

Heart to Heart

our way of saying that we view things from our customers perspective. Through this market-oriented approach to doing business, we want to contribute to society.

BIG OIL FLOODED SCREW COMPRESSORS

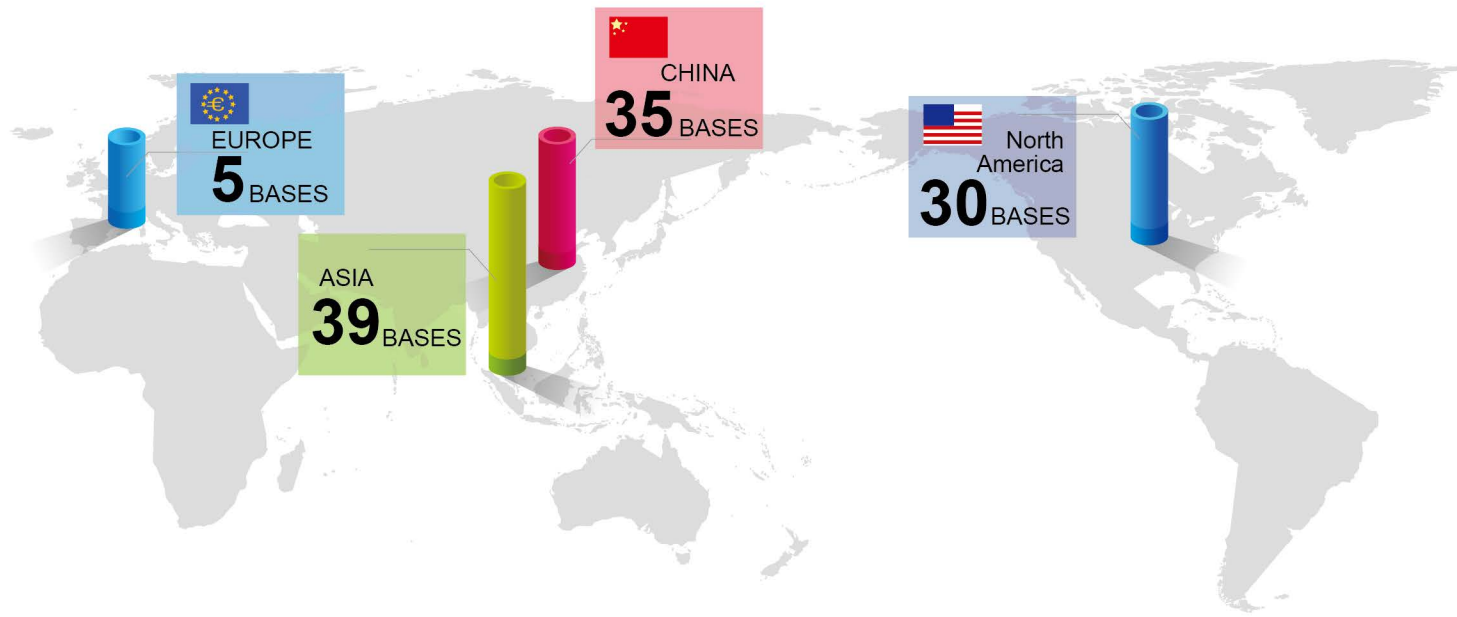
KOBELION SCREW COMPRESSOR

OIL FLOODED SCREW AIR COMPRESSORS

VS110-250AW
AG110-250AW
XG3900-4730W(V)
110-250kW



KOBE STEEL GROUP Overseas Bases



About KOBELCO

KOBELCO is a corporate brand of KOBE STEEL GROUP who is a major steel producer in Japan founded in 1905.

KOBE STEEL adopts diversified farming system and has 8 major business unit, Iron & Steel, Aluminum & Copper, Welding, Machinery, Engineering, Construction Machinery, Mobile Crane, and other business unit like Real Estate.

Each business unit is leading Japanese industry with its 'Only One / Number One' technology.

Now the consolidate subsidiaries are more than 200, and total numbers of employee reaches 35,469 in 03.2012.



Fortune 500 company
Magazine as one of the world's top 500 corporations



Innovator 100 company
Thomson Reuters Top 100 Global Innovator

Group Name: Kobe Steel, LTD.
Unified Trademark: KOBELCO
Founding Date: Sep.1, 1905



KOBELCO COMPRESSORS DEVELOPMENT HISTORY

About KOBELCO Compressors

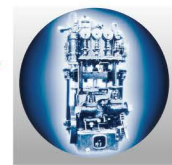


Kobelco has a long history of compressors manufacturing and technologies since it produced a high pressure reciprocating compressor for the first time in Japan in 1915. It made Japan's first oil-free screw compressor in 1956. In addition, it began to get involved in the production of centrifugal compressor in 1966, thus becoming one of the world's few comprehensive compressor manufacturers that can produce all piston, screw, centrifugal compressors.

Kobelco, as a material producer, is acquainted with material characteristics and properties, as well as material processing technology. It can develop and produce high efficiency, high performance, high quality products. Its experienced techniques and proven product quality, as well as the eternal pioneer spirit and the pursuit of a more perfect quality make it the industry leader.

Nowadays, Kobelco produces oil-injected and oil-free screw compressors in Japan, US and China and supplies to all over the world.

1915年
1956年
1966年
1988年
1997年
2004年
2014年



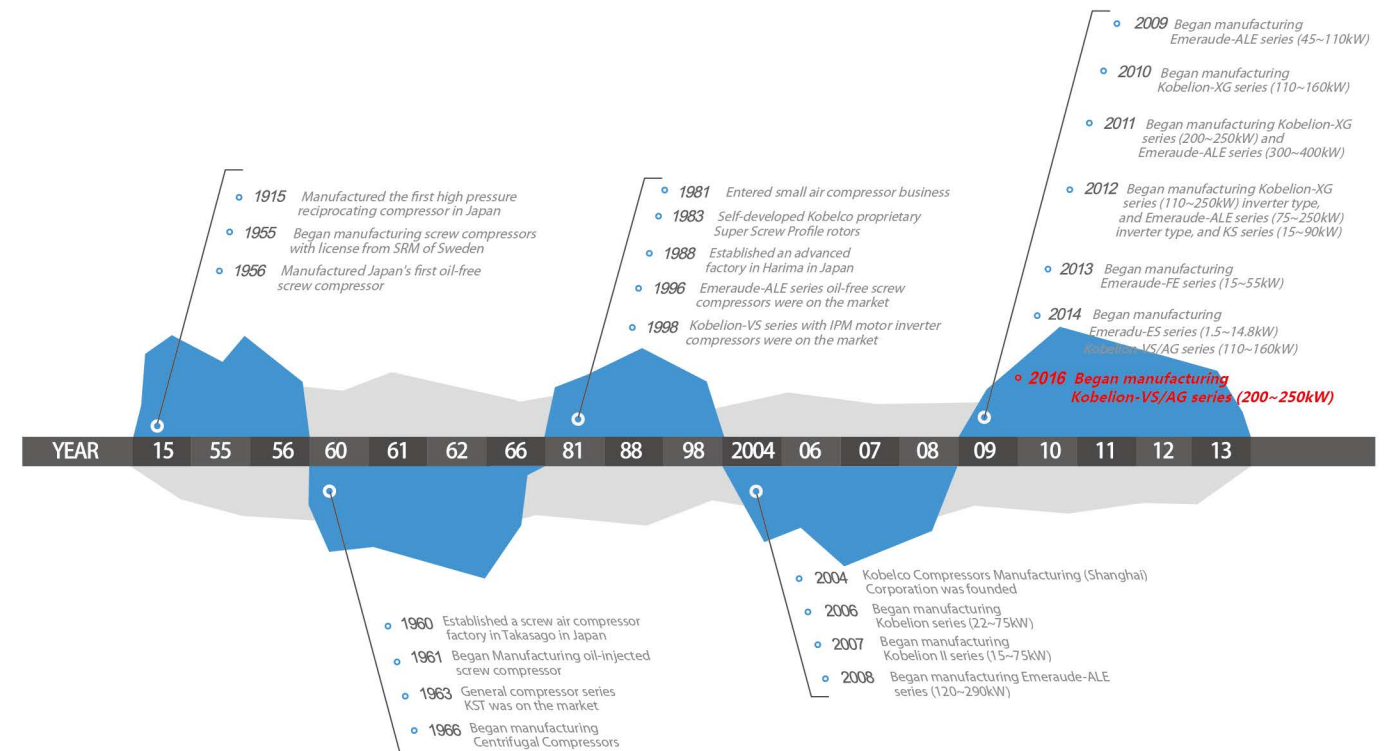
Japan's first high pressure compressor



KOBELION VS-AG



Kobelco factory is certified by ISO9001 Quality management, and ISO14001 Environmental Management.



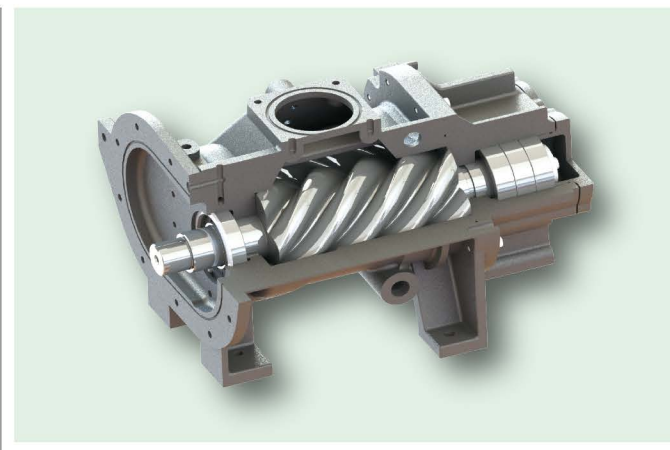


Inherit history and experienced expertise, reach the highest capacity and energy efficiency in the world!

Kobelion series oil flooded screw compressors incorporate Kobelco's half a century's expertise in screw compressor research and manufacture. It takes the highest flow capacity worldwide as the center, and also has both the highest performance and the best quality in the global market.

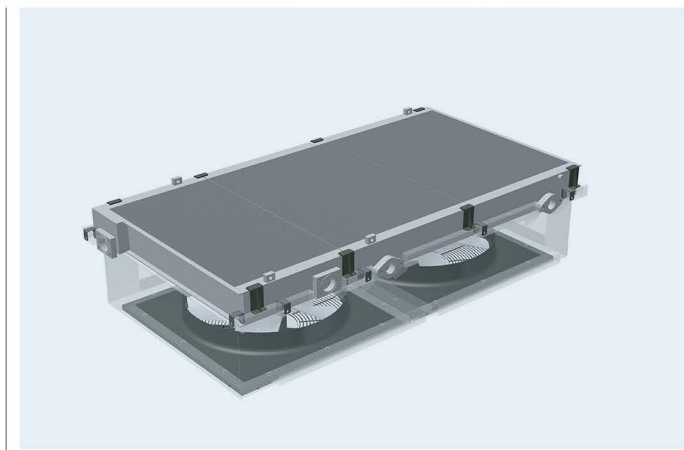
State-of-the-art Airend from Japan **Energy saving**

Kobelion series adopts large diameter screw airends made by Kobelco in Japan, to ensure high quality and performance.



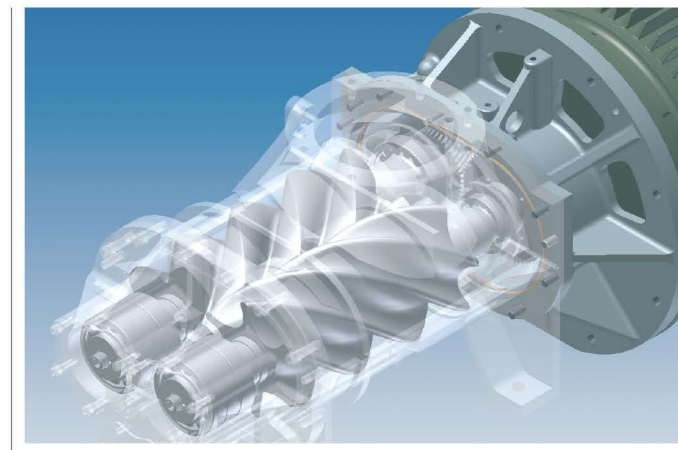
Adapt to harsh ambient temperature **Reliability**

It has abundant cooling margin and can run safely even at extreme ambient condition.



Direct airend drive **High performance**

Direct gear driven is adopted between airend and motor to reduce energy loss.



High performance controller **Easy to operate**

Adopt new touch type liquid crystal display, more easy to operate and time saving. It can coordinate up to 6 units without an additional group controller.



※For VS/AG model only.



KOBELION SCREW COMPRESSOR

Kobelion is derived from the combination of Kobe Steel Group's trademark "Kobelco" and "Lion". We select the king of all animals -- the lion, as the series name, because we can provide customers with the newest choices and get their trust. Proven high reliability isn't a transient glory, but a permanent value beyond era and nations. It represents various beginnings of the prelude to the ballrooms.

- ◀ VS110-250AW
- AG110-250AW
- XG3900-4730W(V)
- 110-250kW**

Proven reliable crystal of technology
We have been innovating ceaselessly to provide you with the optimized compressed air solution since it produced Japan's first high pressure piston compressor in 1915.

The highest flow capacity
It adopts big diameter screw airends to offer the highest capacity in the world.

High efficiency and energy saving
This series adopts gear transmission without coupling design in order to reduce energy loss. Kobelco's patent — Energy Saving Logic function.

High reliability
High efficient inlet/outlet systems to ensure adapting to high ambient temperature.

Easy maintenance
Easy for maintaining and long interval period.

Low noise
Lower pulsation noise, improve tone quality.



Inverter driving --The Perfect reflection of high performance and energy saving!

KOBELION VS
SCREW COMPRESSOR

The combination of the most advanced motor technique and inverter technology reflects excellent reliability and energy saving.

Expertise by many years' experience, and dedicated design!

KOBELION AG
SCREW COMPRESSOR

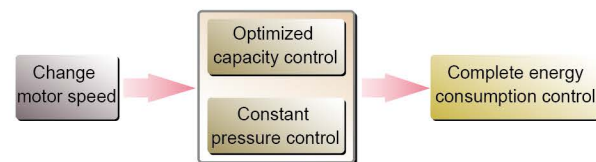
AG series incorporate Kobelco's proven screw compressor technology to ensure high efficiency and reliability.



Adopt optimizing capacity control and constant pressure control to reduce power consumption

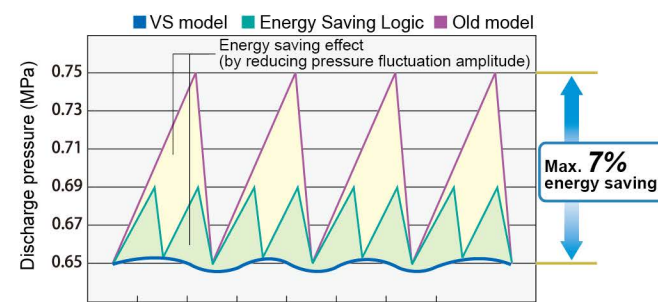
VS inverter adjust rotating speed along with the air consumption to achieve the best energy saving. This inverter can quickly respond to the pressure change so that the pressure fluctuation is minimized within $\pm 0.01\text{MPa}$ and can supply required air by optimized power.

Inverter control



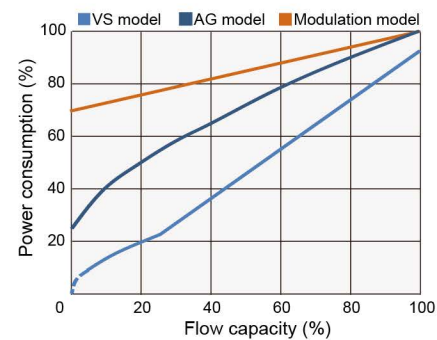
Energy saving by constant pressure control

Pressure fluctuation can be controlled within $\pm 0.01\text{MPa}$.



Regulate flow capacity by changing rotating speed

Energy saving characteristics



Energy saving example (VS110A compare with standard AG110A)

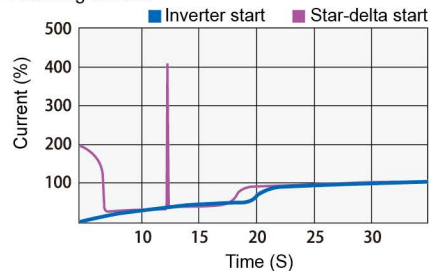


Calculation conditions:
Running 6000 hours/year. Unit price: 0.15 US\$/kWh. Average loading rate: 60%.

Inverter starter

Reduce starting current and torque to realize steady soft startup, as well as lower electrical devices cost.

Starting current



Other characteristics

High frequency reactor is a standard configuration to filter out high frequency harmonics produced by inverter.

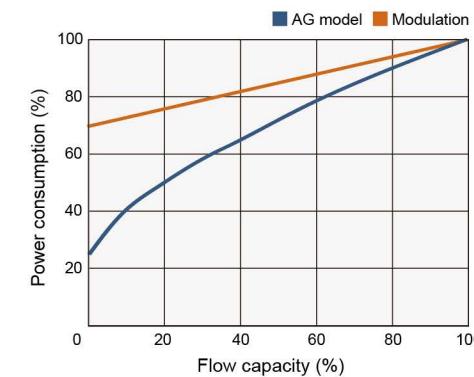
Forced cooling on inverter prevents trip at high temperature in summer.

Coating on electronic panel can resist dirt and moisture effectively and enduringly.



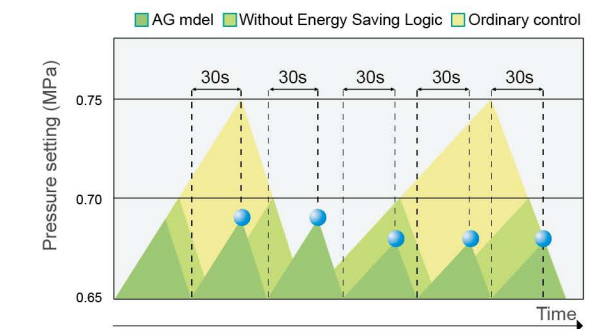
Unload regulation reduces energy consumption

AG series adopt unload/load mode which has better energy consumption efficiency compared to previous modulating mode. In addition, big unloading valves are treated by special oxidized aluminum membrane. It assures steady air supply and energy saving by loading and unloading.



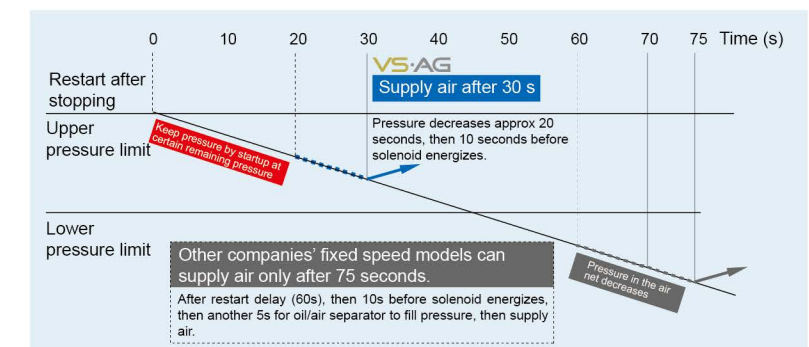
Energy Saving Logic Kobelco Patent

It can unload the compressor in advance if unload/load cycle is longer than setting time (30 seconds). Thus lower pressure fluctuation and eliminate energy consumption caused by unnecessary pressure rise.



Can start up with certain remaining pressure

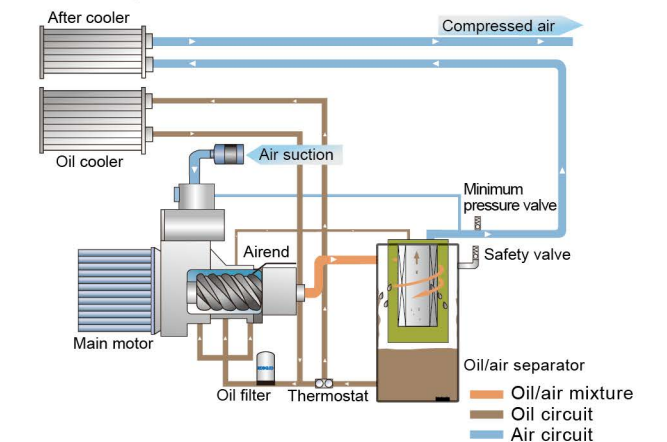
It can supply air at certain remaining pressure. It is better than other companies' models which require 1 minute starting delay, to avoid pressure drops beneath lower limit.



High efficient inlet/outlet systems

Cold/warm cooling air sections and professional air duct design, which consider fully of internal flow pattern and thermal pattern, ensures adaptation to high ambient temperature, as well as reducing noise. It also considers fully of temperature rises around thermal sensitive parts and controller.

Flow diagram



Function Rich Big ITCS Controller



The new liquid crystal electronic controller



New functions

- 7 inches big LCD high resolution screen with background lighting
- Multiple units control
- Standard configured MODBUS module
- USB data download function
- Over current protection
- Flow chart display
- 3 pressure settings
- Many password protections

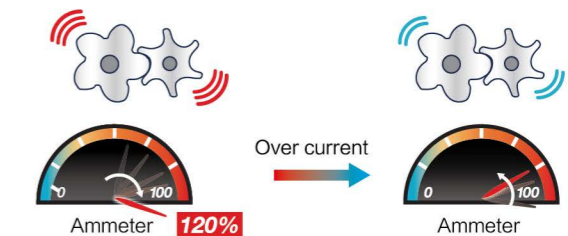
Standard configured USB data download function

Detailed running data can be stored. Data before and after an accident can be read. Diagnosed data can be available without installing a measuring instrument.



Over current protection

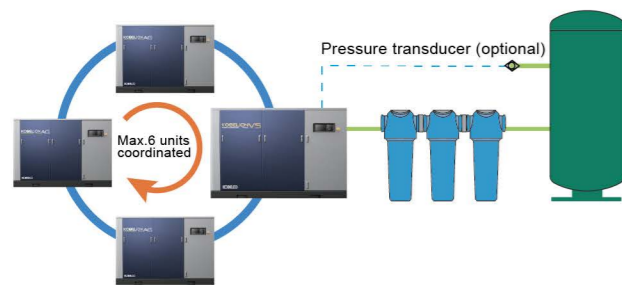
Motor speed will slowdown if inverter detects an over current, in order to continue supply air and prevent emergency shutdown.



※For VS model only.

Standard configured multiple units control function

Up to 6 units can be coordinated without an additional multiple-units controller, nor is an additional pressure transducer. These compressors can also be group controlled through an additional pressure transducer installed on the air net



※ Multiple units control function and Modbus function can't be used simultaneously. If you need the two functions simultaneously, please install another multiple-units controller. Standard configured multiple units control function is only by local control.

Standard configured MODBUS module

MODBUS module is a standard configuration, which can realize Modbus communications that monitor compressors' real time status. It facilitates management and responds to emergencies swiftly.



Other contents displayed

| | | | |
|------------------------|---------------------------|-----------------------------|-------------------------|
| Home page | Running status | Pressure setting | Flow diagram |
| Maintenance | Caution | Emergency | Log records |

Running status

Many data such as air outlet pressure, pressure in oil separator, loading or unloading, running time, current, inverter consumed current, discharges temperature, temperature of oil separator downstream, ambient temperature, motor coil temperature, air net pressure, etc.

Maintenance

Up to 30 self-diagnose functions, display maintenance/caution/emergency stop signals timely, and corresponding troubleshooting measures. Facilitate daily inspection/maintenance/management, as well as prevent compressor from breaking suddenly to ensure safe production.

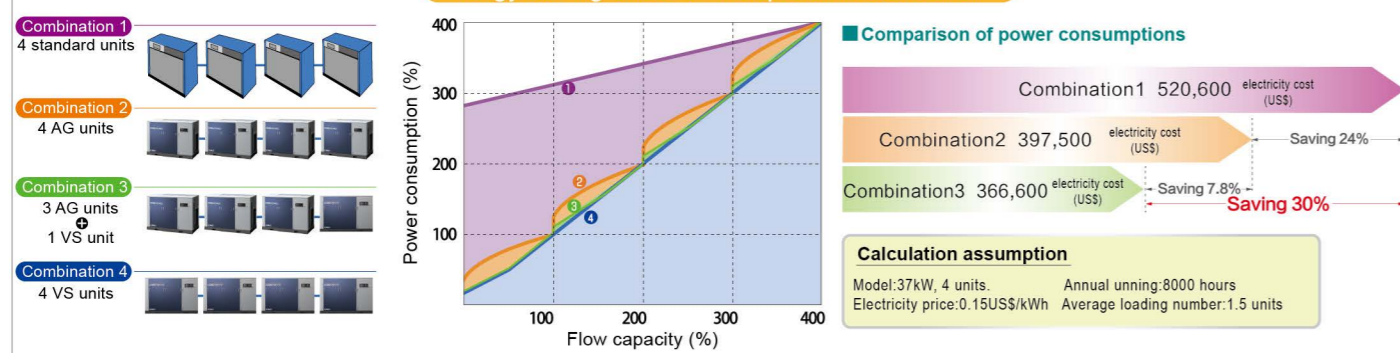
Weekly timer

There are at most 7 start/stop combination settings in a week. Each combination setting can set different pressures.

Running data/charts display

Current data display (every 5 seconds).
Operation data display (each hour of the latest 24 hours).
Display contents: discharge pressure, current, loading rate.

Energy saving effect of multiple units controller





Twin Airends for Energy-saving, High Efficiency And Reliability.

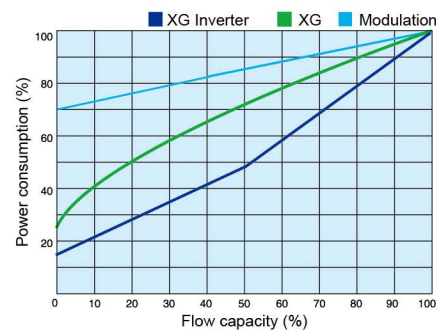
KOBELION XG
SCREW COMPRESSOR

You have more choices offered by twin Airends for energy-saving, High efficiency and reliability.

Pursue the lowest power consumption

XG inverter adjust rotating speed along with the air consumption to greatly save the energy consumption. This is the most economical mode.

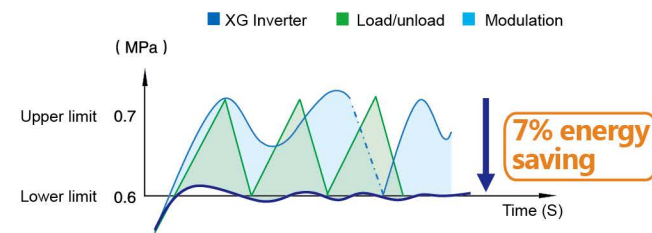
Energy saving curves



Energy saving by constant pressure control

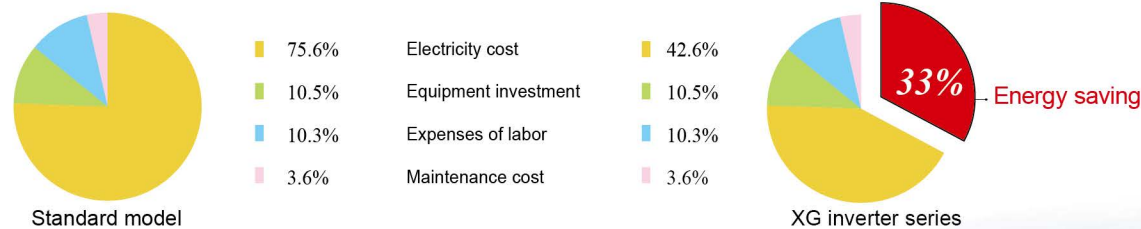
Pressure fluctuation can be controlled within ± 0.01 MPa by adjusting rotating speed. Reduce energy consumption by unnecessary pressure hikes.

Save 7% energy by, reducing pressure 0.1MPa



Energy saving effect of inverter

The lifetime cost for air compressor is categorized as electricity consumption, maintenance, machine purchase, labor, etc. 86% among them are electricity cost. We can reduce air compressor's lifetime cost by adopting XG inverter series.



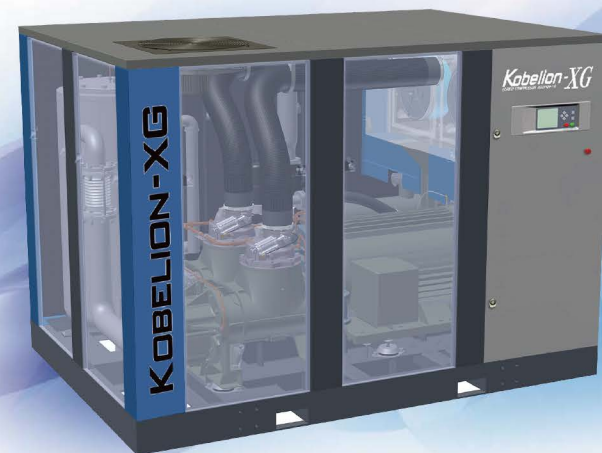
Other advantages

Improve reliability

Inverter's start-up acceleration time can be regulated, in order to reduce moment impact on mechanical parts to improve reliability, and prolong service life. By the way, inverter can eliminate current surge when startup, to protect electrical devices.

Reduce compressor noise

Motor speed slows down in most time, as well as fewer unloading blow-off, effectively decreases noise when compressor is running.



Common features for XG series

Twin airends in parallel

The highest level of flow capacity and efficiency in the world. Slow rotor speeds maximize service life for rotating parts and bearings. Lower noise and pulsation.



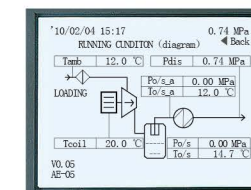
Coordination of two units

2 units can be coordinated running by simply wiring LCDs. Group controller isn't needed.



Real time display of flow diagram

Add flow diagram display to facilitate knowing running status.

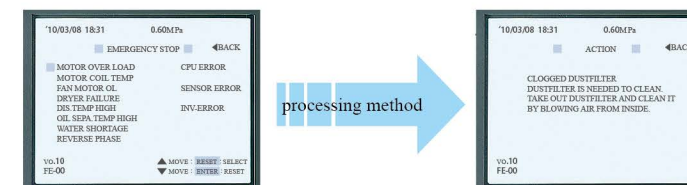


Condensate monitoring

To prevent from condensation accumulating, discharge temperature is monitored and the monitor alerts if condensed.

Self-diagnosis to prevent emergent stop

LCD controller can show various conditions such as maintenance information, caution and emergency stop etc. It can also display corresponding remedy methods in the LCD controller, to deal with emergent matters promptly.



| | |
|-------------|--|
| Maintenance | 10 items, recommend services for various parts. |
| Caution | 8 items, request check and repair at once. |
| Emergency | 13 items, display corresponding remedy methods in the LCD controller for dealing promptly. |

Standard configured Liquid crystal display electronic controller

IP65 protection, high resolution display with LCD background lighting. Chinese, Japanese, English three languages display. It not only monitors running status of compressor, but also sets parameters such as discharge pressure, etc. It can also record operation, display chart, set time weekly, manage daily and weekly information.





Elaborate Design of Details

KOBELION VS · AG · XG
SCREW COMPRESSOR



High efficient coolers

Oil cooler and after cooler are separated to not only improve efficiency, but also avoid damaging coolers due to different temperatures, so as to prolong their lifetimes.



TOUGH GREASE

Adopt Kobelco compressors's exclusive TOUGH grease to improve motor efficiency by 2%, as well as ensure more stable running because its long service interval and high temperature endurance.
※ For VS/AG model only.



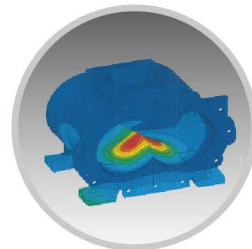
High efficient motors

Insulation class F, protection class IP55 total enclosure effectively prevents dust and water from entering motor.
In addition, it is standard configured with Phase Sequence Relay to prevent motor from rotating reversely, in order to protect units.
It also embeds a thermocouple to detect motor coil's temperature to protect motor.



Low noise

Adopt advanced new FEM analysis, new designed structure, optimized muffle material, etc. to achieve super low running noise.
Consider fully of sound pressure/sound tone/sound volume by adding insulation boards and air duct etc, to reduce noise that it is the lowest in its category.



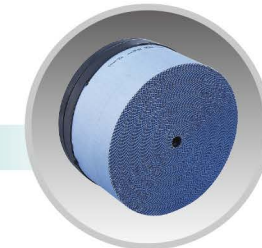
Draw out water cooler bundles

Internal bundles of oil cooler and after cooler can be drawn out for convenient cleaning and servicing if they are clogged.



Adopt big high efficient air inlet filters

Adopt big air inlet filters to reduce pressure loss and prolong cleaning interval, in order to cope with dusty environment.
Centrifugal + filtration: 2 steps separation.
ISO Fine TD 99.98%.



High efficient oil filter

Adopt big oil filter with high separating efficiency to ensure clean oil, as well as prolong oil and related parts' service lifetimes.



Oil separator

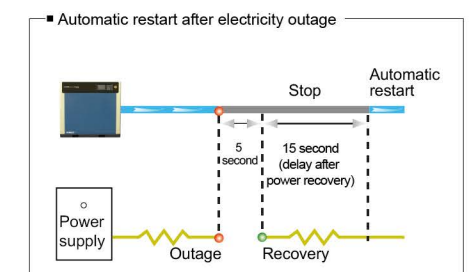
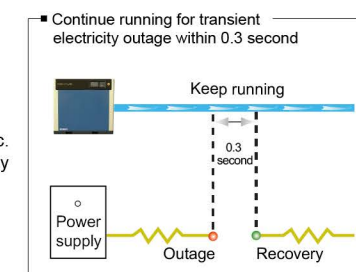
Reduce remaining oil in the outlet air to less than 2 ppm by 3 steps high efficient oil separation: centrifugal force, gravity, and filtration.

- 1st step: Centrifugal force**
The mixture of compressed air and oil from airoend rotates in the oil separator, oil is separated by centrifugal force.
- 2nd step: Gravity**
The oil which is separated by centrifugal force to the inner wall flows down to the bottom by gravity.
There are several magnets at the bottom of the separator to filter out metal scraps in the air stream, in order not to scratch the separating element.
- 3rd step: Filtration**
Adopt big separating elements to suit its flow capacity.
The cylindrical separating element is mainly composed of fiber, to filter out the remaining oil mist.



Perfect electrical protections

- ◆ Setting for transient electricity outage...within 0.3 sec.
The compressor doesn't stop if electricity outage is within the setting time. The compressor will stop only when electricity outage exceeds the setting time. (For AG it is 0.2 sec.)
- ◆ Setting for automatic restart after electricity outage...1~20sec.
(Example as right) Resuming electricity is set at 5 sec, delay setting is 15 sec. after electricity resumes.
- ◆ Built-in 7,500V surge protector and noise filter.
(XG model is 12,000V)



Specifications

Provide a full range of services

VS/XG Inverter Series

| Model | Max. pressure (MPa) | Flow capacity (m ³ /min) | Main motor power (kW) | Outlet connection diameter | Noise dB(A) | Dimensions (mm) | | | Weight (kg) |
|---------------|---------------------|-------------------------------------|------------------------------|------------------------------|-------------|-----------------|-------|--------|---------------|
| | | | | | | Length | Width | Height | |
| VS110A/W | 0.75 | 21.4 | 110 | R ₂ 3/DN80Flange | 69 | 2,600 | 1,600 | 1,850 | 3,000(2,900)* |
| VS132A/W | | 25.4 | 132 | R ₂ 3/DN80Flange | 70 | 2,600 | 1,600 | 1,850 | 3,250(3,050) |
| VS160A/W | | 30.3 | 160 | R ₂ 3/DN80Flange | 71 | 2,600 | 1,600 | 1,850 | 3,600(3,250) |
| VS200A/W | | 37.3 | 200 | R ₂ 4/DN100Flange | 73(72) | 3,060 | 2,120 | 2,150 | 4,900(5,000) |
| VS250A/W | | 43.4 | 250 | R ₂ 4/DN100Flange | 75(72) | 3,060 | 2,120 | 2,150 | 5,300(5,400) |
| XG3900WV-200 | | 39.0 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,240 |
| XG4730WV-250 | 47.3 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,650 | |
| VS110A/W-H | 0.85 | 20.2 | 110 | R ₂ 3/DN80Flange | 69 | 2,600 | 1,600 | 1,850 | 3,000(2,900) |
| VS132A/W-H | | 24.1 | 132 | R ₂ 3/DN80Flange | 70 | 2,600 | 1,600 | 1,850 | 3,250(3,050) |
| VS160A/W-H | | 28.8 | 160 | R ₂ 3/DN80Flange | 71 | 2,600 | 1,600 | 1,850 | 3,600(3,250) |
| VS200A/W-H | | 34.2 | 200 | R ₂ 4/DN100Flange | 73(72) | 3,060 | 2,120 | 2,150 | 4,900(5,000) |
| VS250A/W-H | | 41.4 | 250 | R ₂ 4/DN100Flange | 75(72) | 3,060 | 2,120 | 2,150 | 5,300(5,400) |
| XG3900WV-200H | | 36.6 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,240 |
| XG4730WV-250H | 44.1 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,650 | |
| VS110A/W-GH | 1.0 | 18.6 | 110 | R ₂ 3/DN80Flange | 69 | 2,600 | 1,600 | 1,850 | 3,000(2,900) |
| VS132A/W-GH | | 21.4 | 132 | R ₂ 3/DN80Flange | 70 | 2,600 | 1,600 | 1,850 | 3,250(3,050) |
| VS160A/W-GH | | 23.8 | 160 | R ₂ 3/DN80Flange | 71 | 2,600 | 1,600 | 1,850 | 3,500(3,150) |
| VS200A/W-GH | | 31.1 | 200 | R ₂ 4/DN100Flange | 73(72) | 3,060 | 2,120 | 2,150 | 4,900(5,000) |
| VS250A/W-GH | | 38.6 | 250 | R ₂ 4/DN100Flange | 75(72) | 3,060 | 2,120 | 2,150 | 5,300(5,400) |

AG/XG Series

| Model | Max. pressure (MPa) | Flow capacity (m ³ /min) | Main motor power (kW) | Outlet connection diameter | Noise dB(A) | Dimensions (mm) | | | Weight (kg) |
|----------------|---------------------|-------------------------------------|-----------------------|------------------------------|-------------|-----------------|-------|--------|--------------|
| | | | | | | Length | Width | Height | |
| AG110A/W | 0.75 | 21.4 | 110 | R ₂ 3/DN80Flange | 69 | 2,600 | 1,600 | 1,850 | 2,950(2,850) |
| AG132A/W | | 25.4 | 132 | R ₂ 3/DN80Flange | 70 | 2,600 | 1,600 | 1,850 | 3,150(2,950) |
| AG160A/W | | 30.3 | 160 | R ₂ 3/DN80Flange | 71 | 2,600 | 1,600 | 1,850 | 3,500(3,150) |
| AG200A/W | | 37.3 | 200 | R ₂ 4/DN100Flange | 73(72) | 3,060 | 2,120 | 2,150 | 4,900(5,000) |
| AG250A/W | | 43.4 | 250 | R ₂ 4/DN100Flange | 75(72) | 3,060 | 2,120 | 2,150 | 5,300(5,400) |
| XG3900W-200 | | 39.0 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,020 |
| XG3900W-200T | | 39.0 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 6,120 |
| XG4730W-250 | | 47.3 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,430 |
| XG4730W-250T | | 47.3 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 6,320 |
| AG110A/W-H | 0.85 | 20.2 | 110 | R ₂ 3/DN80Flange | 69 | 2,600 | 1,600 | 1,850 | 2,950(2,850) |
| AG132A/W-H | | 24.1 | 132 | R ₂ 3/DN80Flange | 70 | 2,600 | 1,600 | 1,850 | 3,150(2,950) |
| AG160A/W-H | | 28.8 | 160 | R ₂ 3/DN80Flange | 71 | 2,600 | 1,600 | 1,850 | 3,500(3,150) |
| AG200A/W-H | | 34.2 | 200 | R ₂ 4/DN100Flange | 73(72) | 3,060 | 2,120 | 2,150 | 4,900(5,000) |
| AG250A/W-H | | 41.4 | 250 | R ₂ 4/DN100Flange | 75(72) | 3,060 | 2,120 | 2,150 | 5,300(5,400) |
| XG3900W-200H | | 36.6 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,020 |
| XG3900W-200HT | | 36.6 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 6,120 |
| XG4730W-250H | | 44.1 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,430 |
| XG4730W-250HT | | 44.1 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 6,320 |
| AG110A/W-GH | 1.0 | 18.6 | 110 | R ₂ 3/DN80Flange | 69 | 2,600 | 1,600 | 1,850 | 2,950(2,850) |
| AG132A/W-GH | | 21.4 | 132 | R ₂ 3/DN80Flange | 70 | 2,600 | 1,600 | 1,850 | 3,150(2,950) |
| AG160A/W-GH | | 25.8 | 160 | R ₂ 3/DN80Flange | 71 | 2,600 | 1,600 | 1,850 | 3,500(3,150) |
| AG200A/W-GH | | 31.1 | 200 | R ₂ 4/DN100Flange | 73(72) | 3,060 | 2,120 | 2,150 | 4,900(5,000) |
| AG250A/W-GH | | 38.6 | 250 | R ₂ 4/DN100Flange | 75(72) | 3,060 | 2,120 | 2,150 | 5,300(5,400) |
| XG3900W-200GH | | 35.3 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,020 |
| XG3900W-200GHT | | 35.3 | 200 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 6,120 |
| XG4730W-250GH | | 40.7 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 5,430 |
| XG4730W-250GHT | | 40.7 | 250 | R ₂ 4/DN100Flange | 75 | 3,060 | 2,120 | 2,150 | 6,320 |

■ Notes: Power supply: 380V/50Hz/3 phases 3 lines
 Discharge air volume is converted into the air inlet conditions. Air inlet conditions: 1 bar, 20°C, 0%.
 ※ Water-cooled models' data in () Please refer to "Specification Manual" for the further detail

KOBELCO NET WORK

Kobelco has set up a sales/service network around the world to meet customers' requirement more perfectly. It can provide various services from daily technique support to technology proposals.

Our sales and service staff carefully listen to customers' opinions, and transfer them to technology departments to guide development of Kobelco's compressors. We will ceaselessly strive to provide customers with the most suitable and the highest quality compressors.

