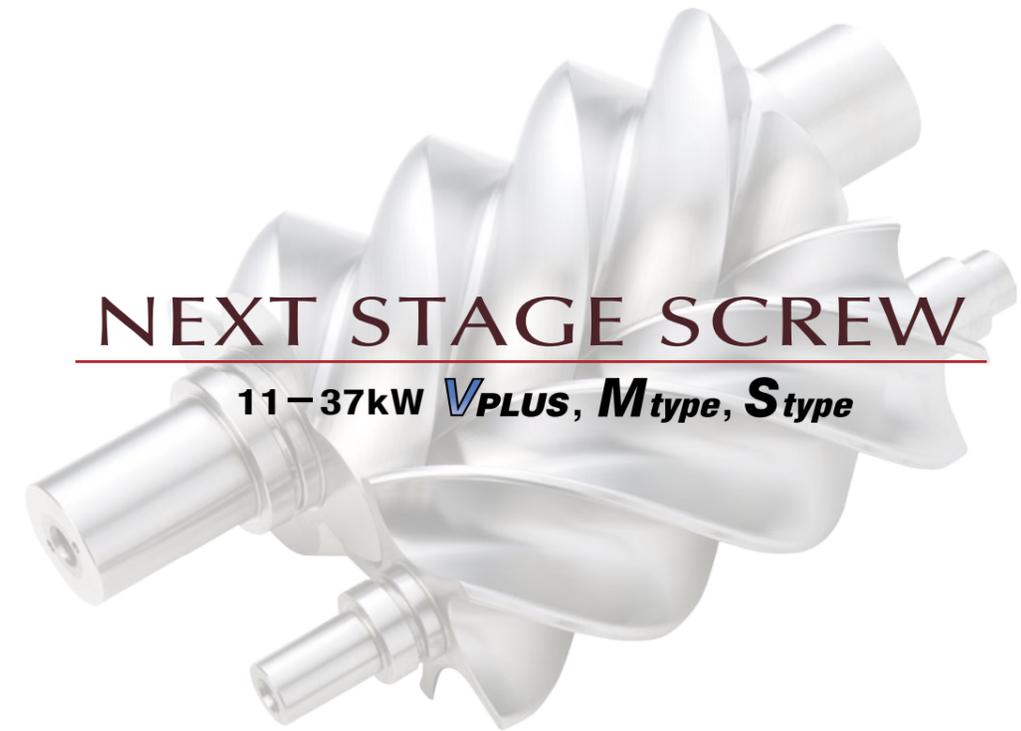


# HISCREW *NEXT*series



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For further information, please contact your nearest sales representative.



# Evolution of Air Compressor...A Collaboration of Economic Efficiency with Environmental Performance **HISCREW Series**

The answer to a higher economic efficiency and reduction of environmental burden has become a great **CHALLENGE** for the air compressor industry in the 21st century.

HITACHI, with long-year-accumulated technology, offers an ultimate answer to this **CHALLENGE**.

HITACHI, to pursue the ultimate goal of higher Energy-Saving performance together with less environmental burdens, adds **NEXT series** with varied types and specs to the well-established **HISCREW** as a new line-up.

HITACHI, aiming to further development, provides solutions for different industrials.

HITACHI, by developing new core technology, will continue providing advanced screw air compressors to satisfy the varied needs of every customer.

## Low Pressure Drop Design

Besides large-size suction filter and oil separator, air dryer with lower pressure drop has been newly developed. Energy-saving is maximized by minimizing the energy loss due to internal pressure loss.

## Improved Reliability by Adoption of Large-Size Suction Filter

Suction filter has been enlarged by one size compared to conventional 2000 series

Effective filtration area ratio of suction filter (comparison with conventional 2000 series)



## Long Cycle, Easy Maintenance

It is easy to carry out the inspection and maintenance, since the parts such as filters or check valve are all easily reachable after removing the front door.

### Overhaul Cycle – 8 years

The overhaul cycle of air end is every 8 years, since the combination of high-performance bearing and high-precision oil filtration system is adopted.



### Possible of Oil Change Every 2 years

[NEW HISCREW OIL2000], oriented to Air Compressor, with top level of reliability.

Oil change cycle is every 2 years, or 12,000hr whichever comes first.



The oil change cycle has been extended by reduction of oil consumption.

### Oil Separator

Adoption of Easy-Maintenance, Spin-On Type Oil Separator.

Compared to the conventional 2000 series, the oil contained in the discharge air is reduced by 60% to 0.002cc/m<sup>3</sup> level\*.

(\*37kW M Type and S Type: 0.005cc/m<sup>3</sup>)



### Large Suction Filter

Adoption of Large Cartridge Type Suction Filter. High-Efficiency of Filtration and Extension of Filter Cleaning Interval.



## Simple Operation

New development of simple and easy-to-look instrumental panel

Possible to switch between ECOMODE, PQ WIDE MODE, and Remote Control by operation on the instrumental panel.

Possible of quick TROUBLESHOOTING referring to the information on the monitor in case of trouble.

### One-Touch to Change Pressure Setting

Easy to change pressure setting on the instrumental panel to achieve Energy-Saving.

### Instantaneous Power Interruption (IPI) Restart Function as Standard Equipment

Automatic restart is available after instantaneous power interruption.

(Standard for V plus and M type)

### Cascade Vector Control Logic\* by HITACHI Original Technology

Both Quick Response and High Reliability are Possible due to PID Control.

All the control logics of variable speed control used on V plus are exclusively developed by HITACHI.

With the control system of the discharge pressure at scale of ±0.01MPa, quick response, excellent load following capacity and high reliability are achieved. \* 22/37kW



## Option

### High Grade (HG) Option

- Possible for energy saving functions such as schedule operation, lead-lag, and dual control.
- Possible to check the operation condition and various settings on LCD monitor.

(\* Applicable for 22kW or 37kW M type or V type ONLY.)



# NEXT STAGE SCREW

## Standard Specification

### 11–37kW M type, S type

Item-Unit	Model	M type		S type	
		OSP-11M5ANA OSP-11M6ANA	OSP-15M5ANA OSP-15M6ANA	OSP-22M5ANA OSP-22M6ANA	OSP-37M5ANA OSP-37M6ANA
Cooling Method	–	Air Cooled			
Motor Nominal Output	kW	11	15	22	37
Discharge Pressure	MPa	0.7 [0.85]		0.7 [0.85] <1.0>	
Discharge Capacity	m <sup>3</sup> /min	1.75 [1.6]	2.35 [2.1]	4.0 [3.7] <3.3>	7.2 [6.6] <5.8>
Suction Pressure/Temperature	–	Atmospheric Pressure / 0–40°C			
Temperature of Discharge Air	°C	Ambient Temperature/ +15°C or below			
Driving System	–	4-Pole TEFC Motor with V-Belt Drive			
Starter Type	–	Full Voltage Starting		Star-Delta	
Lubricating Oil	–	New HISCREW OIL 2000			
Lubricating Oil Filling Amount	L	6	7	10	15
Discharge Air Pipe Diameter	–	Rc 1		Rc 1 · 1/2	
External Dimension (WxDxH)	mm	930x770x1,250		1,000x1,000x1,500	1,200x1,100x1,650
Weight	kg	340	350	590	830
Noise Level	dB[A]	58	61	65	70

### 11–37kW V PLUS (VSD)

Item-Unit	Model	OSP-11VANA		OSP-15VANA		OSP-22VANA		OSP-37VANA	
Cooling Method	–	Air Cooled							
Motor Nominal Output	kW	11		15		22		37	
Rated	Discharge Pressure	0.85				0.7			
	Discharge Capacity	1.6		2.1		4.0		6.8	
PQ WIDE MODE	Discharge Pressure	0.7	0.9	0.7	0.9	0.60	0.85	0.60	0.85
	Discharge Capacity	1.75	1.5	2.35	2.0	4.2	3.5	7.1	6.2
Working Range of PQ WIDE MODE	MPa	0.7–0.9				0.6–0.85			
Suction Pressure/Temperature	–	Atmospheric Pressure/ 0–40°C							
Temperature of Discharge Air	°C	Ambient Temperature +15 or below							
Driving System	–	4-Pole TEFC Motor with V-Belt Drive				DCBL Direct Driving			
Starter Type	–	Soft Start							
Lubricating Oil	–	New HISCREW OIL 2000							
Lubricating Oil Filling Amount	L	6		7		10		15	
Discharge Air Pipe Diameter	–	Rc 1				Rc 1 · 1/2			
External Dimension (WxDxH)	mm	930x770x1,250				1,000x1,000x1,500		1,200x1,100x1,650	
Weight	kg	345		360		460		630	
Noise Level	dB[A]	58		61		65		68	

Note:

- Capacity is the converted value at its inlet condition. For guaranteed values, contact your nearest dealer or HITACHI local representative offices.
- Pressure is indicated as the gauge pressure.
- Motor output values are indicated as motor nominal outputs.
- Temperature of discharge air may vary in different environments.
- Noise level is measured value at 1.5m in front and 1m height in an anechoic room, under full load operation. It may vary in different operation conditions or environments.
- Make sure to install an air receiver tank of sufficient volume.
- For V plus, it is necessary to install an air dryer or filter of larger size when operated pressure is below the pressure range of PQ WIDEMODE. Contact your nearest dealer or HITACHI local representative offices.
- Earth leakage circuit breaker is NOT attached. Prepare it in advance.
- [ ] < > show values of capacity under different discharge pressures.
- Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.
- 1.0MPa model is ONLY available on 22/37kW M type. For details, contact your nearest dealer or HITACHI local representative office.

## Capacity control

Type of Control	Characteristics	Comparison/effect	Type of Model			
U type (suction throttle valve)*	Discharge air capacity is controlled by nonstep control of open ratio of the suction throttle valve.	Pressure fluctuation → small Energy saving → small	S type	M type	—	—
I type (air purge)	Discharge air capacity is controlled by 0% or 100% open of the suction throttle valve. For low load ratio operation, shaft power input is reduced by decreasing the pressure inside the oil tank/case.	Comparing to U type Pressure fluctuation → big Energy saving → big	S type	M type	V type	V plus
P type (motor auto start/stop)	Discharge air capacity is controlled by automatic motor stop and restart according to pressure settings.	Comparing to I type Pressure fluctuation → big Energy saving → big	—	M type	V type	V plus
V type (variable speed control)	Discharge air capacity is controlled by variable motor rotation speed according to the pressure settings.	Pressure fluctuation → very small Energy saving → maximum	—	—	V type	V plus
PQ wide mode	Wide range of capacity setting is available for each pressure. Air capacity can be increased by max. 5% for low pressure setting.	Pressure fluctuation → very small Energy saving → maximum	—	—	—	V plus

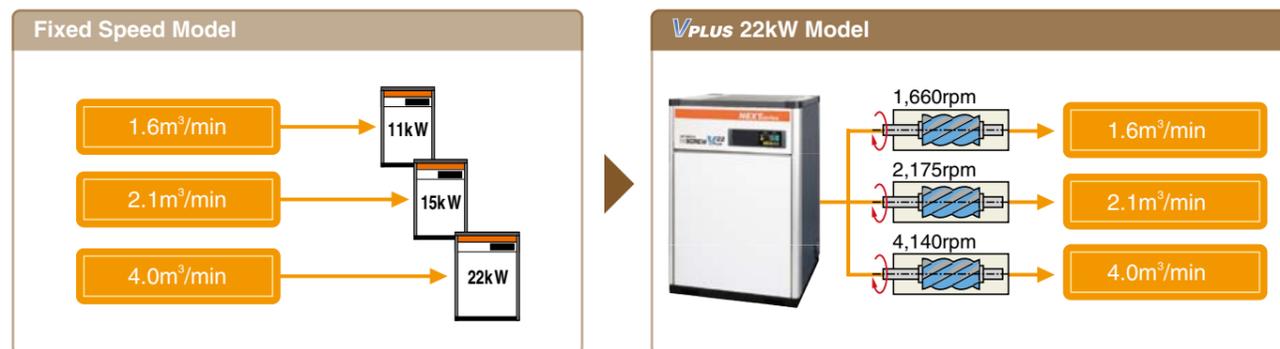
\* U type is Optional for 22kW and 37kW models.

# VPLUS (Variable Rotation Speed Control System of Motor)

Variable speed control (VSD) enables to exert Energy-Saving effect  
**NEXT** Generation of Compressor with Expertise in Saving Unnecessary Power Consumption

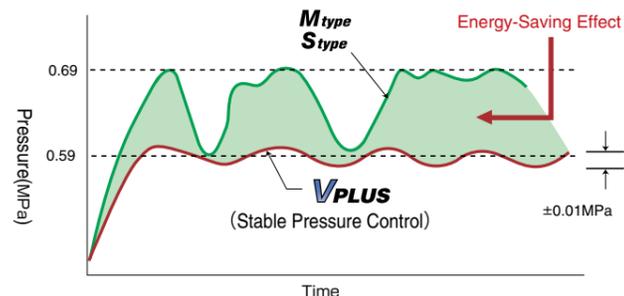
## Variable Speed Control to Respond to the Necessary Used Air on VPLUS

Compared to the conventional Fixed Speed type, optimal capacity control of VPLUS is possible to respond to the need of used air. Therefore, power consumption is reduced by cutting the unnecessary work.



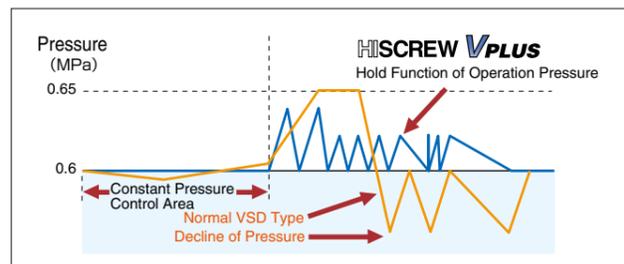
## Provide Necessary Compressed Air at Necessary Pressure by Stable Pressure Control

Since highly precise pressure control within change of  $\pm 0.01$ MPa is possible, necessary amount of compressed air at required pressure is provided to the application equipment with high efficiency. Further, significant energy-saving can be achieved since the setting of pressure is at scale of 0.01MPa.



## Hold Function of Operation Pressure (JP No. 3262011 and others, Japan Regional Award)

It is possible to keep the setting pressure during low load operation by HITACHI unique control logic. For conventional VSD type, because decline of pressure occurs in case of low load operation or automatic Start/Stop operation, it is necessary to set the pressure higher than the target pressure in advance. Due to the hold function of operation pressure on V plus, further energy-saving is possible.

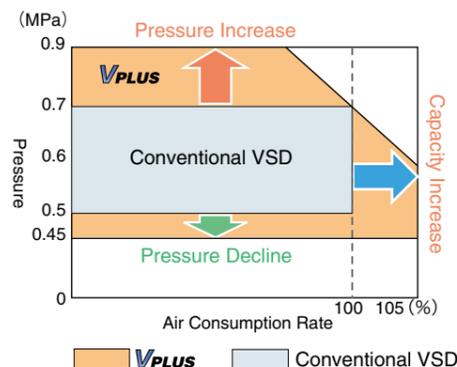


## PQ WIDE MODE to Enlarge the Applicable Range (JP No. 3516108 and others, Japan Regional Award)

PQ WIDE MODE, by automatically adjusting the maximum rotation speed of the compressor, enables an increase in the discharge air capacity when the pressure drops. Compared to conventional VSD, compressor can operate at a wider range of pressure (P) and air capacity (Q).

### Air Capacity at PQ WIDE MODE

11-15kW		Unit: m³/min				
Discharge pressure MPa	0.5	0.6	0.7	0.85	0.9	
Model						
11kW	1.75	1.75	1.75	1.6	1.5	
15kW	2.35	2.35	2.35	2.1	2.0	
22-37kW		Unit: m³/min				
Discharge pressure MPa	0.45	0.50	0.60	0.70	0.85	
Model						
22kW	4.2	4.2	4.2	4.0	3.5	
37kW	7.1	7.1	7.1	6.8	6.2	



# Mtype, S type (Fixed Rotation Speed Control of Motor)

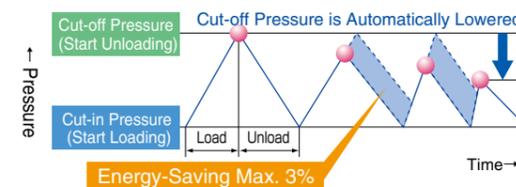
Excellent Energy-Saving Effect with Fixed Rotation Speed Control of Motor  
 Auto Start/Stop for Mtype, Continuous Operation Function for S type as Standard Model

Since I type control system (Load/Unload Capacity Control) is loaded as standard on Mtype or S type, energy-saving is achieved. Further energy-saving is possible by the combination of ECOMODE.

## ECOMODE

- Energy-Saving control mode ECOMODE is equipped as standard.
- Possible to save up to 7.3MWh electric power every year in case of 37kW model

Responding to the load rate of compressor, the cut-off pressure is automatically lowered. Operation of energy-saving is achieved by reducing the unnecessary operation for increasing pressure.



## Cooling Fan (Air Cooled Type)

- High-Efficiency, Energy-Saving Turbo Fan
- High-Efficiency, Energy-Saving Turbo Fan is newly developed. Compared to the conventional one, 40% of energy-saving has been obtained.



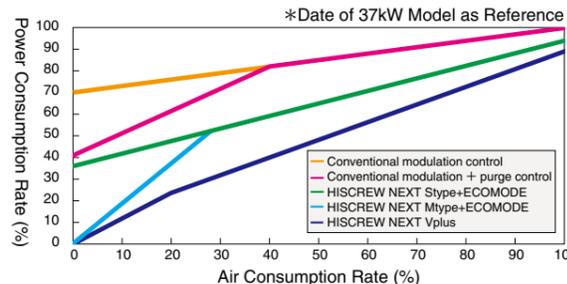
## Belt Automatic Tensioner

New Developed Belt Automatic Tensioner as Standard Equipment  
 Adjustment of belt tension depending on the condition of operation, belt slip is effectively avoided. Higher reliability is obtained by adopting the combination of highly durable V- belt.



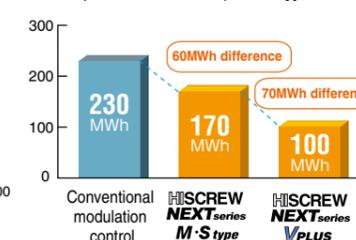
## Energy-Saving

HITACHI will always provide advanced air compressors. Performance of well-established HISCREW VPLUS is further improved.



### Example of Annual Power Consumption (Air Consumption Rate 40%)

Example: 37kW VPLUS, M-S type



Calculation Condition  
 •6,000 hr/year operation. (at ECOMODE for M,S type)  
 •Pressure(at compressor outlet)  
 VPLUS : 0.6MPa,  
 M-S type : 0.7MPa,  
 Conventional Model: 0.7MPa  
 •Power consumption of auxiliary devices (cooling fan, dryer etc) is NOT included.

## System Upgrade (JP No. 3547314 and others)

Flexible response to the need of Energy-Saving is possible by the VPLUS-centered HITACHI unique system upgrade. Obvious difference in total merit is easy to find.

### V-M Combination System

If 2 or 3 compressors are necessary, HITACHI V-M combination system is your BEST choice. There is great merit on HITACHI V-M combination system which divides 1 compressor into 2.

### Single-V system Multi-V system

Besides V-M Combination System, Energy-Saving is also possible with any combination such as Single-V multi-unit control system, or Multi-V multi-unit control system etc.

### Example Effect of V-M Combination System

- ① Energy consumption is similar to the one of 75kW V plus.
- ② About 25% of the initial investment can be saved.
- ③ Power consumption is reduced by 39% or 164MWh/year, when the air consumption rate is 60% at pressure of 0.6MPa.

\*Calculation condition: 6,000h/year running

