



Oil-free Screw Compressor General Catalog





KOBELCO COMPRESSORS CORPORATION

KOBELCO COMPRESSORS MANUFACTURING (SHANGHAI) 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 2106

"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.











Full color Group co

ALE Emeraude ALEN/ Two-stage dry screw



ALE Emeraude ALE / 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.

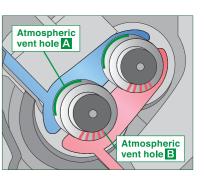
Dual vent holes design

(Common for ALE \mathbb{N} / ALE / FE)

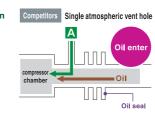


KOBELCO's proven dual vent holes design prevents oil entry in compressor chambers during long unload running.





A Oil return groove* Compressor Chamber Oil seal



■ 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

 $19.2 - 66.8 \,\mathrm{m}^3/\mathrm{min}$

P.20



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

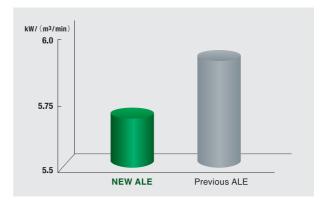
Energy saving

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.

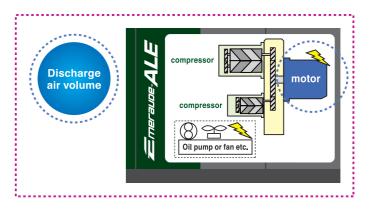
Compared with Previous ALE

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

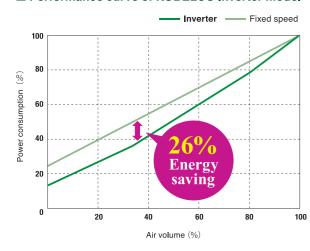
Internal piping design, high efficiency motors and fans contribute to energy savings. Moreover, gas coolers' optimization decreases the discharge temperature and downsizes auxiliary equipment such as dryers. This leads energy saving of not only compressors but also clean air systems.



Partial-load performance of Inverter model

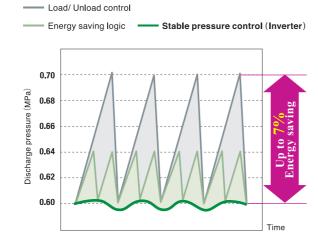
Inverter model's partial load performance has been improved thanks to IPM motor and superior rotor design. Inverter model supplies required air volume in appropriate power consumption.

■ 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.



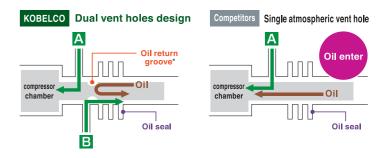
Reliabilit

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

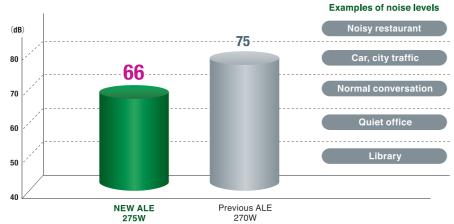
Usability

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

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

Running condition 2



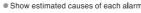
Trouble shooting



Others

Alarm records





Running records



Show graphs of discharge pressure, load rate and motor current

Show running records of every 5sec & 1hr and daily & weekly reports

Protection features

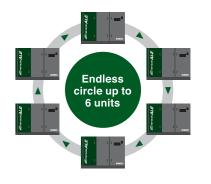
- 7500V surge protector
- Water flow switch (for water cooled model)
- Emergency stop button
- Motor winding temperature detection
- Password protection

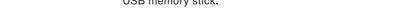
Data logging with USB

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.

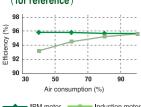
Main motor

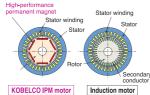


• IPM motor for Inverter model

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.

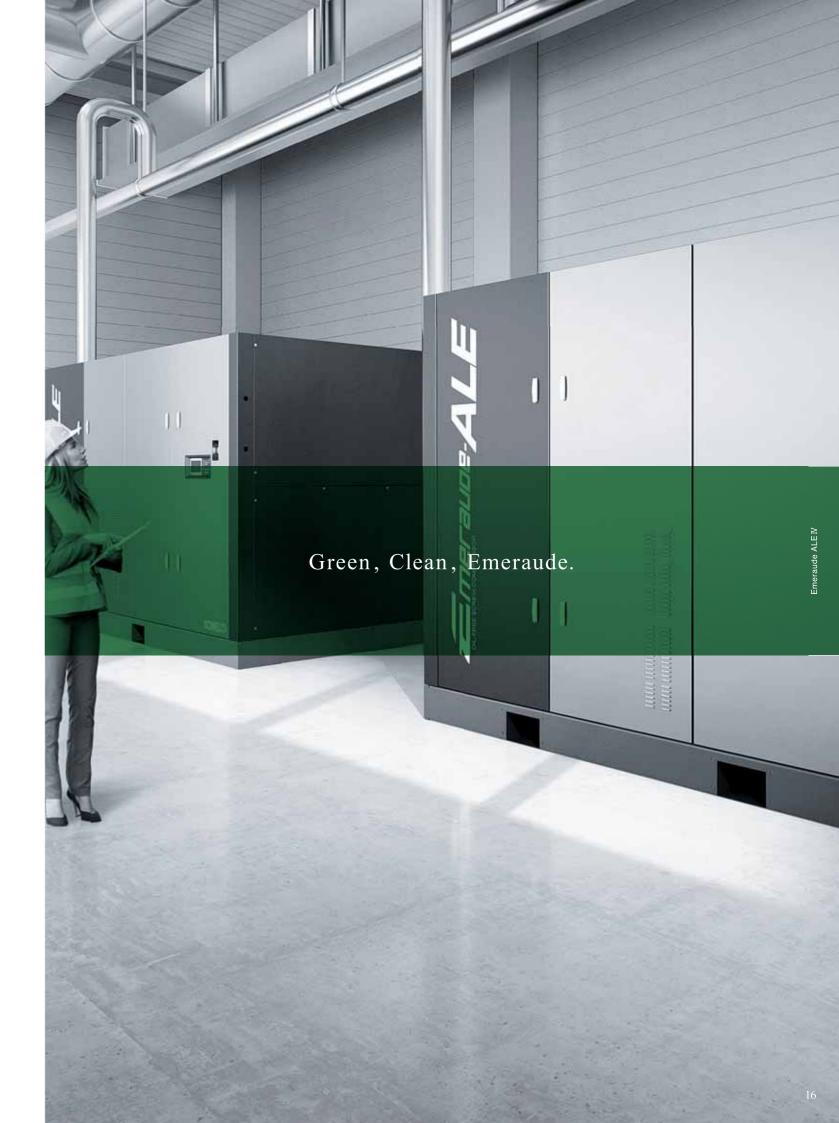
*Expansion Silencer for 200kW and above

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.



Emeraupe-ALE

Motor power

45-120kW

Discharge air flow

5.4 - 17.2 m³/min P.22



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)

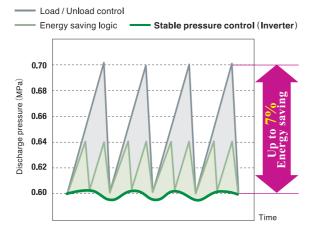
- Water-in-tube design Plate-Fin-Tube Cooler can reduce pressure loss at cooler portion 1/5 compare to usual Shell & Tube type cooler.
- Less accumulation of Silica in water camber.

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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.

■ Standard Overhaul cycle

1st stage

9year

2nd stage

6year

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 equivalent to IP65.

■ Principal features and displays

Maintenance information

| V2/12/31 23:59 | 6.50 bar | W2/12/31 23:59 | MAINTENBUNCE INFORMATION | MEMORY | MAINTENBUNCE INFORMATION | MAINTENBUNCE INFOR







- Weekly timer
- Compressor SettingRunning condition
- Running record

Zmeraude-FE

22 - 55 kW

Discharge air flow

 $3.0 - 8.1 \,\mathrm{m}^3/\mathrm{min}$

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Energy saver with Two-stage compression.

Supreme specific power consumption

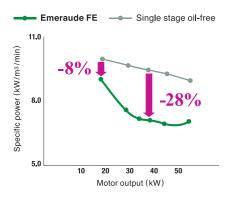
Highly efficient two stages compression

Ultimate clean air

Highly efficient Two-stage compression

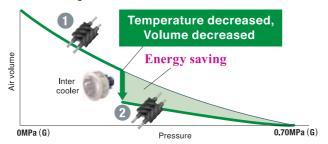
Emeraude FE's Two-stage compression is $8{\sim}28\%$ more efficient than typical single stage oil-free screw type.

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.	Discharge		Main		Dimensions	Noise		Wainb.	
Model	Pressure	50/6	0Hz	motor Discharg		W×D×H	Level	Voltage	Weight	
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	
	0.75	24.8	876							
ALE132WVIV	0.86	22.0	777	132					3,700	
	1.04	19.6	692		JIS10k	2,705×1,545×1,845				
	0.75	29.3	1,035		65A					
ALE160WVIV	0.86	26.8	946	160	FF		66	380 · 415	3,800	
	1.04	24.8	876							
	0.75	45.4	1,603		JIS10k					
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.			Main		Dimensions	Noise	Voltage	Mainte	
Model	Discharge Pressure	50/6	motor	Discharge Connection	W×D×H	Level	Weight			
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	
AL E400 AVIII	0.75	24.0	848	400			71			
ALE132AV IV	0.86	21.1	745	132	JIS10k		/ 1		4,300	
AL EACOAME	0.75	28.3	999	160	65A FF	3,730×1,700×1,995	73	380 · 415	4.300	
ALE160AVIV	0.86	25.8	911	160			/3		4,300	
AL FOGOAVIN	0.75	44.4	1,568	250	JIS10k	4.000 v.1.000 v.0.100	76		F 000	
ALE250AV IV	0.86	40.8	1,441	230	80A FF	4,300×1,900×2,180	76		5,600	

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

Fixed speed / Water cooled model

	Max.	Free Air	Delivery	Main		Dimensions	Noise		Weight	
Model	Discharge Pressure	50)Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Star-Delta	Reactor*
	MPa	MPa m³/min cfm kW		mm	dB(A)	Voltage	k	kg		
	0.75	24.8	876							
ALE132W IV	0.86	21.6	763	132					4,100	-
	1.04	19.9	703							
	0.75	26.5	936		JIS10k					
ALE145WIV	0.86	24.8	876	145	65A	2,705 × 1,545 × 1,845	66	380 · 415	4,200	-
	1.04	21.5	759		FF					
	0.75	29.2	1,031							
ALE160WIV	0.86	26.5	936	160					4,200	-
	1.04	24.7	872							
	0.75	37.4	1,321							
ALE200W IV	0.86	33.7	1,190	200	JIS10k				5,950	-
	1.04	30.3	1,070							
	0.75	45.0	1,589			3,150 × 1,600 × 2,180				
ALE250WIV	0.86	41.4	1,462	250	80A		66	380 · 415	5,950	-
	1.04	38.1	1,345		FF	, , ,				
	0.75	48.6	1,716							
ALE275WIV	0.86	45.0	1,589	275					6,000	-
	1.04	41.3	1,458							
	0.75	54.6	1,928					380 · 415	9,100	-
ALE315W IV	0.86	51.5	1,819	315				10,000	-	10,200
	1.04	48.0	1,695				70	-	-	-
	0.75	63.1	2,228		JIS10k	3,850 × 2,000 × 2,400	70	380 · 415	9,150	-
ALE355W IV	0.86	58.8	2,077	355	100A	(4.082×2.000×2.400)		10,000	-	10,300
	1.04	54.5	1,925		FF	(4,082 × 2,000 × 2,400)		-	-	-
	0.75	66.8	2,359				75	380 · 415	9,400	-
ALE400WIV	0.86	63.1	2,228	400			/5	10,000	-	10,450
	1.04	58.7	2,073				70	-	-	-

Motor specification: Induction motor, 2-pole totally enclosed fan-cooled, Insulation class F, Drive system: Step-up gear.

*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.

 $\langle \ \rangle$ is for 10,000V spec.

Fixed speed / Air cooled model

	Max. Discharge	Free Air	Delivery	Main		Dimensions	Noise		Weight	
Model	Pressure	50	Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Weight	
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	
	0.75	23.8	840							
ALE132A IV	0.86	20.9	738	132			71		4,700	
	1.04	19.2	678							
	0.75	25.6	904		JIS10k					
ALE145AIV	0.86	23.8	840	145	65A	3,730 × 1,700 × 1,995	71	380 · 415	4,700	
	1.04	20.7	731		FF					
	0.75	28.2	996							
ALE160A IV	0.86	25.6	904	160			73		4,700	
	1.04	23.8	840							
	0.75	35.4	1,250							
ALE200A IV	0.86	33.0	1,165	200					6,200	
	1.04	29.8	1,052							
	0.75	44.0	1,554		JIS10k					
ALE250A IV	0.86	40.5	1,430	250	80A	4,300 × 1,900 × 2,180	76	380 · 415	6,200	
	1.04	37.3	1,317		FF					
	0.75	47.6	1,681							
ALE275AIV	0.86	44.0	1,554	275					6,250	
	1.04	40.4	1,427							

Motor specification:Induction motor, 2-pole totally enclosed fan-cooled, Insulation class F, Drive system: Step-up gear.

Water cooled model

Model	Cooling water Quantity	∆T	Water inlet temperature	Water inlet /outlet	Initial lubricant charge
Wodel	L/min	°C		connection	L
ALE132WVIV ALE132WIV	238			110401	
ALE145W IV	261			JIS10k 50A FF	25
ALE160WVIV ALE160WIV	288				
ALE200W IV	355			110401	
ALE250WVIV ALE250WIV	443	10	20	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.

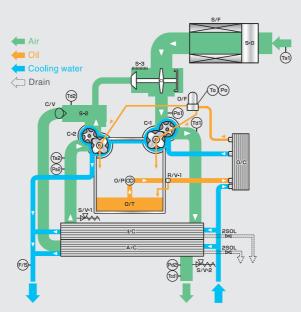
- *Suction conditions Absolute suction pressure:0.10MPa, Suction temperature:20°C, Humidity:0%RH.
- *Discharge air volumes is converted to suction conditions.
- *Discharge pressure are measured after gas coolers.
- *Air produced by compressors should not be used in respiratory equipment
- furnishing air for direct inhalation.
- *Nominal working pressure of 0.75MPa & 0.86MPa model is 0.70MPa.

 *Nominal working pressure of 1.04MPa is 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 1.04MPa model, the surrounding air temperature should not exceed 40 $^{\circ}\text{C})$
- *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

	Cooling fan motor output	Initial lubricant charge			
Model	kW	L			
ALE132AV IV ALE132A IV					
ALE145A IV	6 (3kW×2)	35			
ALE160AVIV ALE160AIV					
ALE200AIV					
ALE250AV IV ALE250A IV	11 (5.5kW×2)	51			
ALE275AIV					

■ Internal flow (Water cooled model)



*S/V-1 applies to only Chinese plant model. *Sample schematic is for 132-160kW.



Emeraune-ALE

Emeraude ALE / Two-stage dry screw

Inverter / Air cooled model

		Max. Free Air Delivery		Main	Main Dimensions		Noise		Wainbi	Cooling	Initial		
ı	Model	Pressure	50/6	60Hz	motor	Discharge Connection		Level	Voltage	Weight	fan motor	lubricant	
ı		MPa	m³/min	cfm	kW		mm	dB(A)		kg	kW	L	
	ALE75AV	0.75	11.6	410	75	JIS10k 40A	2,385 × 1,400 × 1,783	70		2.160	2.2	30	
	ALE75AV-H	0.88	10.1	357	/5	RF		72	380 · 415	2,100	2.2	30	
	ALE100AV	0.75	17.0	600	100	JIS10k 50A	0.466 × 1.500 × 0.160	69	360.415	2.980	3.0	50	
	ALE100AV-H	0.88	15.7	554	100	RF	2,466 × 1,500 × 2,160	71		2,960	3.0	50	

Inverter / Water cooled model

	Max. Discharge	Free Air	Delivery	Main		Dimensions	Noise		Weight	Cooling water	ΔT	Water inlet	M/-4	Initial
Model	Pressure	50/6	60Hz	motor	Discharge Connection	W×D×H	W×D×H Level		oltage			temperature	Water inlet/outlet connection	lubricant
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	L/min	°C		connection	L
ALE75WV	0.75	11.8	417		JIS10k		66							
ALE75WV-SH	0.86	10.3	364	75	40A	2,120 × 1,170 × 1,683	68		2,270	106	10	20	JIS10k 32A	20
ALE75WV-SX	1.0	10.3	364		RF		69	000 445						
ALE100WV	0.75	17.2	607		JIS10k		67	380 · 415	3,060					
ALE100WV-SH	0.86	15.9	562	100	50A	2,604 × 1,335 × 1,891	69			147	10	20	JIS10k 40A	35
ALE100WV-SX	1.0	14.1	498		RF		71							

Fixed Speed / Air cooled model

	Max. Discharge	Free Air	Delivery	Main		Dimensions	Noise		Walata	Cooling	Initial			
Model	Pressure	50	Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Weight	fan motor	lubricant			
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	kW	L			
ALE45A	0.75	6.8	240	45		1,830×1,400×1,783	67		1.900					
ALE45A-H	0.88	5.4	191	45	55 JIS10k 40A		69		1,900					
ALE55A	0.75	8.8	311				68		1,950					
ALE55A-H	0.88	6.8	240	55			70		1,950					
ALE65A	0.75	10.2	360	65	RF		69		2,030	2.2	30			
ALE65A-H	0.88	8.7	307	65			71	380 · 415	2,030					
ALE75CA	0.75	11.8	417	75			70	360-415	2,110					
ALE75AH	0.88	10.1	357	/5			72		2,110					
ALE75A	0.75	12.8	452	75			67	1	1]	2,860		
ALE90A	0.75	15.8	558	90	JIS10k	2.010 × 1.500 × 2.160	68		3.110	3.0	50			
ALE90A-H	0.88	12.8	452	90	50A RF		70		3,110	3.0	30			
ALE100A	0.75	17.0	600	100			69	1	3,160					

Please see next page (P.23) for notes.

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

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Fixed Speed / Water cooled model

	Max. Discharge	Free Air Delivery 50Hz		Main motor	Discharge Connection	Dimensions	Noise		Weight	Cooling water quantity	ΔT		Water inlet/outlet connection	
Model	Pressure					W×D×H	Level	Voltage						
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	L/min	0	°C		L
ALE45W	0.75	6.9	244				63							
ALE45W-SH	0.86	6.9	244	45			65		2,040	59				
ALE45W-SX	1.0	5.4	191				67							
ALE55W	0.75	8.9	314				64							
ALE55W-SH	0.86	8.4	297	55			66		2,080	77	10	20	JIS10k 32A	20
ALE55W-SX	1.0	6.9	244		JIS10k 40A	1,730 × 1,170 × 1,683	68							
ALE65W	0.75	10.4	367		RF		65			90				
ALE65W-SH	0.86	8.9	314	65			67							
ALE65W-SX	1.0	8.9	314				69							
ALE75CW	0.75	12.0	424				66							
ALE75W-SH	0.86	10.3	364	75			68	380 · 415	2,240	106				
ALE75W-SX	1.0	10.3	364				69	300 413						
ALE75W	0.75	13.0	459	75			65		2,950	108				
ALE90W	0.75	16.0	565				66							
ALE90W-SH	0.86	14.1	498	90		2,150×1,335×1,891	68		3,190	134		20	JIS10k 40A	35
ALE90W-SX	1.0	12.9	456				71							
ALE100W	0.75	17.2	607		JIS10k 50A 100 RF		67		3,240		10			
ALE100W-SH	0.86	16.0	565	100			69			147	10			
ALE100W-SX	1.0	14.1	498				71							
ALE110W-SH	0.86	17.1	604	110			69		3,400	152				
ALE110W-SX	1.0	16.0	565	110			72		3,400	132				
ALE120W-SX	1.0	17.1	604	120			72		3,470	158				

Starting system of fixed speed model is Star-Delta.

*Suction conditions Absolute suction pressure:0.10MPa, Suction temperature:20°C, Humidity:0%RH.

*Discharge air volumes is converted to suction conditions.
*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.
*Nominal working pressure of 0.75MPa is 0.70MPa.

*Nominal working pressure of 0.86MPa is 0.80MPa. *Nominal working pressure of 1.0MPa is 1.0MPa.

*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





Emeraude FE / Two-stage dry screw

Inverter / Air cooled model

		Max. Discharge Pressure	Free Air Delivery		Main		Dimensions	Noise			Cooling	Initial
	Model			60Hz	motor	Discharge Connection	W×D×H	Level	Voltage	Weight	fan motor	lubricant
		MPa	m³/min	cfm	kW		mm	dB(A)		kg	kW	L
	FE37AV	0.75	5.4	191	37	40A	1,650 × 1,100 × 1,500	68	380 · 415	1,035	2.2	13
1	FE55AV	0.75	8.1	286	55	(R1·1/2)	1.950 × 1.200 × 1.500	67	300 413	1.440	2.2	13

Fixed Speed / Air cooled model

	Max.			Main motor	Discharge Connection	Dimensions	Noise		Walaha	Cooling	Initial
Model	Discharge Pressure					W×D×H Level		Voltage	Weight	fan motor	lubricant
	MPa	m³/min	cfm	kW		mm	dB(A)		kg	kW	L
FE22A	0.75	3.8	134	22	25A	1,650 × 900 × 1,500	64		905	2.2	11
FE22A-H	0.86	3.0	106	22	(R1)						
FE30A	0.75	4.8	170	30	40A (R1•1/2)	1,650 × 1,100 × 1,500	67		1,016	3.0	13
FE30A-H	0.86	4.2	148	30							
FE37A	0.75	5.8	205	37				380 · 415			
FE37A-H	0.86	5.1	180	37				360*415			
FE45A	0.75	6.9	244	45		1,950 × 1,200 × 1,500	65		1.325	3.0	
FE45A-H	0.86	6.3	222	45			66		1,323		
FE55A	0.75	8.1	286	55			67		1,415		
FE55A-H	0.86	7.5	265	55			68		1,415		

Starting system of fixed speed model is Star-Delta.

*Suction conditions Absolute suction pressure:0.10MPa, Suction temperature: 20°C, Humidity: 0%RH.

*Discharge air volumes is converted to suction conditions *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.

*Nominal working pressure of 0.75MPa is 0.70MPa *Nominal working pressure of 0.86MPa is 0.80MPa

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*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?

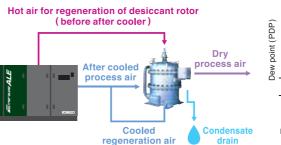
▶ High efficiency

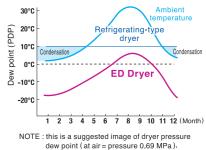
- No requirement of external power for regeneration because hot air from compressor is used for regeneration of desiccant. Only 15-40W for rotary system needed.
- No purge air loss* unlike heatless desiccant type.

- ▶ 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.











■ Applicable model

*Selection based on discharge pressure

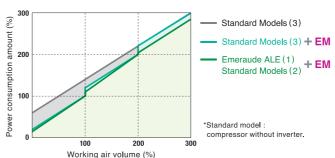
Group Controller Model EM

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.





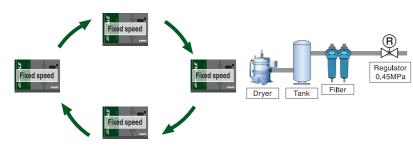
Specification

Model		EM 42	EM 44	EM 48				
Max No. of cor	npressor	2	8					
Display		4.3 inch	7 inch	7 inch				
D:	Width	500	600	700				
	Depth	200	200	200				
(11111)	Height	600	900	1,200				
Control pres	ssure	0~1.5MPa						
Installation	style	Wall mount						
Weight (kg)		30	70					
Power supp	ly	AC 100V to 240V 50/60Hz 1Φ						
	Max No. of cor Display Dimensions (mm) Control pres Installation Weight (kg)	Display Dimensions (mm) Width Depth	Max No. of compressor 2	Max No. of compressor 2 4 Display 4.3 inch 7 inch Dimensions (mm) Width Depth 200 200 200 Height 600 900 Control pressure 0~1.5 MPa Nall mount Installation style Wall mount Weight (kg) 30 50				

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.

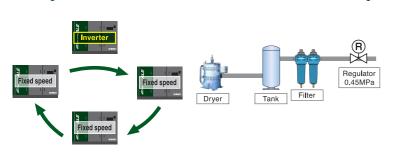
① Group control



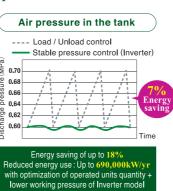
Max 6 units can be operated without a group control panel in case of new ALE.



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

Stable pressure control (Inverter)

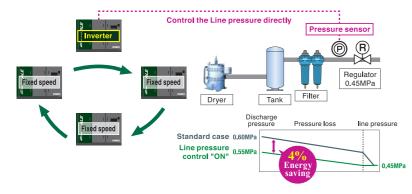
Line pressure control "ON"

Energy saving of up to 20%

ed energy use : Up to 770.00

---- Load / Unload control

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.



Sales companyProduction base

Japan

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

 ${\tt KOBELCO\ COMPRESSORS\ MANUFACTURING\ INDIANA,\ INC.\ [KCMI]$}$



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.