



# OIL FREE SCREW

## *NEXT*series TWO STAGE (22/30/37kW)

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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.**

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# Thorough Reduction of Loss due to the New Air-End Low Noise Level and Energy-Saving, DSP **NEXTseries**

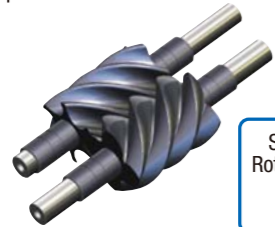


\*The above picture shows the internal structure of Air-Cooled model (V-type).

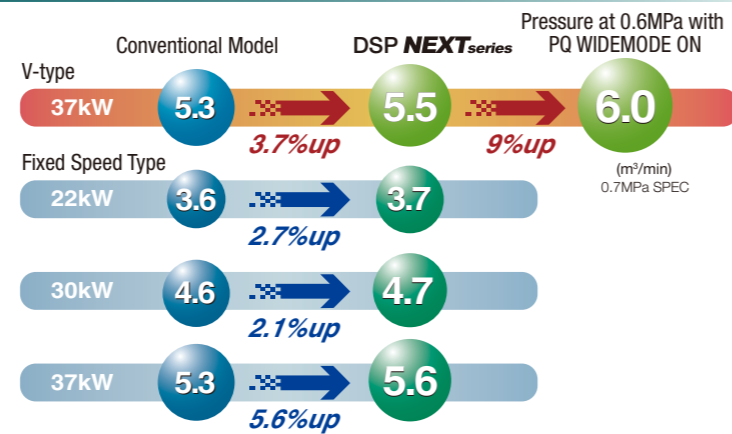
## High Capacity

### New Developed Air-End

Newly developed air-end achieved capacity increase by up to 5.6%. Furthermore, V-type can increase the capacity by PQ wide mode with reducing the discharge pressure.

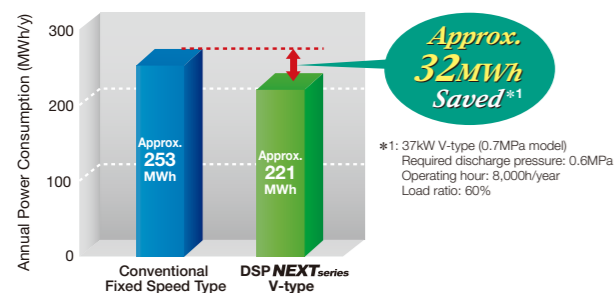
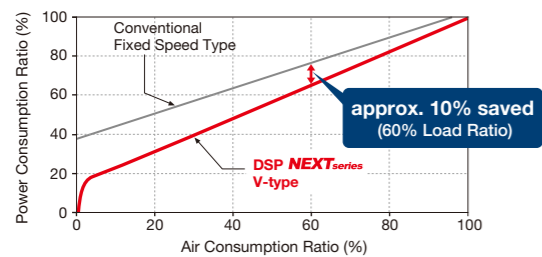


Stainless Steel Fine Rotors adopted for both 1st and 2nd stage Air-End



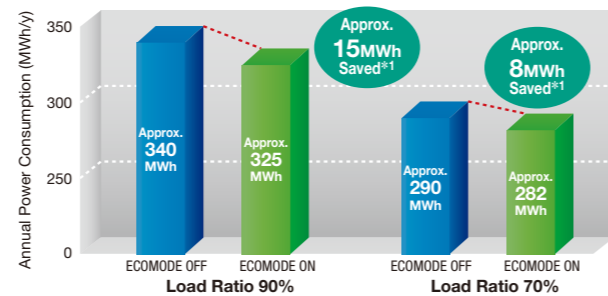
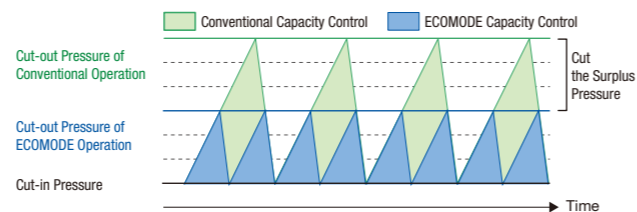
## Pursuit of Energy-Saving

### Energy-Saving achieved by DCBL Drive (V-type)



### ECOMODE (Fixed Speed Model)

Surplus power is reduced by decreasing cut out pressure automatically depending on the compressor load ratio.



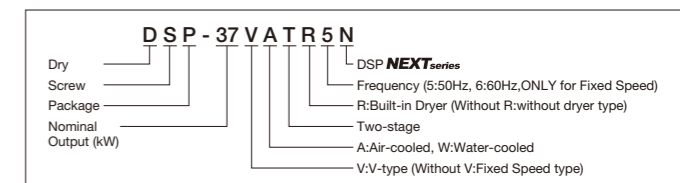
## Specifications

Item-Unit	Model	Fixed Speed Series						Variable Speed Drive	
		DSP-22AT[R]5N	DSP-30AT[R]5N	DSP-37AT[R]5N	DSP-22AT[R]6N	DSP-30AT[R]6N	DSP-37AT[R]6N	DSP-37VAT[R]N	
Cooling Method	—	Air-cooled						Air-cooled	
Discharge Pressure	MPa	0.70	0.88	0.70	0.88	0.70	0.88	0.7	0.88
Capacity	m³/min	3.7	3.2	4.7	4.0	5.6	4.7	5.5	4.6
Capacity @PQ WIDEMODE ON at 0.6MPa	m³/min	—						6.0	5.6
Nominal Output	kW	22		30		37		37	
Motor Type	—	4-Pole TEFC Motor						DCBL Motor	
Intake Air Press. / Temp.	°C	Atmospheric Pressure / 0 – 45 [ 5 – 45 ]						Atmospheric Pressure / 0 – 45 [ 5 – 45 ]	
Discharge Temperature	°C	Ambient Temperature + 15 or below						Ambient Temperature + 15 or below	
Discharge Air Pipe Connection	B	Rc1-1/2						Rc1-1/2	
Starting Method	—	Star-Delta (3 contact)						Soft Start	
Driving Method	—	V-Belt (with Auto Tensioner) + Gear Driving						Direct Connection with Motor + Gear Driving	
Oil System Capacity	L	15 (Not Filled)						15 (Not Filled)	
Cooling Fan Motor Output	kW	1.5						1.5	
[Air Dryer]	P.D.P	°C						[10 (Under Pressure)]	
	Refrigerator Nominal Output	kW						[1.1]	
	Refrigerant	—						[R407C]	
Approximate Weight	kg	1,070 [1,130]		1,170 [1,230]		1,170 [1,230]		950 [1,010]	
Dimensions (WxDxH)	mm	1,530x1,150x1,650						1,530x1,150x1,650	
Sound Level (1.5m from front)	dB(A)	63	64	65	66	66	67	66	67

### NOTE:

- Capacity is measured according to ISO 1217, Third Edition, Annex C.
- Sound Levels is the 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.
- P.D.P is measured at 30 degree C of intake air temperature and rated discharge pressure. P.D.P might be much worth 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.
- Capacity after built-in dryer is decreased by 3% because of condensate.
- Earth leakage circuit breaker is out of scope of supply from Hitachi.
- DSP **NEXTseries** are not designed, intended or approved for breathing air applications.
- Pressures are indicated as the gauge pressure.
- DSP **NEXTseries** cannot run in excess of 45°C of ambient temperature. Ventilation and/or air conditions should be considered to maintain the compressor room temperature.

- Install the DSP **NEXTseries** indoors and avoid flammable and corrosive environment, moisture and dust.
- Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at any time without notice.



## Premium Air Quality

### True Oil-free Air at Class 0 Level

Air purity class of the discharge air from Hitachi Oil-free Screw air compressor (DSP) is proved to be the highest level "Class 0" from the test result which was conducted by the renowned TÜV institute, in accordance with ISO8573-1.



### 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.



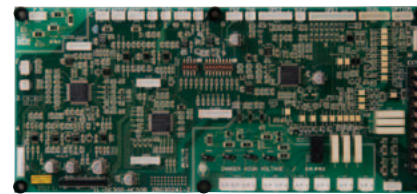


## Energy-Saving by DCBL Drive (V-type)

### DCBL Drive System (JP 3255213 others)

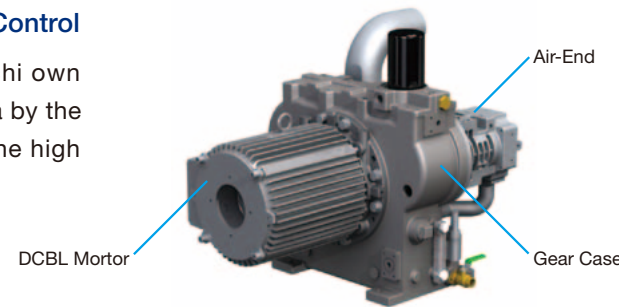
- Newly developed DCBL motor and its direct connection with gear casing achieve the high efficiency. Cascade vector control achieves the high reliability.
- DCBL controller is equipped with the retry function as standard, which is by 3 times when the minor failure occurs. It keeps the influence to the air compressor operation away from the minor trouble.

### Japan Regional Award



### Enlarged Energy-Saving Effect due to Original Capacity Control

DCBL drive system and capacity control system are Hitachi own designed. Discharge pressure can be controlled in  $\pm 0.01\text{MPa}$  by the high response and stable control logic, and they achieve the high energy saving.



## High Reliability

### Standard Up to 45°C

Thanks to new internal structure which minimizes the internal temperature rise, continuous operation under ambient temperature up to 45°C is possible.

### Overhaul Cycle 6 years

By using the precise special bearings, overhaul interval is 6 years or 48,000 hours, whichever comes first.

### Large Air Inlet Filter

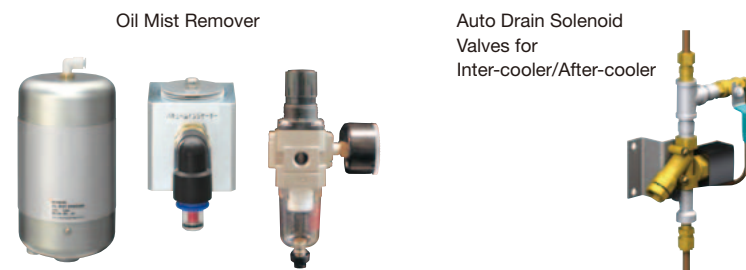
Large cartridge type air inlet filter enables the high filtering efficiency and high reliability.

## Environment Response

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

Oil Mist Remover (OMR) and auto drain solenoid valves are equipped as standard. OMR can collect almost all oil fumes from the gear casing and recycle them.

Auto drain solenoid valves for condensate of both inter-cooler and after-cooler minimize air consumption.



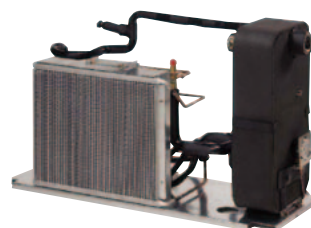
## Air Dryer (Built-in Dryer Type)

### Low pressure drop, stainless heat exchanger is newly developed

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

### Improvement of Reliability

Built-in dryer type enables the operation in the 45°C ambient temperature.



## Energy Saving from Various Combinations V-type based Systems

### Proposal for Energy-Saving

Three proposal systems responding to various requirements

Combination V-type with fixed speed type achieves

Energy saving operation without external controller

### V-M Combination System

Energy saving operation by one V-type and maximum two fixed speed type

Energy saving operation with external controller

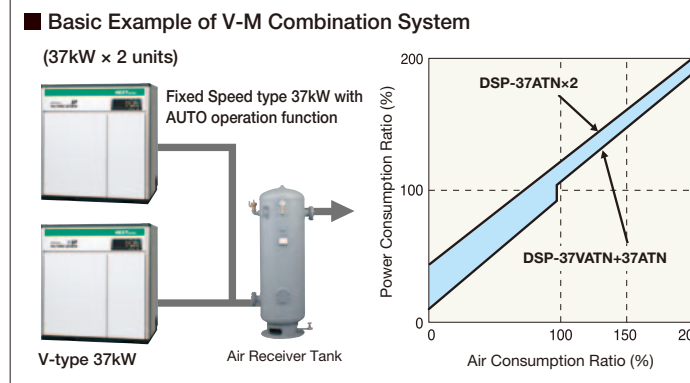
### Single-V System

Energy saving operation by one V-type and more than one fixed speed type with multi-unit controller.

Energy saving operation by more than one V-type with multi-unit controller

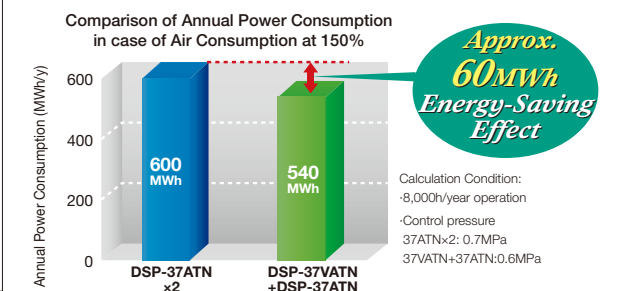
### Multi-V System

Energy saving operation and averaging V-type operating hour

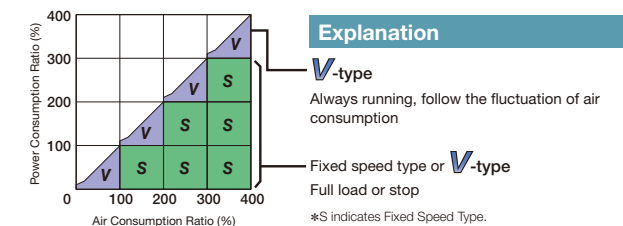
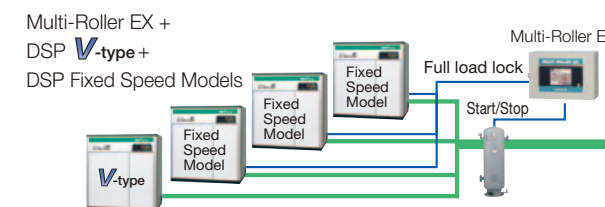


### Following Energy-Saving effect can be achieved due to the V-M Combination

Energy-Saving of 60MWh/y can be achieved in case of air consumption at 150%.



### ■ Single-V (Multi-V) Example of Multi-Unit Control System



## ⚠ Safety Precautions

### ■ Application

- The compressor described in this catalog utilizes only air as a gas. Never use any gases other than air. This could result in a fire hazard or damage to the equipment.
- Hitachi Compressors are not designed, intended or approved for Breathing Air Applications. Hitachi assumes no responsibility or liability for compressors used in breathing air applications.

### ■ Installation

- Install these compressors indoor. Environments susceptible to moisture such as precipitation or vapors should be avoided — this could result in fire hazard, electric shock, rusting, or shortened life of parts.
- There should be no explosives, flammable gas (acetylene, propane, etc.), organic solvent, explosive powder, or flame used near the compressor — it may cause fire hazard.
- Avoid using the compressor at a place 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.

### ■ Usage

- Before use, be sure to read the instruction manual thoroughly for correct use of the compressor.
- Do not modify the compressor or its components — this could result in damage or malfunction.