

# OIL FREE SCREW

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SINGLE STAGE / TWO STAGE

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# Hitachi Social Innovation

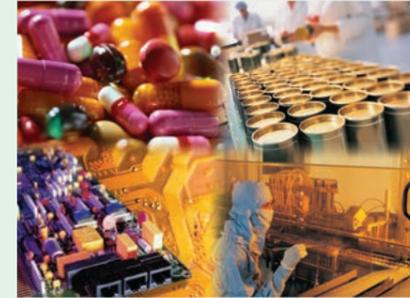
## - Environment Friendly, High Standard Oil-Free Rotary Screw Compressor (DSP)

Since the first Hitachi air compressor (1911),  
Hitachi has become one of the global leading manufacturers in air compressor.  
With the concept 'Toward the next 100 years, Contribute to Environment and Energy-Saving',  
Hitachi commit ourselves to unstoppable effort in technology innovation.  
With high standard reliability, excellent Energy-Saving and various air solutions,  
Hitachi will contribute to the industrial growth and development.

### Premium 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".



#### 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.



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# Industry Standard in Energy-Saving, Environment Friendly and High Quality

## - From small to large, Full Line-Up (15-240kW)

### 15-55kW Single-Stage

#### NEXT series

MPa: 0.30/0.40/0.70  
m<sup>3</sup>/min: 2.0 - 8.5

- VSD
- Fixed Speed
- Air-Cooled
- Water-Cooled
- With Built-in Dryer
- Without Dryer



### 22-120kW Two-Stage

#### NEXT II series

MPa: 0.70/0.88/0.93  
m<sup>3</sup>/min: 3.2 - 21.0

- VSD
- Fixed Speed
- Air-Cooled
- With Built-in Dryer
- Without Dryer



### 132-240kW Two-Stage

#### NEXT series

MPa: 0.75/0.93  
m<sup>3</sup>/min: 20.7 - 40.5

- VSD
- Fixed Speed
- Water-Cooled
- Without Dryer



#### NEW DSP series

- Fixed Speed
- Air-Cooled
- Without Dryer

MPa: 0.75/1.0  
m<sup>3</sup>/min: 19.0 - 40.0



#### Oil Free Screw (DSP) Model List

● Fixed Speed Type

|              |              |                | Nominal Output (kW) |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
|--------------|--------------|----------------|---------------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|--|
| Model        |              |                | 15                  | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 100 | 120 | 132 | 145 | 160 | 200 | 240 |  |
| Single-Stage | Air-Cooled   | Built-in Dryer | ●                   | ●  |    | ●  |    | ●  |    |    |     |     |     |     |     |     |     |  |
|              |              | Without Dryer  | ●                   | ●  |    | ●  |    | ●  |    |    |     |     |     |     |     |     |     |  |
|              | Water-Cooled | Without Dryer  |                     |    |    | ●  |    | ●  |    |    |     |     |     |     |     |     |     |  |
| Two-Stage    | Air-Cooled   | Built-in Dryer |                     | ●  | ●  | ●  | ●  | ●  | ●  |    |     |     |     |     |     |     |     |  |
|              |              | Without Dryer  |                     | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   | ●   | ●   |  |
|              | Water-Cooled | Built-in Dryer |                     |    |    |    | ●  | ●  | ●  |    |     |     |     |     |     |     |     |  |
|              |              | Without Dryer  |                     |    |    |    | ●  | ●  | ●  | ●  | ●   | ●   | ●   | ●   | ●   | ●   | ●   |  |

● V type (VSD)

|              |              |                | Nominal Output (kW) |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
|--------------|--------------|----------------|---------------------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|--|
| Model        |              |                | 15                  | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 100 | 120 | 132 | 145 | 160 | 200 | 240 |  |
| Single-Stage | Air-Cooled   | Built-in Dryer |                     | ●  |    | ●  |    | ●  |    |    |     |     |     |     |     |     |     |  |
|              |              | Without Dryer  |                     | ●  |    | ●  |    | ●  |    |    |     |     |     |     |     |     |     |  |
|              | Water-Cooled | Without Dryer  |                     |    |    | ●  |    | ●  |    |    |     |     |     |     |     |     |     |  |
| Two-Stage    | Air-Cooled   | Built-in Dryer |                     |    |    | ●  |    | ●  | ●  |    |     |     |     |     |     |     |     |  |
|              |              | Without Dryer  |                     |    |    | ●  |    | ●  | ●  |    | ●   |     |     |     |     |     |     |  |
|              | Water-Cooled | Built-in Dryer |                     |    |    |    |    | ●  | ●  |    |     |     |     |     |     |     |     |  |
|              |              | Without Dryer  |                     |    |    |    |    | ●  | ●  |    | ●   |     |     |     |     | ●   | ●   |  |

● : NEXT Series   ● : NEXT II Series   ● : NEW DSP Series

#### High Performance Air-End

##### Stainless Steel Rotor

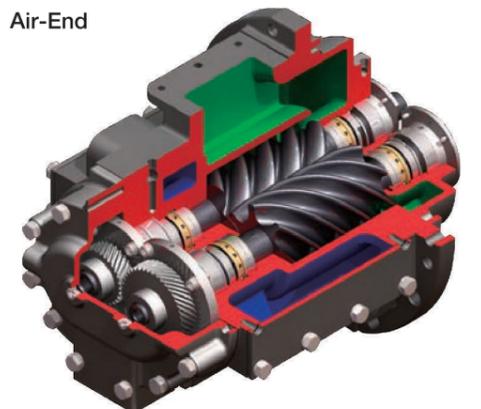
Particular stainless steel, which is superior in corrosion resistance and durability, is applied for rotor with highly accurate grinding. Furthermore, compensated profile, which is optimized for thermal expansion during operation, enables to keep optimal clearance.

##### High Performance Coating

Patent JP05416072

Hitachi original coating, which can withstand the high temperature of over 300°C, protects the rotors from a decrease in performance (efficiency, air purity, etc.).

Air-End



# Single-Stage, Air-Cooled (15/22/37/55kW) and Single-Stage, Water-Cooled (37/55kW)

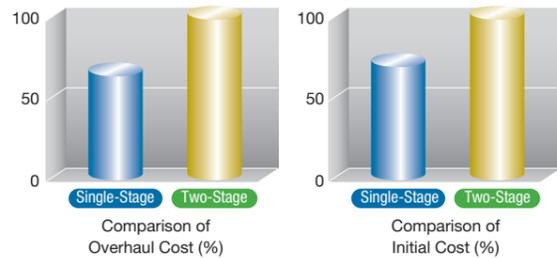


\*The above picture shows the internal structure of 55kW Air-Cooled model (V-type).

## Cut Down Overhaul and Initial Cost

### Comparison of cost with the same air capacity level

Because there is only one air-end for DSP Single-Stage model, the initial cost is lower than Two-Stage model. The overhaul cost, which covers the most of maintenance cost, is about half of two-stage for the same reason.



\*Example of Hitachi 55kW (Single-Stage) and 45kW (Two-Stage), Without Dryer model

## Expanded Line-Up (Low Pressure)

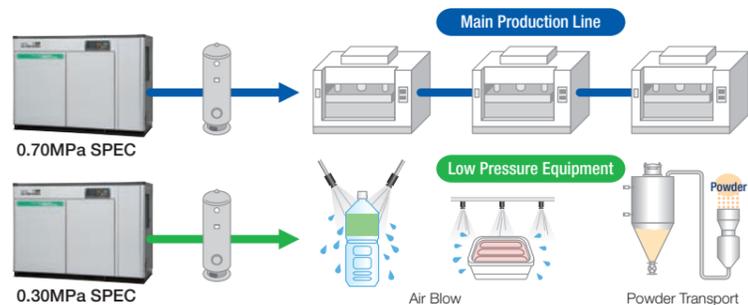
### 0.30MPa model is newly added

Air capacity is improved by the newly-developed high efficiency air-end.



## Applications

In case that the pressure requirement is higher than blower but lower than standard compressor SPEC, low pressure SPEC DSP can be your solution.



## Specifications

### Air-Cooled, Fixed Speed Model (15-55kW)

[ ] : indicates model with Dryer integrated

| Item·Unit                           | Model                       | DSP-15A[R]5N<br>DSP-15A[R]6N         |                       | DSP-22A[R]5N<br>DSP-22A[R]6N |                       | DSP-37A[R]5N<br>DSP-37A[R]6N      |                       | DSP-55A[R]5N<br>DSP-55A[R]6N |                       |      |
|-------------------------------------|-----------------------------|--------------------------------------|-----------------------|------------------------------|-----------------------|-----------------------------------|-----------------------|------------------------------|-----------------------|------|
|                                     |                             | Discharge Pressure                   | MPa                   | 0.70                         | 0.40                  | 0.70                              | 0.40                  | 0.70                         | 0.40                  | 0.70 |
| Discharge Air Capacity              | m³/min                      | 2.0                                  | 2.5                   | 3.4                          | 4.0                   | 5.0                               | 5.9                   | 6.4                          | 8.0                   |      |
| Nominal Motor Output                | kW                          | 15                                   |                       | 22                           |                       | 37                                |                       | 55                           |                       |      |
| Motor Type                          | -                           | 4-Pole TEFC Motor                    |                       |                              |                       |                                   |                       |                              |                       |      |
| Intake Air Pressure/Temperature     | °C                          | Atmospheric Pressure/0 - 40 [5 - 40] |                       |                              |                       |                                   |                       |                              |                       |      |
| Discharge Temperature               | °C                          | Ambient Temperature +15 or below     |                       |                              |                       |                                   |                       |                              |                       |      |
| Discharge Air Pipe Connection       | B                           | Rc1                                  |                       |                              |                       | Rc1-1/2                           |                       |                              |                       |      |
| Starting Method                     | -                           | Full Voltage Start                   |                       |                              |                       | Star-Delta (3 contact)            |                       |                              |                       |      |
| Driving Method                      | -                           | V-Belt+Gear-Driven                   |                       |                              |                       |                                   |                       |                              |                       |      |
| Oil Quantity                        | L                           | 12 (Not filled)                      |                       |                              |                       | 18 (Not filled)                   |                       |                              |                       |      |
| Cooling Fan Motor Output            | kW                          | 0.4                                  |                       |                              |                       | 0.65                              |                       |                              |                       |      |
| Coolant Pump Motor Output (50/60Hz) | kW                          | 0.2/0.3                              |                       |                              |                       |                                   |                       |                              |                       |      |
| [Dryer]                             | P.D.P                       | °C                                   | [10 (Under Pressure)] | -                            | [10 (Under Pressure)] | -                                 | [10 (Under Pressure)] | -                            | [10 (Under Pressure)] | -    |
|                                     | Refrigerator Nominal Output | kW                                   | [0.5]                 | -                            | [1.2]                 | -                                 | [1.45]                | -                            | [1.45]                | -    |
|                                     | Refrigerant                 | -                                    | [R407C]               | -                            | [R410A]               | -                                 | [R410A]               | -                            | [R410A]               | -    |
| Weight                              | kg                          | 750 [780]                            |                       | 800 [860]                    |                       | 1,020 [1,170]                     |                       | 1,240 [1,390]                |                       |      |
| Dimensions (WxDxH)                  | mm                          | 1,400x970x1,400                      |                       |                              |                       | 1,830x980x1,580 [2,230x980x1,580] |                       |                              |                       |      |
| Sound Level (1.5m from front)       | dB(A)                       | 62                                   | 63                    | 63                           | 64                    | 66                                | 68                    | 68                           | 70                    |      |

### Air-Cooled, V-type Model (22-55kW)

[ ] : indicates model with Dryer integrated

| Item·Unit                           | Model                       | DSP-22VA[R]5N<br>DSP-22VA[R]6N       |                       | DSP-37VA[R]5N<br>DSP-37VA[R]6N |                       | DSP-55VA[R]5N<br>DSP-55VA[R]6N    |                       |      |      |
|-------------------------------------|-----------------------------|--------------------------------------|-----------------------|--------------------------------|-----------------------|-----------------------------------|-----------------------|------|------|
|                                     |                             | Discharge Pressure                   | MPa                   | 0.70                           | 0.30                  | 0.70                              | 0.30                  | 0.70 | 0.30 |
| Discharge Air Capacity              | m³/min                      | 3.4                                  | 4.6                   | 5.0                            | 6.7                   | 6.4                               | 8.5                   |      |      |
| PQ                                  | Discharge Pressure          | MPa                                  | 0.60                  | -                              | 0.60                  | -                                 | 0.60                  | -    |      |
|                                     | Discharge Air Capacity      | m³/min                               | 3.7                   | -                              | 5.5                   | -                                 | 7.0                   | -    |      |
| WIDEMODE                            | Discharge Pressure          | MPa                                  | 0.40 [0.50]           | -                              | 0.40 [0.50]           | -                                 | 0.40 [0.50]           | -    |      |
|                                     | Discharge Air Capacity      | m³/min                               | 4.3 [4.0]             | -                              | 6.4 [6.0]             | -                                 | 8.2 [7.6]             | -    |      |
| PQ WIDEMODE Range                   | MPa                         | 0.40 - 0.70 [0.50 - 0.70]            |                       | 0.40 - 0.70 [0.50 - 0.70]      |                       | 0.40 - 0.70 [0.50 - 0.70]         |                       |      |      |
| Nominal Motor Output                | kW                          | 22                                   |                       | 37                             |                       | 55                                |                       |      |      |
| Motor Type                          | -                           | 4-Pole TEFC Motor                    |                       |                                |                       |                                   |                       |      |      |
| Intake Air Pressure/Temperature     | °C                          | Atmospheric Pressure/0 - 40 [5 - 40] |                       |                                |                       |                                   |                       |      |      |
| Discharge Temperature               | °C                          | Ambient Temperature +15 or below     |                       |                                |                       |                                   |                       |      |      |
| Discharge Air Pipe Connection       | B                           | Rc1-1/2                              |                       |                                |                       |                                   |                       |      |      |
| Starting Method                     | -                           | Inverter                             |                       |                                |                       |                                   |                       |      |      |
| Driving Method                      | -                           | V-Belt+Gear-Driven                   |                       |                                |                       |                                   |                       |      |      |
| Oil Quantity                        | L                           | 12 (Not filled)                      |                       |                                | 18 (Not filled)       |                                   |                       |      |      |
| Cooling Fan Motor Output            | kW                          | 0.75                                 |                       |                                | 0.9                   |                                   |                       |      |      |
| Coolant Pump Motor Output (50/60Hz) | kW                          | 0.2/0.3                              |                       |                                |                       |                                   |                       |      |      |
| [Dryer]                             | P.D.P                       | °C                                   | [10 (Under Pressure)] | -                              | [10 (Under Pressure)] | -                                 | [10 (Under Pressure)] | -    |      |
|                                     | Refrigerator Nominal Output | kW                                   | [1.2]                 | -                              | [1.45]                | -                                 | [1.45]                | -    |      |
|                                     | Refrigerant                 | -                                    | [R410A]               | -                              | [R410A]               | -                                 | [R410A]               | -    |      |
| Weight                              | kg                          | 850 [910]                            |                       | 1,080 [1,230]                  |                       | 1,180 [1,330]                     |                       |      |      |
| Dimensions (WxDxH)                  | mm                          | 1,650x970x1,400                      |                       |                                |                       | 1,830x980x1,580 [2,230x980x1,580] |                       |      |      |
| Sound Level (1.5m from front)       | dB(A)                       | 63                                   | 64                    | 66                             | 68                    | 68                                | 70                    |      |      |

### Water-Cooled Model (37/55kW)

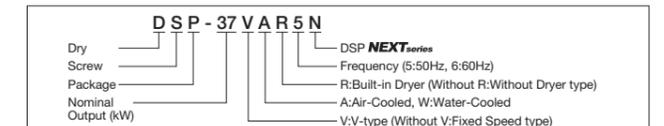
[ ] : indicates model with Dryer integrated

| Item·Unit                       | Model                  | Fixed Speed Model                      |                        | V type Model |           |
|---------------------------------|------------------------|--|------------------------|--------------|-----------|
|                                 |                        | DSP-37W5N<br>DSP-37W6N                 | DSP-55W5N<br>DSP-55W6N | DSP-37VWN    | DSP-55VWN |
| Discharge Pressure              | MPa                    | 0.70                                   | 0.40                   | 0.70         | 0.30      |
| Discharge Air Capacity          | m³/min                 | 5.0                                    | 5.9                    | 6.4          | 8.5       |
| PQ                              | Discharge Pressure     | MPa                                    | -                      | -            | -         |
|                                 | Discharge Air Capacity | m³/min                                 | -                      | -            | -         |
| WIDEMODE                        | Discharge Pressure     | MPa                                    | -                      | -            | -         |
|                                 | Discharge Air Capacity | m³/min                                 | -                      | -            | -         |
| PQ WIDEMODE Range               | MPa                    | -                                      | -                      | -            | -         |
| Nominal Motor Output            | kW                     | 37                                     | 55                     | 37           | 55        |
| Motor Type                      | -                      | 4-Pole TEFC Motor                      |                        |              |           |
| Intake Air Pressure/Temperature | °C                     | Atmospheric Pressure/0 - 40            |                        |              |           |
| Discharge Temperature           | °C                     | Cooling Water Temperature +13 or below |                        |              |           |
| Discharge Air Pipe Connection   | B                      | Rc1-1/2                                |                        |              |           |
| Starting Method                 | -                      | Star-Delta (3 contact)                 |                        |              |           |
| Driving Method                  | -                      | V-Belt+Gear-Driven                     |                        |              |           |
| Oil Quantity                    | L                      | 14 (Not filled)                        |                        |              |           |
| Cooling Fan Motor Output        | kW                     | 0.1                                    |                        |              |           |
| Cooling Water Flow Rate         | L/min                  | 80                                     |                        |              |           |
| Cooling Water Temperature       | °C                     | 32 or below                            |                        |              |           |
| Cooling Water Pipe Connection   | B                      | Rc1                                    |                        |              |           |
| Weight                          | kg                     | 970                                    | 1,190                  | 1,050        | 1,150     |
| Dimensions (WxDxH)              | mm                     | 1,830x980x1,580                        |                        |              |           |
| Sound Level (1.5m from front)   | dB(A)                  | 64                                     | 66                     | 64           | 66        |

#### NOTE:

- Capacity is measured according to ISO 1217, Third Edition, Annex C.
- Sound Levels is the value at 1.5m in front and 1m height in an anechoic room. It varies in different operating conditions and/or different environment with echo of actual field installations.
- For V-type models, sound level is increased by 2dB at PQ WIDEMODE ON. P.D.P is measured at 30°C of intake air temperature and rated discharge pressure. P.D.P is much worse at 0.4MPa or less of discharge pressure. P.D.P rises 3°C at PQ WIDEMODE ON and 0.6MPa of discharge pressure.
- Air Capacity of Built-in Dryer model decreases by up to 3% when drain condensates.
- Discharge air temperature with Dust Proof option or Simple Package Filter option is ambient temperature + 18°C or below.
- Earth leakage circuit breaker is NOT equipped within. Prepare it in advance.

- Pressure is indicated as the gauge pressure.
- Dimensions do NOT include protruding objects such as piping.
- Specifications and/or appearances are subject to change without notice.



# Two-Stage, Air-Cooled (22/37/45/55/75/90/100/120kW)



\*The image described above has been modified.

## IPC Control (Intelligent Pressure Control)

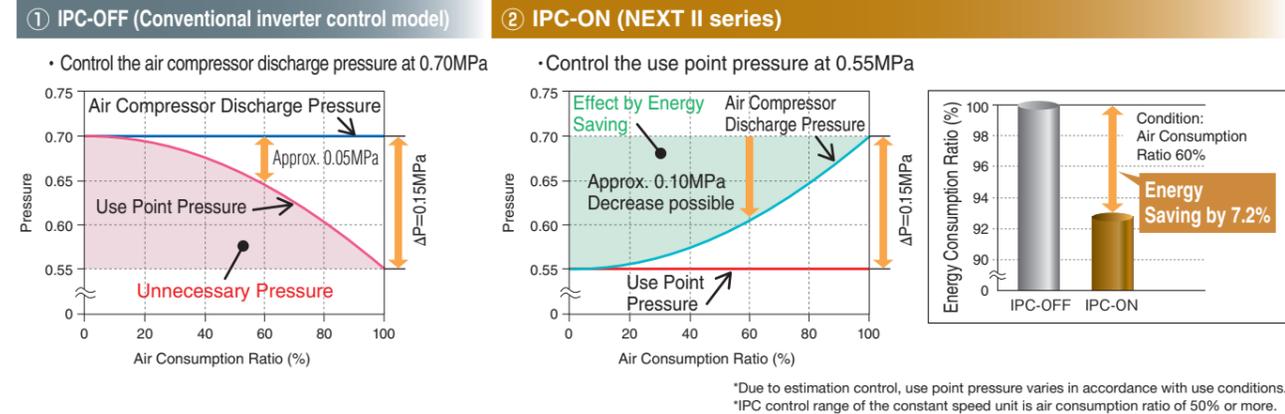
By estimating use point pressure in accordance with air consumption, IPC control decreases discharge pressure during low load operation, which enables Energy-Saving.

Patent JP4425768 and others

### Example of effect by IPC

- Conditions**
- Air compressor: DSP-37VATN2
  - 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)



## IT Communication Functions

### USB Flash Memory Possible for Data Logging

\*Necessary to prepare a USB flash memory device (5.5 cm or smaller) on user's side.  
\*Operation data for one day is approximately 400kB. (For reference)

USB flash memory (data retrieving)  
(Standard) pressure/temperature/current/history/time

### Web Server Function via Bluetooth®

\*Necessary to prepare a Bluetooth® USB dongle on your side.  
\*For setting changes, part of the items are applicable.

### Modbus® Communication

Open network serial communication  
Modbus®/RTU is supported as standard  
\*Modbus®/TCP support is optional.



•Bluetooth is the registered trademark of Bluetooth SIG, Inc (US).  
•Modbus is the registered trademark of Schneider Automation Inc.

## Specifications

### Air-Cooled 22/37kW

| Item·Unit                                      | Model               | Fixed Seed Model                       |                  |                  |                  | V-type Model     |                  |   |      |
|--|---------------------|--|------------------|------------------|------------------|------------------|------------------|---|------|
|  |                     | DSP-22AT [R] 5N2                       | DSP-30AT [R] 5N2 | DSP-37AT [R] 5N2 | DSP-22AT [R] 6N2 | DSP-30AT [R] 6N2 | DSP-37AT [R] 6N2 | DSP-37VAT [R] N2                        |      |
| Discharge Pressure                             | MPa                 | 0.70                                   | 0.88             | 0.70             | 0.88             | 0.70             | 0.88             | 0.70                                    | 0.88 |
| Discharge Air Capacity                         | m <sup>3</sup> /min | 3.7                                    | 3.2              | 4.7              | 4.0              | 5.6              | 4.7              | 5.5                                     | 4.6  |
| Discharge Air Capacity at PQ wide ON of 0.6MPa |                     |  |                  |                  |                  |                  |                  | 6.0                                     | 5.6  |
| Nominal Motor Output                           | kW                  | 22                                     |                  | 30               |                  | 37               |                  | 37                                      |      |
| Motor Type                                     | —                   | 4-Pole TEFC                            |                  |                  |                  | 6-Pole DCBL      |                  |   |      |
| Intake Air Pressure/Temperature                | °C                  | Atmospheric Pressure·0 – 45 [2 – 45]   |                  |                  |                  |                  |                  | Atmospheric Pressure·0 – 45 [2 – 45] °C |      |
| Discharge Temperature                          | °C                  | Ambient Temperature +15 or below       |                  |                  |                  |                  |                  | Ambient Temperature +15 or below        |      |
| Discharge Pipe Diameter                        | B                   | Rc1·1/2                                |                  |                  |                  |                  |                  | Rc1·1/2                                 |      |
| Starting Method                                | —                   | Star-Delta (3 contact)                 |                  |                  |                  |                  |                  | Soft Start                              |      |
| Driving Method                                 | —                   | V-Belt with Auto Tensioner+Gear-Driven |                  |                  |                  |                  |                  | Direct Connection + Gear Driven         |      |
| Lubricating Oil Filling                        | L                   | 15 (Not filled)                        |                  |                  |                  |                  |                  | 15 (Not filled)                         |      |
| Output of Cooling Fan                          | kW                  | 1.1 (Inverter)                         |                  |                  |                  |                  |                  | 1.1 (Inverter)                          |      |
| [Dryer] P.D.P                                  | °C                  | [10 (Under Pressure)]                  |                  |                  |                  |                  |                  | [10 (Under Pressure)]                   |      |
| [Dryer] Refrigerator Nominal Output            | kW                  | [1.45]                                 |                  |                  |                  |                  |                  | [1.45]                                  |      |
| [Dryer] Refrigerant                            | —                   | [R410A]                                |                  |                  |                  |                  |                  | [R410A]                                 |      |
| Weight   | kg                  | 1,120 [1,180]                          |                  | 1,230 [1,290]    |                  | 950 [1,010]      |                  | 950 [1,010]                             |      |
| Dimensions (W×D×H)                             | mm                  | 1,530×1,150×1,650                      |                  |                  |                  |                  |                  | 1,530×1,150×1,650                       |      |
| Noise Level (1.5m from front side)             | dB(A)               | 63                                     | 64               | 65               | 66               | 66               | 67               | 66                                      | 67   |

### Air-Cooled 45/55/75kW

| Item·Unit                                      | Model               | Fixed Seed Model                     |                  |                  |                  | V-type Model      |                  |                                    |                  |
|--|---------------------|--------------------------------------|------------------|------------------|------------------|-------------------|------------------|------------------------------------|------------------|
|  |                     | DSP-45AT [R] 5N2                     | DSP-55AT [R] 5N2 | DSP-75AT [R] 5N2 | DSP-45AT [R] 6N2 | DSP-55AT [R] 6N2  | DSP-75AT [R] 6N2 | DSP-55VAT [R] N2                   | DSP-75VAT [R] N2 |
| Discharge Pressure                             | MPa                 | 0.70                                 | 0.93             | 0.70             | 0.93             | 0.70              | 0.93             | 0.70                               | 0.93             |
| Discharge Air Capacity                         | m <sup>3</sup> /min | 7.4/7.8                              | 6.2/6.5          | 9.2              | 7.2/7.7          | 13.0              | 10.5/11.1        | 9.3                                | 7.7              |
| Discharge Air Capacity at PQ wide ON of 0.6MPa |                     |                                      |                  |                  |                  |                   |                  | 9.6                                | 9.3              |
| Nominal Motor Output                           | kW                  | 45                                   |                  | 55               |                  | 75                |                  | 55                                 |                  |
| Motor Type                                     | —                   | 2-Pole TEFC Flange                   |                  |                  |                  | 6-Pole DCBL       |                  |                                    |                  |
| Intake Air Pressure/Temperature                | °C                  | Atmospheric Pressure·0 – 45 [2 – 45] |                  |                  |                  |                   |                  | Atmospheric Pressure·0 – 40 [2–40] |                  |
| Discharge Temperature                          | °C                  | Ambient Temperature +15 or below     |                  |                  |                  |                   |                  | Ambient Temperature +15 or below   |                  |
| Discharge Pipe Diameter                        | B                   | 2 (Flange)                           |                  |                  |                  |                   |                  | 2 (Flange)                         |                  |
| Starting Method                                | —                   | Star-Delta (3 contact)               |                  |                  |                  |                   |                  | Soft Start                         |                  |
| Driving Method                                 | —                   | Direct Connection + Gear Driven      |                  |                  |                  |                   |                  | Direct Connection + Gear Driven    |                  |
| Lubricating Oil Filling                        | L                   | 25 (Not filled)                      |                  |                  |                  |                   |                  | 25 (Not filled)                    |                  |
| Output of Cooling Fan                          | kW                  | 1.5 (Inverter)                       |                  | 2.2 (Inverter)   |                  | 1.5 (Inverter)    |                  | 2.2 (Inverter)                     |                  |
| [Dryer] P.D.P                                  | °C                  | [10 (Under Pressure)]                |                  |                  |                  |                   |                  | [10 (Under Pressure)]              |                  |
| [Dryer] Refrigerator Nominal Output            | kW                  | [2.2]                                |                  | [3.0]            |                  | [2.2]             |                  | [3.0]                              |                  |
| [Dryer] Refrigerant                            | —                   | [R410A]                              |                  |                  |                  |                   |                  | [R410A]                            |                  |
| Weight   | kg                  | 1,600 [1,750]                        |                  | 1,860 [2,030]    |                  | 1,340 [1,490]     |                  | 1,560 [1,730]                      |                  |
| Dimensions (W×D×H)                             | mm                  | 2,000×1,300×1,800                    |                  |                  |                  | 2,250×1,300×1,800 |                  |                                    |                  |
| Noise Level (1.5m from front side)             | dB(A)               | 63                                   | 65               | 63               | 65               | 68                | 63               | 65                                 | 67               |

### Air-Cooled 90/100/120kW

| Item·Unit                          | Model               | Fixed Seed Model                 |                   |                   |              | V-type Model       |               |
|------------------------------------|---------------------|----------------------------------|-------------------|-------------------|--------------|--------------------|---------------|
|                                    |                     | DSP-90A5 [L] MN2                 | DSP-100A5 [L] MN2 | DSP-100A6 [L] MN2 | DSP-120A5MN2 | DSP-100VA5MN2      | DSP-100VA6MN2 |
| Discharge Pressure                 | MPa                 | 0.70                             | 0.93              | 0.70              | 0.93         | 0.70               | 0.93          |
| Discharge Air Capacity             | m <sup>3</sup> /min | 16.6                             | 13.9              | 18.0              | 15.4         | 20.5               | 17.3          |
| Nominal Motor Output               | kW                  | 90                               |                   | 100               |              | 120                |               |
| Motor Type                         | —                   | 2-Pole TEFC Flange               |                   |                   |              | 2-Pole TEFC Flange |               |
| Intake Air Pressure/Temperature    | °C                  | Atmospheric Pressure·0 – 45      |                   |                   |              |                    |               |
| Discharge Temperature              | °C                  | Ambient Temperature +15 or below |                   |                   |              |                    |               |
| Discharge Pipe Diameter            | B                   | 2 (Flange)                       |                   |                   |              |                    |               |
| Starting Method                    | —                   | Star-Delta (3 contact)           |                   |                   |              |                    |               |
| Driving Method                     | —                   | Direct Connection + Gear Driven  |                   |                   |              |                    |               |
| Lubricating Oil Filling            | L                   | 26 (Not filled)                  |                   |                   |              |                    |               |
| Output of Cooling Fan              | kW                  | 1.5×2                            |                   |                   |              | 1.5×2              |               |
| Weight                             | kg                  | 2,200                            |                   | 2,380             |              | 2,300              |               |
| Dimensions (W×D×H)                 | mm                  | 2,150×1,520×1,975                |                   |                   |              |                    |               |
| Noise Level (1.5m from front side) | dB(A)               | 68                               | 70                | 69                | 71           | 72                 | 73            |

NOTE:

- Capacity shows the flow rate converted in suction condition at rated discharge pressure.
- Noise Level is the value under the condition of full load running and auto-drain valves closed in an anechoic room. It may vary in different operating conditions and/or different environments with echo of actual field installations. Noise level might be increased by 3dB when PQ WIDEMODE is ON.
- P.D.P. is measured at 30 degree C of intake air temperature and rated discharge pressure. P.D.P. might be worse at 0.40MPa or less of discharge pressure. P.D.P. might be 13 degree C at PQ WIDEMODE ON and 0.60MPa of discharge pressure.
- Free Air Delivery of Built-in Dryer model may decrease by up to 3% when drain condensates.
- Earth leakage circuit breaker is out of scope of supply from Hitachi.
- DSP series compressors are not designed, intended or approved for breathing air applications.
- Pressures are indicated as the gauge pressure.
- For the quality of the cooling water, contact your nearest dealer or Hitachi local representative offices.
- Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.
- Motor output is nominal output.
- Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

# Two-Stage, Water-Cooled (45/55/75/90/100/120kW)



## IPC Control (Intelligent Pressure Control)

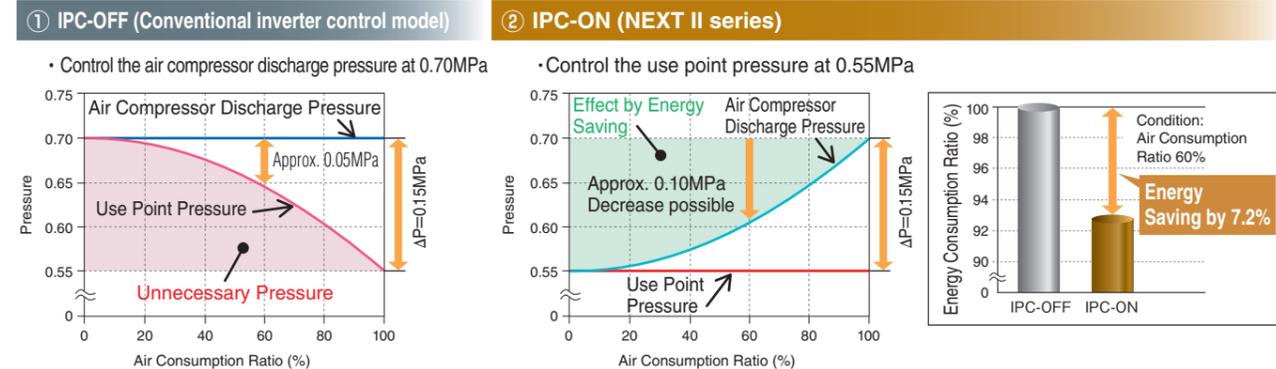
By estimating use point pressure in accordance with air consumption, IPC control decreases discharge pressure during low load operation, which enables Energy-Saving.

Patent JP4425768 and others

### Example of effect by IPC

- Conditions**
- Air compressor: DSP-37VATN2
  - 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)



\*Due to estimation control, use point pressure varies in accordance with use conditions.  
\*IPC control range of the constant speed unit is air consumption ratio of 50% or more.

## IT Communication Functions

### USB Flash Memory Possible for Data Logging

\*Necessary to prepare a USB flash memory device (5.5 cm or smaller) on user's side.  
\*Operation data for one day is approximately 400kB. (For reference)

USB flash memory (data retrieving)  
(Standard) pressure/temperature/current/history/time

### Web Server Function via Bluetooth®

\*Necessary to prepare a Bluetooth® USB dongle on your side.  
\*For setting changes, part of the items are applicable.

### Modbus® Communication

Open network serial communication  
Modbus®/RTU is supported as standard  
\*Modbus®/TCP support is optional.



•Bluetooth is the registered trademark of Bluetooth SIG, Inc (US).  
•Modbus is the registered trademark of Schneider Automation Inc.

## Specifications

### Water-Cooled 45/55/75kW

| Item · Unit                                    | Model  | Fixed Seed Model                       |                  |                  |                  | V-type Model                    |           |
|--|--------|--|------------------|------------------|------------------|---------------------------------|-----------|
|  |        | DSP-45WT [R] 5N2                       | DSP-55WT [R] 5N2 | DSP-75WT [R] 5N2 | DSP-55VWT [R] N2 | DSP-75VWT [R] N2                |           |
| Discharge Pressure                             | MPa    | 0.70                                   | 0.93             | 0.70             | 0.93             | 0.70                            | 0.93      |
| Discharge Air Capacity (50Hz/60Hz)             | m³/min | 7.5/7.9                                | 6.4/6.7          | 9.4              | 7.4/7.9          | 13.2                            | 10.7/11.3 |
| Discharge Air Capacity at PQ wide ON of 0.6MPa | m³/min | -                                      |                  |                  |                  |                                 |           |
| Nominal Motor Output                           | kW     | 45                                     |                  | 55               |                  | 75                              |           |
| Motor Type                                     | -      | 2-Pole TEFC Flange                     |                  |                  |                  | 6-Pole DCBL                     |           |
| Intake Air Pressure/Temperature                | -      | Atmospheric Pressure 0 - 45 [2 - 45]   |                  |                  |                  |                                 |           |
| Discharge Temperature                          | °C     | Cooling Water Temperature +13 or below |                  |                  |                  |                                 |           |
| Discharge Pipe Diameter                        | B      | 2 (Flange)                             |                  |                  |                  |                                 |           |
| Starting Method                                | -      | Star-Delta (3 contact)                 |                  |                  |                  | Soft Start                      |           |
| Driving Method                                 | -      | Direct Connection + Gear Driven        |                  |                  |                  | Direct Connection + Gear Driven |           |
| Lubricating Oil Filling                        | L      | 15 (Not filled)                        |                  |                  |                  |                                 |           |
| Output of Cooling Fan                          | kW     | 0.05x2                                 |                  |                  |                  |                                 |           |
| Cooling Water Capacity                         | L/min  | 90                                     |                  |                  |                  | 120                             |           |
| Cooling Water Temperature                      | °C     | 35 or below                            |                  |                  |                  |                                 |           |
| Cooling Water Pipe Diame                       | B      | Rc 1 · 1/4                             |                  |                  |                  |                                 |           |
| [Dryer] P.D.P                                  | °C     | [10 (Under Pressure)]                  |                  |                  |                  |                                 |           |
| [Dryer] Refrigerator Nominal Output            | kW     | [2.2]                                  |                  |                  |                  | [3.0]                           |           |
| [Dryer] Refrigerant                            | -      | [R410A]                                |                  |                  |                  |                                 |           |
| Weight   | kg     | 1,580 [1,730]                          |                  |                  |                  | 1,710 [1,880]                   |           |
| Dimensions (WxDxH)                             | mm     | 2,000x1,300x1,800                      |                  |                  |                  |                                 |           |
| Noise Level (1.5m from front side)             | dB(A)  | 63                                     |                  | 63               |                  | 65                              |           |

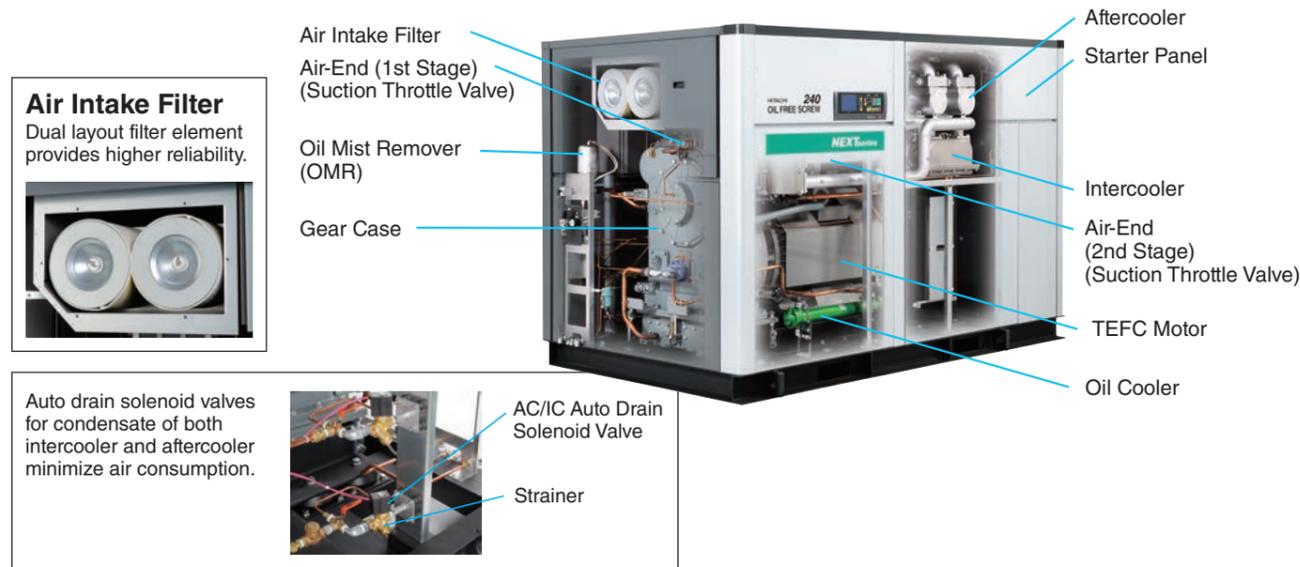
### Water-Cooled 90/100/120kW

| Item · Unit                        | Model  | Fixed Seed Model                       |                   |              |              | V-type Model                    |      |
|------------------------------------|--------|--|-------------------|--------------|--------------|---------------------------------|------|
|                                    |        | DSP-90W5 [L] MN2                       | DSP-100W5 [L] MN2 | DSP-120W5MN2 | DSP-100W5MN2 | DSP-100W6MN2                    |      |
| Discharge Pressure                 | MPa    | 0.70                                   | 0.93              | 0.70         | 0.93         | 0.70                            | 0.93 |
| Discharge Air Capacity             | m³/min | 16.8                                   | 14.0              | 18.3         | 15.6         | 21.0                            | 17.6 |
| Nominal Motor Output               | kW     | 90                                     |                   | 100          |              | 120                             |      |
| Motor Type                         | -      | 2-Pole TEFC Flange                     |                   |              |              | 2-Pole TEFC Flange              |      |
| Intake Air Pressure/Temperature    | -      | Atmospheric Pressure 0 - 45            |                   |              |              |                                 |      |
| Discharge Temperature              | °C     | Cooling Water Temperature +13 or below |                   |              |              |                                 |      |
| Discharge Pipe Diameter            | B      | 2 (Flange)                             |                   |              |              |                                 |      |
| Starting Method                    | -      | Star-Delta (3 contact)                 |                   |              |              | Inverter                        |      |
| Driving Method                     | -      | Direct Connection + Gear Driven        |                   |              |              | Direct Connection + Gear Driven |      |
| Lubricating Oil Filling            | L      | 16 (Not filled)                        |                   |              |              |                                 |      |
| Cooling Water Capacity             | L/min  | 160                                    |                   |              |              | 180                             |      |
| Cooling Water Temperature          | °C     | 35 or below                            |                   |              |              |                                 |      |
| Cooling Water Pipe Diame           | B      | Rc 1 · 1/2                             |                   |              |              |                                 |      |
| Weight                             | kg     | 2,050                                  |                   |              |              | 2,230                           |      |
| Dimensions (WxDxH)                 | mm     | 2,150x1,520x1,825                      |                   |              |              |                                 |      |
| Noise Level (1.5m from front side) | dB(A)  | 66                                     | 68                | 67           | 69           | 69                              | 70   |

NOTE:

- Capacity shows the flow rate converted in suction condition at rated discharge pressure.
- Noise Level is the value under the condition of full load running and auto-drain valves closed in an anechoic room.  
It may vary in different operating conditions and/or different environments with echo of actual field installations.  
Noise level might be increased by 3dB when PQ WIDEMODE is ON.
- P.D.P. is measured at 30 degree C of intake air temperature and rated discharge pressure.  
P.D.P. might be worse at 0.40MPa or less of discharge pressure.  
P.D.P. might be 13 degree C at PQ WIDEMODE ON and 0.60MPa of discharge pressure.
- Free Air Delivery of Built-in Dryer model may decrease by up to 3% when drain condensates.
- Earth leakage circuit breaker is out of scope of supply from Hitachi.
- DSP series compressors are not designed, intended or approved for breathing air applications.
- Pressures are indicated as the gauge pressure.
- For the quality of the cooling water, contact your nearest dealer or Hitachi local representative offices.
- Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.
- Motor output is nominal output.
- Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

# Two-Stage, Water-Cooled (132/145/160/200/240kW)



**High Capacity by Equipping New NEXTseries Air-End**

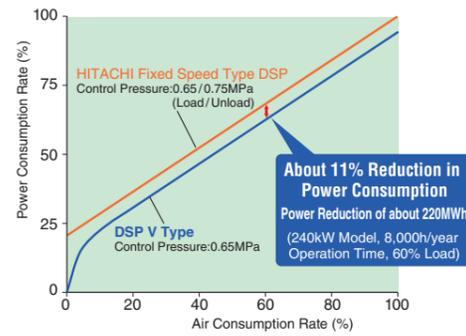
**Low Noise and Vibration**

**Compact Design by Optimized Layout of Components**

**High Discharge Pressure Available (up to 1.0MPa)**

**Energy-Saving (V-type)**

Further Energy-Saving is achieved by DSP NEXTseries with Built-in Inverter.



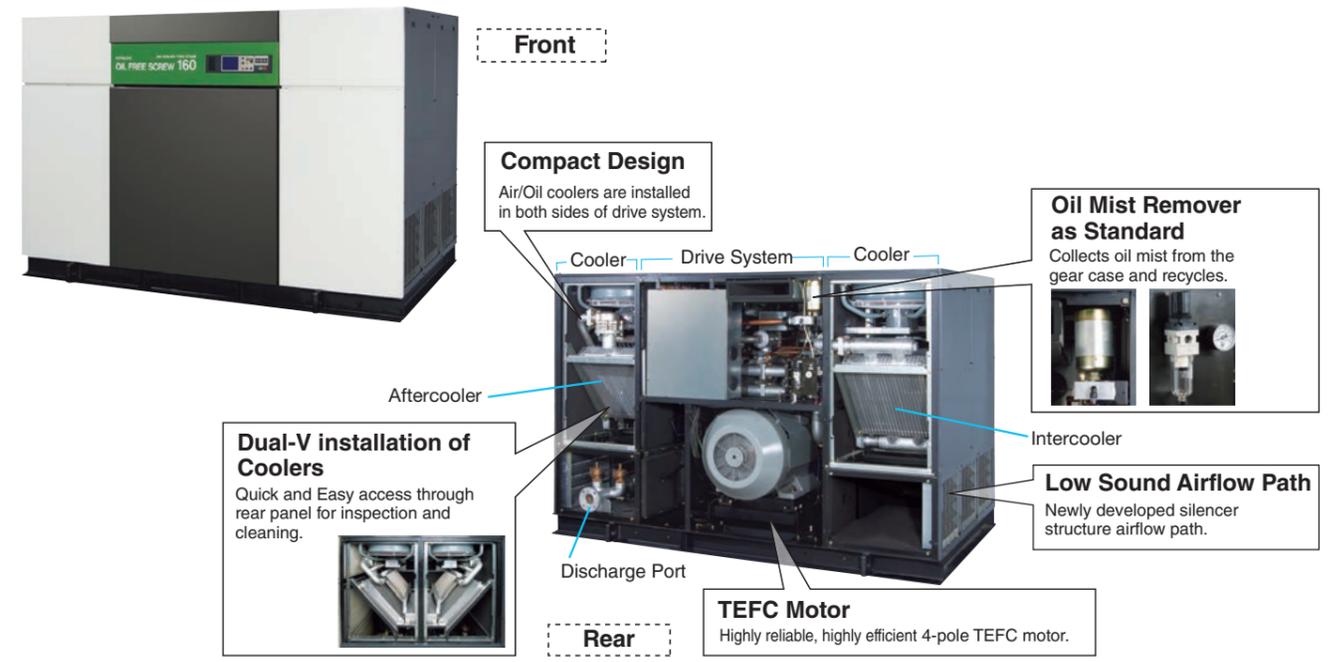
\*Compared to conventional Load/Unload Control Type, lower pressure setting is possible due to the stable pressure control.

## Specifications

| Item - Unit                        | Model               | Water-Cooled                                |      |      |      |                   |      |                   |      |                   |    |    |    |
|------------------------------------|---------------------|---|------|------|------|-------------------|------|-------------------|------|-------------------|----|----|----|
|                                    |                     | Fixed Speed Type                            |      |      |      | V type (VSD)      |      |                   |      |                   |    |    |    |
| Discharge Pressure                 | MPa                 | 0.75  | 0.93 | 0.75 | 0.93 | 0.75              | 0.93 | 0.75              | 0.93 |                   |    |    |    |
| Capacity                           | m <sup>3</sup> /min | 23.4  | 20.7 | 26.0 | 22.2 | 28.5              | 24.8 | 37.0              | 32.2 |                   |    |    |    |
| Nominal Output                     | kW                  | 132   |      | 145  |      | 160               |      | 200               |      | 240               |    |    |    |
| Motor Type                         | —                   | 4-Pole TEFC Flange Motor                    |      |      |      |                   |      |                   |      |                   |    |    |    |
| Intake Air Press. / Temp.          | —                   | Atmospheric Pressure / 0 – 40°C             |      |      |      |                   |      |                   |      |                   |    |    |    |
| Discharge Temperature              | °C                  | Cooling Water Temperature + 13 or below     |      |      |      |                   |      |                   |      |                   |    |    |    |
| Discharge Pipe Diameter            | B                   | 2 1/2 (Flange)                              |      |      |      | 3 (Flange)        |      | 2 1/2 (Flange)    |      | 3 (Flange)        |    |    |    |
| Starting Type                      | —                   | Star-Delta                                  |      |      |      | Inverter          |      |                   |      |                   |    |    |    |
| Driving Method                     | —                   | Direct Connection with Motor + Gear Driving |      |      |      |                   |      |                   |      |                   |    |    |    |
| Lubricating Oil Capacity           | L                   | 40 (Not filled)                             |      |      |      | 50 (Not filled)   |      | 40 (Not filled)   |      | 50 (Not filled)   |    |    |    |
| Cooling Fan Motor Output           | kW                  | 0.4   |      |      |      |                   |      |                   |      |                   |    |    |    |
| Weight                             | kg                  | 3,800                                       |      |      |      | 4,800             |      | 4,000             |      | 5,100             |    |    |    |
| Dimensions (WxDxH)                 | mm                  | 2,500x1,600x1,925                           |      |      |      | 2,800x1,800x1,950 |      | 2,500x1,600x1,925 |      | 2,800x1,800x1,950 |    |    |    |
| Sound Level (1.5m from front side) | dB(A)               | 68  | 69   | 69   | 70   | 69                | 70   | 70                | 71   | 70                | 70 | 71 | 71 |

NOTE:  
 1. Capacity is converted value at its inlet condition (atmospheric pressure).  
 2. Sound Level is value at 1.5m in front and 1m height in an anechoic room. It may vary in different operating conditions and/or different environment with echo of actual field installations.  
 3. Earth leakage circuit breaker is out of scope of supply from Hitachi.  
 4. DSP NEXTseries compressors are not designed, intended or approved for breathing air applications.  
 5. Pressures are indicated as the gauge pressure.  
 6. For the quality of the cooling water, contact your nearest dealer or Hitachi local representative offices.  
 7. Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.  
 8. Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

# Two-Stage, Air-Cooled (132/145/160/200/240kW)



**High Reliability and Easy Maintenance**

**Totally enclosed flange motor is standard**

New totally enclosed flange motor is applied to improve reliability. Motor shaft in direct connection without coupling enables easy maintenance work.

**High precooler system (Air-Cooled models)**

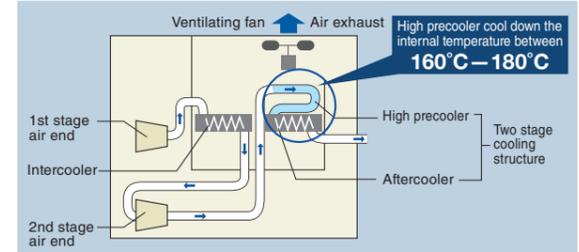
High precooler system reduces temperature of extremely hot air to aftercooler and two stage cooling structure improves reliability.

**High Discharge Pressure Available**

1.0MPa is available with high reliability.

**Maintenance Friendly**

DSP series provides easy accessibility for inspection and maintenance.



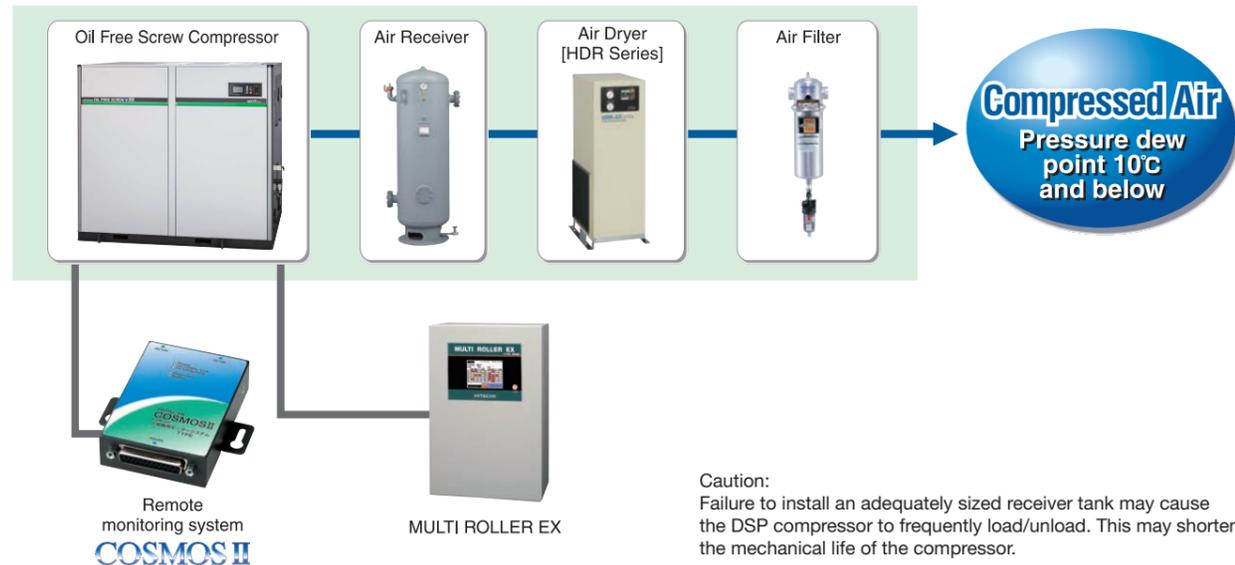
## Specifications

| Item - Unit                        | Model               | Air-Cooled                                  |      |           |      |           |      |                   |       |           |      |
|------------------------------------|---------------------|---|------|-----------|------|-----------|------|-------------------|-------|-----------|------|
|                                    |                     | DSP-132A5                                   |      | DSP-145A5 |      | DSP-160A5 |      | DSP-200A5         |       | DSP-240A5 |      |
| Discharge Pressure                 | MPa                 | 0.75  | 1.0  | 0.75      | 1.0  | 0.75      | 1.0  | 0.75              | 1.0   | 0.75      | 1.0  |
| Capacity                           | m <sup>3</sup> /min | 22.5  | 19.0 | 25.0      | 20.0 | 27.5      | 22.5 | 35.5              | 30.0  | 40.0      | 32.5 |
| Nominal Output                     | kW                  | 132   |      | 145       |      | 160       |      | 200               |       | 240       |      |
| Motor Type                         | —                   | 4-Pole TEFC Flange Motor                    |      |           |      |           |      |                   |       |           |      |
| Intake Air Press. / Temp.          | —                   | Atmospheric Pressure / 0 – 40°C             |      |           |      |           |      |                   |       |           |      |
| Discharge Temperature              | °C                  | Ambient Temperature + 15 or below           |      |           |      |           |      |                   |       |           |      |
| Discharge Pipe Diameter            | B                   | 2 1/2 (Flange)                              |      |           |      |           |      | 3 (Flange)        |       |           |      |
| Starting Type                      | —                   | Star-Delta                                  |      |           |      |           |      |                   |       |           |      |
| Driving Method                     | —                   | Direct Connection with Motor + Gear Driving |      |           |      |           |      |                   |       |           |      |
| Lubricating Oil Capacity           | L                   | 50 (Not filled)                             |      |           |      |           |      | 60 (Not filled)   |       |           |      |
| Cooling Fan Motor Output           | kW                  | 4.4 (1.1 x 4)                               |      |           |      |           |      |                   |       |           |      |
| Weight                             | kg                  | 3,900                                       |      |           |      | 4,000     |      |                   | 5,200 |           |      |
| Dimensions (WxDxH)                 | mm                  | 2,900x1,710x1,925                           |      |           |      |           |      | 3,200x1,890x1,950 |       |           |      |
| Sound Level (1.5m from front side) | dB(A)               | 73  | 74   | 74        | 75   | 74        | 75   | 76                | 77    | 77        | 78   |

NOTE:  
 1. Capacity is converted value at its inlet condition (atmospheric pressure).  
 2. Sound Level is value at 1.5m in front and 1m height in an anechoic room. It may vary in different operating conditions and/or different environment with echo of actual field installations.  
 3. Earth leakage circuit breaker is out of scope of supply from Hitachi.  
 4. DSP series compressors are not designed, intended or approved for breathing air applications.  
 5. Pressures are indicated as the gauge pressure.  
 6. Install the DSP indoors and avoid flammable and corrosive environment, moisture and dust.  
 7. Hitachi may make improvements and/or changes in the appearance and/or specifications described in this publication at anytime without notice.

# Auxiliary Equipment & Options

## Oil Free Screw Compressed Air System



## Control Panel

### Multi Unit Controller (MULTI ROLLER EX)

- Designed for Hitachi Air Compressor
- Efficient Control of Multiple Units
- Energy-Saving
- Various Functions Available



### Alternate Operation Controller (Dual Roller III)

- Designed for Hitachi Air Compressor
- Efficient Control of 2 Units
- Energy-Saving



### Standard Specification

| Item               | Model                         | Unit        | MR 26-4                              | MR 26-8       | MR 26-12 |
|--------------------|-------------------------------|-------------|--------------------------------------|---------------|----------|
| Power Supply       | —                             | —           | Single-phase AC100/200V (Common)     |               |          |
| Frequency          | —                             | —           | 50/60Hz (Common)                     |               |          |
| Controlled unit    | —                             | —           | 4                                    | 8             | 12       |
| Input              | Discharge pressure            | MPa         | 0 - 1 (Digital Indication)           |               |          |
|                    | Control                       | —           | Answer (Operation), Failure          |               |          |
|                    | External                      | —           | Start, Stop, Forced Start-up, Remote |               |          |
| Output             | Control                       | —           | Run, Stop, Load, PID Command         |               |          |
|                    | External                      | —           | Start, Shutdown, Auto                |               |          |
|                    | Controlled discharge pressure | —           | Minimum ±0.001MPa setting            |               |          |
| Dimensions (WxDxH) | mm                            | 400x200x600 | 500x200x900                          | 500x200x1,200 |          |
| Weight             | kg                            | 19          | 32                                   | 37            |          |

### Standard Specification

| Item                         | Model                      | Unit | SDR-3   |
|------------------------------|----------------------------|------|---|
| Power Supply                 | —                          | —    | AC100V (-10%+10%)   |
| Frequency                    | —                          | —    | [Possible for AC200V by switching connector]                                      |
| Power supply Frequency       | —                          | —    | AC100 to 240V±10% 50/60Hz [Single-phase]  |
| Controllable Number of Units | —                          | —    | 2   |
| Input                        | Frequency × 2              | mA   | 4 - 20 (250Ω)   |
|                              | Remote-set [Remote] × 2    | —    | Connection using the contacts to which no voltage is applied [Power supply DC24V] |
|                              | Run [Operation] × 2        | —    |   |
|                              | Failure [Shut down] × 2    | —    |   |
|                              | Electric pulse · Extra × 2 | —    | Optional terminals  |
| Output                       | Run × 2                    | —    | 1500ms w/out voltage  |
|                              | Stop × 2                   | —    | Pulse AC250V0.3A  |
|                              | Load/Unload command × 2    | —    | Dry contact   |
|                              | Status × 2                 | —    | AC250V0.3A  |
| Pressure detection           | —                          | —    | Built-in pressure sensor [0 - 1 MPa]  |
| Operation method             | —                          | —    | Following control [pressure/failure], Switching time [LAP/GAP], Schedule          |
| Standard function            | —                          | —    | Initial pump-up operation, Err. history, IPS restart, Remote operation            |
| Dimensions (WxDxH)           | mm                         | —    | 300x160x400   |
| Weight                       | kg                         | —    | 10  |

## COSMOS II



## COSMOS II (Compressor Status Monitoring System)

Web monitoring system shows real time status of compressors via office computer with high speed interface(100BASE-T).

### Features

#### 1 Labor saving

A COSMOS II module can set and monitor operating conditions of maximum four (4) DSP units, which saves costs of daily checking and facility workers.

#### 2 Monitoring energy saving

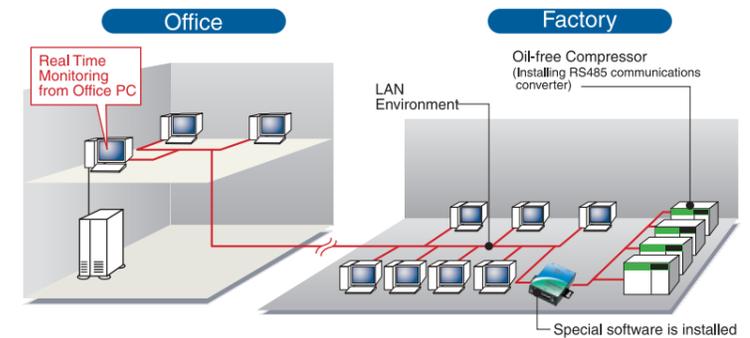
A COSMOS II module can monitor the history of compressor load from data of load factor, amperage, mean-load and other operating data.

#### 3 Immediate failure notice

Operating conditions can be monitored visually by animations and bar charts. In an emergency, the operating data and shutdown history are conveyed immediately to make necessary maintenance quicker.

#### 4 Easy installation

RS485 Multi Drop cable system is applied. In addition, connecting to existing LAN cable makes wiring construction easy and economical. When the optional database software is introduced, additional functions such as trend generation will be available to enhance the monitoring capability.



### Specifications (model: COS-200)

|                              |  |  |
|------------------------------|--|--|
| Interface                    | RS485 (D-SUB 25-pin connector) - LAN (10/100BASE-T)  | * Compressor requires converters for communications. Other applicable models will be lined up sequentially.<br>* This system is only for COSMOS II body, and user shall do wiring separately.<br>* For existing compressors already installed, please contact Hitachi authorized distributors.<br>* The PC should be a DOS/V machine with Windows'98, XP, NT and 2000 and browser (IE6.0 or higher).<br>* It always uploads data in a short time. However, due to facility condition, semantics may slow down.<br>* Windows' is a registered trademark of Microsoft Corporation. |
| Transmission Speed           | 9600bps  |  |
| Communication System         | Full duplex  |  |
| Synchronization System       | Start-stop synchronous                               |  |
| Isolation                    | None   |  |
| Compressor                   | DSP with control board ver. VO.Z.Z. or higher        |  |
| No. of Compressors Monitored | 4 (monitoring timing with multi-monitor: 10 s)       |  |
| Transfer Format              | Start bit: 1, data bit: 7, parity: even, stop bit: 1 |  |
| Dimensions and Weight        | 90 × 64 × 23mm, 200g                                 |  |
| Operating Environment        | Temperature: 0-40°C, humidity: 30-80%                |  |
| Power Supply                 | 100-240VAC (AC adapter:12V, 0.9A)                    |  |
| LAN Protocol                 | TCP/IP   |  |
| RS485 Cable Length           | 250 m, max.  |  |
| Connector                    | D-SUB 25-pin Female (RS485), RJ-45 (10/100BASE-T)    |  |

## HITACHI ROTARY COMPRESSOR OIL

HITACHI Genuine Lubricating Oil designed for Hitachi Rotary Screw Compressor

### Features

- Originally Designed for Hitachi Rotary Screw Compressor
- High Performance
- High Reliability



## HITACHI FOOD GRADE ROTARY COMPRESSOR OIL

HITACHI Genuine Lubricating Oil for Hitachi Air Compressor Used in Food Industry

### Features

- Comply with the international hygiene control method for food safety, HACCP\*1
- Consist of ONLY prescript substances specified by the US FDA\*2
- Approved and registered as H1 grade\*4 by the US NSF International\*3
- Applicable for both HITACHI Rotary Screw Compressor (HISCREW/DSP)



\*1 Hazard Analysis Critical Control Point  
\*2 Food and Drug Administration  
\*3 National Sanitation Foundation International  
\*4 The Oil can be used in places where it can make occasional contact with foods. The materials must be prescript substances regulated in the US Food and Drug Law: FDA21 CFR178.3570.

### Specifications

| Item                | Unit               | Content  |
|---------------------|--------------------|--|
| ISO Viscosity Grade | —                  | 32   |
| Density @15°C       | kg/L               | 0.86   |
| Viscosity @40°C     | mm <sup>2</sup> /s | 32.6   |
| Viscosity Index     | —                  | 102  |
| Flash Point         | °C                 | > 200  |
| Content             | L                  | 20   |
| Package             | —                  | Plastic Container Tank   |
| Weight              | kg                 | About 18   |
| Exchange Cycle      | —                  | HISCREW: 3,000 operating hours or 1 year which comes earlier<br>DSP: Every half year |

Note: Do NOT use this oil on the compressor which requires synthetic lubricating oil.

### Specifications

| Item                | Unit               | Content  |
|---------------------|--------------------|--|
| ISO Viscosity Grade | —                  | 32   |
| Color Phase         | —                  | Colorless and Transparent  |
| Density @15°C       | kg/L               | 0.84   |
| Viscosity @40°C     | mm <sup>2</sup> /s | 32.8   |
| Flash Point         | °C                 | 200  |
| Pour Point          | °C                 | -50  |
| Content             | L                  | 20   |
| Exchange Cycle      | —                  | 8,000 operating hours or 1 year which comes earlier  |
| Retrofit            | —                  | Flushing running operation with the exclusive flushing use oil (new oil 20L can) for 30 minutes × twice then refill with new oil |
| Package             | —                  | Plastic Container Tank   |
| Weight              | kg                 | About 18   |

Note: 1. Compliance Standard/Law: NSF H1 approval No. 138329 and FDA21 CFR178.3570  
2. For retrofitting from conventional mineral oil to HITACHI FOOD GRADE DSP OIL, contact your nearest HITACHI authorized distributor/dealer.

# Auxiliary Equipment

## Hitachi Air Dryer

### Hitachi Air Dryer HDR (Medium Size) series

HFC Refrigerant  
R407C



HDR-7.5AXI

#### Specifications

| Item/Unit                                | Model               | HDR-7.5AXI                   | HDR-15AXI | HDR-22AXII    | HDR-37AXII    | HDR-55AX      | HDR-75AX      | HDR-100AX       |          |
|--|---------------------|------------------------------|-----------|---------------|---------------|---------------|---------------|-----------------|----------|
| Capacity (Note 1) 50/60Hz                | m <sup>3</sup> /min | 1.3/1.4                      | 2.5/2.9   | 4.0/4.3       | 6.8/7.4       | 10.8/11.3     | 15.0/15.7     | 19.0/20.0       |          |
| Max. Inlet Pressure of Compressed Air    | MPa                 | 0.30 - 0.97                  |           |               |               |               |               |                 |          |
| Max. Inlet Temperature of Compressed Air | °C                  | 80                           |           |               |               |               |               |                 |          |
| Ambient Temperature                      | °C                  | 5 - 40                       |           |               |               |               |               |                 |          |
| Dew Point of Outlet Air                  | °C                  | 10 Under Pressure            |           |               |               |               |               |                 |          |
| Cooling Method of Condenser              | -                   | Air-Cooled                   |           |               |               |               |               |                 |          |
| Refrigerant Control Device               | -                   | Ejector                      |           |               |               |               |               |                 |          |
| Capacity Control Device                  | -                   | Hot Gas Bypass Valve         |           |               |               |               |               |                 |          |
| Refrigerant Used                         | -                   | R407C                        |           |               |               |               |               |                 |          |
| Charged Quantity                         | g                   | 250                          | 380       | 600           | 1,000         | 1,650         | 2,000         |                 |          |
| Finish Color                             | -                   | Ivory (Munsell No. 5Y8.5/1)  |           |               |               |               |               |                 |          |
| Pipe Diameter                            | B                   | Rc 1                         |           | Rc 1 1/2      |               |               | Rc 2          |                 | Rc 2 1/2 |
| Dimensions (WxDxH)                       | mm                  | 303x603x720                  |           | 356x513x1,067 | 356x513x1,274 | 356x903x1,274 | 356x903x1,489 | 406x1,400x1,380 |          |
| Weight                                   | kg                  | 44                           | 46        | 74            | 87            | 135           | 170           | 280             |          |
| Accessories                              | -                   | Auto Drain Trap, Drain Valve |           |               |               |               |               |                 |          |

Note: 1. The capacity values above are measured at an ambient temperature of 30°C, inlet temperature of 45°C, inlet pressure of 0.70MPa.  
2. Dew point gets worse if operated at pressure below the range of operation pressure.  
3. The dimensions do NOT include protruding objects.  
4. In case of having solid objects such as rust in the inlet air flow, install a pre-filter on the inlet of dryer.

### Hitachi Air Dryer HDR (Large Size) series

HFC Refrigerant  
R407C



HDR-150AX

#### Specifications

| Item/Unit                                | Model               | HDR-120WX                    | HDR-150WX       | HDR-190WX | HDR-240WX           | HDR-300WX         | HDR-380WX | HDR-120AX           | HDR-150AX       | HDR-190AX | HDR-240AX           | HDR-300AX         | HDR-380AX |
|--|---------------------|------------------------------|-----------------|-----------|---------------------|-------------------|-----------|---------------------|-----------------|-----------|---------------------|-------------------|-----------|
| Capacity (Note 1) 50/60Hz                | m <sup>3</sup> /min | 21/25                        | 27/31           | 35/41     | 42/49               | 51/60             | 64/75     | 20/23               | 25/30           | 32/38     | 38/45               | 47/55             | 59/69     |
| Max. Inlet Pressure of Compressed Air    | MPa                 | 0.30 - 0.97                  |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Max. Inlet Temperature of Compressed Air | °C                  | 60                           |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Ambient Temperature                      | °C                  | 2 - 40                       |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Dew Point of Outlet Air                  | °C                  | 10 Under Pressure            |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Cooling Method of Condenser              | -                   | Water-Cooled                 |                 |           |                     |                   |           | Air-Cooled          |                 |           |                     |                   |           |
| Refrigerant Control Device               | -                   | Capillary Tube               |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Capacity Control Device                  | -                   | Hot Gas Bypass Valve         |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Refrigerant Used                         | -                   | R407C                        |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Charged Quantity                         | g                   | 1,900                        | 2,000           | 2,700     | 3,400               | 4,000             | 4,000     | 2,200               | 3,600           | 3,500     | 4,400               | 5,000             | 6,000     |
| Finish Color                             | -                   | Ivory (Munsell No. 5Y8.5/1)  |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |
| Cooling Water Quantity                   | m <sup>3</sup> /h   | 2.5/2.9                      | 2.7/3.0         | 3.0/3.2   | 3.6/3.8             | 3.4/4.0           | 4.3/5.0   | -                   |                 |           |                     |                   |           |
| Pipe Diameter                            | B                   | 2-1/2*                       | 3*              |           | 4*                  | 5*                |           | 2-1/2*              | 3*              |           | 4*                  | 5*                |           |
| Dimensions (WxDxH)                       | mm                  | 672x1,260<br>x1,276          | 950x1,290x1,332 |           | 1,969x905<br>x1,583 | 2,020x1,100x1,650 |           | 672x1,260<br>x1,276 | 950x1,290x1,332 |           | 1,969x905<br>x1,583 | 2,020x1,100x1,650 |           |
| Weight                                   | kg                  | 238                          | 346             | 344       | 534                 | 792               | 872       | 258                 | 372             | 370       | 557                 | 792               | 872       |
| Accessories                              | -                   | Auto Drain Trap, Drain Valve |                 |           |                     |                   |           |                     |                 |           |                     |                   |           |

\* JIS 10K Flange

Note: 1. The capacity values above are measured at an ambient temperature of 32°C, inlet temperature of 40°C, inlet pressure of 0.69MPa.  
2. Dew point gets worse if operated at pressure below the range of operation pressure.  
3. The dimensions do NOT include protruding objects.  
4. In case of having solid objects such as rust in the inlet air flow, install a pre-filter on the inlet of dryer.

## Line Filter

### Air Filter\*1



### Micron Mist Filter\*2



### Activated Carbon Filter\*3



#### Specifications

| Item                     |                                     | Model  | 7.5BX               | 11BX           | 15BX     | 22B          | 37B          | 55B      | 75B       | 100B        | 125C      | 160C      | 200C      | 240B      |    |
|--------------------------|-------------------------------------|--|---------------------|----------------|----------|--------------|--------------|----------|-----------|-------------|-----------|-----------|-----------|-----------|----|
| Common                   | Air Condition                       | Capacity (converted to the ambient pressure) | m <sup>3</sup> /min | 1.2            | 1.8      | 2.4          | 3.9          | 6.6      | 10.6      | 13.8        | 20        | 27.6      | 32        | 40        | 50 |
|                          |                                     | Inlet Air Temperature                        | °C                  | 30             |          |              |              |          |           |             |           |           |           |           |    |
|                          |                                     | Inlet Air Pressure                           | MPa                 | 0.69           |          |              |              |          |           |             |           |           |           |           |    |
|                          | Use                                 | Applicable Fluid                             | -                   | Compressed Air |          |              |              |          |           |             |           |           |           |           |    |
| Condition                | Max. Pressure                       | MPa  | 1.57                |                |          | 0.97         |              |          |           |             |           |           |           |           |    |
| Connecting Pipe Diameter | B (A)                               | Rc3/4 (20)                                   | Rc1 (25)            |                | Rc1 (25) | Rc1 1/2 (40) | Rc1 1/2 (40) | Rc2 (50) | Rc2 (50)  | 2 1/2* (65) | 3* (80)   | 3* (80)   | 3* (80)   | 4* (100)  |    |
| Air Filter               | Item                                | Model  | HAF-7.5BX           | HAF-11BX       | HAF-15BX | HAF-22B      | HAF-37B      | HAF-55B  | HAF-75B   | HAF-100B    | HAF-125C  | HAF-160C  | HAF-200C  | HAF-240B  |    |
|                          | Use                                 | Inlet Air Temperature Range                  | °C 5 - 60           |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Condition                           | Ambient Temperature Range                    | °C 2 - 60           |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Filtration Rating                   | µm   | 1*1                 |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Filtration Efficiency               | %  | 99.999              |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Pressure                            | Initial                                      | MPa 0.005 or below  |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Drop (Loss)                         | Element Exchange                             | MPa 0.07            |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Dimension (Max. Diameter×Length)    | mm   | 92×237              | 130×290.5      | 160×509  | 170×591      | 170×699      | 173×792  | 173×949   | 590×1,511   | 590×1,511 | 590×1,511 | 590×1,511 | 640×1,735 |    |
| Drain Outlet Diameter    | B (A)                               | Rc1/4 (8)                                    |                     |                |          |              |              |          |           |             |           |           |           |           |    |
| Weight                   | kg                                  | 1  | 2                   | 2.1            | 3        | 3.3          | 3.7          | 4.3      | 6         | 41          | 43        | 43        | 73        |           |    |
| Micron Mist Filter       | Item                                | Model  | HMF-7.5BX           | HMF-11BX       | HMF-15BX | HMF-22B      | HMF-37B      | HMF-55B  | HMF-75B   | HMF-100B    | HMF-125C  | HMF-160C  | HMF-200C  | HMF-240B  |    |
|                          | Use                                 | Inlet Air Temperature Range                  | °C 5 - 60           |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Condition                           | Ambient Temperature Range                    | °C 2 - 60           |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Density of Oil in the Discharge Air | w/ppm  | 0.01*2              |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Pressure                            | Initial                                      | MPa 0.01            |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Drop (Loss)                         | Element Exchange                             | MPa 0.07            |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Dimension (Max. Diameter×Length)    | mm   | 92×237              | 130×364        | 160×582  | 170×664      | 170×772      | 173×865  | 173×1,022 | 590×1,511   | 590×1,511 | 590×1,511 | 590×1,511 | 640×1,735 |    |
|                          | Drain Outlet Diameter               | B (A)  | Rc1/4 (8)           |                |          |              |              |          |           |             |           |           |           |           |    |
| Weight                   | kg                                  | 1  | 2                   | 2.1            | 3        | 3.3          | 3.7          | 4.3      | 6         | 41          | 43        | 43        | 73        |           |    |
| Activated Carbon Filter  | Item                                | Model  | HKF-7.5BX           | HKF-11BX       | HKF-15BX | HKF-22B      | HKF-37B      | HKF-55B  | HKF-75B   | HKF-100B    | HKF-125C  | HKF-160C  | HKF-200C  | HKF-240B  |    |
|                          | Use                                 | Inlet Air Temperature Range                  | °C 5 - 60           |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Condition                           | Ambient Temperature Range                    | °C 2 - 60           |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Density of Oil in the Discharge Air | w/ppm  | 0.003*3             |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Pressure Drop (Loss)                | MPa  | 0.007               |                |          |              |              |          |           |             |           |           |           |           |    |
|                          | Dimension (Max. Diameter×Length)    | mm   | 92×232              | 130×281.5      | 160×308  | 170×390      | 170×498      | 173×591  | 173×748   | 590×1,511   | 590×1,511 | 590×1,511 | 590×1,511 | 640×1,735 |    |
|                          | Weight                              | kg   | 1                   | 2              | 3        | 3.3          | 3.7          | 4.3      | 6         | 41          | 43        | 43        | 73        |           |    |

\* JIS 10K Flange

● Make sure to install an air dryer before the filter.

\* 1 The density of oil in the inlet air is 3wtppm.

\* 2 According to "Test methods for oil aerosol content" of ISO8573-2, the density of oil in the inlet air is 3wtppm.

\* 3 According to "Test methods for oil aerosol content" of ISO8573-2, the density of oil in the inlet air is 0.01wtppm.

# Systems and Options

## Energy Saving from Various Combinations V-type based Systems

### Proposal for Energy-Saving

Three proposal systems responding to various requirements  
Combination V-type with fixed speed type achieves

Energy saving operation without external controller

Energy saving operation with external controller

Energy saving operation by more than one V-type with multi-unit controller

#### V-M Combination System

Energy saving operation by one V-type and maximum two fixed speed type

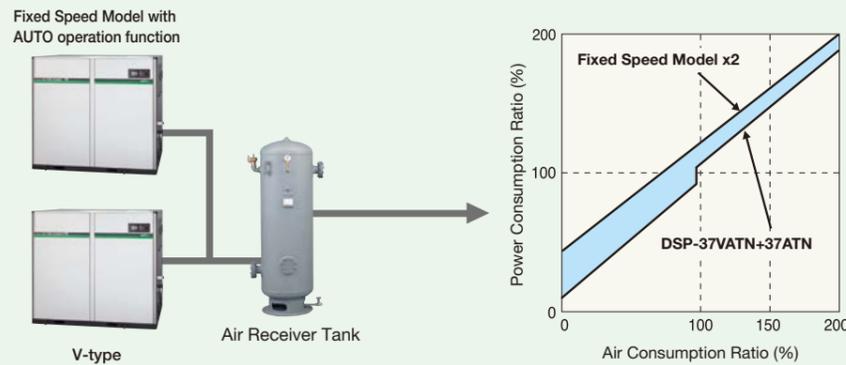
#### Single-V System

Energy saving operation by one V-type and more than one fixed speed type with multi-unit controller.

#### Multi-V System

Energy saving operation and averaging V-type operating hour

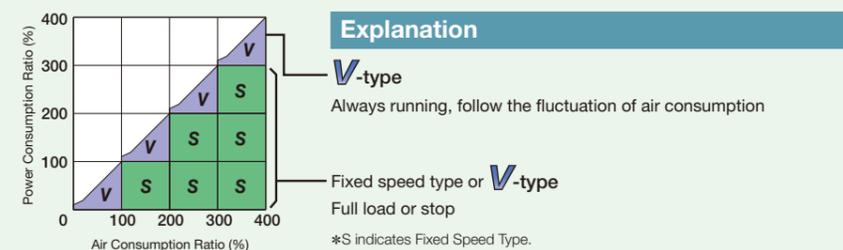
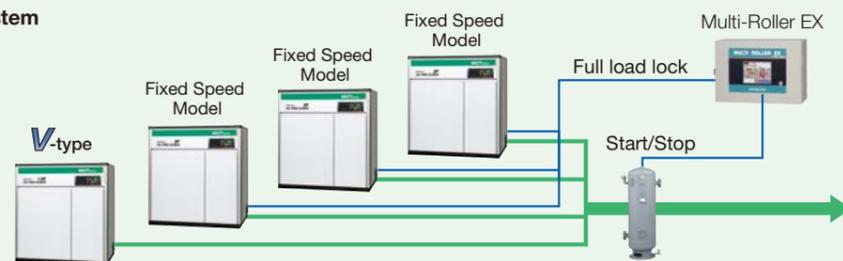
#### Basic Example of V-M Combination System



#### Single-V (Multi-V)

##### Example of Multi-Unit Control System

Multi-Roller EX +  
DSP V-type +  
DSP Fixed Speed Models



### Options

|  | NEW DSP series         | DSP NEXT series |                  |                        |                          | DSP NEXT II series |                  |
|--|------------------------|-----------------|------------------|------------------------|--------------------------|--------------------|------------------|
|  | Two-Stage              | Single-Stage    |                  | Two-Stage              |                          | Two-Stage          |                  |
|  | Fixed Speed Type       | V type (VSD)    | Fixed Speed Type | V type (VSD)           | Fixed Speed Type         | V type (VSD)       | Fixed Speed Type |
| Nominal Output (kW)                            | 132 - 240 (Air-Cooled) | 22 - 55         | 15 - 55          | 160/240 (Water-Cooled) | 132 - 240 (Water-Cooled) | 37 - 100           | 22 - 120         |
|  |                        |                 |                  |                        |                          |                    |                  |
| Oil Mist Remover (OMR)                         | Standard               | Standard        | Standard         | Standard               | Standard                 | Standard           | Standard         |
| Instantaneous Power Interruption (IPI) Restart | ●                      | Standard        | Standard         | Standard               | Standard                 | Standard           | Standard         |
| Multi-unit Control (with Multi Roller EX)      | ●                      | ●               | ●                | ●                      | ●                        | ●                  | ●                |
| Alternate Operation (with Dual Roller)         | ●                      | ●               | ●                | ●                      | ●                        | ●                  | ●                |
| Alternate Operation*1                          | ●                      | ●               | ●                | ●                      | ●                        | ●                  | ●                |
| AUTO Operation                                 | ●                      | Standard        | ●                | Standard               | ●                        | Standard           | Standard         |
| V-M Combination                                | ●*2                    | ●               | ●*2              | ●                      | ●*2                      | ●                  | ●                |
| Modbus*/TCP                                    | —                      | —               | —                | —                      | —                        | ●                  | ●                |
| Communication Function (for COSMOS II)         | ●                      | ●               | ●                | ●                      | ●                        | —                  | —                |
| Package Filter                                 | —                      | ●               | ●                | —                      | —                        | ●                  | ●                |
| Dust Filter                                    | ●                      | ●               | ●                | ●                      | ●                        | ●                  | ●                |
| Specified Color of Sound-Proof Cover           | ●                      | ●               | ●                | ●                      | ●                        | ●                  | ●                |
| Food Grade Oil                                 | ●                      | ●               | ●                | ●                      | ●                        | ●                  | ●                |

Note: \*1 Alternate Operation is possible between same models or models of the same series. In case of alternate operation between models of different series, connection and control by Dual Roller is necessary.  
\*2 In case of V-M Combination, modification of AUTO Operation on the Fixed Speed model is necessary.  
\*3 For other options, contact your nearest dealer or Hitachi local representative office.

### Safety Precautions

#### Regarding compressor application

- The compressor described in this catalog utilizes only air as a gas. Absolutely avoid using it for compression of a gas other than air — this could result in a fire hazard or damage to the equipment.
- Never use compressed air for human breathing.

#### Regarding installation site

- Install this compressor indoors. Avoid using it at a place susceptible to moisture such as precipitation or vapors — this could result in a fire hazard, electric shock, rusting or shortened life of parts.
- There should be no explosive or flammable gas (acetylene, propane, etc.), organic solvent, explosive powder or flame used near the compressor — otherwise there is a fire hazard.
- Avoid using the compressor at a place where there is corrosive gas such as ammonia, acid, salt sulfurous acid gas, etc. — this could result in rusting, shortened life, or damage to the equipment.

#### Regarding usage

- Before use, be sure to read the instruction manual thoroughly for correct use of the compressor.
- Absolutely avoid modifying the compressor or its components—this could result in damage or malfunction.