

KOBELION

SCREW COMPRESSOR

Oil Injected Screw Compressor General Catalog

KOBELION
SCREW COMPRESSOR

KOBE STEEL,LTD.

Machinery Business / Compressor Division

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.

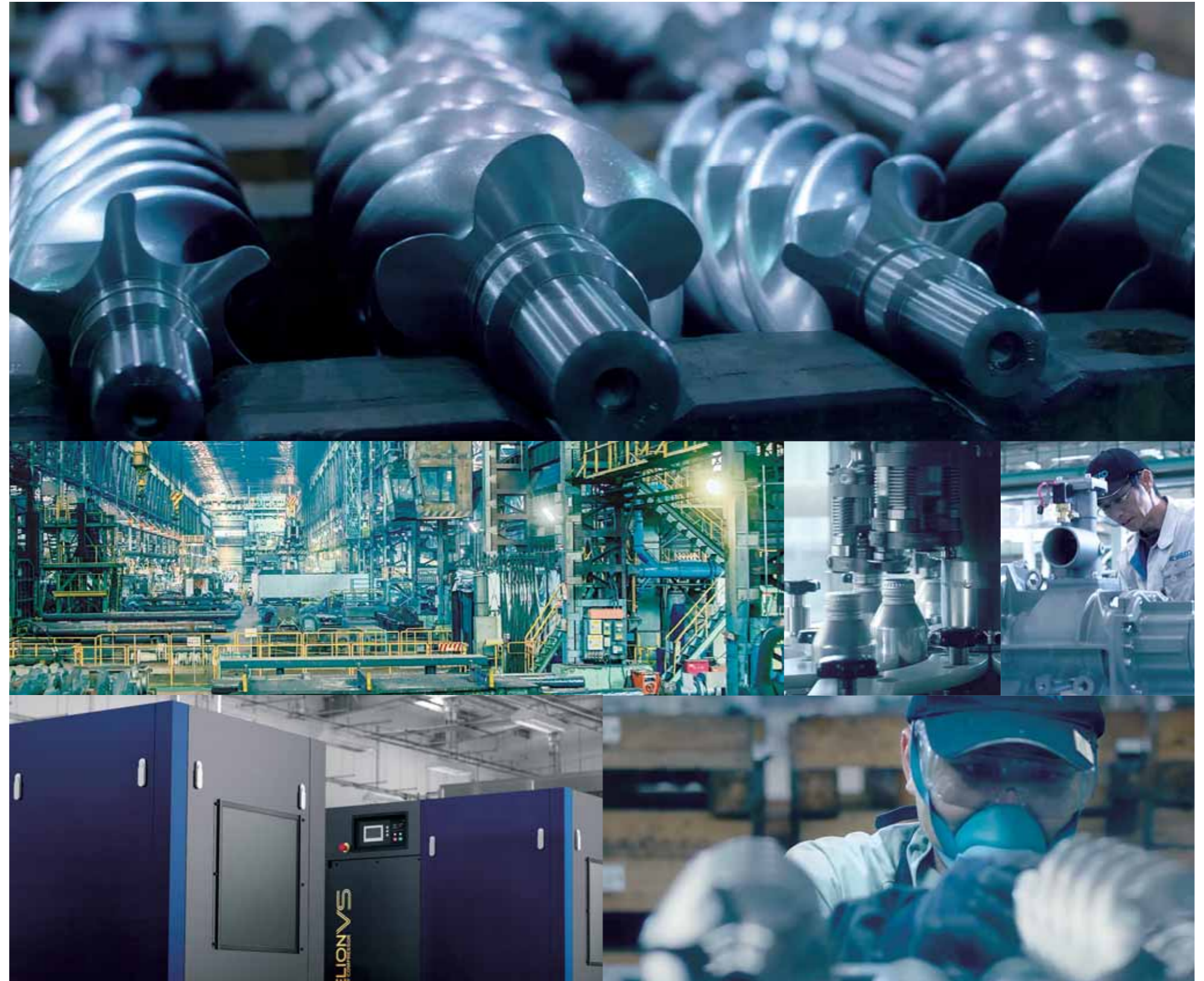
"Monozukuri" What makes it KOBELCO

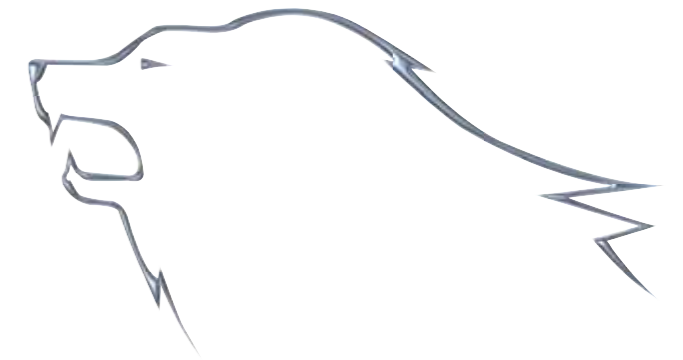
"Monozukuri" literally means Production or Manufacturing in Japanese word. But this "Monozukuri" especially has meaning of integration of prowess, know-how, and spirit of Japanese manufacturing, which include sincere mind, pride for the quality backed by skill, dedication and the pursuit of innovation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





Diverse choices for the best of your use.

NEW GENERATION
KOBELION
 SCREW COMPRESSOR
 VS / AG / SG series

KOBELION
 SCREW COMPRESSOR

VS series

AG series

SG series

Small type SG series

Large type VS / AG series



Motor output **22-75 kW**

Discharge air flow **3.8-15.1 m³/min**

P.7

Motor output **15-75 kW**

Discharge air flow **2.18-15.0 m³/min**

P.13

Motor output **30-90 kW**

Discharge air flow **4.75-17.8 m³/min**

P.14

Motor output **15-22 kW**

Discharge air flow **1.86-3.7 m³/min**

P.19

Motor output **110-250 kW**

Discharge air flow **18.6-43.4 m³/min**

* Only VS *2

P.20

INVERTER control IPM motor IoT cloud service Full color touch monitor Group control with hard wire *1

Model	Type	(kW)													
		15	22	30	37	45	55	75	90	110	132	160	200	250	
VS	INVERTER		●		●		●	●		●	●	●	●	●	
AG	Fixed speed	●	●		●		●	●		●	●	●	●	●	
SG	Fixed speed	●	●	●	●	●	●	●	●						

*1 Availability of group control with hard wire varies depending on controller type.
 *2 Requires stand alone "Kobelink BOX", please see P.25 for detail.

KOBELION

NEW GENERATION KOBELION Debut.

KOBELION-1st generation launched in 2002, presenting innovative concept in the industry. When we developed NEW GENERATION KOBELION, we redefined every key component, from screw element, inverter, cooler to controller and took the most forward-looking way to design each of them. All new are for the best, making KOBELION as masterpiece.

WHAT'S NEW



Ultimate Energy saving

With newly developed screw elements, achieved up to 15% lower specific power consumption and up to 17% more air volume compared to previous model.



Outstanding quietness

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



Up to 50°C ambience

Designed with enough margin against temperature, continuous duty up to 46°C, can be operated up to 50°C.



IoT cloud service "Kobelink"

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



Full color touch monitor*

Newly developed "NGSC-430/700" is sophisticated LCD interface which enables you to figure out necessary information at a glance.

*Available for NGSC-430/700 controller

KOBELION VS

SCREW COMPRESSOR

Motor power	Discharge air flow	Specification
22-75 kW	3.8-15.1 m ³ /min	P.23



Ultimate Efficient Inverter Model.

Summit of high-tech for extreme efficiency. Premium energy saver with industrial top notch Air-End, super premium efficiency (IE4 equiv) IPM motor, built-in overhung design. Much wider range, much better usability.

- Energy saving with Inverter
- Super premium efficiency IPM motor (IE4 equiv)
- Built-in overhung design
- New Wide Range Control
- Kobelink compatible
- Up to 50°C ambient condition

BUILT-IN OVER HUNG DESIGN, as identity of KOBELION. Now, you can feel the GENUINE.



High efficiency

Motor rotor is directly mounted on the rotor shaft. No coupling, no belt and no gear design realize zero transmission loss.

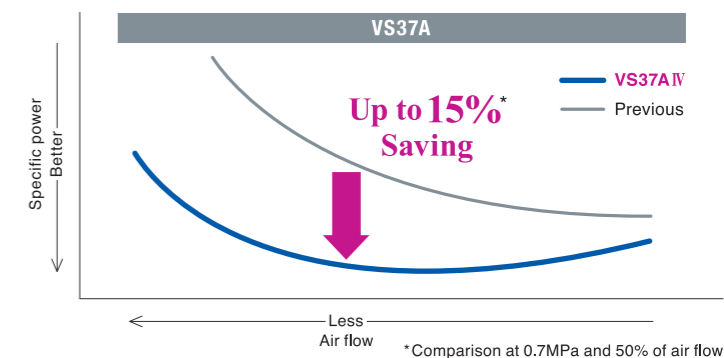
Easy maintenance

With built in overhung design, adjusting and replacing of v-belt is no longer necessary. It is not even required to change or re-grease motor bearings.

Ultimate specific power consumption

Thanks to newly developed Air-End from its rotor profile, super premium efficiency IPM motor and optimised package design, KOBELION VS achieved best in class specific power consumption.

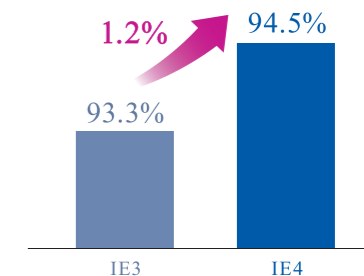
Specific power consumption comparison



Super Premium Efficiency IPM Motor (IE4 equiv)

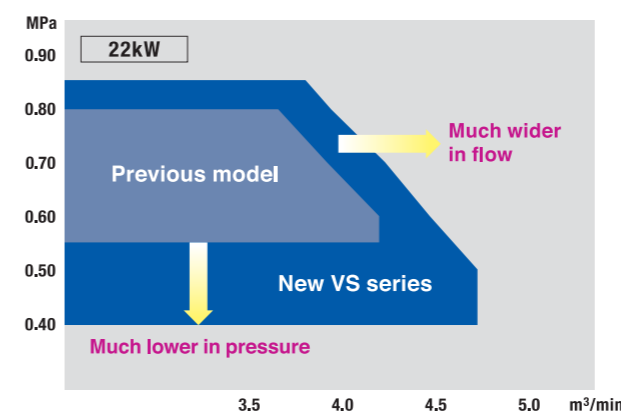
New KOBELION VS series equips super premium efficiency IPM (interior permanent magnet) motor, which efficiency is equivalent to IE4 of IEC standard. IPM has better efficiency from low load to high load compare to induction motor. This IPM is with oil cooled jacket cooling system with insulation class H, which has better resistance to high ambient conditions.

(*) Standard of motor efficiency is defined by IEC (International Electrotechnical Commission) standard and it defines IE1=Standard Efficiency, IE2=High Efficiency, IE3=Premium Efficiency, and IE4=Super Premium Efficiency for induction motor. As IPM is synchronous motor, IPM is not defined in this scheme. IPM equipped on VS series has the efficiency beyond IE4 of induction motor, and has good efficiency in wide range of the working load.



New Wide Range Control

In case that required pressure of compressor is 0.5MPa, you may be able to use one size smaller compressor. Wide Range Control of KOBELION VS can deliver much higher flow when it runs at lower pressure point. KOBELION VS senses line pressure and automatically change maximum rpm limit. New KOBELION VS achieves much higher flow and much wider pressure range. As a leading company of Inverter compressor, we can offer cutting-edge value.



Increased discharge air flow by Wide Range Control

	0.85MPa	0.8MPa	0.7MPa	0.5MPa	0.4MPa
22kW	3.8	3.94	4.22	4.72	4.72
Increased rate	Base	104%	111%	124%	124%
37kW	6.3	6.5	7.0	7.6	7.6
Increased rate	Base	103%	111%	121%	121%
55kW	9.65	10	10.6	11.4	11.8
Increased rate	Base	104%	110%	118%	122%
75kW	12.9	13.1	13.9	14.8	15.1
Increased rate	Base	102%	108%	115%	117%



New Generation Smart Controller
NGSC-430 controller as standard

Kobelink - IoT cloud service

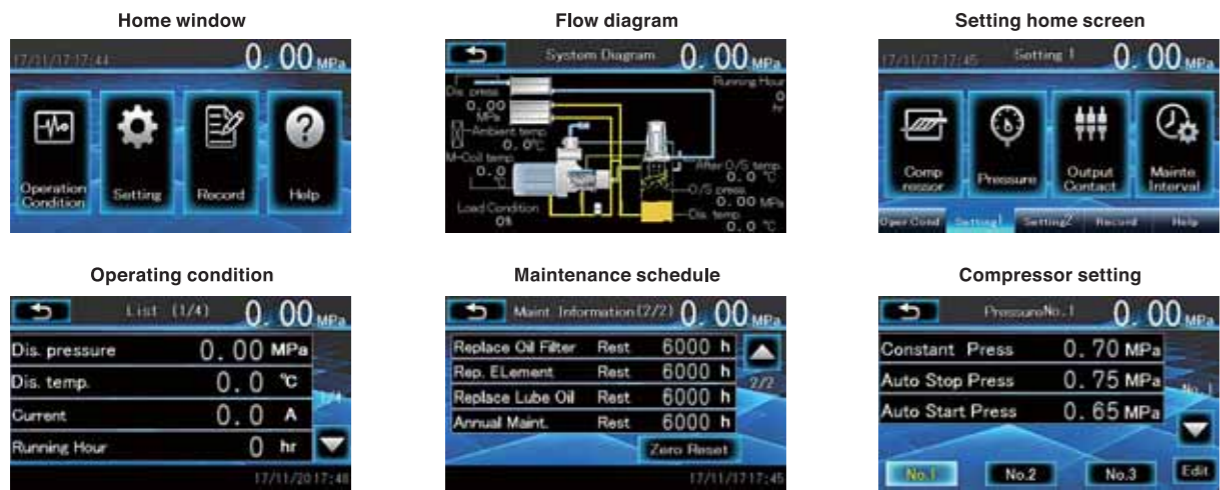


- 4.3 inch full color touch LCD monitor
- Function key (Shortcut key)
- LED status indicator
- Switch for Local/Remote
- Reset button
- Start/Stop button

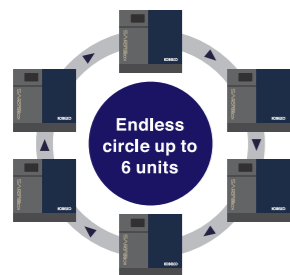
NGSC-430 for VS series equips 4.3 inch full color touch operation monitor. Sophisticated LCD interface enables you to figure out following information at a glance.

- Operating condition
- Alarm / Interlock list
- Compressor settings
- Daily, Weekly, Monthly record etc.
- Maintenance schedule
- Alarm / Trip history
- Flow diagram

Various user interface



Compressor Group Control



Up to 6 units of compressor can be control by inbuilt sequencing function without external control panel. (Hard wire connections are needed)

Other features

- 3 mode pressure setting
- Energy saving logic
- USB data logging
- Modbus I / O
- Kobelink - Remote monitoring
- 7500V lightning surge killer
- Multi language (JPN/ENG/CHN)
- Overload protection
- Instant power failure ride-through : [AG]~0.3 sec [VS]~0.5 sec
- Automatic restart : 5~20 sec
- Reverse phase protection etc.

Monitor can be upgrade as option

Kobelink - IoT cloud service

NGSC-700 Controller

- 7.0 inch full color touch LCD monitor
- Operation / Maintenance / Alarm / Interlock information
- Flow diagram
- Operation record / Chart display
- Weekly timer
- Compressor setting (3 pressure mode setting, output signal terminal settings)
- Group control (2 units / 6 units)
- USB data logging
- Modbus I / O etc

■ Controller can be upgrade as option

	Standard		Option (Upgrade)
VS	NGSC-430	→	NGSC-700
AG	NGSC-430	→	NGSC-700
SG	NGSC-200	→	NGSC-430 NGSC-700

Why INVERTER? Question actually should be "WHY NOT?"

INVERTER

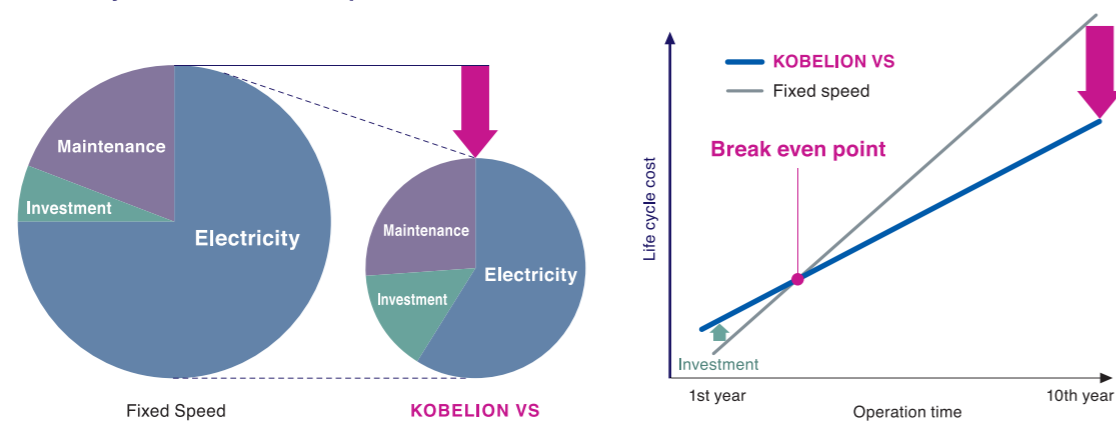
Since we firstly applied IPM motor on INVERTER compressor in 1998, we have been accumulated know-how of INVERTER compressor for nearly 20 years. Our advanced energy saving technology have been chosen by various fields of industry over the years.



Down-to-earth investment for the future

What's important is not initial cost but life cycle cost (LCC). INVERTER compressors may look more expensive than fixed speed model, but many customers choose them because they know importance of life cycle cost (LCC) & return on investment (ROI) when it comes to choosing compressors.

Life cycle cost (LCC) comparison

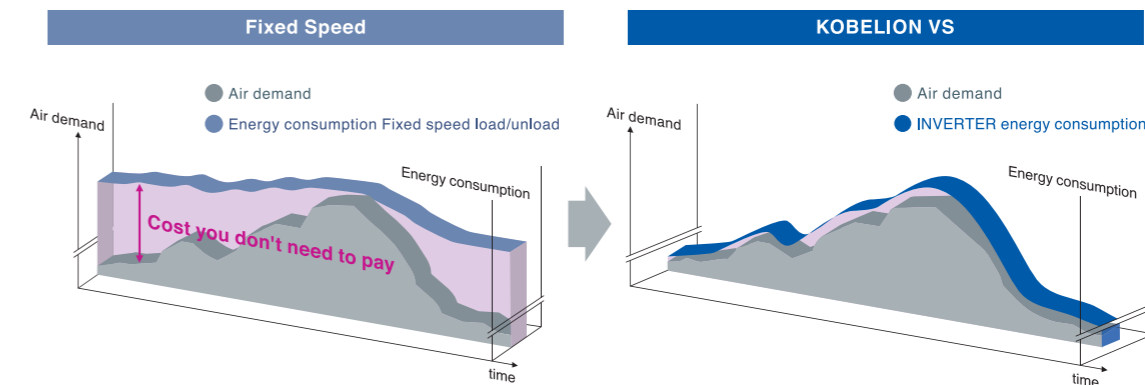
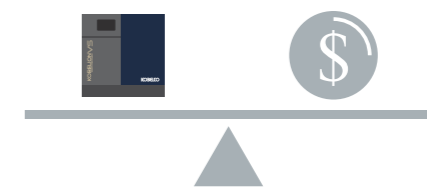


Can Save
Approx. 30%
of life cycle cost (LCC)

* **Comparison model** VS22IV (Latest INVERTER model)
SG22A (Previous fixed speed model Load/Unload)
* **Conditions** Yearly running hour:6,000hours, Total running year:10 years:Load ratio:40%,
Investment and maintenance cost is as per KOBELCO conditions.
* The energy saving outcome of introduction of inverter compressors can vary depending on actual running situations.

What you pay should be only for what you use

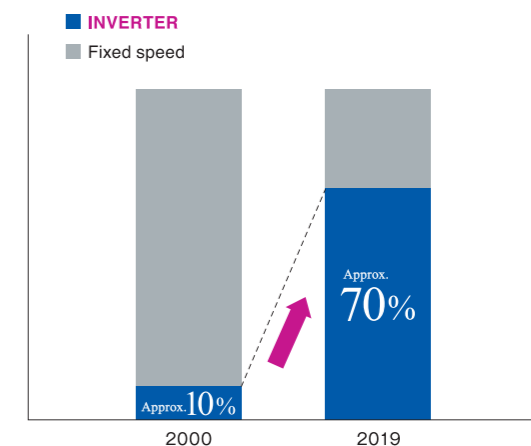
In every situation in our life, we pay only for what we eat, drink and use etc. Of course, compressors also should be that way. KOBELION VS can adjust compressor's rotating speed depends on the demand of factory load which changes from moment to moment by own developed algorithm. Thus, it can provide exact volume and pressure what customer needs and achieve maximum energy saving.



Already majority in Japan

Approx. **70%**

The percentage of INVERTER type KOBELCO*1 ships in Japanese market is approx. 70%*2. In 2000, INVERTER ratio was only approx.10%. This is a sign of fact that people are getting aware of importance of "Life Cycle Cost (LCC)" and "Return on Investment (ROI)". Now INVERTER is not special but mainstream for every industry. *1:15~75kW/oil injected type *2:As of 2019 April



KOBELION AG

SCREW COMPRESSOR

Motor power	Discharge air flow	specification
15-75 kW	2.18-15.0 m ³ /min	P.23



New Generation Air-end, Direct Gear Drive, IE3 premium efficiency motor standardly equips to minimize all types of losses and achieves best rated performance as base load machine. Industry leading quality with IoT compatible control. Best in class air flow in all the range.

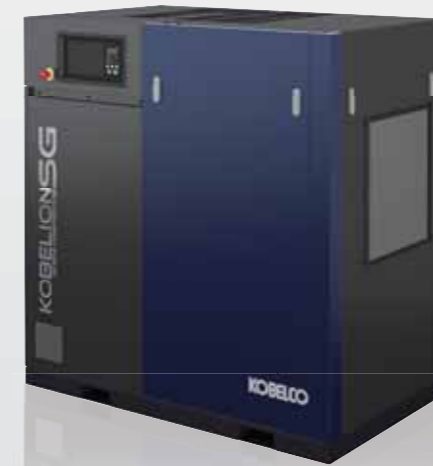
PREMIUM LINE - Fixed speed model

- Extreme efficiency
- Direct Gear Drive
- Kobelink compatible
- Premium efficiency motor (IE3)
- Resistance to high ambient up to 50°C

KOBELION SG

SCREW COMPRESSOR

Motor power	Discharge air flow	specification
30-90 kW	4.75-17.8 m ³ /min	P.23



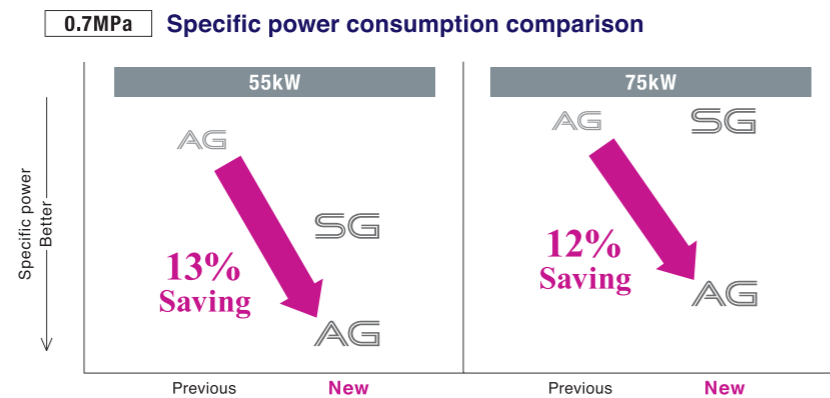
New Generation Air-end, Direct Gear Drive, IE3 premium efficiency motor standardly equips. Integration of cutting-edge technology as industrial compressor for highest reliability and simple controllability.

STANDARD LINE - Fixed speed model

- Best-in-class discharge air flow
- Direct Gear Drive
- Kobelink compatible
- Premium efficiency motor (IE3)
- Resistance to high ambient up to 50°C

Ultimate specific power consumption

KOBELION AG equips state-of-the-art extra large size air end. Newly developed profile rotors and flow-optimized bearing lube control boost energy efficiency to the highest standard. Up to 15% energy, 8.5% on average more efficient compare to its previous model.



NGSC-430 controller as standard

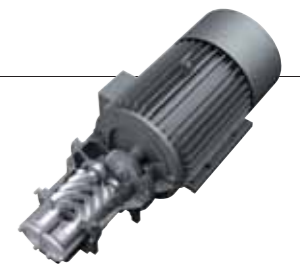


- 4.3 inch full color touch LCD monitor
- Operation / Maintenance / Alarm / Interlock information
- Flow diagram
- Operation record / Chart display
- Weekly timer
- Compressor setting (3 pressure mode setting, output signal terminal settings)
- Group control (2 units / 6 units)
- USB data logging
- Modbus I / O etc

Kobelink - IoT cloud service

Direct Gear Drive (AG/SG)

Designed to achieve best efficiency in rated load. Precise machined helical gears are directly mounted on motor shaft and eliminate coupling or v-belt. Single piece drive train minimize vibration of rotating part and mechanical losses. Also adjusting and replacing of v-belt is no longer necessary. All the model is with IE3 Premium efficiency motor.



Best in Class discharge air flow

New KOBELION SG achieves best-in-class discharge air flow, and max 17% increase from existing model, thanks to New Generation Air-end.

● Previous model	30kW	5.4	9% UP	5.9
● New SG series	45kW	8.1	12% UP	9.1

Model	0.75MPa	0.85MPa	1.05MPa
SG30A V	5.9	5.4	4.75
Previous model	109%	110%	111%
SG37A V	7.0	6.4	5.7
Previous model	105%	102%	104%
SG45A V	9.1	8.5	7.7
Previous model	112%	112%	117%

NGSC-200 controller as standard



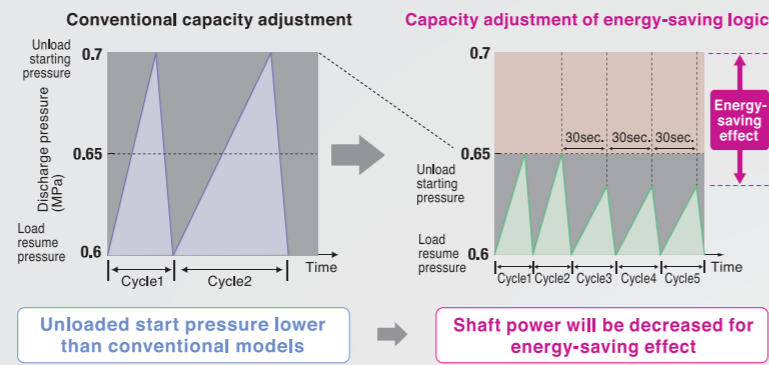
- 5 digits segment LED monitor
- Operation / Maintenance / Alarm / Interlock information
- Compressor setting
- LED status indication
- Remote I / O (Start / Stop / Load / Alarm / Trip)
- Modbus I / O etc

Kobelink - IoT cloud service

Other features

Energy saving logic

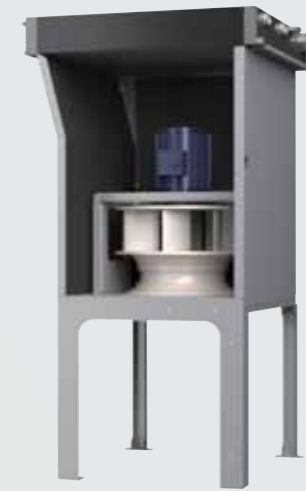
KOBELCO's "Energy saving logic" can reduce pressure band of load/unload control to eliminate excess pressure hike.



Up to 50°C Ambient

KOBELION is designed for operation up to 50°C ambient condition. All the component like split designed oil cooler and after cooler is designed for extreme condition. Against 46°C continuous duty, we still have safety margin.

*Maintenance interval may be changed under the surrounding condition of above 46°C.



Reliable 3-step Oil separation system

Centrifugal, Gravity, Coalescing filtration 3-step oil separation system enables to remove oil mist from compressed air efficiently. Oil vapor in the compressed air is less than 1.6 ppm (*).

(*) As per our reference condition

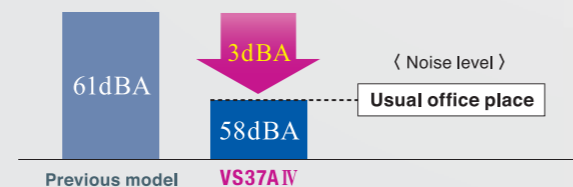
Dust filter as standard

Unit dust filter standardly equipped for all model. Prevent heavy dust enter into the compressor package.



Low noise package

New KOBELION achieves world best class low noise during operation. Latest noise simulation analysis and our package design will change the image of industrial compressor.



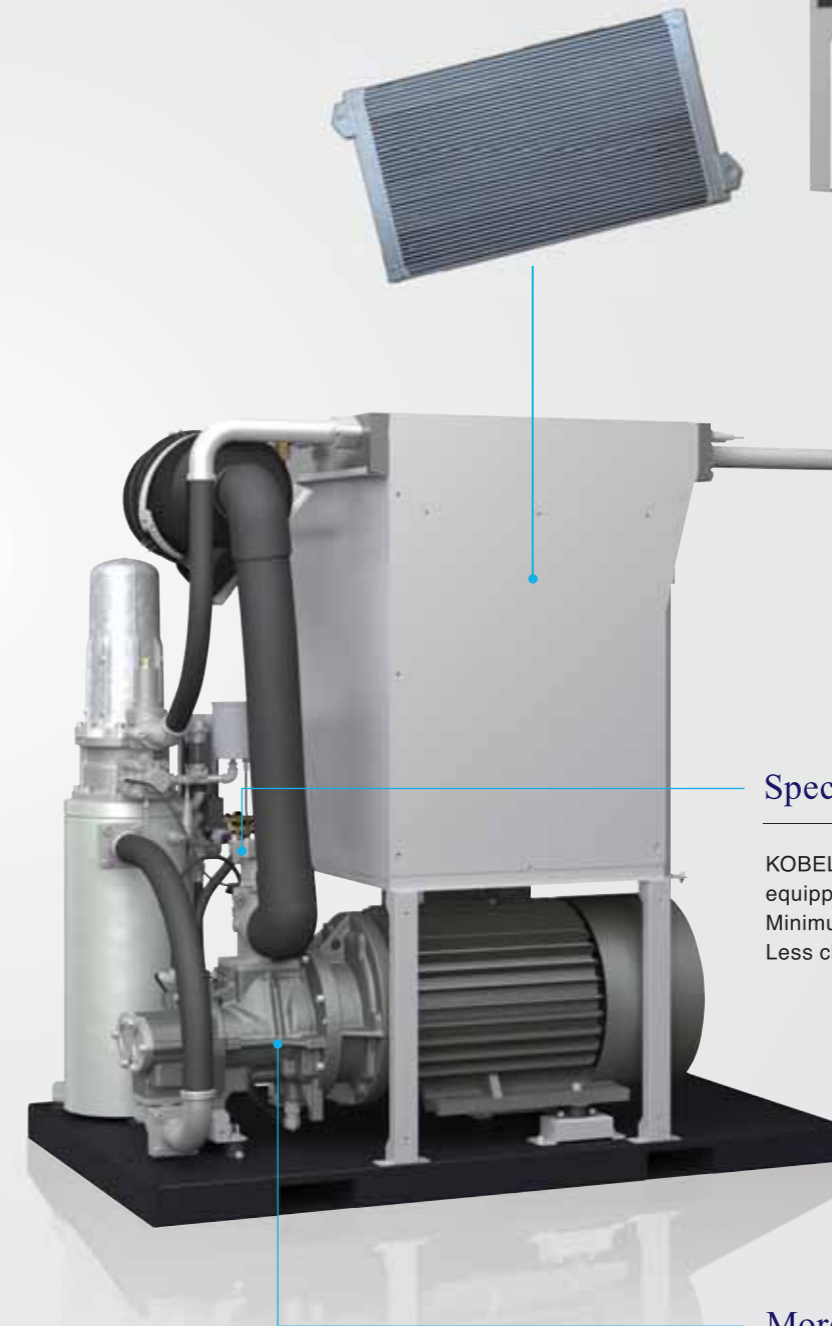
Special design unloader valve

KOBELCO special design suction unloader valve equipped. Minimum pressure loss, high reliability. Less chance of trouble, and longer maintenance life.



More reliable bearing

New KOBELION equips bearings with stabilizing treatment. This is our endless challenge for more reliability.



Our prides

- Quality, always our first priority
- Complete in-house technologies, including screw element material
- Insatiable challenges for technology upgrade
- No compromise for every detail
- Proven experience of over 100 years

Dedication to every detail



Over 100 years history



Commitment to top quality



KOBELION SG

SCREW COMPRESSOR

Motor power	Discharge air flow	Specification
15-22 kW	1.86-3.7 m ³ /min	P.24



Simple, small but strong.

Sophisticated basic functions of KOBELION are packaged into compact body. You can feel genuineness here as well.

KOBELION VS·AG

SCREW COMPRESSOR

Motor power	Discharge air flow	Specification
110-250 kW	18.6-43.4 m ³ /min	P.24



VS series

AG series

Extreme durability & reliability, extra peace of mind.

State of art screw element

- Quality, efficiency and reliability backed by over 100 years history of KOBELCO as compressor manufacture.
- Direct gear drive design - No V-belt, No Coupling - eliminates chance of misalignment, frequent tension adjustment and minimize mechanical loss.



User friendly controller



- Simply designed controller with IP65 protection, LCD high resolution display.
- Various optional interfaces are available as below ;
 - RS485 / Ethernet connection
 - Protocol : Modbus
 - Up to 8 units can be controlled each other by RS485

Outstanding toughness

- Continuous operation under 46°C ambient condition with more margin against tripping point.
- Separation of HOT and COOL zone enables to keep screw element, motor, electric cubicle in cool condition and eliminate heat circulation from cooler section.

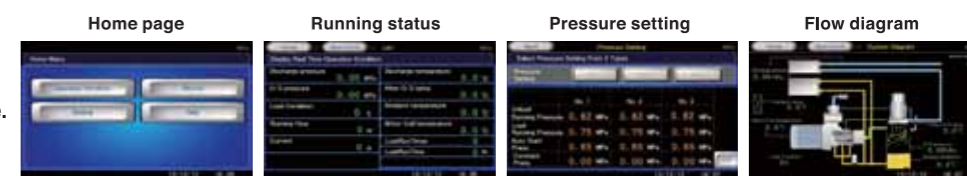
High durability & reliability

- Optimized internal air flow and thermal pattern by separation of HOT and COOL zone and professional air duct design.
- Continuous operation under 46°C ambient condition with more margin against tripping point.



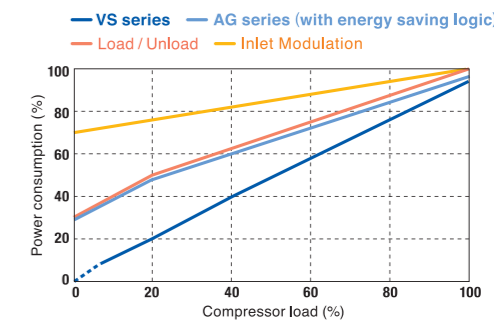
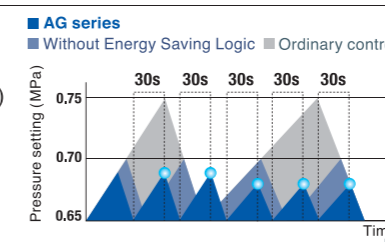
Big touch color monitor

- Sophisticated LCD interface enables you to see operation conditions at a glance.



Energy saving logic (AG series)

- Automatically unloading if unload/load cycle is longer than setting time (30 seconds) and eliminates unnecessary pressure rise.



ECONO MILD II (Group Control Panel)

When using multiple compressors, the system ensures efficient energy-saving control.

The system automatically selects and controls the optimum number of units in accordance with air flow needs.

Two to six compressors can be connected to the system.

The system supports multiple-unit operation including a KOBELCO inverter-equipped compressor.



Operability is enhanced by a touch screen panel color LCD monitor

- An easy-to-view and easy-to-use, touch screen panel full color LCD monitor is included.
- Just touch the screen to select the number of units and make settings.

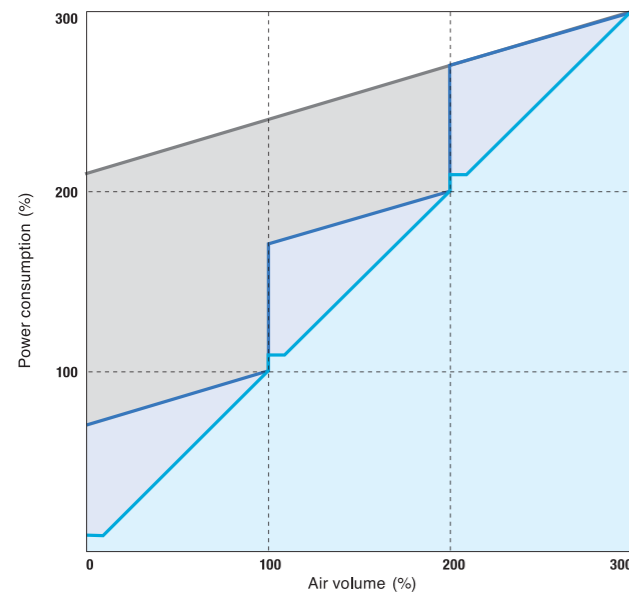


Previously optional features are included as standard

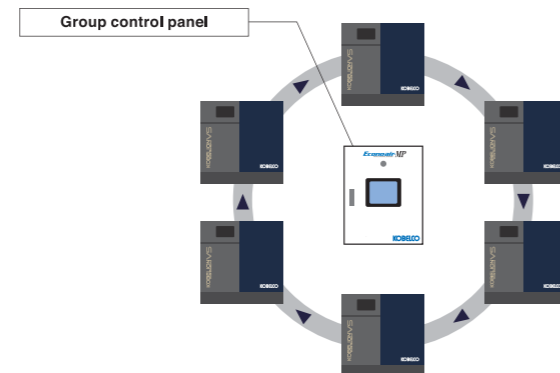
The following previously optional four features are included as standard.

- Momentary interruption protection (within 0.5 second), automatic recovery after power failure.
- Timer to switch from the first to the second compressor.
- Weekly timer
- Support for multiple-unit operation including an inverter compressor

Control model



- Fixed speed x 3 units without group control
 - Fixed speed x 3 units with group control
 - Inverter x 1 unit Fixed speed x 2 units with group control
- *Fixed speed : Inlet modulation



KOBELCO Energy Audit

How much can you cut your energy cost by optimizing air system? We will let you know.

3 simple steps of Energy Audit

1 Collecting the running data

KOBELCO visits customer site to collect existing compressors' running data with a small equipment.

2 Analyzing the collected data

KOBELCO analyzes the collected data with KOBELCO's original software and considers the best suited air system.

3 Learning with KOBELCO

KOBELCO submits a read friendly report on analyzed existing compressors' data and energy saving potential by air system optimization.



Why KOBELCO Energy Audit ?

- No production interruptions
- Can be conducted at any time
- Rich experience all over the world
- Simulation & recommendation based on actual data measured
- Can be applicable to any brands of air compressor



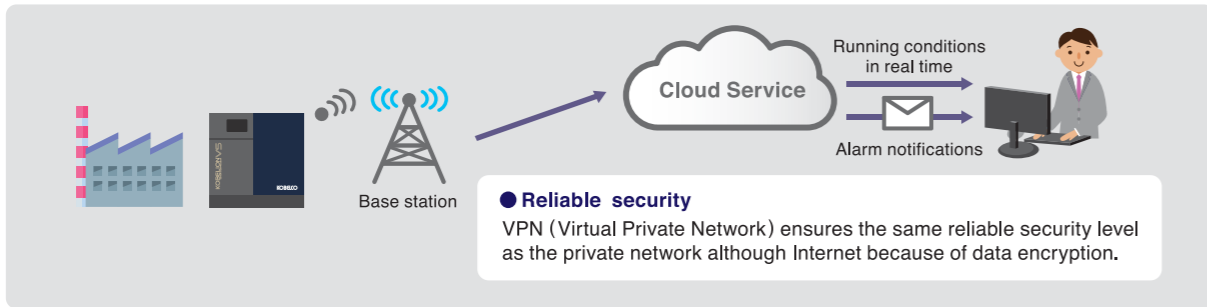


New air solution program with advanced IoT technology by KOBELCO

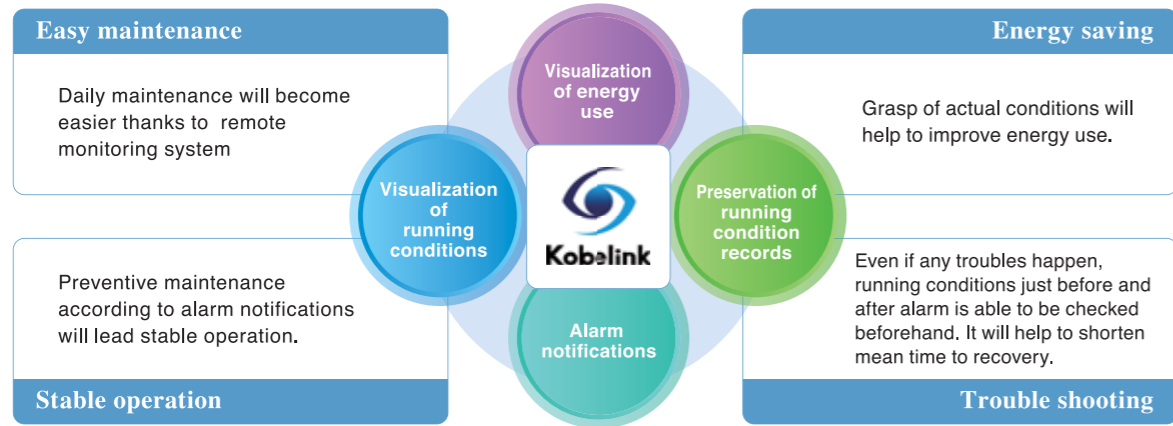
KOBELCO's Cloud service **Kobelink**

Anytime, Anywhere

Customers can monitor running conditions of compressors anytime, anywhere because they are updated and can be accessed through Cloud service in real time. Moreover, alarm notifications will help stable operation.



Practical use of Kobelink



Things to be noted when using **Kobelink**

A special kit ("**Kobelink Kit**") is required for using Kobelink. There are two types of Kobelink Kits depending on the type of compressor you are using, namely, [**Built-In Type**], which can be mounted inside the compressor unit, and [**External Type**], which requires additional installation.

< For the latest models KOBELIONIV >

Built-In Type

They are **compressor built-in types** which allow the use of Kobelink with a simple installation work.



*Kobelink Kit will be shipped only to customers who have agreed to avail Kobelink services upon ordering KOBELIONIV.

< For other models >

External Type

Kobelink can be used by installing the "**Kobelink BOX**" which is sold separately.



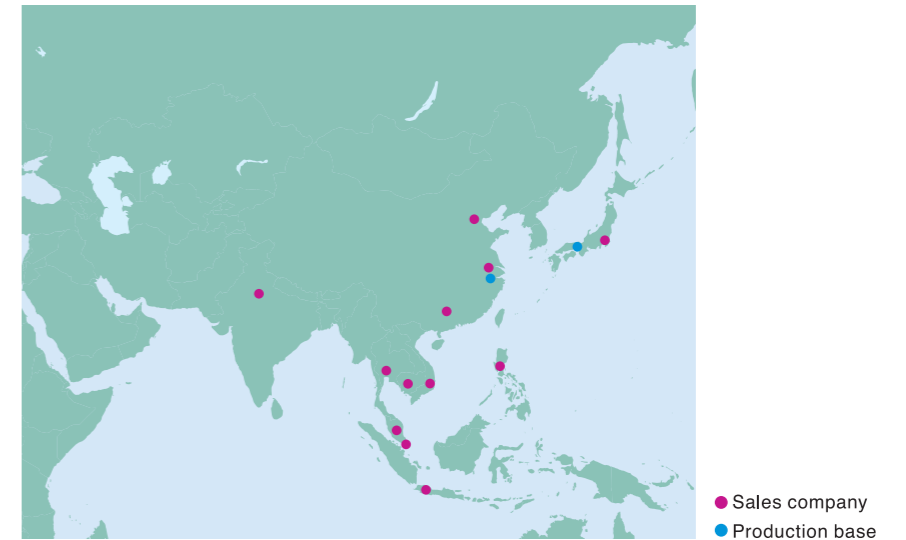
dimensions (W300mm×D120mm×H300mm)

*Installation, power supply wiring, and wire connection with the compressor shall be done by the customer in accordance with the operation manual.

You may not be able to mount the Kobelink Kit to a compressor of another manufacturer and some of our small-size models. Please contact our sales representative for models that are compatible with Kobelink and the type of installation.

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. [KCI]

America

KOBELCO COMPRESSORS MANUFACTURING INDIANA, INC. [KCI]

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.