

Sté BURTON CORBLIN

NOGENT-SUR-OISE FRANCE

Téléphone : 455-12-21

OPERATING AND MAINTENANCE
INSTRUCTIONSOF
22042 APR

CLIENT REFERENCE : GML/CJB/HIMIC GRECE

Manufacture number, s/n° A4 C 85 n° 40698 - 40699
 Stroke 130 mm
 RPM. 400 t/mn
 Manufacture Steel
 Internal diameter \varnothing 70 mm
 Discharge pressure 85 kg/cm²
 Recommended water flow -

LEAFLET, type 22 A Nombre 14
 Leak detection 446581 1 à 3/3 6400 0000 OH
 Oil filling volume data 332937 A
 Characteristics of oil 449548 A
 Safety device mounted on lubricating
 oil circuit 450540 A
 Compressor maintenance
 Clearance table and tightening torques
 Instructions for assembly and setting
 Instructions for preservation and storage
 Unbalanced forces and moments
 Instruments
 Instructions for dissassembly and assembly
 Locking of plate bolts 452242 A
 Device of décompression

DRAWINGS

Sight oil level 4 1140 0001 6S
 Oil piping assembly 4 1500 6304 3 / 2 1500 6304 3K
 Check valves 4 3200 0002 0S
 1st stage : (suction valve C 28 VA 5 2000 2801 1L
 (discharge valve C 28 VR 5 2000 2803 2L
 2nd stage : (suction valve
 (discharge valve
 3rd stage : (suction valve
 (discharge valve
 4th stage : (suction valve
 (discharge valve
 Pressure limiter valve 3 3500 0001 0A
 Compensating pump 3 3600 0002 4D
 Oil receiver assembly
 Oil gear pump 2 1536 0004 6B
 Filling pump
 Assembly on base plate
 Pneumatic diagram
 Oil cooler PICKER P.2514 + NOTICE
 Mechanical part assembly 4 1100 6401 0W/O 1101 6401 0F
 1st stage cylinder 4 3200 6414 0 / 0 3200 6414 0N
 2nd stage cylinder
 Wiring diagram
 G.A. drawing
 Flow sheet
 Foundation drawing
 Oil piping diagram
 Spare part list for 1 year operation. A

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Operating conditions :

Compressed air : hydrogène sec

Suction pressure : 17 kg/cm²

Discharge pressure : 35 à 66 kg/cm² A

AIR CAPACITY : 5,05 m³/heure

RPM : 400 t/mn

Absorbed power on shaft
for discharge pressure
of :

non précisé

Necessary power to motor :

Motor speed :

DIAPHRAGM COMPRESSOR FOR OIL FREE GASES
=====

INSTRUCTION AND MAINTENANCE MANUAL

TYPES AO - AOC - A1 - A1C - A2 - A2C
A34 - A34C - A4 - A4C - A5 - A5C
B2C - B4C

- A - DESCRIPTION AND METHOD OF OPERATION
- B - PUTTING INTO SERVICE
- C - MAINTENANCE
- D - STARTING AND STOPPING

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LEAFLET 22 A

The CORBLIN DIAPHRAGM COMPRESSOR consists essentially of two cylindrical plates each having a concave recess hollowed out in their contacting faces between which a flexible metallic diaphragm is gripped and held in position by bolts.

One of the plates is drilled with holes which connect the bi-conical chamber with the cylinder of a pump ; the other plate carries the suction and delivery valves for the gas.

A piston acts on the oil, with which the cylinder of the pump is filled, and thus imparts an oscillating motion to the diaphragm forcing it in contact with the plate carrying the suction and delivery valves. This action of the diaphragm displaces the gas under the control of the suction and delivery valves.

At each stroke a small compensating pump replaces the oil slightly in excess of that which escapes between the piston and cylinder. The excess oil is released at the end of the stroke by a pressure limiting device, consisting of a valve controlled by a spring thus permitting the oil to be returned to the crankcase.

Owing to the fact that the piston moves in the oil, and that the diaphragm separates the gas completely from the oil, the compressor operates without any packed gland ; this, combined with the maximum volumetric efficiency, which is ensured by the small compensating pump, enables the compressor to absorb the least possible amount of power.

The gas to be delivered is only in contact with the metallic diaphragm ; it is therefore compressed in a state of absolute purity, without the slightest trace of lubricant. Moreover, there can be no leakage of the gas into the atmosphere.

The crankshaft bearings and those for the connecting rod big end are fitted with ball, roller or needle bearings. (For compressors type A34 - A34C - A4 - A4C - B4C with forced-feed lubrication system and for A5 - A5C type see sheets 8-9-10).

The delivery valve is located in the centre of the plate : the suction valve(s) are offset.

The upper plate is suitably drilled to allow the circulation of cooling water.

NOTE - The machine will operate in an entirely satisfactory manner with only one diaphragm. However, it is advisable to fit the compressor according to the following manner.

$$30^{\text{bar}} - 30,6 \frac{\text{kg}}{\text{cm}^2}$$

For compressors (and liquid pumps) up to 450 p.s.i.g. fit two diaphragms.

$$30^{\text{bar}} - 30,6 \frac{\text{kg}}{\text{cm}^2}$$

For compressors (and liquid pumps) above 450 p.s.i.g. fit three diaphragms.

The diaphragms are fitted directly one above the other, but between them a thin skin of molybdenum bisulphide has to be placed (use a sprayer when possible).

In order to protect our machines during transit and storage, the following components are greased before leaving our works :

- valve holders ;
- valves ;
- gas plate ;
- diaphragms.

In order that the compressor operates satisfactorily, not the slightest trace of grease must remain when it is assembled for service.

It is therefore necessary to take down and clean the following parts in the following order.

- remove the valve flanges, spacers and valves ;
- unbolt the plates ;
- remove the gas plate, the diaphragms and the drilled plate ; (avoid knocking any of these parts, since a knock may result in damaging the inner face of the cylinder heads and thus cause rupture of the diaphragm when the compressor begins to run). (See remark page 5)
- carefully remove the grease from all these parts as well as from the cylinder if necessary.

To facilitate these operations, and also the replacement of the diaphragms, it is recommended that for the heavy machines (type A34, or larger) a pulley-block supported on an overhead runway should be installed above the compressor.

FILLING THE CRANKCASE WITH OIL

The oil which must be employed with these compressors has a Redwood n° 1 viscosity of 270 at 100°F (315 Sec. Saybolt Universal at 100°F) and a freezing point of - 4 to - 13°F. (VISCOSITY OF 5° ENGLER à 50°C - and a freezing point of - 20 to - 25°C). Any oil which has closely similar characteristics is suitable.

It is necessary to use dopped oils with anti-rust, anti-corrosion and anti-foam inhibitors.

Commercial grade corresponding :

SHELL.....	TELLUS OIL 33
ESSO STANDARD.....	ESSTIC 55
C. F. R.....	TOTAL PRESLIA 40
MOBIL OIL.....	DTE. OIL HEAVY MEDIUM
ELF.....	OLNA 46
ANTAR.....	MISOLA CH
(or equivalent)	

For enough quantity of oil into the crankcase to fill it upper mark on the oil-gauge mounted on the outside of the crankcase.

COMPENSATING PUMP

It is essential, before putting the compressor into service for the first time or after each refilling to prime the compensating pump.

Proceed in the following manner :

- 1) Dismantle the discharge pipe of the compensating pump ;
- 2) Remove the delivery valve of the compensating pump ;
- 3) Evacuate the air, by working the piston by hand and pouring a small quantity of oil through the delivery outlet. (To move piston use a screw-driver and push with it on the groove at the top of the piston) ;
- 4) Refit the delivery valve ;
- 5) Check the working of the pump by once again moving the piston by hand ;
- 6) Refit the discharge pipe of the compensating pump.

FILLING THE CYLINDER WITH OIL

It is also essential that the space between the piston and the diaphragm should be completely filled with oil, and to expel any air bubbles. Since such air is compressible it would, in fact, result in a "clearance space", which would be detrimental to the efficient working of the machine.

Proceed in the following manner :

- Bring the piston of the compressor into the bottom dead-centre position and the pressure limiting device into the working position (lever in line with the axis of the regulator) ; (Flywheel key at high point)
- Fill with oil to a level so that all the holes are filled completely, but without any oil running over ;
- Place the diaphragms in position.

NOTE - For A5 and A5C compressors see sheets 9 and 10.

PLACING THE DIAPHRAGM IN POSITION

(For pressures higher than 15 000 p.s.i.g. see special sheets at end of leaflet)
(1000 bar - 1020 kg/cm²).

Carefully clean both faces of the diaphragms.

Hold the diaphragms in an inclined position and place it, first of all, on the drilled plate at a single point of its external circumference. Then, gradually apply it over the oil, keeping part of the diaphragm slightly lifted up throughout the operation, so that no air is trapped in the oil. Put on the first diaphragm the second and eventually the third.

The upper plate is then gently lowered and the bolts are tightened in sequence.

Filling with oil is now finished, but the compressor must not yet be started up. The diaphragm has been mounted flat in the compressor when the piston was at the bottom dead centre. In reality, when the compressor is running normally, and the piston is at the bottom dead centre, the diaphragm is curved concavely downwards. Consequently, there is a half-cylinder of oil in excess in the space between the diaphragm and the piston. This excess oil must be removed before the compressor is started up. This operation is carried out in the following manner :

- open the pressure limiting device by placing the operating lever transversely ;
- turn the flywheel by hand until the top dead center is reached, but do not go beyond it ;
- close the pressure limiting device by bringing the operating lever back into line.

The compressor is then ready for starting up.

IMPORTANT NOTE - For compressors A34 - A34 C - A4 - A4C - B4C with forced feed lubrication system and for A5 - A5C it is also necessary to prime the oil gear pump before starting (see sheets 8-9-10).

Date

N°

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Dismantling of the gas plate :

In order to remove the plate, use a tackle with a special shackle made in such a way that it can be fitted at the center of the plate where the discharge valve is normally fitted (use the gudgeons of the valve flange).

Date

N°

When the compressor is operating satisfactorily, it requires no special attention. The oil level must be checked to see that it has not dropped below the lower mark of the gauge. (If necessary, oil should be added). If no oil has been added during a period of twelve months, it is advisable to replace it completely with new oil.

For all the operations which have to be carried out on the compressor, the valves installed on gas loop must obviously be closed, so that the machine is completely isolated.

CHANGING THE DIAPHRAGM

Do not run the compressor with a punctured diaphragm. As soon as it is observed that a diaphragm is damaged, it must be replaced by proceeding as follows :

- bring the piston to bottom dead centre position ; (flywheel key at high point)
- remove the assembly bolts ;
- raise the gas plate by means of the three jacking screws ; (1)
- withdraw the diaphragm.

At this stage, it is advisable to make certain that the internal surface and the grooves in the plates are quite clean and free from particles of solid matter.

Place the new diaphragm in position, after first wiping it with a clean cloth, in accordance with the instructions given in the paragraph headed "Filing the cylinder with oil" sheet 4. (For A5 and A5C compressors see sheets 9 and 10).

INSPECTION OF THE VALVES (see drawing at end of leaflet)

Loosen the nuts or the screws holding the flanges of the valves in position to the upper plate ; remove the flanges and the gaskets.

The assembly constituting the valve is held by a spacer. Use the special tools supplied with the compressor to extract valve assemblies.

The movement of the valve is assisted by a small spring (flat or coil).

INSPECTION OF PRESSURE-LIMITING DEVICE (see drawing at end of leaflet)

This pressure limiting device, which releases the excess oil at the end of each stroke, is mounted on the outside of the oil cylinder. Any foreign matter which becomes lodged under the seat of this device would result in an additional quantity of oil being released and thus causing unsatisfactory operation, since the full quantity of oil would no longer be maintained between the diaphragm and the piston. In such case, after stopping the compressor and the oil cylinders having been drained, unscrew the connection of the outlet tube and the fixing nuts (or nut) on the oil cylinder. The pressure limiting device is thereby detached from the compressor. Completely unscrew the nut on the body which contains the valve-needle and the nut of operating lever. Remove the operating lever, with its spindle, the spring and the valve-needle ; clean and reassemble.

- (1) these jacking screws are fitted on the gas plate between bolt holes or tackle holes and screwed to the maximum.

INSPECTION OF COMPENSATING PUMP (see drawing at end of leaflet)

This component is easily dismantled. After emptying a little of the oil to bring the level just below the suction pipe, unscrew the union of the delivery tube and the screws which secure the compensator to the crankcase. The compensator is fitted with poppet type valves. The oil is drawn in through a perforated tube which acts as a strainer. These perforation can become blocked with dirt, reducing the volume delivered by the pump, and consequently lowering the efficiency of the compressor. Thorough cleaning of the perforations is sufficient to put matters right. At the same time, check the tightness of the valves on their seats.

Removal of air

After inspection of the pressure limiting device or the other components, which have caused a loss of oil, and before putting the compressor back into service, air must be removed in accordance with the instructions given in the paragraph "FILLING THE CYLINDER WITH OIL" sheet 4. (For A5 and A5C compressors see sheets 9 and 10).

OIL PRESSURE

To ensure that the diaphragm presses tightly against the cylinder head at each stroke of the piston, it is essential that the oil pressure given by the pressure limiting device should be greater than the working pressure of the compressor. The pressure limiting device is usually calibrated before it is despatched from our works. It may be useful, however, to know the exact oil pressure and in that case proceed as follows :

While the compressor is running close the outlet valve of the normal delivery circuit: in the case of refrigerating or liquefying installations, it is sufficient to close the inlet valve of the condenser water). The gas pressure will gradually rise and finally remain steady, when it has reached the pressure of the oil, because the compressor then ceases to deliver. The oil pressure is therefore equal to that of the gas which is shown at that instant on the pressure gauge on the delivery side.

The excess of the oil pressure over the maximum gas pressure should be 45 to 60 p.s.i.g. for low pressures (below 300 p.s.i.g.) and 300 to 450 p.s.i.g. for high pressures (more than 850 p.s.i.g.). For pressures higher than 15 000 p.s.i.g. see special sheets at end of leaflet.

5 bar $5.1 \frac{\text{kg}}{\text{cm}^2}$
6 bar $6.12 \frac{\text{kg}}{\text{cm}^2}$
20 bar $20.4 \frac{\text{kg}}{\text{cm}^2}$
30 bar $30.6 \frac{\text{kg}}{\text{cm}^2}$
1000 bar
1020 $\frac{\text{kg}}{\text{cm}^2}$

Pressure is too low :

This may be due to :

- the operating lever of the pressure limiting device being in an incorrect position ;
- the amount of oil in the crankcase is insufficient, thus making the feed to the compensating pump inadequate ;
- too much oil in the crankcase (the balance weight or the connecting rod, by beating the oil in the crankcase causes an emulsion, thus permitting the entry of air into the compensating pump ;
- the needle of the pressure limiting device sticking in the open position ;
- the pressure limiting device spring becoming loose (add a washer or change the spring ; if the pressure limiting device is of the adjustable type, screw down the adjustin screw) ;
- the working of the compensating pump being impeded by dirt which has lodged under the valves or the suction strainer tube.

Date

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Pressure is too high

An abnormal bending of the upper plate or an oil leak under diaphragm can be seen.

Make sure that the needle of the pressure limiting device is not jammed in the close position and that the outer openings are not blocked.

Slacken the spring of the pressure limiting device, if this should be necessary, by placing one or more aluminium gaskets under the nut 410 984, in the case of a non adjustable pressure limiting device, or by slightly unscrewing the adjusting screw, in the case of an adjustable pressure limiting device. (For pressures higher than 15 000 p.s.i.g. see special sheets at end of leaflet).

1 000 bar
1 020 Kg/cm².

GENERAL REMARKS

When dismantling or reassembling, cleanliness is the most important consideration. A grain of sand, or a small fragment of metal, may interfere with the proper working of the pressure limiting device or of the compensating pump and may even cause puncturing of the diaphragm. It should be borne in mind that, in the last mentioned eventuality, the hole in the diaphragm may be very small.

If the compressor is not working properly, inspect the various parts in the following order :

- 1 - Check the oil level ;
- 2 - Make sure that the lever of the pressure limiting device is in its correct closed position (in the axis of the device) ;
- 3 - Ascertain whether the oil pressure has reached its normal value ;
- 4 - Check the valves ;
- 5 - Inspect the compensating pump ;
- 6 - Change the diaphragm.

IMPORTANT

- 1) Always use the same grade of oil (see sheet 4). Details of oil are as follows :

Kinematic (Centistokes)	VISCOSITY	
	Redwood n° 1	Sec. Saybolt Universal
20°C..... 180	70°F..... 680	100°F..... 315
50°C..... 38	100°F..... 270	130°F..... 150
100°C..... 8,5	140°F..... 112	210°F..... 55

Freezing point : 4 to 13° F below zero.
-20 to -25° C

- 2) On new installations very often pipes are dirt and contain more or less welding particles. If dirt comes into compression cylinder they can break diaphragms. To avoid these problems an efficient filter must be used on suction side of compressor. This filter must have a big enough surface to reduce pressure drops to the minimum rate.

- 3) Impurities can also involve a bad sealing of the valves.
Remove them through the special extractor supplied with the tooling;
check their sealing and in case of need dismantle them for cleaning
them and eventually honing the valve on its seat.

CONCERNING THE A4 - A34 - A4C - A 34C - B4C COMPRESSORS

with forced-feed lubrication system

See assembly drawing of oil pipes system at end of the leaflet

- for A4 & A34 compressors..... drawing 237717
- for A4C & A34C compressors..... 238264-425 660
- for A4C & A34C // STAINLESS STEEL " 248 980
- for B4C compressors..... " 427 929
- for A4C 600 - A4C 700 & A4C 1000 compressors..... " 246272

In these types of compressors, the big end of connecting rod is fitted with anti-friction bearing (babitt bearing).

An oil gear pump (R), directly driven by the crankshaft of the compressor, on side opposed to flywheel, ensures while running, the lubrication under pressure of the big and small ends connecting rod, as well as of piston and piston cross-head.

- starting pressure : 60 to 90 p.s.i.g. $4,08 \text{ kg/cm}^2$ to $6,12 \text{ kg/cm}^2$ - 4 to 6 bar
- running pressure : never below 20 to 25 p.s.i.g. $1,53 \text{ kg/cm}^2$ to 2 kg/cm^2 - 1,5 bar
- adjustment of pressure by by-pass valve(s)

Before the first starting or if compressor remained in storage a long time it is necessary to prime this oil gear pump.

To do so dismantle the plug (G) and pour oil in the pump body. Then tighten carefully the plug (G). An oil-cooler (U) is fitted do the crankcase of the compressor. It must be water cooled and the cooling pipes must be made on site ; they can be combined with the cooling water loop of the upper head plate.

ATTENTION

1) For the good running of the oil gear pump, check carefully the direction of rotation indicated by the arrow located on the crankcase of the compressor. (Clockwise direction when facing driven end).

2) In case of low oil pressure, check the oil filter in the crankcase and the suction pipe of the oil gear pump.

Be careful there is no air entry on this suction pipe as well as in the oil cooler.

The oil pressure must never be below 20 to 25 p.s.i.g. while compressor running.

$1,53$ to 2 kg/cm^2
1,5 bar

CONCERNING SPECIALLY A5 AND A5C COMPRESSORS

See assembly drawing of oil pipes system at end of the leaflet :

For A5 compressor..... drawing 23 6 7 7 7

For A5C compressor..... drawing 23 6 8 1 2

In these types of compressors, the big end of connecting rod is fitted on anti-friction bearing (babitt bearing).

When the compressor is running, the oil gear pump (R) directly driven by the crankshaft of compressor on compensator side, allows the lubrication under pressure of the connecting rod, piston crosshead (or the piston itself) and cross-head pin bushings.

Pressure at starting (cold oil) : 60 to 90 p.s.i.g. $4,08 \frac{\text{kg}}{\text{cm}^2}$ to $6,12 \frac{\text{kg}}{\text{cm}^2}$ - 4 to 6 bar

Pressure during running : never below 20 to 25 p.s.i.g. $1,53$ to $2 \frac{\text{kg}}{\text{cm}^2}$ - 1,5 bar

Adjustement of pressure with by-pass valve (S).

Before the first starting or if compressor remained in storage a long time it is necessary to prime the oil gear pump (R).

To do so use the hand priming pump (C). (This pump is also used for filling the cylinder with oil).

1) Filling the cylinder with oil.

Take away or lift the upper head plate.

Put the piston on bottom dead center position then open pressure limiting device (A) (by putting the operating lever perpendicular to the longitudinal axis of the device). Open valve (H) (make sure that the valve (G) is closed).

Filling will be carried out with the hand priming pump until that the holes of the drilled plate are completely filled up without overflowing.

Close pressure limiting device (A) and valve (H).

Carefully clean both faces of the diaphragm.

Hold the diaphragm in an inclined position and place it, first of all on the drilled plate at a single point of its external circumference. Then gradually apply it over the oil, keeping part of the diaphragm slightly lifted up throughout the operation so that no air is trapped in the oil. Put on the first diaphragm the second and eventually the third one.

The upper plate is then put in place and the bolts are tightened in sequence. Then oil excess from cylinder oil housing as described in paragraph "Placing the diaphragm in position" sheet 4.

2) Priming of the oil gear pump.

Open the valve (G) the valve (H) and close the pressure limiting device (A).
Operate manual priming pump (C) clockwise direction until it can be seen pressure increasing on the pressure gauge of the oil gear pump (R).

Then carefully close the valve (G) isolating the oil gear pump (by putting its operating lever perpendicular to the longitudinal axis of pipes).

The oil is cooled by oil cooler (U) by means of cooling water which is also used, to cool heads and coolers.

NOTES :

a) In order to get the right working of the oil gear pump, compressor must be run in the direction indicated by the arrow set on the compressor crankcase (clockwise direction when facing flywheel).

b) If the oil pressure drops check the crankcase oil filter and the suction piping of the oil gear pump (R).

Make sure the connections are tight along suction pipe and oil cooler.

When the compressor is running the oil pressure must never drop below 20 to 25 p.s.i.g. - 1,53 to 2 kg/cm^2 - 1,5 bar

3) Cylinder oil draining.

Draining is carried out by means of the hand pump (C).

Operate in the following way :

- remove the assembly bolts
- raise the upper plate by means of the three jacking screws
- withdraw the diaphragms
- open the pressure limiting device (A) and the valve (H) the valve (G) being closed

The draining is then carried out by turning the flywheel (C) of the hand pump counterclockwise.

I - STARTING

- 1 - Close the relief valve and drain cock for the cooler (1)
- 2 - Open the cooling water admission valve
- 3 - Open the valve for the inlet gas
- 4 - Start up the motor
- 5 - If the receiver for the compressed gas is empty
 - Open the inlet valve on the receiver

If the receiver for the compressed gas is empty

- Wait until the delivery pressure of the compressor reaches that of the receiver, then open the inlet valve of the receiver.

II - STOPPING

- 1 - Stop the motor
- 2 - Close the inlet valve on the gas receiver
- 3 - Open the relief valve and drain cock for the cooler to unload gas pressure after shut down, in order to prevent a loss of oil from the chamber beneath the diaphragm and to enable the compressor to start under no load conditions on the next start up.
- 4 - Close the valve for the inlet gas
- 5 - Close the water inlet valve

IMPORTANT NOTICE

If the compressor has been stored for a long time and before to put it into service the moving parts in the crankcase above the oil level must be hand lubricated to avoid seizure or any failure if there is a lack of lubrication. For Compressors with forced-feed lubrication system do not forget to prime the oil gear pump (see sheets 8-9-10).

(1) when the installation is foreseen with aftercooler.

Diaphragm rupture detection device

Everytime a diaphragm rupture is to be known immediately, each compressor head has to be fitted with a diaphragm rupture detection device.

A) PRINCIPLE

- 3 diaphragms are used together - when the oil side or the gas side diaphragm bursts, the pressure rises between the broken and the intermediate diaphragm. The pressure rise is used to operate a pressure switch which stops the compressor.

B) COMPONENTS AND DESCRIPTION

1.- diaphragm set : 3 diaphragms with each 3 positioning notches are used :

- gas side : plain diaphragm
- oil side : plain diaphragm with a small detection hole located on the sealing area on the diaphragm periphery
- intermediate : slotted and grooved diaphragm.

When these 3 diaphragms are assembled together the slot of the intermediate diaphragm comes in front of the oil side diaphragm detection hole, thanks to the three positioning notches.

Three pins fixed on the perforated plate, match the notches and hold the diaphragms in right position. These pins are pushed down by the gas plate when it comes down for assembly.

When any of the oil or gas side diaphragm breaks, either by metal fatigue or by scrap metal insert, the oil or gas comes into contact with the intermediate diaphragm and gets through its slot, to the hole in the oil side diaphragm.

That hole facing the detection system orifice in the perforated plate, the oil or gas coming through rises the pressure in the detection system pipe.

2.- Pressure-switch

A very sensitive pressure switch adjusted to switch off against a pressure of some hundreds gram only is connected to the above mentioned perforated plate orifice.

When the pressure rises in the detection piping the pressure switch switches off and the compressor stops. An additional contact may be added to the pressure switch to operate an alarm or signal on request.

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A		D		COMPRESSEURS A MEMBRANE CORBLIN 78-80 BOULEVARD SAINTE MARCEL PARIS 5 ^e	DATE :
B		E			PLAN :
C		F			446581-1

Connecting piping to pressure switch is protected by a safety valve set à 7 bar maximum in order to avoid that it may be damaged by a too fast pressure build-up in case of an important diaphragm puncture.

The system is complete with a small drain valve allowing to unload the piping connecting this system to the machine.

CAUTION - During installation of the diaphragms on the machine
===== air may be trapped in between. This air, if not vented prior to starting the compressor, will be subjected to a pressure rise due to the movement of the diaphragms, hydraulic pressure and/or gas pressure and also due to warming up. Under these circumstances the crack detection switch may switch the machine off after some minutes because of the pressure building up in the system.

To avoid undue stopping on diaphragm detection switch signal because of the system air pressure build up, we recommend to open for a few minutes the vent valve provided in the system.

IMPORTANT - Make sure that this vent valve is closed in normal operation so that the switch can operate on oil or gas pressure in the event of oil or gas diaphragm failure.

DRUCKWÄCHTER

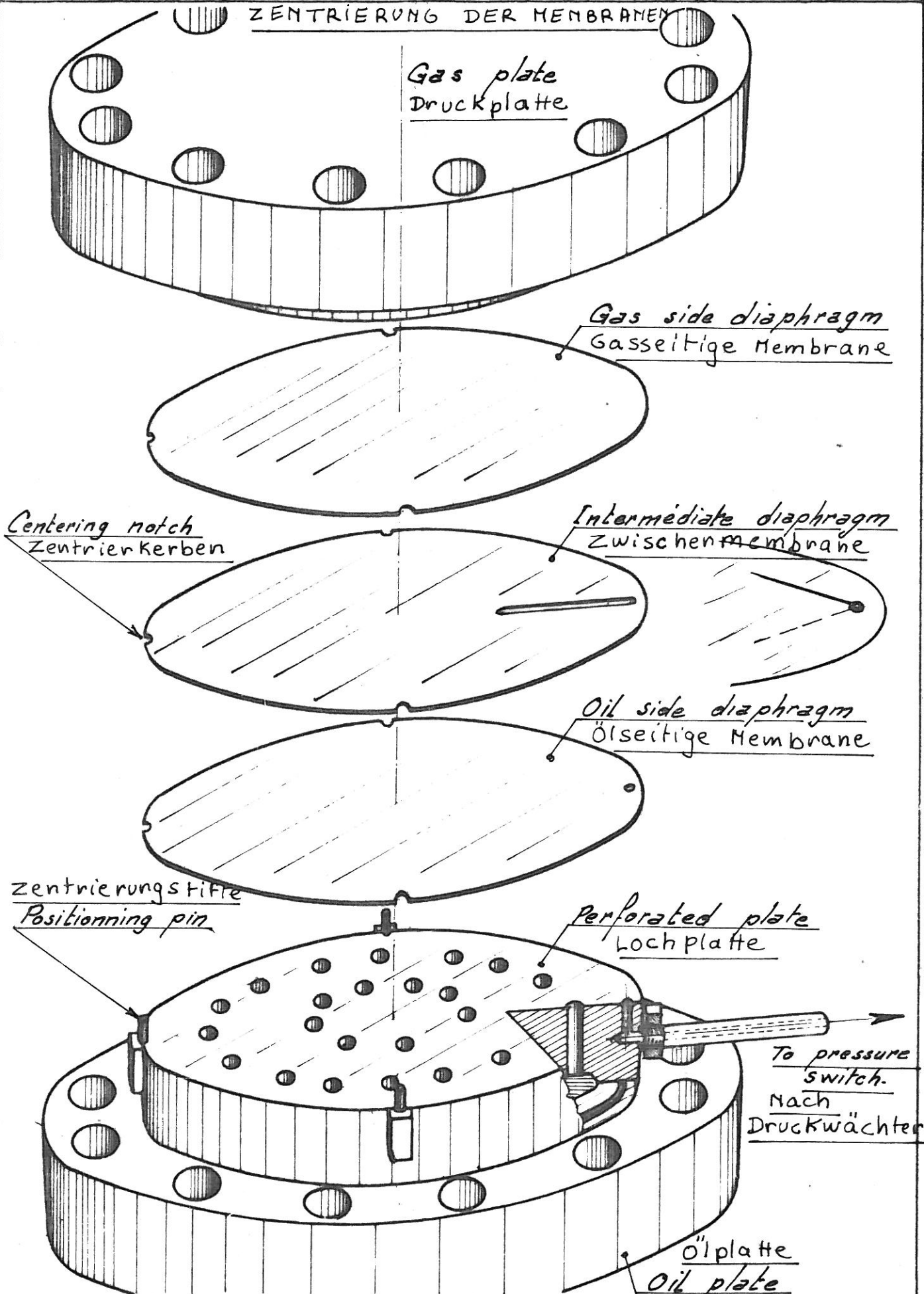
DIAPHRAGM RUPTURE DÉTECTION DEVICE

N°

DIAPHRAGM ASSEMBLY

SL

ZENTRIERUNG DER MEMBRANEN



A		D	
B		E	
C		F	

COMPRESSEURS A MEMBRANE CORBLIN

78-80 BOULEVARD SAINT-MARCEL PARIS 5°

DATE:

PLAN

446581-3

A