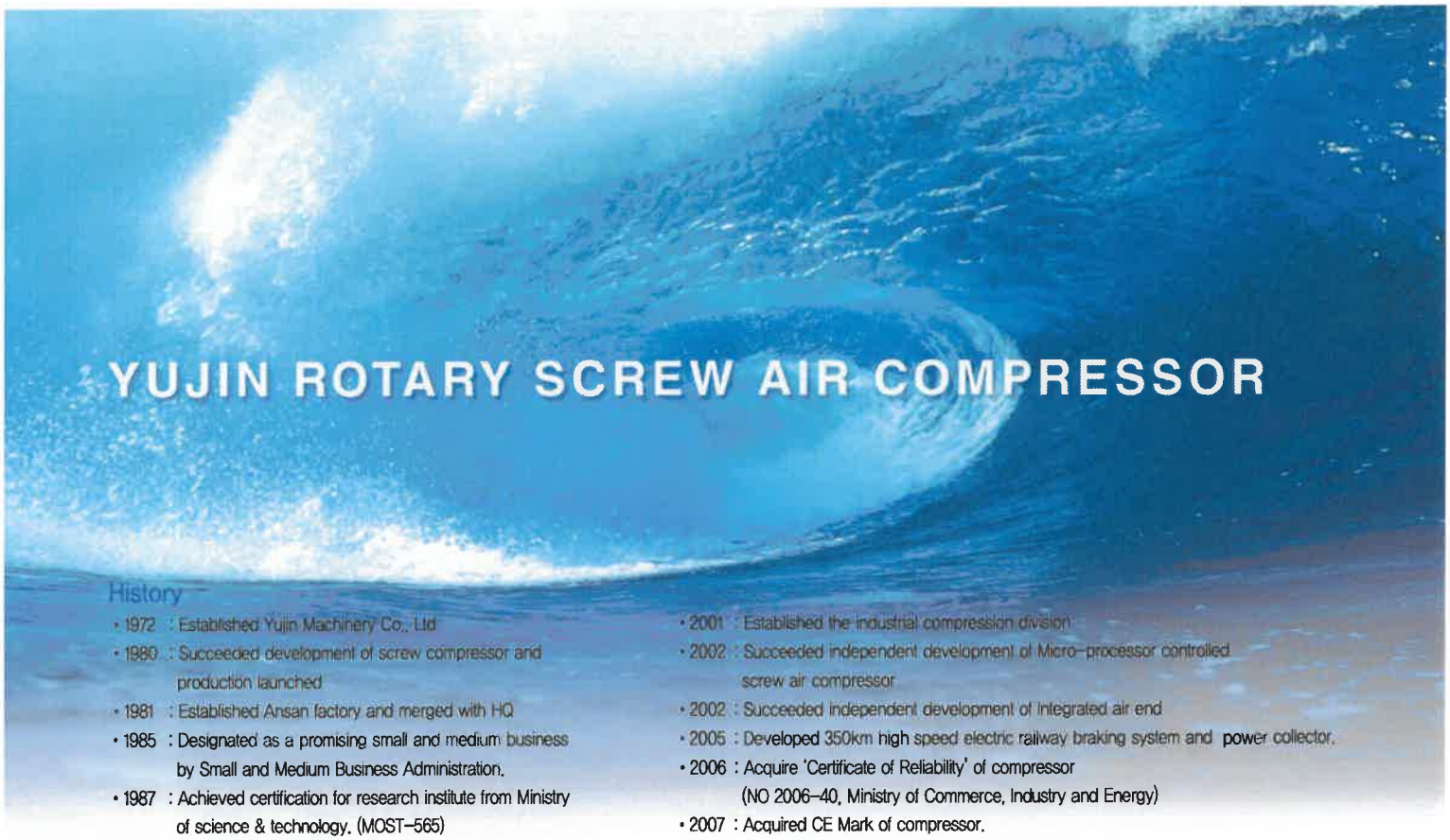

AIR SOLUTION
Micos
YUJIN
AIR COMPRESSOR
SCREW TECHNOLOGY
YUJIN MACHINERY LTD.
www.yujinltd.co.kr

GREETINGS

Technology of compressor production over 40 years is joining together with your business.

Since Yujin has been established in 1972, a major business field has been concentrated in producing pneumatic brake system and compressed air supply system for rolling stock industry more than 40 years and also investing intensive service and distribution effort to cover global market in order to adapt its product application for electric railway vehicles manufactured in Japan, China and other Southeast Asian countries. Today, our product, screw air compressor produced according to international standard are still being operated successfully in the field requires perfect safety for millions of citizens public transportation as metros, subways and other railway vehicles in the major Asian countries as well as local area thanks to the world best technology and experience since 1980.



History

- 1972 : Established Yujin Machinery Co., Ltd
- 1980 : Succeeded development of screw compressor and production launched
- 1981 : Established Ansan factory and merged with HQ
- 1985 : Designated as a promising small and medium business by Small and Medium Business Administration.
- 1987 : Achieved certification for research institute from Ministry of science & technology. (MOST-565)
- 1990 : Localized VVVF braking system of electric multiple unit
- 1994 : Established Yujin Electric Ltd.
- 1999 : Succeeded development of inverter controlled screw compressor
- 2000 : Established Yujin Rollingstock Maintenance Ltd.
- 2001 : Succeeded independent development of 5×6 screw air end series
- 2001 : Received Metropolitan Train Equipment Quality Certificate (KRT)
- 2001 : Established the industrial compression division
- 2002 : Succeeded independent development of Micro-processor controlled screw air compressor
- 2002 : Succeeded independent development of integrated air end
- 2005 : Developed 350km high speed electric railway braking system and power collector.
- 2006 : Acquire 'Certificate of Reliability' of compressor (NO 2006-40, Ministry of Commerce, Industry and Energy)
- 2007 : Acquired CE Mark of compressor.
- 2007 : Awarded Silver Tower Order of Industrial Service Merit (for the development of excellent capital goods).
- 2008 : Industrial compressor division moved to the second factory.
- 2009 : Established Chinese factory in Suzhou, China
- 2010 : Succeeded in the independent development of oil-free scroll compressor.
- 2010 : Succeeded in the independent development of oil-free screw compressor.

First factory in Ansan, Korea (Railway Div.)

YUJIN

Yujin Family puts own effort as best as possible to produce the high quality air compressor in the world in order to meet the customer satisfaction and give enhanced competitiveness to the customer.
Yujin will be always together with you for your success and prosperity through systematic production quality control, superb human resource to carry the best technology, continuous research & development as well as intensive investment.

Second factory in Ansan, Korea
(Compressor Div.)

Chinese factory in Suzhou, China
(Compressor Div.)

RESEARCH & DEVELOPMENT

A key of high quality is generated from continuous Research & Development.

The official lab for research & development has been established in 1980 for technology development. In order to achieve competitive position in the world market under tough world market competition and to absorb rapidly changing and releasing modern technology as quick as possible, fair and constant investment to hire high class researchers and latest equipments for mechanic, electric and electronic technology are continuously spent. Over 30 researchers are on operation to do test trial and product development through systematic process for development with using qualified equipments in order to achieve high product quality to match within ISO, DIN and KS standard. Such a high quality of air compressor by Yujin is originated from the reason as above and it made Yujin to land competitive position on the market against existing manufacturers in the world who ever has over 100 years old history or even more.

Performance, function and durability are thoroughly inspected from initial development stage to mass production stage.

Noise and vibration are major causes of machine lifetime reduction. So Yujin's newly developed units are inspected through vibration test for catching resonance characteristics and modifying machine design to improve noise and vibration performance.

CE Certificate

Micos series compressor
received CE certification
from SGS in 2006.
(Micos 37~Micos 300, 8Models)

Product development via researching a trend of latest technology and rapid market analysis assures to make competitive product to meet customer requirement.

MICOM CONTROL SYSTEM

All Rotors are checked by high precision rotor pairing machine to get the optimum performance of airend.

Production according to the international standard condition.

With the foundation of know-how in the railway industry where the performance, safety and function are necessarily required, quality valuation standard according to international standard and thoroughly held pre-inspection are applied to prevent any problems may occur in the field but also extends machine lifetime.

Design of air compressor including air end is made by 3-D Design Tool and dynamic simulation as well as definition is simultaneously proceeded to estimate part reliability and durability.

All major parts as screw rotors and other high precision parts are precisely measured by 3-D CMM via specially arranged control program in order to produce highly efficient compressor.

Product quality control of strict inspection for material and part before assembly stage is proceeded in order to achieve constant product quality.

QUALITY CONTROL

Thoroughly proceeded quality control system from each material to the final product.

An effort to produce perfect product is clearly shown by an optimized construction of quality control system but also an activity to utilize it. Applying a strict quality guarantee system to produce highly confident and stable compressor, and ISO 9001 quality certification achieved in 1995 from the international standard association in order to enhance the management system within international standard condition. In addition, bringing the most modern equipment into the production, each QC processes for material, machining, assembling as well as product inspection are controlled under the central control system.

Screw air end defines machine performance.
All air ends are inspected under controlled according to international quality control standard and only approved part can be conveyed out for production.

Achieve ISO 9001 certification!

Quality control ability of Yujin is authorized in 1995.

Modernized production facility as well as experienced men resource creates the best quality.

Concrete experience learned from the time being screw compressor for railway industry was made, "even a single malfunction is not allowed", Yujin's high quality air compressor is produced through optimized mass production line controlled by experienced operators from the material, machining to assembly.

OIL INJECTION SCREW COMPRESSOR

Rotor cases as well as other major parts are inspected by 3-D CMM.

Yujin's genuine parts keep the machine optimum condition.

Export airend to Japan

Exclusively developed air end for railway vehicles exports to Japanese National Railway and also southeast Asian countries so these proves Yujin's premium quality.

ADVANCED SCREW TECHNOLOGY

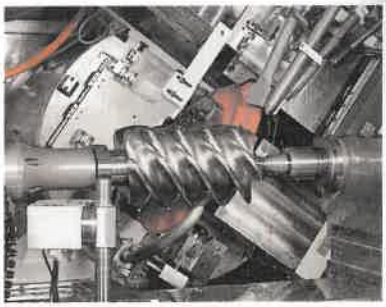
MICOS, Advanced module technology with modernized screw profile designed high efficiency air end application expresses the most advanced quality development.

Compressed air is common and basic utility using in all industries. When the factory is using a low efficient air compressor, it is foreseen clearly that problems in the process will be occurred but also production cost will be increased thus as a result, it will be a factor decreasing their product competitiveness. MICOS screw air compressor has the most advanced and modern airend profile and package design to prevent the problem as usually found in the other normal compressors so that the performance as energy consumption efficiency, discharged air amount of MICOS compressor would be called as one of the best in the world.

Machining process of rotor case

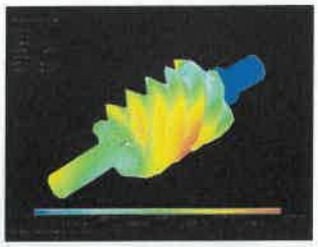
Milling process of rotor

Grinding process of rotor



High precision air end production at site.

Milling of rough contour material by special milling machine then finishing by high precision grinding machine to produce uniform quality and it guarantees high efficiency and low compressor noise level.



Yujin's new released screw profile was born by means of continuous study and development with perfect analysis of modern technology trends focused on improving the efficiency of airend. These new profile air ends are designed to run properly even under the circumstance most critical environment condition so that the best performance with durability can be reached in any industries.

OIL INJECTION SCREW COMPRESSOR

Yujin's profile design guarantees the best energy saving efficiency

- Succeed independent development of high efficiency profile of screw air end.
- A profile development history
  (4×6, Symmetric form → 4×6, Asymmetric form → 4×5, 5×6)
- Acquired Korean, USA and Chinese patent and International PCT patent.
- The special features of new screw profile
  - Minimized the blow hole and improves a contact execution condition between rotors.
  - High energy efficiency is confirmed in low rotational speed.
  - Prevent efficiency degradation at a long utility period.
- The design and manufacturing know-how of screw air end can be applicable at an advanced industrial field.

US Patent for screw profile!

Yujin Machinery Ltd received US patent (US 6,779,993 B2) for screw profile.

INTELLIGENT AIR MANAGEMENT SYSTEM

AIR SOLUTION® Powerful integrated control system for compressors and Air treatment system

MICOS-Ⅲ Ethernet based compressor controller and Air Solution, the compressed air master control system within Windows environment are suited to managing various compressor systems including compressors and air treatment systems. Air Solution can control the operation of compressor systems automatically according to the various air demand of each factory and it is very simple to connect to an available computer network. Any kinds of compressors can connect to Air Solution and it can guarantee maximum energy saving, safe and efficient operation of compressor system with minimum investment.

Group Controller

MICOS-Ⅳ Controller

- Operation mode : Automatic / Remote / Continuous / Scheduled
- Main functions
  - Real time control of outlet pressure and temperature
  - Automatic stop, restart and stop delaying function
  - System Protection function : Main and Fan motor overload, over temperature, detecting failure sensors and electric components
  - Maintenance message display : Alarm for replacing consumable parts
  - Statistic function : operation hours, running time of consumable parts and failure status
  - Equipped with ModBus interface as standard

Air Solution and PC Monitoring Program

- Safe and easy installation with ModBus interface
- Controls any kind of compressors with analog controller
- Air solution ensures maximum energy saving by accurate pressure band control for various air demand condition.
- Powerful control, monitoring, statistic and reporting function
- Option : Touch-screen remote monitor
- Option : SMS messaging service for abnormal operation and system faults
- Safe operation and system flexibility with Windows environment
- User friendly design : simple system parameter and easy operation

Compressed air produced by compressor should be supplied through proper air treatment device so that air quality satisfies the right purpose and actual demand. Since insufficient quality of air causes shorten the life time of production facility and transfer massive loss of product quality and production efficiency. The selection and operation of reliable air treatment system are very necessarily required.

YUJIN AIR SOLUTION Micos AIR COMPRESSOR

3 Comp-Keeper : SMS messenger service

- Send SMS message automatically on happening abnormal operation or system faults.
- Send SMS message to 18 mobile phone numbers.
- Set various SMS message according to the various fault condition.

2 Air-Solution : touch screen remote monitor

- Install simply to connect LAN cable at user's office.
- Monitor and control operation status, system faults and pressure band control of main pipe line.
- Remote monitor get all functions of Air Solution.

1 Air-Solution : PC monitoring program

- Install simply to connect compressors and PC by connecting LAN cable.
- Control compressor system optimally with Various HMI screen.
- Monitor and control operation status, system faults and pressure band control of main pipe line.
- Powerful control, monitoring, statistic and reporting function.

BELT DRIVEN SCREW COMPRESSOR

5.5~7.5kW (7.5~10hp)

A small size MICOS compressor offers agreeable factory environment.

MICOS series small compressor with YDA-3 module air end technique is designed for high energy efficiency at low operation speed, easy maintenance and low noise. So MICOS compressor can give the customer of a small and calm business factory the contentment of the maximum.

Belt tension adjusting device

Customer can replace belt and adjust belt tension easily with belt tension adjusting device. So it can prevent loss of compression and adiabatic efficiency according to a belt tension problem.

Proven and high quality component application

Proven and high quality component including consumable parts are adapted in MICOS compressor and it can guarantee clean compressed air.

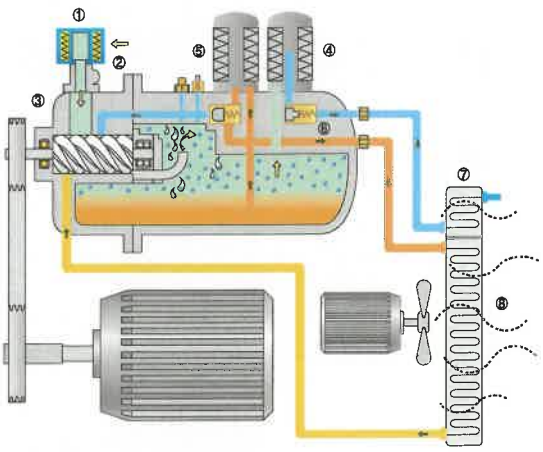
Advanced package design

The fully integrated air end can make package layout very simple and has advantage of fail-safe operation and low maintenance cost.

Oil leakage prevention design

Reduced pipe components (module type design) and Parker fitting (international fitting manufacturer) are applied in the design to prevent oil leakage in the compressor.

Flow Diagram

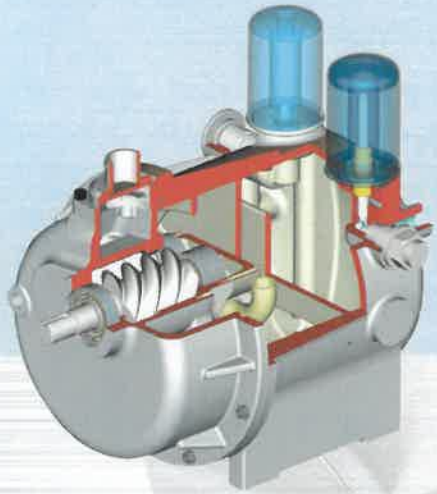


① Air Filter
② Intake Valve
③ Airend
④ Separator
⑤ Oil Filter
⑥ Minimum Pressure Valve
⑦ Air Cooler
⑧ Oil Cooler

YUJIN AIR COMPRESSOR

YDA-3 integrated air end

YDA-3 integrated air end guarantee high energy efficiency and quite operation at a low rotation speed. All functional components are integrated in air end and only small space is needed to install.



Control panel

The compressor controller is designed and manufactured in accordance with customer's need for easy and convenient operation.
The controller has several protection functions and status- monitoring device, so it is possible to minimize the maintenance work.

Pre-separation construction

Pre-separation construction application of airend with high quality oil separator combination guarantees the clean compressed air less that 3 PPM.

TECHNICAL DATA (MICOS 5~7)

Article		Unit	MICOS 5	MICOS 7
Compression method			Oil flooded, 1-stage compression	
Capacity (FAD)[1]	7 bar	m^3/min	0.83	1.18
	9 bar		0.68	0.95
	12 bar		0.51	0.73
Compression unit	Driven method		Belt driven with Auto-tention device	
	Suction Temperature[3]	℃	Max. 40	
	Outlet Temperature		Max. suction temperature + 15	
	Cooling method		Air cooled	
Motors	Rated power	kW	5.5	7.5
	Input voltage	V	AC 220 / 380 / 440, 3-phase	
	Frequency	Hz	50 / 60	
	Starting method		Direct	
Pipe connection			20A	
Control method			Loading/Unloading control (MICOS-Ⅲ controller)	
Noise level[2]		dB(A)	59	60
Weight		kg	270	273
Overall dimension (L×B×H)		mm	770×750×1,100	

(1) According to ISO1217 Edition3-1966, Annex-C
(2) According to ISO2151 Edition1-1972
(3) High temperature packages upto 55℃ are available

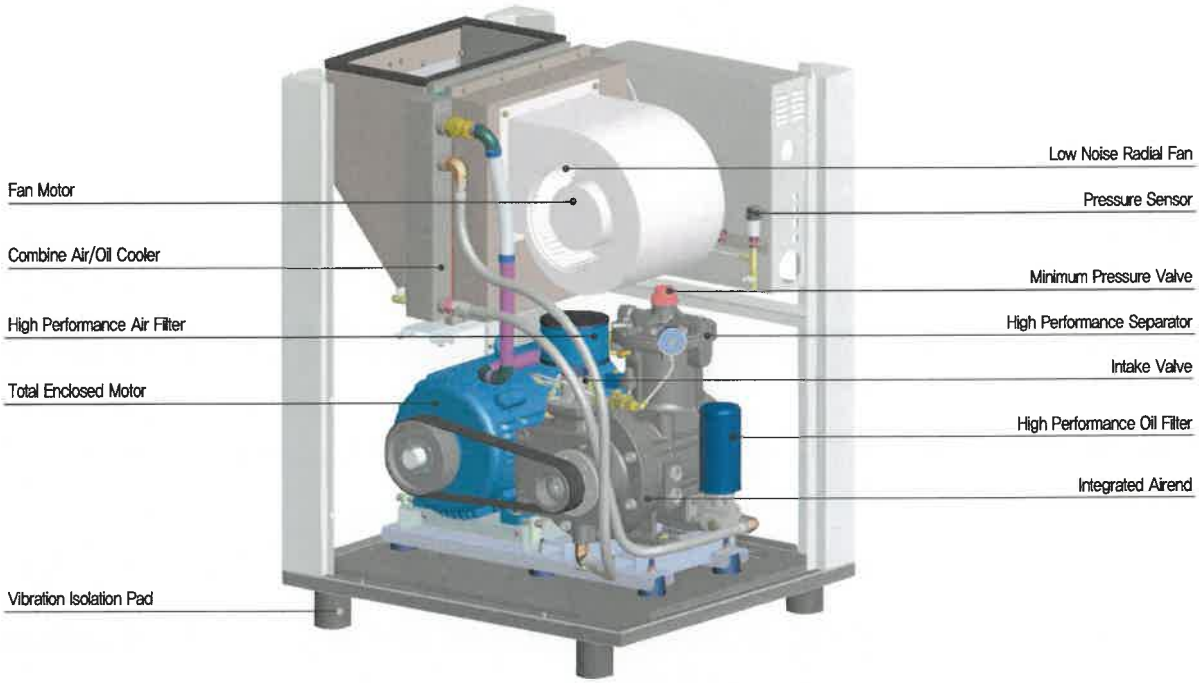
Micos 22
AIR SOLUTION
AIR COMPRESSOR

BELT DRIVEN SCREW COMPRESSOR

11~22kW (15~30hp)

Yujin's small and medium size belt driven compressor proposes the new world standard.

Most latest design of 5×6 profile module air end installed belt driven compressor is designed that gives the highest efficiency in the range of speed lower than 4000 rpm presents quiet and smooth operation at any industrial fields with longer machine life time. All the consumable parts are located in front of body cover so that quick replacement of consumable parts is available, module design air end and valve application enable to reduce oil line and other related part application as simple as possible in order to cut down maintenance cost. Yujin presents a new standard line with fresh experience you will never forget.



5×6 set profile air end

Exclusively developed 5×6 set profile air end presents quiet operation with high efficiency in the low speed range.

Integrated design of air end with tank

Simplified design of compressor presents decreased number of parts possible cause of machine part failure but also cheaper maintaining cost.

Belt tension control device

Compress and power efficiency loss cause of tension pressure changes is eliminated and belt life time is extended by applying belt tension control device.

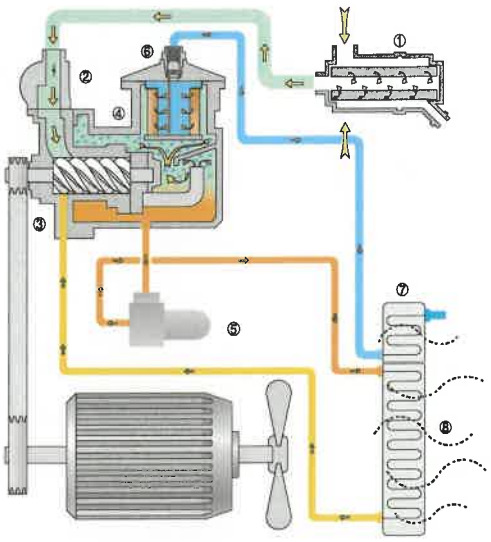
Oil leakage prevention design

Reduced pipe components (module type design) and Parker fitting (international fitting manufacturer) are applied in the design to prevent oil leakage in the compressor.

Pre-Inlet filter

Pre-filters in two side covers remove contaminant from inlet air, prolongs the lifetime of air cleaner and makes the unit clean.

Flow Diagram



① Air Filter
② Intake Valve
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⑤ Oil Filter
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⑦ Air Cooler
⑧ Oil Cooler

EX-I MICOM Control system

The cutting-edge EX-I microprocessor-based control is an intelligent control that can perform various functions such as the operational status of the compressor, equipment protection, and maintenance message output through precision pressure controlling and digital input and output controlling.

Air flow analysis

Input air flow definition allows high compress efficiency and minimizednoise level at inlet and fan area and as a result, the compressor can be installed at any place in the production line enable for the customer to feel free from the limited installation area.

Pre-separation construction

Pre-separation construction application of airend with high quality oil separator combination guarantees the clean compressed air less that 3 PPM.

TECHNICAL DATA (MICOS 11~22)

Article			Unit	MICOS 11	MICOS 15	MICOS 22
Compression method				Oil flooded, 1-stage compression		
Capacity (FAD)[1]	50Hz	7 bar	m³/min	1.81	2.49	3.76
		8 bar		1.74	2.43	3.64
		10 bar		1.5	2.08	3.14
		13 bar		1.14	1.66	2.57
	60Hz	7 bar	m³/min	1.81	2.55	3.62
		9 bar		1.50	2.17	3.13
		12 bar		1.16	1.62	2.64
Compression unit	Driven method			Belt driven with Auto-tention device		
	Suction Temperature[3]		℃	Max. 40		
	Outlet Temperature			Max. suction temperature + 15		
	Cooling method			Air cooled		
Motors	Rated power		kW	11	15	22
	Input voltage		V	AC 220 / 380 / 440, 3-phase		
	Frequency		Hz	50 / 60		
	Starting method			Direct		Y-△
Pipe connection				20A		25A
Control method				Load/Unload control (by EX-I controller)		
Noise level[2]			dB(A)	70	71	72
Weight			kg	485	510	650
Overall dimension (L×B×H)			mm	890×1,025×1,355		

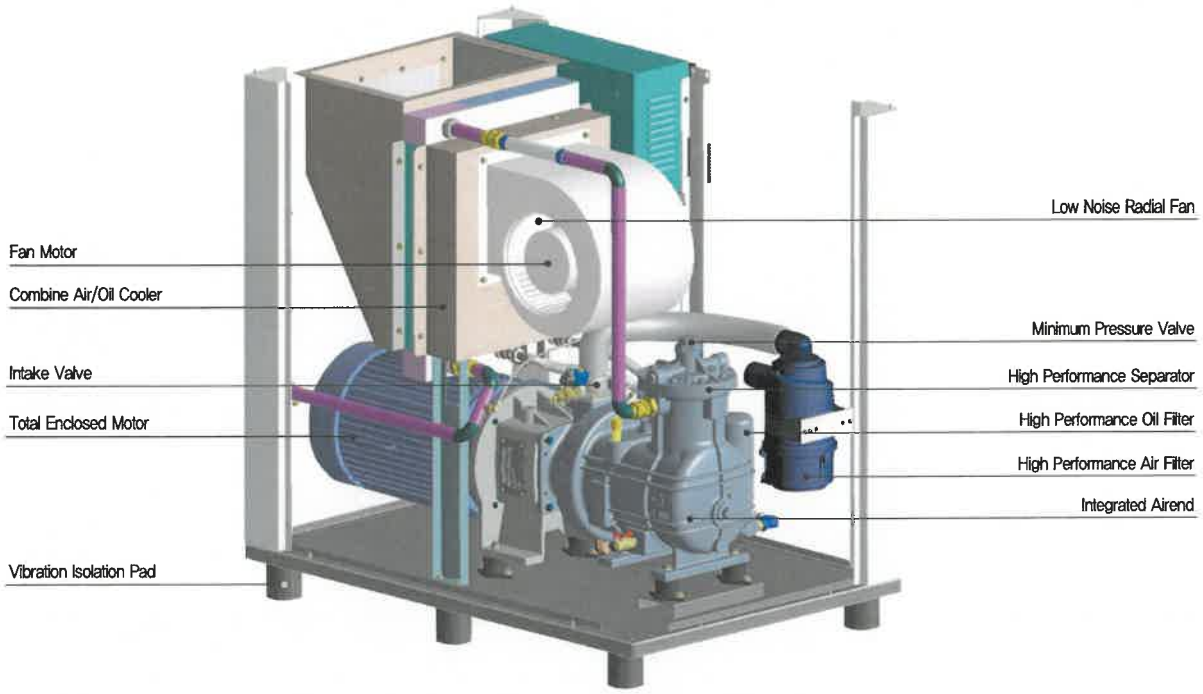
(1) According to ISO1217 Edition3-1966, Annex-C
(2) According to ISO2151 Edition1-1972
(3) High temperature packages upto 55℃ are available

DIRECT DRIVEN SCREW COMPRESSOR

15~22kW (20~30hp)

Yujin's mid-sized direct driven screw compressor promises the minimum operation cost.

The first direct drive compressor to be developed in Korea, MICOS 15D/22D utilizes motor and air end drive in 1:1 ratio instead of a speed gear. This method prevents loss of power(occurring during transmission in belt drive) and minimizes maintenance cost to reduce overall operational cost by 15%.



5×6 set profile air end

Module type air end, equipped with Yujin's exclusive latest 5x6 profile screw air end offers silent operation and maximum efficiency at low operation speed.

Air end and monolithic tank design

Air end and monolithic tank design simplifies the compressor structure to minimize components with potential malfunction, which enables affordable maintenance expense.

Oil leakage prevention design

Reduced pipe components (module type design) and Parker fitting (international fitting manufacturer) are applied in the design to prevent oil leakage in the compressor.

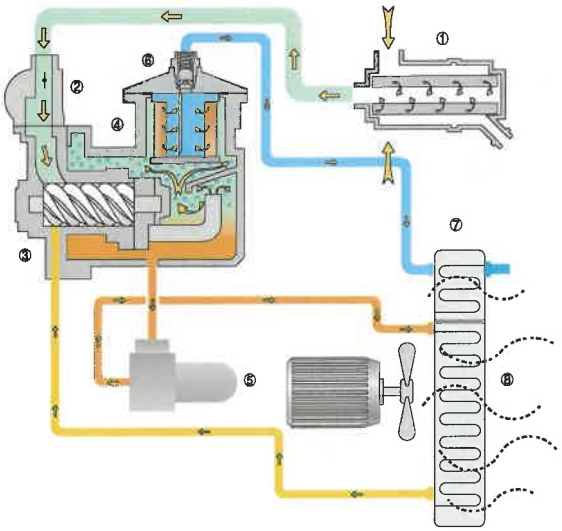
1 : 1 direct coupled drive

The 1:1 drive method connects motor with permanent coupling to prevent loss of power that occurs during belt drive transmission slip. It effectively produces large volume of compressed air with low energy consumption.

Pre-Inlet filter

Pre-filters in two side covers remove contaminant from inlet air, prolongs the lifetime of air cleaner and makes the unit clean.

Flow Diagram



① Air Filter
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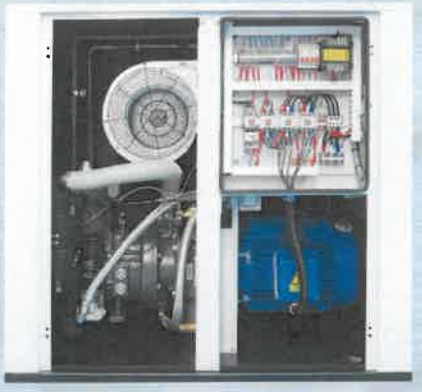
⑧ Oil Cooler

MICOS-Ⅳ MICOM Control system

MICOS-Ⅳ Control with Touch Color LCD having trilingual interface can display a variety of function such as the operational status of the compressor, equipment protection, and maintenance message output through the appropriate icons available on the display screen, so you can operate the machine with ease and convenience.



Easy maintenance and low maintenance cost

- Filter component layout in consideration of regular parts replacement and inspection
- Open facet and covered sides and rear
- Completely enclosed cooler duct has a side cleaning cover for customers' safety and easy cleaning

Pre-separation construction

Pre-separation construction application at air end with high quality element type separator guarantees the most clean compressed air production less than 3 PPM.

TECHNICAL DATA (MICOS 15D~22D)

Article			Unit	MICOS 15D	MICOS 22D
Compression method				Oil flooded, 1-stage compression	
Capacity (FAD)(1)	60Hz	7 bar	m³/min	2.63	3.90
		9 bar		2.24	3.34
		12 bar		1.65	2.56
Compression unit	Driven method			Direct coupled drive	
	Suction Temperature(3)		℃	Max. 40	
	Outlet Temperature			Max. suction temperature + 15	
	Cooling method			Air cooled	
Motors	Rated power		kW	15	22
	Input voltage		V	AC 220 / 380 / 440, 3-phase	
	Frequency		Hz	50 / 60	
	Starting method			Direct	Y-△
Pipe connection				20A	25A
Control method				Load/Unload control (by MICOS-Ⅳ controller)	
Noise level(2)			dB(A)	70	71
Weight			kg	550	650
Overall dimension (L×B×H)			mm	1,280×820×1,348	1,380×880×1,348

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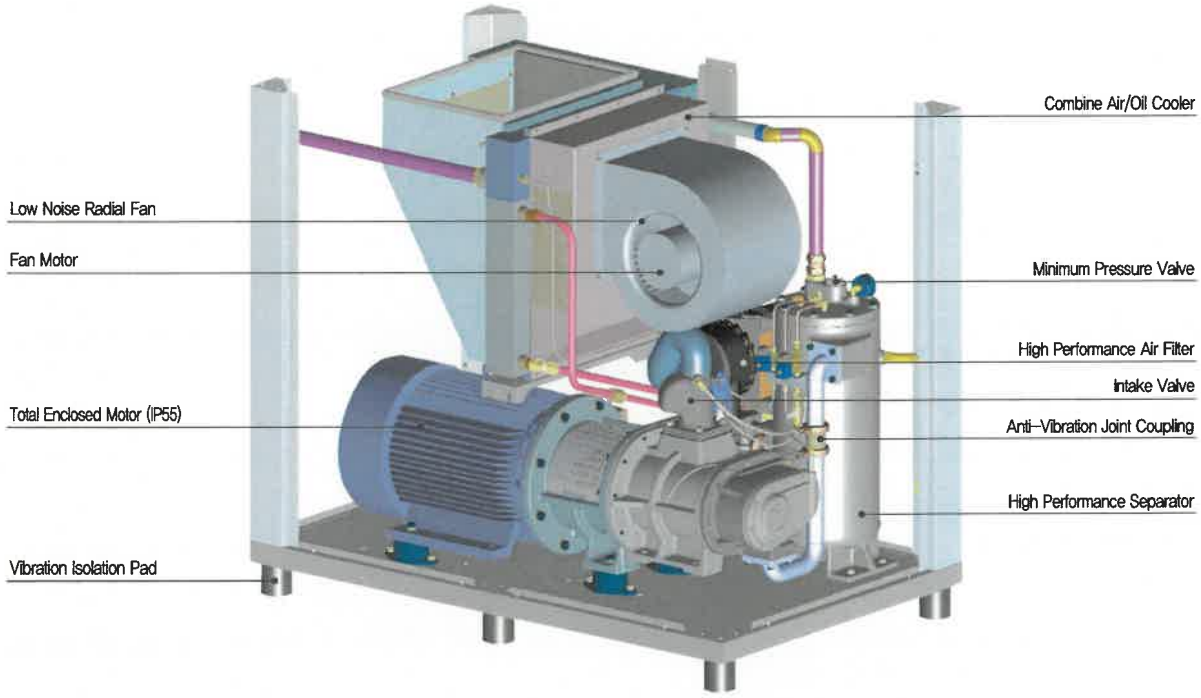
(2) According to ISO2151 Edition1-1972
(3) High temperature packages upto 55℃ are available

DIRECT DRIVEN SCREW COMPRESSOR

37~450kW (50~600hp)

Low speed direct driven compressor becomes a leader in the efficiency race in the world

Medium and large size oil injection screw compressor over than 50 horse power are the far-reaching range in the major industries and it is very important to select the most economical product not only the cost of compressor itself but also low operating cost as electric consumption etc,. Yujin's direct driven screw compressor has a large 5×6 profile airend application with reduced R.P.M in order to lower the cost for operation and higher the efficiency in the ranges of 50 to 600 horse power compressors. MICOS screw air compressor, layout design advanced package technology adapted and high quality part application will no doubt to be the best and outrageous choice.



Large diameter air end

Yujin's exclusively designed large diameter air end with high efficiency profile application provides silent operation with the best efficiency in low R.P.M range.

5×6 profile air end

High tech screw air end, exclusively developed 5×6 profile produced by full grinding technology serves lowest vibration and noise level with highest efficiency which is the best and the world first class performance.

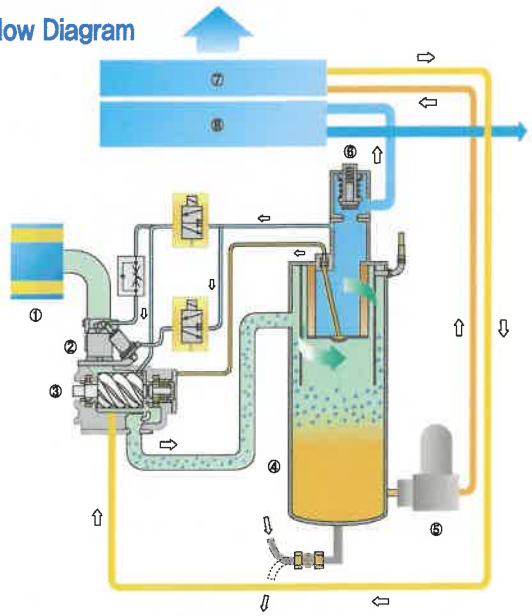
Direct drive solution

Direct drive coupling minimizes power transfer loss and the more energy saving effect will be guaranteed in case when high efficiency motor is applied.

Advanced package technology application

Package technology of MICOS screw compressor is developed through perfect analysis of advanced technology. From the design of suction refrigerated air to the part selection and layout design, Yujin's compressor is developed under the application of advanced technology tends to be the best in the world.

Flow Diagram



① Air Filter
② Intake Valve
③ Airend
④ Separation Tank
⑤ Thermostat & Oil Filter Housing
⑥ Minimum Pressure Valve
⑦ Oil Cooler
⑧ Air Cooler

MICOS-Ⅳ MICOM Control system

MICOS-Ⅳ Control with Touch Color LCD having trilingual interface can display a variety of function such as the operational status of the compressor, equipment protection, and maintenance message output through the appropriate icons available on the display screen, so you can operate the machine with ease and convenience.

Low noise and vibration design

Low speed air end with fully grinded rotors can achieve world top grade of noise and vibration performance and also guarantees long compressor lifetime.

Pre-Inlet filter

Pre-filters in two side covers remove contaminant from inlet air, prolongs the lifetime of air cleaner and makes the unit clean.

Optimum design application for Hydraulic line and pneumatic line

Thermostats installed in oil filter housing made possible to minimize the space of hydraulic line and using internationally proven and inspected connection fitting in order to prevent any leakage problems in the circulation line.
Vibration proof coupling type outlet line reacts fluently against machine vibration.

Easy maintenance and low maintenance cost

- Package arrangement considered for easy consumable part replacement and maintenance every period.
- Fully opened front cover, easy open / close design at each side cover application.
- Fully protected cooler duct has a covers for cleaning at each side so that easy cleaning and safety for operator is guaranteed.

DIRECT DRIVEN SCREW COMPRESSOR

37~450kW (50~600hp)

The special features of MICOS compressor

Electric display panel

Electric display panel and touch type control panel prevents operator's eyes stress, operation faults or any input errors but also it is very easy to control that anyone can handle it easily thanks to modern and easy design.

Full grinding type high efficiency air end

Solely developed and manufactured Yujin's own air end guarantees it's durability as well as high efficiency thanks to strict production and quality standard control.

Energy saving motor

Water, vibration proof, isolation and heat conservation motor has such an optimized efficiency to save energy consumption

Module type oil filter housing

Thermostats installed in oil filter housing prevents oil leakage thanks to the simplified piping arrangement.

TECHNICAL DATA (MICOS 37~132)

Article			Unit	MICOS 37	MICOS 45	MICOS 55	MICOS 75	MICOS 90	MICOS 110	MICOS 132
Compression method				Oil flooded, 1-stage compression						
Capacity (FAD)(1)	50Hz	7 bar	m^3/min	-	7.68	9.79	13.8	15.9	21.0	23.1
		8 bar		-	7.26	9.74	13.0	15.8	20.2	22.7
		10 bar		-	6.10	7.59	10.6	13.5	18.9	21.0
		13 bar		-	5.72	7.28	9.6	10.4	14.7	18.1
	60Hz	7 bar	m^3/min	6.67	-	10.30	13.73	-	21.20	-
		9 bar		6.11	-	9.12	13.10	-	18.60	-
		12 bar		4.58	-	7.10	9.83	-	16.10	-
Compression unit	Driven method			Direct coupled drive						
	Suction Temperature(3)		℃	Max. 40						
	Outlet Temperature			Max. suction temperature + 15						
	Cooling method			Air cooled / Water cooled						
Motors	Rated power		kW	37	45	55	75	90	110	132
	Input voltage		V	AC 220 / 380 / 440, 3-phase (Option : AC 400 / 415 / 460)						
	Frequency		Hz	50 / 60						
	Starting method			Y-△						
Pipe connection				32A	40A		50A		65A	
Control method				Load/Unload control (by MICOS-Ⅳ controller)						
Noise level(2)			dB(A)	71	72	73	73	74	75	65
Weight			kg	1,100		1,550	1,800		2,550	
Overall dimension (L×B×H)			mm	1,700×1,065×1,500		2,000×1,400×1,850			2,482×1,800×1,960	

(1) According to ISO1217 Edition3-1966, Annex-C
(2) According to ISO2151 Edition1-1972
(3) High temperature packages upto 55℃ are available

Acquire Certificate of Reliability!

The reliability and quality control ability are proven by achieving Certificate of Reliability from Ministry of Commerce, Industry and Energy.

Direct driven screw compressor
450kW, Water-cooled

The whole view of 8 sets of 600 HP installed and operated

(OO Resort Snow-Clearing Equipment)

TECHNICAL DATA (MICOS 150~450)

Article			Unit	MICOS 150	MICOS 190	MICOS 225	MICOS 260	MICOS 300	MICOS 375	MICOS 450
Compression method				Oil flooded, 1-stage compression						
Capacity (FAD)[1]	50Hz	7 bar	m^3/min	28.9	34.7	37.4	43.4	55.9	-	-
		8 bar		27.4	31.5	35.9	41.2	53.6	-	-
		10 bar		22.9	27.8	32.8	34.3	47.2	-	-
		13 bar		20.8	24.7	28.0	32.4	40.5	-	-
	60Hz	7 bar	m^3/min	28.53	35.0	40.6	45.8	55.3	73.1	78.6
		9 bar		26.16	30.0	33.3	38.2	50.2	61.3	72.1
		12 bar		23.07	26.8	29.6	31.9	45.0	53.2	58.2
Compression unit	Driven method			Direct coupled drive						
	Suction Temperature[3]		℃	Max. 40						
	Outlet Temperature			Max. suction temperature + 15						
	Cooling method			Air cooled / Water cooled						
Motors	Rated power		kW	160	190	225	260	315	375	450
	Input voltage		V	AC 220 / 380 / 440, 3-phase (AC 400 / 415 / 460, AC 3,300 / 6,600 : option)						
	Frequency		Hz	50 / 60						
	Starting method			Y-△ / Reactor / Soft starter					Reactor / Soft starter	
Pipe connection				65A	80A	100A			125A	
Control method				Load/Unload control (by MICOS-Ⅳ controller)						
Noise level[2]			dB(A)	78	78	79	81	83	85	85
Weight			kg	3,010	4,800	5,530	6,420	7,320	7,900	8,900
Overall dimension (L×B×H)			mm	2,482×1,800×1,960	3,382×2,100×2,500				3,580×2,100×2,525	

(1) According to ISO1217 Edition3-1966, Annex-C
(2) According to ISO2151 Edition1-1972
(3) High temperature packages upto 55℃ are available

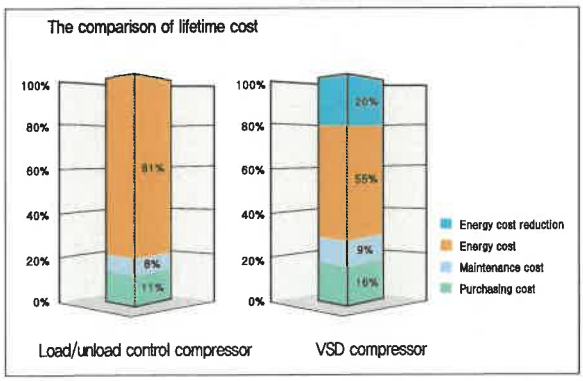
VARIABLE SPEED DRIVE SCREW COMPRESSOR 37~315kW (50~400hp)

MICOS VSD(Variable Speed Drive) screw compressor is the optimal choice for reducing energy cost.

In most factories, energy consumed on producing compressed air takes a large portion of total energy expense. During production, demand of compressed air shows different patterns based on time, day and month and general compressor (normal speed drive system) repeats loading/unloading operation according to the demand. MICOS VSD compressor changes drive motor's rotation speed to produce only the necessary amount according to actual demand of compressed air. It eliminates unload operation and frequent restart of compressor and consistent discharge pressure provides energy saving up to 30% of total energy expense.

We guarantee the economical efficiency of the maximum by reducing energy cost.

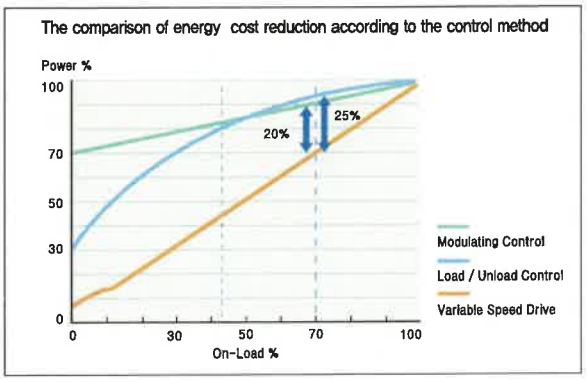
MICOS VSD compressor produces only the necessary amount demanded by the operation. When demand is low, unloading operation can be eliminated to maximize energy savings. When variable speed compressor and conventional compressor are operated together, excessive initial investment to accommodate for the highest demand can be prevented. Purchasing price of conventional compressor is under 10% of total life expense where compressor operational expense is approximately 80%. Although approximately 5% of initial investment expense increases if MICOS VSD type compressor is purchased, the overall life expense can be reduced by 22%.



Analysis on energy reduction theory and economical value

Conventional compressor produces only fixed volume of air from fixed speed because it cannot change the motor's rotation speed. When purchasing a compressor, most factories consider highest demand plus margin. However, the actual compressor operation remains at 50–80% due to continuous changes in demand. Current conventional compressor is unable to comply with constant changes in demand. Therefore, it wastes energy by repeating regulation control, loading / unloading operation and stop and restart.

MICOS VSD compressor, unlike conventional compressor, uses high efficient inverter and motor to control motor rotation speed. This feature changes the discharged air volume to produce only necessary volume; hence saves energy.



MICOS-Ⅳ MICOM Control system

MICOS-Ⅳ Control with Touch Color LCD having trilingual interface can display a variety of function such as the operational status of the compressor, equipment protection, and maintenance message output through the appropriate icons available on the display screen, so you can operate the machine with ease and convenience.

ADT : Air Demand Analysis Tool

MICOS VSD compressor is selected through a process where each factory's daily air consumption volume is analyzed using ADT. ADT analyzes customers' air consumption pattern to select maximum energy conserving model and enables simulation on energy consumption with selected model before compressor is installed.

Open discharge pressure selection

The discharged pressure of MICOS VSD compressor can be freely selected within 5~13 bar range with its own controller.
This feature smoothly copes with main line pressure fluctuation (due to differential pressure from line filter and others) during compressor operation.

High efficiency Inverter and inverter motor

MICOS VSD compressor applies CE and UL approved high-efficient inverter and its own motor to accurately follow highly fluctuating operational characteristics of a compressor. This analysis then controls discharged pressure within 0.1 bar of predetermined pressure.

VARIABLE SPEED DRIVE SCREW COMPRESSOR 37~315kW (50~400hp)

The special features of MICOS VSD compressor

The powerful VSD compressor controller : MICOS-Ⅳ

MICOS-Ⅳ controller detects system pressure and controls inverter to produce exact quantity of air according to the factory's air demand. So it can save energy cost by reducing the unloading action of other compressors.

1 : 1 direct driven compressor

All MICOS series VSD compressors have direct coupled driven method without acceleration gear box. So they can reduce the transmission loss caused by the gear box and can guarantee high energy efficiency, low maintenance cost and quite operation.

High efficiency inverter

CE and UL certified inverter is adapted all models of VSD compressor. The electric cabinet is fully separated from mechanical component and exclusive cooling fan and pre-filter are installed in the cabinet. So MICOS VSD compressor can be operated safely at any industrial surroundings.

YUJIN's Air Demand Analysis Tool (ADT) will find the most desirable compressor system that fits customer's need. (Air Demand Analysis Tool, ADT)

Selecting an inverter compressor is determined by accurately analyzing the compressor system condition and compressed air usage pattern of the existing compressors. Air Demand Analysis Tool (ADT) is connected to the customer's compressor to analyze operational characteristics of each machine (based on compressed air usage pattern) for more effective compressor system design.

Each compressor's operational data stored in ADT are inputted into analysis program to calculate the daily air usage volume graph and electricity consumption characteristics. Subsequently, optimal equipment construction and investment recovery can be examined by evaluating potential electricity savings resulting from employing standard and interval compressors prior to operation.

TECHNICAL DATA (MICOS 37V~150V)

Article			Unit	MICOS 37V	MICOS 55V	MICOS 75V	MICOS 110V	MICOS 150V
Compression method				Oil flooded, 1-stage compression				
Capacity (FAD)(1)	50/60Hz	7 bar	m³/min	2.0~6.7	3.1~10.3	4.1~13.7	6.4~21.2	8.3~28.5
		9 bar		1.8~6.1	2.6~9.10	3.5~13.1	5.1~18.6	7.0~26.1
		12 bar		1.4~4.6	2.1~7.1	2.9~9.8	3.8~16.1	5.9~23.0
Compression unit	Driven method			Direct coupled drive				
	Suction Temperature(3)		℃	Max. 40				
	Outlet Temperature			Max. suction temperature + 15				
	Cooling method			Water cooled				
Motors	Rated power		kW	37	55	75	110	160
	Input voltage		V	AC 220 / 380 / 440, 3-phase				AC 380 / 440, 3-phase
	Frequency		Hz	50 / 60				
	Starting method			Soft start by Inverter(No peak current)				
Pipe connection				32A	50A		65A	
Control method				Variable speed drive (MICOS-Ⅳ controller)				
Noise level(2)			dB(A)	68	70	71	73	76
Weight			kg	1,160	1,850	2,040	2,680	3,320
Overall dimension (L×B×H)			mm	1,700×1,065×1,500	2,000×1,400×1,850		2,482×1,800×1,960	

(1) According to ISO1217 Edition3-1966, Annex-C
(2) According to ISO2151 Edition1-1972
(3) High temperature packages upto 55℃ are available

Achieved US patent for VSD control method!

Yujin Machinery Ltd achieved US patent (US 6,394,758 B1) for VSD control method!

VSD screw compressor
37~315kW

TECHNICAL DATA (MICOS 190V~300V)

Article			Unit	MICOS 190V	MICOS 225V	MICOS 260V	MICOS 300V
Compression method				Oil flooded, 1-stage compression			
Capacity (FAD)[1]	50/60Hz	7 bar	m^3/min	10.5~35.0	12.1~40.6	13.5~45.8	17.7~55.3
		9 bar		8.7~30.0	9.8~33.3	11.0~38.2	15.8~50.2
		12 bar		7.3~26.8	8.1~29.6	9.1~31.9	13.8~45.0
Compression unit	Driven method			Direct coupled drive			
	Suction Temperature[3]		℃	Max. 40			
	Outlet Temperature			Max. 40 Max. suction temperature + 15			
	Cooling method			Water cooled			
Motors	Rated power		kW	190	225	260	315
	Input voltage		V	AC 220 / 380 / 440, 3-phase			
	Frequency		Hz	50 / 60			
	Starting method			Soft start by Inverter(No peak current)			
Pipe connection				80A	100A		
Control method				Variable speed drive (MICOS-Ⅳ controller)			
Noise level[2]			dB(A)	78	79	81	83
Weight			kg	4,910	6,260	6,590	7,500
Overall dimension (L×B×H)			mm	3,382×2,100×2,500		3,382×2,100×2,500 (800×1,080×2,500)	

(1) According to ISO1217 Edition3-1966, Annex-C
(2) According to ISO2151 Edition1-1972
(3) High temperature packages upto 55℃ are available

AIR TREATMENT SYSTEM (5~6,000hp)

AIR DRYER · AFTER COOLER · AIR FILTER

Refrigerated Air Dryer

Our heat exchanger, a MY series Air Dryer is so specially designed that compressed air with high temperature and high humidity goes through the rapid cooling cycling system so that no fine water exists. In addition, the entire part of the cabinet of the dryer is specially coated to prevent corrosion to the maximum extent, and the cabinet can be so easily detachable that you may clean the inside of the machine with ease. The machine can be easily checked and repaired when it needs a service.

MY Series

MY 5–15

MY 50–100

MY 150–200

MY 250–400

Refrigerated Air Dryer

An open-type one of large refrigerated air dryers has been most produced and sold in the nation, and we have the best know-how and technology for large products in the country. You can easily know at a glance if the main control is working in the best condition. The machine is capable to have the best dehumidification capability without failure in any evil condition.

MYO Series

MYO 500W–6000W (water-cooled)

MYO 500–1200 (air-cooled)

MYI 5000 (indirect-cooled)

Desiccant Air Dryer

This is one of the best dryers of high quality combined with activated alumina adsorbents and precise control.
Even in the case of continuously repeated operation, the dryer will maintain accurate dew point.
And the use of the best parts ensures the machine will operate with no fine fault.

MD Series
(Fuzzy Blow Type)

ME Series
(External Heater Type)

MO Series
(Oil Master Type)

Aftercooler (air-cooled)

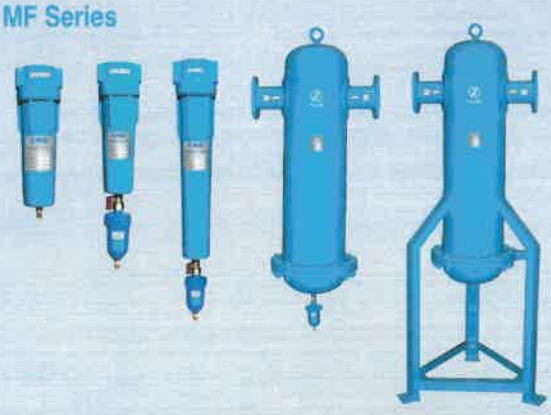
The copper pipes of the highest quality and a large number of AL heat sink used for this cooler has maximized the heat transfer area.
Compressed air with high temperature and high humidity discharged from the compressor rapidly cooled closer to room temperature helps to give the best dehumidifying effect without burdening. In addition, the cabinet is specially coated to prevent corrosion.

MC Series

High Performance Air Filter

This air filter completely filters solids and large amounts of water. Especially AC-F type air filter with activated carbon absorbents built in is very much efficient to remove heated and carbonized substances formed from fine molecules and the compressor.
Stainless steel perforated punching net with a long life span has been made only by our company in the country to protect filter paper and completely resolve the problem of corrosion.

MF Series



SCREW TECHNOLOGY

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