

HITACHI OIL-FREE SCREW COMPRESSOR

HITACHI
Inspire the Next

OIL FREE SCREW

SINGLE STAGE / TWO STAGE



Hitachi Social Innovation

- Environment Friendly, High Standard Oil-Free Rotary

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.



Screw Compressor (DSP)

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".



■ ISO 8573-1:2010 [-:-:0]



Industry Standard in Energy-Saving, Environment - From small to large, Full Line-Up (15-240kW)

15–55kW Single-Stage

NEXT II series

MPa: 0.30/0.40/0.70
m³/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
m³/min: 3.2 - 21.0

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



132–240kW Two-Stage

NEXT II series

MPa: 0.75/0.93/1.0
m³/min: 19.0 - 40.5

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



Friendly and High Quality

■ OIL FREE SCREW (DSP) Model List

● Fixed Speed Type

| Nominal Output (kW) | | | 15 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 100 | 120 | 132 | 145 | 160 | 200 | 240 |
|---------------------|--------------|----------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| Model | | | | | | | | | | | | | | | | | |
| 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) | | | 15 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 100 | 120 | 132 | 145 | 160 | 200 | 240 |
|---------------------|--------------|----------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| Model | | | | | | | | | | | | | | | | | |
| 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 II Series

High Performance Air-End

Stainless Steel Rotor

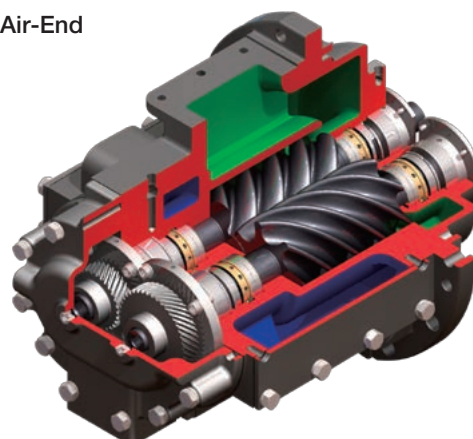
Particular stainless steel, which is superior in corrosion resistance and durability, is applied for rotor with highly accurate grinding. Furthermore, compensated profile, which is optimized for thermal expansion during operation, enables to keep optimal clearance.

High Performance Coating

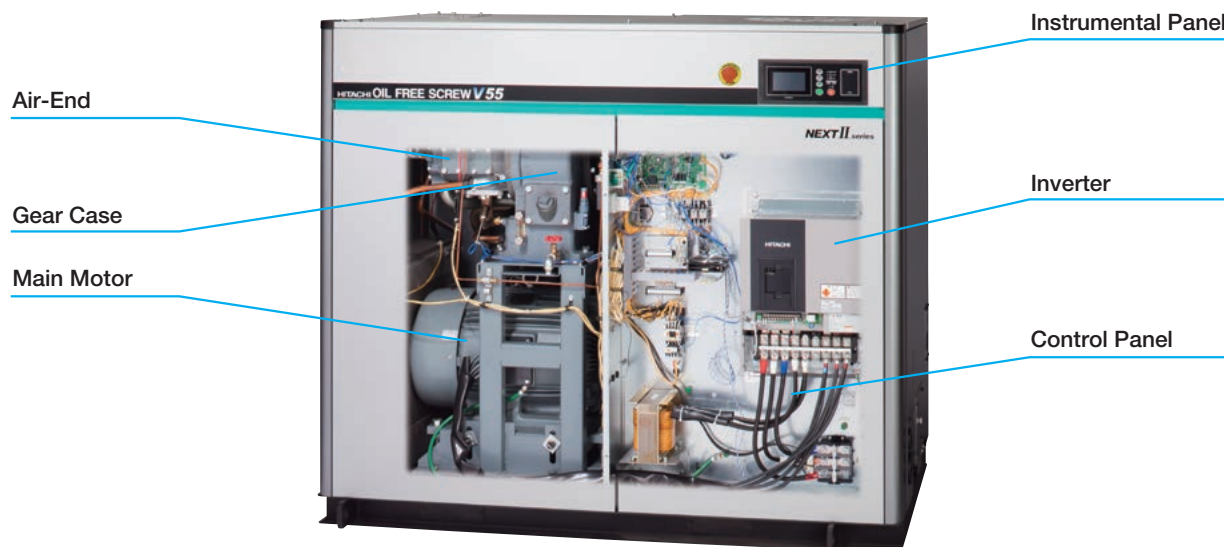
Patent JP05416072

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

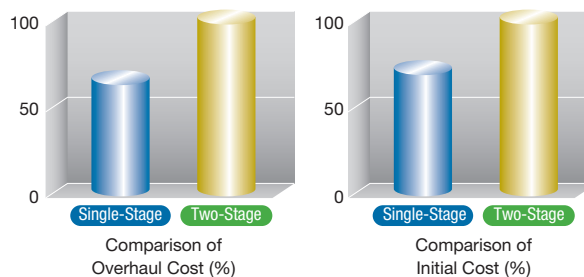


*The above picture shows the internal structure of 55kW Air-Cooled model (V-type).

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 60% 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

V-type 0.30MPa and Fixed Speed Model 0.40MPa models are available for low pressure application to save the energy.

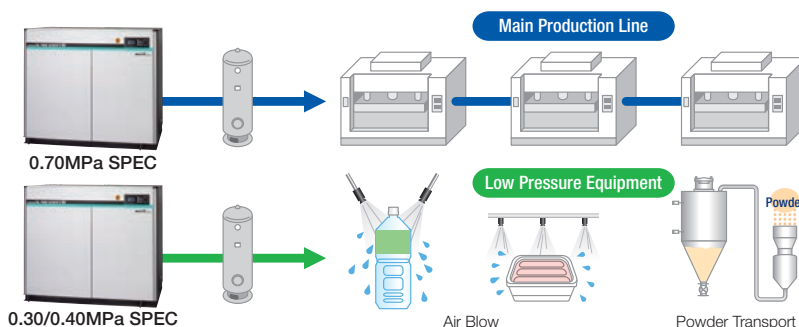
Capacity Comparison

| | 0.70MPa Fixed Speed Model / V-type | 0.40MPa Fixed Speed Model | 0.30MPa V-type |
|------|---------------------------------------|------------------------------|-------------------|
| 22kW | 3.4 | 4.0 | 4.6 |
| 37kW | 5.0 | 5.9 | 6.7 |
| 55kW | 6.4 | 8.0 | 8.5 |

(m³/min)

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.

| Model | | DSP-15A [R] 5N2 DSP-15A [R] 6N2 | | DSP-22A [R] 5N2 DSP-22A [R] 6N2 | | DSP-37A [R] 5N2 DSP-37A [R] 6N2 | | DSP-55A [R] 5N2 DSP-55A [R] 6N2 | |
|-------------------------------------|-----------------------------|--|-----------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
| Item・Unit | | | | | | | | | |
| Discharge Pressure | MPa | 0.70 | 0.40 | 0.70 | 0.40 | 0.70 | 0.40 | 0.70 | 0.40 |
| 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 – 45 [2 – 45] | | | | | | | |
| 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 | | | | 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)] | — | [10 (Under Pressure)] |
| | Refrigerator Nominal Output | kW | [0.5] | — | [1.2] | — | [1.45] | — | [1.45] |
| | Refrigerant | — | [R407C] | — | [R410A] | — | [R410A] | — | [R410A] |
| Weight | kg | 770 [800] | | 850 [910] | | 1,080 [1,230] | | 1,330 [1,480] | |
| Dimensions (W×D×H) | mm | 1,400×970×1,400 | | | | | | | |
| Sound Level (1.5m from front) | dB(A) | 62 | 63 | 63 | 64 | 66 | 68 | 68 | 70 |

■ Air-Cooled / Water-Cooled, V-type Model (22–55kW)

[]: Indicates model with Dryer integrated.

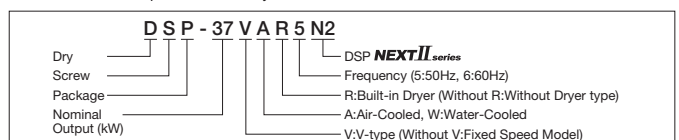
| Item・Unit | | Model | DSP-22VA [R] 5N2 DSP-22VA [R] 6N2 | | DSP-37VA [R] 5N2 DSP-37VA [R] 6N2 | | DSP-55VA [R] 5N2 DSP-55VA [R] 6N2 | | DSP-37VWN2 | | DSP-55VWN2 | |
|-------------------------------------|-----------------------------|--------|--|------|--------------------------------------|------|--------------------------------------|------|--|------|------------------------------|------|
| Cooling Method | | — | Air-Cooled | | | | | | Water-Cooled | | | |
| Discharge Pressure | | MPa | 0.70 | 0.30 | 0.70 | 0.30 | 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 | 5.0 | 6.7 | 6.4 | 8.5 |
| PQ WIDEMODE | Discharge Pressure | MPa | 0.60 | — | 0.60 | — | 0.60 | — | 0.60 | — | 0.60 | — |
| | Discharge Air Capacity | m³/min | 3.7 | — | 5.5 | — | 7.0 | — | 5.5 | — | 7.0 | — |
| | Discharge Pressure | MPa | 0.40 [0.50] | — | 0.40 [0.50] | — | 0.40 [0.50] | — | 0.40 | — | 0.40 | — |
| | Discharge Air Capacity | m³/min | 4.3 [4.0] | — | 6.4 [6.0] | — | 8.2 [7.6] | — | 6.4 | — | 8.2 | — |
| 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 | | 37 | | 55 | |
| Motor Type | | — | 4-Pole TEFC Motor | | | | | | 4-Pole TEFC Motor | | | |
| Intake Air Pressure / Temperature | | °C | Atmospheric Pressure / 0 – 45 [2 – 45] | | | | | | Atmospheric Pressure / 0 – 45 | | | |
| Discharge Temperature | | °C | Ambient Temperature +15 or below | | | | | | Cooling Water Temperature +13 or below | | | |
| Discharge Air Pipe Connection | | B | Rc1-1/2 | | | | | | Rc1-1/2 | | | |
| Starting Method | | — | Inverter | | | | | | Inverter | | | |
| Driving Method | | — | V-Belt+Gear-Driven | | | | | | V-Belt+Gear-Driven | | | |
| Oil Quantity | | L | 12 (Not filled) | | 18 (Not filled) | | | | 14 (Not filled) | | | |
| Cooling Fan Motor Output | | kW | 0.75 | | | 0.9 | | | 0.2 | | | |
| Cooling Water Flow Rate | | L/min | — | | | — | | | 80 | | | |
| Cooling Water Temperature | | °C | — | | | — | | | 32 or below | | | |
| Cooling Water Pipe Connection | | B | — | | | | | | Rc1 | | | |
| 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 | 900 [960] | | 1,140 [1,290] | | 1,270 [1,420] | | 1,110 | | 1,240 | |
| Dimensions (W×D×H) | | mm | 1,650×970×1,400 | | 1,830×980×1,580 | | [2,230×980×1,580] | | 1,830×980×1,580 | | — | |
| Sound Level (1.5m from front) | | dB(A) | 63 | 64 | 66 | 68 | 68 | 70 | 64 | 66 | 64 | 66 |

■ Water-Cooled, Fixed Speed Model (15-55kW)

| Item・Unit | | Model | | DSP-15W5N2 DSP-15W6N2 | | DSP-22W5N2 DSP-22W6N2 | | DSP-37W5N2 DSP-37W6N2 | | DSP-55W5N2 DSP-55W6N2 | |
|------------------------------------|--------|---|------|--------------------------|------|--------------------------|------|--------------------------|------|--------------------------|------|
| Discharge Pressure | MPa | 0.70 | 0.40 | 0.70 | 0.40 | 0.70 | 0.40 | 0.70 | 0.40 | 0.70 | 0.40 |
| 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 – 45 | | | | | | | | | |
| Discharge Air Temperature | °C | Cooling Water Temperature + 13 or below | | | | | | | | | |
| Discharge Air Pipe Diameter | B | Rc1 | | Rc1-1/2 | | | | | | | |
| Cooling Water Flow Rate | L/min | 50 | | | | 80 | | | | | |
| Cooling Water Temperature | °C | | | | | 35 or below | | | | | |
| Coolant Water Pipe Diameter | B | Rc3/4 | | | | Rc1 | | | | | |
| Starting Method | — | Full Voltage Start | | | | Star-Delta (3-contact) | | | | | |
| Driving Method | — | V-Belt+Gear-Driven | | | | | | | | | |
| Lubricating Oil Quantity | L | 10 (Not filled) | | | | | | 14 (Not filled) | | | |
| Cooling Fan Motor Output | kW | 0.05 | | | | 0.1 | | | | | |
| Weight | kg | 770 | | 830 | | 1,030 | | 1,280 | | | |
| Dimensions (W×D×H) | mm | 1,400×970×1,400 | | | | | | 1,830×980×1,580 | | | |
| Sound Level (1.5m from front side) | dB(A) | 62 | 63 | 63 | 64 | 64 | 66 | 64 | 66 | | |

NOTE:

- Capacity is measured according to ISO 1217, fourth edition, Annex C.
- Sound level is the equivalent value at 1.5m in front and 1m height in an anechoic room, under full load operation with no auto drain function. It may vary in different operation conditions or environments. Sound level may be increased by 2dB 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 can be much worse at 0.40MPa or lower discharge pressure. P.D.P can be 13 degree C at 0.60MPa of discharge pressure PQ WIDEMODE ON.
- Built-in dryer 0.30MPa model is NOT available.
- Capacity after built-in dryer is decreased by 3%.
- In case of dust-proof or package filter option, maximum ambient temperature is limited up to 40 degree C, and discharge air temperature of air-cooled models is atmospheric temperature +18 degree C or less.
- Earth leakage circuit breaker is out of supply scope from Hitachi.
- These air compressors are not designed, intended or approved for breathing air applications.
- Pressures are indicated as the gauge pressure.
- Install the air compressor indoors and avoid flammable and corrosive environment, moisture and dust.
- Protruding objects such as discharge pipe are not included in Dimension.
- 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 (22/37/45/55/75/90/100/120kW)



*The above picture shows 75kW Air-Cooled model (V-type).

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

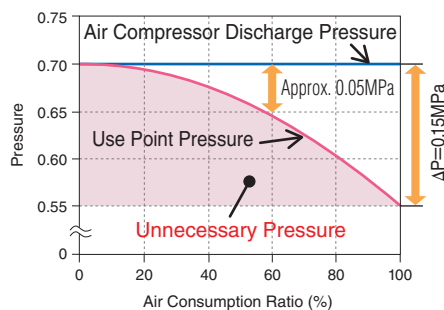
Example of effect by IPC

- 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)

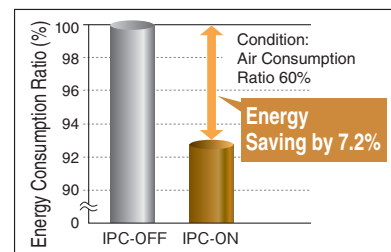
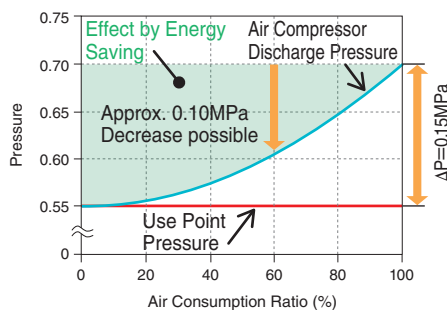
① IPC-OFF

- Control the air compressor discharge pressure at 0.70MPa



② IPC-ON

- Control the use point pressure at 0.55MPa



*Due to estimation control, use point pressure varies in accordance with use conditions.

IT Communication Functions

USB Flash Memory Possible for Data Logging

- *Necessary to prepare a USB flash memory device (5.5cm 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.



(The image is modified)

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

Specifications

■ Air-Cooled 22/37kW

[]: Indicates model with Dryer integrated.

| Item・Unit | | Model | Fixed Speed Model | | | | | | V-type Model | |
|--|-----------------------------|--------|--|------|--------------------------------------|------|--------------------------------------|------|--|------|
| | | | DSP-22AT [R] 5N2 DSP-22AT [R] 6N2 | | DSP-30AT [R] 5N2 DSP-30AT [R] 6N2 | | DSP-37AT [R] 5N2 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 | | m³/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] | |
| 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)] | |
| | Refrigerator Nominal Output | kW | [1.45] | | | | | | [1.45] | |
| | Refrigerant | — | [R410A] | | | | | | [R410A] | |
| Weight | | kg | 1,120 [1,180] | | 1,230 [1,290] | | | | 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

[]: Indicates model with Dryer integrated.

| Item・Unit | | Model | Fixed Speed Model | | | | | | V-type Model | | | | |
|--|-----------------------------|--------|--|---------|--------------------------------------|---------|--------------------------------------|-----------|------------------|------|-------------------|-------------------|--|
| | | | DSP-45AT [R] 5N2 DSP-45AT [R] 6N2 | | DSP-55AT [R] 5N2 DSP-55AT [R] 6N2 | | DSP-75AT [R] 5N2 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 | 0.70 | 0.93 | |
| Discharge Air Capacity | | m³/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 | 12.6 | 10.9 | |
| Discharge Air Capacity at PQ wide ON of 0.6MPa | | | — | | | | | | 9.6 | 9.3 | 13.0 | 12.6 | |
| Nominal Motor Output | | kW | 45 | | 55 | | 75 | | 55 | | 75 | | |
| Motor Type | | — | 2-Pole TEFC Flange | | | | | | | | | | |
| Intake Air Pressure / Temperature | | °C | Atmospheric Pressure / 0 – 45 [2 – 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 | 25 (Not filled) | | | | | | | | | | |
| Output of Cooling Fan | | kW | 1.5 (Inverter) | | | | 2.2 (Inverter) | | | | 1.5 (Inverter) | 2.2 (Inverter) | |
| P.D.P | | °C | [10 (Under Pressure)] | | | | | | | | | | |
| [Dryer] | Refrigerator Nominal Output | kW | [2.2] | | | | [3.0] | | | | [2.2] | [3.0] | |
| | Refrigerant | — | [R410A] | | | | [R407C] | | | | [R410A] | [R407C] | |
| 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 | | | | 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 | 68 | |

■ Air-Cooled 90/100/120kW

| Item・Unit | | Model | Fixed Speed Model | | | | | | V-type Model | |
|------------------------------------|--------|----------------------------------|--------------------------------------|------|--|-------|------------------------------|----------------------------------|--------------------------------|--|
| | | | DSP-90A5 [L] MN2 DSP-90A6 [L] MN2 | | DSP-100A5 [L] MN2 DSP-100A6 [L] MN2 | | DSP-120A5MN2 DSP-120A6MN2 | | DSP-100VA5MN2 DSP-100VA6MN2 | |
| Discharge Pressure | MPa | 0.70 | 0.93 | 0.70 | 0.93 | 0.70 | 0.93 | 0.70 | 0.93 | |
| Discharge Air Capacity | m³/min | 16.6 | 13.9 | 18.0 | 15.4 | 20.5 | 17.3 | 18.0 | 15.4 | |
| Nominal Motor Output | kW | 90 | | 100 | | 120 | | 100 | | |
| Motor Type | — | 2-Pole TEFC Flange | | | | | | 2-Pole TEFC Flange | | |
| Intake Air Pressure / Temperature | ℃ | Atmospheric Pressure / 0 – 45 | | | | | | Atmospheric Pressure / 0 – 45 | | |
| Discharge Temperature | ℃ | Ambient Temperature +15 or below | | | | | | Ambient Temperature +15 or below | | |
| Discharge Pipe Diameter | B | 2 (Flange) | | | | | | 2 (Flange) | | |
| Starting Method | — | Star-Delta (3 contact) | | | | | | Inverter | | |
| Driving Method | — | Direct Connection + Gear Driven | | | | | | Direct Connection + Gear Driven | | |
| Lubricating Oil Filling | L | 26 (Not filled) | | | | | | 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 | | | | | | 2,150×1,520×1,975 | | |
| Noise Level (1.5m from front side) | dB(A) | 68 | 70 | 69 | 71 | 72 | 73 | 69 | 71 | |

NOTE:

- Capacity is measured according to ISO 1217, fourth edition, Annex C.
- Sound level is the equivalent value at 1.5m in front and 1m height in an anechoic room, under full load operation with no auto drain function. It may vary in different operation conditions or environments. Sound level may be increased by 2dB 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 can be much worse at 0.60MPa or lower discharge pressure. P.D.P can be 13 degree C at 0.60MPa of discharge pressure PQ WIDEMODE ON.
- Capacity after built-in dryer is decreased by 3%.
- In case of dust-proof or package filter option, maximum ambient temperature is limited up to 40 degree C, and discharge air temperature of air-cooled models is atmospheric temperature +18 degree C or less.
- Earth leakage circuit breaker is out of supply scope from Hitachi.
- These air compressors are not designed, intended or approved for breathing air applications.
- Pressures are indicated as the gauge pressure.
- Install the air compressor indoors and avoid flammable and corrosive environment, moisture and dust.
- Protruding objects such as discharge pipe are not included in Dimension.
- 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)



*The above picture shows the internal structure of 75kW Water-Cooled model (V-type).

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

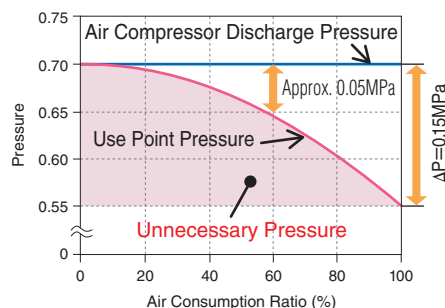
Example of effect by IPC

- 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)

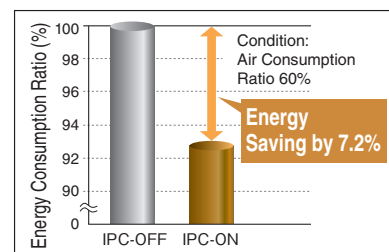
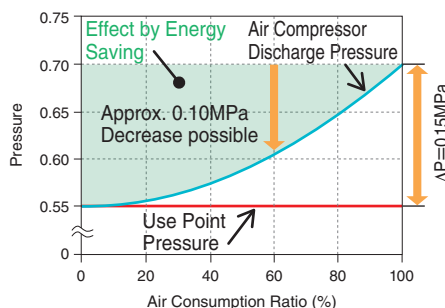
① IPC-OFF

- Control the air compressor discharge pressure at 0.70MPa



② IPC-ON

- Control the use point pressure at 0.55MPa



*Due to estimation control, use point pressure varies in accordance with use conditions.

IT Communication Functions

USB Flash Memory Possible for Data Logging

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

Web Server Function via Bluetooth®

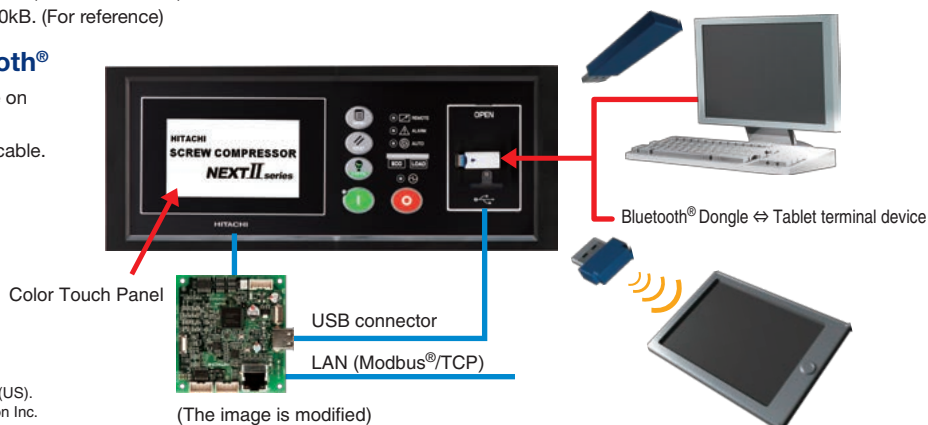
- *Necessary to prepare a Bluetooth® USB dongle on your side.
- *For setting changes, part of the items are applicable.

Modbus® Communication

Open network serial communication
Modbus®/RTU is supported as standard

*Modbus®/TCP support is optional.

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



*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

[]: Indicates model with Dryer integrated.

| Item・Unit | | Model | Fixed Speed Model | | | | | | V-type Model | | | | |
|--|-----------------------------|--------|--|---------|--------------------------------------|---------|--------------------------------------|-----------|------------------|------|------------------|---------------|--|
| | | | DSP-45WT [R] 5N2 DSP-45WT [R] 6N2 | | DSP-55WT [R] 5N2 DSP-55WT [R] 6N2 | | DSP-75WT [R] 5N2 DSP-75WT [R] 6N2 | | DSP-55VWT [R] N2 | | DSP-75VWT [R] N2 | | |
| Discharge Pressure | | MPa | 0.70 | 0.93 | 0.70 | 0.93 | 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 | 9.5 | 8.0 | 12.9 | 11.4 | |
| Discharge Air Capacity at PQ wide ON of 0.6MPa | | | — | | | | | | 9.8 | 9.5 | 13.4 | 13.0 | |
| Nominal Motor Output | | kW | 45 | | 55 | | 75 | | 55 | | 75 | | |
| Motor Type | | — | 2-Pole TEFC Flange | | | | | | | | | | |
| Intake Air Pressure / Temperature | | — | Atmospheric Pressure / 0 – 45 [2 – 45] | | | | | | | | | | |
| Discharge Temperature | | ℃ | Cooling Water Temperature +13 or below | | | | | | | | | | |
| Discharge Pipe Diameter | | B | 2 (Flange) | | | | | | | | | | |
| Starting Method | | — | Star-Delta (3 contact) | | | | | | | | | | |
| Driving Method | | — | Direct Connection + Gear Driven | | | | | | | | | | |
| Lubricating Oil Filling | | L | 15 (Not filled) | | | | | | | | | | |
| Output of Cooling Fan | | kW | 0.05×2 | | | | | | | | | | |
| Cooling Water Capacity | | L/min | 90 | | | | 120 | | | | 90 | 120 | |
| Cooling Water Temperature | | ℃ | 35 or below | | | | | | | | | | |
| Cooling Water Pipe Diamo | | B | Rc 1-1/4 | | | | | | | | | | |
| [Dryer] | P.D.P | ℃ | [10 (Under Pressure)] | | | | | | | | | | |
| | Refrigerator Nominal Output | kW | [2.2] | | | | [3.0] | | | | [2.2] | [3.0] | |
| | Refrigerant | — | [R410A] | | | | [R407C] | | | | [R410A] | [R407C] | |
| Weight | | kg | 1,580 [1,730] | | | | 1,710 [1,880] | | | | 1,320 [1,470] | 1,410 [1,580] | |
| Dimensions (W×D×H) | | mm | 2,000×1,300×1,800 | | | | | | | | | | |
| Noise Level (1.5m from front side) | | dB(A) | 63 | | 63 | | 65 | 66 | 63 | 65 | | 66 | |

Water-Cooled 90/100/120kW

| Model Item・Unit | | Fixed Speed Model | | | | | | V-type Model | |
|------------------------------------|--------|--|------|--|------|------------------------------|------|--------------------------------|------|
| | | DSP-90W5 [L] MN2 DSP-90W6 [L] MN2 | | DSP-100W5 [L] MN2 DSP-100W6 [L] MN2 | | DSP-120W5MN2 DSP-120W6MN2 | | DSP-100VW5MN2 DSP-100VW6MN2 | |
| Discharge Pressure | MPa | 0.70 | 0.93 | 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 | 18.3 | 15.6 |
| Nominal Motor Output | kW | 90 | | 100 | | 120 | | 100 | |
| Motor Type | — | 2-Pole TEFC Flange | | | | | | | |
| Intake Air Pressure / Temperature | — | Atmospheric Pressure / 0 – 45 | | | | | | | |
| Discharge Temperature | ℃ | Cooling Water Temperature +13 or below | | | | | | | |
| Discharge Pipe Diameter | B | 2 (Flange) | | | | | | | |
| Starting Method | — | Star-Delta (3 contact) | | | | | | | |
| Driving Method | — | Direct Connection + Gear Driven | | | | | | | |
| Lubricating Oil Filling | L | 16 (Not filled) | | | | | | | |
| Cooling Water Capacity | L/min | 160 | | | | 180 | | | |
| Cooling Water Temperature | ℃ | 35 or below | | | | | | | |
| Cooling Water Pipe Diamo | B | Rc 1-1/2 | | | | | | | |
| Weight | kg | 2,050 | | | | 2,230 | | | |
| Dimensions (W×D×H) | mm | 2,150×1,520×1,825 | | | | | | | |
| Noise Level (1.5m from front side) | dB(A) | 66 | 68 | 67 | 69 | 69 | 70 | 67 | 69 |

NOTE:

- Capacity is measured according to ISO 1217, fourth edition, Annex C.
- Sound level is the equivalent value at 1.5m in front and 1m height in an anechoic room, under full load operation with no auto drain function. It may vary in different operation conditions or environments. Sound level may be increased by 2dB 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 can be much worse at 0.60MPa or lower discharge pressure. P.D.P can be 13 degree C at 0.60MPa of discharge pressure PQ WIDEMODE ON.
- Capacity after built-in dryer is decreased by 3%.
- In case of dust-proof or package filter option, maximum ambient temperature is limited up to 40 degree C.
- Earth leakage circuit breaker is out of supply scope from Hitachi.
- These air compressors are not designed, intended or approved for breathing air applications.
- Pressures are indicated as the gauge pressure.
- Install the air compressor indoors and avoid flammable and corrosive environment, moisture and dust.
- Protruding objects such as discharge pipe are not included in Dimension.
- 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)

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



*The above picture shows the internal structure of 240kW Water-Cooled model (V-type).

High Capacity by Equipping New
NEXT II series Air-End

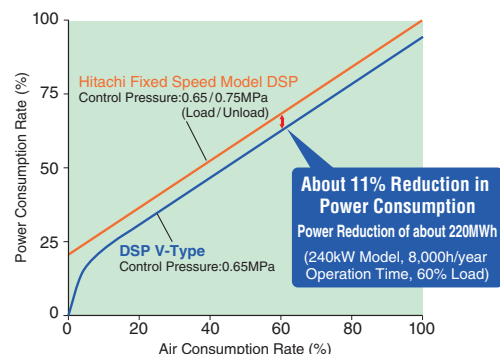
Low Noise Low Vibration

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 **NEXT II series** with Built-in Inverter.



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

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 precool system (Air-Cooled models)

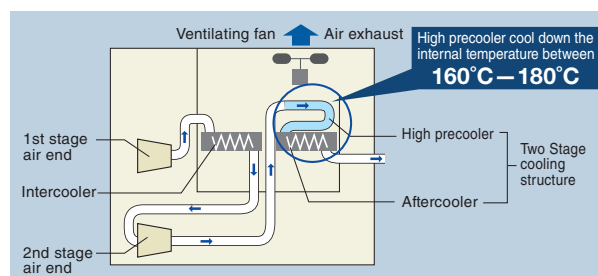
High precool system reduces temperature of extremely hot air after aftercooler and Two-Stage cooling structure improves reliability.

High Discharge Pressure Available

1.0MPa is available with high reliability.

Maintenance Friendly

DSP series provides easy accessibility for inspection and maintenance.



Specifications

■ Water-Cooled, V-type Model (160/240kW)

| Model | | DSP-160VW5N2 DSP-160VW6N2 | | | DSP-240VW5N2 DSP-240VW6N2 | | |
|------------------------------------|--------|--|------|------|------------------------------|------|------|
| Item・Unit | | | | | | | |
| Discharge Pressure | MPa | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 |
| Discharge Air Capacity | m³/min | 28.5 | 24.8 | 23.2 | 40.5 | 35.0 | 32.5 |
| Nominal Motor Output | kW | 160 | | | 240 | | |
| Motor Type | — | 4-Pole TEFC Flange Motor | | | | | |
| Intake Air Pressure / Temperature | ℃ | Atmospheric Pressure / 0 - 45 | | | | | |
| Discharge Air Temperature | ℃ | Cooling Water Temperature+13 or below | | | | | |
| Discharge Air Pipe Diameter | B | 2-1/2 (Flange) | | | 3 (Flange) | | |
| Starting Method | — | Inverter | | | | | |
| Driving Method | — | Direct Connection With Motor+Gear-Driven | | | | | |
| Cooling Water Flow Rate | L/min | 240 | | | 330 | | |
| Cooling Water Temperature | ℃ | 35 or below | | | | | |
| Coolant Water Pipe Diameter | B | Rc2 | | | | | |
| Lubricating Oil Quantity | L | 40 (Not filled) | | | 50 (Not filled) | | |
| Cooling Fan Motor Output | kW | 0.4 | | | | | |
| Weight | kg | 3,960 | | | 4,900 | | |
| Dimensions (W×D×H) | mm | 2,500×1,600×1,925 | | | 2,800×1,800×1,950 | | |
| Sound Level (1.5m from front side) | dB(A) | 70 | | | 71 | | |

■ Air-Cooled, Fixed Speed Model (132-240kW)

| Item・Unit | | Model | DSP-132A5N2 | | | DSP-145A5N2 | | | DSP-160A5N2 | | | DSP-200A5N2 | | | DSP-240A5N2 | | |
|------------------------------------|--------|--|-------------|------|------|-------------|------|-------|-------------|------|-------------------|-------------|------|------|-------------|------|--|
| | | | DSP-132A6N2 | | | DSP-145A6N2 | | | DSP-160A6N2 | | | DSP-200A6N2 | | | DSP-240A6N2 | | |
| Discharge Pressure | MPa | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | |
| Discharge Air Capacity | m³/min | 22.5 | 20.0 | 19.0 | 25.0 | 21.4 | 20.0 | 27.5 | 23.9 | 22.5 | 37.0 | 32.2 | 30.0 | 40.0 | 35.0 | 32.5 | |
| Nominal Motor Output | kW | 132 | | | 145 | | | 160 | | | 200 | | | 240 | | | |
| Motor Type | — | 4-Pole TEFC Flange Motor | | | | | | | | | | | | | | | |
| Intake Air Pressure / Temperature | ℃ | Atmospheric Pressure / 0 - 45 | | | | | | | | | | | | | | | |
| Discharge Air Temperature | ℃ | Ambient Temperature+15 or below | | | | | | | | | | | | | | | |
| Discharge Air Pipe Diameter | B | 2-1/2 (Flange) | | | | | | | | | 3 (Flange) | | | | | | |
| Starting Method | — | Star-Delta (3-contact) | | | | | | | | | | | | | | | |
| Driving Method | — | Direct Connection With Motor+Gear-Driven | | | | | | | | | | | | | | | |
| Lubricating Oil Quantity | L | 50 (Not filled) | | | | | | | | | 60 (Not filled) | | | | | | |
| Cooling Fan Motor Output | kW | 4.4 (1.1×4) | | | | | | | | | 6.0 (1.5×4) | | | | | | |
| Weight | kg | 3,860 | | | | | | 3,960 | | | 5,000 | | | | | | |
| Dimensions (W×D×H) | mm | 2,900×1,700×1,925 | | | | | | | | | 3,200×1,890×1,950 | | | | | | |
| Sound Level (1.5m from front side) | dB(A) | 73 | 74 | | 74 | 75 | | 74 | 75 | | 76 | 77 | | 77 | 78 | | |

■ Water-Cooled, Fixed Speed Model (132-240kW)

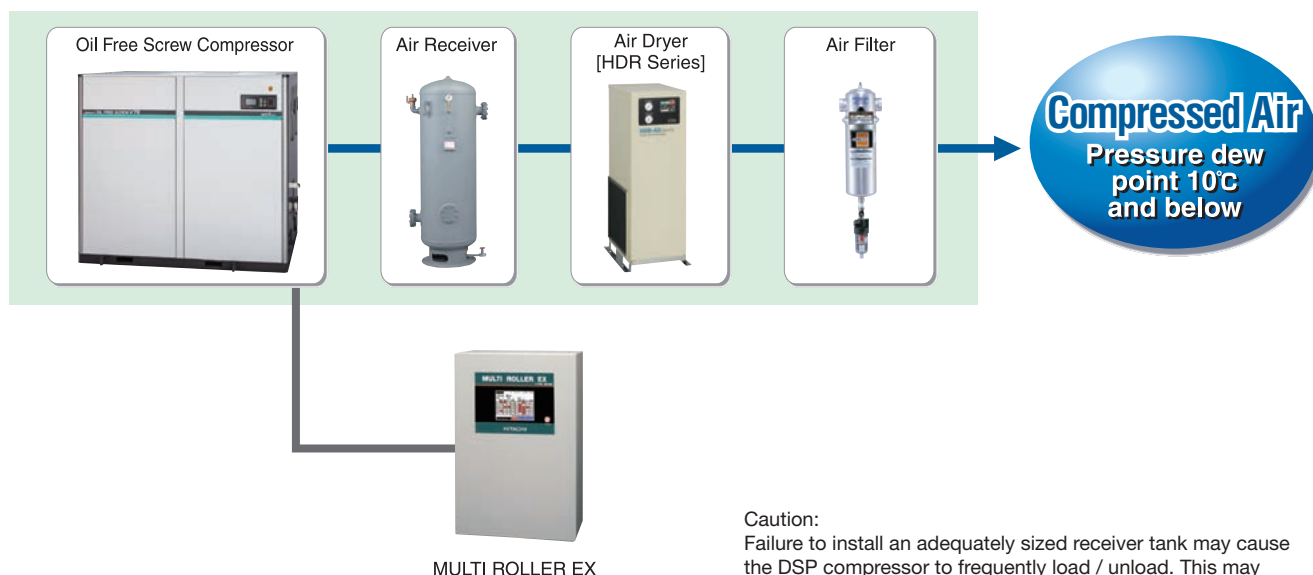
| Item・Unit | | Model | DSP-132W5N2 | | | DSP-145W5N2 | | | DSP-160W5N2 | | | DSP-200W5N2 | | | DSP-240W5N2 | | |
|------------------------------------|--------|--|-------------|------|------|-------------|------|------|-------------|------|------|-------------|------|------|-------------|------|--|
| | | | DSP-132W6N2 | | | DSP-145W6N2 | | | DSP-160W6N2 | | | DSP-200W6N2 | | | DSP-240W6N2 | | |
| Discharge Pressure | MPa | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | 0.75 | 0.93 | 1.0 | |
| Discharge Air Capacity | m³/min | 23.4 | 20.7 | 19.6 | 26.0 | 22.2 | 20.6 | 28.5 | 24.8 | 23.2 | 37.0 | 32.2 | 30.0 | 40.5 | 35.0 | 32.5 | |
| Nominal Motor Output | kW | 132 | | | 145 | | | 160 | | | 200 | | | 240 | | | |
| Motor Type | — | 4-Pole TEFC Flange Motor | | | | | | | | | | | | | | | |
| Intake Air Pressure / Temperature | ℃ | Atmospheric Pressure / 0 - 45 | | | | | | | | | | | | | | | |
| Discharge Air Temperature | ℃ | Cooling Water Temperature+ 13 or below | | | | | | | | | | | | | | | |
| Discharge Air Pipe Diameter | B | 2-1/2 (Flange) | | | | | | | | | | 3 (Flange) | | | | | |
| Starting Method | — | Star-Delta (3-contact) | | | | | | | | | | | | | | | |
| Driving Method | — | Direct Connection With Motor + Gear-Driven | | | | | | | | | | | | | | | |
| Cooling Water Flow Rate | L/min | 200 | | | 210 | | | 240 | | | 300 | | | 330 | | | |
| Cooling Water Temperature | ℃ | 35 or below | | | | | | | | | | | | | | | |
| Coolant Water Pipe Diameter | B | Rc2 | | | | | | | | | | | | | | | |
| Lubricating Oil Quantity | L | 40 (Not filled) | | | | | | | | | | | | | | | |
| Cooling Fan Motor Output | kW | 0.4 | | | | | | | | | | | | | | | |
| Weight | kg | 3,760 | | | | | | | | | | 4,600 | | | | | |
| Dimensions (W×D×H) | mm | 2,500×1,600×1,925 | | | | | | | | | | | | | | | |
| Sound Level (1.5m from front side) | dB(A) | 68 | 69 | | 69 | 70 | | 69 | 70 | | 69 | 70 | | 70 | 71 | | |

NOTE:

- Capacity is measured according to ISO 1217, fourth edition, Annex C.
- Sound level is the equivalent value at 1.5m in front and 1m height in an anechoic room, under full load operation with no auto drain function. It may vary in different operation conditions or environments
- In case of dust-proof or package filter option, maximum ambient temperature is limited up to 40 degree C, and discharge air temperature of air-cooled models is atmospheric temperature +18 degree C or less.
- Earth leakage circuit breaker is out of supply scope from Hitachi.
- These air compressors are not designed, intended or approved for breathing air applications.
- Pressures are indicated as the gauge pressure.
- Install the air compressor indoors and avoid flammable and corrosive environment, moisture and dust.
- Rear duct (200mm depth) and other protruding objects such as a discharge pipe are not included in dimension.
- 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



Caution:
Failure to install an adequately sized receiver tank may cause the DSP compressor to frequently load / unload. This may shorten the mechanical life of the compressor.

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 ± 0.001 MPa setting | | |
| Dimensions (W×D×H) | mm | | 400×200×600 | 500×200×900 | 500×200×1,200 |
| Weight | kg | | 19 | 32 | 37 |

Standard Specification

| Model | | Unit | SDR-3 | |
|------------------------------|--------------------------|------|---|------------|
| Power Supply | | — | AC100V (−10%+10%) [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 | — | | |
| | ElectricPulse · Extra ×2 | — | Optional terminals | |
| Output | Run × 2 | — | 1500ms w/out voltage | “a”contact |
| | Stop × 2 | — | Pulse AC250V0.3A | “b”contact |
| | Load/Unload Command × 2 | — | Dry contact | “c”contact |
| | Status × 2 | — | AC250V0.3A | “a”contact |
| 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 (W×D×H) | | mm | 300×160×400 | |
| Weight | | kg | 10 | |

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



Specifications

| Item | Unit | Content |
|---------------------|--------------------|--|
| ISO Viscosity Grade | — | 32 |
| Density @15°C | kg/L | 0.86 |
| Viscosity @40°C | mm ² /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 DSP: Every half year |

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

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.



Nonfood Compound
Program Listed Hds
NSF-Reg.No. 15061

Specifications

| Item | Unit | Content |
|---------------------|--------------------|---|
| ISO Viscosity Grade | — | 32 |
| Color Phase | — | Colorless and Transparent |
| Density @15°C | kg/L | 0.84 |
| Viscosity @40°C | mm ² /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 | m³/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 | | | | 0.40 – 0.97 | | |
| Max. Inlet Temperature of Compressed Air | ℃ | 80 | | | | | | |
| Ambient Temperature | ℃ | 5 – 40 | | | | | | |
| Dew Point of Outlet Air | ℃ | 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 (W×D×H) | mm | 303×603×720 | | 356×513×1,067 | 356×513×1,274 | 356×903×1,274 | 356×903×1,489 | 406×1,400×1,380 |
| 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 | m³/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 | | | | | 0.30 – 0.93 | | 0.30 – 0.97 | | | 0.30 – 0.93 | |
| Max. Inlet Temperature of Compressed Air | ℃ | 60 | | | | | | | | | | | |
| Ambient Temperature | ℃ | 2 – 40 | | | | | | | | | | | |
| Dew Point of Outlet Air | ℃ | 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 | m³/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 (W×D×H) | mm | 672×1,260 ×1,276 | 950×1,290×1,332 | | 1,969×905 ×1,583 | | 2,020×1,100×1,650 | | 672×1,260 ×1,276 | 950×1,290×1,332 | | 1,969×905 ×1,583 | 2,020×1,100×1,650 |
| 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 theambient pressure) | m³/min | 1.2 | 1.8 | 2.4 | 3.9 | 6.6 | 10.6 | 13.8 | 20 | 27.6 | 32 | 40 | 50 | |
| | | Inlet Air Temperature | ℃ | 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) | Rc1½ (40) | Rc1½ (40) | Rc2 (50) | Rc2 (50) | 2 1/2" (65) | 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 | ℃ | 5 – 60 | | | | | | | | | | | | |
| | Condition | Ambient Temperature Range | ℃ | 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 | 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 | ℃ | 5 – 60 | | | | | | | | | | | | |
| | Condition | Ambient Temperature Range | ℃ | 2 – 60 | | | | | | | | | | | | |
| | Density of Oil in the Discharge Air | | wtppm | 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 | 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 | ℃ | 5 – 60 | | | | | | | | | | | | |
| | Condition | Ambient Temperature Range | ℃ | 2 – 60 | | | | | | | | | | | | |
| | Density of Oil in the Discharge Air | | wtppm | 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 | 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 Model achieves

Energy saving operation without external controller

V-M Combination System

Energy saving operation by one **V**-type and maximum two Fixed Speed Model

Energy saving operation with external controller

Single-V System

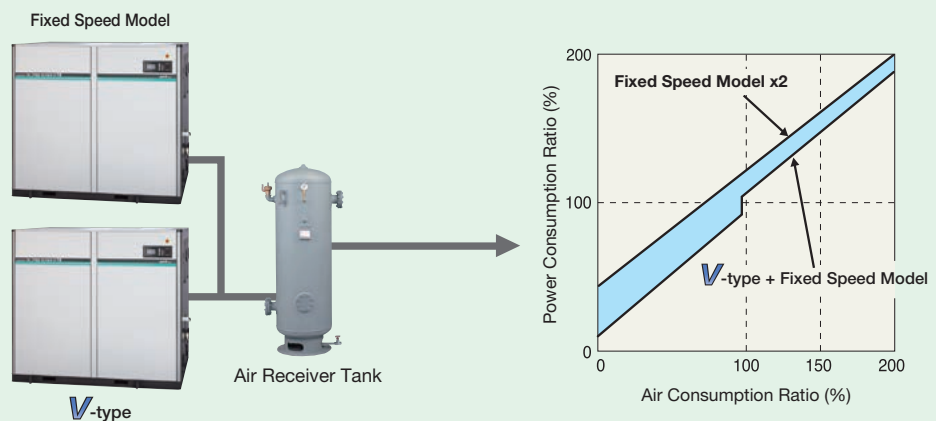
Energy saving operation by one **V**-type and more than one Fixed Speed Model with multi-unit controller.

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

Multi-V System

Energy saving operation and averaging **V**-type operating hour

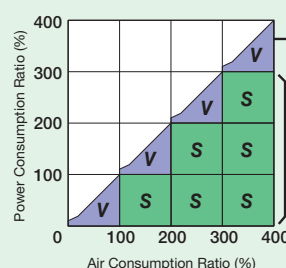
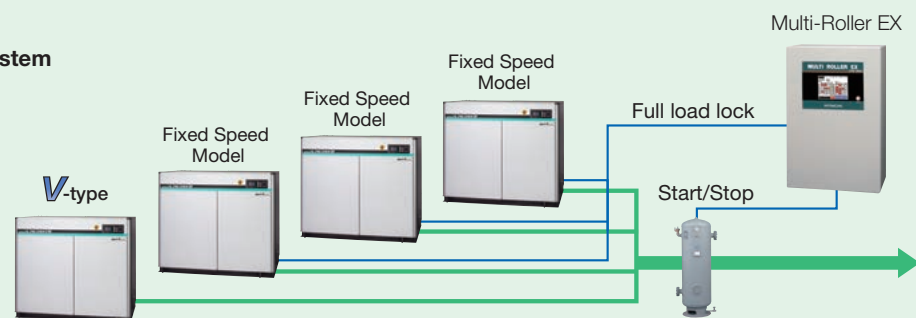
Basic Example of V-M Combination System



Single-V (Multi-V)

Example of Multi-Unit Control System

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



Explanation

V-type




Always running, follow the fluctuation of air consumption

Fixed speed type or **V**-type

Full load or stop

*S indicates Fixed Speed Model.

Options

| | DSP <i>NEXT II</i> series | | | | | |
|--|---|-------------------|--|-------------------|---|-------------------|
| | Single-Stage | | Two-Stage | | Two-Stage | |
| | V-type (VSD) | Fixed Speed Model | V-type (VSD) | Fixed Speed Model | V-type (VSD) | Fixed Speed Model |
| Nominal Output (kW) | 22 — 55 | 15 — 55 | 37 — 100 | 22 — 120 | 160/240 | 132 — 240 |
| |  | |  | |  | |
| Oil Mist Remover (OMR) | 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 | Standard | Standard |
| V-M Combination | ● | — *2 | ● | — *2 | ● | — *2 |
| Modbus®/TCP | ● | ● | ● | ● | ● | ● |
| 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 on the Fixed Speed Model is not 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.



Asia & Oceania

China

Hitachi Industrial Equipment Systems (China) Co., Ltd.
(Shanghai Branch)

Room2201, Rui Jin Building, No.205
Maoming Road(S) Shanghai 200020
TEL : +86 (21) 5489-2378
FAX : +86 (21) 3356-5070

(Beijing Branch)

Room1420, Beijing Fortune Building,
No.5 Dong San Huan Bei Road,
Chao Yang District, Beijing 100004
TEL : +86 (10) 6590-8180
FAX : +86 (10) 6590-8189

(Guangzhou Branch)

Room3003, HNA Tower,
8# Linhezhong Road, Tianhe District,
Guangzhou 510610
TEL : +86 (20) 3877-3819
FAX : +86 (20) 2735-3820

Hitachi Industrial Equipment Systems
(Hong Kong) Co., Ltd.

8/F, Building 20E, Phase 3, Hong Kong
Science Park, Pak Shek Kok,
New Territories, Hong Kong
TEL : +852 2735-9218
FAX : +852 2735-6793

Taiwan Hitachi Asia Pacific Co., Ltd
3rd Floor, No. 167, Tun Hwa N. Road,
Hung-Kuo Building, Taipei 10512, Taiwan
TEL : +886 (2) 2718-3666
FAX : +886 (2) 2514-7664

India

Hitachi India Pvt. Ltd.

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

Indonesia

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

Malaysia

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

Philippines

Hitachi Asia Ltd. Philippine Branch
Unit 8, 11th Floor Zuellig Bldg.,
Makati Avenue corner Paseo de Roxas
Makati City, Philippines 1225
TEL : +632 886-9018
FAX : +632 887-3794

Singapore

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

Thailand

Hitachi Asia (Thailand) Co., Ltd.

18th Floor, Ramaland Building, 952
Rama IV Road Bangrak, Bangkok 10500
TEL : +66 (2) 632-9292
FAX : +66 (2) 632-9299

Viet Nam

Hitachi Asia Ltd.
(Ho Chi Minh City Office)
4th Floor, The Landmark, 5B Ton Duc
Thang Street District 1, Ho Chi Minh City
TEL : +84 (8) 3829-9725
FAX : +84 (8) 3829-9729
(Ha Noi Office)
Sun Red River Bldg., 5th Floor,
23 Phan Chu Trinh Street
Hoan Kiem District, Hanoi
TEL : +84 (4) 3933-3123
FAX : +84 (4) 3933-3125

Australia

Hitachi Australia Pty Ltd.
Level 8, 123 Epping Road, North Ryde,
NSW 2113
TEL : +61 (2) 9888-4100
FAX : +61 (2) 9888-4188

Europe

Germany

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

Russian Federation

Hitachi, Ltd. (Moscow Office)

Millenium House, 12, Trubnaya, Moscow
107045
TEL : +7 (495) 787-4020
FAX : +7 (495) 787-4021

Latin America

Mexico

Hitachi Industrial Equipment
Mexico S.A. de C.V.
Avenida Rio Seguro 161, Parque Tecno
Industrial Castro del Rio Tramo
Irapuato-Silao km125, Carretera
Panamericana C.P.36810, Irapuato, Gto.,
Mexico
TEL : +52 (462) 693-7088, -7089, -7090
FAX : +52 (462) 693-7091

North America

U.S.A.

Hitachi America, Ltd.
(Industrial Components & Equipment
Division)
50 Prospect Avenue, Tarrytown,
New York, 10591-4625
TEL : +1(914) 332-5800
FAX : +1(914) 332-5555
(Charlotte Office)
(Industrial Components & Equipment
Division)
6901 Northpark Blvd., Suite A, Charlotte,
NC 28216
TEL : +1 (704) 494-3008
FAX : +1 (704) 599-4108

Products described in this catalog may differ from different countries or regions. Contact your nearest Hitachi representative office for details.

Product appearances and specifications in this catalog are subject to change with or without notice, as Hitachi continues to develop the latest technologies and products for its customers.

Hitachi Industrial Equipment Systems Co., Ltd.

For further information, please contact your nearest sales representative.

