71	70	70	71	71

NOTE:
1. Capacity is converted value at its inlet condition (atmospheric pressure).
2. Sound Level is value at 1.5m in front and 1m height in an anechoic room. It may vary in different operating conditions and/or different environment with echo of actual field installations.
3. Earth leakage circuit breaker is out of scope of supply from Hitachi.
4. DSP *NEXT series* compressors are not designed, intended or approved for breathing air applications.
5. Pressures are indicated as the gauge pressure.
6. DSP *NEXT series* can not run in excess of 40°C of ambient temperature. Ventilation and/or air conditions should be considered to maintain the compressor room temperature.
7. For the quality of the cooling water, contact your nearest dealer or Hitachi local representative offices.
8. Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.
9. Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

Advanced Technology, Top Class of Energy-Saving Achieved
Large Class of Air-cooled DSP 132–240kW



Compact Design
Air/Oil coolers are installed in both sides of drive system.

Dual-V installation of Coolers
Quick and Easy access through rear panel for inspection and cleaning.

Oil Mist Remover as Standard
Collects oil mist from the gear case and recycles.

Low Sound Airflow Path
Newly developed silencer structure airflow path.

TEFC Motor
Highly reliable, highly efficient 4-pole TEFC motor.

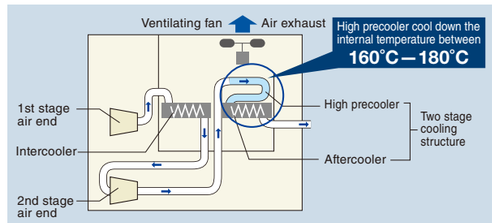
High Reliability and Easy Maintenance

Totally enclosed flange motor is standard
New totally enclosed flange motor is applied to improve reliability. Motor shaft in direct connection without coupling enables easy maintenance work.

High precooler system (air cooled models)
High precooler system reduces temperature of extremely hot air to aftercooler and two stage cooling structure improves reliability.

High Discharge Pressure Available
1.0MPa is available with high reliability.

Maintenance Friendly
DSP series provides easy accessibility for inspection and maintenance.



Specifications

Item・Unit	Model	DSP-132A5 / DSP-132A6		DSP-145A5 / DSP-145A6		DSP-160A5 / DSP-160A6		DSP-200A5 / DSP-200A6		DSP-240A5 / DSP-240A6	
Cooling Method	—	Air-cooled									
Discharge Pressure	MPa	0.75	1.0	0.75	1.0	0.75	1.0	0.75	1.0	0.75	1.0
Capacity	m³/min	22.5	19.0	25.0	20.0	27.5	22.5	35.5	30.0	40.0	32.5
Nominal Output	kW	132		145		160		200		240	
Motor Type	—	4-Pole TEFC Flange Motor									
Intake Air Press. / Temp.	—	Atmospheric Pressure / 0 – 40°C									
Discharge Temperature	°C	Ambient Temperature + 15 or below									
Discharge Pipe Diameter	B	2 1/2 (Flange)						3 (Flange)			
Starting Type	—	Star-Delta									
Driving Method	—	Direct Connection with Motor + Gear Driving									
Lubricating Oil Capacity	L	50 (Not filled)						60 (Not filled)			
Cooling Fan Motor Output	kW	4.4 (1.1 × 4)						6.0 (1.5 × 4)			
Weight	kg	3,900				4,000		5,200			
Dimensions (W×D×H)	mm	2,900×1,710×1,925						3,200×1,890×1,950			
Sound Level (1.5m from front side)	dB(A)	73	74	74	75	74	75	76	77	77	78

NOTE:
1. Capacity is converted value at its inlet condition (atmospheric pressure).
2. Sound Level is value at 1.5m in front and 1m height in an anechoic room. It may vary in different operating conditions and/or different environment with echo of actual field installations.
3. Earth leakage circuit breaker is out of scope of supply from Hitachi.
4. DSP series compressors are not designed, intended or approved for breathing air applications.
5. Pressures are indicated as the gauge pressure.
6. DSP series can not run in excess of 40°C of ambient temperature. Ventilation and/or air conditions should be considered to maintain the compressor room temperature.
7. Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.
8. Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

High Performance NEW DSP Series

Large Air Delivery

Newly-developed high efficiency air end is applied, and discharge air capacity is increased dramatically.

22kW Single-stage Model (0.69MPa)

Unit: m³/min

37kW Single-stage Model (0.69MPa)

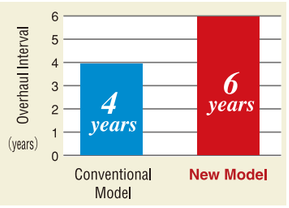
Unit: m³/min

High Reliability and Easy Maintenance

Totally-enclosed, fan-cooled (TEFC) motor is equipped as standard feature.

Longer Overhaul Interval

Overhaul interval is extended from 4 years to 6 years.

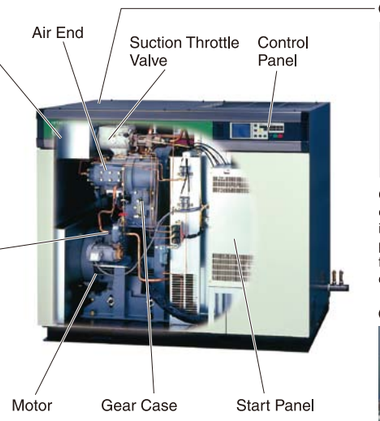


● Suction Filter

Can easily be taken out by removing the left cover.

● Coolant Filter (air-cooled model)

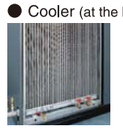
Can be taken out without disconnecting the pipe.



● Oil Mist Remover (option)

Can be built in the package, eliminating the need for installing the gear case vent pipe. All amounts of oil mist from the gear case are collected and reused.

● Cooler (at the back)



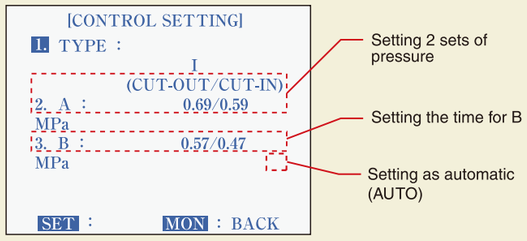
The cooler is installed at the back of the unit and easy to clean.

Further Energy Saving

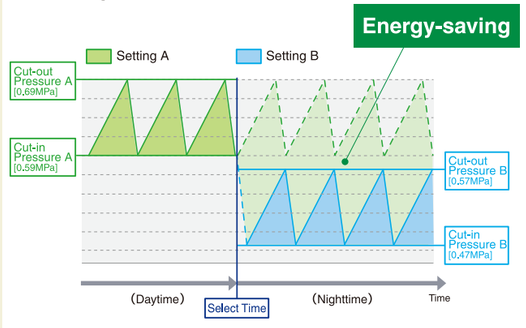
● Hitachi Original Pressure Setting

2 sets of pressure setting, **A** and **B**, are available for capacity control. By setting the operation time, it executes capacity control by either **A** or **B**. In addition, **A** and **B** can be switched externally.*

* Additional modification for terminal block is required.



■ **Example**



VARIABLE SPEED CONTROL INVERTER DSP V PLUS

AIR COOLED SINGLE STAGE
22kW / 37kW / 55kW

PQ WIDEMODE (22kW, 37kW, 55kW, Air-Cooled, Single-Stage Models)

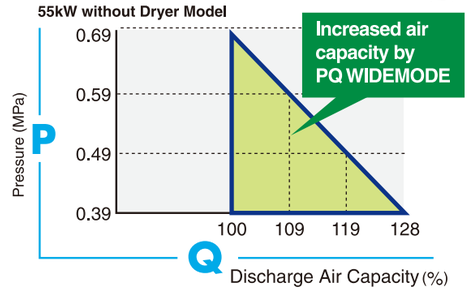
Hitachi inverter controlling system brings about larger capacity under lower pressure or smaller capacity under higher pressure. The available pressure range is between 0.39 and 0.69MPa and air capacity has increased maximum 19–28% compared with conventional models.

● Capacity in the PQ WIDEMODE

Unit: m³/min

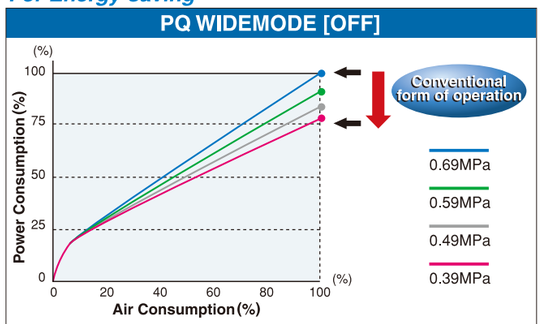
Model \ Discharge Air Pressure MPa	0.39	0.49	0.59	0.69
22kW	4.3	4.0	3.7	3.4
37kW	6.4	6.0	5.5	5.0
55kW	8.2	7.6	7.0	6.4

Note: Dryer built-in model and 37kW minimum pressure are 0.49MPa in the PQ WIDEMODE.



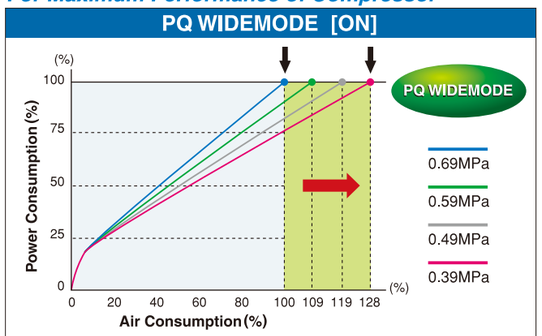
● PQ WIDMODE is set up as ON or OFF, depends on needs

For Energy-saving



① When the operating pressure is reduced from 0.69MPa to 0.59MPa, the maximum power consumption is automatically reduced to about 92% of 0.69MPa.
② When the pressure is reduced to 0.49MPa, the power consumption reaches about 85%. When the pressure is reduced to 0.39MPa, the power consumption reaches about 79%. If you know your air consumption for sure and wish to reduce the power consumption depressurization, PQ WIDEMODE OFF is recommended.

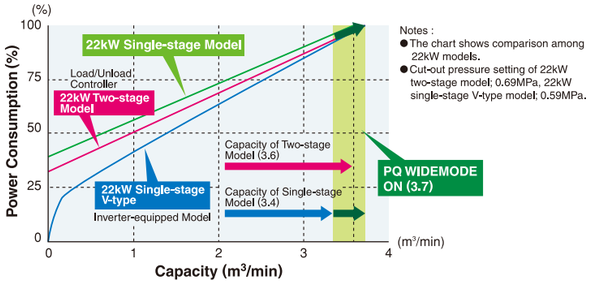
For Maximum Performance of Compressor



① Reducing the operating pressure from 0.69MPa to 0.39MPa, the power consumption is decreased about 79% of 0.69MPa.
② With the excess power from depressurization, you can increase the air flow to 128% of the rating. At that time, the power consumption reaches 100%. If you wish to use maximum performance, PQ WIDEMODE ON is recommended.

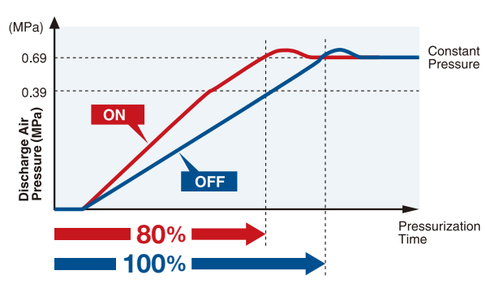
Further Discharge Air Capacity and Energy-Saving Effect, Comparing with Two-Stage Model (22kW Single-Stage Model)

The maintenance cost for single-stage model low.
PQ WIDEMODE offers competitive discharge air capacity with two-stage model.



Shorten Pressurization Time (PQ WIDEMODE)

Pressurization time is shortened by maximum air capacity operation. For example, when 55kW model rises pressure in air receiver from the ambient pressure to 0.69MPa, it can shorten maximum of 20 % more than conventional model.



Specifications New DSP Fixed Speed Series

Single-Stage

Air-cooled

Item・Unit \ Model			Without Dryer Model								Dryer Built-in Model			
			DSP-15A5II		DSP-22A5II		DSP-37A5III		DSP-55A5II		DSP-15AR5II	DSP-22AR5II	DSP-37AR5III	DSP-55AR5II
			DSP-15A6II		DSP-22A6II		DSP-37A6III		DSP-55A6II		DSP-15AR6II	DSP-22AR6II	DSP-37AR6III	DSP-55AR6II
Discharge Pressure		MPa	0.69	0.39	0.69	0.39	0.69	0.39	0.69	0.39	0.69			
Discharge Air Delivery		m³/min	2.0	2.5	3.4	4.0	5.0	5.9	6.4	8.0	2.0	3.4	5.0	6.4
Motor Nominal Output		kW	15		22		37		55		15	22	37	55
Suction Pressure / Temperature		℃	Atmospheric Pressure / 0 – 40								Atmospheric Pressure / 5 – 40			
Discharge Temperature		℃	Atmospheric Temperature + 15 or below											
Discharge Pipe Diameter		—	R1				R1 1/2				R1		R1 1/2	
Starter Method		—	Full Voltage Start		Star-Delta (3 contact)						Full Voltage Start	Star-Delta (3 contact)		
Driving Method		—	V-Belt + Gear-Driven											
Cooling Fan Motor Nominal Output		kW	0.75						0.9		0.75			0.9
Coolant Pump Motor Nominal Output		kW[50/60Hz]	0.2 / 0.3											
Lubricating Oil Amount		L	12 (Not filled in)				18 (Not filled in)				12 (Not filled in)		18 (Not filled in)	
Air Dryer	P.D.P.	℃	—								10 (Under Pressure)			
	Refrigerator Nominal Output	kW									0.5	1.1		
	Refrigerant	—									R407C			
	Fan Motor Output	W									25		25 × 2	120
Weight		kg	750		800		1,020		1,240		780	830	1,170	1,390
Dimensions (W×D×H)		mm	1,400×970×1,400				1,780×980×1,500				1,400×970×1,400		2,180×980×1,500	
Sound Level (1.5m from front side)		dB(A)	62	63	63	64	66	68	68	70	62	63	66	68

Water-cooled

Item・Unit \ Model			Without Dryer Model									
			DSP-15W5I		DSP-22W5I		DSP-37W5III		DSP-45W5III		DSP-55W5III	
			DSP-15W6I		DSP-22W6I		DSP-37W6III		DSP-45W6III		DSP-55W6III	
Discharge Pressure		MPa	0.69	0.39	0.69	0.39	0.69	0.39	0.69	0.39	0.69	0.39
Discharge Air Delivery		m³/min	2.0	2.5	3.4	4.0	4.2	5.9	5.0	6.8	6.4	8.0
Motor Nominal Output		kW	15		22		37		45		55	
Suction Pressure / Temperature		℃	Atmospheric Pressure / 0 – 40									
Discharge Temperature		℃	Cooling Water Temperature + 13 or below									
Discharge Pipe Diameter		—	R1				R1 1/2					
Amount of Cooling Water		L/min	50		50		60		80		80	
Cooling Water Temperature		℃	32 or below									
Cooling Water Pipe Temperature		—	R3/4				R1					
Starter Method		—	Full Voltage Start		Star-Delta (3 contact)							
Driving Method		—	V-Belt + Gear-Driven									
Cooling Fan Motor Nominal Output		kW	0.1									
Lubricating Oil Amount		L	10 (Not filled in)				14 (Not filled in)					
Weight		kg	690		760		970		1,190		1,190	
Dimensions (W×D×H)		mm	1,400×970×1,400				1,520×980×1,500					
Sound Level (1.5m from front side)		dB(A)	62	63	63	64	64	66	64	66	64	66

Two-Stage

Air-cooled

Item・Unit \ Model			Without Dryer Model						Dryer Built-in Model					
			DSP-22AT5I		DSP-30AT5I		DSP-37AT5I		DSP-22ATR5I		DSP-30ATR5I		DSP-37ATR5I	
			DSP-22AT6I		DSP-30AT6I		DSP-37AT6I		DSP-22ATR6I		DSP-30ATR6I		DSP-37ATR6I	
Discharge Pressure		MPa	0.69	0.88	0.69	0.88	0.69	0.88	0.69	0.88	0.69	0.88	0.69	0.88
Discharge Air Delivery		m³/min	3.6	3.1	4.6	3.9	5.3	4.6	3.6	3.1	4.6	3.9	5.3	4.6
Motor Nominal Output		kW	22		30		37		22		30		37	
Suction Pressure / Temperature		℃	Atmospheric Pressure / 0 – 40						Atmospheric Pressure / 5 – 40					
Discharge Temperature		℃	Ambient Temperature + 15 or below											
Discharge Pipe Diameter		—	R 1 1/2											
Starter Method		—	Star-Delta (3 contact)											
Driving Method		—	V-Belt + Gear-Driven											
Cooling Fan Motor Nominal Output		kW	0.75											
Lubricating Oil Capacity		L	18 (Not filled)											
Air Dryer	P.D.P.	℃	—						10 (Under Pressure)					
	Refrigerator Nominal Output	kW							1.1					
	Refrigerant	—							R407C					
	Fan Motor Output	W							25 × 2					
Weight		kg	1,050		1,150				1,200		1,300			
Dimensions (W×D×H)		mm	1,780×980×1,500						2,180×980×1,500					
Sound Level (1.5m from front side)		dB(A)	64		66		67		64		66		67	

Specifications New DSP V-type with Variable Speed Drive

Single-Stage

Item・Unit \ Model			Without Dryer Model			Dryer Built-in Model			Without Dryer Model	
			DSP-22VA5I	DSP-37VA5II	DSP-55VA5I	DSP-22VAR5I	DSP-37VAR5II	DSP-55VAR5I	DSP-37VW	DSP-55VW
			DSP-22VA6I	DSP-37VA6II	DSP-55VA6I	DSP-22VAR6I	DSP-37VAR6II	DSP-55VAR6I		
Cooling Method		—	Air-Cooled						Water-Cooled	
Rated	Discharge Pressure	MPa	0.69						0.69	
	Discharge Air Delivery	m³/min	3.4	5.0	6.4	3.4	5.0	6.4	4.2	6.4
In PQ WIDEMODE	Discharge Pressure	MPa	0.39			0.49			—	
	Discharge Air Delivery	m³/min	4.3	6.4	8.2	4.0	6.0	7.6		
Operating Range of PQ WIDEMODE		MPa	0.39–0.69			0.49–0.69				
Motor Nominal Output		kW	22	37	55	22	37	55	37	55
Motor Type		—	4-pole TEFC Motor						4-pole TEFC Motor	
Suction Pressure / Temperature		℃	Atmospheric Pressure / 0 – 40			Atmospheric Pressure / 5 – 40			Atmospheric Pressure / 0 – 40	
Discharge Temperature		℃	Ambient Temperature + 15 or below						Cooling Water Temperature + 13 or below	
Discharge Pipe Diameter		—	R 1	R 1 1/2		R 1	R 1 1/2		R 1 1/2	
Starter Method		—	Inverter						Inverter	
Driving Method		—	Inverter Control + Purge Control						Inverter Control + Purge Control	
Cooling Fan Motor Nominal Output		kW	0.75		0.9	0.75		0.9	0.2	
Lubricating Oil Filling Amount		L	12 (Not filled)	18 (Not filled)		12 (Not filled)	18 (Not filled)		14 (Not filled)	
Coolant Pump Motor Nominal Output		kW[50/60Hz]	0.2 / 0.3						—	
Amount of Cooling Water		L/min	—						60	80
Cooling Water Temperature		℃							32 or below	
Cooling Water Pipe Diameter		—							R 1	
Air Dryer	P.D.P.	℃	—			10 (Under Pressure)			—	
	Refrigerator Nominal Output	kW				1.1				
	Refrigerant	—				R407C				
	Fan Motor Output	W				25	120			
Weight		kg	850	1,080	1,180	880	1,230	1,330	1,050	1,150
Dimensions (W×D×H)		mm	1,650×970×1,400	1,780×980×1,500		1,650×970×1,400	2,180×980×1,500		1,780×980×1,500	
Sound Level (1.5m from front side)		dB(A)	63	66	68	63	66	68	64	

Two-Stage

Item・Unit \ Model			Without Dryer Model		Dryer Built-in Model	
			DSP-37VAT5		DSP-37VATR5	
			DSP-37VAT6		DSP-37VATR6	
Cooling Method		—	Air-Cooled			
Discharge Pressure		MPa	0.69	0.88	0.69	0.88
Discharge Air Delivery		m³/min	5.3	4.6	5.3	4.6
Motor Nominal Output		kW	37			
Motor Type		—	4-pole TEFC Motor			
Suction Pressure / Temperature		℃	Atmospheric Pressure / 0 – 40		Atmospheric Pressure / 5 – 40	
Discharge Temperature		℃	Ambient Temperature + 15 or below			
Discharge Pipe Diameter		—	R 1 1/2			
Starter Method		—	Inverter			
Driving Method		—	Inverter Control + Purge Control			
Cooling Fan Motor Nominal Output		kW	0.75			
Lubricating Oil Filling Amount		L	18 (Not filled)			
Air Dryer	P.D.P.	℃	—		10 (Under Pressure)	
	Refrigerator Nominal Output	kW			1.1	
	Refrigerant	—			R407C	
	Fan Motor Output	W			25 × 2	
Weight		kg	1,200		1,350	
Dimensions (W×D×H)		mm	1,780×980×1,500		2,180×980×1,500	
Sound Level (1.5m from front side)		dB(A)	67		67	

NOTE:

1. Capacity shows the flow rate converted in suction condition at rated discharge pressure.
2. Noise Level is the value under the condition of full load running and auto-drain valves closed in an anechoic room.
   It may vary in different operating conditions and/or different environments with echo of actual field installations.
   Noise level might be increased by 3dB when PQ WIDEMODE is ON.
3. P.D.P. is measured at 30 degree C of intake air temperature and rated discharge pressure.
   P.D.P. might be worse at 0.4MPa or less of discharge pressure.
   P.D.P. might be 13 degree C at PQ WIDEMODE ON and 0.6MPa of discharge pressure.
4. Free Air Delivery of Built-in Dryer model may decrease by up to 3% when drain condensates.
5. Earth leakage circuit breaker is out of scope of supply from Hitachi.
6. DSP series compressors are not designed, intended or approved for breathing air applications.
7. Pressures are indicated as the gauge pressure.
8. New DSP series cannot run in excess of 40℃ of ambient temperature. Ventilation and/or air conditions should be considered to maintain the compressor room temperature.
9. For the quality of the cooling water, contact your nearest dealer or Hitachi local representative offices.
10. Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.
11. Motor output is nominal output.
12. Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

Optional Specifications

COSMOS Ⅱ (COmpressor Status MOnitoring System)

Web monitoring system shows real time status of compressors via office computer with high speed interface(100BASE-T).

Features

1 Labor saving

A COSMOS Ⅱ module can set and monitor operating conditions of maximum four (4) DSP units, which saves costs of daily checking and facility workers.

2 Monitoring energy saving

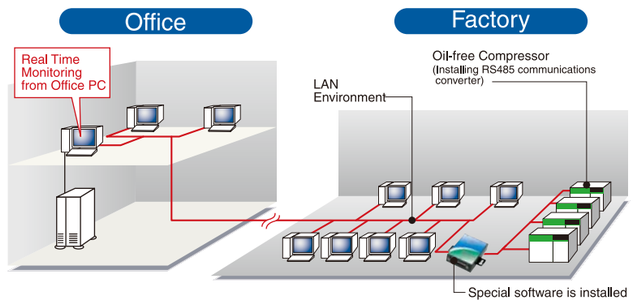
A COSMOS Ⅱ module can monitor the history of compressor load from data of load factor, amperage, mean-load and other operating data.

3 Immediate failure notice

Operating conditions can be monitored visually by animations and bar charts. In an emergency, the operating data and shutdown history are conveyed immediately to make necessary maintenance quicker.

4 Easy installation

RS485 Multi Drop cable system is applied. In addition, connecting to existing LAN cable makes wiring constraction easy and economical. When the optional database software is introduced, additional functions such as trend generation will be available to enhance the monitoring capability.



Specifications (model: COS-200)

Interface	RS485 (D-SUB 25-pin connector) - LAN (10/100BASE-T)
Transmission Speed	9600bps
Communication System	Full duplex
Synchronization System	Start-stop synchronous
Isolation	None
Compressor	DSP with control board ver. VO.Z.Z. or higher
No. of Compressors Monitored	4 (monitoring timing with multi-monitor: 10 s)
Transfer Format	Start bit: 1, data bit: 7, parity: even, stop bit: 1
Dimensions and Weight	90 × 64 × 23mm, 200g
Operating Environment	Temperature: 0–40˚C, humidity: 30–80%
Power Supply	100-240VAC (AC adapter:12V, 0.9A)
LAN Protocol	TCP/IP
RS485 Cable Length	250 m, max.
Connector	D-SUB 25-pin Female (RS485), RJ-45 (10/100BASE-T)

* Compressor requires converts for communications. Other applicable models will be lined up sequentially.
* This system is only for COSMOS Ⅱ body, and user shall do wiring separately.
* For existing compressors already installed, please contact Hitachi authorized distributors.
* The PC should be a DOS/V machine with Windows®98,XP,NT and 2000 and browser (IE6.0 or higher).
* It always uploads data in a short time. However, due to facility condition, semantics may slow down.

● "Windows" is a registered trademark of Microsoft Corporation.

Dual Operation

Dual operation is available only by wiring.

Communication between 2 compressors allows operation mode switching by pressure and failure judgement.

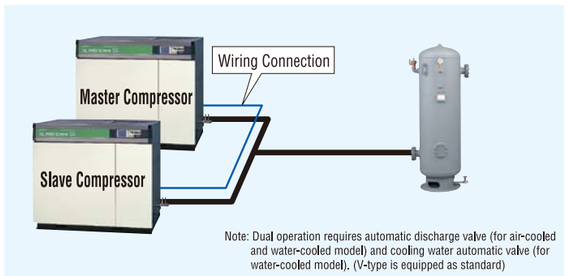
- ☐ Alternate Operation Function
- ☐ Pressure Back-up Function
- ☐ Failure Back-up Function

● **Operation Setting**

[MULTI-U SETTING]

1.	MODE :	DUAL
2.	SELECT :	SLAVE
3.	DUAL TIME :	8.0h
4.	SWITCH METHOD :	OVERLAP
5.	SWICHOVER :	15s
6.	BUCKUP :	0.05 MPa
7.	UNLOAD :	0.02 MPa

SET : STORE MON : BACK



Note: Dual operation requires automatic discharge valve (for air-cooled and water-cooled model) and cooling water automatic valve (for water-cooled model). (V-type is equipped as standard)

Other Options

Automatic Restart Function

It restarts the oparation automatically when it is instantaneously shut down. (Time for instantaneous power interruption is between 1 to 5 seconds.)

Auto Operation Function

Compressor can shut down automatically at low loading. (V-type is equipped as standard.)

HITACHI FOOD GRADE DSP OIL (Option)

HITACHI FOOD GRADE DSP OIL – HITACHI Genuine Lubricant for Machine Used in Food Industry

Full Compliance with the International Hygiene Control Method for Food Safety "HACCP"*1

To cope with the increasing demand for "Food Safety", HITACHI newly developed HITACHI FOOD GRADE DSP OIL, HITACHI genuine lubricant for HITACHI Oil-free Screw Compressor DSP used in food industry, fully complied with "HACCP"*1

Features

- **The FOOD GRADE DSP OIL complies with the international hygiene control method for food safety "HACCP"*1**
- **The FOOD GRADE DSP OIL consists of only prescript substances by the U.S. FDA*2**
- **The FOOD GRADE DSP OIL is approved and registered as H1 grade*4 by the U.S. NSF International*3.**
- **The FOOD GRADE DSP OIL has doubled long life compared with the conventional mineral oils*5.**

*1 Hazard Analysis Critical Control Point
*2 Food and Drug Administration
*3 National Sanitation Foundation International
*4 The oil which can be used in places where the oil can make occasional contact with foods.
The materials must be prescript substances regulated in the U.S. Food and Drug Law: FDA21 CFR178.3570.
*5 Compared with the conventional mineral oil, longer life by adoption of chemosynthetic based lubricant.
(Exchange cycle: 8,000 operating hours or 1 year which comes earlier.)

Specifications

Item		Unit	Content
ISO Viscosity Grade		—	46
Color Phase		—	Colorless and Transparent
Density	@15˚C	kg/L	0.84
Viscosity	@40˚C	mm²/s	47
Flash Point		˚C	200
Pour Point		˚C	−50
Content		L	20
Exchange Cycle		—	8,000 operating hours or 1 year which comes earlier
Retrofit		—	Flushing running operation with the exclusive flushing use oil (new oil 20L can) for 30 minutes × twice then refill with new oil
Package		—	Plastic Container Tank
Weight		kg	About 18

Note:
1. Compliance Standard/Law: NSF H1 approval No. 138329 and FDA21 CFR178.3570
2. For retrofitting from conventional mineral oil to HITACHI FOOD GRADE DSP OIL, contact your nearest HITACHI authorized distributor/dealer.

Proposal for Energy-Saving

Various Energy-Saving operations are possible based on different combinations of V-type model (VSD) and Fixed Speed type model.

Easy Energy-Saving operation by 2 or 3 units

V-M Combination System

New Energy-Saving operation achieved by the combination of V-type and Fixed Speed type model

More Energy-Saving is demanded based on multi-unit control

Multi-Unit Control with *Single-V type* unit

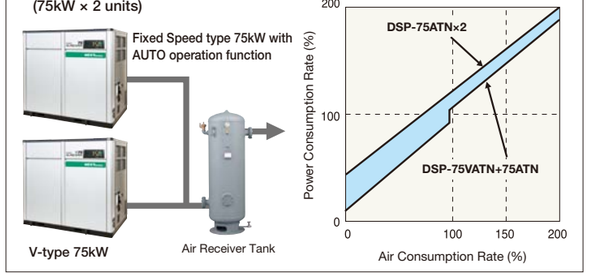
Easy Energy-Saving is possible by multi-unit control with Single V-type unit

Further Energy-Saving effect and leveling operation hours are demanded

Multi-Unit Control with *Multi-V type* units

Energy-Saving and leveling operation hours are achieved by all V-type units.

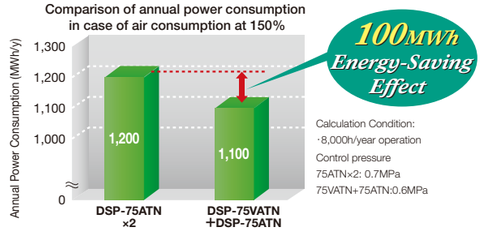
■ Basic Example of V-M Combination System
(75kW × 2 units)



Following Energy-Saving effect can be achieved due to the *V-M Combination*

Energy-Saving of 100MWh can be achieved in case of air consumption at 150%.

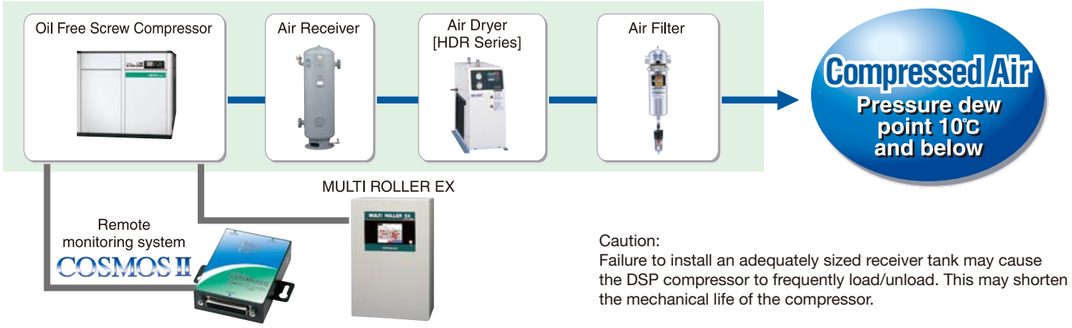
Comparison of annual power consumption in case of air consumption at 150%



Calculation Condition:
·8,000h/year operation
Control pressure
75ATN×2: 0.7MPa
75VATN+75ATN:0.6MPa

Auxiliary Equipment to Enhance Air Quality

Oil Free Screw Compressed Air System



Caution:
Failure to install an adequately sized receiver tank may cause the DSP compressor to frequently load/unload. This may shorten the mechanical life of the compressor.

Hitachi Air Dryer

Standard Specification

Item / Model	Unit	HDR-15AX	HDR-22AX	HDR-37AX	HDR-55AX	HDR-75AX	HDR-100AX
Applicable Compressor	kW	15	22	37	55	75	100
Capacity (Note 1) 50/60Hz	m^3/min	2.5/2.9	4.0/4.3	6.8/7.4	10.8/11.3	15.0/15.7	19.0/20.0
Max. Inlet Pressure of Compressed Air	MPa	0.97					
Max. Inlet Temperature of Compressed Air	˚C	80					
Ambient Temperature	˚C	5–40					
P.D.P.	˚C	10 Under Pressure					
Rated Output of Refrigerator	kW	0.5	1.1		2.2	3.0	3.75
Cooling Method of Condenser	—	Air Cooled					
Refrigerant Control Device	—	Capillary Tube					
Capacity Control Device	—	Hot Gas Bypass Valve					
Refrigerant Used	—	R407C					
Finish Color	—	Ivory (Munsell No. 5Y8.5/1)					
Pipe Conection	—	Rc 1	Rc 1 1/2			Rc 2	Rc 2 1/2
Dimensions (WxDxH)	mm	303x603x720	356x513x1,067	356x513x1,247	356x903x1,247	356x903x1,489	406x1,400x1,385
Weight	kg	46	74	87	135	170	280
Accessories	—	Auto Drain Trap / Drain Valve					

Notes:
1. The capacity values listed above were measured at an ambient temperature of 30˚C, inlet temperature of 45˚C, inlet pressure of 0.7MPa, dew point of 10˚C under pressure.
2. The initial pressure losses of the dryers are less than or equal to 0.03MPa.
3. Contact our service outlet if you want to use the dryer in corrosive gas environment.

Hitachi Filter

Standard Specification

Item / Model		Unit	HAF-7.5BX	HAF-11BX	HAF-15BX	HAF-22B	HAF-37B	HAF-55B	HAF-75B	HAF-100B	HAF-125B	HAF-160B	HAF-200B	HAF-240B
Use Conditions Air Condition	Capacity (converted to the ambient pressure)	m^3/min	1.2	1.8	2.4	3.9	6.6	10.6	13.8	20	27.6	32	40	50
	Inlet Air Temperature	˚C	30											
	Inlet Air Pressure	MPa	0.69											
	Usable Fluid	—	Compressed Air											
	Max. Pressure	MPa	1.57			0.97								
	Inlet Air Temperature Range	˚C	5–60											
	Ambient Temperature Range	˚C	2–60											
Filtration Rating		µm	1											
Filtration Efficiency		%	99.999											
Pressure Drop	Initial	MPa	0.005 or Lower											
	Terminal(to replace element)	MPa	0.07											
Connecting Pipe Diameter		B(A)	Rc3/4	Rc1			Rc11/2		Rc2		21/2 (Flange)	3 (Flange)		4 (Flange)
Dimensions (Diameter x Length)		mm	92x237	130x290.5		160x509	170x591	170x699	173x792	173x949	590x1,512	590x1,512		640x1,735
Weight		kg	1	2	2.1	3	3.3	3.7	4.3	6	57	61		73

Multi Unit Controller (MULTI ROLLER EX)

Standard Specification

Item / Model		MR26-4E	MR26-8E	MR26-12E
Power Supply		Single-phase AC100/200V (Common)		
Frequency		50/60Hz(Common)		
Controlled Units		4	8	12
Input	Discharge Pressure	0 to 1 MPa (Digital Display)		
	Control	Operation Answer, Shutdown		
	External	Start, Stop, External Forced Start-up, Flow Volume		
Output	Control	Start, Stop, Load, PID Command		
	External	Start, Shutdown, Auto		
Dimensions (WxDxH)		400×200×600	500×200×900	500×200×1,200
Weight		19kg	32kg	37kg

Beware of Ventilation in The Compressor Room

DSP cannot be used in the closed room.
Install DSP in a facility that can ventilate the heat from DSP.

(1) Whole Ventilation (Figure A)

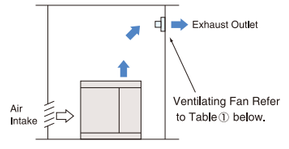
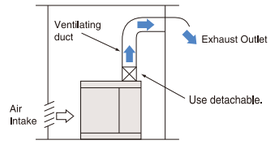
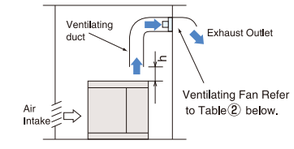
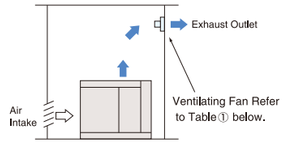
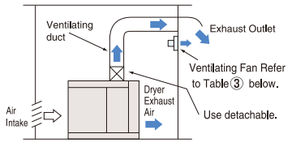
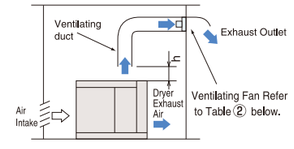
When the whole compressor room is ventilated, the ventilating fan capacity shall be larger than **recommended fan capacity** ① in the below table. (This value is calculated under the condition when the room temperature rise is 5˚C or below. Other than this temperature rise range, the calculating formula for required capacity is specified at the bottom of this page.) Install the ventilating fan as high as possible on the wall.

(2) Ventilation with Exhaust Duct (Figure B)

- If the pressure loss is within **20Pa {2mmAq}**, ventilating fan in the duct is not required. In this case, install the removal duct on the compressor exhaust port and set it up as removable for maintenance. Also, to ventilate dryer exhaust, set up suitable fan which capacity is larger than **recommended fan capacity** ③ in the below table.

(3) Ventilation with Exhaust Duct and Ventilating Fan (Figure C)

- If the pressure loss is **larger than 20Pa {2mmAq}**, install ventilating fan which capacity is larger than **recommended fan capacity** ② in the below table. (Keep in mind the temperature rise for selecting the fan.) In this case, set up hood on the duct inlet port and make sure to take a distance **h**, which is longer than duct diameter.
- Do not use the duct installed ventilating fan for dryer exhaust. It may cause freezing the dryer aftercooler by enforced exhaust.

	Fig. A	Fig. B	Fig. C
Dryer excluded			
Dryer built-in			

Ventilation Data

Air-cooled (Without Built-in Dryer)

15—55kW (Single-stage and Two-stage)

Item・Unit / Model		DSP-15AII	DSP-22AII / DSP-22VAI	DSP-37AIII / DSP-37VAII	DSP-55AII / DSP-55VAI	DSP-22ATI	DSP-30ATI	DSP-37ATI / DSP-37VAT
Heat Generation	MJ/h	77	117	166	225	118	145	158
	(kcal/h)	(18,400)	(28,000)	(39,600)	(53,800)	(28,100)	(34,600)	(37,800)
Air Exhaust (air compressor)	m^3/min	65		100	120		100	
Approx. Temp. Rise (exhaust air)	˚C	18	27	25	28	18	22	23
Maximum Pressure Loss (exhaust duct)	Pa (mmAq)	20 (2)						
Recommended Fan Capacity ①	m^3/min	204	311	440	600	310	380	410
Recommended Fan Capacity ②	m^3/min	86	95	130	150		130	

45—120kW (Two-stage)

Item・Unit / Model		DSP-45ATN	DSP-55ATN / DSP-55VATN	DSP-75ATN / DSP-75VATN	DSP-90AN	DSP-100AN	DSP-120AN	DSP-100VAN
Heat Generation	MJ/h	198	246	333	387	430	498	440
	(kcal/h)	(47,300)	(58,700)	(79,700)	(92,500)	(102,800)	(118,900)	(105,000)
Air Exhaust (air compressor)	m^3/min	150		200	250		270	
Approx. Temp. Rise (exhaust air)	˚C	20	25	25	24	26	28	25
Maximum Pressure Loss (exhaust duct)	Pa (mmAq)	20 (2)						
Recommended Fan Capacity ①	m^3/min	530	650	890	1,030	1,140	1,320	1,170
Recommended Fan Capacity ②	m^3/min	180		230	280		300	

132—240kW (Two-stage)

Item・Unit / Model		DSP-132A	DSP-145A	DSP-160A	DSP-200A	DSP-240A
Heat Generation	MJ/h	522	566	636	830	948
	(kcal/h)	(125,000)	(135,000)	(152,000)	(198,000)	(226,000)
Air Exhaust (air compressor)	m^3/min	400 〈200×2〉		440 〈220×2〉	500 〈250×2〉	
Approx. Temp. Rise (exhaust air)	˚C	20	21	22	25	29
Maximum Pressure Loss (exhaust duct)	Pa (mmAq)	20 (2)				
Recommended Fan Capacity ①	m^3/min	1,400	1,500	1,700	2,200	2,500
Recommended Fan Capacity ②	m^3/min	480 〈240×2〉		520 〈260×2〉	600 〈300×2〉	

Air-cooled (With Built-in Dryer)

15—75kW (Single-stage and Two-stage)

Item・Unit / Model		DSP-15ARII	DSP-22ARII / DSP-22VARI	DSP-37ARIII / DSP-37VARII	DSP-55ARII / DSP-55VARI	DSP-22ATRI	DSP-30ATRI	DSP-37ATRI / DSP-37VATR	DSP-45ATRN	DSP-55ATRN / DSP-55VATRN	DSP-75ATRN / DSP-75VATRN
Heat Generation	MJ/h	84	127	177	238	129	157	171	223	271	379
	(kcal/h)	(20,100)	(30,400)	(42,200)	(57,000)	(30,600)	(37,400)	(40,800)	(53,300)	(64,700)	(90,700)
Air Exhaust (air compressor)	m^3/min	65		100	120	100			150		200
Air Exhaust (air dryer)	m^3/min	18	20	30					60		70
Approx. Temp. Rise (exhaust air)	˚C	18	27	25	28	18	22	23	20	25	
Maximum Pressure Loss (exhaust duct)	Pa (mmAq)	20 (2)									
Recommended Fan Capacity ①	m^3/min	223	338	470	630	340	420	450	600	720	1,020
Recommended Fan Capacity ②	m^3/min	106	122	140	160		162	166	250		360
Recommended Fan Capacity ③	m^3/min	20	27	30	36	30	32	36	70		130

Ventilation Data

■Water-cooled (Without Built-in Dryer)

15—75kW (Single-stage and Two-stage)

Item・Unit \ Model		DSP-15WI	DSP-22WI	DSP-37WⅢ / DSP-37VW	DSP-45WⅢ	DSP-55WⅢ / DSP-55VW	DSP-45WTN	DSP-55WTN / DSP-55VWTN	DSP-75WTN / DSP-75VWTN
Heat Generation	MJ/h	8	12	15	18	22	27	28	37
	(kcal/h)	(1,900)	(2,800)	(3,600)	(4,300)	(5,300)	(6,400)	(6,800)	(8,800)
Recommended Fan Capacity ①	m^3/min	21	31	40	50	60	75	80	100

90—240kW (Two-stage)

Item・Unit \ Model		DSP-90WN	DSP-100WN / DSP-100VWN	DSP-120WN	DSP-132WN	DSP-145WN	DSP-160WN / DSP-160VWN	DSP-200WN	DSP-240WN / DSP-240VWN
Heat Generation	MJ/h	44	49	56	57	60	67	90	98
	(kcal/h)	(10,400)	(11,600)	(13,400)	(13,400)	(14,400)	(16,000)	(21,500)	(23,500)
Recommended Fan Capacity ①	m^3/min	120	130	150		160	180	240	260

■Water-cooled (With Built-in Dryer)

15—75kW (Single-stage and Two-stage)

Item・Unit \ Model		DSP-45WTRN	DSP-55WTRN / DSP-55VWTRN	DSP-75WTRN / DSP-75VWTRN
Heat Generation	MJ/h	52	53	83
	(kcal/h)	(12,300)	(12,700)	(19,800)
Recommended Fan Capacity ①	m^3/min	140	145	230

●Required Ventilation Capacity

$$Q=\frac{n\times H}{0.00126\times \triangle T\times 60}$$

Q：Required ventilation capacity m^3/min
H：Heat generation per unit MJ/h
n：The number of installed units
△T：Tolerable temperature rise ˚C
(The highest tolerable temperature of the compressor − annually highest ambient temperature)

Required Power Transformer Capacity

Select an appropriate power transformer to secure required power source for a compressor.

Model (kW)	Min. Capacity of Transformer (kVA)
15	30
22	50
30	75
37	
45	100
55	
75	150
90	200
100	
120	250

Model (kW)	Min. Capacity of Transformer (kVA)
132	350
145	
160	
200	500
240	

Note:
The capacity of transformer changes dependent on the specs of power cable.

⚠ Safety Precautions

■ **Regarding compressor application**
- The compressor described in this catalog utilizes only air as a gas. Absolutely avoid using it for compression of a gas other than air — this could result in a fire hazard or damage to the equipment.
- Never use compressed air for human breathing.

■ **Regarding installation site**
- Install this compressor indoors. Avoid using it at a place susceptible to moisture such as precipitation or vapors — this could result in a fire hazard, electric shock, rusting or shortened life of parts.
- There should be no explosive or flammable gas(acetylene, propane, etc.), organic solvent, explosive powder or flame used near the compressor — otherwise there is a fire hazard.
- Avoid using the compressor at a palace where there is corrosive gas such as ammonia, acid, salt sulfurous acid gas, etc. — this could result in rusting, shortened life, or damage to the equipment.

■ **Regarding usage**
- Before use, be sure to read the instruction manual thoroughly for correct use of the compressor.
- Absolutely avoid modifying the compressor or its components—this could result in damage or malfunction.

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