

Installation, Operating & Maintenance Manual

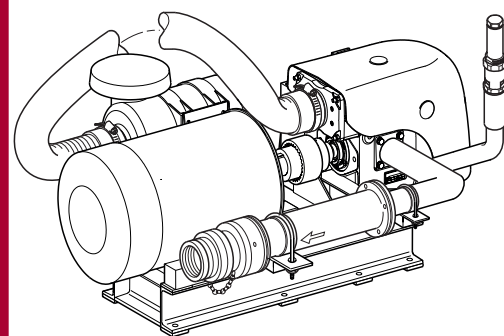
(Original Instructions)

DRUM

XK SERIES SCREW COMPRESSOR

Models

XK12 Electric
Motor drive



4990340000
September 2013

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To be used with the main
XK12 instructions

1

Build Procedure

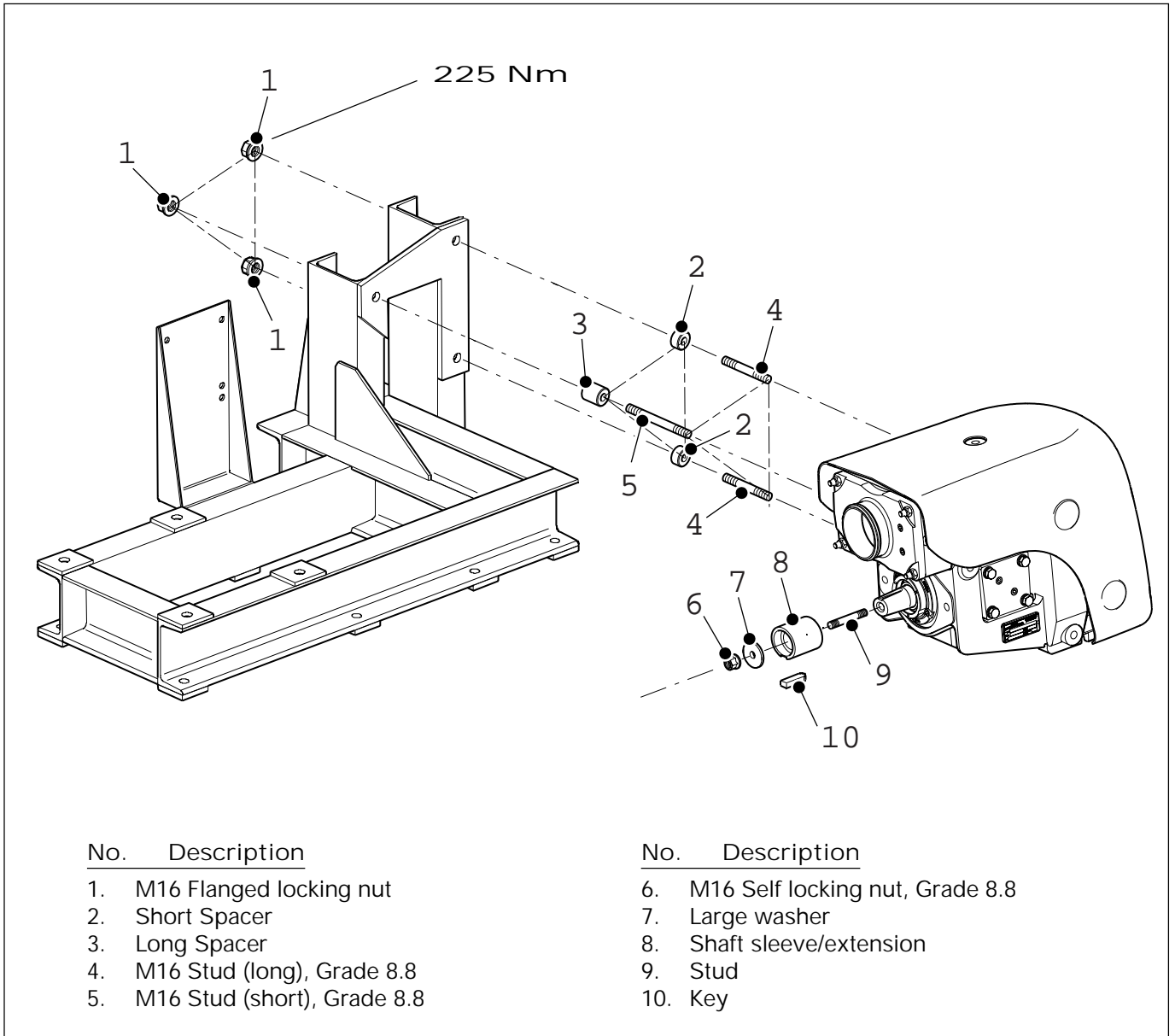


Figure 1. Compressor and sleeve mounting

1.1 Machine and Shaft Sleeve Installing

The basic XK12 compressor should be installed/mounted (using the M16 fittings supplied in the machine mounting kit) as shown in fig. 1

All M16 Grade 8.8 mounting nuts/bolts should be applied at a torque setting of 225Nm.

The sleeve should be mounted as shown in fig. 1

Build Procedure

1.2 Electric motor Mounting

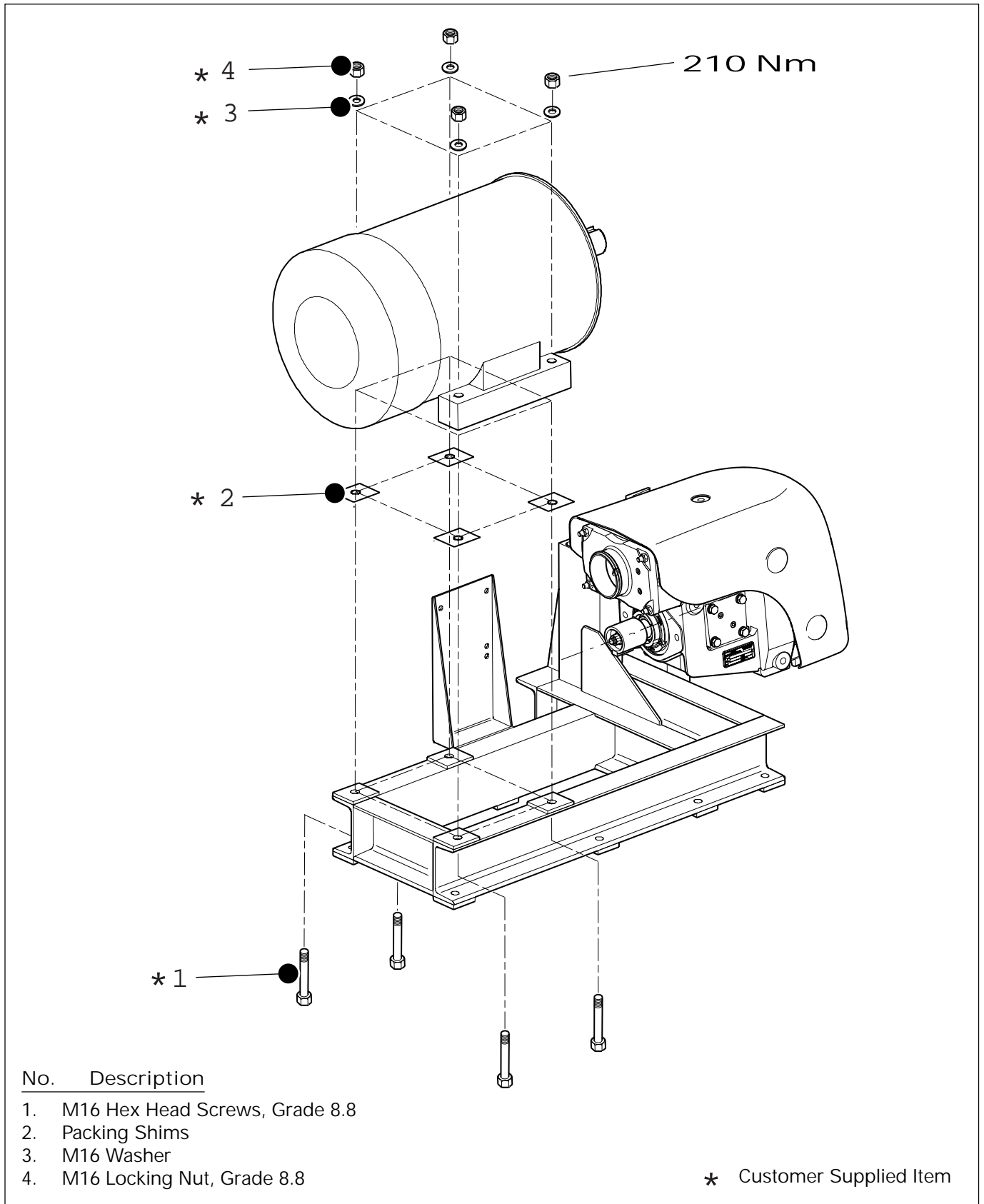


Figure 2. Electric motor mounting

Build Procedure

1.3 Coupling Assembly

No.	Description
1.	Key - Electric Motor
2.	Hub - Electric Motor
3.	M10 Grub Screw
4.	Drive Sleeve - Plastic
5.	Hub - Electric Motor

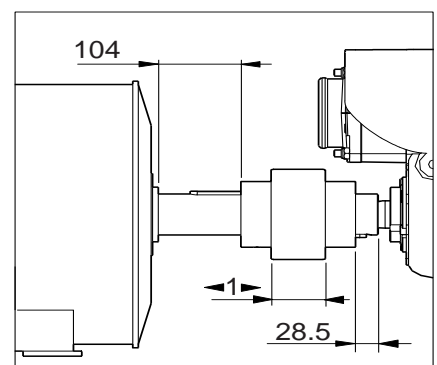
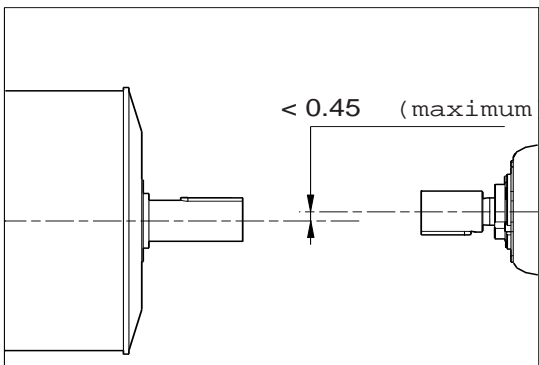
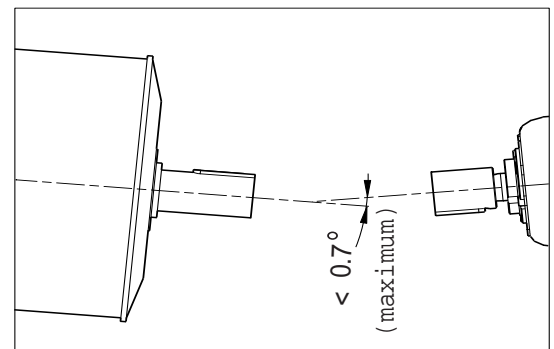
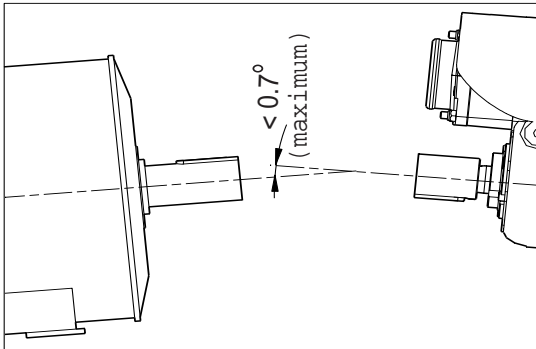
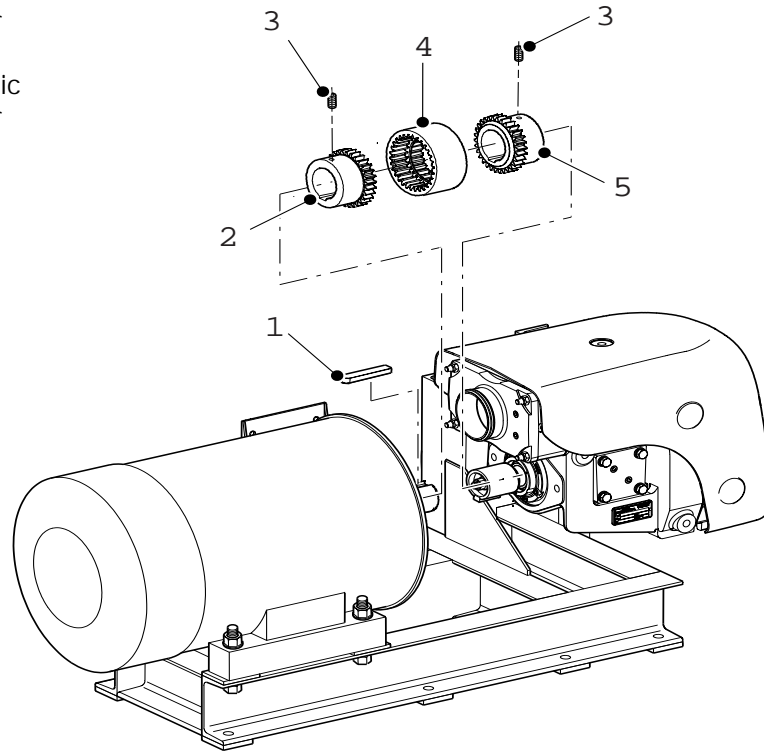


Figure 3. Coupling Mounting and Alignment

Build Procedure

1.4 Filter Assembly

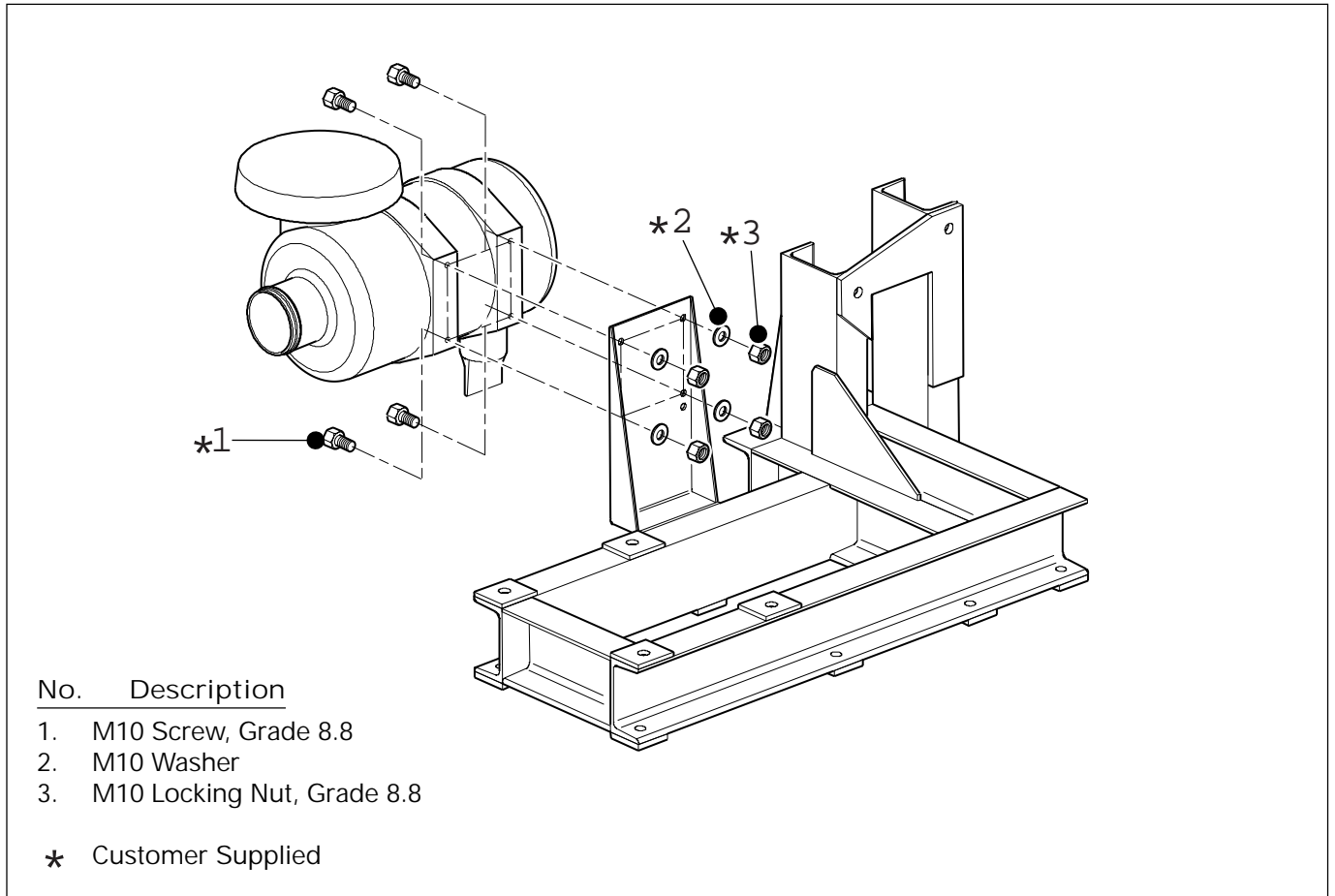


Figure 4. Filter installation

1.5 Pipework connections -General (see fig. 5)

When preparing the discharge pipework, the following points should be considered:

- Access to oil fill/level and drain plugs on compressor (see main instructions)
- Adequate clearance to allow the cooling air to circulate around the machine
- Venting relief valve air must be unobstructed, direct to the atmosphere and not towards the machine, inlet filter or inlet pipework
- Fit the relief as close as possible to the XK12 discharge port.
- Venting valves must be positioned so that hot air cannot easily vent onto the operator
- Silencers should be fitted as close as possible to the discharge port (after the relief valve) to maximise the noise reduction.

For the recommended layout of the machine and ancillaries, see figure 5.

Build Procedure

1.5 Pipework Connections - Continued

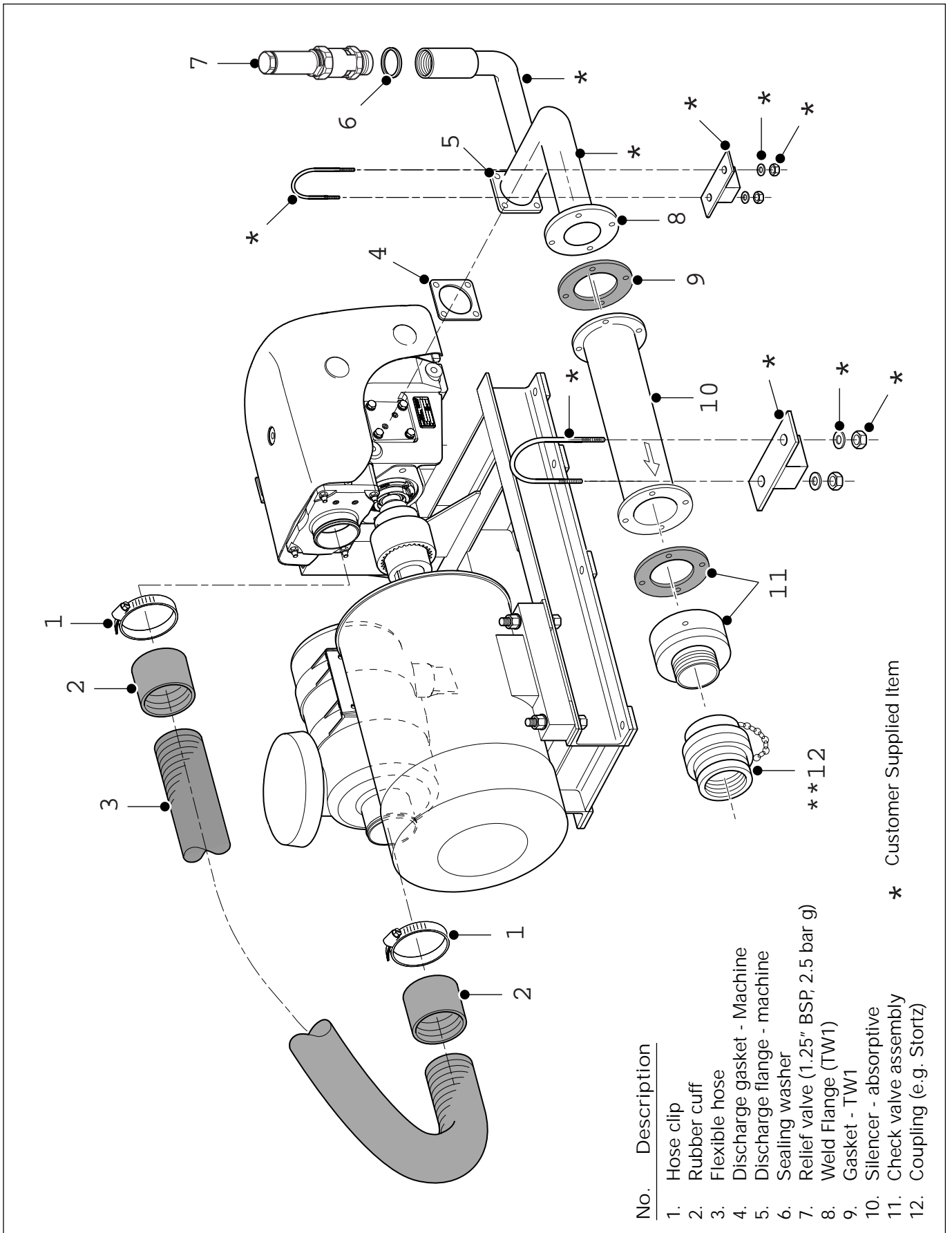


Figure 5. Pipework Connections

Build Procedure

1.6 Build Complete

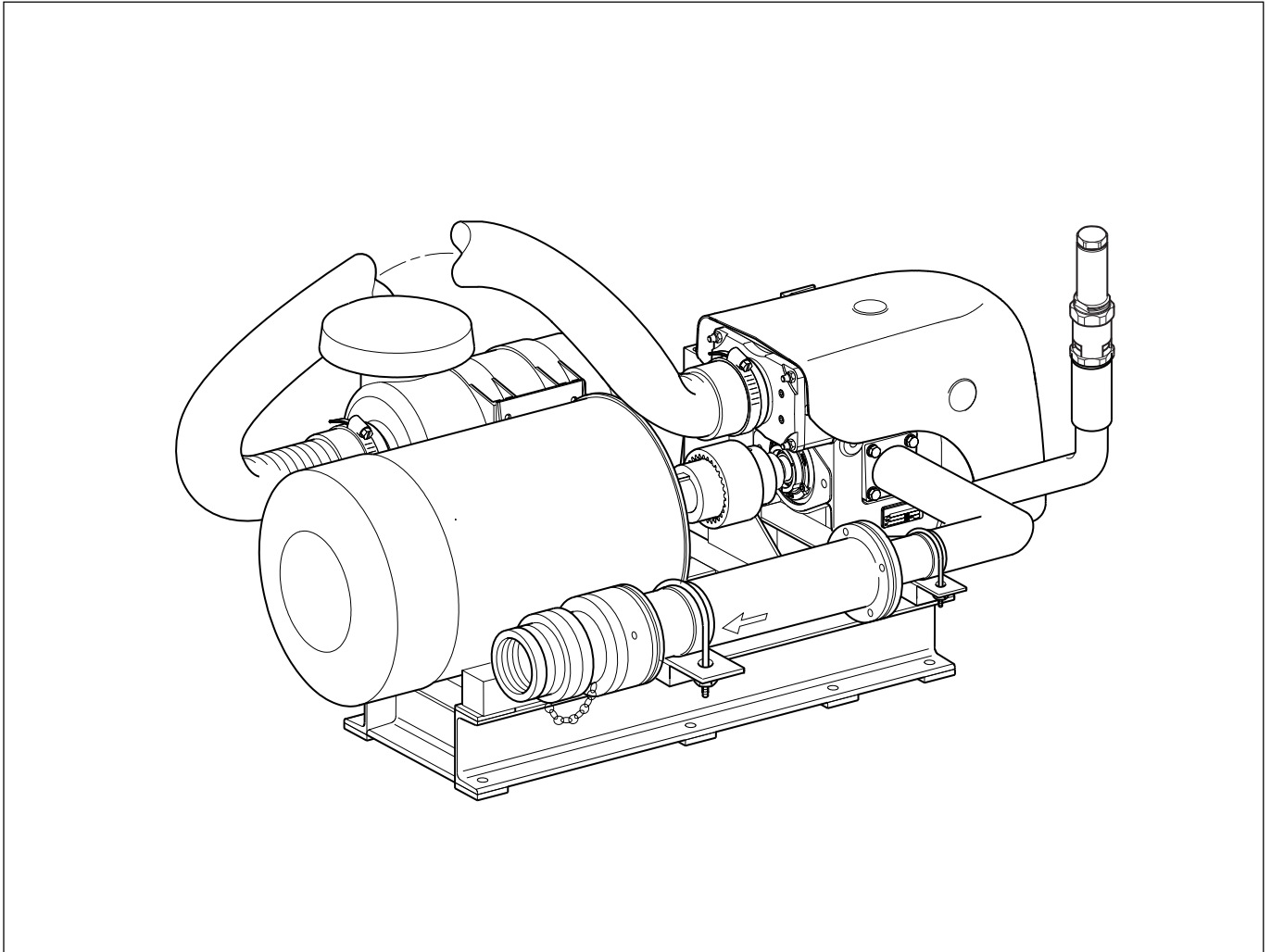


Figure 6. Completed Build

CAUTION

Any rotating parts must be guarded.

1.7 Guarding

The rotating area of the coupling and drive shafts should be guarded during the assembly process to prevent injury to the operator.

1.8 Control/Starter Cabinet

Please refer to the instructions contained in the Starter cabinets for mounting and electrical connection.

The cabinets are IP65 rated and resistant to external weather conditions.

1.9 Ball Valve

We recommend that a 1" - 1.5" manual ball valve is fitted on the discharge line to allow the compressor discharge air to vent directly to atmosphere to prevent the machine being started against a pressurised tank. This will lower the starting and stopping torque on the machine and coupling.

2

Discharge ancillaries

2.1 Ancillaries in the discharge line

Inlet air filter and flexible induction kit

Should be located so that the inlet air is cool and clean. Do not mount close to exhausts or other warm air sources.

Relief Valve

The relief valve is installed to prevent the XK12 from encountering pressures beyond its operating range.

The relief valve should be installed as close as possible to the discharge port of the machine prior to any other discharge ancillary and should be mounted vertically (as shown in fig 7).

It is pre-set and fitted to protect the XK12 against pressures of over 2.5bar g . Adjustment of the machine relief valve will invalidate the XK12 and relief valve warranty.

Any pressure vessels or other parts of the discharge system should be protected by a separate relief valve that should be supplied with them in line with any prevailing legislation

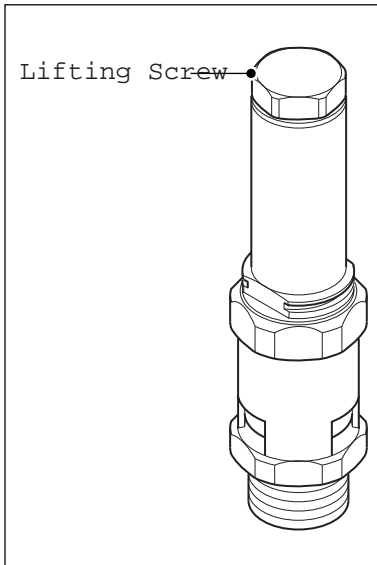


Fig. 7 Relief valve orientation

Discharge Silencer

Should be mounted/connected as close as possible to the discharge port (after the relief valve) using the slip-on-weld flanges supplied.

Silencers should be mounted/supported separately (see figs 5 and 6) to prevent the generation of loads on the machine and discharge port due to weight or temperature expansion. Flexibility in the mounting or connecting pipe work to the silencer should be incorporated where this could occur.

Check (non-return) valve

This is to prevent a back-flow of air and product (often encountered when stopping compressors whilst the discharge tank is still pressurised) from entering and damaging the XK12.

The check valve should be the last ancillary on the discharge pipework (but before any connection point) to protect all the other ancillaries. It is often mounted directly to the delivery port of the discharge silencer as shown in the pictures.

The check valve hinge should be positioned at the top in horizontal pipe work to encourage closure under gravity. If mounted vertically, the position of the check valve hinge is not important.

Expansion Joints

Any pipe work or equipment should incorporate flexible elements or mountings where:

- Movement due to thermal expansion is likely
- Pipe work crosses the vehicle chassis.

3

Commissioning

3.1 Pre-operating check list.

Tick when completed

Lubrication plugs fitted.	
Gearbox filled with oil.	
Pipe bores etc cleaned after fabrication.	
Commissioning filter in position.	
All flanges, fasteners and mountings secure.	
Vehicle PTO disengaged.	
Blow (ball) valve open (if starting against a tank pressure).	
Ancillaries correctly fitted and sequenced.	

CAUTION

Failure to remove the commissioning filter during commissioning may lead to failure of the compressor.

3.2 Commissioning filter.

The inlet commissioning filter should have been in place throughout the installation of the XK12 and its pipework - see main instructions
The filter should be removed during commissioning after 5 minutes operation.

3.3 Commissioning Procedure

This assumes that a pressure creating gate valve is fitted to the end of discharge pipework. We also suggest a silencer is fitted.

Tick when completed



NOTE

Watch out for hot-pipes and make sure you replace/re-tighten any fastenings.

NOTE

Max. Inlet Depression
100mbar under all circumstances. 70mbar when new with the commissioning filter removed.

Max. Discharge Pressure
2.5 bar g

1 Check that the discharge gate valve on the pipe work is open.	
2 Start the Electric motor	
3 Check the discharge pipe work for leaks and gently agitate the flexible inlet pipe to release any debris that may be present.	
4 After 5 minutes, stop the electric motor	
5 Check the oil/fill level and drain plugs for leaks, and replace the commissioning filter with the inlet gasket supplied being careful to remove any debris that could fall into the pipe bore.	
6 Repeat point 2 above	
7 If possible, record the inlet depression using one of the plugs on the inlet flange. If it is greater than 50 mbar, this check the inlet pipes and filter for blockages and confirm that the commissioning filter has been removed.	
8 Raise the discharge pressure to 2 bar g by adjusting the gate valve setting. Check the discharge pipework for air leaks. If all is well, run the compressor for 30 minutes.	
9 Re-check for air and oil leaks	
13 Reduce the discharge pressure again by fully opening the gate valve and then stop the electric motor.	
10 Make sure that all fastenings/mountings are still tight.	

4

Training

4.1 Operator training

Driver training should be given when ever possible and should include:-

Safety

Instruct the driver regarding:

- Rotating parts
- Hot Pipework
- Safety valve
- Safety coupling

Operation

Instruct the driver regarding:

- Speed range
- Maximum operating pressure
- PTO engagement
- Unloading valve

Routine Maintenance

Instruct the driver regarding:

- Gearbox oil - topping-up and replacement
- Air filter - cleaning/replacing
- Pipe connections - checking
- Relief valve function

5

Maintenance

5.1 Schedule

NOTE

The relief valve should be operated every 3 months to clear the valve seat and check that the valve is functional.

(Ear protection is recommended)



NOTE

500 hours is the maximum oil change interval.

Daily	<ul style="list-style-type: none">• Check Air Filter blockage indicator and clean or replace filter element if required.
40 - 60 hours from new	<ul style="list-style-type: none">• Change the gearcase oil; see section 5.2
Monthly	<ul style="list-style-type: none">• Check gearbox oil level• Check function of Relief Valve• Remove air filter and clean inside the casing.• Check security of compressor and pipe mountings.
500 hours run time or every 12 months (which ever is sooner)	<ul style="list-style-type: none">• Change the gearcase oil; see section 5.2• Drain plug - clean magnetic (plug See Fig.6)
Annually	<ul style="list-style-type: none">• Examine the internals of the check valve• Examine pipes and silencers for corrosion and replace as required• Replace Air Filter element• Check Relief Valve function, setting and visually.

Drive systems must be maintained in accordance with the manufacturers instructions.

See the main instructions for maintenance techniques and other information

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