

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”.



ISO8573-1:2010 CLASS 0 TÜV Certification

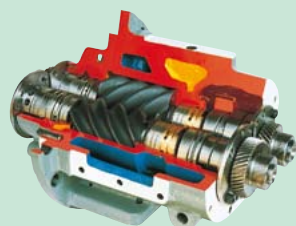
TÜV (The Technische Überwachungs Verein), a Germany based international test service provision third-party on aspects of technical safety and quality evaluation, is globally well-reputed on its neutrality and expertise as well as its strictness in testing.



Class Zero
ISO-8573-1



High Performance Air End



Stainless Steel Fine Rotor

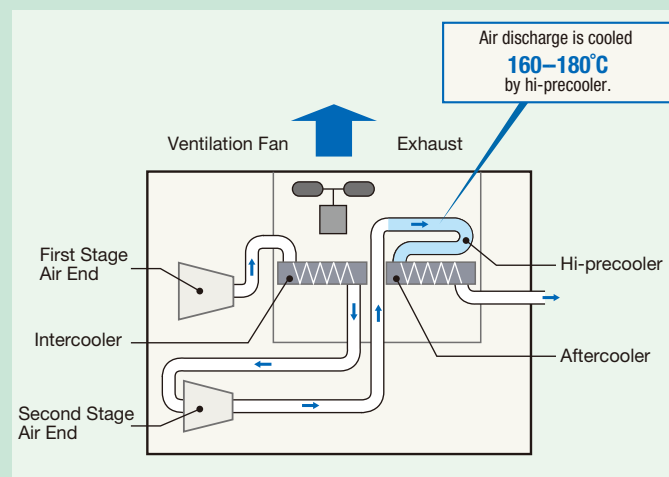
Particular stainless steel, which is superior in corrosion resistance and durability, is applied for rotor with highly accurate grinding. Furthermore, to reduce internal leakage, mirror finished surface enables to keep appropriate clearance, including thermal expansion during operation.

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

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

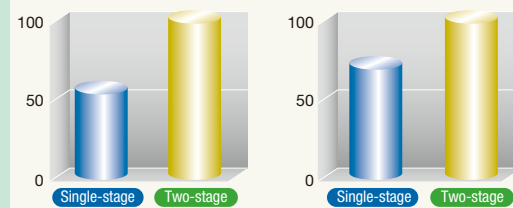
DSP V-type with Variable Speed Drive

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



*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.

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

Air Intake Filter
Air End(1st Stage)
(Suction Throttle Valve)
Oil Mist Remover (OMR)

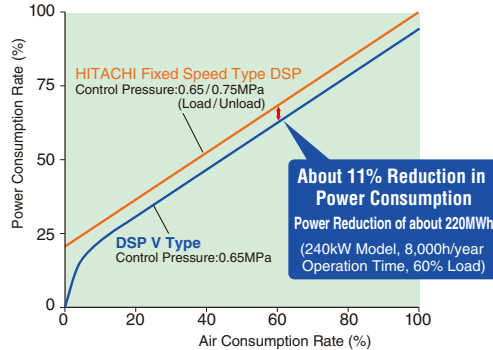
Gear Case



Aftercooler
Starter Panel
Intercooler
Air End (2nd Stage)
(Suction Throttle Valve)
TEFC Motor
Oil Cooler

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

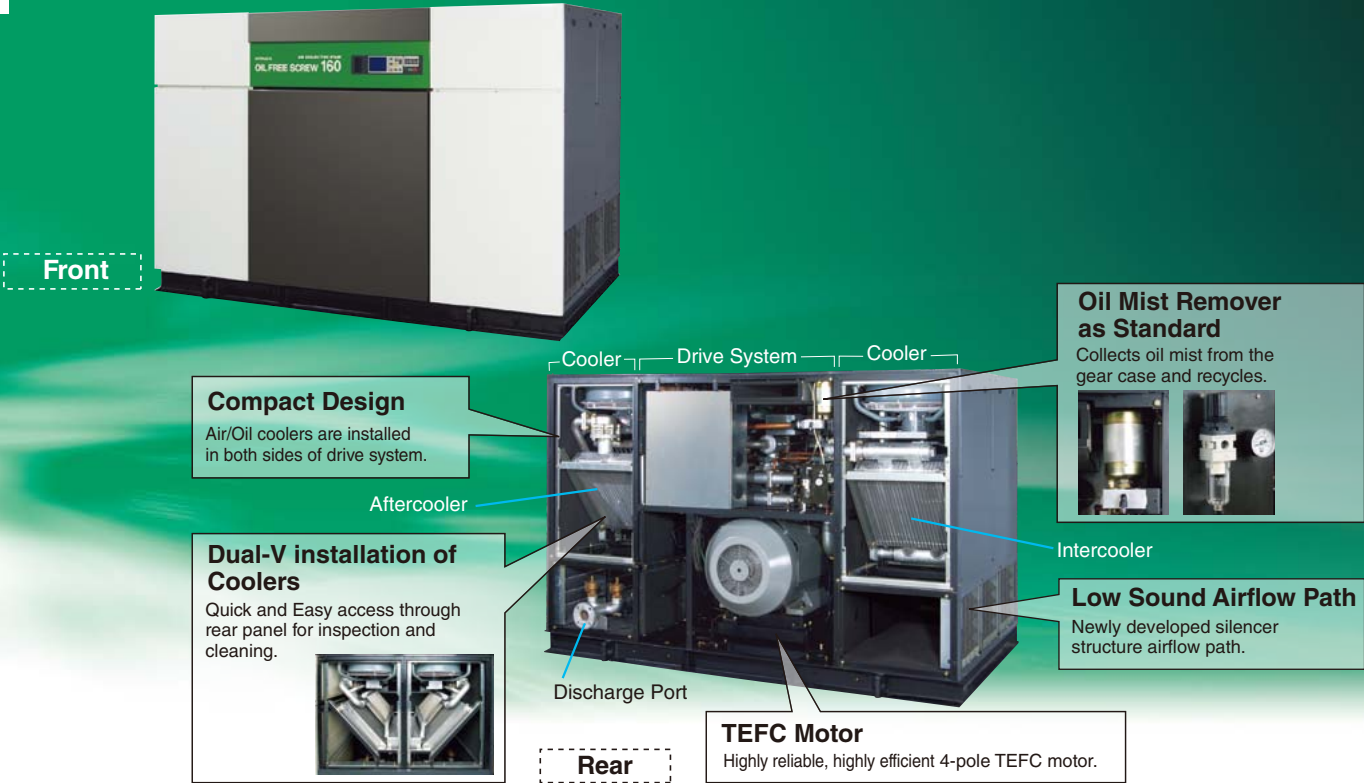
Item・Unit		Model	DSP-132W5N		DSP-145W5N		DSP-160W5N		DSP-200W5N		DSP-240W5N		DSP-160VW5N		DSP-240VW5N			
			DSP-132W6N		DSP-145W6N		DSP-160W6N		DSP-200W6N		DSP-240W6N		DSP-160VW6N		DSP-240VW6N			
Cooling Method		—	Water-cooled															
Control Method		—	Fixed Speed Type										V type (VSD)					
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	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	28.5	24.8	
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	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



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)

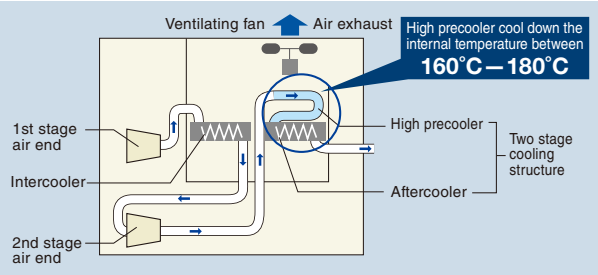
High precooler system reduces temperature of extremely hot air to aftercooler and two stage cooling structure improves reliability.

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-145A5		DSP-160A5		DSP-200A5		DSP-240A5	
		DSP-132A6	DSP-145A6		DSP-160A6		DSP-200A6		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).
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