

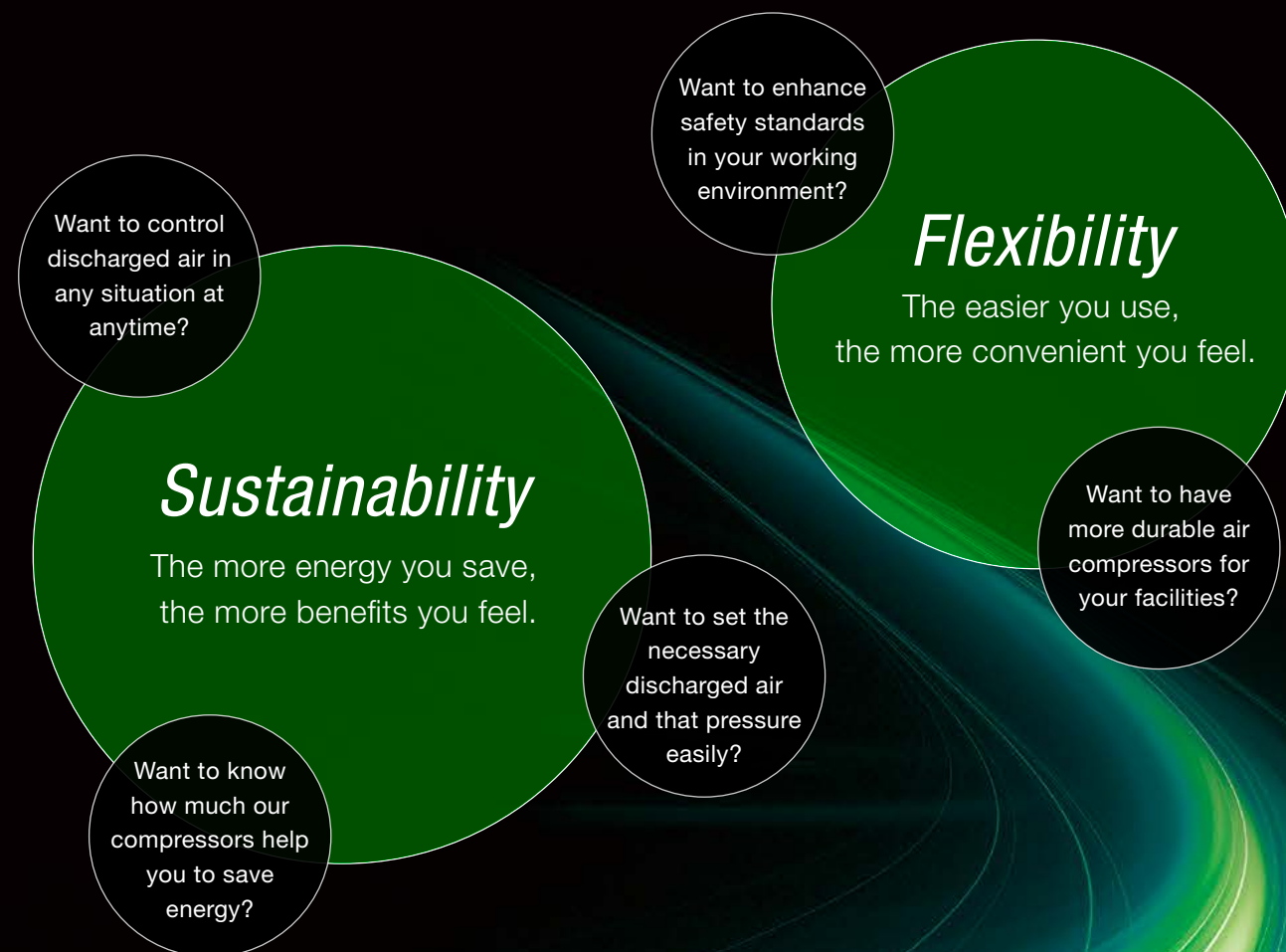
**HITACHI**  
Inspire the Next

# AIR COMPRESSOR OIL FREE SCREW *G series*

22/30/37kW  
90/100/120kW



We are Hitachi, one of the global leading manufacturers in air compressor. With our engineering experience and expertise, we help our customers to improve their facilities and bring more solutions to their daily needs with more enjoyable and convenient user experience everyday!



#### Premium Air Quality

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



Hitachi releases new line-up of **DSP G series**, with higher environment-friendly, premium standard, durability. **DSP G series** brings your facility advanced oil free operation experience!



#### Variable speed type DSP-37/100/120V

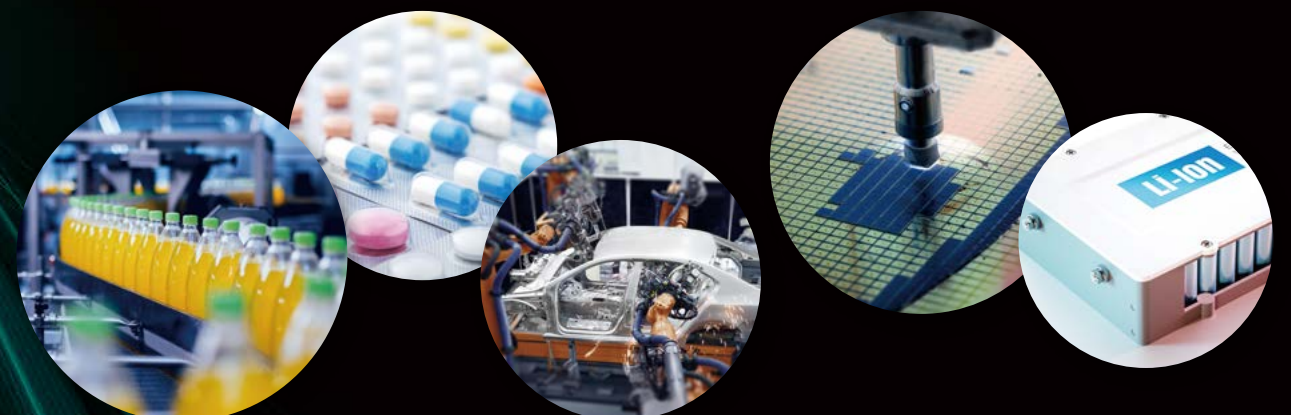
[Main functions and characteristics]

- DCBL motor variable speed (37kW only)
- Inverter + IE3 motor (100/120kW only)
- Touch panel
- V+P type control
- Unit controllable (Max. 6 units)
- Cooling fan variable speed (Air-Cooled type only)
- Adaptation for 45°C
- PQ widemode
- IPC control
- Heat safety function
- Emergency stop button
- Unload stop

#### Fixed speed type DSP-22/30/37/90/100/120F

[Main functions and characteristics]

- DCBL motor fixed speed (22/30/37kW only)
- IE3 motor (90/100/120kW only)
- Touch panel
- I+P type control
- FI+P type control (30/37kW only)
- Cooling fan variable speed (Air-Cooled type only)
- Unload stop
- Adaptation for 45°C
- IPC control
- Heat safety function (22/30/37kW only)
- Emergency stop button
- Unit controllable (Max. 6 units)

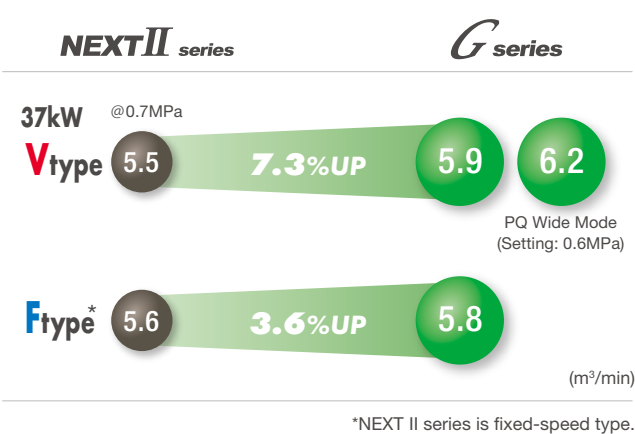




Hitachi compressors have been used in various industries. With advanced *G series* features, we continue bringing customers more satisfaction with **flexibility** and **sustainability** of our product to meet customer's needs.

### Discharge air capacity for 37kW has been improved. Vtype Ftype **Max. 7.3% UP**

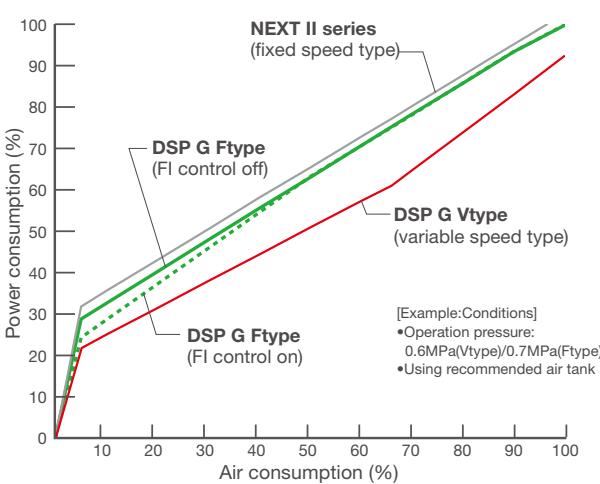
With Hitachi's dedicated air-end, our compressor reduces the loss of air intake pressure internally and improves air capacity to maximize higher efficiency.



### **NEW** FI control (Ftype 30/37kW only) Ftype

Compared to the conventional I-type control (load/unload capacity control), FI control decreases rotating speed during unloading and unloads motive power with further energy saving performance.

\*Default setting of this mode is invalid.  
 \*This mode is switchable(On-off) at customer side.  
 \*FI control characteristic is different per air tank capacity.



### Energy Efficiency Improvement (22/30/37kW only)

Hitachi has been achieved power cost reductions for the conventional types through the efficient performance of the air-end and permanent magnet motor. Energy saving of *DSP G series* has been improved to max. 6% for Vtype and 5% for Ftype when full loading.

High performance air-end



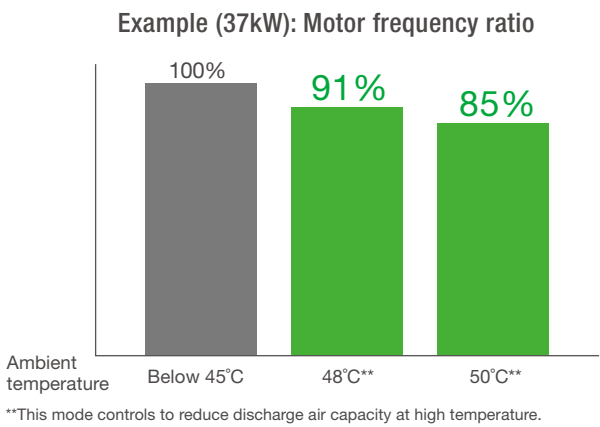
High efficient permanent magnet motor



### **NEW** Heat safety mode (Ftype only 22/30/37kW, Vtype all models) Vtype Ftype

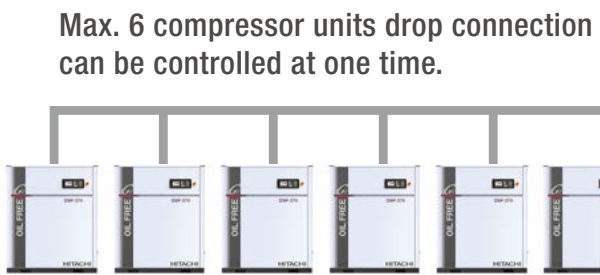
This mode reduces the max frequency automatically when the ambient temperature goes over 45°C and refrains internal components from degrading in high-temperature operation process with stable discharged air.

\*Default setting of this mode is invalid.  
 \*This mode is switchable(On-off) at customer side.



### **NEW** Multiple unit control function Vtype Ftype

Customers can control compressors remotely without external controller, when the compressor is connected to Hitachi's dedicated multi drop connection. Meanwhile, this mode is switchable while operation.

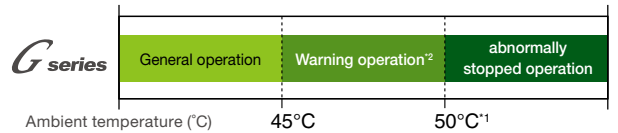


Conventional functions are inherited in Hitachi Oil-Free compressor *G series* as well. Our outstanding functions keep satisfying our customers with higher productivity and superior operability.

**45°C** Reliability at high temperature operation **Vtype** **Ftype**

Stable continuous operation in ambient temperature of 45°C (Running up to 50°C)

Remarkable unit layout of *DSP G series* provides high coolability and reliability in high ambient temperature with stable operation.



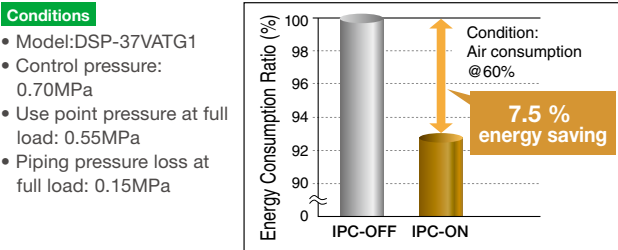
\*1:According to the installation status of air compressor, ambient temperature has the possibility of difference.  
\*2:The alarm is displayed when the ambient temperature is over 45°C. In addition, the life of lubricating oil and electrical devices will be shortened in the case of long operation over 45°C.

**IPC** IPC control (Intelligent Pressure Control) **Vtype** **Ftype**

By estimating use point pressure in accordance with air consumption, IPC control decreases discharge pressure during low load operation, which enables energy-saving.

JP patent No.4425768 and others

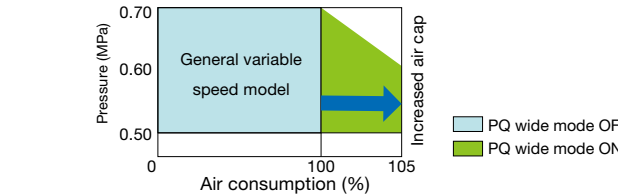
Example of effect by IPC



\*Use point pressure is changed according to working condition because of predicted control.

**PQ** PQ wide mode **Vtype**

The range of discharge pressure(P) and discharge air capacity(Q) can be widen compared with general variable speed model. Auto control of max rotation increases discharge air capacity even when working pressure decreased.



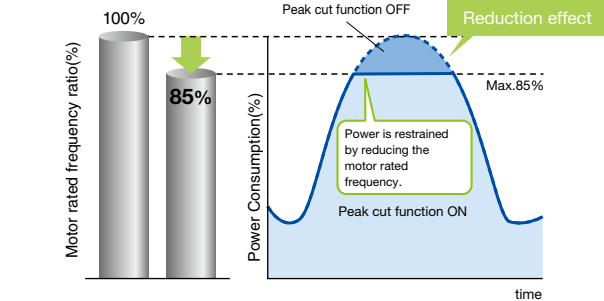
\*The above figure is example of 37kW, 0.7MPa model. Please refer to the specification sheet for the discharge air capacity in each model.

**Peak cut function** **Vtype** **Ftype**  
(Ftype only 30/37kW, Vtype all models)

This function can temporarily reduce the overall energy consumption while operation in the case of high power used in the factory.

Setting range Motor rated frequency (100 ~ 85%)

Example

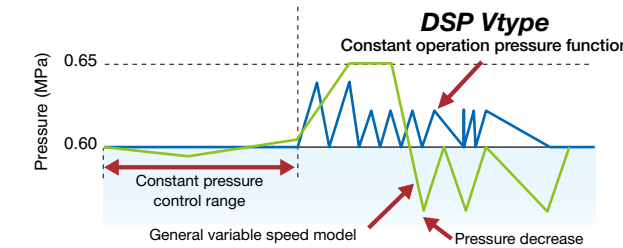


Peak cut function forcibly decreases motor rated frequency to reduce the discharge air capacity. Use caution when you turn on this mode.

\*In the case of switching both peak cut fuction and heat safety mode, our compressor will prioritize to use heat safety mode.

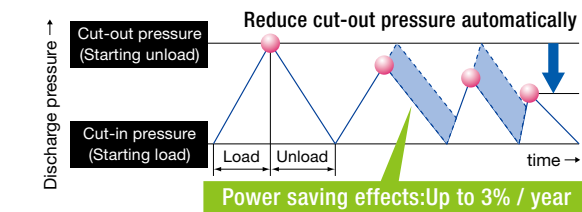
**Constant operation pressure function** **Vtype**

This function helps working pressure above the setting value even at low loading. Vtype realized firm energy saving with its constant operation pressure control function.



**ECO-MODE** (Energy-saving operation control) **Ftype**

Responding to the load ratio, cut-out pressure is reduced automatically to keep it as low as possible so that energy consumption is minimized.



**User-friendly operation interface** **Vtype** **Ftype**

Multi-functional color touch panel

- Significant improvement in operability (Touch panel, Numeric keypad etc.)
- Providing a variety of operation function (Scheduled running operation, Restart after momentary power loss, Auto stop etc.)
- Operating data logging function (Pressure, Temperature, Error history etc.)

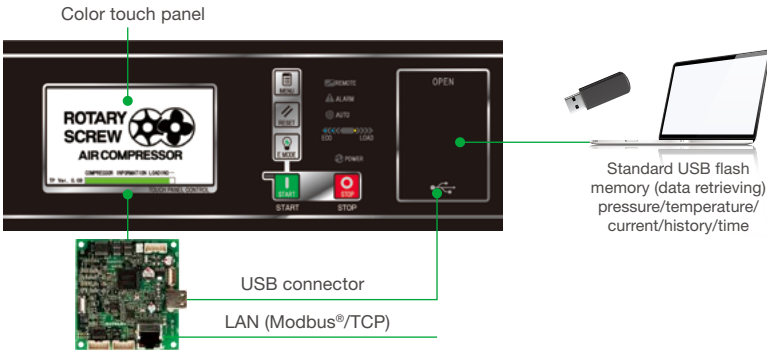
Fulfilled IT communication functions

- USB memory support (Data format: CSV format)
- Modbus® communication support (Standard: Modbus® / RTU; Option: Modbus® / TCP)

\*USB memory is not included. Customer needs to prepare one with the size under 5.5cm.

\*Data transfer capacity per day is approx. 400kB.

\*Modbus is the registered trademark of Schneider Automation Inc.



Long cycle and simple maintenance

Hitachi provides global after-sales service network. With our high quality service parts, strong engineering experience and expertise, maintenance will become an easy thing to satisfy our customers.



**HITACHI FOOD GRADE ROTARY COMPRESSOR OIL (Option)**

Hitachi genuine lubricant used in food industry with high demand for "Food safety", fully complied with "HACCP".



**HITACHI ROTARY COMPRESSOR OIL**

Hitachi dedicated mineral oil with high performance and reliability.

**Standarded Oil Mist Remover (OMR)**

99.99% recovery of oil mist occurred from gear case

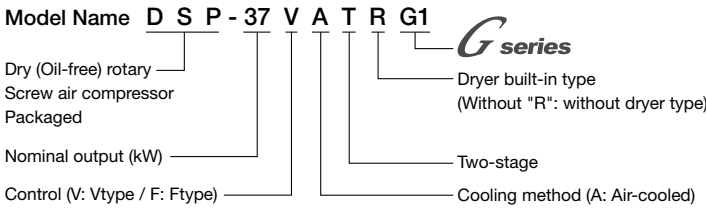
**Simple package filter (Option)**

Cleaning period is shown on touch panel per setting time.

**High withstand load type bearing**  
6 years long overhaul period



DSP G series Specifications (22/30/37kW)

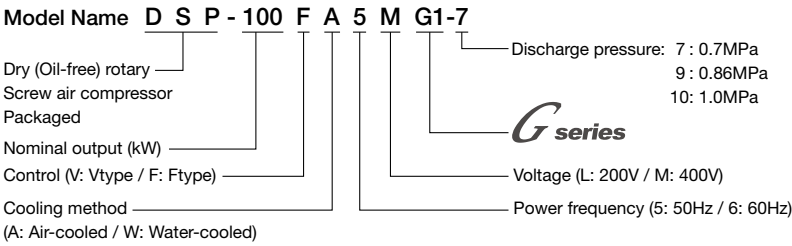


Air-cooled 22/30/37kW

Item / Unit		Model	Vtype (Variable speed)		Ftype (Fixed speed)					
		DSP-37VAT[R]G1		DSP-22FAT[R]G1		DSP-30FAT[R]G1		DSP-37FAT[R]G1		
Power Supply Voltage		V/Hz	3 phases 200, 380, 400, 415/50 ; 3 phases 200, 220, 380, 400, 440/60							
Main motor type		-	6 poles totally enclosed permanent magnet motor							
Nominal output		kW	37		22		30		37	
Discharge pressure		MPa	0.70	0.88	0.70	0.88	0.70	0.88	0.70	0.88
Discharge air capacity		m³/min	5.9	5.0	3.7	3.3	4.7	4.0	5.8	4.9
@PQ wide mode (@ 0.6MPa)			6.2	6.0	-					
Intake air pressure/temperature		-	Atmospheric pressure, 0~45°C [2~45°C]							
Discharge air temperature		°C	Ambient temperature + 15°C or below							
Drive method		-	Direct connection to motor + gear drive							
Starting method		-	Soft start							
Lubricating oil amount		L	15(Unfilled)							
Fan motor output		kW	1.1 (inverter control)							
[Dryer]	P. D. P	°C	[10 (under pressure) ]							
	Refrigerator nominal output	kW	[1.9]		[1.2]		[1.9]			
	Refrigerant	-	[R410A]							
Discharge air pipe diameter		B	Rc1-1/2							
Dimensions (WxDxH)		mm	1,400 x 1,150 x 1,650							
Weight		kg	870 [950]		880 [930]		880 [960]			
Noise level (From front 1.5m)		dB(A)	66	67	63	64	65	66	66	67
Recommended air tank capacity		m³	1.24		1.24				2.26	

- NOTE:
- Nominal output is a numerical value for the rough compressor size.  
Refer to installation drawings when you plan the compressor shaft power, installed motor output, and power supply equipment.
  - Discharge air capacity is the value obtained by converting the discharged air amount at the time of discharge pressure into the suction state.  
Its guaranteed value needs to be confirmed separately.
  - Noise level is the converted value in an anechoic room measured under the condition that at full load running operation at 1.5m in front and 1m in height, the timing of the closure of cooler drain automatic discharge valve.  
It is not a guaranteed value. It could be larger depending on the actual installation and its environment.
  - P. D. P of a built-in dryer model is measured in ambient temperature 30 °C, inlet temperature 45 °C, and under the rated pressure.
  - Used less than 0.7MPa, it might be necessary to increase the size of the separate dryer or filter.
  - Discharged air capacity of a built-in dryer model decreases max 3% at drain condensed.
  - Earth leakage breaker is not built in the compressor.  
Be prepared separately at customer side, and select the leakage circuit breaker of inverter for Ftype.
  - DC reactor is standard equipment of G series, but if necessary, calculate the harmonic outflow current before the compressor installation.
  - Do not use the respiratory equipment to suck the compressed air directly.
  - Discharge pressure is gauge pressure.
  - The compressor is designed for indoor installation. Make sure install indoors, in a non-explosive, corrosive environment, and in a place with low humidity and dust.
  - Appearance and specifications are subject to change without notice.
  - Dimensions do not include the pipes and protruding parts. Refer the drawing for more details.
  - Do not use any lubricating oil other than the dedicated HITACHI ROTARY COMPRESSOR OIL or FOOD GRADE ROTARY COMPRESSOR OIL.

DSP G series Specifiction (90/100/120kW)



Air-cooled 90/100/120kW

Model		Vtype (Variable speed)				Ftype (Fixed speed)									
		DSP-100VAMG1		DSP-120VAMG1		DSP-90FA5<L>MG1			DSP-100FA5<L>MG1			DSP-120FA5MG1			
Item / Unit						DSP-90FA6<L>MG1			DSP-100FA6<L>MG1			DSP-120FA6MG1			
Power supply voltage	V	3 phases 380-415/380-480				3 phases <200/220>380-415/380-480						3 phases 380-415/380-480			
Power frequency	Hz	50/60 common				50/60									
Main motor type	-	2-pole totally enclosed fan-cooled flange type top runner motor													
Nominal output	kW	100		120		90			100			120			
Discharge pressure	MPa	0.70	1.0	0.70	1.0	0.7	0.86	1.0	0.7	0.86	1.0	0.7	0.86	1.0	
Discharge air capacity	m³/min	18.0	14.7	20.5	17.0	16.6	14.4	13.4	18.0	15.8	14.7	20.5	17.8	17.0	
@PQ wide mode		18.5	15.8	21.0	17.8	-									
Intake air pressure/temperature	-	Atmospheric pressure, 0~45°C													
Discharge air temperature	°C	Ambient temperature + 15°C or below													
Drive method	-	Direct connection to motor + gear drive													
Starting method	-	Inverter				Star-Delta (3 contactor)									
Lubricating oil amount	L	26 (unrefilled)													
Fan motor output	kW	1.5×2 (inverter control)													
Discharge air pipe diameter	B	2 (flange)													
Dimensions (W×D×H)	mm	2,150×1,520×1,975													
Weight	kg	2,300		2,460		2,230						2,310			
Noise level (From front 1.5m)	dB(A)	68	70	70	71	67	69	68	70	70	70	70	71	71	
Recommended air tank capacity	m³	2.26													

Water-cooled 90/100/120kW

Model		Vtype (Variable speed)				Ftype (Fixed speed)											
		DSP-100VWMG1		DSP-120VWMG1		DSP-90FW5<L>MG1			DSP-100FW5<L>MG1			DSP-120FW5MG1					
Item / Unit						DSP-90FW6<L>MG1			DSP-100FW6<L>MG1			DSP-120FW6MG1					
Power supply voltage	V	3 phases 380-415/380-480				3 phases <200/220> 380-415/380-480									3 phases 380-415/380-480		
Power frequency	Hz	50/60 common				50/60											
Main motor type	-	2-pole totally enclosed fan-cooled flange type top runner motor															
Nominal output	kW	100		120		90			100			120					
Discharge pressure	MPa	0.7	1.0	0.7	1.0	0.7	0.86	1.0	0.7	0.86	1.0	0.7	0.86	1.0			
Discharge air capacity	m³/min	18.3	14.8	21.0	17.2	16.8	14.5	13.5	18.3	16.0	14.8	21.0	18.0	17.2			
@PQ wide mode		18.8	16.0	21.5	18.0	-											
Intake air pressure/temperature	-	Atmospheric pressure, 0~45℃															
Discharge air temperature	℃	Intake water temperature + 13℃ or below															
Drive method	-	Direct connection to motor + gear drive															
Starting method	-	Inverter				Star-Delta (3 contactor)											
Lubricating oil amount	L	16 (unrefilled)															
Fan motor output	kW	0.2															
Cooling water amount	L/min	160															
Cooling water temperature	℃	35℃ or below															
Discharge air pipe diameter	B	2 (flange)															
Dimensions (W×D×H)	mm	2,150×1,520×1,825															
Weight	kg	2,200		2,360		2,130						2,210					
Noise level (From front 1.5m)	dB(A)	66	68	68	69	66	67	67	66	68	68	68	69	69			
Recommended air tank capacity	m³	2.26															

- NOTE:
- Nominal output is a numerical value for the rough compressor size.  
Refer to installation drawings when you plan the compressor shaft power, installed motor output, and power supply equipment.
  - Discharge air capacity is the value obtained by converting discharge air capacity at the time of discharge pressure into the suction state. The discharge air capacity of PQ widemode shows each discharge air capacity at 0.6MPa for the 0.7MPa specification and at 0.86MPa for the 1.0MPa specification. Contact us for the guaranteed value.
  - Noise level is the converted value in an anechoic room measured under the condition that at full load running operation at 1.5m in front and 1m in height, the timing of the closure of cooler drain automatic discharge valve. It is not a guaranteed value. It could be larger depending on the actual installation and its environment.
  - Earth leakage breaker is not built in the compressor. Be prepared separately at customer side.
  - Do not use the respiratory equipment to suck the compressed air directly.
  - Discharge pressure is gauge pressure.
  - The compressor is designed for indoor installation. Make sure install indoors, in a non-explosive, corrosive environment, and in a place with low humidity and dust.
  - Appearance and specifications are subject to change without notice.
  - Dimensions do not include the pipes and protruding parts. Refer the drawing for more details.
  - Do not use any lubricating oil other than the dedicated HITACHI ROTARY COMPRESSOR OIL or FOOD GRADE ROTARY COMPRESSOR OIL.

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Hitachi air compressor 

