SCREW COMPRESSOR UNITS, SERIES SV10
Unit description

SVA/SVB/SVK/SVR

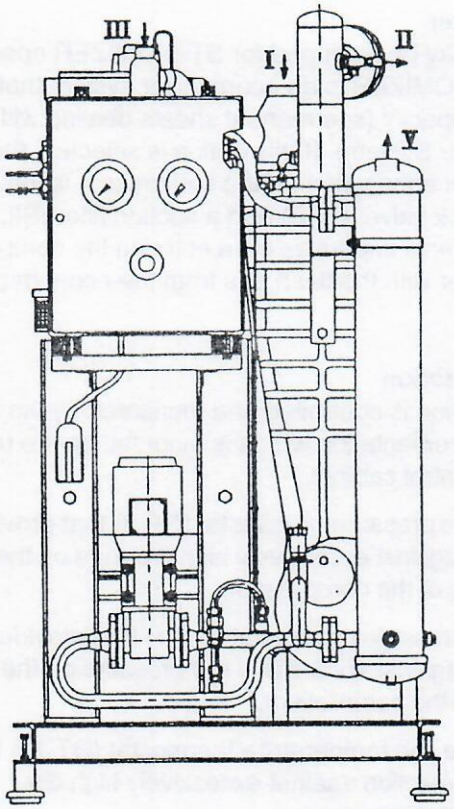


Figure 1. Stal-Mini screw compressor unit, series SV10

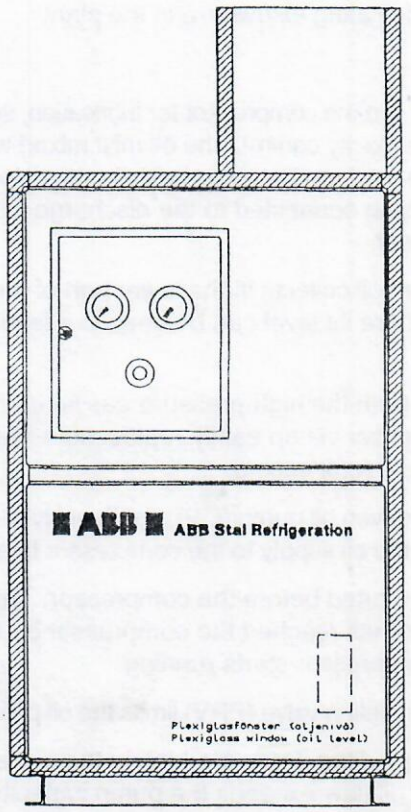


Figure 2. Stal-Mini screw compressor unit, series SV10 with sound damping enclosure

Applications
The SVA and SVB screw compressor units are both intended for unclassified stationary operation in plants using R717 (NH_3). The SVA compressor unit is for high-pressure operation and the SVB is for booster (low-pressure) operation.

The SVK and SVR screw compressor units are intended for high-pressure operation using R22 refrigerant. The SVK screw compressor unit is intended for classified marine plants while the SVR is intended for unclassified stationary installations.

General
All units are designed as compact, ready-to-operate units for connection to existing equipment: see Fig 1. Each type is manufactured in four sizes for mains frequencies of 50 Hz and 60 Hz.

Where there are special requirements calling for a low noise level, the units can be fitted with site-mounted enclosures. The enclosures are secured to the bottom frame of the unit, and are ventilated, with easily remov-able covers for access to the compressor unit for maintenance (Fig 2).

Design, construction and operation
(see Fig. 3 for SVA/SVB units and Fig. 4 for SVK/SVR units)

Compressor
The compressor (KS) and electric motor (M) are mounted on a shared bottom frame, which can be placed on vibration isolators or steel feet.

The compressor is connected to the electric motor, the torque of which is transmitted to the compressor via gearing.

The compressor gas inlet is fitted with a stop valve (AV 1) in combination with a flap-type check valve (BV 1), which prevents the compressor from rotating backwards when stopped.

The compressor gas inlet also contains a filter (SIL 1) to protect the compressor from damage caused by impurities originating elsewhere in the plant.

Oil system

Oil is injected into the compressor for lubrication, sealing, cooling and capacity control. The oil mist mixed with the high-pressure gas from the compressor is separated in the outlet casing connected to the discharge side of the compressor.

The separated oil collects in the lower part of the outlet casing, where its level can be seen in a level indicator (SG).

Oil removed from the high-pressure gas is returned to the compressor via an easily-replaceable filter in the compressor rotor casing.

A separately driven oil pump (OP), continously in operation, secures the oil supply to the compressor bearings.

The pump is started before the compressor. This is to assure that oil has reached the compressor bearings before the compressor starts running.

A pressure regulating valve (PRV) limits the oil pressure.

When pressure differences are high in the system, i.e. when the oil flow exceeds the pump capacity, part of the flow is by-passed via a check valve (BV 5).

The outlet casing in compressor units of types SVA and SVB, (as opposed to those in the SVK and SVR compressor units) incorporates a replaceable filter (SIL 6) in the secondary stage. Oil from this filter is returned via oil filter (SIL 7) and nozzle (SN) to an inlet on the compressor.

When a lower level for oil carry over is required or at certain operating conditions (see manual sheet with data for oil carry over), an extra equipment can be fitted on the outlet casing. See Fig. 5.

A check valve (BV2) is delivered separately and intended for connection to the high-pressure side of the plant. The outlet casing incorporates a safety valve (SÄV) in order to prevent damage which would occur if, say, the compressor was to be started with one of the valves closed downstream of the outlet casing.

The outlet casing also contains an oil heater (VO) which prevents condensation of refrigerant in the outlet casing during standstill periods.

Cooling

The unit is normally fitted with a single oil cooler (OK), which may be either water-cooled or condensate-cooled. The purpose of this cooler is to dissipate part of the heat of compression. The oil cooler is fitted in the oil line between the oil pump and the compressor.

Economizer

The unit may be equipped for STALOMIZER operation. STALOMIZER is an economizer system that increases capacity (see manual sheets dealing with the Economizer System). If this option is selected, the economizer connection on the compressor is fitted with a check valve (BV 3) and a suction filter (SIL 5) which prevents impurities from entering the compressor together with the flash gas from the economizer system.

Instrumentation

Unit operation is controlled and monitored by the following instrumentation which is mounted on the unit, inside a control cabinet.

A discharge pressure pressostat (GP 3) that provides protection against excessively high pressure on the discharge side of the compressor.

A suction pressure pressostat (GP 1) that provides protection against abnormally low pressure on the suction side of the compressor.

A discharge line temperature thermostat (GT 11) that provides protection against excessively high discharge line temperature.

An oil filter differential pressure pressostat (GP 6) provides protection against excessive pressure drop across the oil filter – tripping indicates that cleaning is needed.

An oil level switch (GN) is fitted in the compressor to provide protection against low oil level in the filter housing.

An oil temperature thermostat (GT 13) as protection against oil temperature to compressor being too high.

Two pressure gauges (MP 1 and MP 2) are connected to the unit via stop valves (AV 3, AV 4 and AV 5):

– A high-pressure gauge (MP 1), which is a dual gauge. The black pointer indicates the condensing pressure in the unit and the red pointer indicates the pressure after the oil filter.

– A low-pressure gauge (MP 2), indicating the evaporating pressure of the unit.

On the outlet casing there is a filling/draining valve (AV 6), as well as valves (AV 8 and AV 9) for measurement of the pressure drop across the secondary stage.

The compressor incorporates a hydraulic control system for capacity control (RK). The associated control valves can be operated by external control equipment.

The unit can also be fitted with an electronic control and monitoring system. The equipment can also be complemented by a capacity control system responding to either temperature or pressure. The electric equipment is fitted inside a cabinet which is mounted on the unit.

List of parts for screw compressor units as shown in Figs. 3, 4 and 5

KS	Compressor
M	Electric motor
UD	Outlet casing
VO	Oil heater
SIL1	Suction filter
SIL3	Oil filter
SIL5	Suction filter
SIL6	Outlet section filter
SIL7	Oil filter
SIL8	Extra equipment filter
SN	Nozzle
OK	Oil cooler
RK	Capacity control
SÄV	Safety valve
SG	Level indicator
OP	Oil pump
MP1	High-pressure gauge
MP2	Low-pressure gauge
GP1	Suction pressure pressostat
GP3	Discharge pressure pressostat
GP6	Differential pressure pressostat (oil filter)
GT11	Discharge temperature thermostat
GT13	Oil temperature thermostat
GN	Oil level switch
AV1	Stop valve, suction side
AV3	Stop valve, pressure gauge
AV4	Stop valve, pressure gauge
AV5	Stop valve, pressure gauge
AV6	Stop valve, oil filling/draining
AV8	Stop valve, pressure drop measurement
AV9	Stop valve, pressure drop measurement
BV1	Flap-type check valve
BV2	Check valve
BV3	Check valve
BV5	Check valve
PRV	Pressure control valve

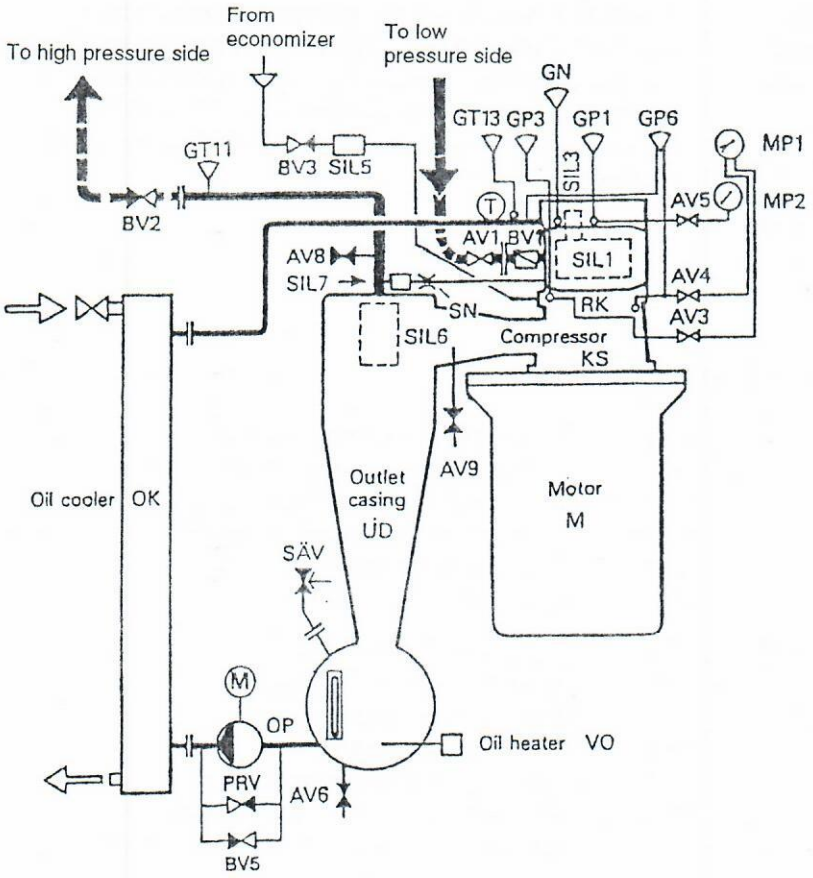


Fig. 3. Schematic arrangement for type SVA/SVB compressor units

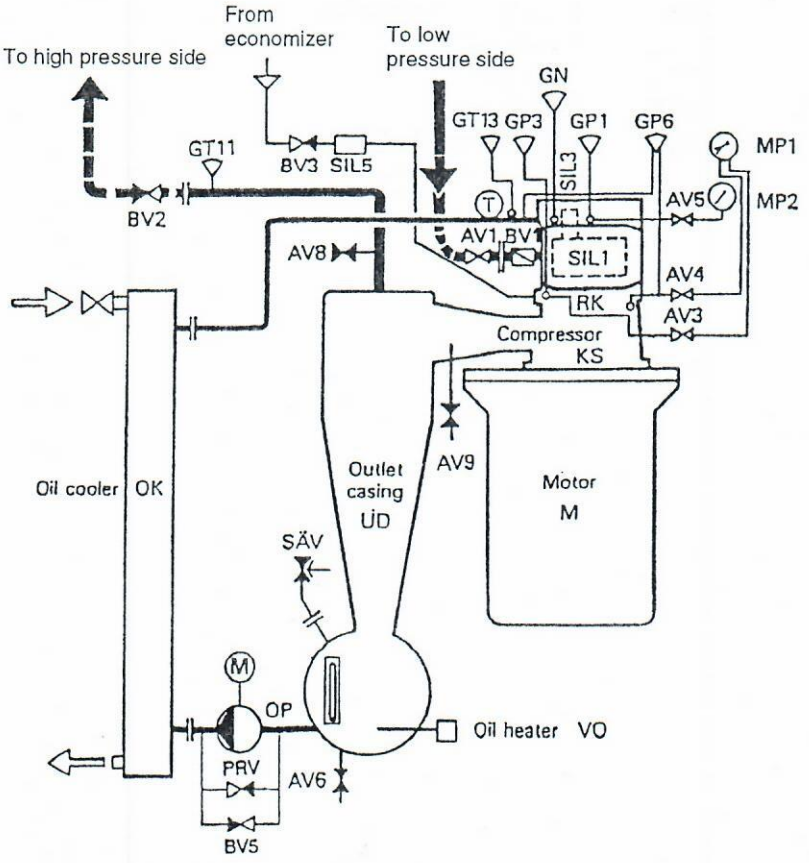


Fig. 4. Schematic arrangement for type SVK/SVR compressor units

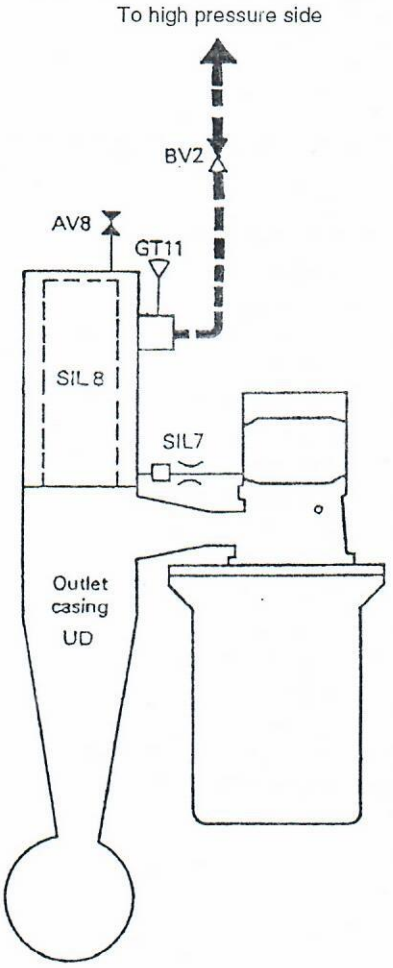


Fig. 5. Schematic arrangement for type SVA/SVB/SVK/SVR compressor units fitted with extra equipment for oil separation

Open valve
Closed valve
Check valve
(T) Surface temperature sensor for oil temperature

COMPRESSOR UNITS SERIES SV10
LIFTING AND TRANSPORT INSTRUCTIONS

SVA, SVB, SVK, SVR	11A – 19A 11EA – 19EA

LIFTING WITH CRANE

The best way to lift the equipment with a crane is to use a lifting beam. See Fig. 1. If a lifting beam is not available, the unit can be lifted by means of flexible slings alone. Carefully adjust the lengths of the slings so that the unit is lifted levelly. The slings must be long enough to eliminate any inward forces that might pinch and damage the unit.

LIFTING WITH TRUCK

A unit can also be lifted with a fork truck. See Fig. 2. The length of the forks on the truck must be at least 1100 mm. **Note** that during transport the unit is unstable if not locked against the truck.

UNIT WEIGHT

Check that the lifting equipment being used has sufficient capacity to handle the weight of the unit.
The net weight of the unit appear on manual sheet 48176-H-10–H-35.

SIGN

A sign is mounted on the unit with instructions regarding lifting and transport. The sign also states the weight of the unit.

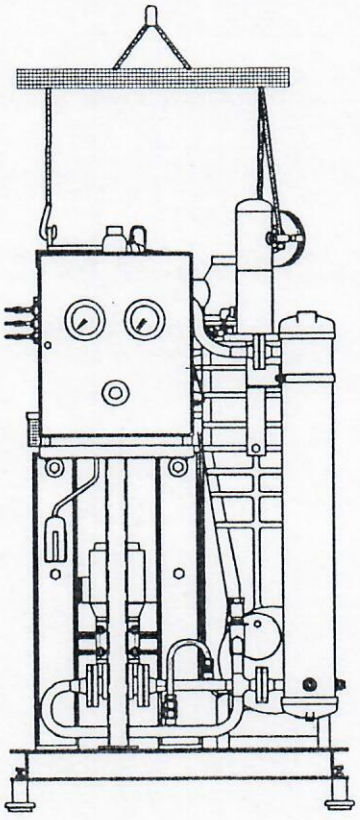


Fig. 1

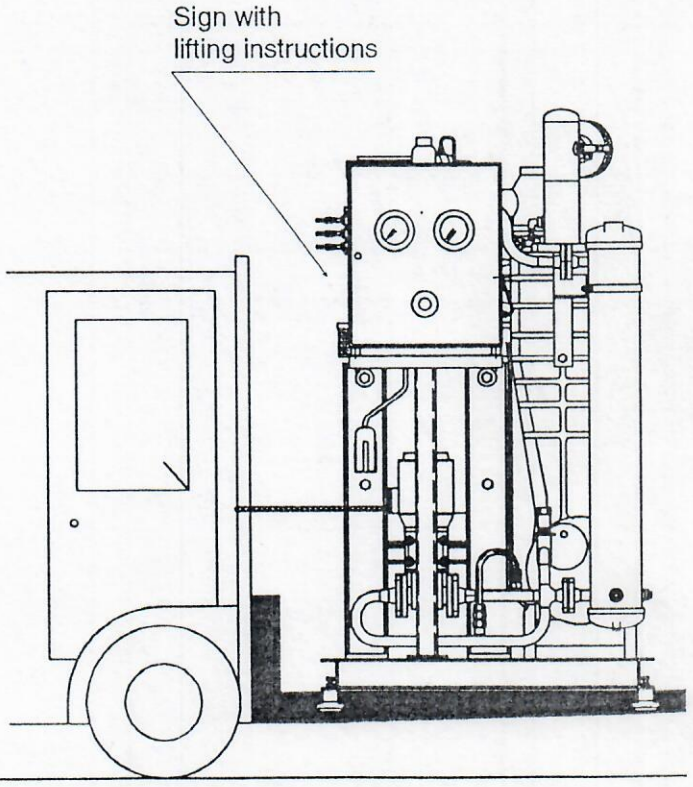


Fig. 2

TYPE ABC CHECK VALVE
DN 65

GENERAL

This check valve is used in pipelines to prevent reverse flow. It can be closed manually against a flowing medium, but it cannot be forced open. Except for the disk (closing member), the spindle and the spring, all of its parts are fully interchangeable with those used in the ASC stop valve.

Two versions of the insert are available. The ABC 65D version has a damped disk for use in gas lines where pulsating or fluctuating pressures are encountered. The ABC 65V version has three drainage holes in the disk to speed up opening and closing in liquids.

These check valves, which are intended for use in refrigeration systems and heat pumps, are designed for welding to steel pipes or flanges. Outstanding features include the following.

- Unobstructed free-flow area that ensures low flow resistance.
- Lightweight valve body that facilitates handling during welding.
- Replaceable seat seal on disk.
- Back seal that permits the stem seal to be replaced during operation.
- Stem guard that prevents dirt from getting into the stem threads and causing them to bind.
- Adapted to ISO pipe sizes.
- Low-temperature gland available as an accessory.

This valve is available classified by Lloyd's Register of Shipping and Det Norske Veritas. On request, it is also available classified by other societies.

DESCRIPTION

The valve body (1) is made of seamless steel pipe that is tapered down at one end to facilitate welding of the seat connection and flared on the side- connection side. A flange ring used to attach the inserts has been welded to the body. The connections are machined for direct welding to pipes having outside diameters of-76.1.

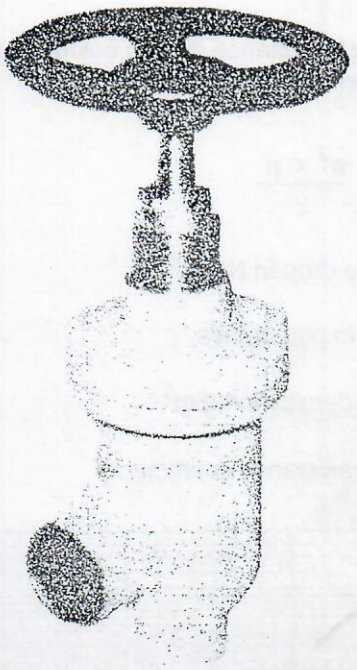


Fig 1

The disk, which is provided with a replaceable sealing ring (3) made of teflon, runs in a guide in the cover (11), and it is actuated by a spring (14). The stem (12) is made of stainless steel having a high finish. Even though the valve can be closed manually against a flowing medium, the disk is not connected to the stem in any way thus making it impossible to force the valve open manually. For low-temperature applications, the standard gland can be replaced with a low-temperature gland. The check valve is provided with a back seal (5) made of teflon, This back seal closes when the valve is opened all the way, thus providing a seal between the stem and cover.

The stuffing box (16) can then be dismounted for inspection, and if necessary the O-rings can be replaced. The handwheel (26) or the valve cover (15) is provided with a nameplate that indicates the valve's flow direction.

PRESSURE DROP

The following pressure differentials are required to open the valve:

- With handwheel at top: 7 kPa
- With handwheel at bottom: 3 kPa

The resistance coefficient is for connecting pipe having an inside diameter of 70.3 mm. The resistance coefficient can be obtained as function of ρw^2 from diagram 1.

The valve's flow resistance can be calculated using the following formula:
where

$$\Delta p = \xi \times \frac{w^2 \times \rho}{2}$$

p

Δp= Pressure drop in N/m^2

w = Velocity in pipe in m/s

ρ = Medium density in kg/m^3

ξ = Valve's resistance coefficient

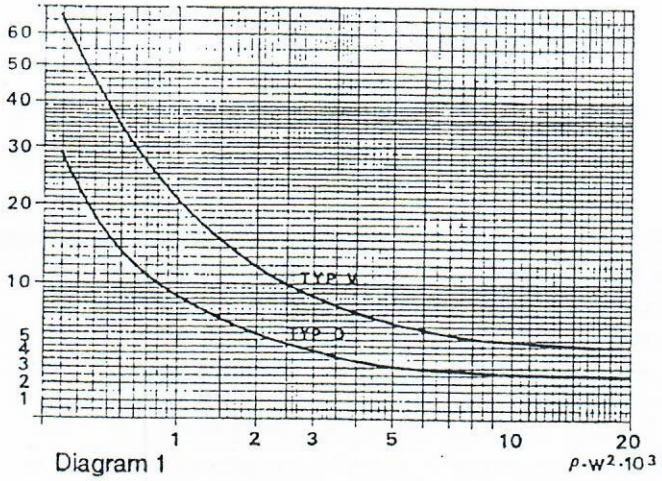


Diagram 1

APPLICATION LIMITS

This valve has been pressure-tested at 4.6 MPa.

Temperature limits:
- 40°C to +130°C for standard version (with O-rings)

- 60°C to +150°C for refrigerants and with low-temperature gland (teflon)

This valve complies with the requirements set forth in AD-Merkblatt W10.

It can be used with the following refrigerants: NH_3, R12, R22, R134, R500, R502 and R13B1. It can also be used with air, oils and other media that do not attack steel, teflon, neoprene synthetic rubber or Klinger Sil 4400 (gland packing).

MOUNTING INSTRUCTIONS

The valve must be mounted with the stem in a vertical position. The handwheel can be at top or at bottom, but there is less flow resistance with the handwheel at bottom.

The insert must be removed from the valve body before it is welded to a pipe, flange or the like. The insert must be kept where it is protected from moisture, dirt and other impurities until it is mounted in the body. Be careful of the stem. It is vulnerable to scratches and impacts.

After the valve body has been welded in place and you have made certain that all welding spatter, dirt, etc. have been removed from both the valve body and the lines running to and from it, you can mount the insert. Make certain that the stem is set to provide a fully open valve. Fit the sealing ring in place in the valve body (or cover) and mount the insert. Tighten the screws alternately. Never paint the valve stem.

STORAGE AND FORM OF DELIVERY

Due to the fact that the insert must be dismounted during welding of the valve body, the two are delivered separately.

On delivery, tha valve body is smeared with screw compressor lubricating oil and packed in a sturdy, plastic bag that is sealed to prevent rusting.

On delivery, the insert is also smeared with screw compressor lubricating oil and packed in a sturdy, sealed plastic bag. The outer shipping container consists of a cardboard box on which the type, size designation and drawing number are marked. In addition, the box is stamped with the manufacturing date and provided with a label reading THIS SIDE UP.

HOW TO PLACE AN ORDER

To order this valve, see Table 1 which presents ordering numbers for valve bodies, inserts and accessories. Always specify these ordering numbers in your order.

Table 1 Ordering numbers

Classification society	Valve body	Insert	
		ABC 65D	ABC 65V
LR and NV	1905 117-A	1905 134-A	1905 134-B
Unclassified	1905 117-B		
Accessories			
Valve cover			1905 200-A
Spindle extension			1885 009-E
Low-temp gland			1905 120-A
Dismounting tool for low-temp gland packing			1889 349-D

MAINTENANCE

Instructions for disassembling and reassembling in the event of leakage.

If the stem seal leaks, O-rings (24) shall be replaced. If the valve can be open during replacement, open it all the way so that the back seal (5) provides a seal between the stem (12) and the cover (11). If the valve cannot be open while being replaced, the pressure across the disk (9, 10)) must be lowered to atmospheric pressure before unscrewing the gland (16). The rings can then be easily removed and replaced with new ones. Check that the spindle has no scratches or the like. There must be absolutely no sharp edges or burrs.

When inserting the sealing rings, see to it that they are not defective or damaged in any way. The rings must be smeared with screw compressor lubricating oil. The gland with rings must fit easily onto the stem and slide easily along it. You should have available a gland that is ready for mounting. When the valve is opened, tiny amounts of refrigerant that are dissolved in the oil can exit. However, the leakage indication obtained using (for example) a leak-finder torch vanishes rapidly.

For the gland to function properly, it must contain properly dimensiond rubber rings of the right quality. We recommend that you keep a few rings on hand for the valve. Use only genuine STAL spare rings, which are made of a special synthetic rubber.

If the disk sealing ring (3) is damaged, it can be turned over or replaced with a new one. In such case, how
ever, all pressure on the valve must be relieved before removing the insert. A lightly damaged seat can be improved by grinding it with emery cloth attached to a flat-ended cylinder. Always treat the stem carefully and never paint it.

Item No.	Name	Qty		Ordering number
		Version A	Version B	
1	Valve body	1	1	1905 117-A/E
2	Nameplate	1		1920 957-3
3	Sealing ring	1	1	1885 117-17
4	Gasket	1	1	1886 347-9
5	Back seal	1	1	1887 207-5
6	Nameplate		1	1895 693-1
7	Locking ring	2	2	1895 999-1
8	Gasket	1	1	1895 718-1
9	Disk	1		1905 123-1
10	Disk		1	1905 123-2
11	Cover	1	1	1905 136-1
12	Stem	1	1	1905 139-3
13	Support ring	1	1	1905 179-1
14	Spring	1	1	1905 182-2
15	Valve cover		1	1905 189-2
16	Stuffing box	1	1	1905 199-1
17	Holder	1	1	1910 816-5
18	Spring-loaded tabular pin	1	1	3921 1171 253
19	Hexagon screw	4	4	3921 2120 495
20	Locking screw	1	1	3921 2123 368
21	Locking screw	1		3921 2123 370
22	Lead screw		1	3921 2411 169
23	Gasket	1	1	3921 5213 954
24	O-ring	2	2	3921 5295 719
25	Lock washer	2	2	3921 5415 156
26	Handwheel	1		3921 8821 905
27	Cup spring	2		3921 9512 806

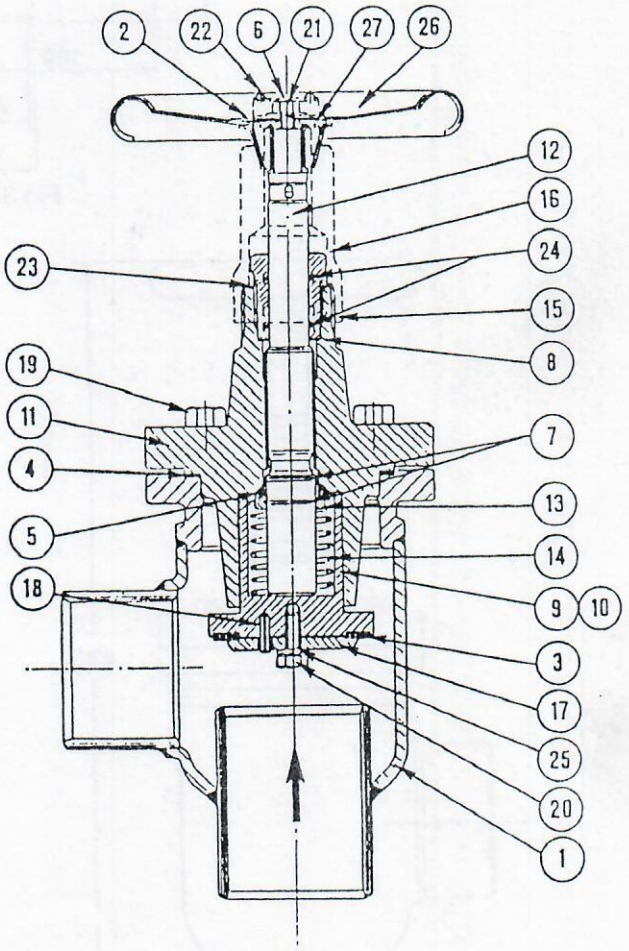


Fig 2

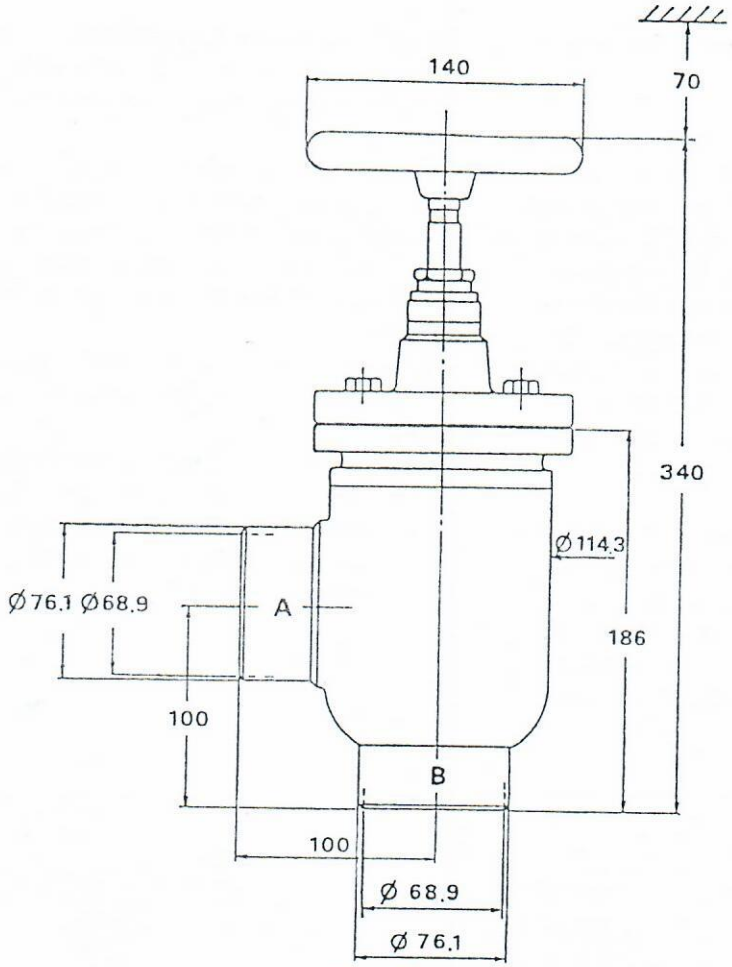


Fig 3 Dimensions

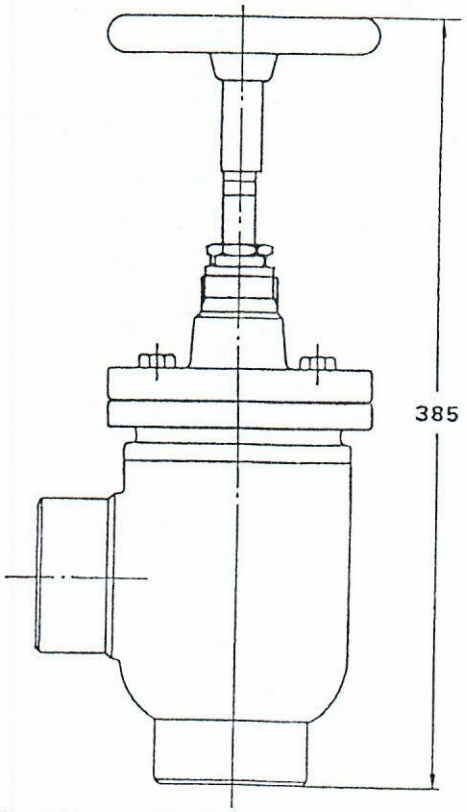


Fig. 4 Valve with stem extension

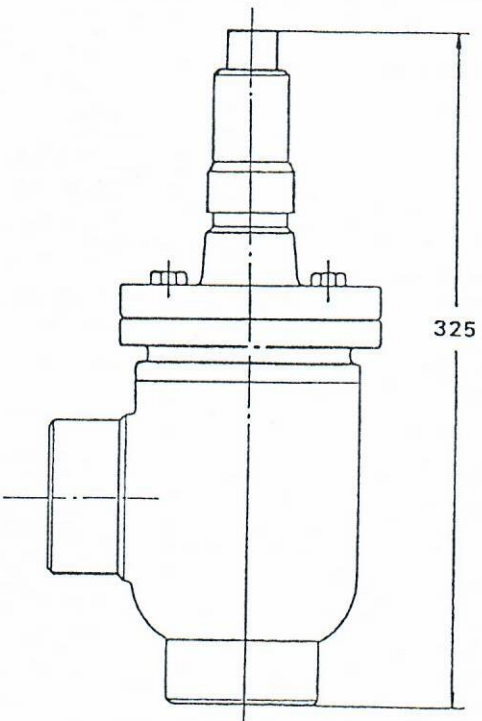


Fig. 5 Valve and valve cover

SCREW COMPRESSOR Type R5
CHECK VALVE
SUCTION FILTER

GENERAL

The purpose of the check valve is to prevent gas from flowing rapidly through the compressor from the high-pressure to the low-pressure side when it is stopped. The check valve (1), see Fig. 1, is of the flap type, and it is mounted between the suction line and the compressor suction filter housing. When the compressor is stopped, the check valve closes so that the pressure in the compressor is equalized, thus preventing the compressor from rotating backwards.

The suction filter (6) prevents impurities from the plant from being sucked into the compressor where they could cause damage. The suction filter housing is a part of the compressor rotor casing.
The filter cartridge comprises a folded strainer cloth provided with two support grids (one on each side) that extend between the two end sleeves. This grid supports the filter and provides a tight seal against the filter housing. The filter filters out particles larger than 60 um. The filter can be dismounted without disturbing the rest of the pipe system.

The running-in filter (9) provides fine filtering of the suction gas. Its purpose is to remove the contaminants often encountered in a new plant system. The suction strainer is provided with a running-in filter prior to delivery, The running-in filter must be removed or replaced after about 20 hours of operation.
See also the instructions on the nameplate (10) that accompanies the delivery.
To remove the running-in filter, first remove the cover (7). If a new running-in filter is to be mounted, pull out the suction filter (6) and press the running-in filter into place from the inlet end of the suction filter. Then remount. Follow the service instructions set forth below.

Final adjustment and setting of valves, cut-outs etc. must wait until the system is clean and the running-in filter has been removed.

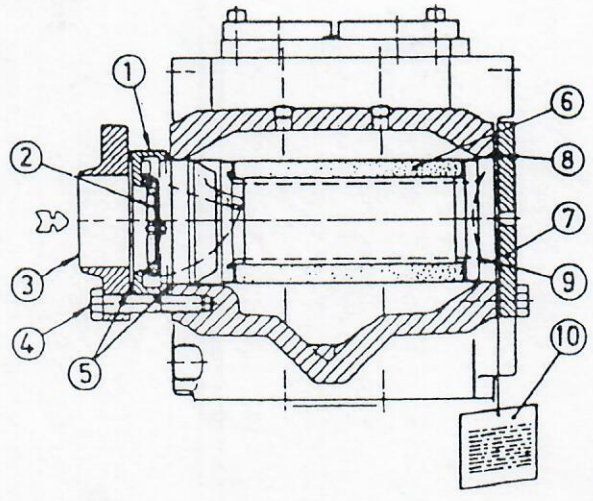


Fig. 1 Inlet to R5 compressor

SERVICE INSTRUCTIONS

If, when it is stopped, the compressor rotates backwards, the check valve is not closing properly. This can occur if flap (2) sticks at its open position for some reason. It can also occur if there is an insufficient seal attributable to a faulty flap suspension device or sealing ring/seat.

The check valve shall be dismounted and mounted as follows:

1. Close the valves upstream and downstream from the compressor unit and equalize the pressure to the low-pressure side via the service valve. Then close this valve and drain off all of the remaining refrigerant.

2. Loosen screws (4) which secure the suction pipe axially. This permits sealing rings (5) to disengage the positioner edge. You can then pull out check valve (1) radially.

3. Repair or replace check valve (1).
   Replace sealing rings (5).

4. Insert check valve (1) and sealing rings (5).

5. Check that the TOP markings on the check valve are at the top and that the arrow (→) points toward the compressor.

6. Check that sealing rings (5) are positioned properly before tightening screws (4).

7. Evacuate air from the system and then open the valves.

8. Check for leaks.

If the suction pressure drops below the specified operating value (without any reduction in the amount of refrigerant in the system and without any throttling on the suction side), filter (6) may be clogged. This filter can be cleaned as follows:

1. Close the valves upstream and downstream from the compressor unit and equalize the pressure to the low-pressure side via the service valve. The close the service valve and drain off all of the remaining refrigerant.

2. Remove the cover (7) and pull out the filter. Use the tool that is provided for this purpose. Make certain that any contaminants in the filter do not fall out of the filter (6) and into the compressor.

3. Clean the filter cartridge by washing it in a water-soluble degreasant and then flush it clean with hot water. Next, apply compressed air until the cartridge is completely dry and clean.

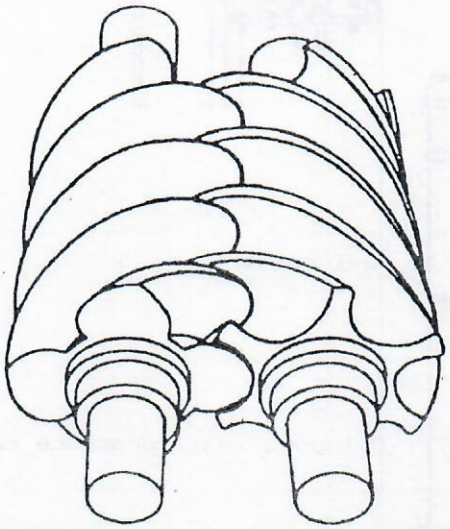
   Hold the filter cartridge up to the light and check to see that the support grids are completely clean. If not, repeat the above procedure until they are.

4. Fit the suction filter and check to see that it is turned the right way relative to the check valve. See Fig. 1.
5. Fit cover (7) using a n e w sealing ring (8).
6. Evacuate air from the system and then open the valves.
7. Check for leaks.

SPARE PARTS
The list of parts and the spare part sets see separate manual sheets.

9. 1904 652-A Running-in filter
10. 1898 126-1 Instructions

OPERATING INSTRUCTIONS
for screw compressor units type SV10 with Stalectronic 700



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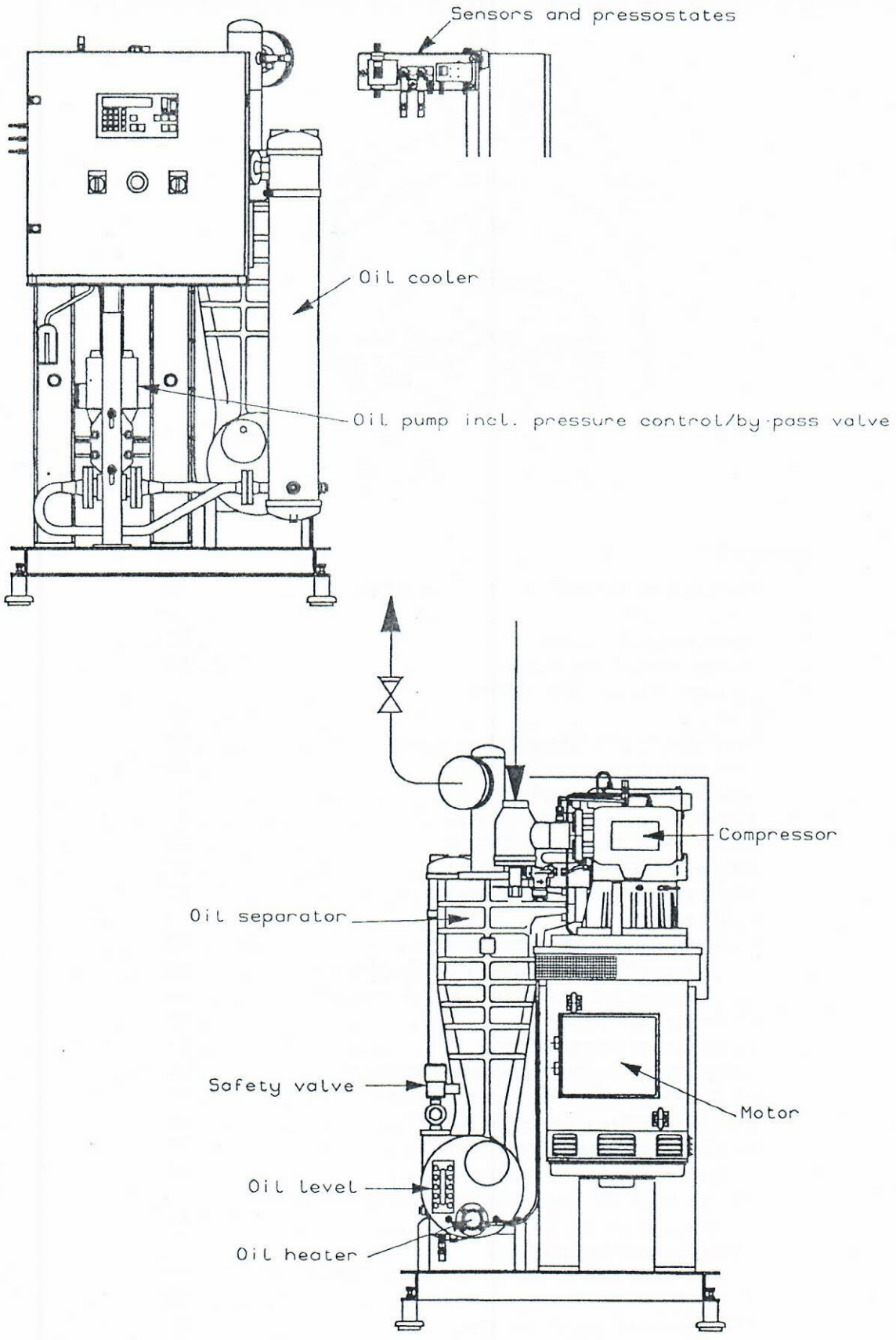


Fig. 1. Stal-Mini compressor unit – main components

NOTE! These general instructions are valid for all operation of Stal-Mini screw compressors of type SV10, but all local country directions e.g. regarding handling of refrigerants must be followed in the first place.

A. PREPARATIONS FOR STARTING UP A NEW INSTALLATION

1. Check to ensure that the data on all the name plates and rating plates on the compressor unit corresponds to the data given in the order.

2. Make sure that all the footplates (erection points) of the unit are in proper contact with the foundation. If not, insert shims as required until the bottom frame is levelled and so that the bottom frame will not be deformed when the foundation bolts are tightened–Fig. 2.

Carefully level the unit using the anti-vibration mountings. Each mounting can be adjusted vertically by up to 7 mm (Fig. 3).

3. All pipes to be connected to the unit must have been accurately pre-bent to ensure proper alignment with their respective connection points.

When connected, they must not apply any load on the unit. If in doubt, undo the joints and check.
It is also important to ensure that external vibration cannot be transmitted to the compressor unit via the connected pipes.

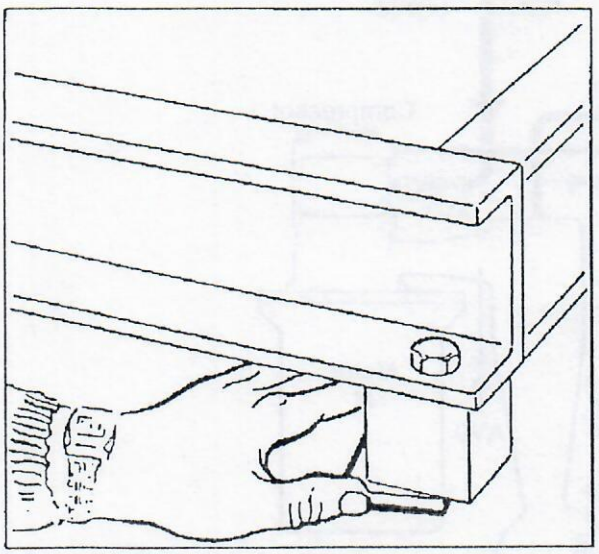


Fig. 2. Inserting shims beneath a footplate

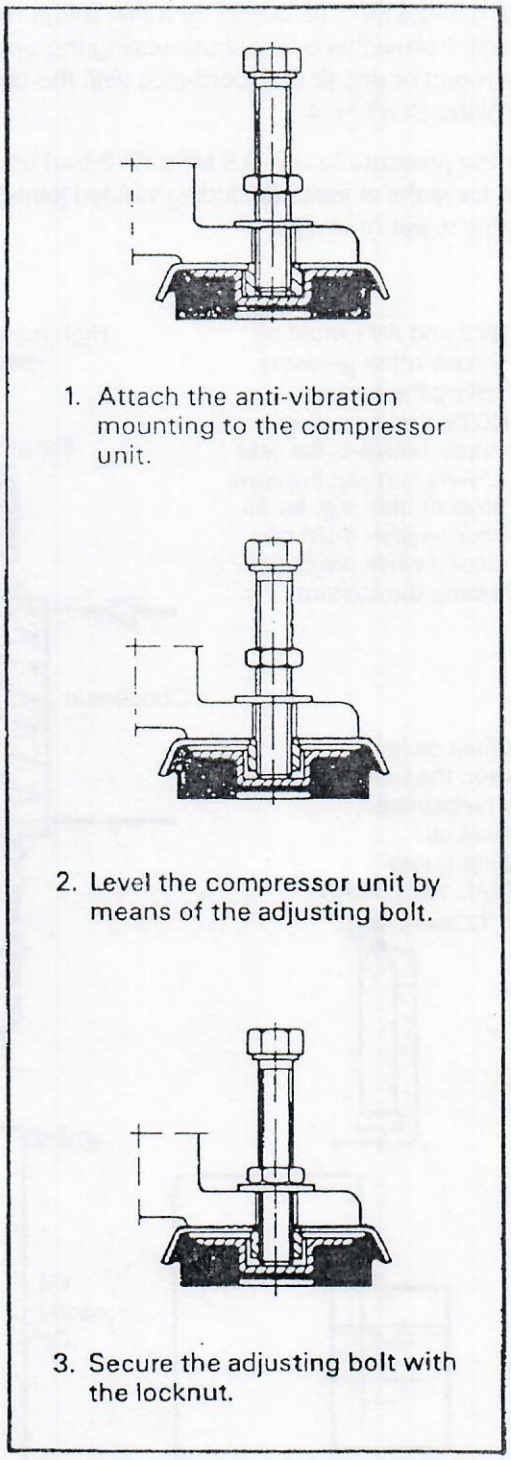


Fig. 3. Adjusting anti-vibration mountings

4. Close the stop valves between the compressor unit and the rest of the system.

Charge the system with nitrogen or dry air to a pressure of 0.2–0.3 MPa (2–3 bar) for a first rough tightness test. Follow this by pressure-testing the system with nitrogen or dry air in accordance with the unit's rating plate. See Fig. 4.

Lower the pressure to 0.7–0.9 MPa (7–9 bar) and search for leaks at joints (including welded joints) using soapy water or similar.

Use a mirror to check difficult-to-reach places. **Note** that it may take a minute or more before bubbles appear at minor leaks.

Alternatively, leak testing may be simplified if the system is charged with a small quantity of refrigerant (2–3 % of the total design charge of the system) and a leak detector is used. Rectify any leaks that are found.

Open the stop valves between the compressor unit and the rest of the system.

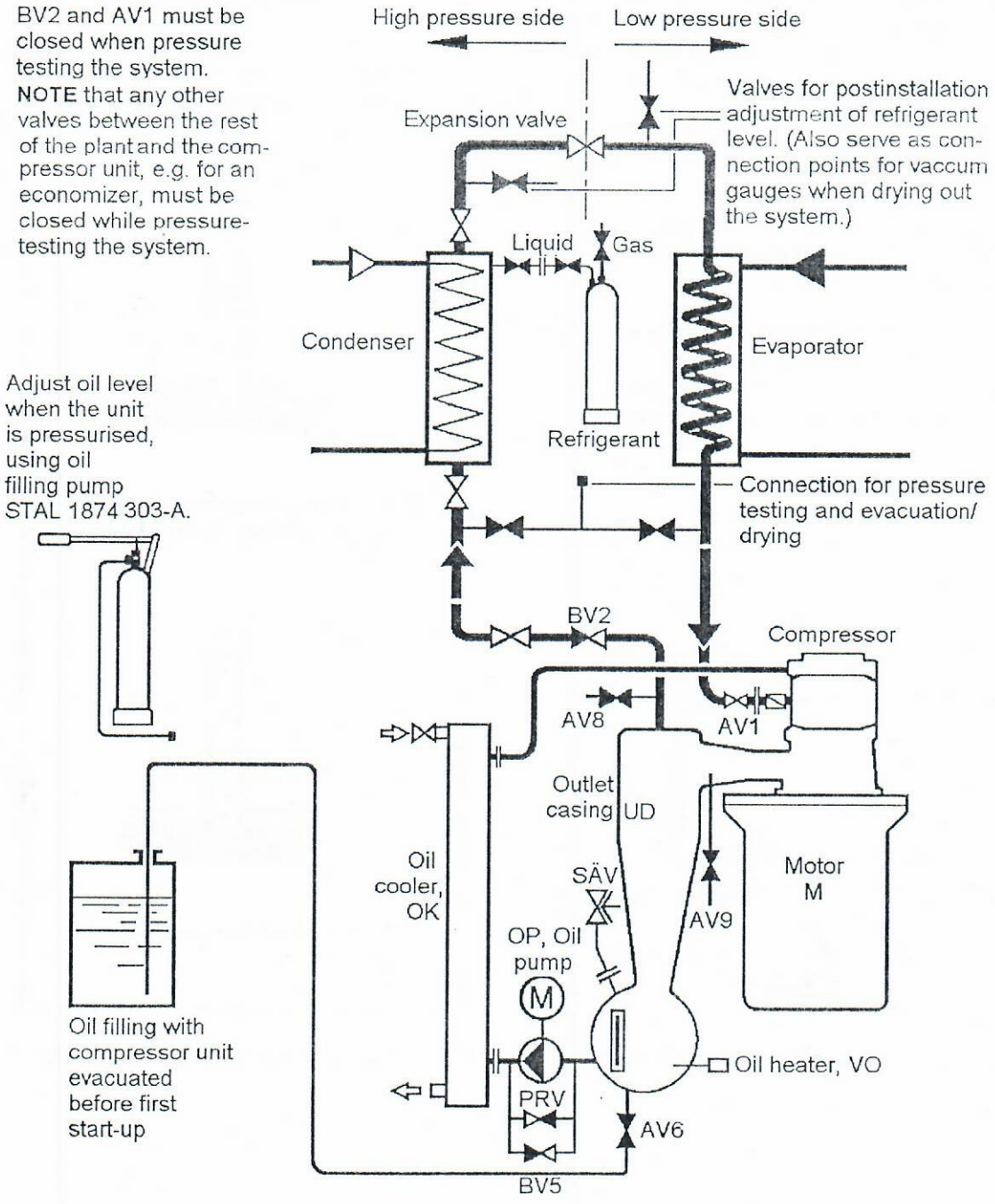


Fig. 4. Schematic diagram: pressure testing, drying/evacuation, oil filling and refrigerant filling.

5. Remove all moisture from the screw compressor unit and the rest of the system by applying a vacuum and maintaining a temperature of at least +10°C (see Fig. 4).

If possible, connect vacuum pumps to both the high-pressure side and low-pressure side. To ensure full utilisation of pump capacity, connection lines should be suitably sized to suit pump capacity: at least 1/4" for a 2.5 m^3/h pump, 3/8" for a 6 m^3/h pump and 1/2" for a 12 m^3/h pump.

Connect a vacuum gauge to the point in the system that is regarded as having the highest pressure drop between it and the connection to the vacuum pump, i.e. where the pressure can be expected to be highest.

All valves in the system itself must be open, while all valves leading either directly or indirectly to the open air (e.g. drain valves and filling valves) must be closed.

Apply a vacuum gauge to the vacuum pump inlet to check that the pump is capable of maintaining a steady-state pressure of less than 133 Pa absolute (1 mm Hg).

Evacuate the system to a pressure not exceeding 133 Pa absolute (1 mm Hg).

Check the drying by closing the connection between the vacuum pump and the system.

After five minutes, the pressure in the system must not have risen to more than 266 Pa absolute (2 mm Hg). If it has, repeat the procedure until the pressure remains below 266 Pa absolute.

Difficulty in reducing the pressure indicates that either water has collected somewhere in the system or that a leak is still present somewhere.

Manual sheet 7181-N-5E describes the drying procedure in more detail.

6. Check whether or not the unit was delivered with the outlet casing filled with oil. If not, fill about 45 litres of oil into the outlet casing while the system is under vacuum. Check that the oil is of the type and grade indicated on the unit rating and data plate.

Use a heavy duty hose as shown in Fig. 4, inserting one end into the oil container and ensuring that it remains beneath the surface of the oil throughout the entire filling procedure in order to prevent any air from being drawn into the system.

Open the valve and allow the oil level in the outlet casing to rise as far as the upper half of the sight glass, but no higher (Fig. 5). Close the valve.

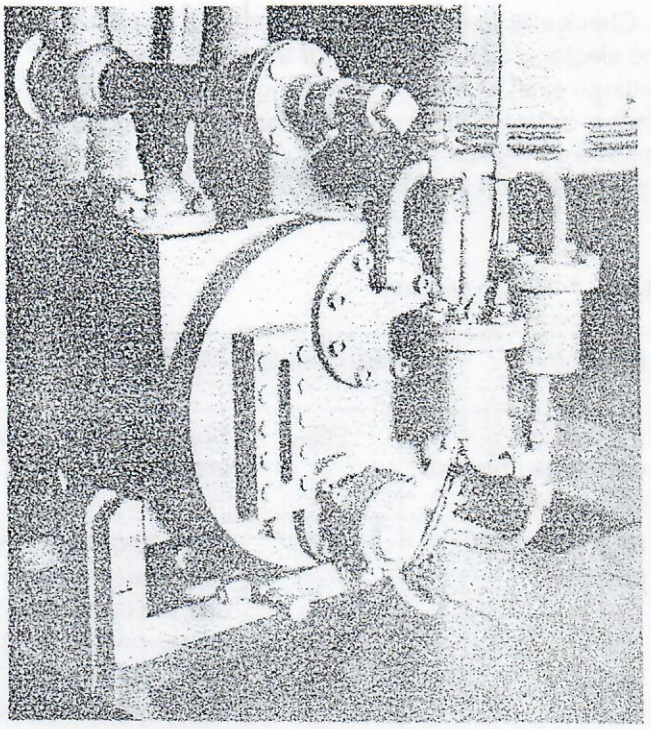


Fig. 5. Level sight glass in the outlet casing

7. Fill the refrigerant prescribed for the plant into the condenser, liquid receiver or other container intended for it (Fig. 4).

Note that there is a risk of freezing in systems incorporating water-cooled condensers. Make sure that either the cooling water is not connected, or that it is circulating, and follow the instructions below.

Refrigerant can normally be filled in liquid form. However, if the condenser is water-cooled, and the water is connected, refrigerant must be filled in gaseous form until the pressure corresponds to the saturation pressure at 0°C.

Filling can then be continued in liquid form. Avoid the entry of air into the system while filling with refrigerant, and fill as closely as posible to the amount specified.

Final adjustment can be made when the system is started up.

8. Search for leaks using a detector designed for the refrigerant being used. Eliminate any leaks by tightening connections etc.

9. Check electrical devices and functions as shown in the electrical circuit diagram for the plant. Check the settings of all monitors. The settings are read on the display of the SE700 system. Basic settings have been entered during test run in factory.
See Manual Sheet 48176-N-580E.

Set the motor overload cut-out as indicated on the motor rating plate. Remove the motor fuses.

Check the electrical functions with the aid of the electrical circuit diagram. Rectify any faults.

Connect the main power supply and heat the oil in the outlet casing to a temperature of +50°C.

Table 1. Monitor settings

Monitors	Designation	Alarm point	Start-up delay	Operation delay
Mechanical discharge pressure pressostat	PS4	Somewhat higher setting than the electronic sensor		
High discharge pressure	PT3	The setting of the discharge pressure sensor depends on the valid safety code and the opening pressure of the safety valves on the high pressure side of the plant. The maximum setting is 22 bar(a), which normally gives enough difference to the opening pressure of the safety valves.		
Low suction pressure	PT1	The setting of the suction pressure sensor depends on the operating conditions of the plant. Normal setting is about 12°C below the normal evaporating temperature.		30 sec
High suction pressure		10 bar(a)		30 sec
High discharge temperature	TT11	105°C The setting of the discharge temperature can be increased to 120°C for units with oil type B and C		
Low discharge superheat	TT11/PT3	15°C	360 sec	
Low pressure ratio	PT3/PT1	1.5	360 sec	10 sec
Low oil temperature (oil separator)	TT15	20°C The oil heater controller is set for the oil heater to start at 40°C and stop at 45°C and 5°C superheat. (superheat = oil temperature – saturated oil temperature in the oil separator)		
Low oil temperature (compressor)	TT13	20°C	360 sec	
High oil temperature (compressor)		60°C The setting of the oil temperature sensor should be 45°C for halocarbons with oil type A. For halocarbons with oil type C, the setting can be increased to 70°C		
Low oil level (compressor)	LS		30 sec	2 sec
High pressure drop (oil filter)	PS	1.0 bar		360 sec

10. Open the cooling water valves to the oil cooler if it is water-cooled (Fig. 6). If not, open any valves provided for the refrigerant-cooled oil cooler.

11. Set all other valves in the system to their normal operating positions (Fig. 6).

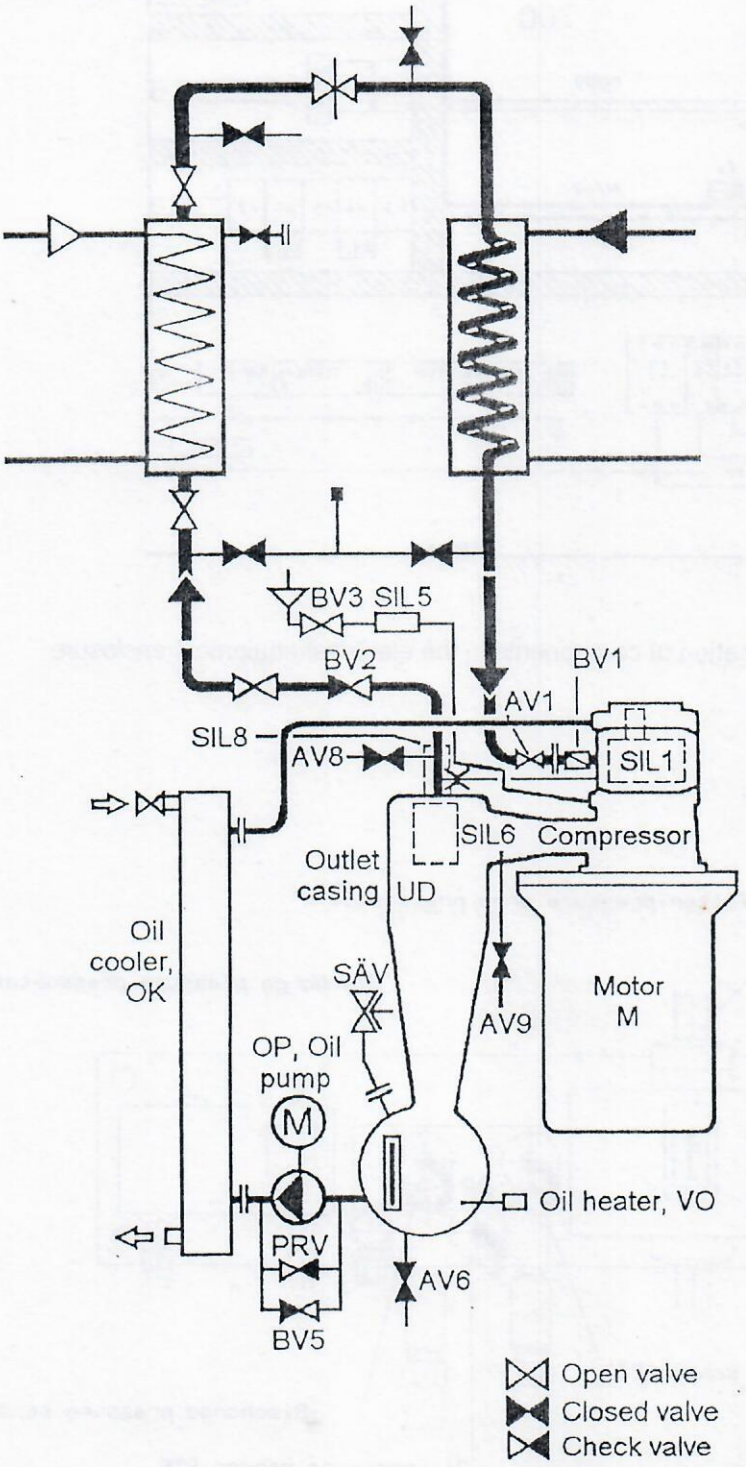


Fig. 6. Positions of valves during operation

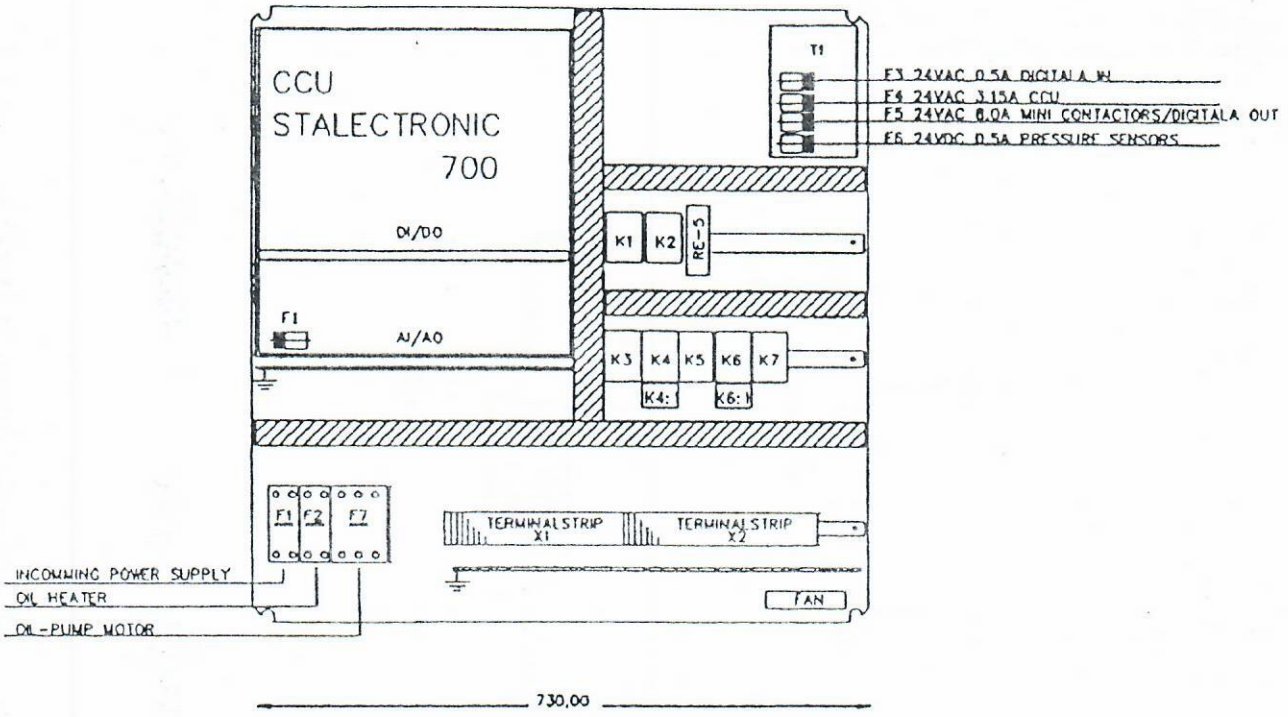


Fig. 7. Location of components in the electrical-equipment enclosure

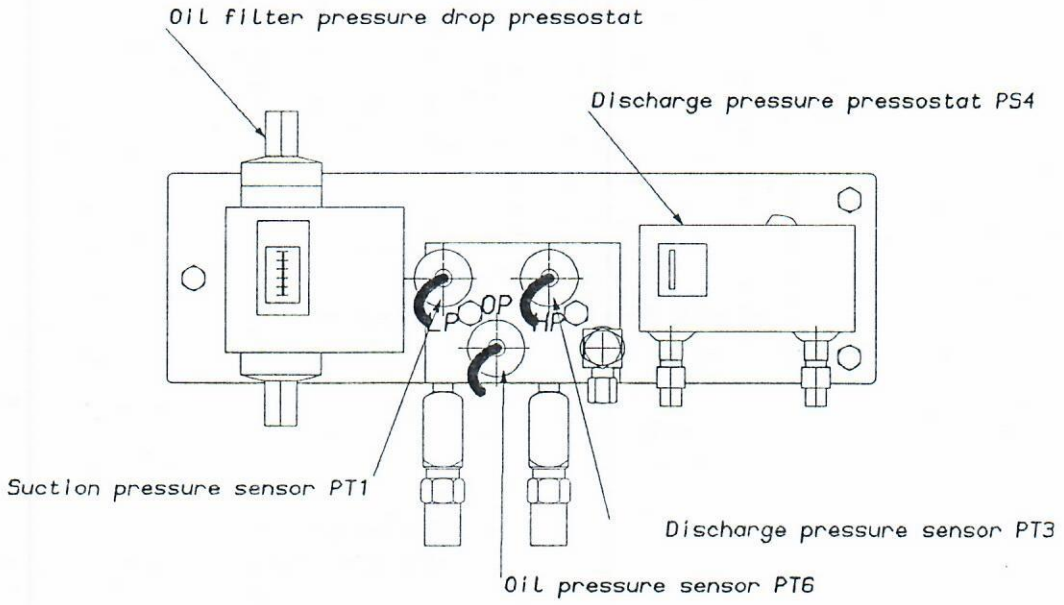


Fig. 8. Installation of sensors and pressostats

B. THE FIRST START-UP

12. Check that the capacity control system is set for minimum capacity.

All three solenoid valves on the capacity control valve block (Fig. 9) must be de-energized.

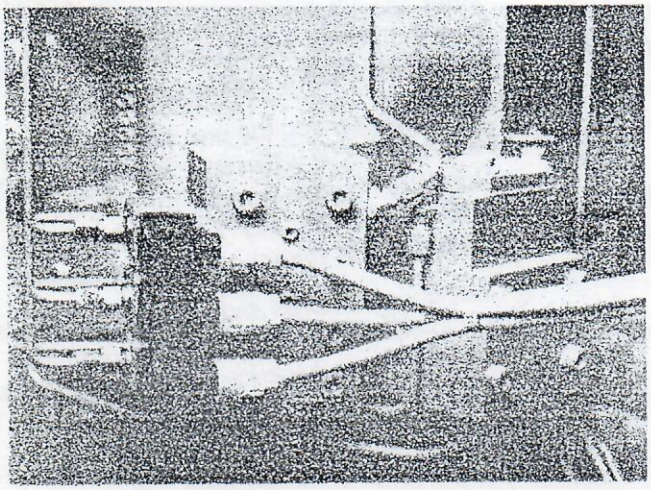


Fig. 9. The capacity control solenoid valves

13. Start as a first step the oil pump OP. The pump motor shall rotate clockwise (when seen looking from the fan end). Check that the oil pressure, controlled by the pressure control valve PRV, reaches normal level 3–5 bar. If the oil is at room temperature, the oil pressure might reach a higher level due to oil having higher viscosity at this temperature. Do not run the pump longer than necessary. Stop the oil pump. Should the pressure be too low or too high – see F, Fault-tracing.

14. Set the starting time for the star-delta starter to about 10 seconds.

15. Start the compressor by pressing button "I" (start) on the control panel. The oil pump is the first to start and after approx. 5–10 seconds, when the level switch for the oil filter housing indicates oil, the compressor motor starts.

Check the motor's direction of rotation. The motor should rotate clockwise (when seen looking at the drive shaft end). The direction of rotation is also marked with an arrow on the compressor's bearing housing (Fig. 10).

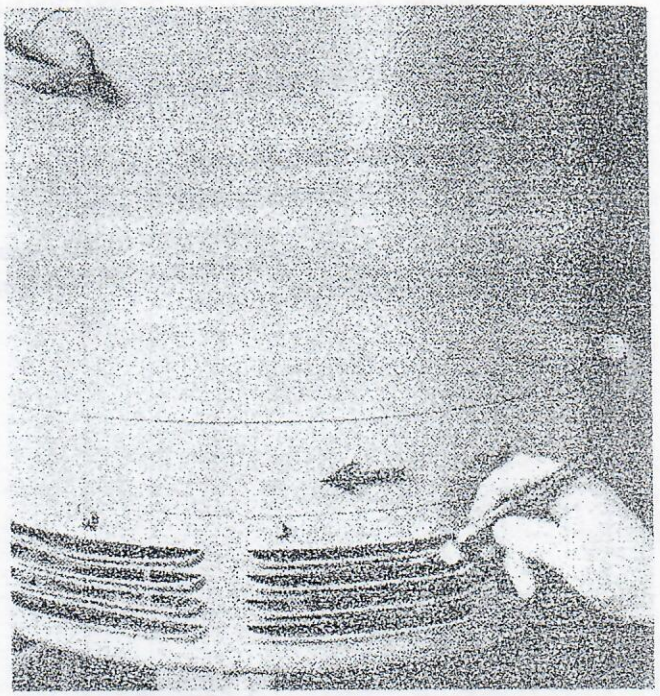


Fig. 10. Checking the direction of rotation of the motor

Should the motor rotate in the wrong direction, the compressor is liable to get damaged. Immediately press button "0" (stop) and rectify the electrical connections. Check as shown in Fig. 11, or check the motor supplier's instructions for phase sequence etc., and have the necessary changes made to the motor wiring by a qualified electrician.

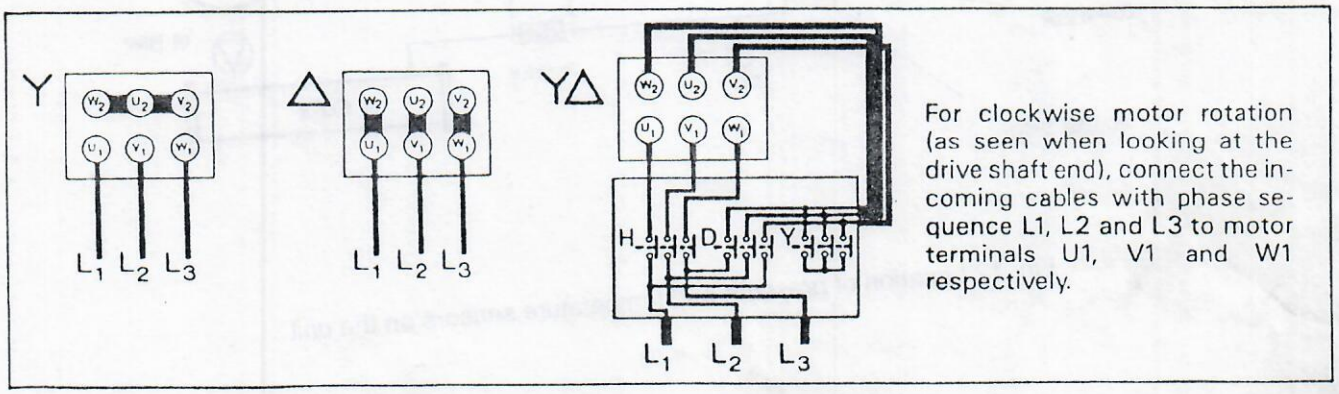


Fig. 11. Motor connections for star, delta and star/delta

16. Run the compressor and make the following checks and settings.
Please note! Always use ear-protection when carrying out any checks or work near the unit.

17. Set the temperature or pressure control equipment that controls the compressor capacity, in accordance with the data specified for the system.
Check that the temperatures and pressures indicated on the Operator's Panel, lie within specified range as shown in the relevant compressor capacity diagram and that they comply with the data specified for the system.

If you press the value list button, a list of measured values is shown. If necessary, adjust the supply of refrigerant to the evaporator, the amount of cooling provided for the condenser and the refrigerant charge.

Please note! When the compressor is run with a pressure ratio of 3.5 and higher, the pressure will be higher before than after the oil pump. In these cases the check valve BV5 will open the by-pass over the pump.

18. Adjust the refrigerant charge. Top up with refrigerant in liquid form either downstream of the expansion valve or in the liquid line after the condenser. In the latter case, it may be necessary to reduce the pressure in the line, which can be done by partly closing the valve after the condenser (Fig. 4).

19. When running the unit, check that pressures and temperatures lie within specified operating conditions. The compressor's working range (Manual Sheets 48176-E-10E and 48176-E-15E) and table 1 in this Manual Sheet state the permitted values.

Checking pressures and temperatures is done from the Operator's Panel on the control system SE700. The panel is explained in Manual Sheet 6134-C-100E.

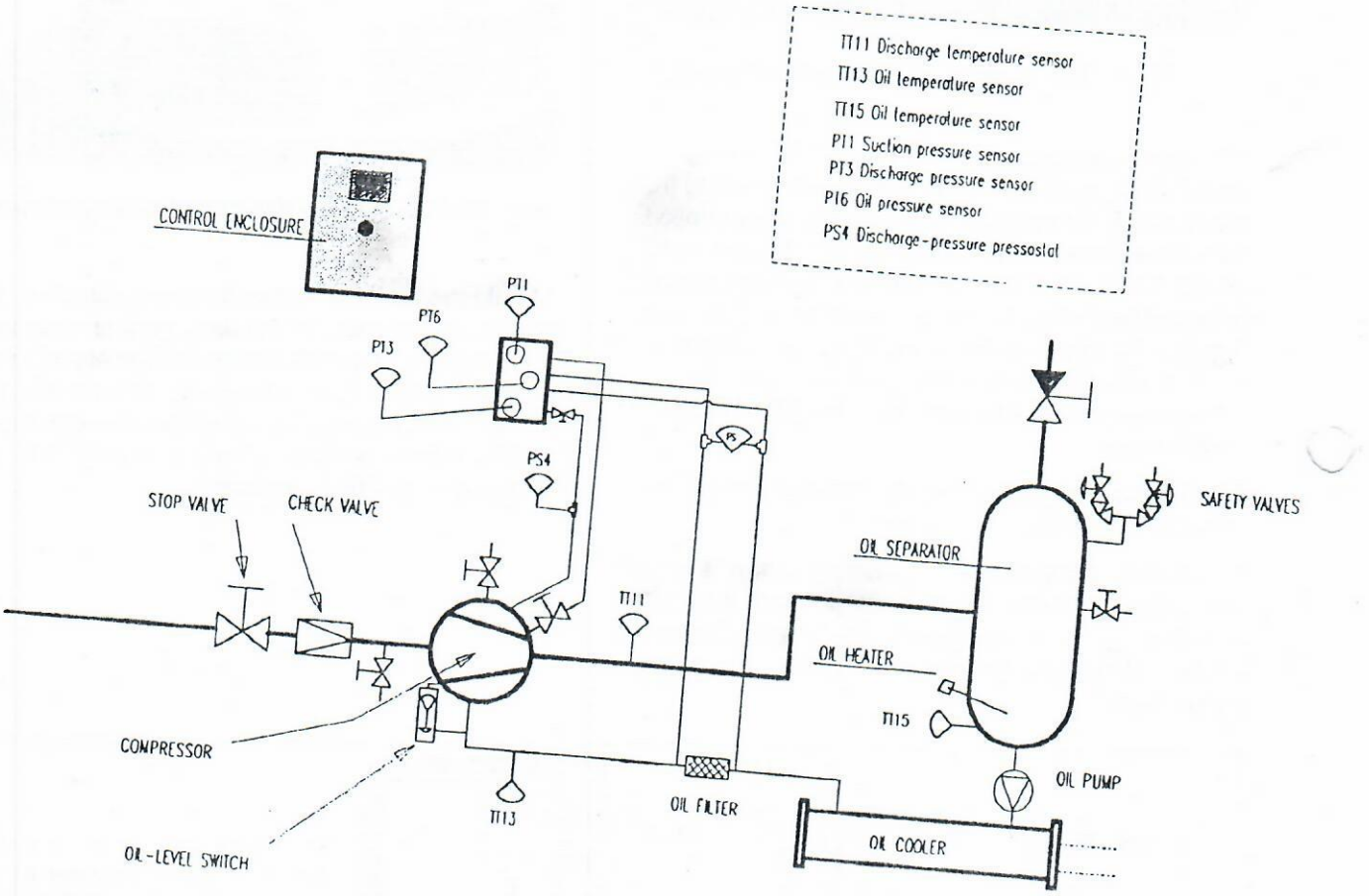


Fig. 12 Location of pressure and temperature sensors on the unit

If you press the value list button, a list of caculated values and parameters is shown. The SCROLL UP/DOWN keys are used to move through the list.

- High compressor oil temperature (between oil cooler and compressor)
  Adjust the cooling water flow to the oil cooler so that the oil temperature lies between +40°C and + 50°C for NH_3, between +40°C and +60°C for R22 and between +40°C and +80°C for R134a.
  If difficulty is encountered in maintaining the oil temperature within these limits (e.g. due to widely varying cooling water pressure) it will be necessary to install temperature control equipment. Control functions for this equipment is available from the SE700 system.
  Note! Cooling medium must not circulate in the oil cooler when the compressor is not running.
- High discharge gas temperature
  This temperature must be at least 20°C higher than the refrigerant condensing temperature, but with an absolute maximum temperature of 120°C. If necessary adjust the flow of cooling water to the oil cooler by means of valve AV11.

20. Check the oil level in the outlet casing (Fig. 5). Please note that this must be done while the compressor is running. The oil level must not drop below the sight glass after start-up.

If this should happen, use a high-pressure oil filling pump, e.g. the Stal 1874 303-A, to top up the oil level while the system is pressurised (Fig. 4).

21. Listen for any abnormal noise or knocks, e.g. from insecurely clamped or oscillating pipes, hammering valves etc. Remedy or report for rectification.

22. Check the previous settings of pressure monitors PS4, PT3 and PT1 in the following way:

- PS4 Mechanical disharge pressure pressostat
  This monitor is normally set to a level that is well above the normal running value, but sufficiently below the relief valve's opening value (usually not more than 0,85 × the relief valve's opening value). This check can be done by partially closing valve BV2.
  Please note! The setting of monitor PT3 must be lower than the setting of PS4.
- PT3 Electronic discharge pressure sensor
  This monitor is set to a slightly lower value than the mechanical monitor PS4. The setting is entered in the control system acc. to table 1.
- PT1 Suction pressure sensor
  This monitor should trip at ca. 12°C below the normal operating pressure. The check can be done by partially closing valve AV1.

Please note that the system is set under high pressure. Do not change any settings without making sure that the adjustment is within reason.

23. Check the starting time by stopping the compressor and then restarting it. Normal operating speed (which is about 2950 r/min or 3540 r/min for 50 Hz and 60 Hz supplies respectively) has been reached when the ammeter reading drops momentarily. This should normally occur after about 4–10 seconds.

Adjust the timing relay on the star-delta starter to a time three seconds longer than this.

Note that changeover from star to delta starting must not take place until the motor has reached normal operating speed.

24. Make a final search for leaks with a leak detector before handing over the system for normal operation.

C. NORMAL START-UP ROUTINE

25. Switch on the oil heater if it has been turned off and allow the oil temperature to rise to +50°C.

26. Check that all valves are in their normal operating positions (Fig. 6).

27. Check the oil level in the outlet casing. It must be visible within the green field of the sight glass during operation (Fig. 5) – we recommend it to be at least 50 % of the sight glass level. If not stop the compressor and top up the oil level as instructed in Section 20.

28. Check that the compressor capacity control system is set at the minimum capacity (Section 12).

29. Start the compressor and check immediately that the oil pump starts before the compressor. Then check the oil level as described in Section 20.

30. Listen for any abnormal noise in accordance with Section 21.

31. Check the pressure drop across the oil filter. Replace filter SIL3 if the pressure drop approaches 100 kPa (1.0 bar). See sections 38 and 39, Periodic Care and Maintenance.

Important! Always wait a few minutes before restart after an unsuccessful start. A too quick a start might lead to a compressor filled with oil.

Repeated unsuccessful starting attempts can be symptoms of a fault somewhere in the system that can lead to damages. Always ascertain the cause of an unsuccessful start.

D. NORMAL MANUAL STOP ROUTINE

32. The compressor can be stopped from any capacity setting whatsoever. Check that the oil pump also stops when the compressor stops. Leave all valves in their operating positions unless work is to be carried out on the compressor during the standstill. Do not switch off the oil heater during short idle periods.

33. If the compressor unit is exposed to vibrations from other equipment, e.g. from another compressor, its bearings may be damaged during prolonged idling periods. This can be avoided by starting and stopping the compressor once every two weeks.

E. PERIODIC CARE AND MAINTENANCE

Daily

34. Inspect the unit and check that there are no abnormal noises or vibrations.

35. Check that the suction and discharge pressure values lie within the stated ranges (Section 17). Log the values.

36. Check the oil level in the outlet casing. Recommended to be about 50% of the sight glass level. If necessary top up as described in Section 20.

37. If the oil in the outlet casing looks abnormal, or if there is any reason for suspecting that its quality may have seriously deteriorated, we recommend that a sample for analysis should be taken via valve AV6 (Fig. 6).
Take this sample while the unit is in operation. Discard the first 100 ml and then drain the sample into a bottle.

Note: Leave the sample bottle open for an hour or so after taking the sample to allow the refrigerant in the oil to evaporate. If not, there is a risk of the bottle bursting.

Seal the bottle and allow the sample to stand for a week before carrying out the simplified analysis described below, or send the sample to Stal's Laboratory Department.

To carry out a simplified analysis, check the colour, odour and viscosity of the oil by comparing with fresh oil. Check the acidity of the oil as well.

a) **Colour.** Oil darkens with use, but must not be cloudy or too dark.

b) **Odour.** At elevated temperatures, oils (and mineral oils in particular) may decompose, with the formation of acids. The oil sample must not have an acid smell. Compare with that of fresh oil.

c) **Viscosity.** The viscosity of the oil may fall somewhat with use. Allow a small quantity of the oil to flow through a capillary tube with a bore of approximately 1 mm. Measure the time taken and then repeat the test with fresh oil. The time taken by the used oil must not be less than 85% of the time taken by the fresh oil.

d) **Acid number.** This is expressed in terms of the amount of KOH needed to neutralize the acid in one gramme of oil. Not more than 0.06 mg KOH/g of oil may be used if the oil is to provide good lubrication and reliable operation.
Refrigeration equipment suppliers can supply a test kit suitable for determination of the acid number of oil in freon plants through colour indication. A test kit of this type may be used, or the work be carried out by a suitable chemical laboratory. The Stal Laboratory Department can also carry out a more precise determination.

Change the oil in the outlet casing and oil cooler if any of the above analysis results indicates that it should be changed. Before changing the oil, remove the fuse for the oil heater.

Within the first 50-100 operating hours

38. Close the valve downstream of the system condenser and run the compressor to reduce the pressure in the system after the condenser to a value just above atmospheric pressure.

Note that the following instructions apply only to small plants. In large plants, it may also be necessary to isolate the compressor unit from the rest of the plant by means of stop valve AV1. In large plants, it is also necessary to isolate parts of the system by means of the appropriate valves when carrying out work.

39. Attend to all filters and suction strainers in the compressor unit – see Fig. 6 and Table 2.

Table 2. Cleaning/replacement of filters and gaskets

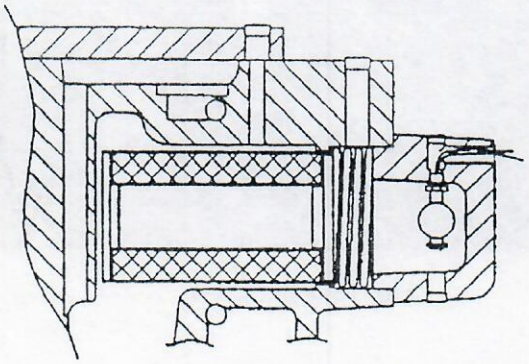
Filter number	Part	Spare part number	Notes
SIL 1	Suction filter Gasket	1901 450-A 1905 285-1	Clean Replace
SIL 3	Oil filter O-ring (one) Gasket (one)	1905 048-A 3921 5282 431 1905 351-1	Replace Replace Replace
SIL 5	Filter Gasket Gasket	3952 6404 060 1920 281-1 1920 282-1	Clean Replace Replace
SIL 6	Filter cartridge NH3 Gasket Gasket (cover)	3952 6457 600 1920 040-1 1920 039-1	Replace Replace Replace
SIL 7	Filter cartridge Cover gasket Flange gasket	3963 1119 138 3963 1119 608 3963 1119 623	Clean Replace Replace
SIL 8	Filter cartridge NH3 Filter cartridge R22 Cover gasket O-ring (filter)	3952 6457 446 3952 6458 446 3921 5204 200 3921 5282 524	Replace Clean Replace Replace

a) Stop the compressor and remove the fuses that protect the motor.

b) Close valve BV2, as well as AV2 and BV3 if included on your compressor unit (Fig. 6). Also close any valves on either side of any filters in the system that are to be cleaned.

c) Connect a hose to valve AV8, sufficiently long to allow its free end to be placed outdoors to avoid any risk of inhaling the gas.
If the compressor uses ammonia as refrigerant, the hose may instead be led to a vessel containing water, which will absorb the ammonia. Open the valve to relieve pressure in the compressor unit.

d) Replace the filter cartridge in SIL3 (Fig. 13), together with the gasket and the O-ring.



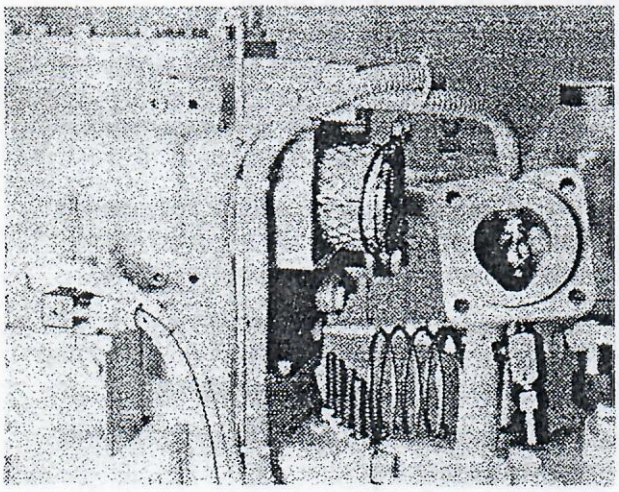
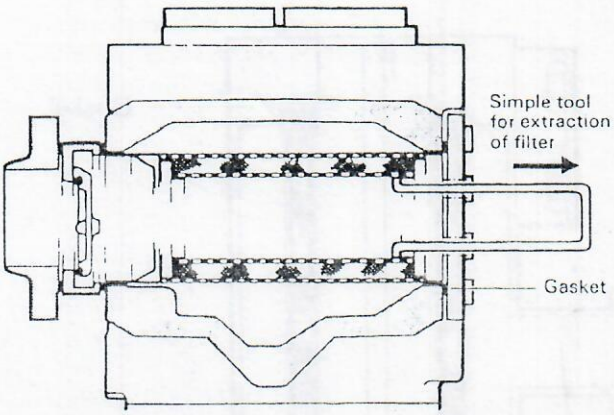


Fig. 13. Filter SIL 3

e) Remove the cover to clean SIL1 (Fig. 14). Withdraw the cartridge carefully so that no contaminants drop into the compressor. Wash the filter cartridge in POLYCLEANS or a similar degreasant and flush it clean with hot water.

Blow the filter clean and completely dry with compressed air. Hold it up to a powerful light and check to see that the meshes are clean. If not, repeat the entire procedure.

Refit the filter, noting that the conical sleeve must be facing inwards (Fig. 14). Fit a new gasket and replace the cover.



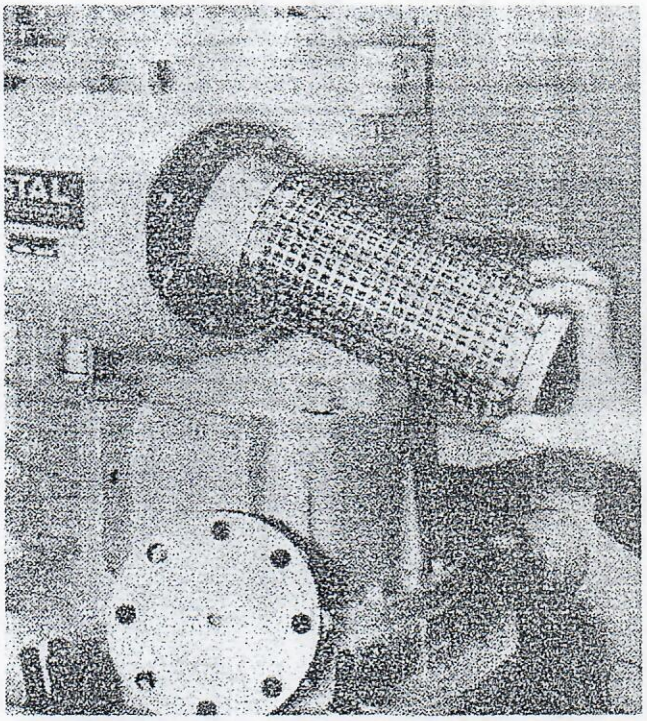


Fig. 14 Filter SIL 1

f) If filters SIL 5 and SIL 7 form part of the system, clean them in the same way (Figs. 15 and 16). Fit new gaskets when replacing the covers.

g) Clean or replace filters in the external system.

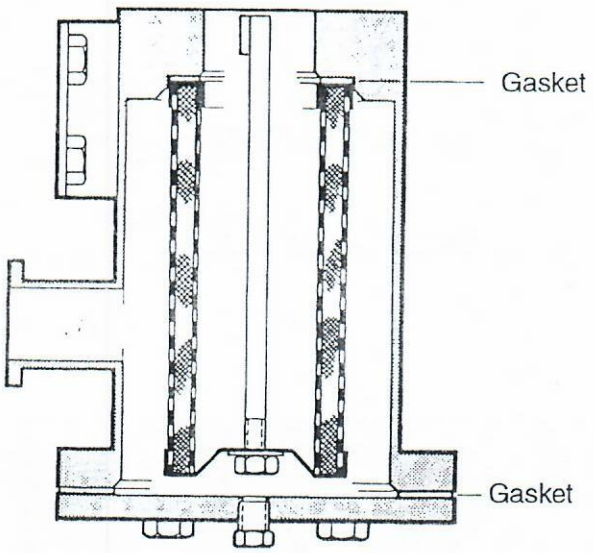
h) Refit the motor fuses.

i) Evacuate the compressor unit and the rest of the system using a vacuum pump, as described in Section 5.

j) Open valve BV2, and also AV2 and BV3 if included. Open all other valves in the system that were closed.

40. Check that all threaded joints are fully tightened.

41. Search for any leaks of refrigerant and oil. Search e.g. possible oil leakage drops which may be visible at two telltale holes, one at each side of the oil pump axle.



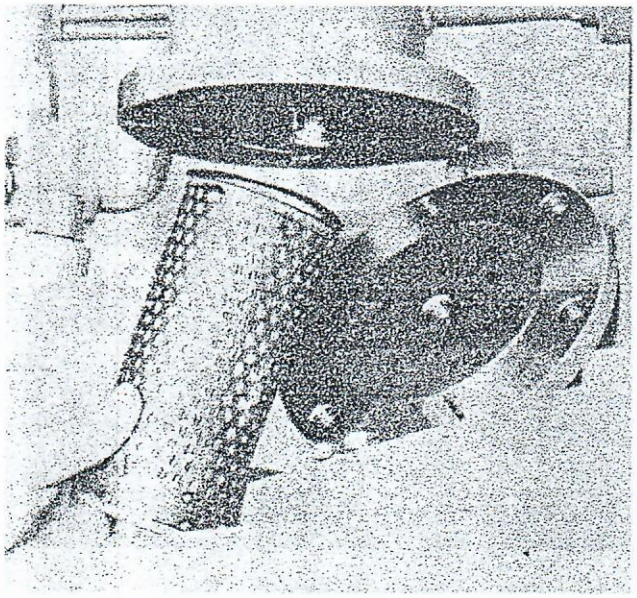
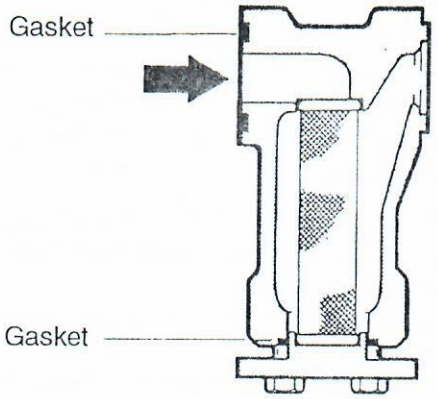


Fig. 15. Filter SIL 5

After the first 500 operating hours
42. Search for leaks in the unit.

After every 1000 operating hours
43. Search for any leaks of refrigerants and oil. Search e.g. possible oil leakage drops which may be visible at two telltale holes, one at each side of the oil pump axle.



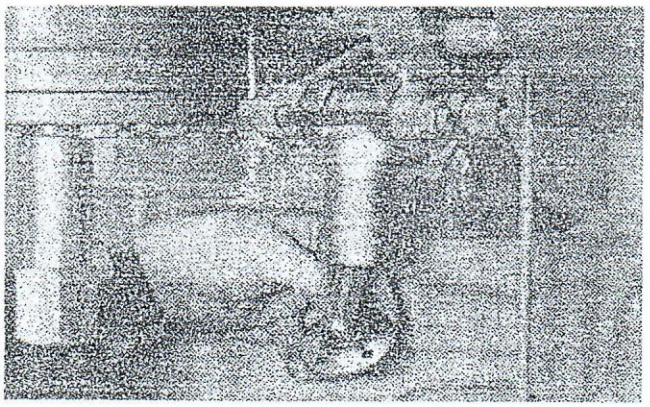


Fig. 16. Filter SIL 7.

After every 2500 operating hours
44. Lubricate the motor bearings - see Fig. 19.
A certain amount of grease must always be pressed (pumped) into each bearing (in 3–4 sessions, see below). See Table 3 and the motor dataplate for information about the required amount.

Use 3–4 pumping sessions to pump in the required amount for each bearing, and allow 2–3 minutes to elapse between the different pumping sessions.

The bearings must be lubricated when the plant is first started up, after about 50 hours of operation and thereafter according to the hours in table 3.

Note: Lubrication must always be carried out while the equipment is operating.

Only grease of lithium type should be used for the compressor's electric motor (see table 4).

Table 3 presents the lubrication intervals and the amount of grease to be used at ambient temperatures of 40°C and below. For information what to use at higher temperatures and in tropical climates, please contact the department Order Compressor Units.

45. For NH_3 units, measure the pressure drop across the outlet casing at full compressor capacity connecting the pressure gauge to valves AV8 and AV9 (Fig. 12). This can be done by using a differential pressure gauge.

46. Replace filter SIL3 and clean or replace the other filters as described in Section 39, a–g.

47. For compressors using NH_3 the filter SIL6 – see Fig. 17 – in the outlet casing should be replaced if the pressure drop across this filter exceeds 100 kPa (1.0 bar).
When an alternative extra filter adapter SIL 8 is mounted – see figs. 6 and 18 – follow instructions according to Manual Sheet 48176-N-100E (NH_3).

Proceed as follows:

a) Fit a new filter cartridge and new gasket (5). Replace the flange ring (6) and tighten the bolts (7). No leakage is permitted.

b) Fit a new gasket (3) and replace the cover.

c) Refit the motor fuses.

d) Apply a vacuum pump and evacuate the compressor unit and the rest of the system (Section 6).

e) Open valve BV2, together with valves AV2 and BV3 if included. Open all other valves in the system that have been closed.

48. Search for leaks in the compressor unit.

49. Restart the compressor unit for normal operation.

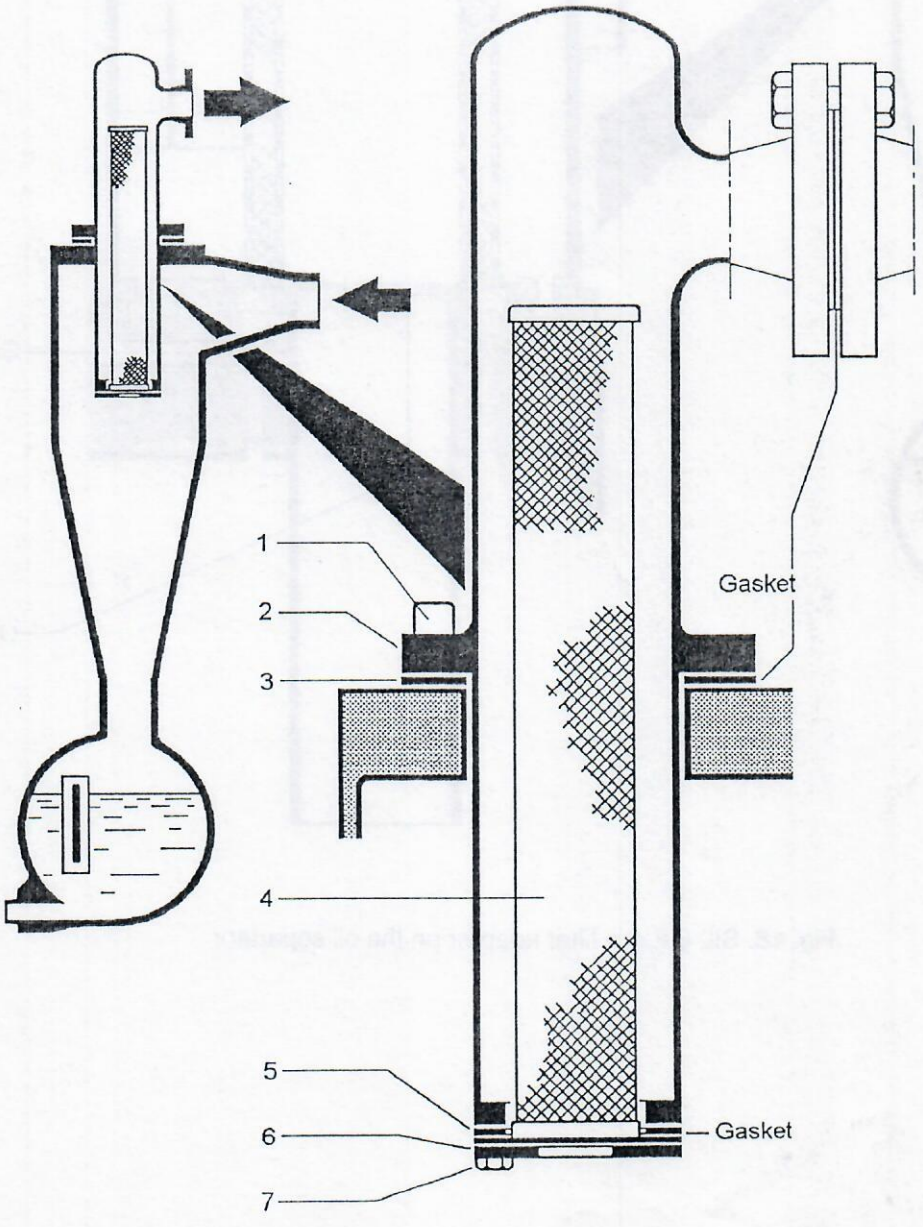


Fig. 17. SIL 6 Oil separator filter, NH_3

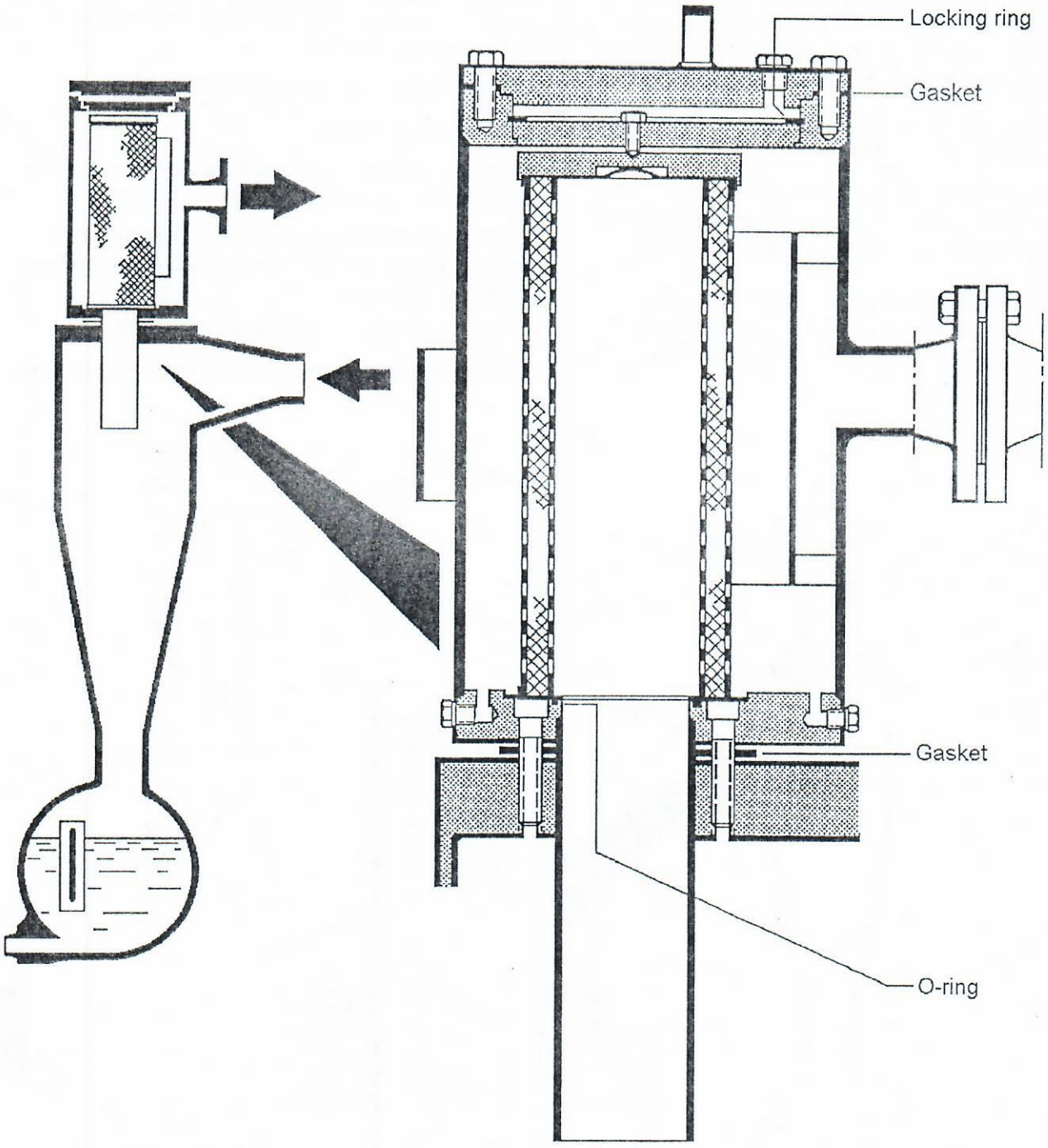


Fig. 18. SIL 8 Extra filter adapter on the oil separator

After every 5000 operating hours

Note: For units operating as heat pumps, take an oil sample as described in Section 37 and wait for the results before starting service work.

50. Carry out the same work as for 2500 operating hours, and replace filter cartridge SIL 6 or SIL 8 in the outlet casing for compressors using NH_3.

51. Replace the oil in units operating as heat pumps if analysis results indicate that this is necessary.

52. Lubricate the motor bearing of all sizes. See Fig. 19 and Table 3.

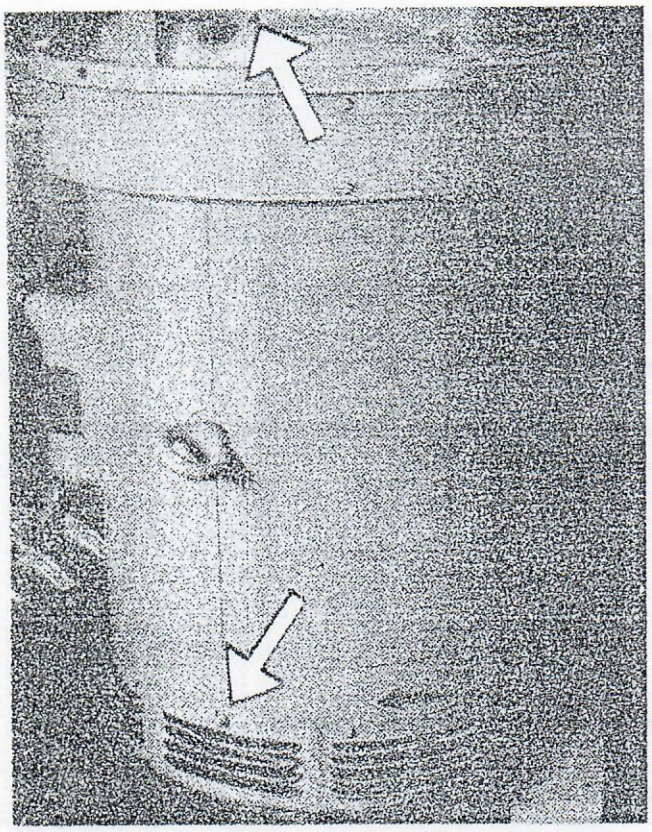


Fig. 19. Motor bearing lubrication nipples.

After every 20 000 operating hours

53. Remove the oil heater fuse and change the oil in the outlet casing and oil cooler in units operating as heat pumps or in air conditioning plants.

After every 40 000 operating hours

54. Stop the compressor, remove the motor fuses and carry out work as specified in Section 39 b) and c).

55. Replace the motor bearings.

56. Disassemble the compressor for a complete overhaul. See Manual Sheet 48165-N-10E, or contact your nearest Stal representative.

Compressor units type SVK must also be inspected in accordance with the rules laid down by the classification society.

57. Remove the oil heater fuse and replace the oil in the outlet casing and oil cooler for compressor units in all types of plant. See also Section 37.

Table 3

Lubrication intervals and amounts of grease (hours/grammes) (Ambient temperature ≤+40°C)

Types of motors	D-end		ND-end	
	50 Hz	60 Hz	50 Hz	60 Hz
KN7 207M KN7 200M KN7 200L	2500/70	2100/70	4600/24	3900/24
KN7 225M			4200/26	3550/26
KN7 250S KN7 250M KN7 280M			4000/26	3400/26
KA7 225M KA7 227M	2000/70	2000/70	2000/15	2000/15
KA7 250M KA7 280S KA7 280M KA7 315S KA7 315M			2000/40	2000/40

Table 4

Manufacturer	Type of grease
SKF	LGHQ3
STATOIL	Uniway LIX62
MOBIL	Mobilgrease 532
ESSO	Unirex N3
TEXACO	Chevron SR1 grease 2

F. FAULT TRACING

58. Compressor drive motor does not start

Cause	Remedy
a) Main circuit breaker is tripped	Reset circuit breaker
b) Main switch is off	Turn main switch on
c) No start signal received from control equipment	Wait for cooling or heating requirement. Reset control equipment if compressor still does not start.
d) Time delay preventing too frequent starts	Wait until time delay has expired
e) An interlock circuit is open	Check all connected functions
f) Motor fuses tripped or blown	Replace fuses
g) Fuses in control curcuit tripped or blown	Replace fuses
h) Fault in power supply curcuit	Investigate circuit and remedy the fault
i) Fault in control circuit	Investigate and remedy the fault
j) Fault in controlsystem	Investigate and remedy the fault
k) One or more monitors tripped 1. Low suction pressure, PT1 2. High condenser pressure, PT3 or PS4 3. High pressure drop across oil filter PS 4. Low level in outlet casing LS 5. High discharge line temperature TT11 6. High motor current 7. High motor temperature	Check switch settings. Reset or investigate and remedy the fault
l) The oil pump does not start	Check the oil pump control system

59. Compressor drive motor starts, but stops after 30 seconds

a) Oil level too low or insufficient oil flow	See Sections 67 and 73 below
b) Oil filter SIL 3 clogged	Clean or replace oil filter
c) Oil pump stops	See Section 73 below

60. Compressor drive motor starts, but stops after 60 seconds

a) Suction pressure too low	See Section 68 below

61. High motor current

a) Operating outside specified range	Adjust for correct operation. Check electric circuits.
b) Faulty motor	Remove and repair motor if necessary.

62. High motor temperature

Cause	Remedy
a) Cooling air supply blocked so that cooling is insufficient	Check cooling air supply and ensure that it is unobstructed
b) Compressor operating outside specified range	Adjust for correct operation

63. Compressor capacity too low or too high

a) Control equipment is malfunctioning, because: 1. A soleniod valve is blocked or faulty	Clean or replace the solenoid valve
2. Control equipment is faulty	Investigate and repair
3. Capacity control piston in compressor has jammed	Disassemble and remedy: see Manual Sheet 48165-N-10E

64. Abnormal noise from compressor

a) Bearing damage b) Seizure	Stop compressor immediateley and call service technician to investigate. See also service instructions in Manual Sheet 48165-N-10E.

65. High discharge line temperature

a) Insufficient oil cooling	Increase oil cooling
b) Insufficient refrigerant	Top up with refrigerant
c) Excess suction gas superheating	Adjust expansion valve

66. High pressure drop across oil filter

a) Oil filter SIL 3 in compressor is clogged	Replace filter

67. Low oil level in compressor

a) The oil pump is leaking or not functioning	Repair the pump or replace it
b) Oil heater is faulty	Repair or replace oil heater
c) Oil heater thermostat TT 15 is incorrectly set or faulty	Check setting or replace it
d) Discharge line temperature too low, with liquid carry-over	Adjust expansion valve
e) Ambient temperature too low	Insulate outlet casing
f) For NH_3 units: secondary stage filter clogged or faulty	Replace filter
g) For NH_3 units: return line filter SIL 7 or restrictor is blocked	Clean filter and restrictor

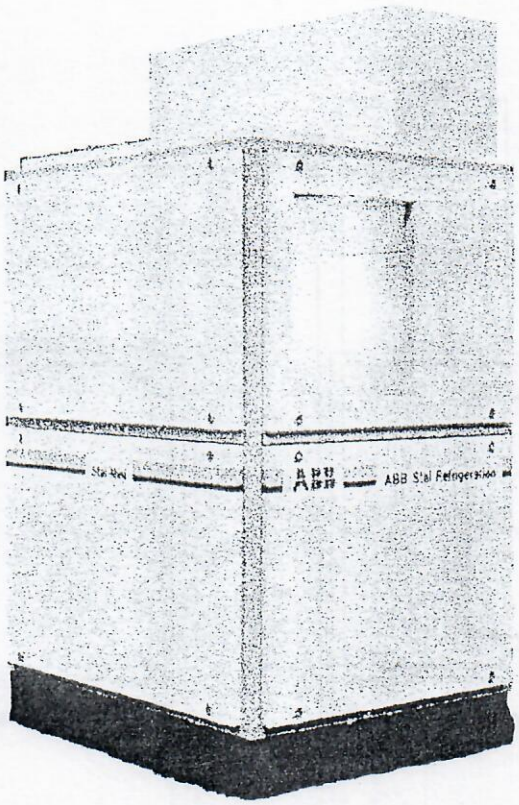
68. Low suction pressure: suction-pressure sensor PT 1 stops the compressor

a) Compressor capacity too high	Change capacity control system setpoint
b) Filter in liquid line clogged	Clean or replace filter
c) Excessive suction gas superheating	Adjust expansion valve setting

68. Continued

Cause	Remedy
d) Expansion valve incorrectly set or faulty	Adjust setting or replace valve
e) Faulty solenoid valve in liquid line	Replace coil and clean valve
f) Insufficient refrigerant	Top up with refrigerant
g) High oil concentration in evaporator	Drain oil and check refrigerant charge
h) Evaporator dirty or in need of defrosting	Clean or defrost evaporator
i) Suction pressure sensor PT1 set too high	Reset setting level
j) Suction filter SIL 1 clogged	Clean filter
69. High condenser pressure: discharge-pressure sensor PT 3 stops compressor	
a) Insufficient condenser cooling	Increase cooling
b) Cooling water filter clogged	Clean filter
c) Refrigerant level too high	Drain off excess refrigerant
d) Air or non-condensable gases in system	Bleed off gases
e) Discharge pressure sensor PT 3 set to trip at too low a pressure	Reset setting level
f) Condenser surfaces dirty	Clean condenser tubes
70. High suction gas temperature	
a) Compressor capacity too low	Reset control equipment
b) Excessive suction gas superheating	Reset expansion valve
c) Insufficient refrigerant	Top up with refrigerant
71. Low suction gas temperature	
a) Liquid in suction line	Reset expansion valve
b) Expansion valve temperature sensor incorrectly posioned or inadequately clamped	Reposition or reclamp the sensor
72. Low discharge line temperature	
a) Excessive oil cooling	Reduce oil cooling
b) Liquid in suction line	Reset expansion valve
73. Too high or too low oil pump pressure	
a) Too high pressure. The pressure control valve does not open for circulation of over-flow.	Check the valve and the PRV actuator or replace it
b) Too low pressure. The pressure control valve PRV or the check valve BV5 does not close.	Check the valves, e.g. for clogging due to impurities in the oil or replace the clogged valve
c) Too low pressure. Malfunction of the oil pump.	Check the pump for impurities in the oil or replace it.

SCREW COMPRESSOR UNITS, SERIES SV10
SOUND DAMPING ENCLOSURE



GENERAL

When special requirements call for a low noise level, the units can be fitted with a site-mounted enclosure. The enclosures are secured to the bottom frame of the unit and are ventilated with easily removable covers for access to the compressor unit for maintenance.

ORDERING

The enclosures can be delivered in two versions acc. to the following:

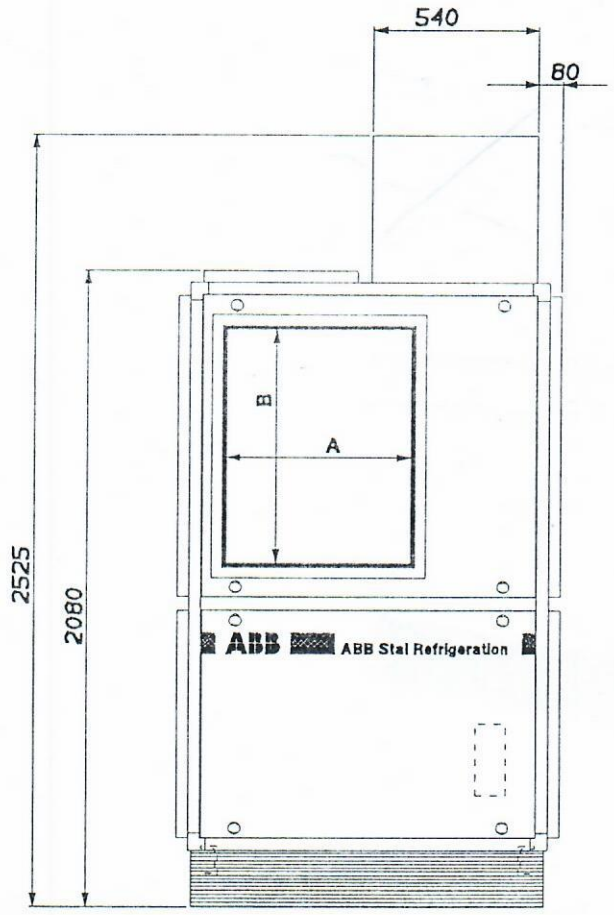
Unit equipped with Stalectronic 700 control system (760×760 mm)	Unit equipped with control cubicle (500×600 mm)
Order No. 1906 195-A	Order No. 1906 195-B

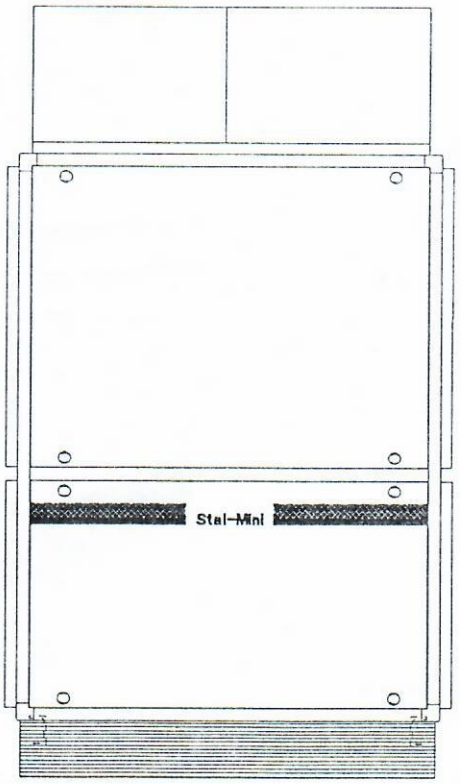
To get a complete installation choose "Electric motor installation compatible with sound damping enclosure" in the ORDERING PROCEDURE for screw compressor units series SV10.

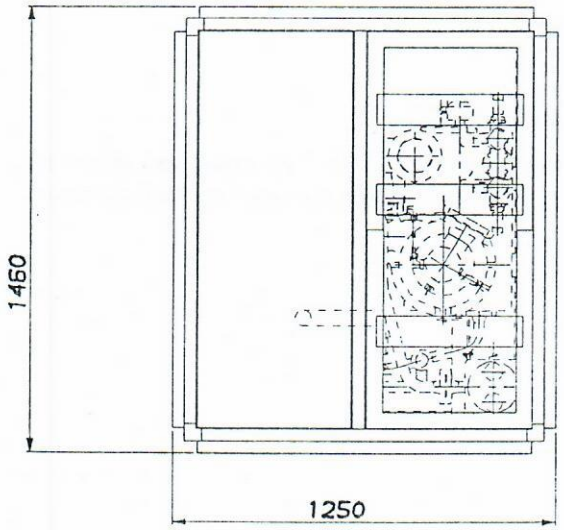
SOUND LEVEL

Sound levels for SV10 units equipped with sound damping enclosure, see separate manual sheet.

DIMENSIONS



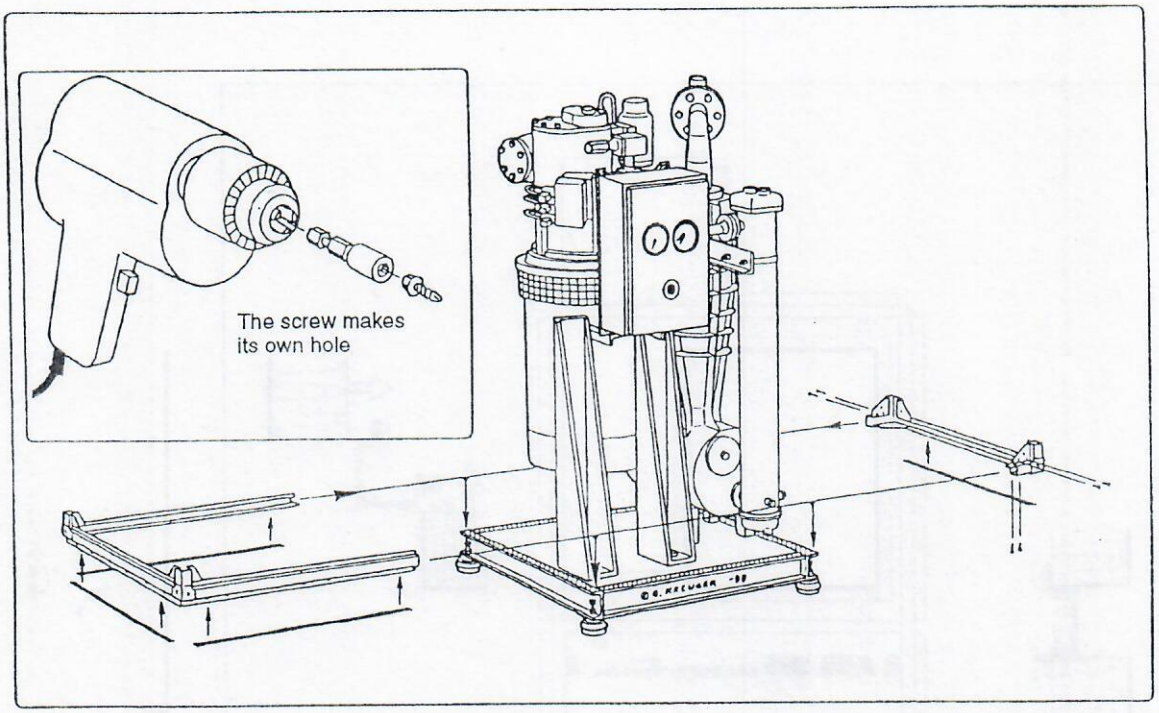


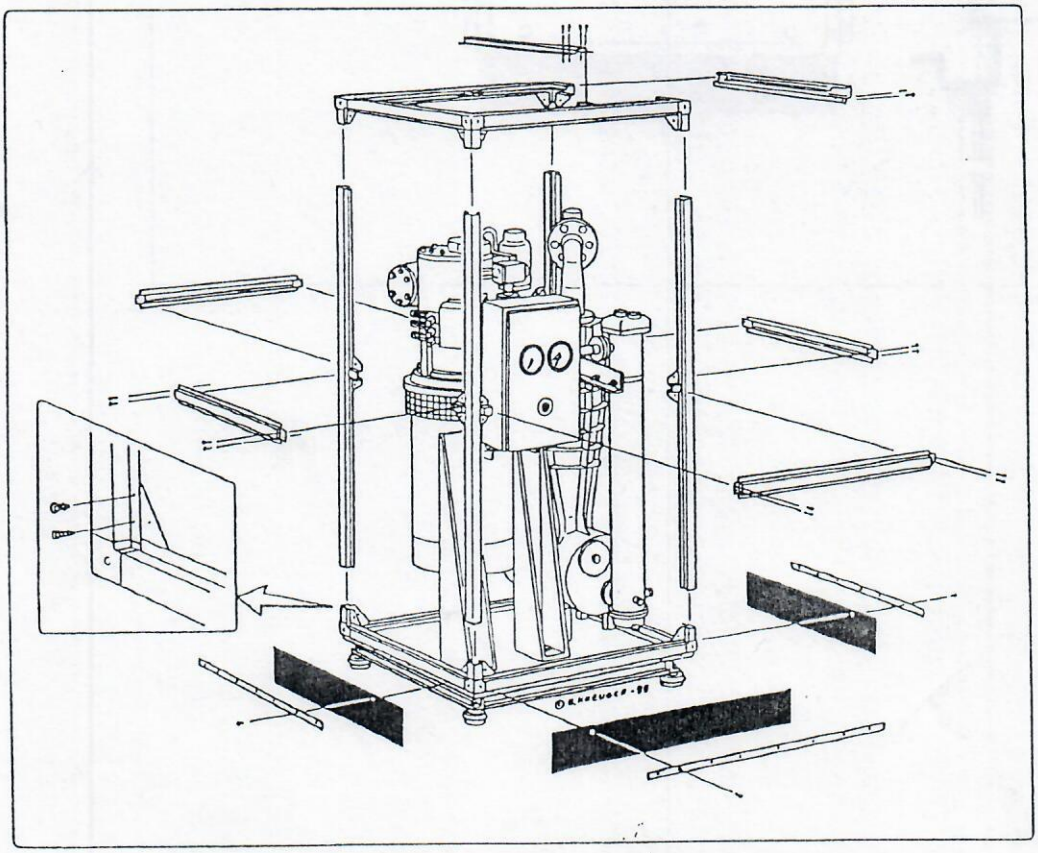


	A	B
1906 195-A	760	760
1906 195-B	500	600

Weight including packing: 250 kg

ASSEMBLY





ASSEMBLY