

# Emeraude

Oil-free Screw Compressor General Catalog



Emeraude

KOBELCO COMPRESSORS CORPORATION

Information in this catalog such as values, photographs, evaluation is listed for the purpose of explaining the general features and performance of our products only, and it does not guarantee anything as a result. In addition, the information contained in this catalog is subject to change without notice, so please contact our sales offices above for the latest information.

Oil-free Screw Compressor 25100055S

# Change the Future by Air and Heat technology

## Towards the Carbon-free society with oil-free technologies

Amid growing global concerns about climate change, carbon neutrality, and other environmental issues, the world is actively working towards a low-carbon society.

Oil-free compressors, which produce clean compressed air, represent a significant step forward in mitigating environmental risks and advancing towards a low-carbon future.

With continuous advancements in environmental performance, oil-free machines, equipped with heat recovery systems for effective heat utilization and heat recovery dryers, are leading the way.

To accelerate the realization of a low-carbon society, KOBELCO remains committed to developing environmentally friendly compressors and energy-saving technologies.

**KOBELCO**



**ALE** Emeraude ALEIV / Two-stage dry screw



Motor output **55-120 kW**

Discharge air flow **6.9-19.7 m<sup>3</sup>/min**



P.9



Motor output **132-400 kW**

Discharge air flow **18.8-66.8 m<sup>3</sup>/min**



P.11

Diverse choices for the best of your use.



INVERTER control\*1



IPM motor\*2



Full color touch monitor



Group control with hard wire\*3



Customize\*4

**FE·VF·VE**

Emeraude FE·VF·VE / Two-stage dry screw



Motor output **22-55 kW**

Discharge air flow **2.0-7.9 m<sup>3</sup>/min**



P.23

\*1 Not all are INVERTER model. \*2 Only available for INVERTER model. \*3 Availability of group control with hard wire varies depending on controller type. \*4 Customization menu is different for each model. Please refer to pages 18-22 for details.



## Oil-free Worry-free

What's most essential value for oil-free compressors is to supply pure, clean, oil-free air stably in any running conditions. For critical applications, such as, food and beverages processing, semiconductor and electronics manufacturing, medicines manufacturing and more, even the smallest oil contamination never been accepted.

As a pioneer of oil-free technology with over 60 years of history, Emeraude ALE/FE series assure safe oil-free compressed air and utmost reliability for your production.

### Class 0 certified



KOBELCO has received Class 0 certification\* (ISO8573-1 [-:-:0]) for <Emeraude ALE> series from international test institute called TÜV which certifies the highest level of purity for quality classifications of compressed air. This is one proof of KOBELCO's supreme oil-free technology.

\* The Class 0 certification can be downloaded from our website.

CLASS	Concentration total oil ( aerosol, liquid, vapor ) mg/m <sup>3</sup>
<b>0</b>	<b>As specified by equipment user or supplier and more stringent than class 1</b>
1	≤ 0.01
2	≤ 0.1
3	≤ 1
4	≤ 5

### KOBELCO's unique design to ensure "Oil-free"

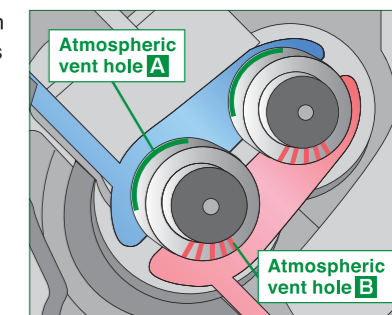
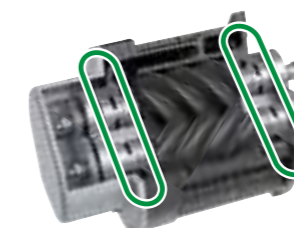
#### Dual vent holes design

( Common for ALEIV / FE )

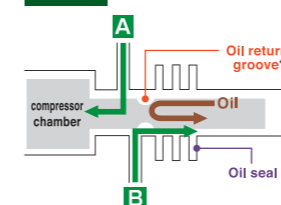


Dual vent holes design

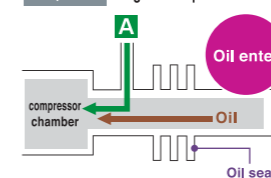
KOBELCO's proven dual vent holes design prevents oil entry in compressor chambers during long unload running.



#### KOBELCO Dual vent holes design



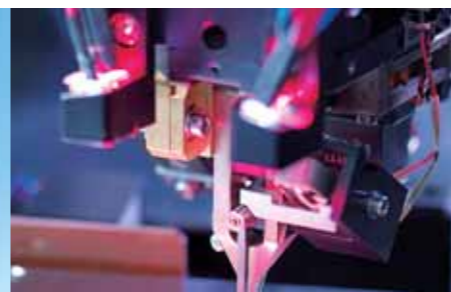
#### Competitors Single atmospheric vent hole



#### 3 steps of reliable shaft seal structure (during unloading)

1. Highly reliable oil seal prevents oil entry.
2. Oil return groove\* pushes back oil even if oil break through oil seal.
3. Oil is exhausted from atmospheric vent hole B even if oil breaks through oil return groove\*. Pressure between vent hole A and B is equal, so oil doesn't enter into compressor chambers.

\* Oil return groove is applicable for ALEIV





**EMERALDE-ALE**

**KOBELCO**

## Evolution continues, New generation starts

Now, brand-new chapter in the over 60 years history of KOBELCO's oil-free technology has just started, New generation Emerald ALE debut. With ultimate specific power consumption, supreme silence and outstanding durability, Emerald ALE reached new stage in the industry. Proudly standing dark green elegance is the result of our never ending challenges for technology innovation and craftsmanship improvement over the long history. Pursuing the perfection, making it a masterpiece.

### Key Features



#### Best in class specific power consumption

With newly developed air-ends and optimized package design, achieved best in class specific power consumption.



#### Class 0 certified

KOBELCO's oil-free technology is proven by Class0 certification\* (ISO8573-1 [-:-:0]) which certifies the highest level of purity for quality classifications of compressed air.

\*The Class 0 certification can be downloaded from our website.



#### Long overhaul cycle

Thanks to long life cycle bearing and optimized design of air-ends, long overhaul cycle can be achieved. (1st stage : 9years/ 2nd stage : 6years)



#### Outstanding quietness

The insulation materials, flow of unit ventilation air, and frequency of noise were all reviewed and optimised for outstanding quietness.



#### Full color touch monitor

Newly developed sophisticated LCD interface enables you to figure out necessary information at a glance.

# EMERAUDE-ALE ALEIV

Motor power	Discharge air flow	Specification
55-120kW	6.9-19.7m <sup>3</sup> /min	P.24-26



## Setting a new standard for specific energy performance in its class. The future of mid-range Oil-free.

By optimizing energy efficiency throughout the entire system, we have set a new benchmark for specific energy performance in its class. A mid-range model that paves the way for the future with cutting-edge performance.

- Best in class specific power consumption
- Class 0 certified
- Long overhaul cycle
- Outstanding quietness
- Sophisticated full color touch monitor

## Energy saving

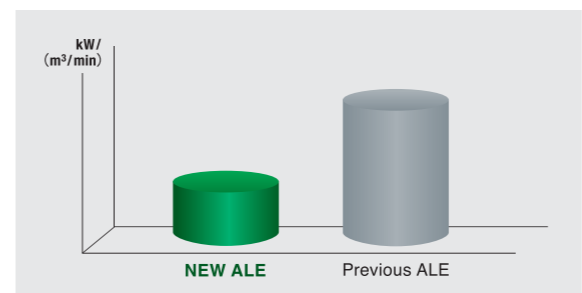
Best energy efficiency in mid-range models.

### Class-leading specific power consumption

With specific power consumption as our primary design criterion, we strive to deliver products that maximize energy efficiency for our customers. The integration of ultra-high-efficiency motors and optimized package design has enabled us to set a new benchmark for specific energy performance in its class.

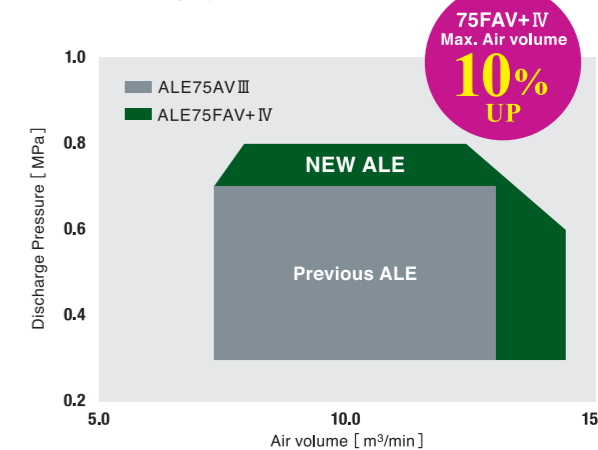
Compared with Previous ALE  
**9% UP**  
(ALE75FAV+IV)

### Comparison of specific power consumption



### Wide-range control

Wide range control can deliver higher airflow at lower pressure point. ALE IV senses line pressure and automatically utilizing excess power during low-pressure operation efficiently. At 0.6MPa operation, airflow can be increased by up to 10% (75kW).



## Key components

Sophisticated components support ALE's high performance.

### High-efficient motor (Fixed-speed : IE4, Inverter : IE5 equivalent)

To pursue energy efficiency, we adopt high-efficiency motors. ALE IV fixed-speed models are equipped with IE4 super-premium motors, and inverter models feature ultra-high-efficiency IPM motors which are IE5 equivalent.



### Enhancing usability with touchscreen controller

Equipped with a 7-inch full-color touch screen controller, it allows for easy monitoring of compressor operation and various settings.



Running condition

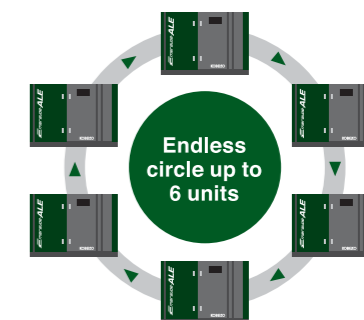
Setting

● Discharge pressure setting : set and choose 3 patterns

Modbus I/O as standard

### Group control (up to 6 units)

By interconnecting multiple units, max. 6 units can be automatically operated, achieving optimal energy-saving operation without group controller.



# Emeraude-ALE ALEIV

Motor power	Discharge air flow	Specification
132 - 400 kW	18.8 - 66.8 m <sup>3</sup> /min	P.25-26



## Ultimate Energy Efficient KOBELCO's Flagship.

By developing state-of-the-art air-ends and optimized package design, we achieved best in class specific power consumption as well as utmost durability. Here, new standard of oil-free compressors starts.

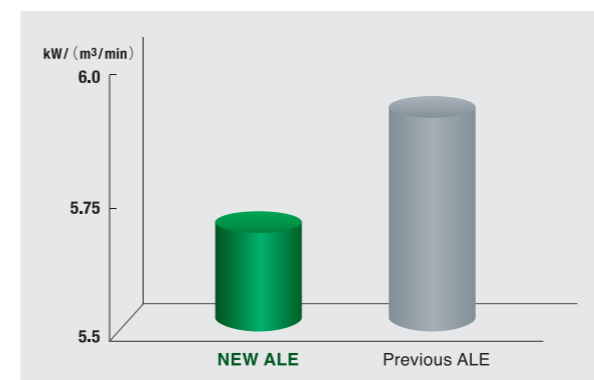
- Best in class specific power consumption
- Class 0 certified
- Long overhaul cycle
- Outstanding quietness
- Sophisticated full color touch monitor

## Energy saving

Supreme energy efficiency for the lowest possible ownership cost.

### Class-leading specific power consumption

#### Comparison of specific power consumption



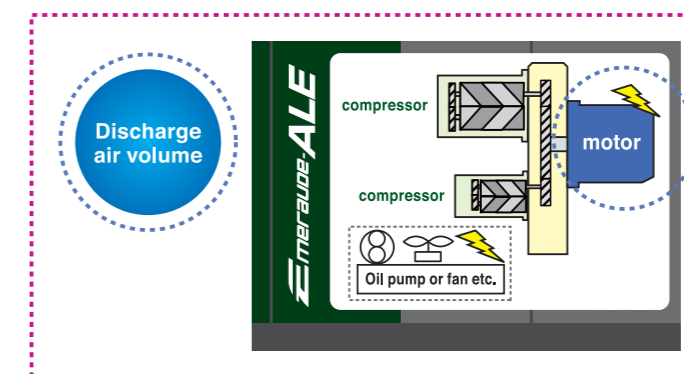
New ALE's performance is evaluated by specific power consumption as per JIS B 8341:2008 (ISO1217 Edition3 equivalent). KOBELCO places an importance on not only shaft power but also compressor's total input power including energy loss in the compressor because electricity consumption for customers is not shaft power and rated motor power but compressor's total input power.

Compared with Previous ALE **3% Performance improvement**

\*Comparison of 132kW models

### Why "Specific power consumption" ?

Specific power consumption is the new valuation standard based on compressor's total input power and discharge air volume. It shows the actual customer's energy use.



- |   |   |  |
|---|---|--|
| <p><b>Previous valuation standard</b> -----</p> <ul style="list-style-type: none"> <li>① Discharge air volume</li> <li>② Shaft power</li> </ul> | <p><b>New valuation standard</b> -----</p> <ul style="list-style-type: none"> <li>① Discharge air volume</li> <li>② Compressor input power</li> </ul> | <p><b>Compressor input power (Motor input power + auxi-motor input power) ÷ Discharge air volume</b></p> |
|---|---|--|

Previous valuation standard evaluated discharge air volume and shaft power separately. New valuation standard evaluate "specific power consumption" which shows energy consumption to create compressed air of 1m<sup>3</sup>/min in addition to discharge air volume. This means an actual compressor performance including fan motors and an oil pump.

KOBELCO has achieved class-leading performance with specific power consumption because of newly designed rotors, reduction of energy loss and selection of high efficient components.

## Newly designed high efficiency rotors



A new rotor profile has been designed using advanced analysis technology that KOBELCO has fostered in their long history since developing the first oil free screw compressor in Japan in 1956. KOBELCO has achieved class-leading specific energy consumption thanks to the new rotors which have been designed superior performance.

### [ Improved Points ]

- Optimization of the inter stage pressure
- Optimization of rotor clearance
- Improvement of shaft sealing structure

## Package design for no wasted energy

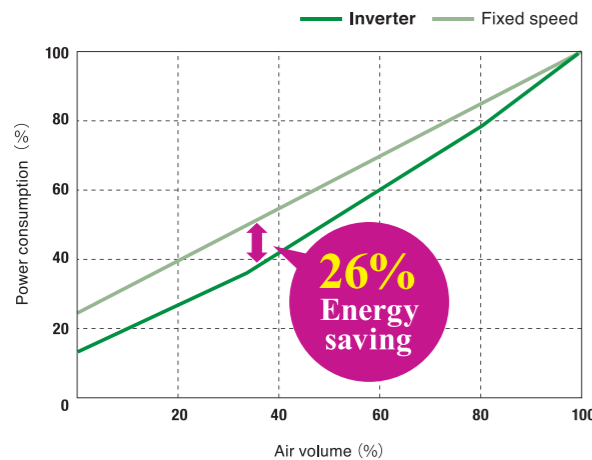
Internal piping design, high efficiency motors and fans contribute to energy savings. Moreover, gas coolers' optimization decreases the discharge temperature and downsizes auxiliary equipment such as dryers. This leads energy saving of not only compressors but also clean air systems.



## Partial-load performance of Inverter model

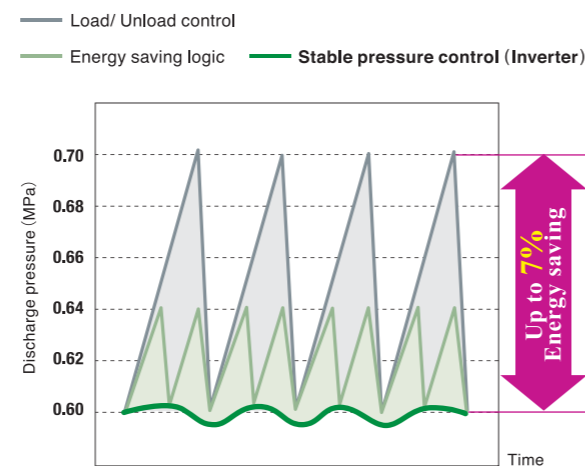
Inverter model's partial load performance has been improved thanks to IPM motor and superior rotor design. Inverter model supplies required air volume in appropriate power consumption.

### ■ Performance curve of KOBELCO Inverter model



## Stable pressure control of Inverter model Energy saving logic of Fixed speed model

Stable pressure control of Inverter model keeps the line pressure lower. And the pressure fluctuation is kept within 0.01MPa. Energy saving logic of Fixed speed model forcibly switch loading to unloading at every capacity control cycle (min 23sec). Excessive pressure rise is eliminated and energy loss is minimized.

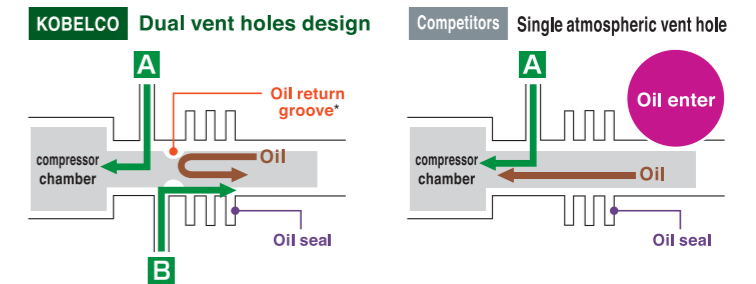


## Reliability

Reliability does matter, as used in critical applications.

## Unique design to ensure "Oil-free"

KOBELCO's proven dual vent holes design prevents oil entry in compressor chambers during unload running. (Please see page6 for more detail)



## Class 0 certified

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\*The Class 0 certification can be downloaded from our website.



CLASS	Concentration total oil (aerosol, liquid, vapor) mg/m <sup>3</sup>
<b>0</b>	As specified by equipment user or supplier and more stringent than class 1
1	≤ 0.01
2	≤ 0.1
3	≤ 1
4	≤ 5

## Long life cycle

Long Overhaul cycle has been achieved thanks to long life cycle bearings.

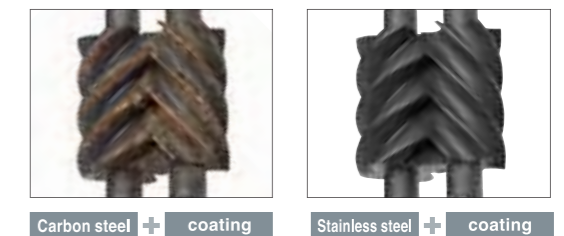
### ■ Standard Overhaul cycle



## Superior Anti-corrosion performance

Proven Teflon coating and 2nd stage's Stainless steel rotors secure high durability against drain attack and prevent performance deterioration due to corrosion.

### ■ Anti-corrosion test results



\*Picture may vary from actual products

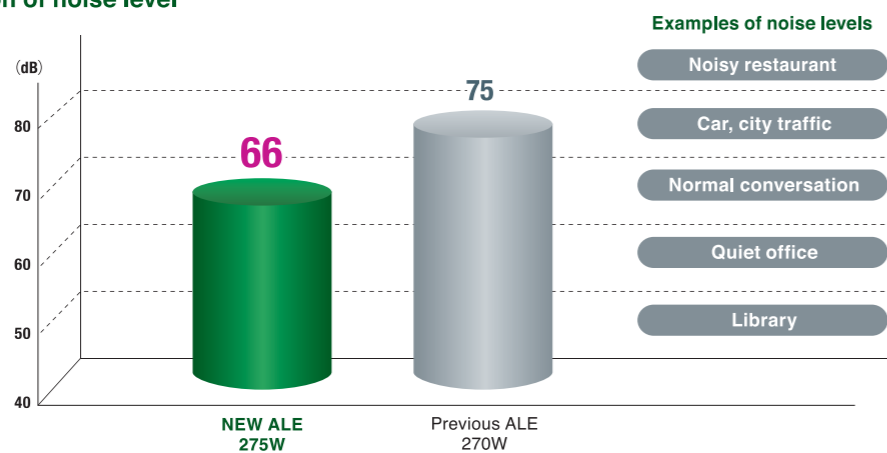
Usability

Advanced usability for your comfortable daily operations.

Outstanding quietness

Various noise control techniques has drastically reduced sound level. Making the working environment more comfortable.

Comparison of noise level



Package structure for noise reduction

Cooling air inlet points have been put into one place to reduce noise.

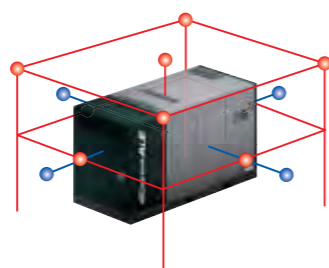
Panel design

Noise absorbing material and high sealing ability against abrasive noise reduce noise leakage.

Silencer

Newly designed suction and discharge silencers reduce noise level.

New measurement standard is more stringent than previous one because of 9point average and 1m around the unit.



- New measurement standard**  
9 point average measured at a distance of 1m around the unit or 1m above the unit
- Previous measurement standard (as per manufacturer's standard)**  
4 point average measured at 1m height and 1.5m around the unit

Easy maintenance

Easy access to key service parts for maintenance thanks to large panels and reduction of internal piping.



Exhaust cleaner without power source or instrument air

Filter type and compact exhaust cleaner has over 99% of oil mist separation performance and keeps inside of unit clean. Moreover, pressure resistance doesn't increase for long time because oil mist is separated itself.



User-friendly controller with 7 inch large size touch screen panel

It's easy to check and set running conditions.

- Running condition 1**
- Setting 1**  
● Discharge pressure setting : set and choose 3 patterns
- Setting 2**  
● Weekly timer setting ● Output contact setting  
● Maintenance timer setting ● Language
- Running condition 2**
- Trouble shooting**
- Alarm records**  
● Show estimated causes of each alarm
- Running records**  
● Show running records of every 5sec & 1hr and daily & weekly reports
- Others**  
● Show graphs of discharge pressure, load rate and motor current

Protection features

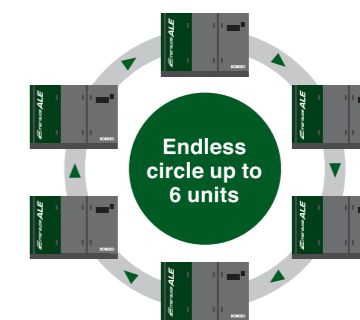
- 7500V surge protector
- Water flow switch (for water cooled model)
- Emergency stop button
- Motor winding temperature detection
- Password protection

Data logging with USB

Running data (CSV file) can be output from monitor to USB memory stick.

Group control

Max. 6 units can be automatically operated without a group control panel.



## Key components

Key components for high performance.

### Plate fin gas cooler (water cooled)



80% of pressure drop has been cut compared with shell & tube type. Additionally, because discharge air temperature has been reduced by optimization of cooler size, auxiliary equipments are downsized.

### Capacity control valve



Proven pneumatic capacity control valve having quick response and high durability. Maintenance parts have been reduced thanks to built-in blow-off silencer.

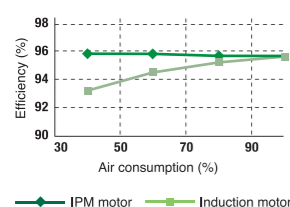
### Main motor



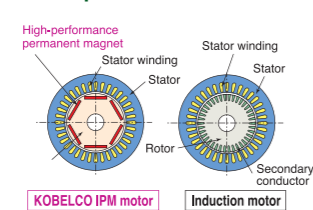
#### ● IPM motor for Inverter model

Heat loss is small and high efficiency is kept even during low load condition.

#### ● Comparison of motor efficiency (for reference)



#### ● Comparison of structure (for reference)



#### ● IE3 motor for fixed speed model

Fixed speed model (380-460V) has IE3 high efficiency induction motor.

### Discharge silencer



KOBELCO Patented Expansion & Porous Silencer reduces noise level in broad frequency band.

\*Expansion Silencer for 200kW and above

### Oil pump



Oil pump attached to gear box is driven by a high efficiency main motor. The risk of oil leakage is reduced by no-piping design.



Customize

## Customized compressors tailored to your exact requirements.

KOBELCO's Oil-free compressors offer flexible customization options to suit your installation environment and application. We provide the perfect air solution for your specific needs.

Customize 01

### Large-size, water-cooled inverter compressor

#### Higher airflow with supreme energy saving performance



Inverter models are available for large, water-cooled compressors (315-400kW) by customization. Stable pressure control eliminates excessive pressure rise and inverter controls motor rotating speed according to air demand, resulting in exceptional energy efficiency.

Motor power

**315-400kW**

Discharge air flow

**48.0-66.6 m<sup>3</sup>/min**

#### ■ Specification

Model	Max. Discharge Pressure MPa	Free Air Delivery		Main motor kW	Discharge Connection	Dimensions		Noise Level dB(A)	Voltage	Weight kg
		50/60Hz				W x D x H mm				
		m <sup>3</sup> /min	cfm							
ALE315W IV - V	0.75	54.7	1,931	315	JIS10k 100A FF	3,850 x 2,000 x 2,400	70	380-440	9,700	
	0.86	51.2	1,808							
	1.04	48.0	1,695							
ALE355W IV - V	0.75	63.0	2,225	355	JIS10k 100A FF	3,850 x 2,000 x 2,400	70	380-440	9,850	
	0.86	58.9	2,080							
	1.04	54.6	1,928							
ALE400W IV - V	0.75	66.6	2,352	400	JIS10k 100A FF	3,850 x 2,000 x 2,400	70	380-440	10,100	
	0.86	62.9	2,221							
	1.04	58.8	2,076							

Motor specifications: IPM motor, 4-pole totally enclosed fan-cooled, Insulation class F, Rated for continuous use Drive system: Step-up gear. Stable control pressure 0.75MPa model: less than 0.70MPa, 0.86MPa model: less than 0.81MPa, 1.04MPa: less than 0.99MPa

#### Water cooled model

Model	Cooling water Quantity	ΔT °C	Water inlet temperature °C	Water inlet/outlet connection	Initial lubricant charge L
	L/min				
ALE315W IV - V	492	10	32	JIS10k 80A FF	50
ALE355W IV - V	555				
ALE400W IV - V	625				

\*Keep the water temperature below 40°C for water cooled model.  
\*Please refer to standard specification manual for water quality.

\*Suction conditions Absolute suction pressure: 0.10MPa, Suction temperature: 30°C, Humidity: 75%RH  
\*Discharge air volumes is converted to suction conditions.  
\*Discharge pressures are measured after gas coolers.  
\*Air produced by compressors should not be used in respiratory equipment furnishing air for direct inhalation.  
\*Since the cooling for the compressed air & the inside of the compressor unit depends on the surrounding air condition, the surrounding air must be properly ventilated to prevent the ambient temperature from rising above 45°C. (For air-cooled 1.04MPa model, the surrounding air temperature should not exceed 40°C)  
\*Please be sure to use the lubricating oil recommended by KOBELCO.  
\*Appearance and specifications are subject to change without notice.  
\*Consult us individually, regarding guaranteed performance values.

Customize 02 **Heat recovery**

Recover and utilize wasted heat energy

TR Series, heat recovery unit, is newly developed for water-cooled oil-free compressors. By recovering thermal energy, TR series contribute to improve entire plant energy efficiency and reduce CO<sub>2</sub> emissions.



Oil-free compressor

Up to **92%** of heat energy can be recovered

Up to **90°C** hot water can be supplied

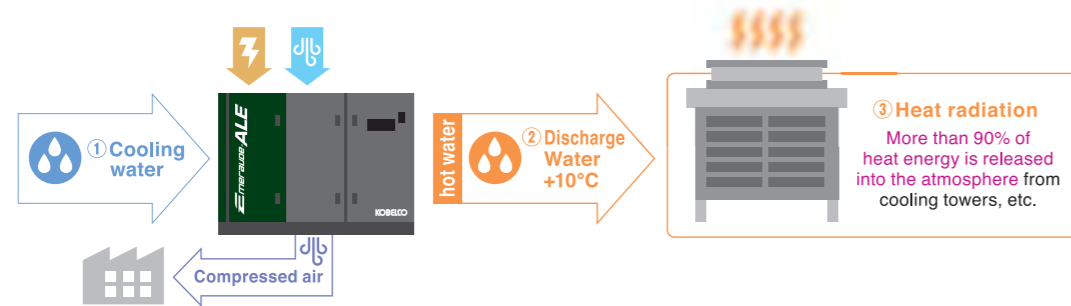


Heat recovery unit TR series

What is a "Heat recovery" ?

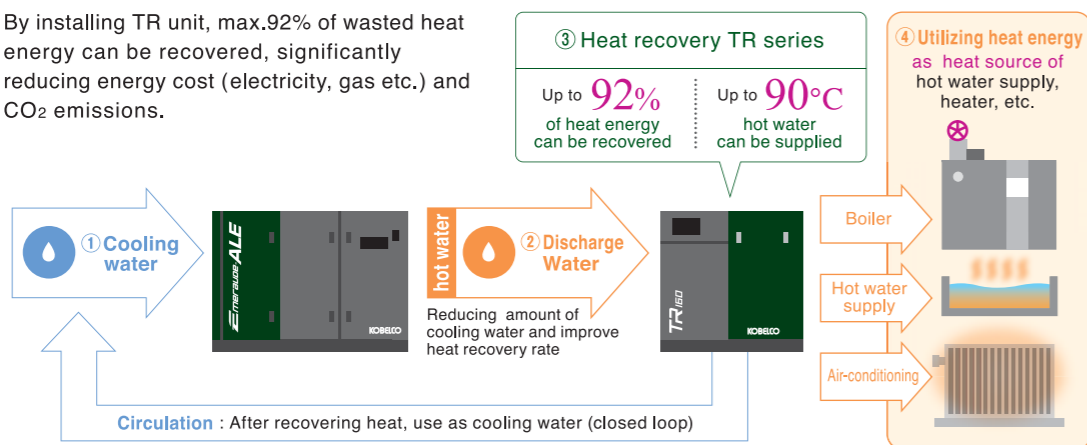
Without TR unit **Wasting recoverable energy through cooling towers**

Electrical energy input to compressors is converted into thermal energy during the air compression process. In conventional compressors, over 90% of thermal energy is wasted typically through cooling towers.



With TR unit **Up to 92% of heat energy can be recovered** \*depending on conditions

By installing TR unit, max.92% of wasted heat energy can be recovered, significantly reducing energy cost (electricity, gas etc.) and CO<sub>2</sub> emissions.



\*Heat recovery system can be added to your current ALEIV compressor. Minor modification of compressor will be required.

Hot water recovery unit-TR series



Maximizing heat recovery efficiency

By modifying cooling water line, heat can be recovered not only from gas coolers (inter/after-cooler), but also from oil cooler and the compressor.

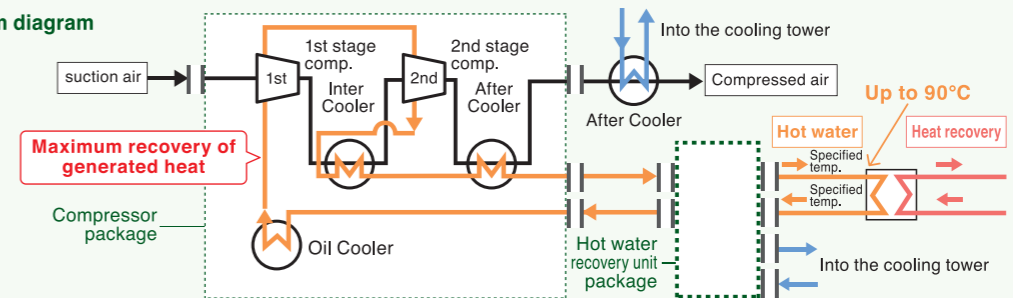
Minimizing energy loss

No modification for compressor's air line is required. This prevents any pressure drop that causes energy loss.

Safe and quiet package

Coolers and high-temperature air piping are enclosed inside the package. This leads to safe working environment and noise reduction.

System diagram



Recovered heat energy can be utilized for various purposes

Applicable industries (Example)

<b>Pharmaceutical</b> Cultivation, Humidification, Cleaning, etc.	<b>Food, Beverage</b> Pasteurization, Sterilization, etc.	<b>Electrical equipment, Semiconductors</b> Air conditioning, Humidification, Cleaning, Hot water supply, etc.	<b>Chemicals</b> Humidification, Cleaning, Hot water supply, etc.
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Purpose of using

- Pre-heating of boiler
- Heater · Shower
- Heated Pool

The environment and business both gain significant benefits

Benefits of hot water recovery (Preheating of boiler, Hot water temp:40°C→75°C)

Model	CO <sub>2</sub> reduction	Cost benefit	Recovery heat	
	t-CO <sub>2</sub> /yr	USD/yr	MJ/h	kWh
ALE160W IV	210	76,500	510	140
ALE250W IV	330	118,000	790	220
ALE275W IV	350	129,000	860	240
ALE400W IV	480	175,000	1,160	330

For a 250kW compressor

CO<sub>2</sub> reduction **330** t-CO<sub>2</sub>/yr

Cost benefit **118,000** USD/yr

( Conditions ) Suction conditions : 30°C 75%RH, Discharge pressure : 0.7MPa, Compressor : Continuous LD operation (load factor : 100%)  
Annual operating hours : 8,000hr, Electricity unit cost : 0.17USD/kWh, Gas unit cost : 0.83USD/m<sup>3</sup>  
Heating value of city gas (LHV) : 9,700kcal/m<sup>3</sup>, Boiler efficiency : 96%, CO<sub>2</sub> emission factor: (electricity) 0.55kg-CO<sub>2</sub>/kWh, (gas) 2.29kg-CO<sub>2</sub>/m<sup>3</sup>  
\*Depends on temperature of hot water recovery and system.

Specification

Model	TR160	TR275	TR400
Compatible compressor model	ALE132W (V) IV ALE145W IV ALE160W (V) IV	ALE200W IV ALE250W (V) IV ALE275W IV	ALE315W IV (-V) ALE355W IV (-V) ALE400W IV (-V)
Recoverable water temp.	Up to 90°C *Depends on specification and condition		
Heat recovery efficiency	Up to 92%		
Dimensions W × D × H	1,520 × 980 × 1,500mm		
Piping connection	JIS 10K-40A-FFequiv. × 4parts JIS 10K-50A-FFequiv. × 2parts		
Voltage	200-220V, 380-440V		
Pump motor	0.75kW	1.5kW	2.2kW
Weight	430kg	470kg	500kg

Customize 03 **Outdoor models**

**Solution for your space constraints with outdoor models**

Our outdoor package provide a solution for limited indoor space. These specialized enclosures, engineered for harsh outdoor environments, offer superior weatherproofing and dustproofing, allowing for safe and reliable operation.



**Best solution for...**

- Limited indoor space for compressor installation
- Insufficient ventilation for additional compressor

- Corrosion-resistant coating
- Specialized cover for touch screen controller
- SUS bolts for exposed parts

Customize 04 **Low-pressure single-stage compressor**

**Energy saving solution for lower pressure application**

For applications requiring pressures below 0.25MPa, lower pressure single-stage oil-free compressor is available. This single-stage design results in significantly lower power consumption compared to two-stage compressors, thereby reducing operational costs.

**Specification**

**Inverter / Water cooled model**

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW
		m <sup>3</sup> /min	cfm	
ALE100WV IV-SL	0.25	28.8	1,017	100
ALE132WV IV-SL		37.8	1,335	132
ALE160WV IV-SL		47.4	1,674	160
ALE315WV IV-SL		65.3	2,306	210 equiv.

**Fixed speed / Water cooled model**

Model	Max. Discharge Pressure MPa	Free Air Delivery*		Main motor kW
		m <sup>3</sup> /min	cfm	
ALE75W IV-SL	0.25	21.2	749	75
ALE90W IV-SL		26.1	922	90
ALE100W IV-SL		28.6	1,010	100
ALE132W IV-SL		37.3	1,317	132
ALE145W IV-SL		40.5	1,430	145
ALE160W IV-SL		47.5	1,677	160
ALE315W IV-SL		65.6	2,316	210 equiv.

**Inverter / Air cooled model**

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW
		m <sup>3</sup> /min	cfm	
ALE100AV IV-SL	0.25	27.8	982	100
ALE132AV IV-SL	0.23	36.9	1,303	132
ALE160AV IV-SL		46.9	1,656	160

**Fixed speed / Air cooled model**

Model	Max. Discharge Pressure MPa	Free Air Delivery*		Main motor kW	
		m <sup>3</sup> /min	cfm		
ALE75A IV-SL	0.25	20.6	727	75	
ALE90A IV-SL		25.1	886	90	
ALE100A IV-SL		27.7	978	100	
ALE132A IV-SL		36.6	1,292	132	
ALE145A IV-SL		0.23	39.7	1,402	145
ALE160A IV-SL			46.6	1,645	160

\*Free Air Delivery of fixed-speed models is based on 50Hz model. 60Hz models are also available.  
\*Please contact us for details.

\*Since the cooling for the compressed air & the inside of the compressor unit depends on the surrounding air condition, the surrounding air must be properly ventilated to prevent the ambient temperature from rising above 40°C.

\*Please be sure to use the lubricating oil recommended by KOBELCO.

\*Specifications and appearances are subject to change without notice.

\*Consult us individually, regarding guaranteed performance values.

\*Suction conditions Absolute suction pressure : 0.10MPa,

Suction temperature : 30°C, Humidity : 75%RH

\*Discharge air volumes is converted to suction conditions.

\*Discharge pressures are measured after gas coolers.

\*Air produced by compressors should not be used in respiratory equipment furnishing air for direct inhalation.

**Tailor your compressor to perfection with extensive customization options.**

We offer a wide range of custom options, from small part additions and replacements to large-scale specification changes, to meet your specific needs.

**Option & Customization menu for ALEIV Series**

	Menu	Explanation	Applicable model				
			Fixed speed		Inverter		
			Water cooled	Air cooled	Water cooled	Air cooled	
Option	Drain Bypass		●	●	●	●	
	Circuit for Water Supply Electric Valve		●	—	●	—	
	Dust Filter for Air-cooled Machine	For cooler inlet	—	●	—	●	
	Companion Flange		●	●	●	●	
	Chemical Anchor Bolt	For compressor unit / For starter panel	●	●	●	●	
	Line pressure control		●	●	●	●	
	External communication	PROFIBUS		●	●	●	●
		DeviceNet		●	●	●	●
		CC-Link		●	●	●	●
		EtherNet		●	●	●	●
	External contact output	Individual output signal for caution/emergency stop		●	●	●	●
		Individual analogue signal output		●	●	●	●
	Display cooling water inlet/outlet temperature		●	—	●	—	
	Food grade oil		●	●	●	●	
	Customization	Hot water recovery (132-400kW)	Please refer to Page.19	●	—	●	—
Low-pressure Single-stage Compressor		Please refer to Page.21	●	●	●	●	
Large-size Inverter Compressor (315-400kW)		Please refer to Page.18	—	—	●	—	
Outdoor Model (132-400kW)		Please refer to Page.21	●	●	●	●	
Corrosion-resistant Coating Package			●	●	●	●	
Internal Heater for Low-temperature Environment			●	●	●	●	
Air purge in Electrical Panel			●	●	●	●	
Inverter model - Load Ratio Signal Output			—	—	●	●	
Material Change of Water-cooled Gas Cooler			●	—	●	—	
Protect Cover for Emergency Stop Button			●	●	●	●	
Change of Grease Nipple			●	●	●	●	
Change of Controller Panel Button Color			●	●	●	●	
Change of Piping Connection			●	●	●	●	
Hole in Anchor			●	●	●	●	
Water Supply Electric Valve			●	—	●	—	
Local Control Panel Customization		Change Control Circuit Voltage : 200V → 100V		●	●	●	●
		Auxiliary Equipment Circuit Breaker : MCCB → LCB		●	●	●	●
Reactor Starter Panel Customization		Change of Starting Method		●	●	—	—
		Cable Entry Port on Top Side		●	●	—	—
		Outdoor model		●	●	—	—
		Corrosion-resistant Coating Package		●	●	—	—
		Lamp Color Change		●	●	—	—
		Protect Cover for Live Part		●	●	—	—
		Internal Lighting (with Door Switch)		●	●	—	—
		Auxiliary Power Supply		●	●	—	—
	Multimeter		●	●	—	—	
	Voltmeter, Wattmeter, Power Factor Meter		●	●	—	—	
Main Motor Customization	Integrating Wattmeter		●	●	—	—	
	Power Outage Signal Output		●	●	—	—	
	Different Voltage Support		●	●	—	—	
	Space Heater		●	●	●	●	
	Thermocouple for Motor Bearing		●	●	●	●	
	F Class Insulation / B Class Temperature Rise		●	●	—	—	
	Anti-Corrosion Treatment		●	●	—	—	

\*For details of above specification and those not listed, please contact our sales staff.

# Emeraude-*FE·VF·VE*

Motor power	Discharge air flow	Specification
<b>22 - 55 kW</b>	2.0 - 7.9 m <sup>3</sup> /min	P.27

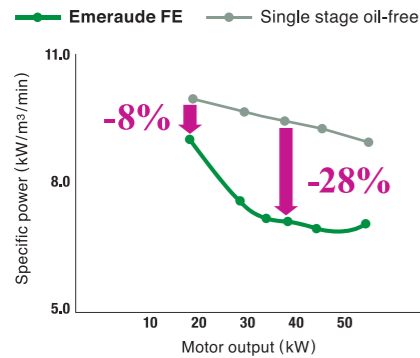


Energy saver with Two-stage compression.

- Supreme specific power consumption
- Highly efficient two stages compression
- Ultimate clean air

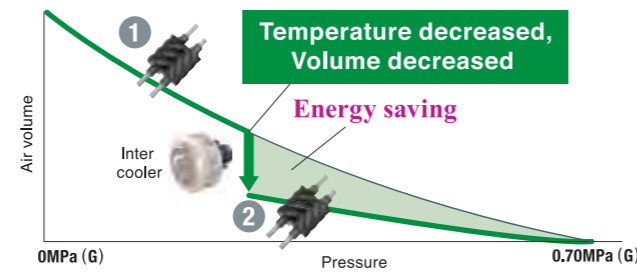
## Highly efficient Two-stage compression

Emeraude FE's Two-stage compression is 8~28% more efficient than typical single stage oil-free screw type. Also, it can decrease discharge temperature which leads to reliability.



### Why Energy saving ?

- Less power is required because discharge air from 1st stage is cooled by inter cooler and air volume for 2nd stage can be decreased accordingly.
- Less air leakage in each compression chamber with less compression rate for each stage.



## Proven reliability

- KOBELCO's unique dual vent holes design prevents oil entry in compressor chamber and ensure "Oil-free". (Please see page6 for more detail).
- State-of-the-art "Gamma Profile" Rotor and Casing with advanced FEM analysis enhances reliability of heart of compressor.
- MoS2 coated Air-ends and 2nd stage's stainless steel improve anti-corrosion.
- Designed for continuous operation under 40°C ambient condition with +5°C allowance.



Emeraude ALE IV / Two-stage dry screw

## 55-120 kW

### Inverter / Water cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz			Main motor kW	Discharge Connection	Dimensions W x D x H mm	Noise Level dB(A)	Voltage	Weight kg
		Discharge Pressure	m <sup>3</sup> /min	cfm						
ALE55WV+ IV	1.04	0.60	10.2	360	55	JIS10K 50A-FF	2,000 x 1,400 x 1,680	62	200-220 (380-440)	1,950
		0.70	9.6	339						
		0.99	7.9	279						
ALE75WV+ IV	1.04	0.60	12.0	424	75	JIS10K 50A-FF	2,000 x 1,400 x 1,680	65	200-220 (380-440)	2,050
		0.70	12.0	424						
		0.99	10.7	377						
ALE75FWV+ IV	0.86	0.60	14.5	512	75	JIS10K 50A-FF	2,000 x 1,400 x 1,680	65	200-220 (380-440)	2,200
		0.70	13.6	480						
		0.81	12.6	445						
ALE100WV+ IV	0.86	0.60	19.0	671	100	JIS10K 50A-FF	2,200 x 1,335 x 1,880	65	380-440	2,650
		0.70	17.9	632						
		0.81	16.8	593						
	1.04	0.80	16.8	593						
		0.90	15.9	562						
		0.99	15.2	537						

### Inverter / Air cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz			Main motor kW	Discharge Connection	Dimensions W x D x H mm	Noise Level dB(A)	Voltage	Weight kg
		Discharge Pressure	m <sup>3</sup> /min	cfm						
ALE55AV+ IV	0.86	0.60	10.1	357	55	JIS10K 50A-FF	1,880 x 1,490 x 1,850	64	200-220 (380-440)	1,650
		0.70	9.5	335						
		0.81	8.9	314						
ALE75AV+ IV	0.86	0.60	11.9	420	75	JIS10K 50A-FF	1,880 x 1,490 x 1,850	67	200-220 (380-440)	1,700
		0.70	11.8	417						
		0.81	11.6	410						
ALE75FAV+ IV	1.00	0.80	11.1	392	75	JIS10K 50A-FF	1,880 x 1,490 x 1,850	69	200-220 (380-440)	2,050
		0.95	10.0	353						
		ALE100AV+ IV	0.86	0.60						
0.70	13.4			473						
0.81	12.3			434						
1.00	0.60		18.7	660						
	0.70		17.6	621						
	0.81		16.4	579						
1.00	0.80	15.7	554							
	0.90	15.4	544							
	0.95	15.1	533							

Motor specifications : IPM motor, 6-pole totally enclosed fan-cooled, Insulation class F, Rated for continuous use, Drive system : Step-up gear.

### Fixed speed / Water cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery				Main motor kW	Discharge Connection	Dimensions W x D x H mm	Noise Level dB(A)	Voltage	Weight kg
		50Hz		60Hz							
		m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm						
ALE55W IV	0.75	9.1	321	9.2	325	55	JIS10K 50A-FF	2,000 x 1,400 x 1,680	62	200-220 (380-440)	2,300
	0.86	8.3	293	8.3	293						
	1.04	7.3	258	7.3	258						
ALE75W IV	0.75	12.0	424	12.0	424	75	JIS10K 50A-FF	2,000 x 1,400 x 1,680	65	200-220 (380-440)	2,350
	0.86	11.5	406	11.4	403						
	1.04	10.1	357	10.2	360						
ALE75FW IV	0.75	13.2	466	13.2	466	75	JIS10K 50A-FF	2,000 x 1,400 x 1,680	65	200-220 (380-440)	2,500
ALE90W IV	0.75	15.7	554	15.7	554	90	JIS10K 50A-FF	2,200 x 1,335 x 1,880	65	200-220 (380-440)	2,950
	0.86	14.8	523	14.7	519						
	1.04	13.2	466	13.2	466						
ALE100W IV	0.75	17.4	614	17.4	614	100	JIS10K 50A-FF	2,200 x 1,335 x 1,880	65	200-220 (380-440)	3,000
	0.86	16.2	572	16.2	572						
	1.04	14.7	519	14.6	516						
ALE120W IV	0.75	19.4	685	19.7	696	120	JIS10K 50A-FF	2,200 x 1,335 x 1,880	66	380-440	3,050
	0.86	18.0	636	18.3	646						
	1.04	17.2	607	17.2	607						

### Fixed speed / Air cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery				Main motor kW	Discharge Connection	Dimensions W x D x H mm	Noise Level dB(A)	Voltage	Weight kg
		50Hz		60Hz							
		m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm						
ALE55A IV	0.75	9.0	318	9.1	321	55	JIS10K 50A-FF	1,880 x 1,490 x 1,850	64	200-220 (380-440)	1,950
	0.86	8.3	293	8.3	293						
	1.00	6.9	244	6.9	244						
ALE75A IV	0.75	11.8	417	11.8	417	75	JIS10K 50A-FF	1,880 x 1,490 x 1,850	67	200-220 (380-440)	2,000
	0.86	11.4	403	11.3	399						
	1.00	9.4	332	9.5	335						
ALE75FA IV	0.75	13.0	459	13.0	459	75	JIS10K 50A-FF	1,880 x 1,490 x 1,850	67	200-220 (380-440)	2,350
ALE90A IV	0.75	15.6	551	15.5	547	90	JIS10K 50A-FF	2,060 x 1,500 x 2,100	67	200-220 (380-440)	2,550
	0.86	14.6	516	14.6	516						
	1.00	13.0	459	13.0	459						
ALE100A IV	0.75	17.2	607	17.2	607	100	JIS10K 50A-FF	2,060 x 1,500 x 2,100	67	200-220 (380-440)	2,600
	0.86	15.8	558	15.8	558						
	1.00	14.7	519	14.7	519						
ALE120A IV	0.75	19.1	674	19.3	681	120	JIS10K 50A-FF	2,060 x 1,500 x 2,100	69	380-440	2,650
	0.86	17.9	632	18.2	643						
	1.00	14.7	519	14.7	519						

132-400 kW

Inverter / Water cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg
		50/60Hz				W × D × H			
		m <sup>3</sup> /min	cfm			mm			
ALE132WV IV	0.75	24.9	879	132	JIS10k 65A FF	2,705 × 1,545 × 1,845	66	380-440	3,750
	0.86	22.0	777						
	1.04	19.7	696						
ALE160WV IV	0.75	29.4	1,038	160	JIS10k 80A FF	3,150 × 1,600 × 2,180	66	380-440	3,850
	0.86	26.9	950						
	1.04	24.9	879						
ALE250WV IV	0.75	45.4	1,603	250	JIS10k 80A FF	3,150 × 1,600 × 2,180	66	380-440	5,500
	0.86	41.7	1,473						
	1.04	38.5	1,360						

Inverter / Air cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg
		50/60Hz				W × D × H			
		m <sup>3</sup> /min	cfm			mm			
ALE132AV IV	0.75	24.1	851	132	JIS10k 65A FF	3,730 × 1,700 × 1,995	71	380-440	4,300
	0.86	21.3	752						
ALE160AV IV	0.75	28.4	1,003	160	JIS10k 80A FF	4,300 × 1,900 × 2,180	73	380-440	4,300
	0.86	25.9	915						
ALE250AV IV	0.75	44.4	1,568	250	JIS10k 80A FF	4,300 × 1,900 × 2,180	76	380-440	5,700
	0.86	40.8	1,441						

Motor specifications : IPM motor, 4-pole totally enclosed fan-cooled, Insulation class F, Rated for continuous use, Drive system : Step-up gear.

Fixed speed / Water cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery				Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Weight		
		50Hz		60Hz				W × D × H		Voltage	Star-Delta	Reactor*
		m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm			mm				
ALE132W IV	0.75	24.8	876	24.7	872	132	JIS10k 65A FF	2,705 × 1,545 × 1,845 《 3,095 × 1,545 × 1,845 》	66	380-440	4,200	4,200
	0.86	21.6	763	21.8	770					3k,3.3k	-	4,250
	1.04	20.0	706	19.5	689					6k,6.6k	-	4,250
ALE145W IV	0.75	26.6	939	26.6	939	145	JIS10k 65A FF	2,705 × 1,545 × 1,845 《 3,095 × 1,545 × 1,845 》	66	380-440	4,250	4,250
	0.86	24.8	876	24.7	872					3k,3.3k	-	4,250
	1.04	21.6	763	21.7	766					6k,6.6k	-	4,250
ALE160W IV	0.75	29.2	1,031	29.1	1,028	160	JIS10k 80A FF	3,150 × 1,600 × 2,180 《 3,350 × 1,600 × 2,180 》	66	380-440	4,250	4,250
	0.86	26.5	936	26.6	939					3k,3.3k	-	4,250
	1.04	24.8	876	24.6	869					6k,6.6k	-	4,650
ALE200W IV	0.75	37.4	1,321	37.4	1,321	200	JIS10k 80A FF	3,150 × 1,600 × 2,180 《 3,350 × 1,600 × 2,180 》	66	380-440	6,150	6,150
	0.86	33.7	1,190	33.5	1,183					3k,3.3k	-	5,900
	1.04	30.3	1,070	30.2	1,067					6k,6.6k	-	5,950
ALE250W IV	0.75	45.0	1,589	45.0	1,589	250	JIS10k 80A FF	3,150 × 1,600 × 2,180 《 3,350 × 1,600 × 2,180 》	66	380-440	6,150	6,150
	0.86	41.4	1,462	41.3	1,458					3k,3.3k	-	5,950
	1.04	38.1	1,345	38.1	1,345					6k,6.6k	-	6,450
ALE275W IV	0.75	48.6	1,716	48.6	1,716	275	JIS10k 100A FF	《 3,850 × 2,000 × 2,400 》	70	380-440	6,200	6,200
	0.86	44.9	1,586	45.0	1,589					3k,3.3k	-	6,400
	1.04	41.3	1,458	41.3	1,458					6k,6.6k	-	6,550
ALE315W IV	0.75	54.6	1,928	54.7	1,932	315	JIS10k 100A FF	《 3,850 × 2,000 × 2,400 》	70	380-440	-	-
	0.86	51.5	1,819	51.2	1,808					3k,3.3k	-	9,000
	1.04	48.0	1,695	48.0	1,695					6k,6.6k	-	9,000
ALE355W IV	0.75	63.1	2,228	63.0	2,225	355	JIS10k 100A FF	《 3,850 × 2,000 × 2,400 》	70	380-440	-	-
	0.86	58.7	2,073	58.9	2,080					3k,3.3k	-	9,000
	1.04	54.5	1,925	54.6	1,928					6k,6.6k	-	9,100
ALE400W IV	0.75	66.8	2,359	66.6	2,352	400	JIS10k 100A FF	《 3,850 × 2,000 × 2,400 》	75	380-440	-	-
	0.86	63.0	2,225	62.9	2,221					3k,3.3k	-	9,100
	1.04	58.7	2,073	58.8	2,077					6k,6.6k	-	9,150

Motor specifications : Induction motor, 2-pole totally enclosed fan-cooled, Insulation class F, Rated for continuous use Drive system : Step-up gear. 《 》 are for 3k/3.3k, 6k/6.6k specification. \*Reactor starter panel is separated. Power sources for main and auxiliary motors are separately needed. Consult us regarding the size and weight of separate starter panel.

Fixed speed / Air cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery				Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Weight		
		50Hz		60Hz				W × D × H		Voltage	Star-Delta	Reactor*
		m <sup>3</sup> /min	cfm	m <sup>3</sup> /min	cfm			mm				
ALE132A IV	0.75	24.0	848	23.8	840	132	JIS10k 65A FF	3,730 × 1,700 × 1,995 《 4,120 × 1,700 × 1,995 》	71	380-440	4,700	4,700
	0.86	20.9	738	21.0	742					3k,3.3k	-	4,700
	1.04	19.3	682	18.8	664					6k,6.6k	-	4,700
ALE145A IV	0.75	25.7	908	25.7	908	145	JIS10k 65A FF	3,730 × 1,700 × 1,995 《 4,120 × 1,700 × 1,995 》	71	380-440	4,700	4,700
	0.86	23.9	844	23.8	840					3k,3.3k	-	4,700
	1.04	20.9	738	21.0	742					6k,6.6k	-	4,700
ALE160A IV	0.75	28.3	999	28.1	992	160	JIS10k 80A FF	4,300 × 1,900 × 2,180 《 4,535 × 1,900 × 2,180 》	73	380-440	4,700	4,700
	0.86	25.6	904	25.6	904					3k,3.3k	-	4,700
	1.04	23.9	844	23.8	840					6k,6.6k	-	5,100
ALE200A IV	0.75	35.4	1,250	35.4	1,250	200	JIS10k 80A FF	4,300 × 1,900 × 2,180 《 4,535 × 1,900 × 2,180 》	76	380-440	6,250	6,250
	0.86	33.0	1,165	32.8	1,158					3k,3.3k	-	6,250
	1.04	29.8	1,052	29.6	1,045					6k,6.6k	-	6,300
ALE250A IV	0.75	44.0	1,554	44.0	1,554	250	JIS10k 80A FF	4,300 × 1,900 × 2,180 《 4,535 × 1,900 × 2,180 》	76	380-440	6,250	6,250
	0.86	40.5	1,430	40.4	1,427					3k,3.3k	-	6,300
	1.04	37.3	1,317	37.3	1,317					6k,6.6k	-	6,800
ALE275A IV	0.75	47.6	1,681	47.6	1,681	275	JIS10k 80A FF	4,300 × 1,900 × 2,180 《 4,535 × 1,900 × 2,180 》	76	380-440	6,350	6,350
	0.86	43.9	1,550	44.0	1,554					3k,3.3k	-	6,700
	1.04	40.4	1,427	40.4	1,427					6k,6.6k	-	6,900

Motor specifications : Induction motor, 2-pole totally enclosed fan-cooled, Insulation class F, Rated for continuous use Drive system : Step-up gear. 《 》 are for 3k/3.3k, 6k/6.6k specification. \*Reactor starter panel is separated. Power sources for main and auxiliary motors are separately needed. Consult us regarding the size and weight of separate starter panel.

55-400 kW

Water cooled model

Model	Cooling water Quantity	ΔT	Water inlet temperature	Water inlet/outlet connection	Initial lubricant charge		
	L/min					°C	
ALE55WV+ IV ALE55W IV	80	10	32	JIS10K 32A-FF	20		
ALE75WV+ IV ALE75W IV	107					JIS10K 40A FF	
ALE75FWV+ IV ALE75FW IV							
ALE90W IV	147						JIS10k 50A FF
ALE100WV+ IV ALE100W IV							
ALE120W IV	172						
ALE132WV IV ALE132W IV							
ALE145W IV	238			JIS10k 65A FF			
ALE160WV IV ALE160W IV							
ALE200W IV	355				JIS10k 80A FF		
ALE250WV IV ALE250W IV							
ALE275W IV	487					JIS10k 100A FF	
ALE315W IV							
ALE355W IV	625	JIS10k 100A FF					
ALE400W IV							

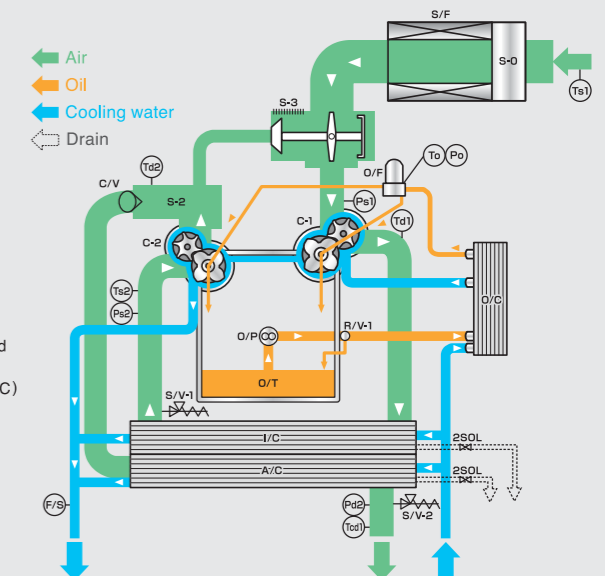
\*Keep the water temperature for water-cooled model as below.  
 - 55-120kW models : Below 35°C  
 - 132-400kW models : Below 40°C  
 \*Please refer to standard specification manual for water quality.

\*Suction conditions Absolute suction pressure : 0.10MPa,  
 Suction temperature : 30°C, Humidity : 75%RH  
 \*Discharge air volumes is converted to suction conditions.  
 \*Discharge pressures are measured after gas coolers.  
 \*Air produced by compressors should not be used in respiratory equipment  
 furnishing air for direct inhalation.  
 \*Nominal working pressure ;  
 [ 0.75MPa model : 0.70MPa, 0.86MPa model: 0.80MPa, 1.04MPa model: 0.90MPa ]  
 \*Since the cooling for the compressed air & the inside of the compressor unit  
 depends on the surrounding air condition, the surrounding air must be properly ventilated  
 to prevent the ambient temperature from rising above 45°C.  
 (For air-cooled 1.00-1.04MPa model, the surrounding air temperature should not exceed 40°C)  
 \*Please be sure to use the lubricating oil recommended by KOBELCO.  
 \*Specifications and appearances are subject to change without notice.  
 Contact us if guaranteed values of performance is needed.

Air cooled model

Model	Cooling fan motor output	Initial lubricant charge
	kW	
ALE55AV+ IV ALE55A IV	1.5	30
ALE75AV+ IV ALE75A IV		
ALE75FAV+ IV ALE75FA IV		
ALE90A IV	3.0	50
ALE100AV+ IV ALE100A IV		
ALE120A IV		
ALE132AV IV ALE132A IV	6 (3kW×2)	35
ALE145A IV		
ALE160AV IV ALE160A IV		
ALE200A IV	11 (5.5kW×2)	51
ALE250AV IV ALE250A IV		
ALE275A IV		

Internal flow (Water cooled model)



\*Sample schematic is for 132-160kW.



# EMERAUDE FE·VF·VE

Emeraude FE·VF·VE / Two-stage dry screw

### Inverter / Air cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg	Cooling fan motor kW	Initial lubricant L
		m³/min	cfm			W × D × H mm					
VF640A/ADⅢ	0.69	6.4-5.4	226-191	37	40A (R1·1/2)	1,780 × 1,200 × 1,500 (2,080 × 1,200 × 1,500)	68	200-220 (380-440)	1,275 (1,360)	2.2	13
VE790A/ADⅢ		7.9	279	55	50A (R2)	2,080 × 1,200 × 1,500 (2,580 × 1,200 × 1,500)	67		1,430 (1,620)		

\*Nominal working pressure is 0.64MPa.

### Inverter / Water cooled model

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg	Cooling water quantity L/min	ΔT °C	Water inlet temperature °C	Water inlet/outlet connection	Initial lubricant L
		m³/min	cfm			W × D × H mm								
VF640W/WD	0.69	6.4-5.4	226-191	37	40A (R1·1/2)	1,780 × 1,200 × 1,500 (2,080 × 1,200 × 1,500)	64	200-220 (380-440)	1,250 (1,335)	55	10	32	25A (R1) 32A (R1·1/4)	13
VE790W/WD		7.9	279	55	50A (R2)	2,080 × 1,200 × 1,500 (2,580 × 1,200 × 1,500)	65		1,405 (1,595)					

\*Nominal working pressure is 0.64MPa.

### Fixed Speed / Air cooled model (0.69MPa)

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg	Cooling fan motor kW	Initial lubricant L
		m³/min	cfm			W × D × H mm					
FE200A/ADⅢ-5/6	0.69	2.05	72	22	25A (R1)	1,650 × 900 × 1,500	63	200-220 (380-440)	870 (925)	2.2	13
FE370A/ADⅢ-5/6		3.7	131	30			64		940 (1,005)		
FE480A/ADⅢ-5/6		4.8	170	37	40A (R1·1/2)	1,950 × 1,100 × 1,500	67		1,170 (1,225)		
FE540A/ADⅢ-5/6		5.4	191	45			68		1,180 (1,265)		
FE640A/ADⅢ-5/6		6.4	226	45	50A (R2)	2,580 × 1,200 × 1,500	65		1,350 (1,510)		
FE770A/ADⅢ-5/6		7.7	272	55			67		1,510 (1,710)		

\*Nominal working pressure is 0.69MPa.

### Fixed Speed / Water cooled model (0.69MPa)

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg	Cooling water quantity L/min	ΔT °C	Water inlet temperature °C	Water inlet/outlet connection	Initial lubricant L
		m³/min	cfm			W × D × H mm								
FE370W/WDⅢ-5/6	0.69	3.7	131	30	25A (R1)	1,650 × 900 × 1,500	61	200-220 (380-440)	930 (995)	40	10	32	25A (R1) 32A (R1·1/4)	11
FE480W/WDⅢ-5/6		4.8	170	37			63		1,145 (1,230)					
FE540W/WDⅢ-5/6		5.4	191	45	40A (R1·1/2)	1,950 × 1,100 × 1,500	64		1,155 (1,240)					
FE640W/WDⅢ-5/6		6.4	226	45			63		1,340 (1,500)					
FE770W/WDⅢ-5/6		7.7	272	55	50A (R2)	2,580 × 1,200 × 1,500	65		1,495 (1,685)					
							80							

\*Nominal working pressure is 0.69MPa.

### Fixed Speed / Air cooled model (0.88MPa)

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg	Cooling fan motor kW	Initial lubricant L
		m³/min	cfm			W × D × H mm					
FE200HA/AD-5/6	0.88	2.0	71	22	25A (R1)	1,650 × 900 × 1,500	63	200-220 (380-440)	870 (925)	2.2	13
FE260HA/ADⅢ-5/6		2.6	92	30			64		910 (975)		
FE400HA/ADⅢ-5/6		4.0	141	37	40A (R1·1/2)	1,950 × 1,100 × 1,500	67		1,170 (1,250)		
FE530HA/ADⅢ-5/6		5.3	187	45			68		1,180 (1,260)		
FE630HA/ADⅢ-5/6		6.3	222	55	50A (R2)	2,580 × 1,200 × 1,500	66		1,510 (1,670)		

\*Nominal working pressure is 0.88MPa.

### Fixed Speed / Water cooled model (0.88MPa)

Model	Max. Discharge Pressure MPa	Free Air Delivery 50/60Hz		Main motor kW	Discharge Connection	Dimensions	Noise Level dB(A)	Voltage	Weight kg	Cooling water quantity L/min	ΔT °C	Water inlet temperature °C	Water inlet/outlet connection	Initial lubricant L
		m³/min	cfm			W × D × H mm								
FE400HW/WDⅢ-5/6	0.88	4.0	141	37	40A (R1·1/2)	1,950 × 1,100 × 1,500	63	200-220 (380-440)	1,145 (1,230)	50	10	32	25A (R1) 32A (R1·1/4)	13
FE530HW/WDⅢ-5/6		5.3	187	45			64		1,155 (1,240)					
FE630HW/WDⅢ-5/6		6.3	222	55			64		1,495 (1,655)					

\*Nominal working pressure is 0.88MPa.

\*Starting system of fixed speed model is Star-Delta.

\*〈 〉 for built-in dryer type.

\*Discharge air volumes is converted to suction conditions (30°C).

\*Discharge pressure are measured after gas coolers.

\*Noise values is measured at 1.5m away from the machine front and 1m from the floor

in the anechoic room, with the machine being operated at its full load.

\*Air produced by compressors should not be used in respiratory equipment furnishing air for direct inhalation.

\*Since the cooling for the compressed air & the inside of the compressor unit depends on the surrounding air condition, the surrounding air must be properly ventilated to prevent the ambient temperature from rising above 40°C.  
\*Please be sure to use the lubricating oil recommended by KOBELCO.  
\*Specifications and appearances are subject to change without notice.  
Contact us if guaranteed values of performance is needed.

## ED series-Rotary drum desiccant dryer

ED series is a desiccant type compressed dryer achieving low dew point without consuming power or compressed air for regeneration of desiccant.

### Why ED dryer ?

#### High efficiency

- No requirement of external power for regeneration because hot air from compressor is used for regeneration of desiccant. Only 15-40W for rotary system needed.
- No purge air loss\* unlike heatless desiccant type. \*Max 0.3% for water drain

#### Low dew point

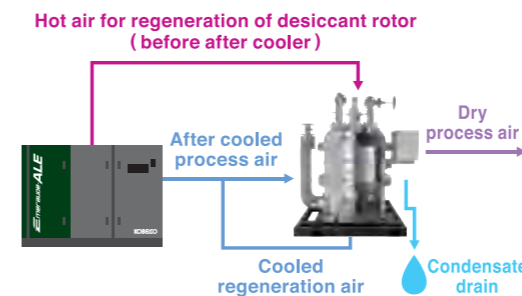
- Lower dew point compared to refrigeration type.
- No worry for condensate in winter time.

#### Eco friendly

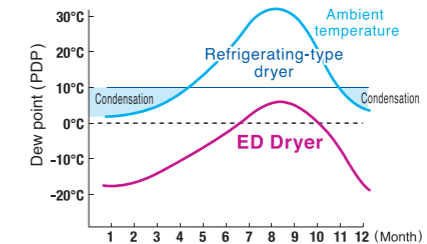
- No Freon required unlike refrigeration type.



### System Flow (compressor-ED series)



### Dew point characteristics



NOTE : this is a suggested image of dryer pressure dew point (at air = pressure 0.69 MPa).

### Applicable model

ED dryer	Applicable compressor
ED160W	ALE132~160
ED250W	ALE200~250
ED370W	ALE275~400

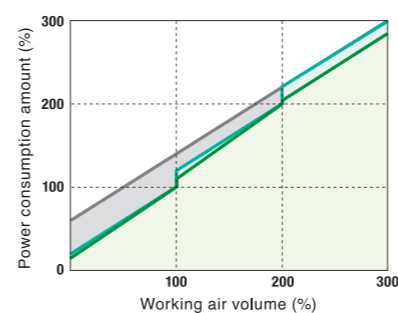
\*Selection based on discharge pressure of 0.69MPa.

## Group Controller Model EM

Efficient utilization of multiple compressors and accessories with energy saving.

### Your merits are ;

- Saving electricity consumption by optimizing the number of running compressor.
- Minimizing pressure band compare with conventional cascade pressure setting.
- Maximizing energy saving merit of variable speed compressor.
- Equalizing compressor running hours.
- Integrating auxiliary equipment control for further energy saving.



Standard Models (3)

Standard Models (3) + EM

Emeraude ALE (1) Standard Models (2) + EM

\*Standard model : compressor without inverter.

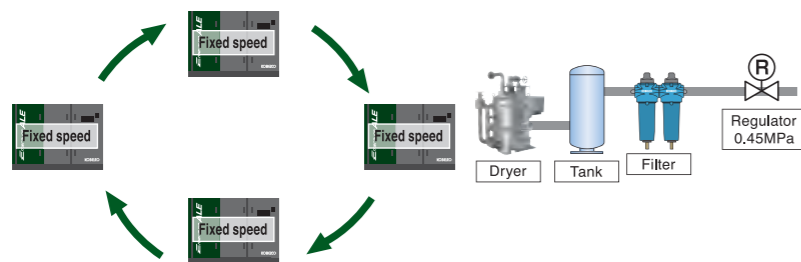
### Specification

Model	EM4-2	EM4-4	EM4-8
Max No. of compressor	2	4	8
Display	4.3 inch	7 inch	7 inch
Dimensions (mm)	Width	500	600
	Depth	200	200
	Height	600	900
Control pressure	0~1.5MPa		
Installation style	Wall mount		
Weight (kg)	30	50	70
Power supply	AC 100V to 240V 50/60Hz 1Φ		

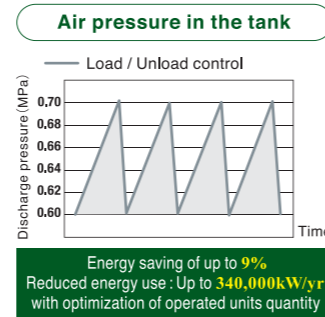
## KOBELCO provides advanced total solution.

KOBELCO, a pioneer of Compressor technologies in Japan, always explores the front-line with its proven history and advanced technology. KOBELCO proposes suitable air system to meet customer's various requests such as clean air system, high efficiency and automation.

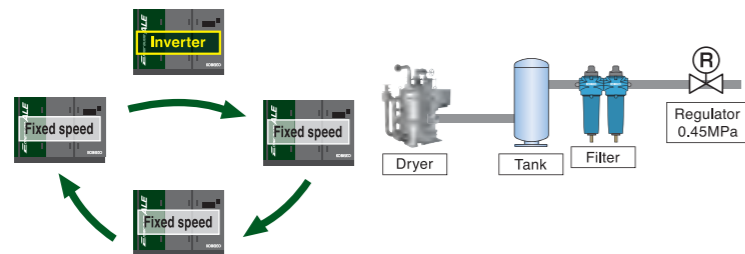
### ① Group control



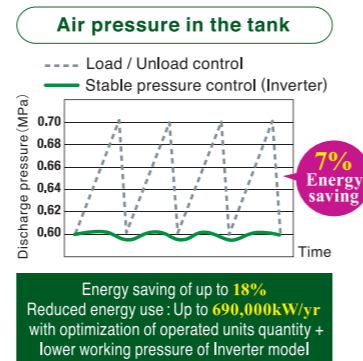
Max 6 units can be operated without a group control panel in case of new ALE.



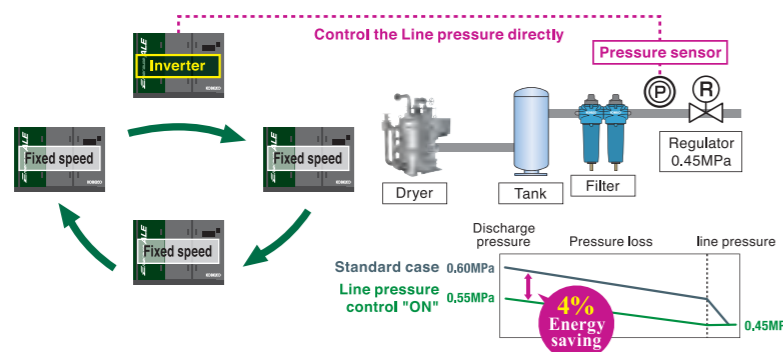
### ② Stable pressure control of Inverter model + Group control



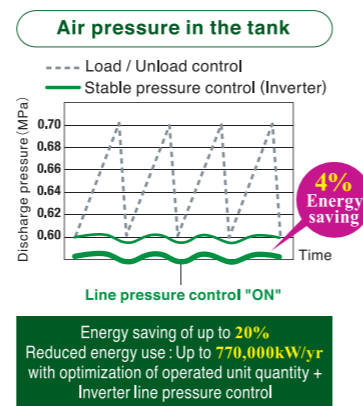
Because Stable pressure control of Inverter model leads to lower down the parallel fixed speed models' discharge pressure, a lot of energy use is saved.



### ③ Line pressure control (Option) + Stable pressure control of Inverter model + Group control



Line pressure control optimizes the discharge pressure which has excessive margin. It's possible to reduce energy loss with excessive pressure rise by monitoring of line pressure and pressure drop.



\*Assumptions : 160kW. \*4units, average load ratio: 62.5%, running time : 8,000hr, Comparison to Load/unload control without group control.

## The strong partnership with our customers is producing fruitful results throughout the world.

KOBELCO COMPRESSOR sales and production locations are based in the regions of Asia and North America, in response to expanding demand overseas. Domestically KOBELCO responds to customer requirements in a meticulous manner through sales offices and service centers nationwide, which provide support for customers in a coordinated manner, covering all their needs ranging from daily support work to proposals for the implementation of new technologies.



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KOBELCO COMPRESSORS CORPORATION

#### China

KOBELCO COMPRESSORS MANUFACTURING (SHANGHAI) CORPORATION

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< Guangzhou > KOBELCO COMPRESSORS (SHANGHAI) CORPORATION GUANG DONG BRANCH

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#### Indonesia

PT. KOBELINDO COMPRESSOR

#### India

KOBELCO COMPRESSORS INDIA PVT. LTD.

#### America

KOBELCO COMPRESSORS MANUFACTURING INDIANA, INC.

### Safety Precautions

1. Before operating, be sure to read the entire instruction manual and follow all safety directions.
2. Never attempt to perform unauthorized equipment modifications. Doing so could cause accidents resulting in injury.
3. The compressors are designed to compress air. Never use them with other gases. Doing so could result in accidents or breakdowns.
4. Never directly inhale the compressed air or use it for respiration systems of any kind. Doing so could cause pulmonary injury.