

MARK

O.K. KOMPRESSOR SERVICE A/S

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ROTARY SCREW COMPRESSOR MSA 4 - 5,5 - 7,5 - 11 - 15 kW



TECHNOLOGY YOU CAN TRUST

Technology and Performance

High performance, silent running, simple installation and maintenance, makes the MSA compressor belong to the top class models currently available in the market.

The use of highly reliable components and the high productive efficiency of our renewed assembly lines, result in an even more reliable product. A rationalised layout, a lower number of components subject to wear and their ergonomic positioning, reduce operating costs.

High-efficiency compression elements

The two rotors with asymmetric profile, which have the same diameter, are mounted on high quality, low wear ball and roller bearings. The high degree of sealing and the fine tolerances used in the element also guarantees, even in small power ranges:

- GREATER YIELD
- HIGH EFFICIENCY
- LONG LIFE AND RELIABILITY
- LASTING PERFORMANCE

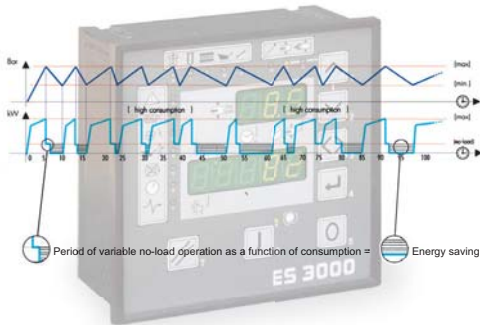


Economical

The direct-reading ES 3000 electronic regulator makes it possible to:

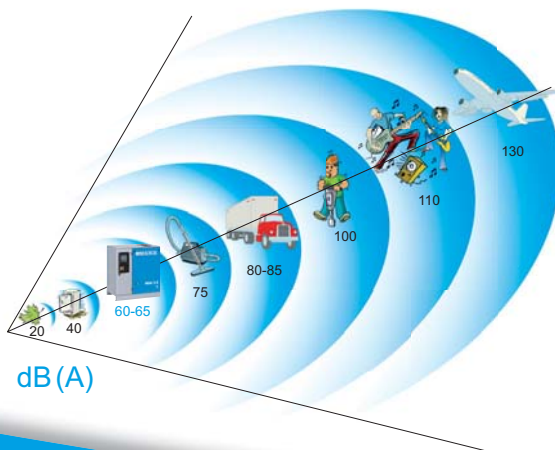
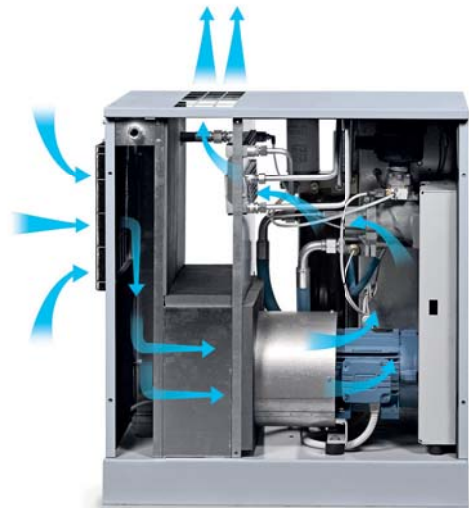
- manage all running operations,
- perform machine control and regulation,
- monitor irregularities,
- stop the compressor in the event of emergency,
- view the data on the machine's maintenance program.

- Reduced energy cost = INCREASED SAVINGS
- Reduced energy consumption = INCREASED ENVIRONMENTAL FRIENDLINESS



Silent running

Years of experience have been applied to the issue of noise levels particular in taking care of analysing the air flow inside the machine and the use of suitable panels with anti-noise devices. The assembly of the various components and the absence of transmitted vibrations. All have enabled us to achieve results which put even the standard version of our machine at the top of the market.



Low noise levels

Design experience, rigorous selection and careful assembly of components. Use of insulation foam, deflectors and anti-vibration pads are the key factors explaining our success in reducing noise levels of all our units to the lowest in the market. Compact and respectful of the environment, thanks to its low noise levels, the MSA range can easily be installed in working environments, even close to offices.

Rotary Screw Compressor MSA

The MSA range is a modern and aesthetically designed belt driven oil lubricated screw compressor offering a wide choice of variants, built with quality components in a state of the art assembly plant:

	FIX SPEED	IVR
Power (kW)	4/5,5/7,5/11/15	5,5/11/15
Pressure (bar)	8/10/13 (7,5-15 kW) 8/10 (4-5,5 kW)	8 and 10
Control	Load/Unload	Variable speed

MSA range can fulfil industrial requirements up to 71 cfm with maximum **reliability** and **efficiency** whilst ensuring user friendliness, easy **serviceability** and **low noise levels**.

Everything required from a compressor with technology you can trust.

Silenced dry air
INTAKE FILTER

COMPRESSOR with oil flooded asymmetric screws

PREMIUM EFF1
Three-phase IP55
ELECTRIC MOTOR,
euro-voltage, class F

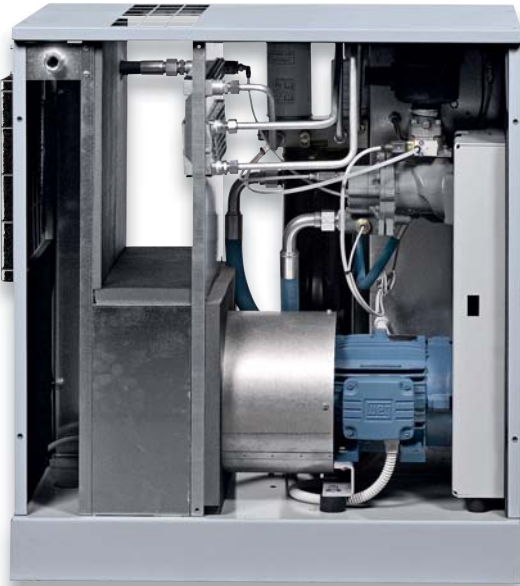
TRANSMISSION
by means of V belts with
automatically aligned
belt tensioner

OIL RESERVOIR
with high efficiency air-oil
separator filter 2-3 ppm

OIL LEVEL
visible via a sightglass

Combined
AIR-OIL COOLER
in aluminium with fine fins

OIL FILTER



External PRE-FILTER very
easy to remove for cleaning

Steel PLATE BASE
handling from three sides

Elegant
SOUNDPROOFED BODY
with polyester powder paint surface

Control and command
MAIN PANEL in a cabinet with a door
locked with a triangular key

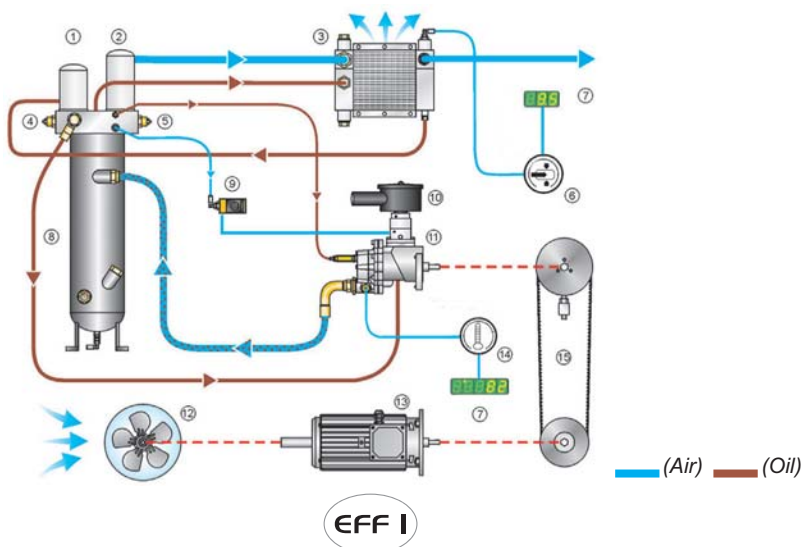
STAR-DELTA STARTER
for start up current reduction

Control and command
INSTRUMENT PANEL
Main switch CONTROL PANEL
command and regulation with
electronic controller ES3000

SAFETY DEVICES:
Motor thermal protection
High air/oil temperature
Safety valve
Minimum pressure valve

Flow Diagram

- 1 - Oil filter
- 2 - Air/oil separator filter
- 3 - Air/oil cooler
- 4 - Safety valve
- 5 - Thermostatic valve
- 6 - Pressure Control
- 7 - Display
- 8 - Oil tank
- 9 - Suction Electro-valve
- 10 - Air Suction filter
- 11 - Air End
- 12 - Cooling fan
- 13 - Electric motor EFF1
- 14 - Temperature Control
- 15 - Transmission Group



MSA Tank & Dry

MSA TANK and MSA DRY are two industrial options for compressed air production. They are compact, pre-assembled and ready for use. Designed for small and medium-scale industrial needs. Ideal where space is limited or close proximity to the work site is required.

MSA Tank

- two versions : 270 and 500 liters
- three pressures : 8 - 10 - 13 bars
- twenty-two models : from 5,5 to 15 kW

Atmospheric air compressed by the compressor is collected in the air receiver.
The condensate produced can be drained through a valve at the bottom of the air receiver.

Air Receiver

Made of steel panels horizontally mounted on a fixed base, built and inspected according to current EEC regulations.

Sturdy structure allows all components to be assembled without affecting the tank's stability.

MSA Dry

A unit for the compression, drying and filtering of compressed air, assembled on a fixed, horizontal air receiver.

Available in:

- two versions : 270 and 500 liters
- three pressures : 8 - 10 - 13 bars
- twenty two models : from 5,5 to 15 kW

for delivery of dried and filtered compressed air in conformity with ISO 8573-1 Classes 1 - 4 - 1 (dust,water,oil).



Atmospheric air is compressed by the compressor and stored in the air receiver, then filtered and dried before entering the air network.

Condensates formed during the various compressed air treatment phases are automatically drained.

Cleaner air results in:

- Lower maintenance costs for distribution network, machinery and pneumatic tools.
- Energy savings through reduced in-line pressure drops.
- Improved productivity due to fewer breakdowns.
- Better final product quality.

MSA DRY: A Complete System ...



TYPICAL MSA DRY SET-UP

MDX dryer ④

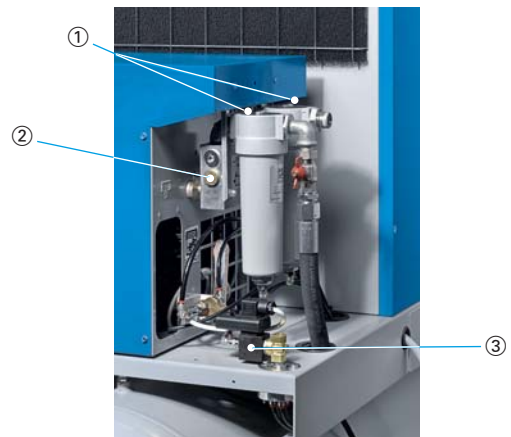
For removing condensate in compressed air according to European environmental directives. Uses R134a ecological gas; with by-pass

A dryer featuring:

- low dewpoint,
- lower maintenance,
- high reliability.

Filters and by-pass dryer

- ① Using the filters, it is possible to eliminate dust and oil particles up to a filtration degree of 0.01μ and to a degree of residual oil equal to 0.01 mg/m^3 .
- ② There is also the possibility of by-passing the dryer, assuring in any case air filtration.
- ③ All condensate coming from the dryer, filters and tank, is centrally collected and drained in a single point through a timed drain device.



A complete compression unit in a small space

Traditional plant



Integrated plant



In the version with dryer, one has in a single solution: compressor, dryer, tank and filters in just 1.2 m^2 (500 l) with the following advantages:

- minimum space requirement and easy installation
- no installation costs for the dryer and the filters (all assembled at the manufacturing factory's premises)
- elimination of air leaks in pipes
- the elimination of many pipes assures a minimum fall of pressure, increasing energy savings.

Easy maintenance

In designing this series of machines, special attention has been paid to the aspect of "SERVICEABILITY". All the internal parts are easily accessible, and the oil level is visible from the outside, with no requirement to remove any panels.



Replacing and tensioning belts

For the replacement and/or tensioning of the belts, just remove one fixed protection (side panel). The special transmission design ensures proper alignment of the pulleys.

Air intake filter replacement

This operation requires removing only the upper panel.

Ordinary maintenance

- Discharge of condensate
- Oil top-off
- Oil change
- Oil filter replacement
- Oil separator filter replacement

All of these interventions are possible by removing only two panels.

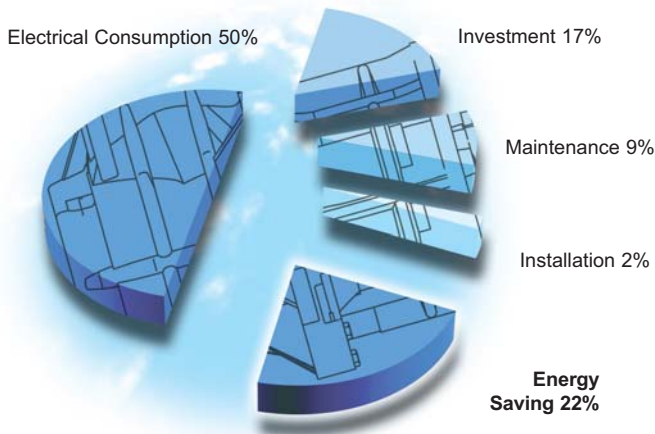


Original Part, Your quality assurance



The 'original part' identification confirms that these components passed the specific strict test criteria. All parts are designed to match the compressor and are approved for use on the specified compressor only. They have been thoroughly tested to obtain the highest level of protection, extending the compressors' lifetime and keeping the cost of ownership to an absolute minimum. No compromises are made on reliability. The use of 'original part' certified quality components ensures reliable operation and will not impact your warranty, unlike other parts. Look for your quality assurance.

Optimum Savings With IVR Regulation MSA IVR 7,5-11-15



IVR Principles

Most of the time, air demand is not constant in a network. The purpose of an inverter is to reduce the speed of the main motor to follow precisely the profile of the compressed air requirement. This results in reduced power consumption, bringing energy savings and a quick return on the investment incurred.

IVR Benefits:

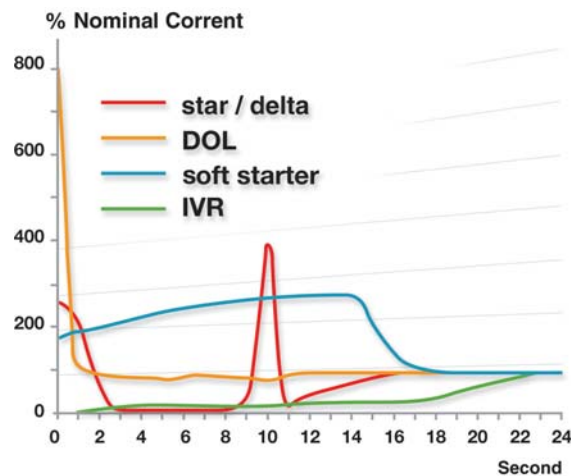
Safe and easy operation

- EMC compliant: no electromagnetic interference to or from the electrical network.
- ES3000 standard controller: comprehensive display and automatic control of the inverter.
- Standard Inlet baffle: protects the inverter against dust whilst allowing ventilation.
- Standard components: easy maintenance and availability.










Energy Savings:

- Soft start: protects the motor against stress at start up, and avoids current peaks.
- Efficiency 1 motor: from a reputed Premium Brand, high efficiency for lower kW consumption. Speed regulation of the motor between minimum and maximum frequency brings maximum savings.
- Constant pressure: no fluctuation between load and unload pressures. (1 bar = 7% energy). No unload cycles and energy wastage.



TECHNICAL DATA

Type													
										MSA TANK		MSA DRY	
	bar	psi	HP	kW	l/min	m³/h	cfm	dB(A)	Kg		270 lt	500 lt	270 lt
MSA 4/8	8	116	5,5	4	600	36,0	21,2	60	180	n.a.	n.a.	n.a.	n.a.
MSA 4/10	10	145	5,5	4	485	29,1	17,1	60	180	n.a.	n.a.	n.a.	n.a.
MSA 5,5/8	8	116	7,5	5,5	820	49,2	29,0	64	195	255	340	290	375
MSA 5,5/10	10	145	7,5	5,5	670	40,2	23,7	64	195	255	340	290	375
MSA 7,5/8	8	116	10	7,5	1.153	69,2	40,7	64	200	265	350	310	385
MSA 7,5/10	10	145	10	7,5	1.000	60,0	35,3	64	200	265	350	310	385
MSA 7,5/13	13	188	10	7,5	810	48,6	28,6	64	200	265	350	310	385
MSA 7,5/8 IVR	8	116	10	7,5	max 1.153 min 461	max 69,2 min 27,7	max 40,7 min 16,3	64	225	290	375	325	410
MSA 7,5/10 IVR	10	145	10	7,5	max 1.000 min 400	max 60,0 min 24,0	max 35,3 min 14,1	64	225	290	375	325	410
MSA 11/8	8	116	15	11	1.665	99,9	58,8	63	220	285	370	320	405
MSA 11/10	10	145	15	11	1.435	86,1	50,7	63	220	285	370	320	405
MSA 11/13	13	188	15	11	1.210	72,6	42,7	63	220	285	370	320	405
MSA 11/8 IVR	8	116	15	11	max 1.665 min 666	max 99,9 min 40,0	max 58,8 min 23,5	63	235	300	385	335	420
MSA 11/10 IVR	10	145	15	11	max 1.435 min 574	max 86,1 min 34,4	max 50,7 min 20,3	63	235	300	385	335	420
MSA 15/8	8	116	20	15	2.000	120,0	70,6	65	245	310	395	345	430
MSA 15/10	10	145	20	15	1.790	107,4	63,2	65	245	310	395	345	430
MSA 15/13	13	188	20	15	1.480	88,8	52,3	65	245	310	395	345	430
MSA 15/8 IVR	8	116	20	15	max 2.000 min 920	max 120,0 min 55,2	max 70,6 min 32,5	65	260	325	410	360	445
MSA 15/10 IVR	10	145	20	15	max 1.790 min 823	max 107,4 min 49,4	max 63,2 min 29,1	65	260	325	410	360	445

Note:
n.a.= not available
Size and weights without packaging
First oil charge
Standard Voltage V/Hz/Ph 400/50/3

Version:
- MSA (Floor standing) and MSA IVR: gas 3/4"
- MSA TANK (Tank mounted); gas 1/2"
- MSA DRY (Tank mounted with dryer and filters); gas 3/4"

Dimension mm: LxWxH
- MSA (Floor standing): 995x655x1045-995x665x1045 (IVR)
- MSA TANK & DRY (270 liters: 1535x655x1550; 500 liters: 1935x655x1680)
- MSA IVR TANK & IVR DRY (270 liters: 1535x665x1550; 500 liters: 1935x665x1680)



According to



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www.mark-compressors.com