

**HITACHI**  
Inspire the Next

# AIR COMPRESSOR OIL FREE SCREW *G series*

22/30/37kW



Hitachi Industrial Equipment Systems Co., Ltd.

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**, 22/30/37kW(**Vtype, Ftype**)16 models with higher environment-friendly, premium standard, durability. **DSP G series** brings your facility advanced oil free operation experience!

#### DSP-37V NEW

**Vtype** can control ideal air capacity with changing motor rotation speed according to necessary air capacity. It allows reducing needless work and electricity cost.



[Main functions and characteristics]

- DCBL motor variable speed
- Touch panel
- IPC control
- V+P type control
- Unit (Max. 6 units) controllable
- Unload stop
- Adaptation for 45°C
- PQ widemode
- Cooling fan variable speed
- Heat safety function
- Emergency stop button

#### DSP-22/30/37F NEW

**Ftype** can decrease rotating speed during unloading, and unload motive powers. Furthermore, it coupled with new FI control function to fulfill energy saving performance, compared to the conventional I-mode control(load/unload capacity control)

[Main functions and characteristics]

- DCBL motor fixed speed
- Touch panel
- IPC control
- I+P (FI+P) type control
- Unit (Max. 6 units) controllable
- Unload stop
- Adaptation for 45°C
- Cooling fan variable speed
- Heat safety function
- Emergency stop button

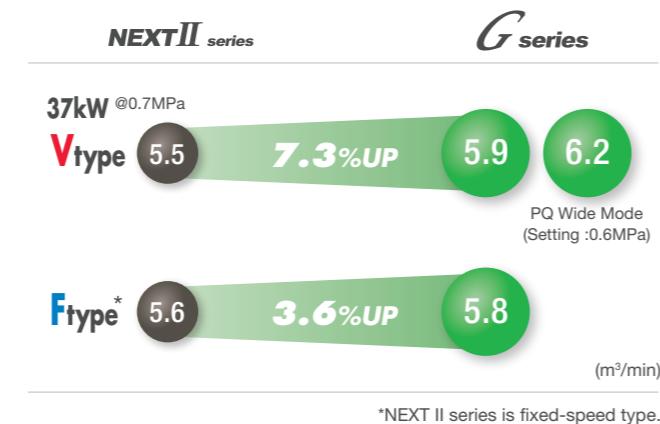


Hitachi compressors have been used in various industries.

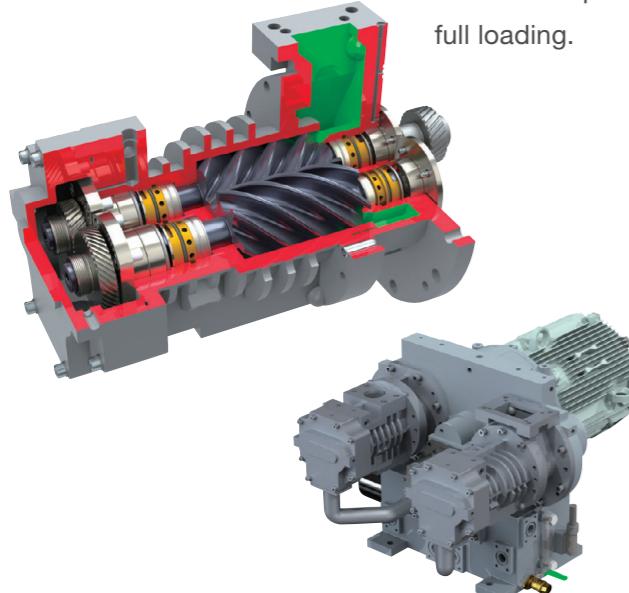
With advanced **G series** features, we continue bringing customers more satisfaction with **flexibility and sustainability** of our product to meet customer's needs.

### Discharge air capacity for 37kW has been improved. 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.



### High performance air-end



High efficient permanent magnet motor

### Energy efficiency improvement

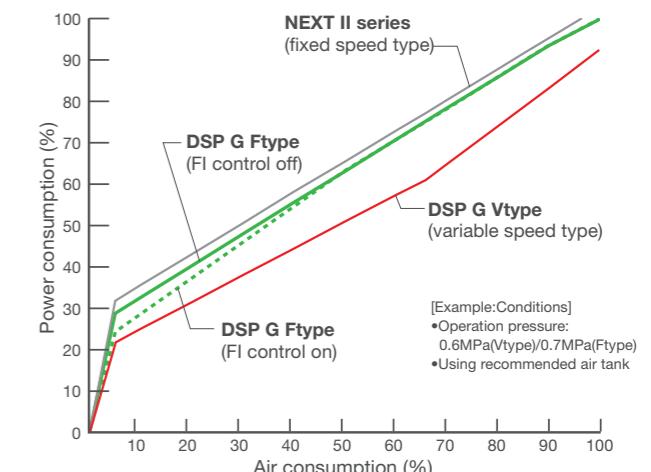
Hitachi has been achieved power cost reductions for the conventional types through the efficient performance of the air-end and permanent magnet motor. Energy saving of **DSP G series** has been improved to max. 6% for Vtype and 5% for Ftype when full loading.



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

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.

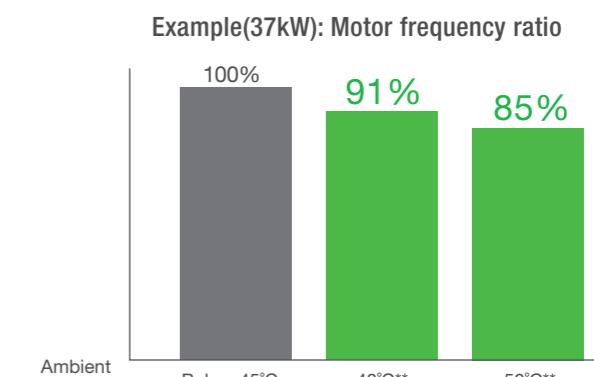
\*Default setting of this mode is invalid.  
\*\*This mode is switchable(On-off) at customer side.  
\*\*\*FI control characteristic is different per air tank capacity.



### [NEW] Heat safety mode

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

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.

Max. 6 compressor units drop connection can be controlled at one time.

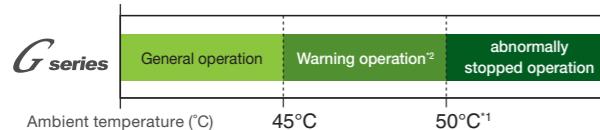


Conventional functions are inherited in Hitachi Oil-Free compressor **G series** as well. Our outstanding functions keep satisfying our customers with higher productivity and superior operability.

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

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

With remarkable unit layout of **DSP G series**, its high efficient cooling fan and low pressure loss dryer provide 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 control (Intelligent Pressure Control) **Vtype Ftype**

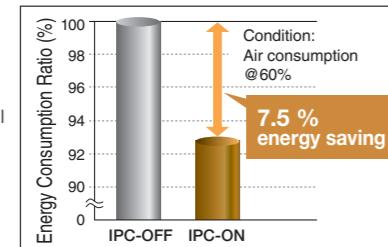
By estimating use point pressure in accordance with air consumption, IPC control decreases discharge pressure during low load operation, which enables energy-saving.

JP patent No.4425768 and others

#### Example of effect by IPC

##### Conditions

- Model:DSP-37VATG1
- Control pressure: 0.70MPa
- Use point pressure at full load:0.55MPa
- Piping pressure loss at full load:0.15MPa



\*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.

#### Discharge air capacity (m³/min) when PQ WIDE MODE ON(0.6MPa)

Model	DSP-37VATG1
0.7MPa	5.9→6.2 (+5.1%)
0.88MPa	5.0→6.0 (+20%)

\*The above figure at right side is example of 37kW, 0.7MPa model.  
Please refer the left table for the discharge air capacity in each model.

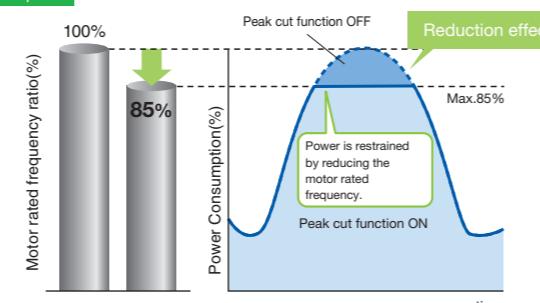


### Peak cut function **Vtype Ftype** (Ftype 30/37kW only)

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.

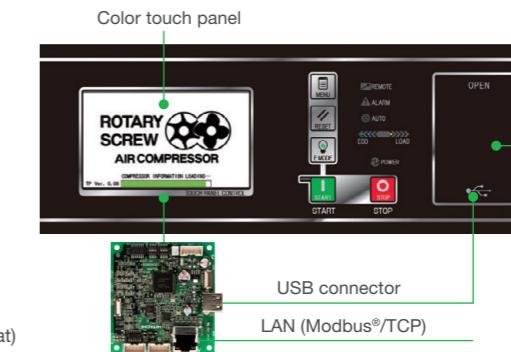
\*In the case of switching both peak cut function and heat safety mode, our compressor will prioritize to use heat safety mode.



### 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.

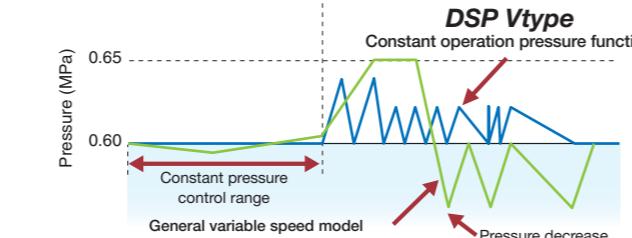
\*Data transfer capacity per day is approx. 400kB.

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



### 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.



### 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)



Nonfood Compounds Program Listed H1  
NSF-Reg.No. 150658

#### HITACHI ROTARY COMPRESSOR OIL

Hitachi dedicated mineral oil with high performance and reliability.

#### Standardized Oil Mist Remover (OMR)

99.99% recovery of oil mist occurred from gear case

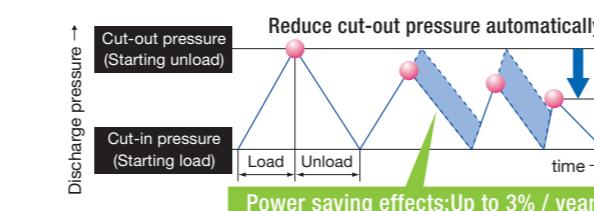
#### Simple package filter (Option)

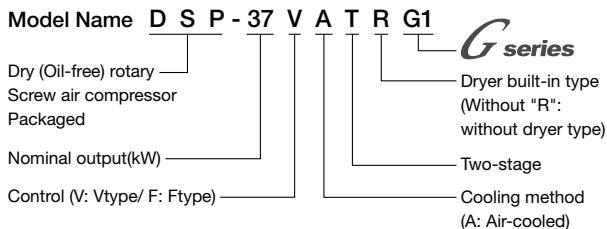
Cleaning period is shown on touch panel per setting time.



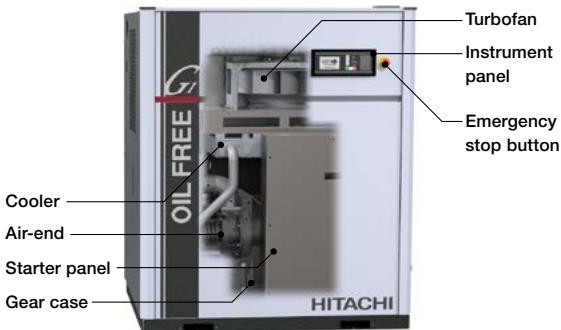
### ECO-MODE (Energy-saving operation control) **Ftype**

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





Internal structure



## Specifications

[ ] Dryer built-in type

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							
Cooling method	-	Air-Cooled										
Power Supply Voltage	-	3 phases 200, 380, 400, 415V/50Hz ; 3 phases 200, 220, 380, 400, 440V/60Hz										
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				
Discharge air capacity	m³/min	5.9	5.0	3.7	3.3	4.7	4.0	5.8				
@PQ wide mode (@ 0.6MPa)	m³/min	6.2	6.0	-				4.9				
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										
P. D. P	°C	[10 (under pressure) ]										
[Dryer]	Refrigerator nominal output	kW	[1.9]	[1.2]	[1.9]							
	Refrigerant	-	[R410A]									
Discharge air pipe diameter	-	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				
Recommended air tank capacity	m³	1.24		1.24		2.26						

NOTE:

1. 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.
2. 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.
3. 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.
4. 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.
5. Used less than 0.7MPa, it might be necessary to increase the size of the separate dryer or filter.
6. Discharged air capacity of a built-in dryer model decreases max 3% at drain condensed.
7. 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.
8. DC reactor is standard equipment of G series, but if necessary, calculate the harmonic outflow current before the compressor installation.
9. Do not use the respiratory equipment to suck the compressed air directly.
10. Discharge pressure is gauge pressure. Use the range from 0.5MPa to designed pressure.
11. 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.
12. Appearance and specifications are subject to change without notice.
13. Dimensions do not include the pipes and protruding parts. Refer the drawing for more details.
14. Do not use any lubricating oil other than the dedicated HITACHI ROTARY COMPRESSOR OIL or FOOD GRADE ROTARY COMPRESSOR OIL.

 Hitachi Industrial Equipment Systems Co., Ltd.

For further information, please contact your nearest sales representative.



Find your region



Contact us

Hitachi air compressor 



ISO14001  
EC97J1107

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.