



Oil-free Screw Compressor General Catalog





KOBE STEEL,LTD.

Machinery Business / Compressor Division

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 201202S

"Monozukuri" What makes it KOBELCO

"Monozukuri" literally means Production or Manufacturing in Japanese word. But this "Monozukuri" especially has meaning of integration of prowess, know-how, and spirit of Japanese manufacturing, which include sincere mind, pride for the quality backed by skill, dedication and the pursuit of innovation and perfection.

KOBELCO explores this "Monozukuri" for more than 100 years as a Japanese leading compressor manufacturer, and quality of our products are for the dedication to "Monozukuri" in the world.

Our endeavor for future technology, top quality, and for maximum customer satisfaction will not stop.

For the next 100 years...

Never ending challenge of KOBELCO just starts here.





Æmeraude

Diverse choices for the best of your use.











Group contro

ALE Emeraude ALEN/Two-stage dry screw











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

CLASS	Concentration total oil (aerosol, liquid, vapor) mg/m³
0	As specified by equipment user or supplier and more stringent than class 1
1	≦0.01
2	≦0.1
3	≦1
4	≦5

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

supreme oil-free technology.

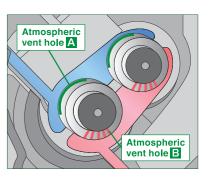
Dual vent holes design

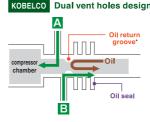
(Common for ALEIV / ALEIII / FE)

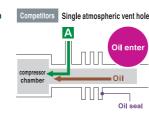


KOBELCO's proven dual vent holes design prevents oil entry in compressor chambers during long unload running.









■ 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.

 $^\star \text{Oil}$ return groove is applicable for ALEIV





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 Emeraude ALE debut. With ultimate specific power consumption, supreme silence and outstanding durability, Emeraude 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 Class 0 certification (ISO8573-1[-:-:0]) which certifies the highest level of purity for quality classifications of compressed air.



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.



IoT cloud service "Kobelink"

Anytime, anywhere, you can check compressor's running conditions with it. This can support sustainable operation.

*Conditions apply



Full color touch monitor

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

Emeraude-ALE ALEW

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 $18.8 - 66.8 \,\mathrm{m}^3/\mathrm{min}$



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

Kobelink compatible

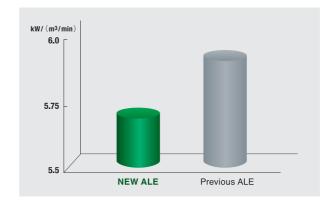
Energy saving

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.

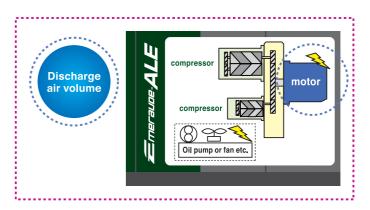
Compared with Previous ALE

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.



Previous valuation standard -----① Discharge air volume

② Shaft power

New valuation standard -----

1) Discharge air volume 2 Compressor input power

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 1m3/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.

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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

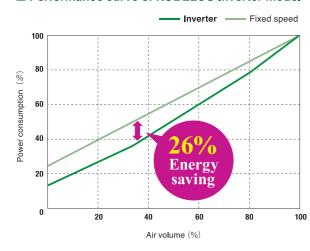
Internal piping design, high efficiency motors and fans contribute to energy savings. Moreover, gas coolers' optimization decreases the discharge temperature and downsizes auxiliary equipment such as dryers. This leads energy saving of not only compressors but also clean air systems.



Partial-load performance of Inverter model

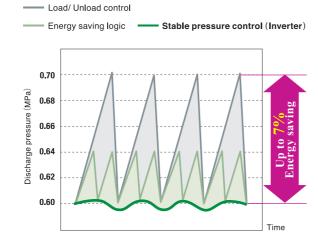
Inverter model's partial load performance has been improved thanks to IPM motor and superior rotor design. Inverter model supplies required air volume in appropriate power consumption.

■ 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.



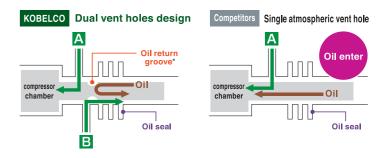
Reliabilit

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)



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Long life cycle

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

■ Standard Overhaul cycle

1st stage 9year

2nd stage 6year

■ Anti-corrosion test results

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.





*Picture may vary from actual products

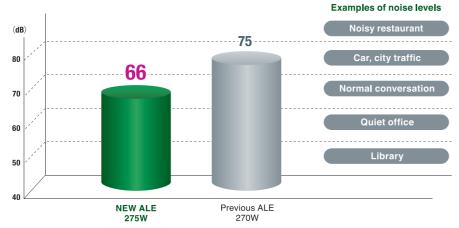
Usability

Advanced usability for your comfortable daily operations.

30 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

Panel design

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

Silencer

Newly designed suction and discharge silencers reduce noise

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

New measurement

9 point average measured at a distance of 1m around the unit or 1m above

Previous

measurement standard (as per manufacturer's standard) 4 point average measured at

1m height and 1.5m around the unit Show estimated causes of each alarm

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.



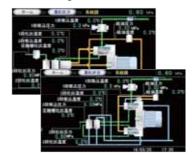




User-friendly controller with 7 inch large size touch screen panel

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
 Maintenance timer setting
 Language

Trouble shooting

Running condition 2





Alarm records



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

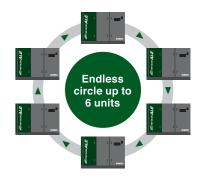
- 7500V surge protector
- Water flow switch (for water cooled model)
- Emergency stop button
- Motor winding temperature detection
- Password protection

Data logging with USB

Running data (CSV file) can be output from monitor to

Group control

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



USB memory stick.

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.

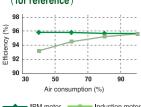
Main motor

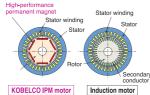


• IPM motor for Inverter model

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

● Comparison of motor efficiency ● Comparison of structure





• IE3 motor for fixed speed model

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

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.

Discharge silencer



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

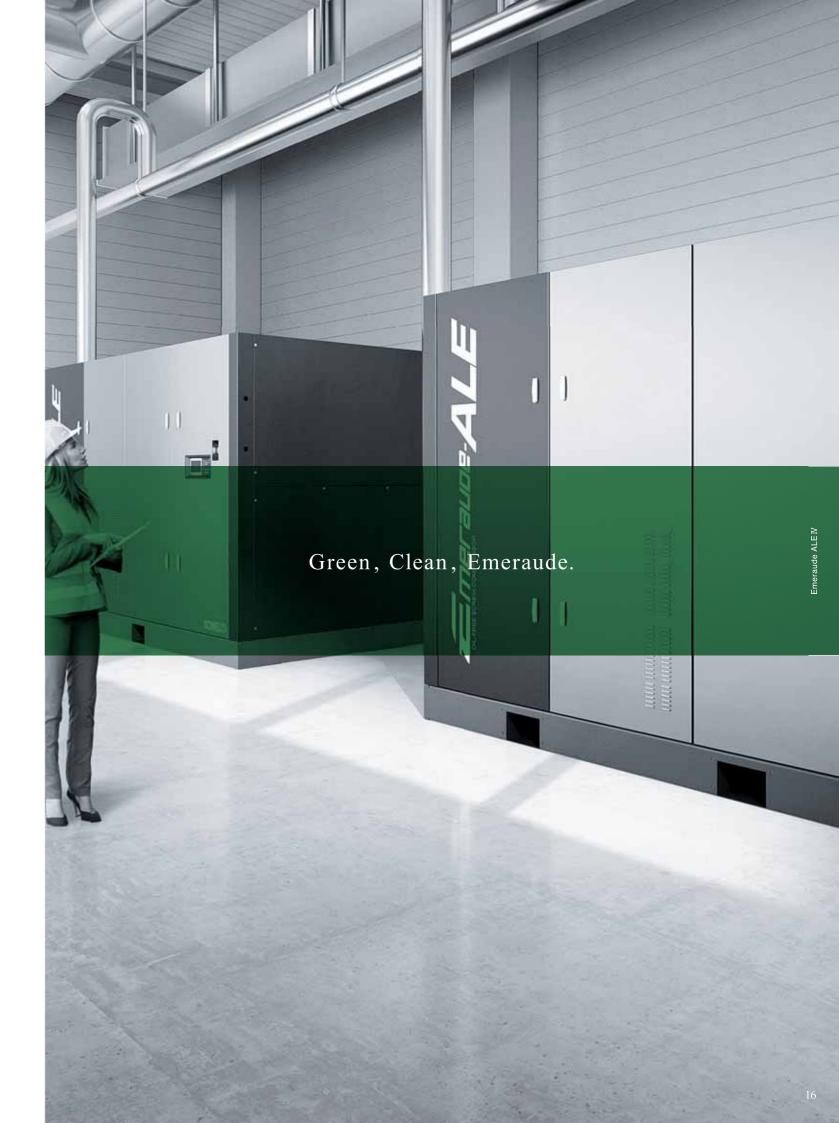
*Expansion Silencer for 200kW and above

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.





55-120kW

 $7.5 - 18.2 \,\mathrm{m}^3/\mathrm{min}$

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Supreme energy efficiency, Utmost reliability for air quality.

Superior specific power consumption

Class 0 certified

Long overhaul cycle

Reliable Air-ends

- Reliability and efficiency backed by over 60 year history of oil-free technology.
- Teflon coated Air-ends and 2nd stage's Stainless steel enhance anti-corrosion.



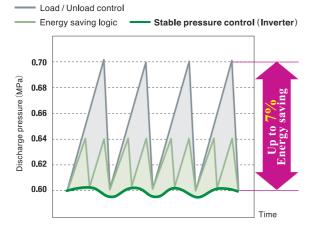
Energy saving Plate fin cooler (water cooled)

- Water-in-tube design Plate-Fin-Tube Cooler can reduce pressure loss at cooler portion 1/5 compare to usual Shell & Tube type cooler.
- Less accumulation of Silica in water camber.



Stable pressure control for Inverter model Energy saving logic for Fixed speed model (Common to FE)

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.



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4	≦5

Long life cycle

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

9year ■ Standard Overhaul cycle 6year 2nd stage

Durable for high ambient temperature (Common to FE)

Reviewing the total cooling system including design of coolers and cooling fan with safety margin, the compressor can operate even under ambient temperature of 45°C.



*Long-time continuous operation at ambient temperatures of 40°C or higher may shorten lifetime of components such as electric equipment and O-rings comparing with normal operation.

User friendly LCD controller (Common to FE)



This monitor can be used not only to keep track of the operating conditions but also to set the discharging pressure, etc. The operating records, graphic displays, weekly timers, daily reports and weekly report management, can be conducted.

- Operation data can be output through "Modbus" (optional).
- The front control panel of the controller is complete with a waterproof specification

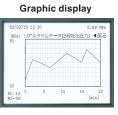
■ Principal features and displays

Maintenance information









- Weekly timer
- Compressor Setting Running condition
- Running record

Emerauoe-FE-VF-VE

22 - 55 kW

Discharge air flow $2.0 - 7.9 \,\mathrm{m}^3/\mathrm{min}$

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Energy saver with Two-stage compression.

Supreme specific power consumption

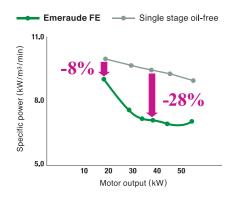
Highly efficient two stages compression

Ultimate clean air

Highly efficient Two-stage compression

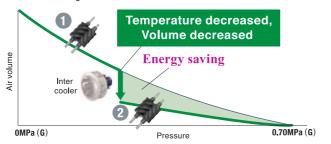
Emeraude FE's Two-stage compression is 8∼28% more efficient than typical single stage oil-free screw type.

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

Inverter / Water cooled model

	Max.	Free Air	Delivery	Main		Dimensions	Noise		Wainba
Model	Discharge Pressure	50/6	60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Weight
	MPa	m³/min	cfm	kW		mm	dB(A)		kg
	0.75	24.9	879						
ALE132WVIV	0.86	22.0	777	132					3,700
	1.04	19.7	696		JIS10k	0.705 1.545 1.045			
	0.75	29.4	1,038		65A	2,705 × 1,545 × 1,845			
ALE160WVIV	0.86	26.9	950	160	FF		66	380-440	3,800
	1.04	24.9	879						
	0.75	45.4	1,603		JIS10k		1		
ALE250WVIV	0.86	41.7	1,473	250	80A	3,150 × 1,600 × 2,180			5,350
	1.04	38.5	1,360		FF				

Inverter / Air cooled model

		Max. Discharge	Free Air	Delivery	Main		Dimensions	Noise		Weight	
	Model	Pressure	50/6	60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Weight	
ı		MPa	m³/min	cfm	kW		mm	dB(A)		kg	
	ALE132AVIV	0.75	24.1	851	132			71		4.000	
	ALE I32AV IV	0.86	21.3	752	132	JIS10k 65A FF	0.7004.7004.005	/ 1		4,300	
	AL E4COAVIV	0.75	28.4	1,003	160		3,730 × 1,700 × 1,995	73	380-440	4.300	
	ALE160AVIV	0.86	25.9	915	160			/3		4,300	
	ALE250AVIV	0.75	44.4	1,568	250	JIS10k	4 200 × 1 000 × 2 100	76		F 600	
	ALE250AVIV	0.86	40.8	1,441	250	80A FF	4,300 × 1,900 × 2,180	76		5,600	

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

	Max. Discharge		Free Air	Delivery		Main		Dimensions	Noise		Weight	
Model	Pressure	50	Hz	60	Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Star-Delta	Reactor*
	MPa	m³/min	cfm	m³/min	cfm	kW		mm	dB(A)	voltage	k	g
	0.75	24.8	876	24.7	872					380-440	4,100	4,050
ALE132W IV	0.86	21.6	763	21.8	770	132				3k,3.3k	-	4,100
	1.04	20.0	706	19.5	689	1				6k,6.6k	-	4,150
	0.75	26.6	939	26.6	939		JIS10k	2,705 × 1,545 × 1,845		380-440	4,200	4,150
ALE145WIV	0.86	24.8	876	24.7	872	145	65A		66	3k,3.3k	-	4,150
	1.04	21.6	763	21.7	766	1	FF	《 3,095×1,545×1,845 》		6k,6.6k	-	4,150
	0.75	29.2	1,031	29.1	1,028					380-440	4,200	4,150
ALE160WIV	0.86	26.5	936	26.6	939	160				3k,3.3k	-	4,150
	1.04	24.8	876	24.6	869	1				6k,6.6k	-	4,400
	0.75	37.4	1,321	37.4	1,321					380-440	5,950	5,950
ALE200WIV	0.86	33.7	1,190	33.5	1,183	200				3k,3.3k	-	5,800
	1.04	30.3	1,070	30.2	1,067	1				6k,6.6k	-	5,800
	0.75	45.0	1,589	45.0	1,589		JIS10k			380-440	5,950	5,950
ALE250WIV	0.86	41.4	1,462	41.3	1,458	250	80A	3,150 × 1,600 × 2,180	66	3k,3.3k	-	5,800
	1.04	38.1	1,345	38.1	1,345	1	FF	《 3,350×1,600×2,180 》		6k,6.6k	-	5,800
	0.75	48.6	1,716	48.6	1,716					380-440	6,000	6,000
ALE275WIV	0.86	44.9	1,586	45.0	1,589	275				3k,3.3k	-	6,200
	1.04	41.3	1,458	41.3	1,458	1				6k,6.6k	-	6,400
	0.75	54.6	1,928	54.7	1,932					380-440	-	
ALE315WIV	0.86	51.5	1,819	51.2	1,808	315				3k,3.3k	-	9,000
	1.04	48.0	1,695	48.0	1,695	1				6k,6.6k	-	9,000
	0.75	63.1	2,228	63.0	2,225		JIS10k		70	380-440	-	-
ALE355WIV	0.86	58.7	2,073	58.9	2,080	355	100A	《 3,850×2,000×2,400 》		3k,3.3k	-	9,000
	1.04	54.5	1,925	54.6	1,928		FF			6k,6.6k	-	9,100
	0.75	66.8	2,359	66.6	2,352				7.5	380-440	-	-
ALE400WIV	0.86	63.0	2,225	62.9	2,221	400			75	3k,3.3k	-	9,100
	1.04	58.7	2,073	58.8	2,077	1			70	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

	Max.		Free Air	Delivery		Main		Dimensions	Noise		Wei	ight
Model	Discharge Pressure	50	Hz	60	Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Star-Delta	Reactor*
	MPa	m³/min	cfm	m³/min	cfm	kW		mm	dB(A)		k	g
	0.75	24.0	848	23.8	840					380-440	4,700	4,700
ALE132A IV	0.86	20.9	738	21.0	742	132			71	3k,3.3k	-	4,600
	1.04	19.3	682	18.8	664	1				6k,6.6k	-	4,650
	0.75	25.7	908	25.7	908		JIS10k	2 720 × 1 700 × 1 005		380-440	4,700	4,700
ALE145AIV	0.86	23.9	844	23.8	840	145	65A	3,730 × 1,700 × 1,995	71	3k,3.3k	-	4,600
	1.04	20.9	738	21.0	742	1	FF	《 4,120 × 1,700 × 1,995 》		6k,6.6k	-	4,650
	0.75	28.3	999	28.1	992					380-440	4,700	4,700
ALE160A IV	0.86	25.6	904	25.6	904	160			73	3k,3.3k	-	4,650
	1.04	23.9	844	23.8	840	1				6k,6.6k	-	4,900
	0.75	35.4	1,250	35.4	1,250					380-440	6,200	6,200
ALE200A IV	0.86	33.0	1,165	32.8	1,158	200				3k,3.3k	-	6,050
	1.04	29.8	1,052	29.6	1,045					6k,6.6k	-	6,050
	0.75	44.0	1,554	44.0	1,554		JIS10k	4,300 × 1,900 × 2,180		380-440	6,200	6,200
ALE250AIV	0.86	40.5	1,430	40.4	1,427	250	80A	《 4,535×1,900×2,180 》	76	3k,3.3k	-	6,050
	1.04	37.3	1,317	37.3	1,317		FF	\(\(4,555 \times 1,900 \times 2,160 \)/		6k,6.6k	-	6,550
	0.75	47.6	1,681	47.6	1,681					380-440	6,250	6,250
ALE275A IV	0.86	43.9	1,550	44.0	1,554	275				3k,3.3k	-	6,450
	1.04	40.4	1,427	40.4	1,427]				6k,6.6k	-	6,650

Motor specifications: Induction motor, 2-pole totally enclosed fan-cooled, Insulation class F, Rated for continuous use Drive system: Step-up gear.

*Reactor starter panel is separated. Power sources for main and auxiliary motors are separately needed.

Water cooled model

Model	Cooling water Quantity	Δτ	Water inlet temperature	Water injet /outjet	Initial lubricant charge
Model	L/min	°(0	connection	L
ALE132WV IV ALE132W IV	238			110401	
ALE145W IV	261			JIS10k 50A FF	25
ALE160WVIV ALE160WIV	288				
ALE200W IV	355				
ALE250WVIV ALE250WIV	443	10	32	JIS10k 65A FF	30
ALE275W IV	487				
ALE315W IV	492			JIS10k	
ALE355W IV	555			80A FF	50
ALE400W IV	625				

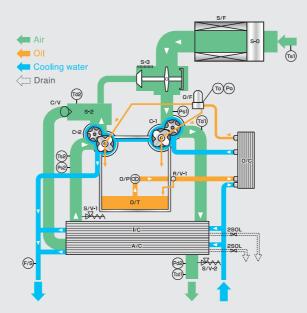
^{*}Keep the water temperature below 40°C for water cooled model.

- *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]
- $\ensuremath{^{\star}}\xspace$ 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 ait 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.
- *For other voltage variants, please consult us.

Air cooled model

	Cooling fan motor output	Initial lubricant charge
Model	kW	L
ALE132AV IV ALE132A IV		
ALE145AIV	6 (3kW×2)	35
ALE160AV IV ALE160A IV		
ALE200AIV		
ALE250AV IV ALE250A IV	11 (5.5kW×2)	51
ALE275AIV		

■ Internal flow (Water cooled model)



*Sample schematic is for 132-160kW.





Emeraude ALEII / Two-stage dry screw

Inverter / Air cooled model

	Max. Discharge		Delivery	Main		Dimensions	Noise		Wainba	Cooling	Initial	
Model	Pressure	ure 50/60Hz		50/60Hz motor		W×D×H	Level	Voltage	Weight	fan motor	lubricant	
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	kW	L	
ALE65A∭-V[H]		10.5 [9.2]	371 [325]	65	JIS10k	0.050 v.1.450 v.1.700	65 [67]	200/200-220	2,000	0.0	30	
ALE75AⅢ-V[H]	0.75 [0.88]	13.0 [10.4]	459 [367]	75	40A RF	2,250 × 1,450 × 1,780	67 [68]	(400/400-440)	2,410 [2,000]	2.2	50 [30]	
ALE100AIII-V[H]		17.2 [15.6]	607 [551]	100	JIS10k 50A RF	2,460 × 1,500 × 2,100	66 [68]	400/400 • 440	3,010	3.0	50	

^{*}Nominal working pressure of 0.75MPa is 0.70MPa. *Nominal working pressure of 0.88MPa is 0.83MPa.

Inverter / Water cooled model

	Max. Discharge	Free Air	Delivery	Main		Dimensions	Noise		Weight	Cooling water	ΔT	Water inlet	14/-4	Initial
Model	Pressure	50/6	60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	weight	quantity		temperature	Water inlet/outlet connection	
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	L/min	°(connection	L
ALE65WⅢ-V[H]		10.6 [9.3]	374 [328]	65	JIS10k	0.400 4.470 4.000	64 [67]	200/200 · 220	2,070	95			JIS10k	20
ALE75WⅢ-V[H]	0.75 [0.93]	13.2 [10.6]	466 [374]	75	40A RF	2,120 × 1,170 × 1,680	64 [68]	(400/400 · 440)	2,710 [2,070]	107	10	32	32A	35 [20]
ALE100WIII-V[H]		17.4 [16.0]	614 [565]	100	JIS10k 50A RF	2,600 × 1,335 × 1,887	66 [68]	400/400 • 440	3,210	146			JIS10k 40A	35

^{*}Nominal working pressure of 0.75MPa is 0.70MPa. *Nominal working pressure of 0.93MPa is 0.88MPa.

Fixed Speed / Air cooled model

	Max.		ree Air	Delive	ry	Main		Dimensions	Noise		Weight	Cooling	Initial
Model	Discharge Pressure		Hz	60	Hz	motor	Discharge Connection	W×D×H	Level	Voltage	weight	fan motor	lubricant
	MPa	m³/min	cfm	m³/min	cfm	kW		mm	dB(A)		kg	kW	L
ALE55A∭-5/6[H]		8.9 [7.6]	314 [268]	9.0 [7.5]	318 [265]	55			64 [66]		1,880		
ALE65A∭-5/6[H]		10.3 [9.2]	364 [325]	10.5 [9.2]	371 [325]	65		1,880×1,450×1,780	65 [67]		2,010	2.2	30
ALE75AⅢ-5/6[H]	0.75 [0.88]	12.9 [10.2]	456 [360]	13.0 [10.4]	459 [367]	75	JIS10k 50A RF		67 [68]	200/200·220 (400/400·440)	2,240 [2,020]		50 [30]
ALE90AⅢ-5/6[H]		15.9 [13.1]	562 [463]	15.9 [13.2]	562 [466]	90	JUANI	2.060×1.500×2.100	65 [67]		3.090	3.0	50
ALE100AⅢ-5/6	[13.1] [463] [13.2] [466]	Ī	2,000×1,000×2,100	66		3,090	3.0	30					

^{*}Nominal working pressure of 0.75MPa is 0.70MPa. *Nominal working pressure of 0.88MPa is 0.88MPa.

Fixed Speed / Water cooled model

	Max.	Fi	ree Air	Delive	ry	Main		Dimensions	Noise		Weight	Cooling water	ΛT	Water	W-+	Initial
Model	Discharge Pressure	50	Hz	60	Hz	motor	Discharge Connection	W×D×H	Level	Voltage		quantity			Water inlet/outlet connection	
	MPa	m³/min	cfm	m³/min	cfm	kW		mm	dB(A)	kg		L/min	°C		connection	L
ALE55WIII-5/6[H]		9.1 [7.7]	321 [272]	9.2 [7.8]	325 [275]	55			63 [65]		1,980	80				00
ALE65WIII-5/6[H]	0.75	10.6 [9.3]	374 [328]	10.6 [9.3]	374 [328]	65		1,780×1,170×1,680	64 [66]		2,110	95			JIS10k 32A	20
ALE75WⅢ-5/6[H]	[0.93]	13.2 [10.5]	466 [371]	13.2 [10.6]	466 [374]	75				200/200·220 (400/400·440)	2,330 [2,110]	107				35 [20]
ALE90WIII-5/6[H]		16.2 [13.8]	572 [487]	16.2 [14.0]	572 [494]	90	JIS10k 50A RF		[67]		2,770	132	10	32		
ALE100WⅢ-5/6	0.75	17.4	614	17.4	614	100		2,200×1,335×1,887	66		2,790	144			JIS10k	35
ALE110WⅢ-5/6H	0.00	17.0	600	17.1	604	110		2,200 × 1,335 × 1,007	68	400/400 440	2,910	160			40A	35
ALE120WⅢ-5/6H	0.93	18.0	636	18.2	643	120			69	400/400 • 440	2,950	172				

^{*}Nominal working pressure of 0.75MPa is 0.70MPa. *Nominal working pressure of 0.93MPa is 0.88MPa.

^{« »} are for 3k/3.3k, 6k/6.6k specification.

Consult us regarding the size and weight of separate starter panel.

^{*}Please refer to standard specification manual for water quality.

Starting system of fixed speed model is Star-Delta.

^{*}Discharge air volumes is converted to suction conditions (30°C).

*Discharge pressure are measured after the check valve of compressor.

^{*}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 45°C.

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

*Keep the water temperature below 35°C for water cooled model.

^{*}Please refer to standard specification manual for water quality.
*Specifications and appearances are subject to change without notice

Contact us if guaranteed values of performance is needed.



Emeraupe-FE-VF-VE

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

Inverter / Air cooled model

	Max.	Free Air Delivery		Main Distriction		Dimensions	Noise		Weight	Cooling	Initial
Model	Discharge Pressure	50/60Hz		motor	Discharge Connection	W×D×H	Level	Voltage	weigiit	fan motor	lubricant
	MPa	m³/min	cfm	kW	Connection	mm	dB(A)		kg	kW	L
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	1,275 〈1,360〉	2.2	13
VE790A/ADⅢ	0.09	7.9	279	55	50A (R2)	2,080 × 1,200 × 1,500 (2,580 × 1,200 × 1,500)	67	(380-440)	1,430 〈1,620〉	2.2	13

^{*}Nominal working pressure is 0.64MPa.

Inverter / Water cooled model

	Max.	Free Air	Delivery	Main		Dimensions	Noise		Mainha	Cooling	^ T	Water in l et	Water	Initi
Model	Discharge Pressure	50/6	60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Weight	quantity	Δ1	temperature	inlet/outlet	
	MPa	m³/min	cfm	kW	Connection	mm	dB(A)		kg	L/min	°C		connection	L
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	1,250 〈1,335〉	55	10	32	25A (R1)	13
VE790W/WD	0.03	7.9	279	55	50A (R2)	2,080 × 1,200 × 1,500 (2,580 × 1,200 × 1,500)	65	(380-440)	1,405 〈1,595〉	80	10	32	32A (R1·1/4)	13

^{*}Nominal working pressure is 0.64MPa.

Fixed Speed / Air cooled model (0.69MPa)

	Max. Discharge	Free Air	Delivery	Main	Dischause	Dimensions	Noise		Weight	Cooling	Initial
Model	Pressure	50/6	60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	weigni	fan motor	lubricant
	MPa	m³/min	cfm	kW	Connection	mm	dB(A)		kg	kW	L
FE200A/ADⅢ-5/6		2.05	72	22	25A	1.650×900×1.500	63		870 〈925〉	1.5	11
FE370A/ADⅢ-5/6		3.7	131	30	(R1)	1,050 ^ 900 ^ 1,500	64		940 〈1,005〉	1.5	''
FE480A/ADⅢ-5/6	0.69	4.8	170	37		1.950 × 1.100 × 1.500	67	200-220	1,170 〈1,225〉	2.2	13
FE540A/ADⅢ-5/6	0.69	5.4	191	45	40A (R1·1/2)	1,950 × 1,100 × 1,500	68	(380-440)	1,180 〈1,265〉		
FE640A/ADⅢ-5/6		6.4	226	45		2.580 × 1.200 × 1.500	65		1,350 〈1,510〉		
FE770A/ADⅢ-5/6		7.7	272	55	50A (R2)	2,300 ^ 1,200 ^ 1,500	67		1,510 〈1,710〉		

^{*}Nominal working pressure is 0.69MPa.

Fixed Speed / Water cooled model (0.69MPa)

Tixed Speed 7 Water Cooled Hoder (0.03MH a)														
	Max. Discharge	Free Air	Delivery	Main	D: 1	Dimensions	Noise		Weight	Cooling water	ΛT	Water inlet	Water	Initial
Model	Pressure	50/60Hz		motor	Discharge Connection	$W \times D \times H$	Level	Level Voltage	weight	quantity		temperature	e mictiounct	
	MPa	m³/min	cfm	kW	Connection	mm	dB(A)		kg	L/min	°()	connection	L
FE370W/WDⅢ-5/6		3.7	131	30	25A (R1)	1,650 × 900 × 1,500	61		930 (995)	40				11
FE480W/WDIII-5/6		4.8	170	37		1.950 × 1.100 × 1.500	63		1,145 〈1,230〉	50			25A (R1)	
FE540W/WDIII-5/6	0.69	5.4	191	45	40A (R1·1/2)	1,950 × 1,100 × 1,500	64	200-220 (380-440)	1,155 〈1,240〉	60	10	32		13
FE640W/WDIII-5/6		6.4	226	45		2.580 × 1.200 × 1.500	63		1,340 (1,500)	65			32A	
FE770W/WDⅢ-5/6		7.7	272	55	50A (R2)	2,000 ~ 1,200 ~ 1,300	65		1,495 〈1,685〉	80			(R1·1/4)	

^{*}Nominal working pressure is 0.69MPa.

Fixed Speed / Air cooled model (0.88MPa)

Tixed Opeca?	AII 6001	cu illoc	CI (0.00	JIVII a,							
	Max.	Free Air	Delivery	Main	B: 1	Dimensions	Noise		Weight	Cooling	Initial
Model	Discharge Pressure	50/0	60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	weight	fan motor	lubricant
	MPa	m³/min	cfm	kW	Connection	mm	dB(A)		kg	kW	L
FE200HA/AD-5/6		2.0	71	22	25A	1,650 × 900 × 1,500	63		870 〈925〉	1.5	11
FE260HA/ADⅢ-5/6		2.6	92	30	(R1)	1,030 × 300 × 1,300	64	200-220 (380-440)	910 (975)	1.0	
FE400HA/ADⅢ-5/6	0.88	4.0	141	37		1.950 × 1.100 × 1.500	67		1,170 〈1,250〉		
FE530HA/ADⅢ-5/6		5.3	187	45	40A (R1·1/2)	1,000 × 1,100 × 1,000	68		1,180 〈1,260〉	2.2	13
FE630HA/ADⅢ-5/6		6.3	222	55	55 2	2,580 × 1,200 × 1,500	66		1,510 〈1,670〉		

^{*}Nominal working pressure is 0.88MPa.

Fixed Speed / Water cooled model (0.88MPa)

 Fixed Speed / Water Cooled Model (0.00MFa)														
	Max. Discharge	Free Air	Delivery	Main Burn		Dimensions	Dimensions Noise		Weight	Cooling	Λт	Water in let	Water	Initial
Model	Pressure	50/0	60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	weight	quantity		temperature		lubricant
	MPa	m³/min	cfm	kW	Connection	mm	dB(A)		kg	L/min	°(connection	L
FE400HW/WDⅢ-5/6		4.0	141	37		1,950 × 1,100 × 1,500	63		1,145 〈1,230〉	50			25A	
FE530HW/WDⅢ-5/6	0.88	5.3	187	45	40A (R1·1/2)	1,950 × 1,100 × 1,500	64	200-220 (380-440)	1,155 〈1,240〉	65	10	32	(R1)	13
FE630HW/WDⅢ-5/6		6.3	222	55		2,580 × 1,200 × 1,500	64		1,495 〈1,655〉	75			32A (R1·1/4)	

^{*}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?

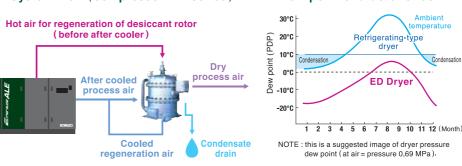
▶ High efficiency

- 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.

- ▶ 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



■ Applicable model



*Selection based on discharge pressure

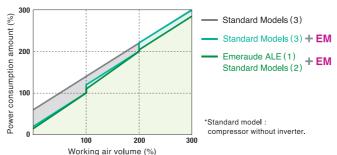
Group Controller Model EM

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.





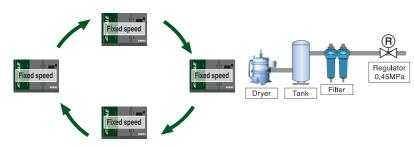
Specification

	Model		EM 42	EM 44	EM 48			
ı	Max No. of cor	npressor	2	4	8			
	Display		4.3 inch	7 inch	7 inch			
ı	Dimensions	Width	500	600	700			
	(mm)	Depth	200	200	200			
	(11111)	Height	600	900	1,200			
	Control pres	ssure	0~1.5MPa					
	Installation	style	Wall mount					
	Weight (kg)		30 50 70					
	Power supp	ly	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.

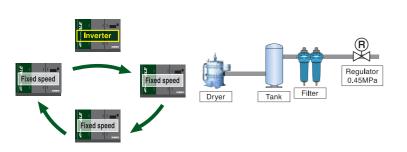
① Group control



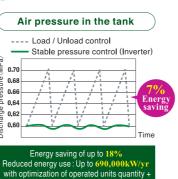
Max 6 units can be operated without a group control panel in case of new ALE.



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.



Air pressure in the tank

Line pressure control "ON"

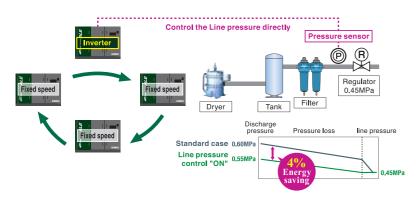
Energy saving of up to 20%

ed energy use : Up to 770.00

---- Load / Unload control

Stable pressure control (Inverter)

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.

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.



Japan

KOBE STEEL, LTD.
KOBELCO COMPRESSORS CORPORATION [KCC]

China

KOBELCO COMPRESSORS MANUFACTURING (SHANGHAI) CORPORATION [KCMS]

⟨ Beijing⟩ KOBELCO COMPRESSORS (SHANGHAI)

CORPORATION BEIJING BRANCH 【KCSB】

(Shanghai) KOBELCO COMPRESSORS (SHANGHAI)
CORPORATION [KCS]

⟨ Guangzhou⟩ KOBELCO COMPRESSORS (SHANGHAI) CORPORATION Guangdong Office [KCSG]

Singapore

KOBELCO MACHINERY ASIA PTE. LTD. [KMA]

Vietnam

KOBELCO COMPRESSORS VIETNAM CO., LTD. [KCV]

Thailand

KOBELCO COMPRESSORS (THAILAND) LTD. [KCTH]

Philippines

KOBELCO COMPRESSORS AND MACHINERY PHILIPPINES CORPORATION [KCMP]

Malaysia

KOBELCO COMPRESSORS MALAYSIA SDN. BHD. [KCM]

Indonesia

PT KOBELINDO COMPRESSORS

Cambodia

KOBELCO COMPRESSORS (CAMBODIA) CO., LTD. [KCCP]

India

KOBELCO COMPRESSORS INDIA PVT. LTD. [KCIN]

America

KOBELCO COMPRESSORS MANUFACTURING INDIANA, INC. [KCMI]



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.

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