



C8 Professional



ATEX , TÜV , CE Certified

ATTENTION

The booster using is allowed to people with suitable knowledge (certified and documented) and they are aware of risks to work with high pressure gases like air, oxygen and helium.

When you use the booster to pump pure oxygen, you must be sure that all the tanks, hoses and all the equipment is cleaned for oxygen and lubricate with oxygen compatible grease.

When you manage high pressure oxygen you must put maximum careful and open the oxygen valve slowly.

We must avoid sudden pressure increase that can create dangerous temperature increasing on critical point (water hammer) and then cause a fire.

Read careful this manual before using the booster.

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Introduction

This manual give you the information to the right use for the booster **MPS** . this instruction are valid for **Booster MPS C8** only described in this manual and must be used according to the following specification.

Study in deep this manual before to start the Booster MPS C8 installation and utilization.

Important information about the safety are highlighted with the words **ATTENTION** and **DANGER** with the following symbols:



DANGER point out a potentially dangerous situation, if not avoided, could generate serious injury or death.



ATTENTION point out information on particular events to anticipate situation potentially dangerous.

Overview

All boosters have a compact structure and high level of compression, must be supplied with a right source of air at low pressure, the booster can work with a minimum of **5 Bar** and maximum of **11 Bar** of air as a drive gas of low pressure piston.



Picture 1

If you need to lubricate the booster you must use oxygen compatible grease.

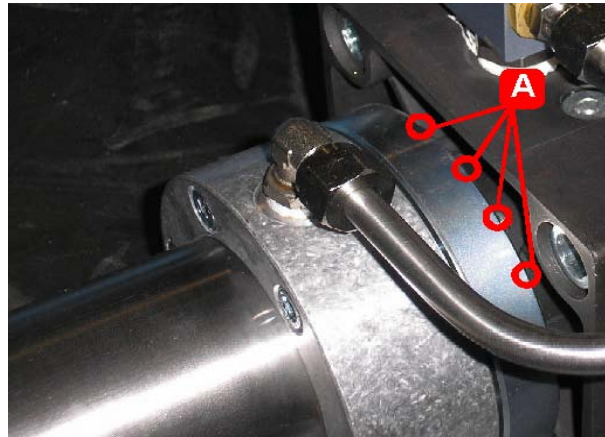
MPS C8 booster is equipped with DIN connections for fill hose (outlet) to compress, with all standard adapters for oxygen tanks. The connection for the drive gas of low pressure piston is a quick connection. (AIR IN) (picture 1)

Moreover the booster is equipped with a high pressure valve for drive gas calibrated at 8 Bar (After LP pressure reducer).Picture 2



Picture 2

The separation between the low (air) and high (oxygen/helium) pressure room is guaranteed by a brass bushing OT58, a lip seal Viton and another lip seal in SintekJ-AL. If one of that components should be damaged or broken it will cause a loose of pure gas. To avoid the contact between a pure gas and some parts of the booster not oxygen cleaned are made some hole at the base of the high pressure cylinder to allow to the pure gas to flow in the atmosphere through sinterized filter.A



To increase the piston life expectancy we insert at the ends of the drive room 2 small pneumatic rooms to decrease the piston speed and avoid it to knock against the ends of the low pressure cylinder.

Technical specification

Feature	Value	Unit
Piston stroke	120	mm
Dead Space	1	mm
Theoretical pressure ratio	39:1	-
Maximum drive gas pressure (AIR only)	11	Bar
Maximum boost pressure @10 bar	385	Bar
High pressure cylinder displacement	38x2	Cc
Maximum pumping speed ¼' valve	40	Cycles/min
Valves and piston seal	Sintek J -AL	-
Booster weight	16	Kg
Case weight	Nd	Kg

Features can change without notice.



Components

1. **Oxygen connection valve**
2. **Oxygen Storage Pressure Gauge**
3. **Drive Air Pressure gauge**
4. **Out Oxygen Pressure Gauge**
5. **Oxygen Out 6**
6. **LP press. Reducer (drive air)**
7. **Drive Air Pressure**
8. **Quick connection air in**
9. **Booster**
10. **Unidirectional Valve**
11. **Cooling air exhaust**
12. **Booster speed regulation**
13. **Cylinder Housing**
14. **Hook opening booster**

Connections

To have the right use of the booster you must do:

- Connect the storage oxygen to the inlet connection (picture 1) Oxygen in from storage and the other end to the supply storage (Oxygen out 5)





- Connect the drive gas (usually air) to the quick insert to supply the Booster.
(10 bar -1200 L/min)



Operation

When you connected the whip as described in the pervious paragraph, follow the step described in sequence:

- Open completely the oxygen storage tank valve
-  open **slowly** the supply tank Oxygen out 5
-  If the Oxygn Storage have a pressure bigger than the Oxygen out 5, open **slowly** the oxygen connection valve (1) tank with a flow rate maximum of 5 litres/minute
- wait some time until the two pressure are balanced
- open the valve completely and open the **Booster speed regulation** valve (12)
- Regulates the pressure of the drive air
- The booster start to work
- At the and of the process, the booster stops when the tank pressure reaches the desired pressure
- To stop the booster at any time close the speed reg. valve or disconnect the quick connector of drive air

How it works

The boosting speed is internally managed (can be changed by the factory or e specialised technician). The booster works fine if the following condition are satisfied:

- The pilot pressure is between 5.11 bar
- The supply tank have a pressure higher than 5 Bar
- The fill tank shuold have a pressure lower than 345 bar
- The pilot gas consumption (air) is directly poportional to the final pressure, the tank capacity, the number of strokes needed.

The air already used from the Humphrey valve is direct in a expansion room around the high pressure cylinder to cool it through the sleeve around the high pressure cylinder then the air flow through the high pressure head and to the atmosphere at outlet piping direction.

The unidirectional valves on the high pressure head have a radial seal in Sintek with MBTF of about 300 hours.

Please log the booster utilization to determinate the maintenance period.

Trouble shooting and tests

Seal test high pressure (check valve outlet)	Connect the outlet whip to a full tank, open the tank valve, leave the circuit in pressure, close the tank valve. Check after 5 minutes if you had a leakage or pressure lost. If it happen sent the booster to the factory or to a specialised technician.
Seal test high pressure circuit	Unscrew the outlet whip with gauge from the booster outlet and connect to the inlet connection and vice versa. Connect a full tank to the booster inlet, and another tank to the booster outlet. Leave the outlet tank close, open the inlet tank and put the circuit in pressure. Close the inlet tank. Check after 5 minutes if you had a leakage or pressure lost. If it happen sent the booster to the factory or to a specialized technician.
The booster doesn't work	Is it connected the pilot whip? Is the pilot gas tank opened? Close the pilot gas tank, disconnect the pilot whip, clean the orifice, attach again the pilot whip. Is the supply tank opened? (Oxygen, Helium, ...). Is the fill tank valve open?

WARRANTY

The MPS provides oxygen booster for its production of the free supply of all components, which clearly defective workmanship for a period of 12 months from the date of dispatch. Are excluded from the free supply shipping charges and the cost intervention and travel MPS who becomes employed.

RECEIVING OF THE MACHINE

Containers, crates or packing boxes prepared for shipment must be verified before the opening to see if any damage caused by transport. In case of apparent damage, immediately notify the carrier which performed the carriage and the MPS, the findings of the case. The opening of containers for packaging, check again that no transport damage has been suffered by the content. Check that objects correspond to voice, words and quantity shipping documentation and Packing List. In case of damage or differences, immediately notify the carrier which performed the carriage and the MPS, the findings of the case.

DISCLAIMER OF LIABILITY '

The MPS is considered to be raised any liability for damage to the booster, to persons or property in the following cases:

Improper use of booster;

Use of the booster by personnel not adequately trained;

Use of the booster without complying with the laws of the country-specific installation; incorrect installation (if not done under supervision of staff MPS);

use of energy sources are not adequate or improper;

failure to comply with the requirements of periodic maintenance;

Maintenance not done properly by experienced personnel, use of non-original spare parts or unfit;

total or partial failure of the instructions of this Manual;

Exceptional occurrences;

Changing the characteristics of the booster;

RULES FOR THE MAINTENANCE

The production of oxygen booster MPS have their internal components wear for which it is established a useful life of 400,000 cycles of pumping. Above that limit are not guaranteed over the full performances provided by the technical specifications though not for nothing that the disabled condition of safety booster. Is not provided by the replacement of those parts that should be done directly from MPS or personnel authorized by it. Posts errors may affect the safety of the equipment, including risk of explosion upon its reactivation. Any other operations control, adjustment, cleaning and fixing of the booster is at the discretion of the user and must be performed in a EVACUATION TOTAL compressed, including that of the tank connected to it.

WARNING: The maintenance is prohibited to unauthorized personnel.

CAUTION: In the cleaning and washing use caution with a cloth moistened with water or non-aggressive detergents. The booster will not in any way be immersed in water and you will have to be careful so that any liquid can penetrate the vents security dinghy high pressure

CHARACTERISTICS OF PNEUMATIC SYSTEMS

- 1 All components, the connecting elements and the pipes are sized to work safely with pressure exceeding 40% of the maximum guaranteed by the safety valve.
- 2 The plant is enclosed in a special canopy which shelters the operator from sudden jets of compressed air (in case of breakage of the pipe) and at the same time protects the plant from damage due to intrusion of foreign bodies.
- 3 The valve controls the anterior chamber of the drive is equipped with safety valve that limits the input pressure to 9 bar maximum.
- 4 The control valve is equipped with a sintered filter on nutrition that prevents the entry of any impurities. The air supply must be dried and filtered with a 30 micron feature.

PRODUCT DESCRIPTION AND PURPOSE OF USE

The production of oxygen booster MPS are designed to compress oxygen at a pressure within a desired range set by the technical specifications.

The apparatus consists essentially of a pneumatic cylinder connected to a plunger for high pressure, the compression ratio is derived from that of sections of the two cylinders.

The booster uses fluid as the compressed air engine as standard pneumatics.

METHOD INSTALLATION-LINK TIRE

The user must press to connect the network distribution of compressed according to the following instructions:

The use of compressed air must be filtered and dried.

Filter element with a 30 micron filter and automatic discharge of condensate.

Connect the Drive air piping to the distribution pipe Picture 1.

Verify that during the connection pipes are clean connection to prevent extraneous bodies can enter the circuit and affect the proper functioning of the press and which have characteristics necessary to withstand the maximum pressure of the Line plant.

Check that the connections of Use connection for connection to the network have a step equal to the internal diameter of the connecting pipe. Any blockages or bottlenecks affect the speed of execution and correct operation.

Max working pressure 9bar.

In the case of a portable version, the wrapper must be non-insulating.

In the case of fixed installations to provide the connection to ground at the point marked



with Symbol

