HITACHI OIL-FREE SCREW COMPRESSOR

OIL FREE SCREW

15～240kW Single-stage / Two-stage

HITACHI
Inspire the Next

HITACHI SCREW COMPRESSOR

Energy-Saving and Easy Maintenance

HISCREW

7.5～240kW Oil-flooded Rotary Screw Compressors

HITACHI
Inspire the Next

Class Zero
ISO 8573-1

■ ISO 8573-1 : 2010

CLASS 0 TÜV Approval

HISCREW

■ HISCREW Model List

Model				Motor Output (kW) 7.5	11	15	22	37	55	75	100	110	132	150 (75x2)	160	125-240	22/37
VSD	Vplus (Vtype)	Air-Cooled	Built-in Dryer	○	○	○	○	○	○	○							
			Without Dryer	○	○	○	○	○	○	○	○			○*			
		Water-Cooled	Built-in Dryer				○	○	○	○							
			Without Dryer				○	○	○	○	○			○*			
Fixed Speed Type	Mtype	Air-Cooled	Built-in Dryer	○	○	○	○	○	○	○							
			Without Dryer	○	○	○	○	○	○	○	○	○	○	○	○		○
		Water-Cooled	Built-in Dryer				○	○	○	○							
			Without Dryer				○	○	○	○	○	○	○	○			
	Stype	Air-Cooled	Built-in Dryer			○	○	○	○	○							
			Without Dryer			○	○	○	○	○	○	○	○		○		
		Water-Cooled	Built-in Dryer						○	○							
			Without Dryer						○	○	○	○	○		○	○	

NEXT series　2-stage series　2000 Series　Intermediate Series(1.57MPa)　＊Combination of 75kW V type and 75kW M type

■ Standard Specifications

● HISCREW *NEXT series*

Fixed Speed Model

Item・Unit \ Model		Stype	—	—	OSP-15S5ANA OSP-15S6ANA	OSP-22S5ANA OSP-22S6ANA	OSP-37S5ANA OSP-37S6ANA	OSP-55S5AN	OSP-75S5AN	OSP-132S5AN	OSP-160S5AN
		Mtype	OSP-7.5M5AN OSP-7.5M6AN	OSP-11M5ANA OSP-11M6ANA	OSP-15M5ANA OSP-15M6ANA	OSP-22M5ANA OSP-22M6ANA	OSP-37M5ANA OSP-37M6ANA	OSP-55M5AN	OSP-75M5AN	OSP-132M5AN	OSP-160M5AN
Capacity		m³/min	1.03 [1.15]	1.6 [1.75]	2.1 [2.35]	4.0 [3.7] <3.3>	7.2 [6.6] <5.8>	9.8 [8.8] <8.1>	13.0 [11.7] <10.7>	25.5 [23.3] <21.0>	29.5 [27.2] <24.5>
Discharge Pressure		MPa	0.83 [0.7]	0.85 [0.7]		0.7 [0.85] <1.0>				0.75 [0.85] <1.0>	

VSD Model

Item・Unit \ Model		OSP-7.5VAN	OSP-11VANA	OSP-15VANA	OSP-22VANA	OSP-37VANA	OSP-55VAN	OSP-75VAN
Capacity	m³/min	1.03	1.6	2.1	4.0	6.8	10.0	13.2
Discharge Pressure	MPa	0.83	0.85		0.7			

● HISCREW 2000 Series

Fixed Speed Model

Item・Unit \ Model		Stype	OSP-100S5ALI OSP-100S6ALI	OSP-110S5ALI	—
		Mtype	OSP-100M5ALI OSP-100M6ALI	OSP-110M5ALI	OSP-150M5AD OSP-150M6AD
Capacity	m³/min		18.1 [16.7]	20.0 [18.0]	26.0 [24.1]
Discharge Pressure	MPa		0.75 [0.85]		

VSD Model

Item・Unit \ Model		OSP-100V5ALI	OSP-150V5AD OSP-150V6AD
Capacity	m³/min	18.1	26.0 [24.1]
Discharge Pressure	MPa	0.7	0.75 [0.85]

● Two-stage HISCREW

Fixed Speed Model

Item・Unit \ Model		OSP-125S5WT	OSP-150S6WT	OSP-160S5WT	OSP-190S6WT	OSP-200S5WT	OSP-240S6WT
Frequency	Hz	50	60	50	60	50	60
Capacity	m³/min	23.3 [20.5]	28.5 [25.0]	30.0 [26.5]	36.5 [32.1]	37.7 [33.2]	45.0 [39.6]
Discharge Pressure	MPa	0.69 [0.83]					

Notes:
1. Capacity is the converted value at its inlet condition.
2. Specifications may be changed without notice.
3. For specifications of built-in dryer models, contact your nearest dealer or Hitachi local representative office.

Hitachi Industrial Equipment Systems Co., Ltd.

For further information, please contact your nearest sales representative.

OIL FREE SCREW

■ OIL FREE SCREW Model List

● DSP Fixed Speed Series　(kW)

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

● DSP V type with Variable Speed Drive　(kW)

		Dryer	15	22	30	37	45	55	75	90	100	120	132~240*1
Single-stage	Air-cooled	—		●		●		●					
		Built-in		●		●		●					
	Water-cooled	—				●		●					
Two-stage	Air-cooled	—				●		●	●		●		
		Built-in				●		●	●				
	Water-cooled	—						●	●		●		●*2
		Built-in						●	●				

● : V plus　● : NEXT Series　*1. 132, 145, 160, 200 and 240kW　*2. 160 and 240kW

■ Standard Specifications

● Two-Stage (22–240kW)

Fixed Speed Model 22–120kW　( ) Built-in Dryer Equipped

Item・Unit \ Model			DSP-22AT(R)5I DSP-22AT(R)6I	DSP-30AT(R)5I DSP-30AT(R)6I	DSP-37AT(R)5I DSP-37AT(R)6I	DSP-45AT(R)5N DSP-45AT(R)6N	DSP-55AT(R)5N DSP-55AT(R)6N	DSP-75AT(R)5N DSP-75AT(R)6N	DSP-90A5MN DSP-90A6MN	DSP-100A5MN DSP-100A6MN	DSP-120A5MN DSP-120A6MN
Capacity	50Hz	m³/min	3.6 [3.1]	4.6 [3.9]	5.3 [4.6]	7.4 [6.2]	9.2 [7.2]	13.0 [10.5]	16.6 [13.9]	18.0 [15.4]	20.5 [17.3]
	60Hz					7.8 [6.5]	9.2 [7.7]	13.0 [11.1]			
Discharge Pressure		MPa	0.69 [0.88]			0.70 [0.93]					

Fixed Speed Model 132–240kW

Item・Unit \ Model		DSP-132W5N DSP-132W6N	DSP-145W5N DSP-145W6N	DSP-160W5N DSP-160W6N	DSP-200W5N DSP-200W6N	DSP-240W5N DSP-240W6N	DSP-132A5 DSP-132A6	DSP-145A5 DSP-145A6	DSP-160A5 DSP-160A6	DSP-200A5 DSP-200A6	DSP-240A5 DSP-240A6
Cooling Method	—	Water-Cooled					Air-Cooled				
Capacity	m³/min	23.4 [20.7]	26.0 [22.2]	28.5 [24.8]	37.0 [32.2]	40.5 [35.0]	22.5 [19.0]	25.0 [20.0]	27.5 [22.5]	35.5 [30.0]	40.0 [32.5]
Discharge Pressure	MPa	0.75 [0.93]					0.75 [1.0]				

VSD Model 37–240kW　( ) Built-in Dryer Equipped

Item・Unit \ Model		DSP-37VAT(R)5 DSP-37VAT(R)6	DSP-55VAT(R)N	DSP-75VAT(R)N	DSP-100VA5MN DSP-100VA6MN	DSP-160VW5N DSP-160VW6N	DSP-240VW5N DSP-240VW6N
Cooling Method	—	Air-Cooled				Water-Cooled	
Capacity	m³/min	5.3 [4.6]	9.3 [7.7]	12.6 [10.9]	18.0 [15.4]	28.5 [24.8]	40.5 [35.0]
Discharge Pressure	MPa	0.69 [0.88]	0.70 [0.93]			0.75 [0.93]	

● Single-Stage (15–55kW)

Fixed Speed Model　( ) Built-in Dryer Equipped

Item・Unit \ Model		DSP-15A(R)5II DSP-15A(R)6II	DSP-22A(R)5II DSP-22A(R)6II	DSP-37A(R)5III DSP-37A(R)6III	DSP-55A(R)5II DSP-55A(R)6II
Capacity	m³/min	2.0 [2.5]	3.4 [4.0]	5.0 [5.9]	6.4 [8.0]
Discharge Pressure	MPa	0.69 [0.39]			

VSD Model　( ) Built-in Dryer Equipped

Item・Unit \ Model		DSP-22VA(R)5I DSP-22VA(R)6I	DSP-37VA(R)5II DSP-37VA(R)6II	DSP-55VA(R)5I DSP-55VA(R)6I
Capacity	m³/min	3.4	5.0	6.4
Discharge Pressure	MPa	0.69		

Notes:
1. Capacity is the converted value at its inlet condition.
2. Specifications may be changed without notice.
3. Do not use any of the compressors with respiratory device that directly sucks compressed air.
4. For Single-stage Fixed Speed type, 0.39MPa is NOT available on built-in dryer model.

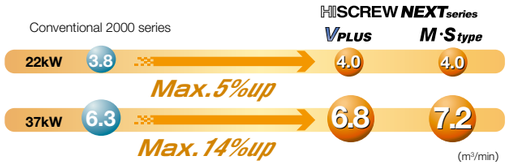
ISO14001　ISO9001 JQA-QM3443

Hitachi Screw Compressor is manufactured at a factory approved by Environmental Standard (ISO 14001) and Quality Standard (ISO9001) of International Organization for Standardization.

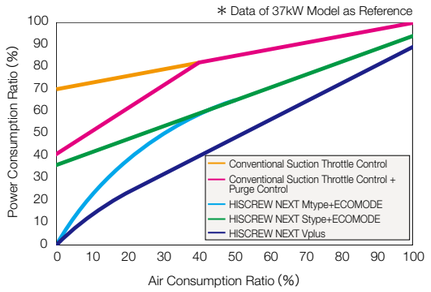
Printed in Thailand (H) **HC-E113Q** 0912

Energy-Saving

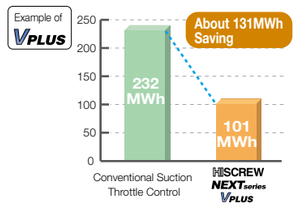
High Efficiency by Evolved ECOPROFILE



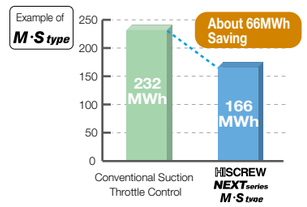
HITACHI Unique Capacity Control



Example of Annual Power Consumption
(37kW Model, Air Consumption Ratio 40%)



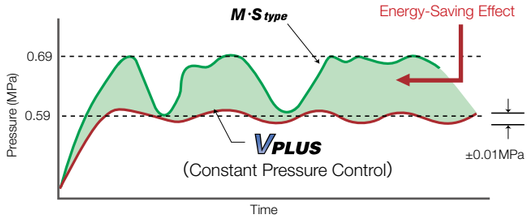
Calculation Condition: 6,000h/year Operation Time, Operation Pressure at 0.6MPa (V plus), 0.7MPa (Conventional Model)



Calculation Condition: 6,000h/year Operation Time (ECOMODE in use), Operation Pressure at 0.7MPa

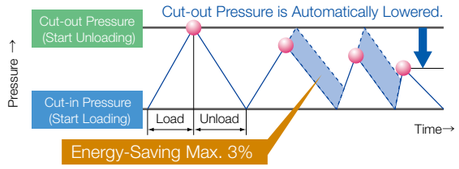
Constant Pressure Control (VPLUS)

Since Constant Pressure Control allows highly precise pressure control within range of ±0.01MPa, supply of compressed air at necessary pressure is possible with high efficiency.



ECOMODE (M type, S type)

Responding to the load ratio of compressor, cut-out pressure is automatically lowered. Energy-Saving is achieved by reducing unnecessary air compression.



Various System Combinations with VPLUS

To respond to the change of air use, HITACHI provides various system combinations with VSD for further Energy-Saving.

V-M Combination System

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

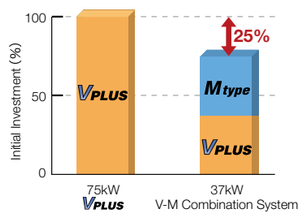
Single-V System/Multi-V System

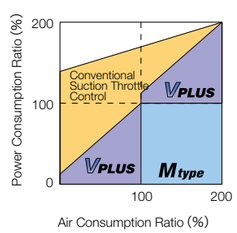
Besides V-M Combination System, Energy-Saving is also possible with any combination such as Single-V multi-unit control system, or Multi-V multi-unit control system etc.

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 saved by **39%** or **164**MWh/year, when the air consumption ratio is 60% at pressure of 0.6MPa.

∗ Calculation condition: 6,000h/year running





Easy-Maintenance

Spin-On Type Oil Separator

Large Suction Filter

Adoption of large cartridge type suction filter.
High efficiency of filtration enables to extend the interval of filter cleaning

ALL-IN-ONE Structure Air End (22/37kW, VPLUS)

Automatic Belt Tensioner (22/37kW, M type, S type)

Newly developed Automatic Belt Tensioner is standard equipment.
Adjustment of belt tension is not necessary.

Oil Change Cycle - 2 years

As the oil consumption is reduced by every effort on oil separation and filtration, oil change cycle has been extended to every 2 years or 12,000hr whichever comes first.

Versatility in HITACHI Unique Technology

PQ WIDE MODE (JP No. 3516108 and others, Japan Regional Award)

PQ WIDE MODE, by automatically adjusting the maximum rotation speed of the compressor, enables to increase the discharge FAD in case that the pressure declines. Compared to conventional VSD, compressor is possible to operate at a wider range of pressure (P) and FAD (Q).

FAD at PQ WIDE MODE

Unit : m³/min

7.5–15kW

Model \ Discharge Pressure MPa	0.5	0.6	0.7	0.85	0.9
7.5kW	1.15	1.15	1.15	1.03*	0.96
11kW	1.75	1.75	1.75	1.6	1.5
15kW	2.35	2.35	2.35	2.1	2.0

22–37kW

Model \ Discharge Pressure MPa	0.45	0.50	0.60	0.70	0.85
22kW	4.2	4.2	4.2	4.0	3.5
37kW	7.1	7.1	7.1	6.8	6.2

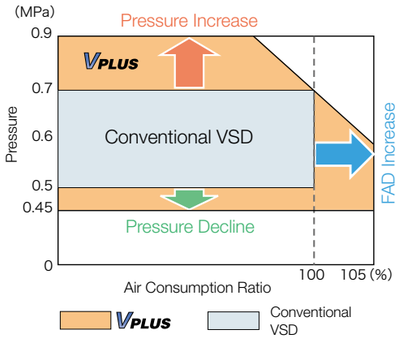
55–75kW

Model \ Discharge Pressure MPa	0.45	0.50	0.60	0.70	0.85
55kW	10.5	10.5	10.5	10.0	9.0
75kW	13.9	13.9	13.9	13.2	11.9

100kW

Model \ Discharge Pressure MPa	0.49	0.59	0.69	0.83	0.88
100kW	19.0	19.0	18.1	16.7	–

∗ Indictes FAD at pressure of 0.83MPa



High Efficiency DCBL Driving System (22–75kW, VPLUS)

Direct connection of new developed high efficiency DCBL motor and air end.
For the control of DCBL motor, cascade vector control (in-line form) is adopted.
Therefore, high efficiency and high reliability are achieved.

Environment Friendly

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”.

Class Zero ISO-8573-1

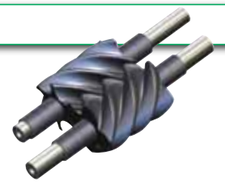
■ **ISO8573-1:2010 CLASS 0 TÜV Certification**

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.

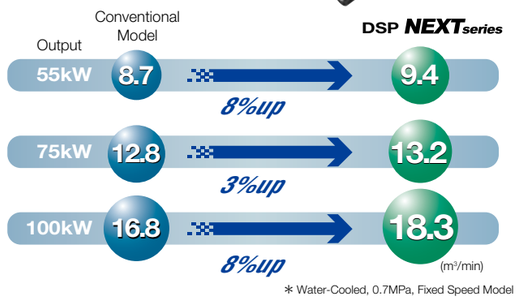
High Performance

Equipped with New Air-End

High capacity is realized by newly developed Air-End.



DSP NEXT series

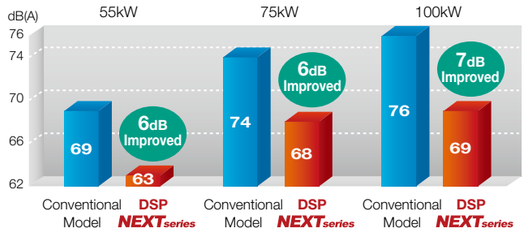


∗ Water-Cooled, 0.7MPa, Fixed Speed Model

Low Noise Design

Low noise achieved by the low-noise rotor profile, adoption of vibration-proof driving system and low-noise structure of suction and exhaust.

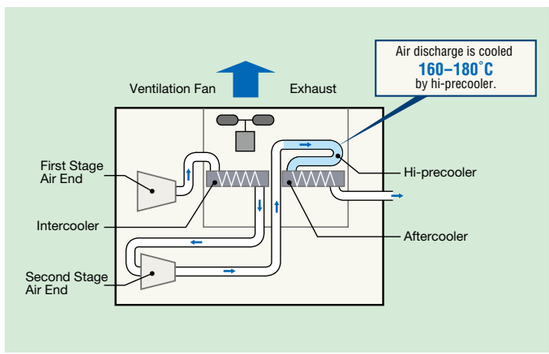
Air-Cooled, 0.7MPa, Fixed Speed Model



High Reliability

Hi-precooler System

Hi-precooler system cools down high temperature discharge air down to 180℃ and below before entering aftercooler. This enables aftercooler to be less than the upper temperature limit.



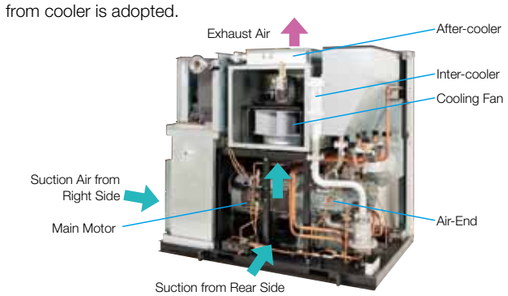
Continuous Operation Under 45℃ (45-120kW)

Continuous operation under up to 45℃ and long maintenance cycle are possible by adoption of new internal structure which minimizes the internal temperature rise.

Continuous Operation under Ambient Temperature of up to 45℃ + **Same as the conventional model (respond up to 40℃) in maintenance cycle**

Ventilation Structure of Air Cooled Model

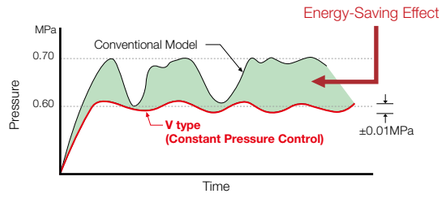
Compulsory ventilation structure inside the unit due to the wind from cooler is adopted.

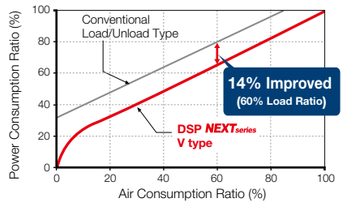


Energy-Saving

Constant Pressure Control (V type)

Since Constant Pressure Control allows highly precise pressure control within range of ±0.01MPa, supply of compressed air at necessary pressure is possible with high efficiency.





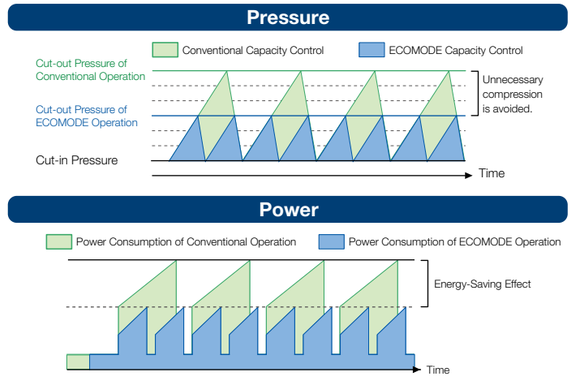
About 83MWh Annual Energy-Saving

Calculation condition:
75kW V type (0.7MPa SPEC),
0.6MPa as necessary pressure,
8,000h/year operation,
60% load ratio

ECOMODE (Fixed Speed Series)

Responding to the load ratio of compressor, unnecessary compression is avoided by automatically lowering the unload start-up pressure. Energy-Saving is achieved. Taking 75kW water-cooled, 0.7MPa SPEC, Fixed Speed model as an example, in case of 70% load ratio 11.3MWh is saved annually, and in case of 90% load ratio 28MWh is saved annually.

(Calculation condition: air receiver tank of 2.26m^3 is installed, 8,000h/year operation)



Various Solutions of Energy-Saving

Easy Energy-Saving operation by 2 or 3 units

V-M Combination System

New Energy-Saving operation achieved by the combination of V type and Fixed Speed type model

More Energy-Saving is demanded based on multi-unit control

Multi-Unit Control with Single-V type unit

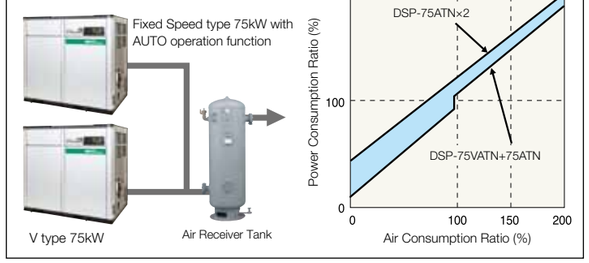
Easy Energy-Saving is possible by multi-unit control with Single V type unit

Further Energy-Saving effect and leveling operation hours are demanded

Multi-Unit Control with Multi-V type units

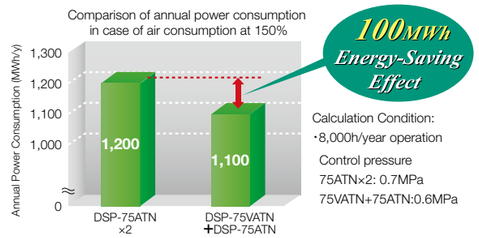
Energy-Saving and leveling operation hours are achieved by all V type units.

Example of V-M Combination System
(75kW × 2 units)



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

Energy-Saving of 100MWh can be achieved in case of air consumption at 150%.

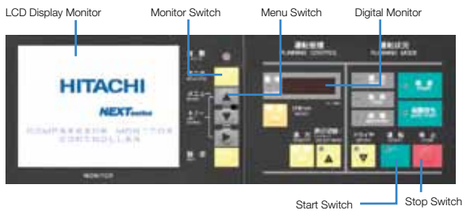


Calculation Condition:
・8,000h/year operation
Control pressure
75ATN×2: 0.7MPa
75VATN+75ATN:0.6MPa

User Friendly

Large LCD Display Monitor with Easy Command Interface

Large LCD display monitor is equipped as standard. Various functions can be easily set by control panel. In case of trouble, the information of status of compressor is displayed so that it is possible to quickly carry out the Troubleshooting.



Standard Function

- 3 Languages Available (English, Japanese, Chinese)
- ECOMODE
- Maintenance Time Notification
- Alarm and Trouble History Display
- Schedule Operation
- Operation Data Memory
- Instantaneous Power Interruption (IPI) Restart etc.

Option

- Dual Operation
- Multi-Unit Control Operation
- AUTO Operation
- Communication Function