

Hitachi oil-flooded rotary screw compressor

HITACHI
Inspire the Next

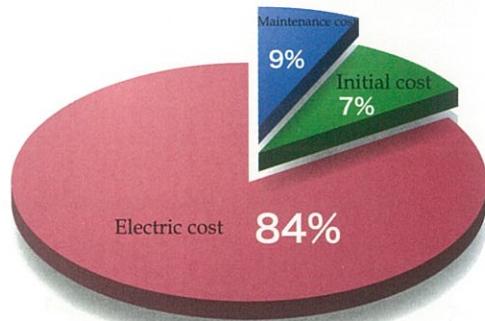
HI SCREW

NEXT II series 55 - 160kW catalogue



Electric consumption becomes the biggest part of the compressor's running cost.

The running cost about compressor which has been used for 12 years



The running cost about compressor which has been used for 12 years

Initial cost account for overall cost

7% (Include compressor fee, installation fee and peripheral device)

Maintenance cost account for overall cost

9% (Regular maintenance and maintenance fee)

Electric cost account for overall cost

84%

Calculation condition: Take HITACHI 75KW oil-flooded rotary screw compressor as a example

6,000hr/year,100% load

Hitachi - your trusted air solution provider

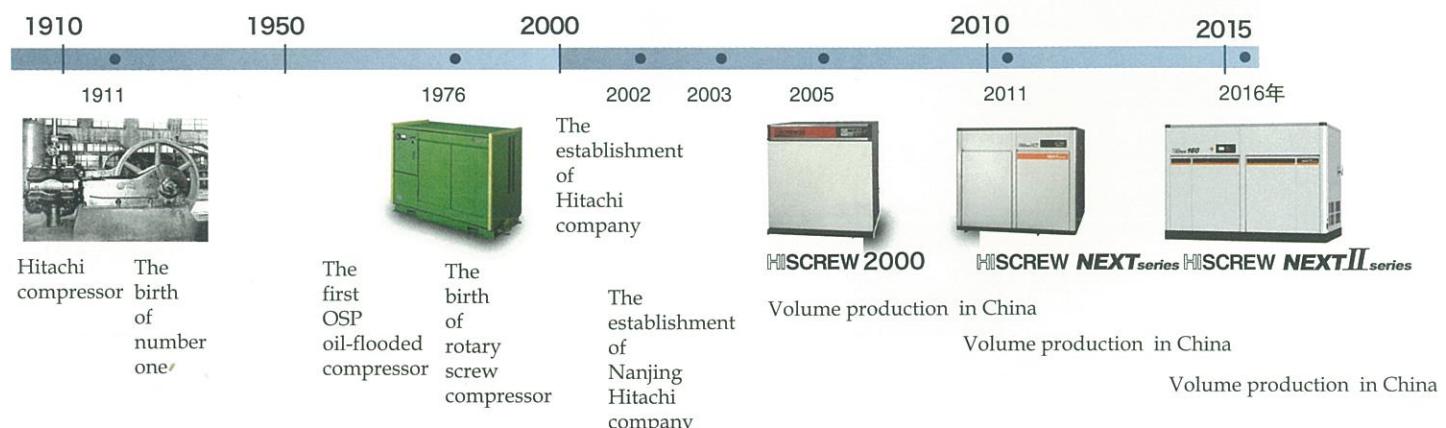
Over 100 years of compressed air experience ,Hitachi has been and continues to be the technology leader via continuous innovation of air compressor technology oriented towards customer value.

As a pioneer, specializing in air compressors in Japan, we commit ourselves to unstoppable effort in technology innovation and product development to diverse needs of customer.

Hitachi air compressor ranges from 0.1-1300KW in output ,with reciprocating,scroll,screw and turbo in compression form,based on oil-flooded and oil-free customer.

We believe our air compressors with ultimate reliability, supreme energy and various air solution, will contribute to the progress and develop of your business

■ The development of Hitachi



Ultimate evolution of air compressor — **HISCREW NEXT II series**

We are proud to introduce HISCREW NEXT II series,a new milestone in Hitachi innovation of air compressor technology.

With outstanding reliability,premium efficiency and industry leading performance ,

HISCREW NEXT II series will undoubtedly match your requirements for air compressors.



New Developed Air-end

Hitachi latest innovation of air-end technology
Rotary screw type air-end with significant improvement of air capacity

Rotor from Hitachi design



Conventional NEXT

HISCREW NEXT II series

PQ wide mode
Set at 0.7MPa

55 kW 9.8

2% up

10

10.6

75 kW 13.0

1.5% up

13.2

14

(m³/min)

※V PLUS (0.7MPa) compare

110 kW 19.3

5.6% up

20.4

(m³/min)

※Mtype (0.85MPa) compare



Intelligent control

Rapidly air-out control

With the development of synthetic oil for compressor, we develop this function in order to reduce the bubbles cause by pressure down also shorten time for unload, air-out, restart, solve the pressure problem when load increase after shut down.

NEXT II series

Oil tank pressure (MPa)

Air-out

Time

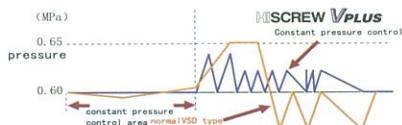
20S

45S

Conventional

Constant pressure control

Hitachi Vplus original control logic possible to hold the discharge pressure at setting level during operation at low load. No higher pressure setting in advance needed.



Long term maintenance cycle & easy maintenance

Dust cover for compressor

Dust cover set at entrance, according to setting time, Display panel reveal clean information.



Oil-separator

Use Spin-on type oil-separator. Because increase the measure of oil-separator, the separate function will be stable.



Large suction filter

Large suction filter with revolving filter and filter, which can significantly filter out impurity in air.



Hitachi DCBL compare to other

Energy-saving —DCBL MOTOR—

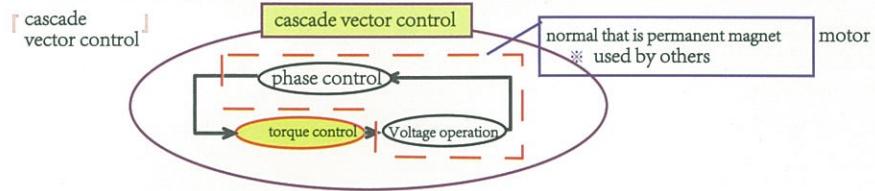
DCBL → Energy-saving

Through independent capacity control to enlarge energy-saving

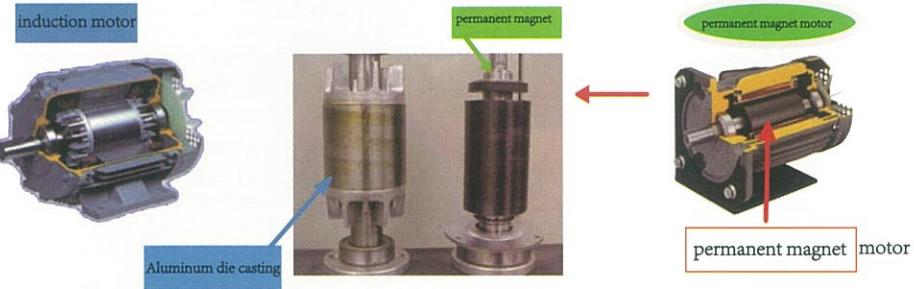
Vtype DCBL motor is developed by Hitachi ,the air-out pressure is under $\pm 0.01\text{Mpa}$.Bring about high speed reply, and energy-saving by stable load control system .

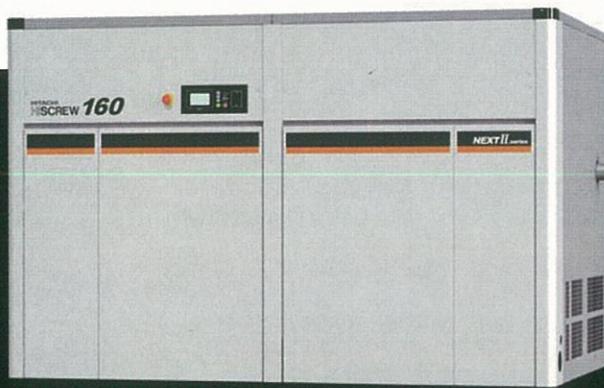
- DCBL connect to air-end, DCBL is cascade vector control ,which ensure function and reliability .

- DCBL control can be restarted when trouble happen.DCBL control can give automatic judgment ,and restart automatic at trip situation (unless 3 times).That ensure compressor run without external influence temporary



The difference between permanent magnet motor and induction motor





Lead compressor future
Hitachi highly recommend
energy-saving and IT communication function

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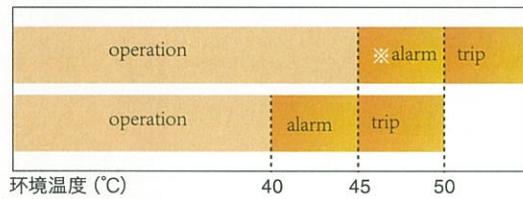
High reliability

standard up to 45°C (operation is possible under 50°C)

Redesign air cooling compressor's structure, which shorten the pressure loss and improve cooling effect. Use high-performance cooling motor to improve work performance. Compressor can run stable under 45°C high temperature.
Improve the capability of water cooling compressor's oil cooler and after cooler. Water cooling compressor standard up to 45°C

NEXT II series

conventional model



※ Ambient temperature alarm will be indicated when ambient temperature is over 45°C. continuous operation at higher than 45°C may shorten lifetime of lubricating oil and electric parts

55 -75kW 8 years 110-160kW 6 years maintenance

Combine high load bearing and high performance lubricating oil filter system, that allows compressor maintenance cycle last to 6~8 years

※ condition : yearly running time under 6000 hr, 1MPa is 4years



New oil

New developed oil [NEW HISCREW OIL NEXT] has heat resistant and inhibit bubbles. The rapidly bleed system can shorten restart time. Same with conventional model oil change every 2years

※ condition : yearly running time under 6000 hr



IPC control (intelligent pressure control)

VPLUS Mtype

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

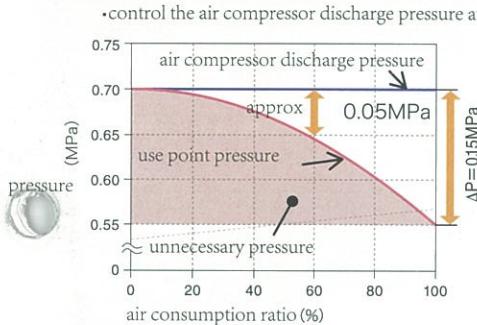
Patent JP : 4425768

Example of effect by IPC

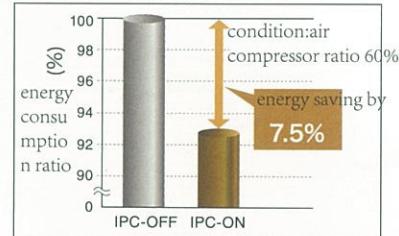
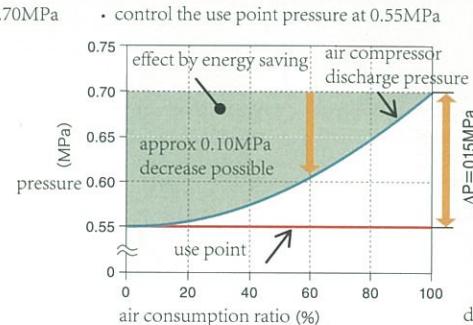
Conditions *Air compressor:OSP-160VAN2 *Control pressure setting:0.70MPa *Use point pressure during full load:0.55MPa
*Piping pressure loss during full load:0.15MPa

Graph of pressure change (Theoretical values)

① IPC-OFF (conventional inverter control model)



② IPC-ON(next II series)



due to estimation control, use point pressure varies in accordance with use conditions
constant speed compressor IPC range is air ration's 50%

IT communication function

USB flash memory possible for data logging

Exporting USB data in CSV format, customers use data to explore energy-saving solutions

*necessary to prepare a USB flash memory device(5.5cm or smaller)on user's side

*operation data for one day is approximately 400kB

Web server function via bluetooth

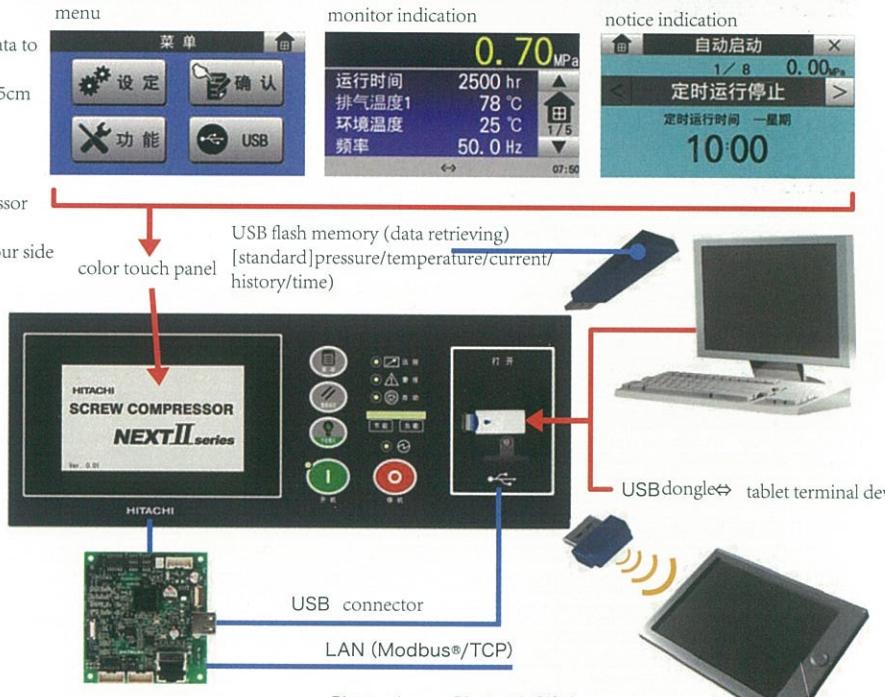
Customers use tablet computers to confirm compressor operation and change settings.

*necessary to prepare a bluetooth USB dongle on your side
*for setting changes, part of the items are applicable

Modbus

Open network serial communication Modbus/RTU is supported as standard

*Modbus/TCP support is optional



※ the image described above has been modified

Multi-function touch panel

Various function available

main function

energy-saving operation/schedule operation(weekly time)/instantaneous power interruption restart function/alternate operation(option)/auto operation/communication function/web serve function/store/load of setting/maintenance time notification

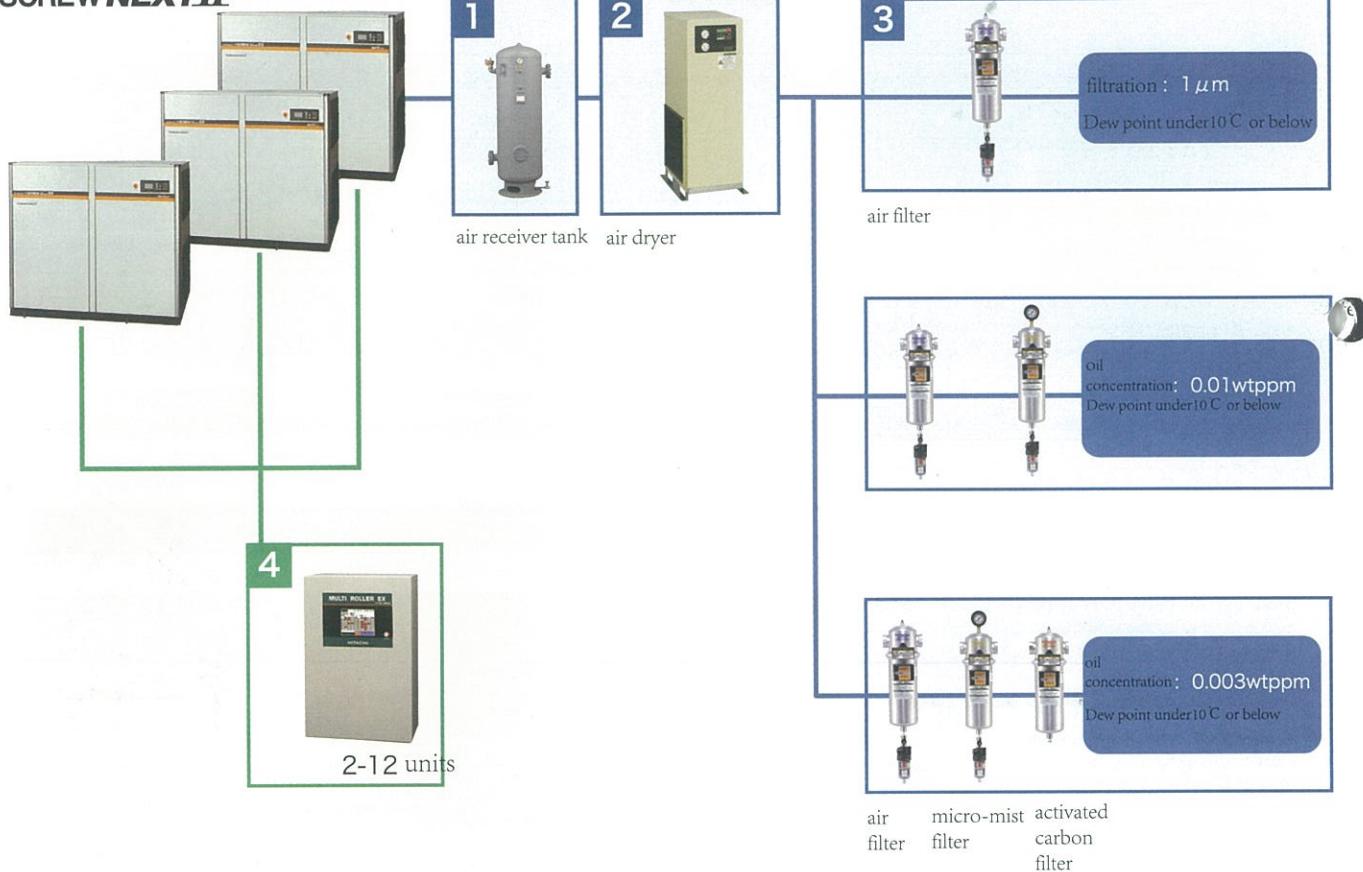
Operation data storage function

Pressure, temperature, electric current, running time, alarm record and other running data can be saved and verified from the operation panel on the spot.

Air compressor system

Example of compressed air system

HISCREW NEXT II



1 Air receiver tank

In order to exert the energy saving effect of compressor, Hitachi recommend to choose the air receiver tank with the following volume.

Air receiver tank volume list

model type (kW)	M type		
	STANDARD	ECONODE	V PLUS
55	1.24	1.24	0.70
75	1.24	2.26	1.24
110	2.26	4.0	4.0
132	4.0	8.0	4.0
160	4.0	8.0	4.0

2 Air dryer

- Dry air of higher quality
- A rich line-up for your choice

3 Line filter

- Various types of filter (air filter, micro-filter, activated carbon filter)

4 Multi-unit control panel (multi roller EX)

- Energy-saving
- Easy-to-read LCD touch panel equipped

Note: for detailed information of above auxiliary equipment, contact your nearest dealer or Hitachi local representative offices.

V plus's energy-saving solutions

Energy-saving solutions

To respond to the change in air demand, connect Vplus and Mtype ,Hitachi provide three patterns of system structure to help you acquire energy-saving.

do not need control panel to realize energy saving

V-M

need 1 Vplus and less than 2 constant speed compressor

need control panel to realize energy saving

Single-V

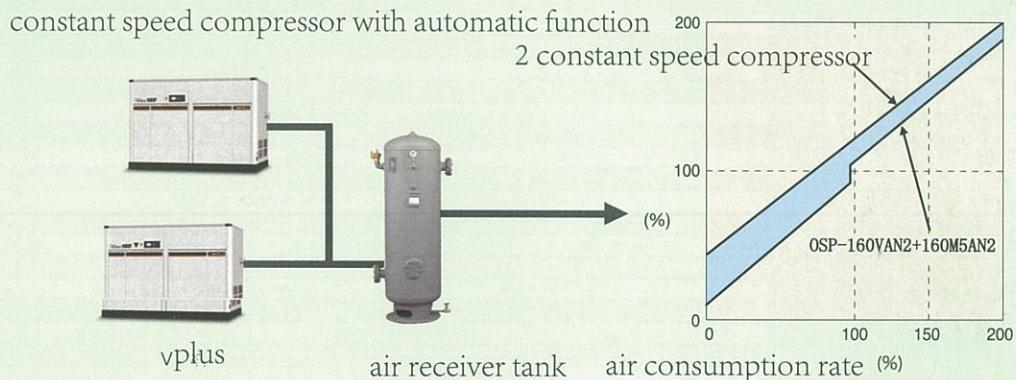
connect 1 Vplus and multiple constant speed compressor by using multiple control panel

need control panel and multiple Vplus to realize energy saving

Multi-V

average Vplus's running time to achieve energy-saving effect

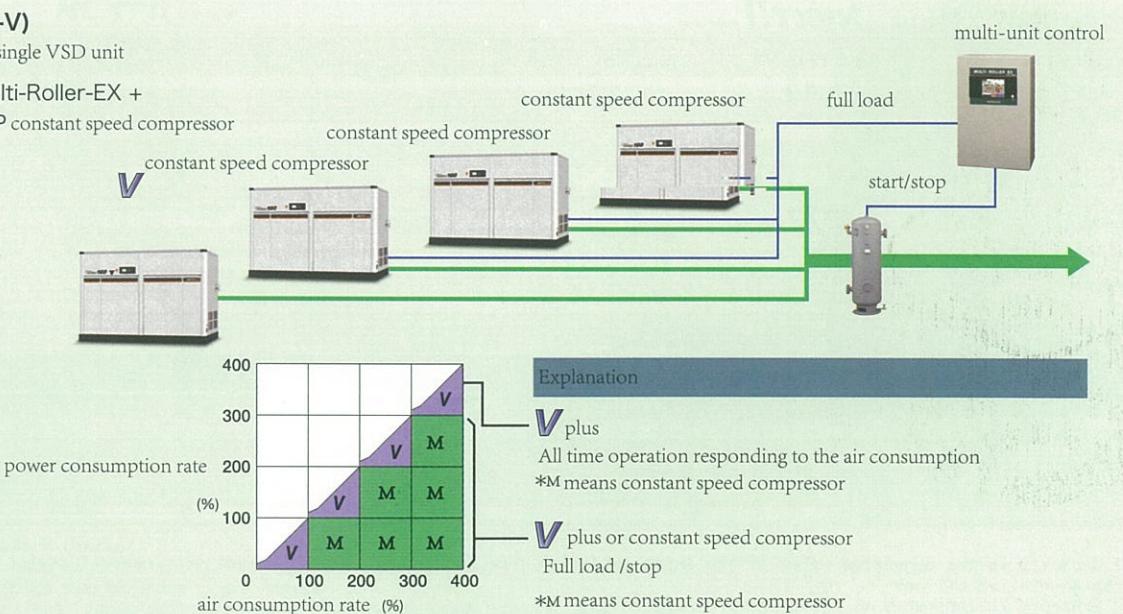
■ V-M combination



Single-V (Multi-V)

Multi-unit control with single VSD unit

Multi-unit control Multi-Roller-EX +
OSP + OSP constant speed compressor





Standard specification sheet (Vtype)

55-75kW VPLUS NEXT II series

item/unit	model	OSP-55VAN2	OSP-75VAN2	OSP-55VWN2	OSP-75VWN2
cooling method	-	air cooled			
motor nominal output	kW	55	75	55	75
rated	discharge pressure discharge capacity	Mpa m³/min	10.1	13.1	0.7 10.1 13.3
PQ wide mode	discharge pressure discharge capacity	Mpa m³/min	10.6~9.1	14.0~12.0	0.6~0.85 10.6~9.1 14.0~12.0
suction pressure temperature	-	-	-	atmospheric pressure 0~45°C	
temperature of discharge air	°C	-	ambient temperature +15 or below	cooling water temperature +13 or below	
driving system	-	-	-	coupling connection	
starter type	-	-	-	soft start	
lubricating oil	-	-	-	NEW HISCREW OIL NEXT	
lubricating oil fill amount	L	26 (filled)	36 (filled)	17 (filled)	24 (filled)
output of cooling fan	kW	1.5 inverter control	2.2 inverter control	0.05×2	-
discharge air pipe diameter	-	-	-	Rc2	
external dimension(W×D×H)	mm	-	-	2000×1200×1800	
weight	kg	1230	1405	1070	1240
air receiver tank volume	m³	0.7 or over	1.24 or over	0.7 or over	1.24 or over
cooling water	°C	-	-	35 or below	-
	L/min	-	-	100	125
cooling water pipe diameter	-	-	-	Rc2	
noise (1.5m)	dB(A)	64	66	63	65

110-160kW VPLUS NEXT II series

item/unit	model	OSP-110VAN2	OSP-160VAN2	OSP-110VWN2	OSP-160VWN2
cooling method	-	air cooled			
motor nominal output	kW	110	160	110	160
rated	discharge pressure discharge capacity	Mpa m³/min	21.5	29.5	0.7 21.5 29.5
PQ wide mode	discharge pressure discharge capacity	Mpa m³/min	0.6 22.5	0.85 19.3	0.95 25.2
suction pressure temperature	-	-	-	atmospheric pressure 0~45°C	
temperature of discharge air	°C	-	ambient temperature +15 or below	cooling water temperature +13 or below	
driving system	-	-	-	gear drive	
starter type	-	-	-	soft start	
lubricating oil	-	-	-	NEW HISCREW OIL NEXT	
lubricating oil fill amount	L	50	115	37	70
output of cooling fan	kW	1.5×2 inverter control	4.0×2 inverter control	0.05×3	0.2
discharge air pipe diameter	-	2-1/2B	3B	2-1/2B	3B
external dimension(W×D×H)	mm	2550×1500×1800	2700×2000×1890	2550×1500×1800	2700×2000×1890
weight	kg	2900	3900	2800	3750
air receiver tank volume	°C	-	4.0 or over	4.0 or over	-
cooling water	temperature	-	-	35	-
	flow	L/min	-	182	-
cooling water pipe diameter	-	-	-	Rc2	-
noise (1.5m)	dB(A)	75	79	72	72

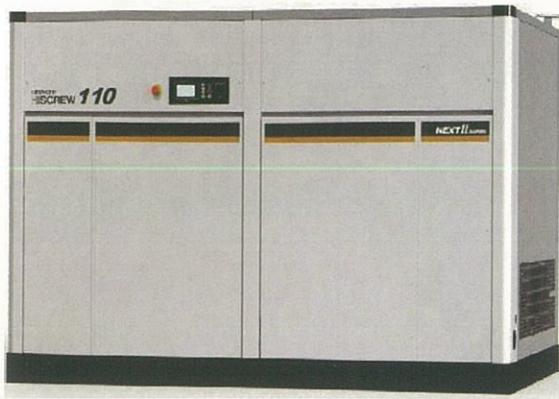
1. Capacity is the converted value at its inlet condition. For guaranteed values, contact your nearest dealer or Hitachi local representative offices.

2. Pressure is indicated as the gauge pressure.

3. Temperature of discharge air may vary from different environments.

4. For Vplus, when PQ wide mode is ON, may need larger dryer/filter. For more information, contact your nearest dealer or Hitachi local representative offices.

5. please use air receiver tank which is recommended. For Mtype (constant speed compressor) to maximize (ECOMODE) energy efficiency, use air receiver tank which is recommended.



Standard specification sheet (Mtype)

55-75kW Mtype NEXTII series

item-unit	model	OSP-55M5AN2			OSP-75M5AN2			OSP-55M5WN2			OSP-75M5WN2		
cooling method	-	air cooled						water cooled					
motor nominal output	kW	55			75			55			75		
rated	discharge pressure	Mpa	0.7	0.85	1.0	0.7	0.85	1.0	0.7	0.85	1.0	0.7	0.85
	discharge capacity	m³/min	10.0	9.0	8.3	13.2	11.9	10.9	10.0	9.0	8.3	13.2	11.9
PQ wide mode	discharge pressure	Mpa	-	-	-	-	-	-	-	-	-	-	-
	discharge capacity	m³/min	-	-	-	-	-	-	-	-	-	-	-
suction pressure temperature	-	ambient temperature +15 or below			atmospheric pressure 0-45°C			cooling water temperature +13 or below					
temperature of discharge air	°C												
driving system	-				gear drive								
starter type	-				star-delta								
lubricating oil	-				New HISCREW OIL NEXT								
lubricating oil fill/inf amount	L	27 (filled)			38 (filled)			17 (filled)			24 (filled)		
output of cooling fan	kW	1.5 inverter control			2.2 inverter control			0.05×2					
discharge air pipe diameter	-				Rc2								
external dimension(W×D×H)	mm				2000×1200×1800								
weight	kg	1520			1800			1360			1640		
air receiver tank volume	m³	1.24 or over			1.24 or over			1.24 or over			1.24 or over		
cooling water	°C							35 or below					
	L/min							100			125		
cooling water pipe diameter	-							Rc2					
noise (1.5m)	dB(A)	65			67			64			66		

110-160kW Mtype NEXTII series

item-unit	model	OSP-110M5AN2	OSP-132M5AN2	OSP-160M5AN2	OSP-110M5WN2	OSP-132M5WN2	OSP-160M5WN2
cooling method	-	air cooled				water cooled	
motor nominal output	kW	110	132	160	110	132	160
motor type	-			4 enclosed external fan motor			
rated	discharge pressure	Mpa	0.75 (0.85) [1.0]			0.75 (0.85) [1.0]	
	discharge capacity	m³/min	21.5 (20.4) [17.0]	25.5 (23.3) [21.0]	29.5 (27.2) [24.5]	21.5 (20.4) [17.0]	25.5 (23.3) [21.0]
suction pressure temperature	-			atmospheric pressure 0-45°C			
temperature of discharge air	°C	ambient temperature +15 or below		cooling water temperature +13 or below			
driving system	-			star-delta			
starter type	-			gear drive			
lubricating oil	-			New HISCREW OIL NEXT			
lubricating oil fill/inf amount	L	50	105	115	37	65	70
output of cooling fan	kW	1.5×2 inverter control	4.0×2 inverter control		0.05×3	0.2	
discharge air pipe diameter	-	2-1/2B		3B	2-1/2B	3B	
external dimension(W×D×H)	mm	2550×1500×1800		2700×1800×1890	2550×1500×1800		2700×1800×1890
weight	kg	2800	3450	3600	2700	3300	3420
air receiver tank volume	m³	2.0 or over		4.0 or over	2.0 or over	4.0 or over	
cooling water	temperature	-				35	
	flow	L/min				180	
cooling water pipe diameter	-					Rc2	
noise (1.5m)	dB(A)	75	77	79	72	72	72

6. client have to prepare breaker

7. Grounding must be used separately.

8. Please use NEW HISCREW OIL NEXT, don't use others

9. If the imbalance rate of input voltage exceeds 1%, or the power supply capacity is more than 10 times of the motor power and more than 500kVA, an AC reactor should be installed between the power supply and the compressor when the rated load is running.

10. Use the air compressor at indoor where no explosion, corrosion gas, low temperature, less dust.

11. Specificaations and outside view are subject to change without notice.

12. Noise level is measured value at 1.5m in front and 1m height in a anechoic room. under full load operation. It may vary in different operation conditions or environments.

Hitachi industrial equipment(Nanjing) co.,ltd



Hitachi industrial equipment system co.,ltd

◎Hitachi Industrial Equipment Systems Co.,Ltd.

<http://www.hitachi-iec.cn>

Hitachi industrial equipment(China) co.,ltd
2201 room,Rui Jin building No 205,Maoming Road shanghai

TEL: +86-21-5489-2378
FAX: +86-21-3356-5070

Beijing office

1402 room Beijing fortune building 5 dong san
huan bei lu chao yang district

TEL : +86-10-6590-8180
FAX : +86-10-6590-8189

Guangzhou office

3003 room Hai hang building TianHe North
road,Guangzhou

TEL : +86-20-3877-3819
FAX: +86-20-3877-3820

Hitachi industrial equipment(Hong Kong) co.,ltd

8 floor techology road east 20E,xin jie bai shi jiao,Hong Kong
TEL : +852-2735-9218
FAX : +852-2735-6793

India
Hitachi India Pvt. Ltd.
Units 304-306, 3rd Floor, ABW Elegance
Tower, Jasola District Centre, New Delhi
110 025, India
TEL : +91 (11) 4060-5252
FAX: +91 (11) 4060-5253

Singapore
Hitachi Asia Ltd.
(Industrial Components & Equipment
Group)
No.30, Pioneer Crescent
#10-15, West Park,Bizcentral
Singapore 628560
TEL : +65-6305-7400
FAX: +65-6305-7401

Europe
Germany
Hitachi Europe GmbH
(Industrial Components & Equipment
Group)
Am Seestern 18 (Euro Center)
D-40547 Düsseldorf
TEL : +49 (211) 5283 0
FAX: +49 (211) 5283 649

Indonesia
PT Hitachi Asia Indonesia
Menara BCA 38th Floor Suite #3804 &
3805 Jl. M. H Thamrin No.1, Jakarta
10310, Indonesia
TEL : +62 (21) 2358-6757
FAX: +62 (21) 2358-6755

Thailand
Hitachi Asia (Thailand) Co., Ltd.
18th Floor, Ramaland Building, 952
Rama IV Road Bangkok, Bangkok 10500
TEL : +66 (2) 632-9292
FAX: +66 (2) 632-9299

Russian Federation
Hitachi, Ltd. (Moscow Office)
Millennium House, 12, Trubnaya, Moscow
103045
TEL : +7 (095) 787-4022, -4020
FAX: +7 (095) 787-4021

Malaysia
Hitachi Asia (Malaysia) Sdn. Bhd.
Suite 17.3, Level 17, Menara IMC
(Letter Box No.5) No. 8 Jalan Sultan
Ismail, 50250, Kuala Lumpur
TEL : +60 (3) 2031-8751
FAX: +60 (3) 2031-8758

Viet Nam
Hitachi Asia Ltd.
(Ho Chi Minh City Office)
4th Floor, The Landmark, 5B Ton Duc
Thang Street District 1, Ho Chi Minh City
TEL : +84 (8) 829-9725
FAX: +84 (8) 829-9729

Latin America
Mexico
Hitachi Mexico, S.A. de C.V.
Andres Bello No.10 Piso 10
Col. Chapultepec Polanco
11560, Mexico, D.F.
TEL : +52 (55) 5282-9040
FAX: +52 (55) 5282-9042

Philippines
Hitachi Asia Ltd. (Philippines Office)
17th Floor Odeon Square
6788 Ayala Avenue,
Makati City, Philippines 1226
TEL : +63 (2) 886-9018
FAX: +63 (2) 887-3794

North America
U.S.A.
Hitachi America, Ltd.
(Industrial Components & Equipment
Division)
50 Prospect Avenue, Tarrytown,
New York, 10591-4698
TEL : +(1) 914 332-6800
FAX: +(1) 914 332-5555
(Charlotte Office)
(Industrial Components & Equipment
Division)
6901 Northpark Blvd., Charlotte, NC 28216
TEL : +(1) 704 494-3008
FAX: +(1) 704 494-3809

Taiwan Hitachi Asia Pacific Co., Ltd.
3th Floor, No. 167, Tun Hwa N, Road,
Hung-Kuo Building, Taipei 10512, Taiwan
TEL : +886 (2) 2718-3666
FAX: +886 (2) 2718-8180

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