

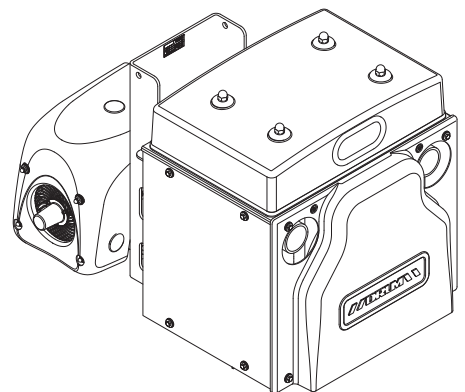
**DRUM**

**XK SERIES SCREW  
COMPRESSOR**

**Models**

XK12 PACKAGE 5

XK18 PACKAGE 5



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**EC Machinery Directive**

**2006/42/EC**

**DECLARATION OF INCORPORATION**

Vehicle Discharge Equipment Comprising:

**Machine Name:**

**XK Pack 5**

**Machine Assembly Number:**

**XK12-5x, XK12-5xx, XK12-5-xx, XK12-5-xx-xxx, XK12-5-xxxx  
XK18-5x, XK18-5xx, XK18-5-xx, XK18-5-xx-xxx, XK18-5-xxxx**

**Machine Installation /Operating Instructions:**

**4990140xxx, 4990147xxx & 4990349xxx**

Is in conformity with the provisions of the following other EEC Directives:

N/A

Harmonised standards applied (including parts/clauses of):

N/A

The equipment above must not be put into service until the machinery into which it has been incorporated has been declared in conformity with the provisions of the directive.

Signed: B Thomas

Date: 20th JAN 2010

Name: Barry Thomas

Position: Director Engineering (Gardner Denver Drum Ltd)  
Being the responsible person appointed by the manufacturer.

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**To be used in  
conjunction  
with the main  
instructions**

**Do not use in  
isolation**

# 1

## General

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### 1.1 Product general description

The XK package 5 is a fully assembled package, ready for out-of-the-box direct mounting to the vehicle chassis.

The assembly is designed for the machine to fit inside the chassis and the ancillary pack outside the chassis to make the best use of the space available and permit direct prop. shaft driving.

#### NOTE



The compact shape and size of the compressor make it particularly suitable for direct PTO/prop. shaft driving inside the vehicle chassis on most applications.

A through shaft allows CW or ACW input drive rotation on the basic machine with mounting points on either side allowing it to be changed around on the assembly.

The standard pack 5 compressor package consists of a basic machine assembled with an enclosed ancillary package. The package consists of the following:

- Basic XK machine, commissioning filter
- Ancillary/cooler module including:
  - Integral inlet filter
  - Filter blockage indicator
  - Pressure gauge (machine discharge air pressure)
  - Mounting bracket
  - Relief valve
  - Drum Discharge silencer (reactive)
  - Air cooler
  - Check valve
  - 2 x 3" BSP male discharge flanges (hot and cold)

The package 5 is also supplied with a torque limiting coupling when direct PTO driven on a tractor unit.

# General

## 1.2 Available packages

The XK package 5 is available in two standard build types to allow installation flexibility and adequate prop.shaft length.

1. With the ancillary and cooler module offset to the left (OL)
2. With the ancillary and cooler module offset to the right (OR)

### NOTE



Integral cooler module ancillaries include:

1. Single stage air inlet filter
2. Filter restriction indicator
3. Reactive discharge silencer
4. Relief valve
5. Check valve
6. 24V air cooler
7. Hot and cold discharge ports
8. GRP/aluminium housing
9. Mounting bracket

### NOTE



Both the Offset Left (OL) and Offset Right (OR) cooler module configurations contain the same components and could be rebuilt as the other version if that was necessary. However, this changes the hot and cold ports. Please see the dimensional drawings for more information.

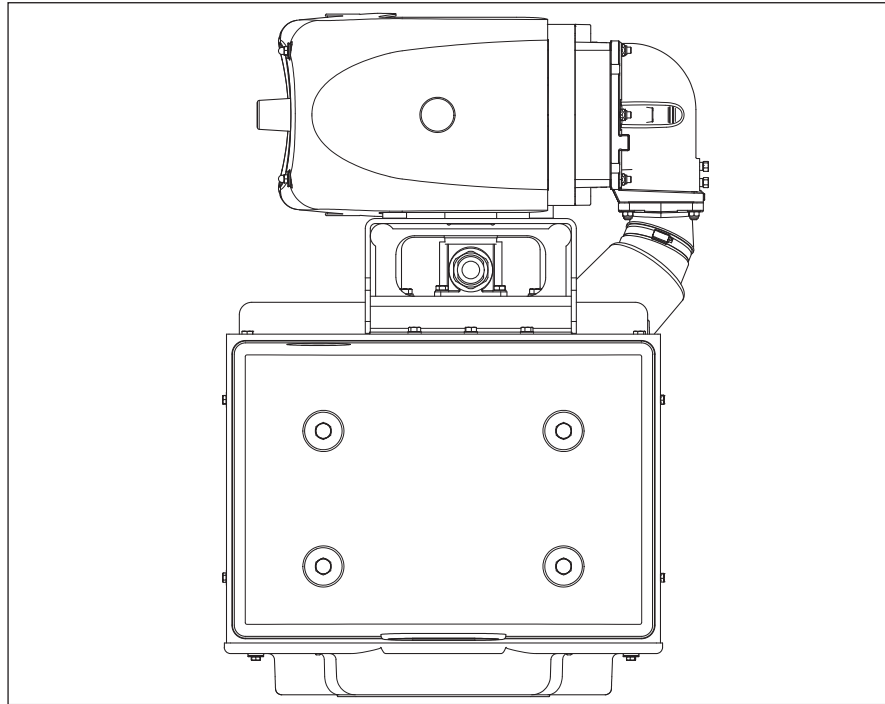


Figure 1. XK Package 5 offset left (OL) - Standard

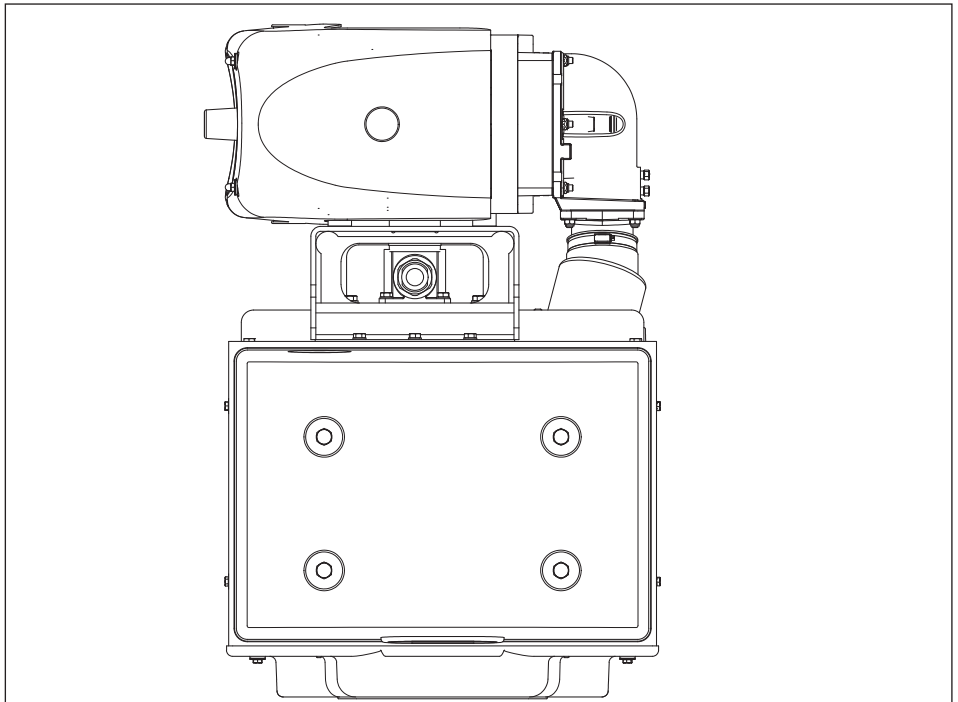


Figure 1. XK Package 5 offset right (OR) - Standard

# General

## 1.3a Dimensions - XK12 standard clockwise build

The general dimensions of both standard packages are shown below

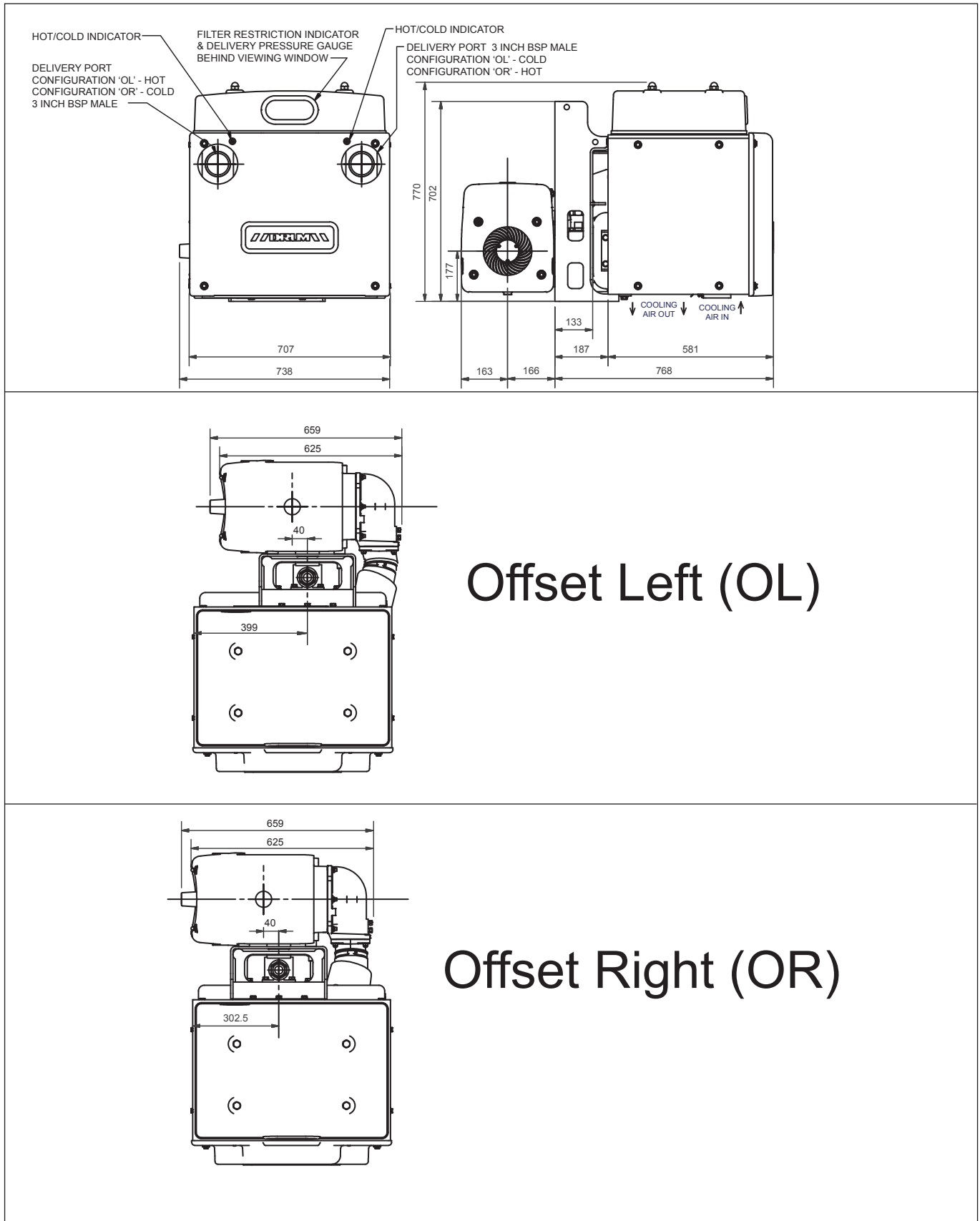


Figure 2. Dimensions - XK12 package 5 - standard builds

# General

## 1.3a Dimensions - XK18 standard clockwise build

The general dimensions of both standard packages are shown below

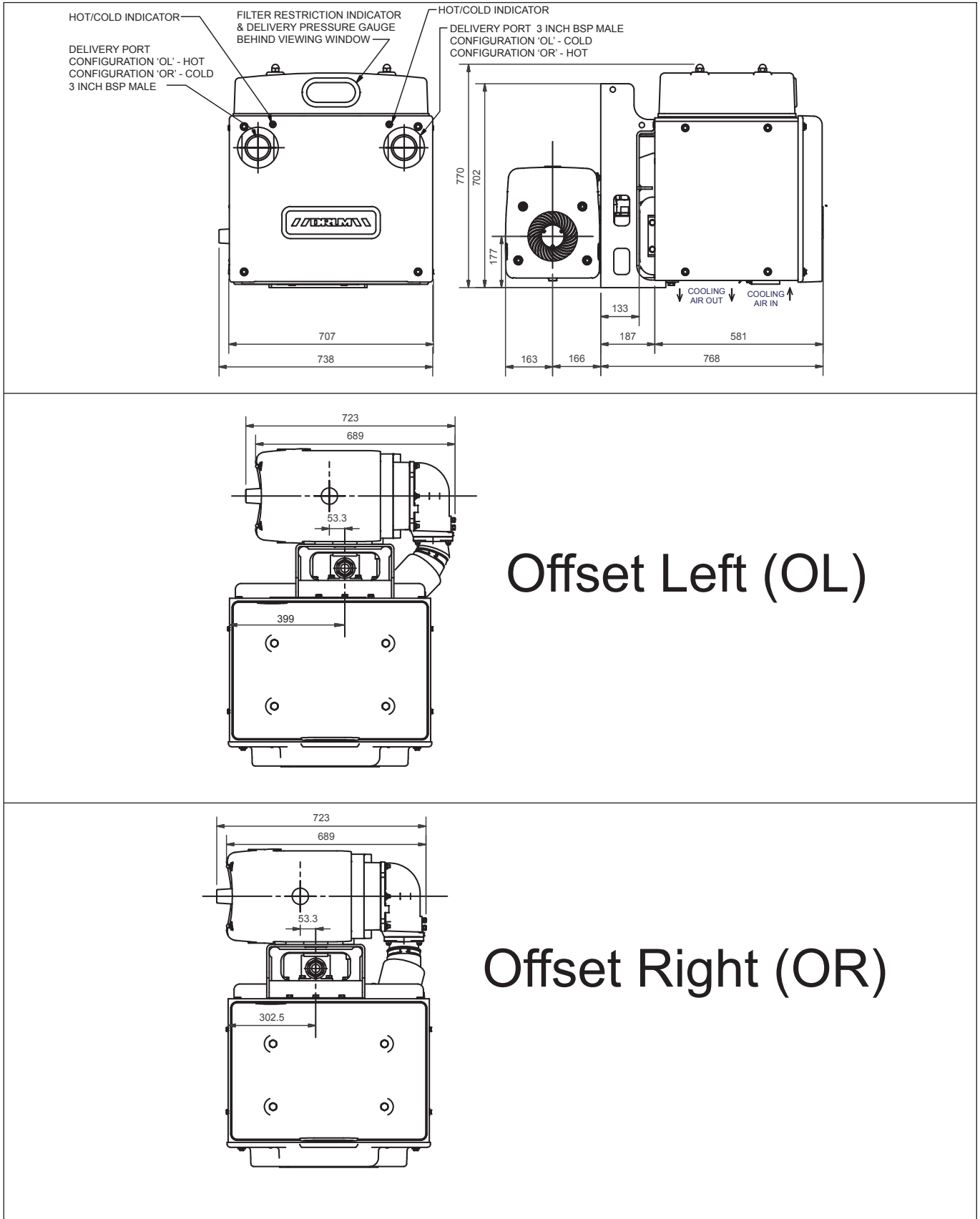


Figure 2. Dimensions - XK18 package 5 - standard builds

# 2 Installation

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## 2.1 General

When selecting the machine mounting position, the following additional points to those given in the main instructions should be considered:

- Access to integral filter (via lid)
- Access to the relief valve
- Air inlet pipe connection and likely path (minimise where possible)
- Position of air inlet connection on the lid (standard or alternative)
- To achieve the best cooling, air entering the radiator should be as cool and as clean as possible to maximise the cooling performance, i.e. install close to the perimeter of the vehicle, away from vehicle exhaust air or other warm air sources.

## 2.2 Lifting

The weight of package 5 not including the torque coupling (6 kg) is:

XK12 - 279.5 kg

XK18 - 290.5 kg

Package 5 should be lifted for installation using the pallet provided.

OR

The top two holes (Fig. 2) on the mounting bracket can be used in conjunction with lifting shackles and a suitably rated rope or sling to lift the package.

Any equipment used for lifting should be rated accordingly.

## CAUTION

Do not lift using other parts of the machine/assembly as this could distort or damage components.



# Installation

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## NOTE

The mounting face to which the package bracket is fitted should be flat to avoid distortion/stress and mounting bolts/locking nuts should be M16, grade 8.8 or higher.

## NOTE

It is the installers responsibility to ensure that the relevant vehicle manufacturer's guidelines for installation of chassis mounted auxillary equipment are also followed when installing this equipment.

## CAUTION

Incorrect drive rotation will damage the compressor.

### 2.3 Mounting and drive

Package 5 should be installed to the chassis using 4 mounting bolts and nuts (Figure 3a - Items 3 and 5) between the main vehicle chassis and mounting bracket. All mounting fasteners should be M16 grade 8.8 (or higher) (See Figure 3a).

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

The mounting bracket should be positioned against the chassis so that the maximum amount of surface to surface contact is made to illiminate any potential flexing of the bracket.

Packing pieces between the mounting bracket and the vehicle chassis may be required on some vehicles to overcome chassis angles or plates and to avoid interference between the compressor and main vehicle prop. shaft. In such cases it may also be necessary to fit a spreader plate between the bracket and the packing pieces to distribute the clamp loads.

The mounting hole centres should be positioned a minimum of 40mm from the top edge of the bracket and a minimum of 30mm from the outer edge of the bracket. Figure 3b shows the preferred location of the mounting holes, however, if required, the hole centres can be positioned elsewhere, within the shaded area shown, to suit already existing chassis holes. The holes should be vertically spaced as far apart as the vehicle chassis will practically allow, and no less than 150mm. If required, further fixing holes, (in addition to the four recommended) may be drilled in any location on the bracket provided it is a minimum of 50mm from any existing holes.

The input drive rotation and air path possibilities are shown in figure 4.

During mounting, the basic machine should be aligned/angled with the gearbox as described in the main XK instructions. The machine can be rotated (+/- 7°) by loosening the three M16 flanged nuts (item 3 - Fig 3a) on the machine.

Always refer to and follow the tractor unit manufacturer's current instructions during installation for fitting the machine or any other work with existing chassis equipment/components.

# Installation

## NOTE

Additional packings may be required between the vehicle chassis and machine mounting bracket depending on other vehicle components

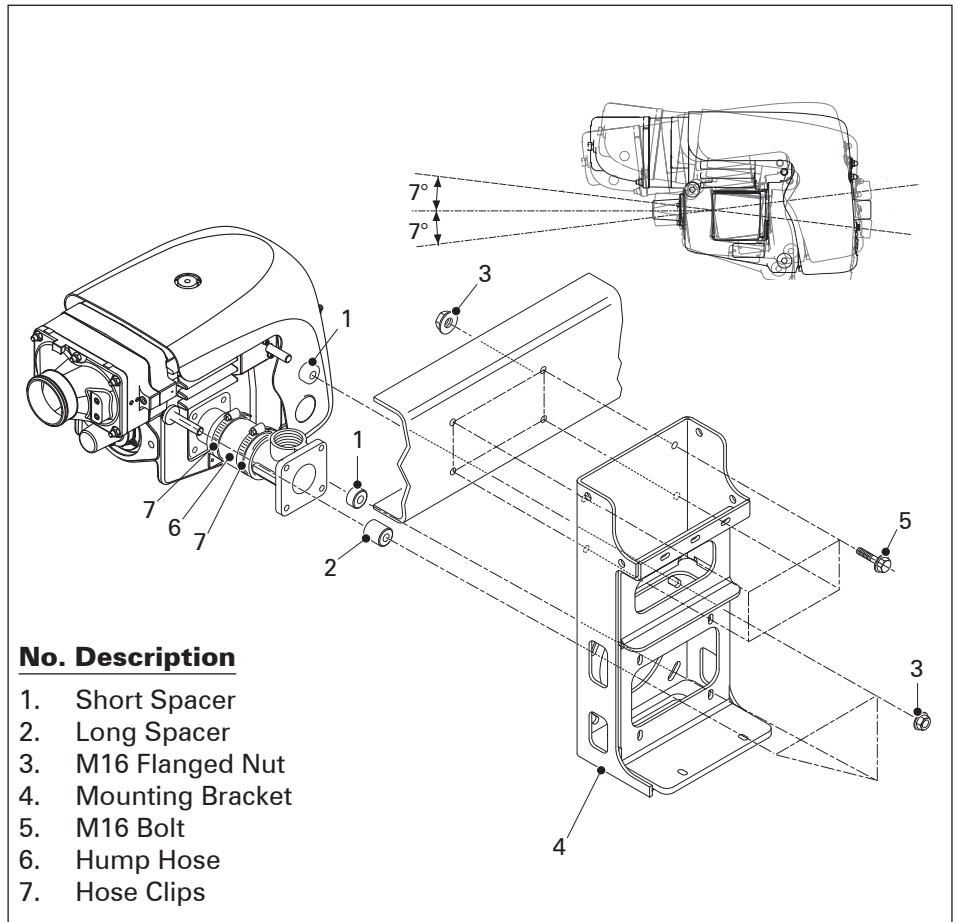


Figure 3a. Mounting fasteners - assembled package

## NOTE

Figure 3b shows the preferred location of the four bracket mounting holes.

If these locations are not suitable the hole centres can be positioned elsewhere within the shaded area shown.

If the locations are changed The holes should be vertically spaced as far apart as the chassis will practically allow, and no less than 150mm.

If required, additional fixing holes may be drilled in any location on the bracket.

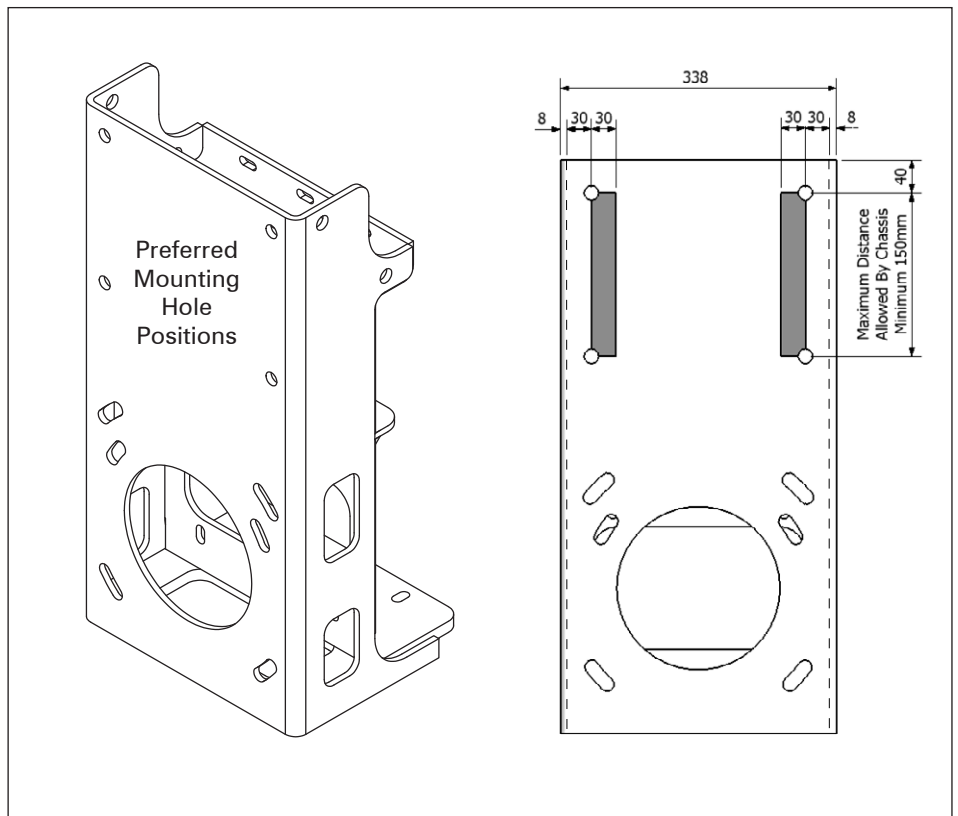


Figure 3b. Mounting hole positions.

# Installation

## 2.3 Mounting and drive (continued)

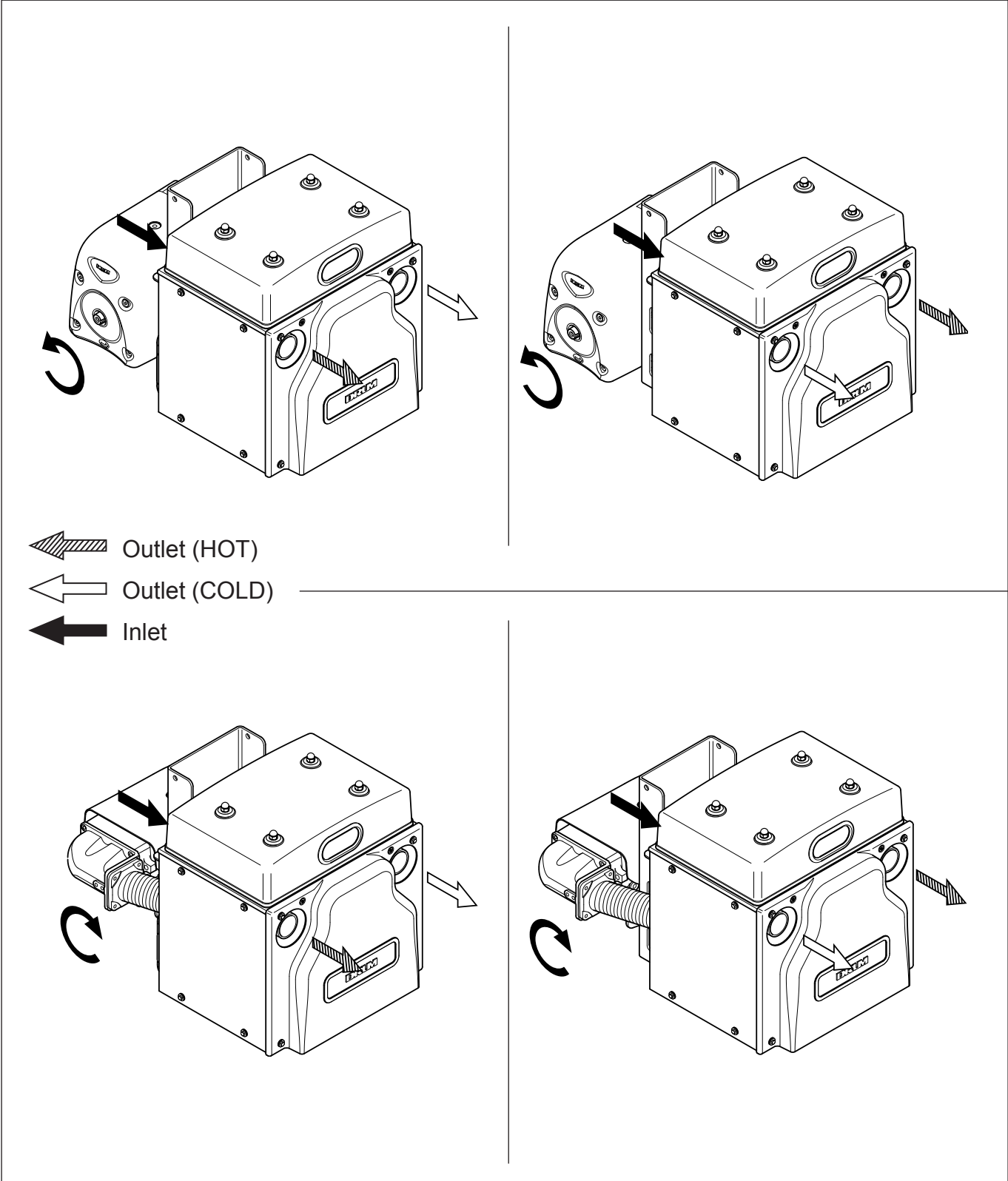


Figure 4. XK package 5 - Mounting & Drive options

# Installation

## 2.4 Changing the compressor input rotation

The process is to generally separate the two modules and then re-assemble with the compressor facing in the opposite direction as follows:

### NOTE

New inlet and discharge flange gaskets will be required (supplied with a new package)

### NOTE

M16 grade 8.8 mounting bolts and nuts should be re-fitted to a torque of 225 Nm

### NOTE

It is important to secure all connections with the hose clips provided to prevent water ingress and possible machine damage

Compressor - See Fig. 5c (next page)

1. Support the machine and ancillary pack independently to prevent damage when the two are separated. Attach a suitably rated eyebolt to the XK basic machine and connect to a crane and lifting hook (see main instructions)
2. Loosen the hose clip (item 3) on the rubber connecting pipe
3. Unscrew and remove the 3 x M16 flanged locking nuts (items 6) and lift away the machine assembly from the ancillary pack/bracket
4. Remove and re-attach the remaining items 2-8 to the opposite side of the machine.
5. Re-attach the machine assembly to the main bracket again using the 3 x M16 flanged locking nuts (item 6).

### Air Inlet Connection - Ancillary Module to Machine

XK package 5 is designed with two connections at the back of the cooler module (see below). The unit is supplied with one of these blanked off and the other connected to the inlet housing of the machine (see figure 5c below)

If the opposite compressor input rotation is required, the machine is rotated to the other orientation (fig 5b) and items 1 to 6 (fig 5a) swapped over to the other connections at the same time.

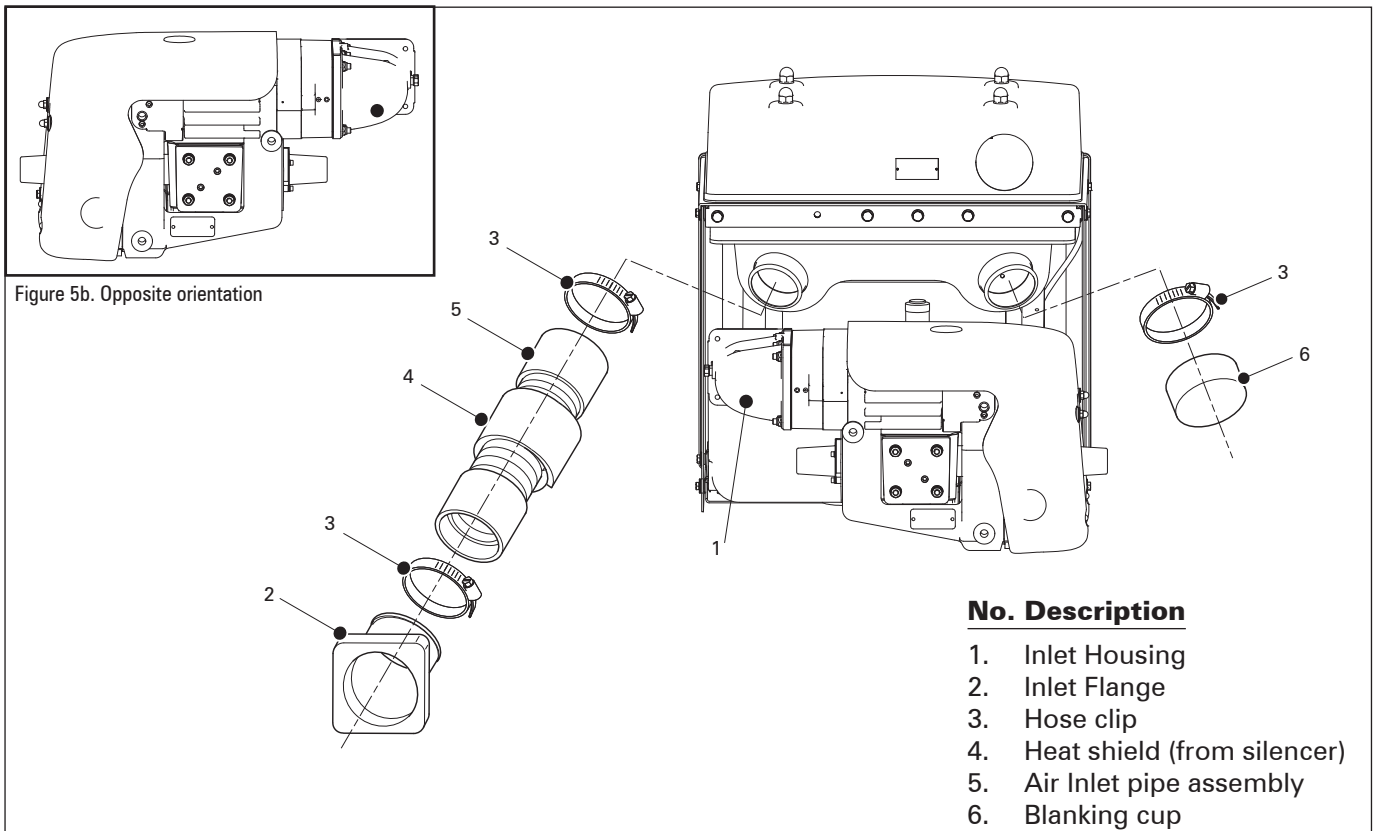


Figure 5a - Cooler module to compressor air inlet connection

# Installation

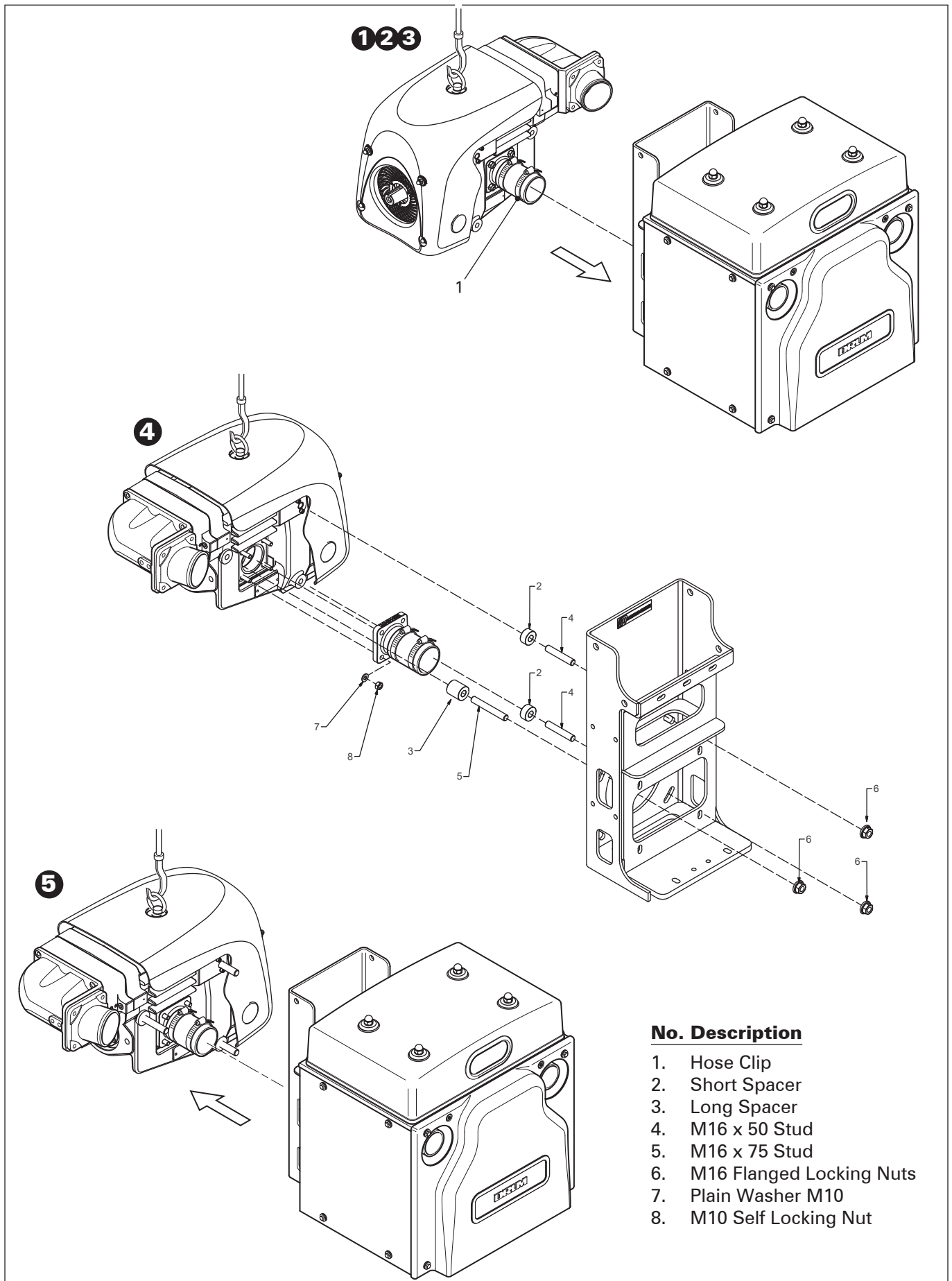


Figure 5c. Changing the XK input rotation

# NOTE

Use a polyurethane based adhesive, either single pack (no mixing, activated by atmospheric moisture) or two pack, to suit installers preference. Adhesive should be suitable for bonding ABS to GRP, with a need for gap filling and flexibility properties.

# Installation

## 2.5 Air Inlet Connection - Atmosphere to Module

Package 5 is supplied with a pre-cut inlet aperture in the ancillary module lid. Adhesive should be applied around the diameter of the air inlet connector (see below) before fitting/bonding into the lid aperture as shown below (fig 6b). Light pressure should be applied to the joint during initial bonding. Only use the adhesive recommended and check the manufacturers advice.

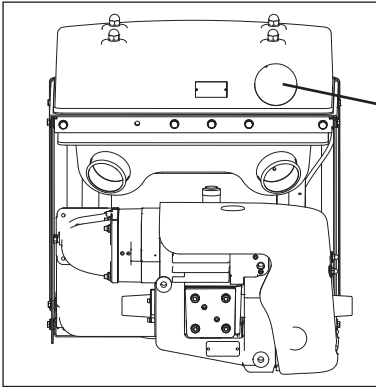


Figure 6a. Air Inlet Connector Position

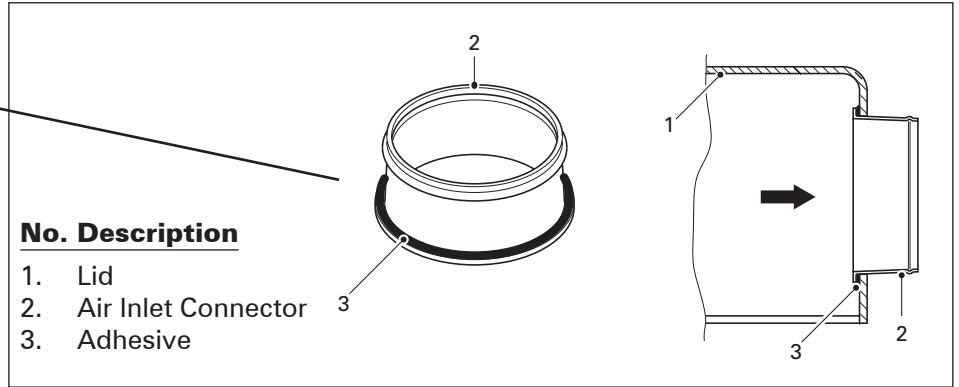


Figure 6b. Fitting Air Inlet Connector

### Alternative Air Inlet Positions

Inlets can be created in different positions around the perimeter of the lid by cutting another aperture and blanking off the standard aperture (fig 6c)

The blanking plate is not supplied with the standard kit, but can be ordered separately under part number 8845300000-2 if required.

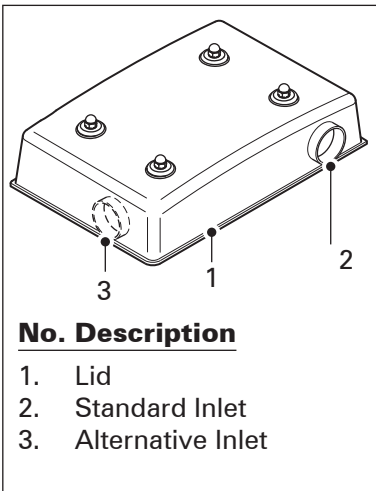


Figure 6c - Alternative inlet positions

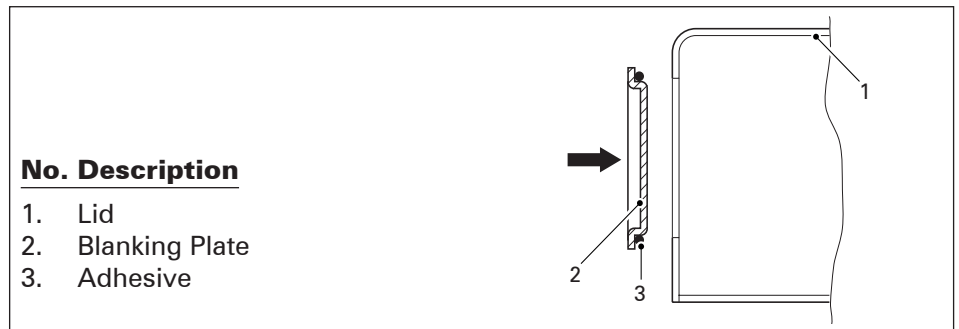


Figure 6d - Fitting Blanking Plate

# NOTE

Only the inlet hose type supplied which will withstand the inlet pressure drops encountered. Inferior hose types can collapse or cause a high inlet depression.

# CAUTION

Always install inlet pipes away from sources of heat.

### Air Inlet Hose

An air inlet hose kit (1 hose, 2 cuffs and 2 hose clips) is provided with the machine. See fig 7

All loose inlet hose cuffs are designed to be screwed onto the flexible hose with exterior grade silicone sealant between. The silicone sealant should be applied to the outside of the hose ends immediately before screwing the cuff into position. Any silicone residue should be removed before installing the hose assembly.

One end of the hose assembly should be fitted to the lid inlet connector (see fig 6c above) and the other should be fitted to a raincap (or similar) in a position that will result in only cool, clean and dry air entering the assembly.

# Installation

## 2.6 Inlet filter and filter blockage indicator

### CAUTION

Failure to clean the air inlet filter will damage the compressor and eventually result in failure.

See figure 7

The package is fitted with a filter blockage indicator (enclosed inside the cooler module), visible through the viewing window on the lid to show when the filter requires cleaning/replacing.

This blockage indicator is set-up to retain the maximum reading and should be reset by pressing the yellow rubber top of the indicator if a more accurate reading is required.

## 2.7 Discharge pressure gauge

See figure 7

The package is fitted with a discharge pressure gauge (enclosed inside the cooler module, visible through the viewing window on the lid) to show the pressure at which the compressor is operating.

When compared with the tank pressure gauge, the XK18 pressure gauge will show a slightly higher reading. This is due to the losses through the components and pipework between the machine discharge flange and vehicle tank.

As with all liquid filled pressure gauges, the gauge must be primed prior to use

### NOTE

The maximum pressure gauge reading will be slightly less than the relief valve setting (normally 2.2 bar g).

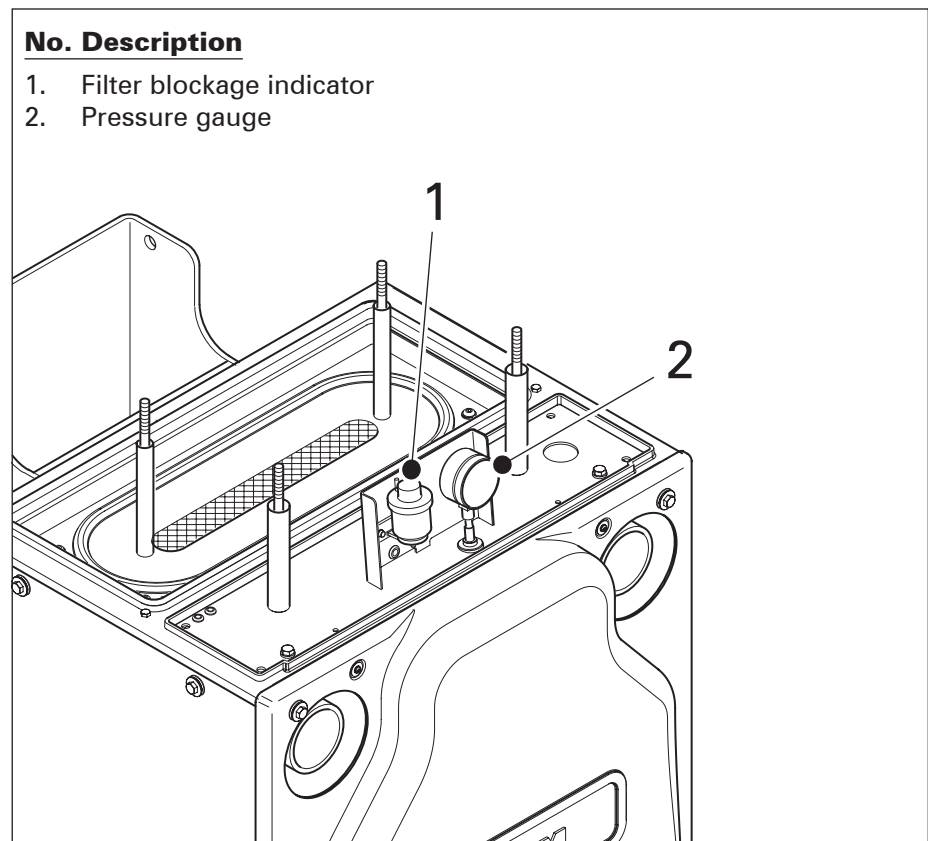
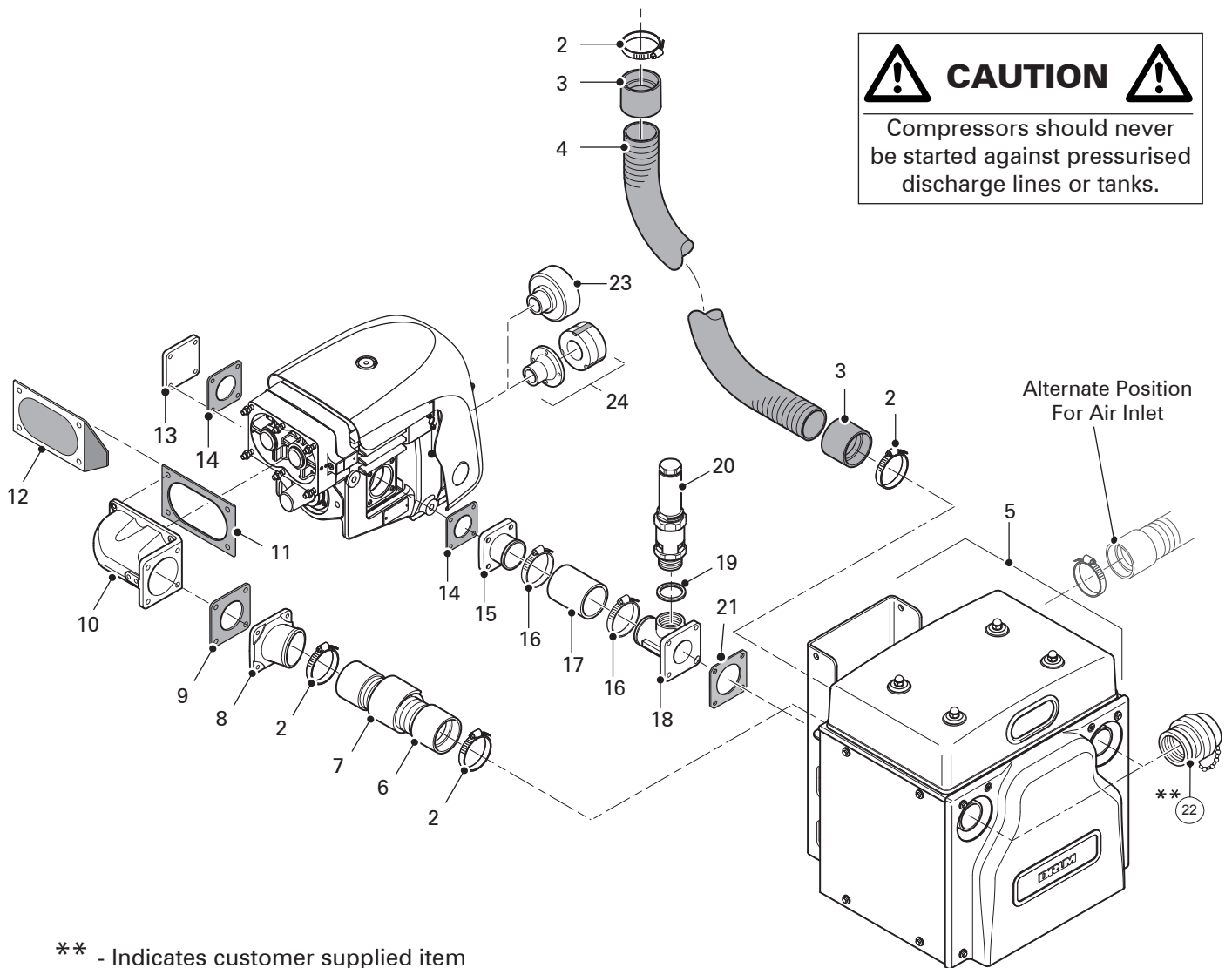


Figure 7 - Filter indicator and discharge pressure gauge

# Installation

## 2.7 XK and Air Cooler Pack Module - Parts Layout



### Ref. No. Description

1	XK Basic M/C
2	Hose Clip
3	Hose Adaptor/Cuff - Nitrile
4	Flexible Hose/Ducting
5	Cooler/Ancillary Module
6	Air Inlet Pipe Assembly
7	Heat Shield
8	Flange - Inlet (Connector)
9	Gasket - Inlet Connector
10	Inlet Flange (Machine)
11	Gasket - Oval Inlet
12	Commissioning Filter
13	Blanking Flange (Discharge)
14	Gasket - Discharge (Machine)
15	Flange - Discharge Connector (Machine)

### Ref. No. Description

16	Hose Clip
17	Hump Hose
18	Flange - Module (Connector)
19	Relief valve sealing washer (Copper)
20	Relief Valve (1.25", 2.5 barg)
21	Gasket - TW1 (Module)
22	Pipework coupling - 3" BSP (e.g. Stortz)
23	Friction Coupling
24	Shear Coupling (Alternative)

### NOT SHOWN

52	Check Valve
53	Check Valve Gasket

Figure 8 XK Machines and Air Cooler Pack



# Installation

## NOTE



The unused connection should remain capped when the other one is connected.

## 2.8 Air cooler

The package is provided with two (3" BSP) cooler discharge connections.

1. One for normal discharge air (often used in tank drying process)
2. One for cooled discharge air.

## Cooling performance

To obtain the maximum cooling effect,

- Do not obstruct the inlet/exit air cooling air paths to/from the fan/radiator.
- Locate the assembly so that only cool air will be drawn into the fan/radiator, i.e. locate away from possible warm air sources (or redirect those sources) such as vehicle exhausts, relief and other valves in the discharge pipe work.

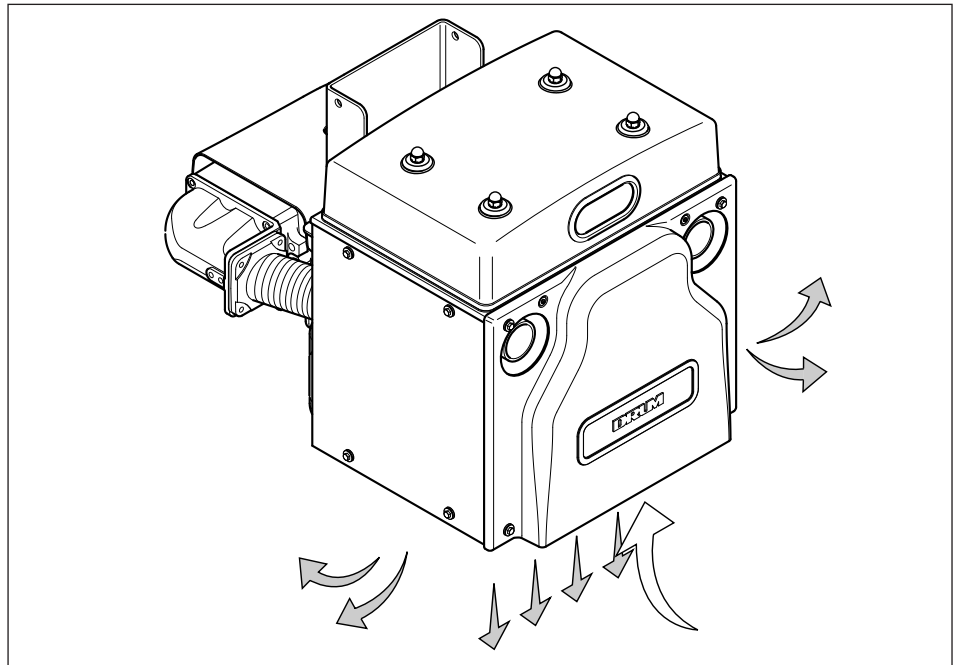


Figure 9. Cooling Air Flow

# Installation

## 2.9 Electrical connection

The cooler should be driven using a 24 volt DC supply and connected as shown below.

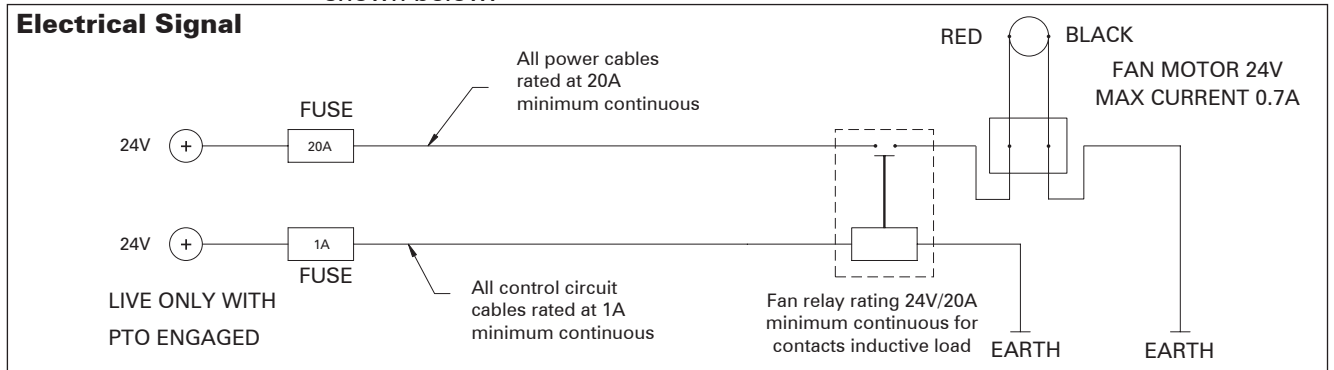


Figure 10a. Electrical signal operated Circuit diagram

### CAUTION

It is the responsibility of the installer to review all wiring/ electrical equipment against any prevailing local and ADR regulations.

All connections to the chassis electrical system, and all details of the electrical wiring, must be strictly in accordance with the chassis manufacturers instructions, and also in accordance with local legislation.

Fuses, if not part of the chassis system, should be located as close as possible to the connection to the chassis system and before any switches, relays etc.

All electrical installation work must be carried out by suitably qualified personnel.

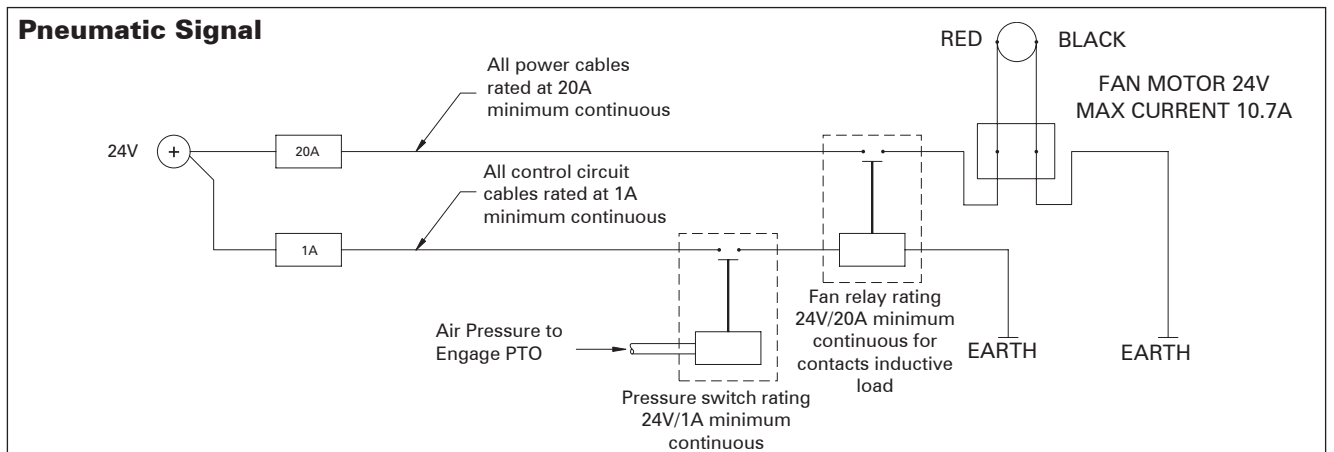


Figure 10b. Pneumatic signal operated Circuit diagram

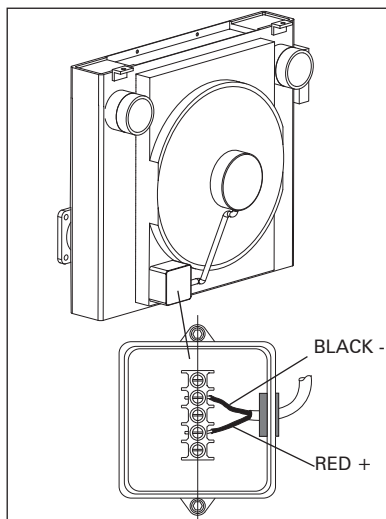


Figure 10c. Electrical Connection

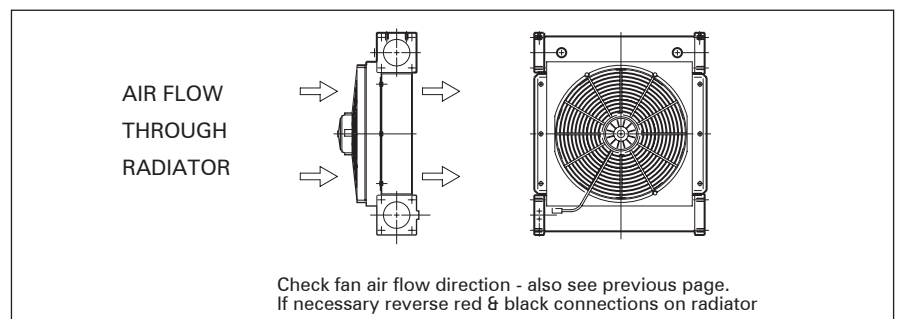


Figure 10d. Air Flow.

# 3

## Maintenance

### NOTE

The inlet depression of a new filter should be less than 60% (23 mbar) in the worst case (1800rpm/1100 m<sup>3</sup>/hr).

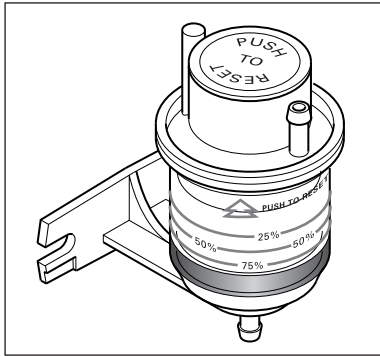
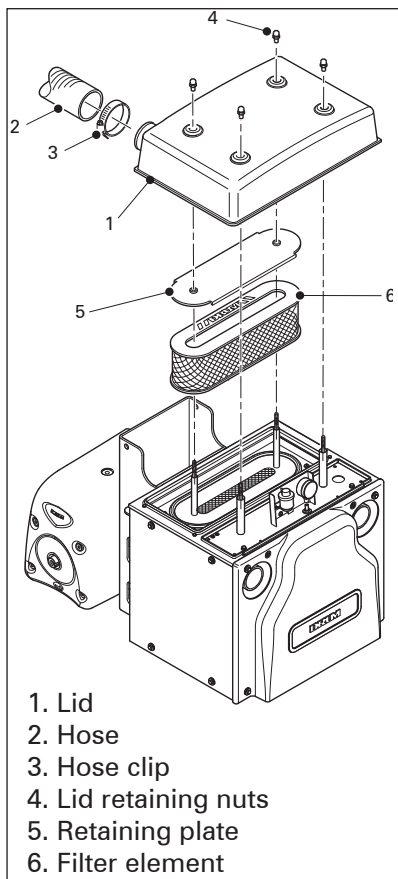


Figure 11a. Blockage indicator

### NOTE

Stop the machine before cleaning/replacing filter elements.



1. Lid
2. Hose
3. Hose clip
4. Lid retaining nuts
5. Retaining plate
6. Filter element

Figure 11b. Replacing the filter element

### 3.1 Replacing/cleaning the Integral Air Filter

#### Blockage/restriction indicator

The blockage indicator is designed to show/hold the maximum inlet depression encountered. It is set to show 100 % blockage when the inlet depression reaches 38 mbar. The element should be replaced/cleaned before the indicator enters the red portion of the blockage scale (>85% = 32 mbar).

If the indicator valve has entered the red portion of the scale (when the compressor is operating) follow the procedure points below.

1. Remove the four lid retaining nuts (item 4) and washers (item 5) and lift up the lid.
2. Press the yellow rubber top of the indicator to reset the indicator
3. Replace the lid and retaining nuts

Note: Tighten the two outer nuts fully home, but only tighten the rear nuts until the sealing rubber around the bottom of the lid seals firmly onto the filter tray.

2. If the indicator still returns to the red portion when the compressor is operating, then the filter must be cleaned or replaced as follows:

#### Accessing the element See figure 11b

Full access to the filter blockage indicator and pressure gauge is gained by following the points below.

The general process is to remove the lid below and filter retaining plate. (See Fig 11). The procedure is as follows:

1. Unscrew the inlet hose clip (item 3) on the inlet filter lid (item 1) and detach the hose (item 2).
2. Remove the four lid retaining nuts (item 4) and take off the lid.
3. Remove the retaining plate (item 5) and filter element (item 6).

Replacement of the element, lid and hose is a direct reversal of the above.

Element part number: 6322447000-2 (standard, 153mm high, 50 micron filter element) (Alternatively 6322647000-2 (non-standard 25 micron filter element)).

#### Cleaning the element

Clean the filter by either :

1. Lightly tapping the element  
or
2. Blowing compressed air through the element filter from the inside outwards.

Note: This will not return the filter to the new condition, but should prolong the life until the element can be more practically replaced.

# Maintenance

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## 3.2 Cleaning the cooling radiator

The radiator should be periodically cleared of debris to maintain efficiency as follows:

- 1.** Remove front cover of the cooler module (after removing the 4 domed nuts) to gain access to the front of the air cooler.
- 2.** Blow through/out the radiator fins with an air line. Access to the rear of the radiator can also be gained underneath the cooler module to clean out that area as well.
- 3.** Replace and re-fix the front cover.

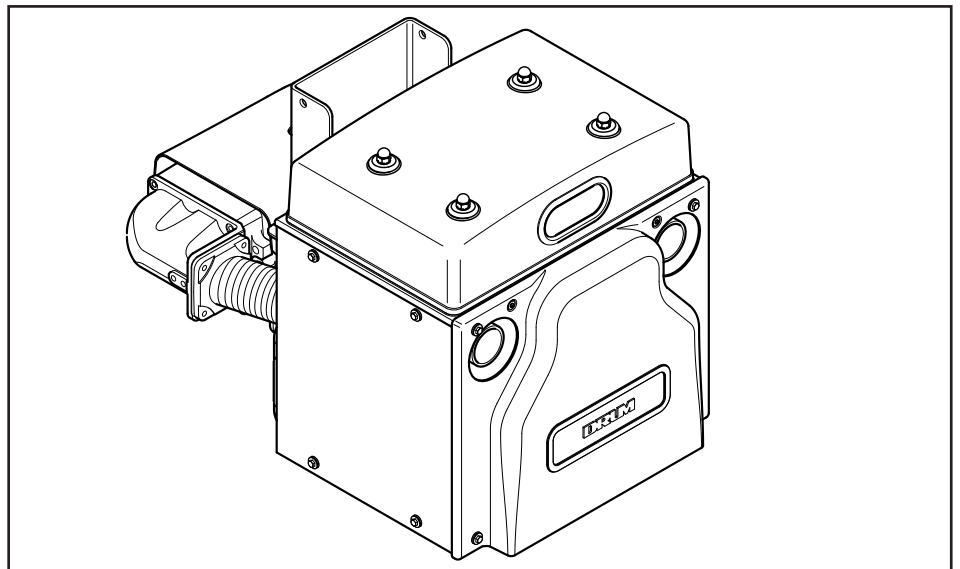


Figure 12. Cleaning the radiator

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The logo for Gardner Denver, featuring the word "Gardner" in a bold, black, sans-serif font above the word "Denver" in a larger, bold, black, sans-serif font. A thick red horizontal line is positioned between the two words.

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