

Illustrated Parts and Service Manual

501/502 Series

Stationary Air Compressors

ST 15926-00 Issue B Mar 00



Introduction

This publication contains parts lists and service information please read it carefully before you attempt to service or carryout adjustments on the compressor.

This service manual should be used in conjunction with the user handbook.

Note: If you need any specialist help or service, please contact your distributor or CompAir UK Hydrovane quoting the MODEL TYPE and SERIAL NUMBER.

Product development

CompAir UK Hydrovane adopt a policy of continual product improvement. The information in this handbook, whilst fully up to date when issued, may be subject to change without notice.

Quality standards

CompAir UK Hydrovane Quality Management Systems are approved to BS EN / ISO 9002.

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(AN INVENSYS COMPANY)

Model range

This handbook relates to all 01/02 50 Hz compressors, model types:

501-009570-9903 onwards

502-010828-9902 onwards

| Classic 01 | Classic 02 |
|------------|------------|
| PURS10 | PURS10 |
| PRDS10 | PRDS10 |
| PUTS10 | PUTS10 |

Terminology:-

| | | |
|---------|---|---|
| 01 & 02 | = | 1.1 & 2.2 kW |
| 10 | = | Normal working pressure (bar) |
| PURS | = | Package Unit, Receiver and Starter |
| PUTS | = | Package Unit, Tripod and Starter |
| PRDS | = | Package Unit, Receiver, Dryer and Starter |

01/02 Classic Parts/Service Manual English

ST 15926-00

Iss B 03/00

OWNERSHIP RECORDS

Model Number: Serial Number:
R.P.M.: Kw:
Maximum Bar:

Local CompAir UK Distributor

Name: Contact:
Address: Telephone:
..... Fax:
..... Email:

GENERAL HEALTH AND SAFETY PRECAUTIONS

Please read carefully and proceed in accordance with the following instructions before installation, operation, maintenance or repair of the compressor unit.

The Health and Safety at Work Act, 1974

In order to comply with your responsibilities under the above act, it is essential that the compressor is transported, positioned, installed, operated and maintained by competent persons in accordance with the instructions in this handbook.

The compressor warranty will be invalidated if unapproved spare parts or lubricants are used. Using such items may cause the efficiency and service life of the compressor to be reduced and could create a hazardous condition over which CompAir UK Hydrovane has no control.

Failure to maintain the compressor correctly, or modifying it without prior approval from CompAir UK Hydrovane, may also create a hazardous condition. This will also invalidate the warranty.

Consequential damage of any nature is not covered by the warranty.

Read and fully understand the contents contained in the user handbook.

Ensure that the user Handbook is not permanently removed from the compressor.

Check that there are no signs of damage and/or oil leaks from the air-end, cooler and associated pipework.

After completing work, tools and foreign matter should be removed from the compressor and its surrounding area.

In the unlikely event of a compressor fire, dry powder or carbon dioxide fire extinguishers should be used. Never use water.

Before Working on Compressor

1. Potentially dangerous voltages are used to power this machine. Do not carry out any work until the isolator is locked in the off position. Fit a safety notice to the isolator advising that work is being carried out and that the isolator must not be switched on. If in doubt then a qualified electrician may remove the fuses and keep them in a secure place until work is complete.
 2. Ensure the compressor has been safely isolated from the main air system and cannot be re-introduced until all work has been completed. Fit a safety notice to the isolation valve advising that work is being carried out.
 3. Do not undertake any work until the compressor and receiver if fitted, have been relieved of all pressure.
 4. Wait until the compressors vent down cycle is complete.
 5. Open the test valve to release any pressure contained in the aftercooler or associated pipework.
 6. Check that the air-end pressure gauge reads zero. Do not proceed until it does.
 7. Carefully unscrew the compressor filler plug. If any air or oil escapes before plug is fully removed stop! Do not remove the plug until all pressure is lost.
 8. Safety devices fitted to the compressor or air-line system should be checked at regular intervals and replaced if faulty. They should not be tampered with or modified. Non return valves should not be used as isolation devices.
 9. To ensure the compressor operates safely you must carry out the specified maintenance procedures.
 10. Only approved lubricants should be used for flushing purposes.
 11. Extreme caution should be taken if the compressor has been subjected to severe operating temperatures or fire. Certain components may contain fluoroelastomer materials and under these conditions can leave extremely corrosive residues. Severe burns and permanent skin and tissue damage can be a result of skin contact.
 12. The Health and Safety information contained in this Handbook is only intended to give general guidelines.
-

Introduction

GENERAL HEALTH AND SAFETY PRECAUTIONS (continued)

When Operating the Compressor

1. When in automatic mode the compressor will re-start without warning.
2. If an automatic re-start device is fitted (allowing the compressor to start when power is re-applied), or operation is controlled from a remote location, additional warnings will be required.
3. Do not remove any plugs or release pipework when the compressor is running.
4. Do not attempt to open the starter enclosure while the compressor is operating.
5. Beware of hot surfaces, both the air-end and electric motor are designed to run at elevated temperatures.
6. Compressed air is potentially dangerous and can be fatal if misused. Do not allow compressed air jets, discharged from any pipe or nozzle, to make contact with your body.
7. Wear safety glasses and suitable clothing when using, or working in an area where compressed air is being used.
8. Hazardous vapours/fumes can be produced if compressed air is used to remove chemicals, cleaning agents and lubricants from equipment and components. Suitable respiratory and extraction equipment may be required in these circumstances. Never use compressed air for cleaning personal clothing.
9. Do not use air directly from compressors for breathing purposes. If the air is to be used for human consumption then it must be subjected to further treatment to ensure that the levels of contaminants, odour and moisture meet the requirements of BS 4275 1974
10. We recommend that the air supply to hand held air guns is regulated to a lower pressure (refer to local Health and Safety regulations).
11. Do not insert any object or part of body through any opening of the compressor enclosure. Serious personal injury and/or damage may result.
12. Never run the compressor when any covers or guards are missing, unless advised to do so in this handbook.

Potential Oil Health Hazards

This section relates to Fluid Force oil. For other lubricants refer to the Health and Safety Instructions issued with the relevant product.

1. There are no significant hazards associated with this product when properly used and in the application for which it was designed. Frequent and/or prolonged skin contact may give rise to skin irritations and it is recommended that protective gloves are worn. The carcinogenic action of mineral oils should be brought to the attention of all users. *
2. The oil may be hot so take care when carrying out oil changes.
3. Do not keep oily rags in pockets or wear contaminated clothing. Do not inhale fumes or vapours. Do not swallow. Avoid eye contact.
4. Always wash hands after use and before eating, drinking, smoking and using the toilet.
5. **Ingestion** - Do not induce vomiting because of the risk of aspiration. Wash mouth out with water. Give 1/2 pint milk. Seek immediate medical attention.
6. **Skin Contact** - *Mildly irritating. Remove by wiping. Wash with soap and water. Apply emollient cream.

7. **Eye Contact** - *Mildly irritating. Flush with copious amounts of warm water. Seek medical advice if necessary.

8. **Aspiration** - If there is any suspicion of aspiration into the lungs (for example during vomiting) admit to hospital immediately.

9. **Inhalation** - Remove from exposure into fresh air. If necessary give artificial respiration or oxygen. Seek medical advice.

10. **Pressure injection** - Obtain immediate medical attention, even if injury appears minor.

*** See Cautionary Notice SHW 397 'Effects of Mineral Oil on the Skin' and MS(B) 5 'Skin Cancer Caused by Oil' published by the Health and Safety Executive.**

11. **Spillage** - Soak up with absorbent clay.

12. **Waste Disposal** - Oil, condensate, filter elements etc. should be disposed of in accordance with local regulations. Do not allow oil to contaminate water supplies.

Warnings, Cautions and Notes

1. Warning

'WARNING' is used in the text of this handbook to identify specific hazards which can cause injury or death. This type of hazard is identified below.

Risk of electric shock



Risk of danger



Risk of hot surfaces



Pressurised vessel



Pressurised component or system



Unit is remotely controlled and may start without warning



Eye Protection Must be worn



Dust protection must be worn



Read the instruction manual



Do not operate the machine without the guard being fitted.



2. Caution

'CAUTION' is used in the text of this handbook to identify incorrect procedures which can cause damage to the compressor.

3. Notes

'NOTE' is used in the text of this handbook to draw attention to specific points of importance.

Hydrovane declines all liability in the event of material damage or bodily injury resulting from negligence in the application of these precautions, from non-observation or lack of elementary supervision in respect of handling, operation, servicing or repair, even if not expressly stated in this instruction notice.

Servicing requirements

Note: The following preventive maintenance charts cover all Hydrovane compressors using Hydrovane Fluid Force oils. The work to be carried out must be done on or before the hours shown for this action.

Read health and safety precautions before starting any work.

Service schedule: Fluid Force Clear Oil (1000 Hour oil change)

The bulk oil temperature must not exceed 90°C. If the oil is working above this temperature, the oil life will be reduced.

Note: When changing to Fluid Force Clear the compressor must be flushed out with Fluid Force Prime in order to comply with USDA H1 standard.

| Preventative Maintenance Schedule | | Fluid Force Clear | | | | | | | |
|--|----|-------------------|-----------|------------|----------------|----------------|----------------|-----------------|-----------------|
| Maintenance Actions and Manual Reference | | Install | Every Day | Every Week | Every 1000 hrs | Every 2000 hrs | Every 6000 hrs | Every 12000 hrs | Every 24000 hrs |
| Suitable sited | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Adequate ventilation | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Ambient temperature | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Sufficient access | | ✓ | | | | | | | |
| Clear of airborne contaminants | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Torque electrical connections | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check oil level at filler plug | 1B | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check correct drive rotation | | ✓ | | | | | | | ✓ |
| Check for air leaks | 5I | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check for oil leaks | 5J | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check air filter | 1C | ✓ | | | | | | | |
| Check power on load | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check power off load | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check oil temperature | 1B | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check motor cable glands secure | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check motor for damage | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check motor for loose connections | 1C | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check motor cables and earth | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check motor for vibration | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check oil seal | | | | | | ✓ | ✓ | ✓ | |
| Check drive media | | | | | | | ✓ | ✓ | ✓ |
| Check operation of non-return valve | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check starter contactors | | | | | | | ✓ | ✓ | ✓ |
| Check motor insulation resistance | | | | | | | | | ✓ |
| Clean air/oil radiator external | 1C | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clean external dirt from motor | 1C | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clean external dirt from compressor | 1C | | | | ✓ | ✓ | ✓ | ✓ | ✓ |

Introduction

| Preventative Maintenance Schedule | | Fluid Force Clear | | | | | | | |
|--|----|-------------------|-----------|------------|----------------|----------------|----------------|-----------------|-----------------|
| Maintenance Actions and Manual Reference | | Install | Every Day | Every Week | Every 1000 hrs | Every 2000 hrs | Every 6000 hrs | Every 12000 hrs | Every 24000 hrs |
| Clean air filter | | ✓ | | ✓ | | | | | |
| Change Fluid Force Clear oil | 1C | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Change air filter | 1C | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Change intake valve seals | 2A | | | | | ✓ | ✓ | ✓ | ✓ |
| Change MPV seals | 1D | | | | | ✓ | ✓ | ✓ | ✓ |
| Change separator element | 1C | | | | | ✓ | ✓ | ✓ | ✓ |
| Change thermal motor (501 PURS) | | | | | | | | | ✓ |
| Change drive media | 2C | | | | | | | | ✓ |
| Change oil return filter | | | | | | | | | ✓ |
| Change oil seal | 1F | | | | | | | | ✓ |
| Change pressure gauge | | | | | | | | | ✓ |
| Test minimum pressure valve | 5E | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Test air delivery | 5C | ✓ | | | | ✓ | ✓ | ✓ | ✓ |

Service schedule: Fluid Force 2000 (2000 Hour oil change)

The bulk oil temperature must not exceed 90°C (Fluid Force 2000) or 100°C (Fluid Force HPO). If the oil is working above this temperature, the oil life will be reduced.

Note: When changing recommended oil types it is advisable to flush the compressor.

| Preventative Maintenance Schedule | | Fluid Force 2000/HPO | | | | | | | |
|--|----|----------------------|-----------|------------|----------------|----------------|----------------|-----------------|-----------------|
| Maintenance Actions and Manual Reference | | Install | Every Day | Every Week | Every 1000 hrs | Every 2000 hrs | Every 6000 hrs | Every 12000 hrs | Every 24000 hrs |
| Suitable sited | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Adequate ventilation | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Ambient temperature | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Sufficient access | | ✓ | | | | | | | |
| Clear of airborne contaminants | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Torque electrical connections | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check oil level at filler plug | 1B | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check correct drive rotation | | ✓ | | | | | | | ✓ |
| Check for air leaks | 5I | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check for oil leaks | 5J | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check air filter | 1C | ✓ | | | ✓ | | | | |
| Check power on load | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check power off load (PUTS) | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check oil temperature | 1B | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Check motor cable glands secure | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check motor for damage | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check motor for loose connections | 1C | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check motor cables and earth | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check motor for vibration | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check oil seal | | | | | | ✓ | ✓ | ✓ | |
| Check drive media | | | | | | ✓ | ✓ | ✓ | |
| Check operation of non-return valve | | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Check starter contactors | | | | | | | ✓ | ✓ | ✓ |
| Check motor insulation resistance | | | | | | | | | ✓ |
| Clean air/oil radiator external | 1C | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clean external dirt from motor | 1C | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clean external dirt from compressor | 1C | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clean air filter | | | | ✓ | ✓ | | | | |
| Change Fluid Force 2000 oil | 1C | | | | | ✓ | ✓ | ✓ | ✓ |
| Change air filter | 1C | | | | | ✓ | ✓ | ✓ | ✓ |

Introduction

| Preventative Maintenance Schedule | | Fluid Force 2000/HPO | | | | | | | |
|--|----|----------------------|-----------|------------|----------------|----------------|----------------|-----------------|-----------------|
| Maintenance Actions and Manual Reference | | Install | Every Day | Every Week | Every 1000 hrs | Every 2000 hrs | Every 6000 hrs | Every 12000 hrs | Every 24000 hrs |
| Change intake valve seals | 2A | | | | | | | | ✓ |
| Change MPV seals | 1D | | | | | ✓ | ✓ | ✓ | ✓ |
| Change separator element | 1C | | | | | ✓ | ✓ | ✓ | ✓ |
| Change thermal motor (501 PURS) | | | | | | | | | ✓ |
| Change drive media | 2C | | | | | | | | ✓ |
| Change oil seal | 1F | | | | | | | | ✓ |
| Change pressure gauge | | | | | | | | | ✓ |
| Test minimum pressure valve | 5E | ✓ | | | | ✓ | ✓ | ✓ | ✓ |
| Test air delivery | 5C | ✓ | | | | ✓ | ✓ | ✓ | ✓ |

Service Kits

Only use genuine CompAir UK Hydrovane parts and approved oils. **Oils must not be mixed.**

Service kits contents

| Item | Part Number | Quantity | Description | Chapter Location |
|-------------------------------|-------------|----------|-----------------------------|------------------|
| KM51 - Maintenance Kit | | | | |
| 1 | 74015 | 1 | Air filter | 2A |
| 2 | 57029 | 1 | Separator element | 2A |
| 3 | 9609 | 1 | Bonded Seal | |
| 4 | 9611 | 1 | Bonded Seal | 2B |
| 5 | 9613 | 1 | Bonded Seal | |
| 6 | 9615 | 1 | Bonded Seal | 2B |
| 7 | 9703 | 1 | 'O' Ring | 2A |
| 8 | 9709 | 1 | 'O' Ring | 2A |
| 9 | 9711 | 1 | 'O' Ring | 2A |
| 10 | 9821 | 1 | 'O' Ring | 2A |
| KT52 - Top Up Kit | | | | |
| 1 | 71553 | 1 | Oil seal | 2B |
| 2 | 56391 | 1 | Gauge | 2A |
| 3 | 74014A | 2 | Shim, Red | 2B |
| 4 | 74014B | 2 | Shim, Blue | 2B |
| 5 | 74014C | 2 | Shim, Green | 2B |
| 6 | 73101 | 1 | Gasket, Separator End Cover | 2A |
| 7 | 58365-01 | 1 | Gasket (cork) | 2B |
| 8 | 71550 | 1 | Gasket (rubber) | 2B |
| 9 | 9707 | 10 | 'O' Ring | 2B |
| 10 | 9718 | 1 | 'O' Ring | 2A |
| 11 | 32653 | 1 | Oil return plug assembly | 2A |
| 12 | 56300 | 1 | 'O' Ring | 2B |
| 13 | 56410 | 1 | Flexible pipe | |
| 14 | 56422 | 1 | Valve seat | 2A |
| 15 | 56423 | 1 | Coupling element (white) | |
| 16 | 56528 | 1 | Insert | 2B |
| 17 | 56565 | 1 | Coupling element (black) | 2D |
| 18 | 56624 | 1 | Fibre washer | 2A |
| 19 | 58327 | 2 | Copper washer | 2A |
| 20 | 70952 | 1 | Coupling element (blue) | 2C, 2D |
| 21 | 9754 | 1 | 'O' ring | |
| 22 | 9648 | 1 | Copper Washer | |
| 23 | 58117 | 1 | Lens | |
| 24 | 58426 | 1 | Lens clip | |

Note: Spare parts to be stored in original packaging and in a dry environment. Repaired or replacement units should be protected against corrosion and mechanical damage during storage.

Introduction

Key to symbols used



Torque Setting Nm.



Spanner Required (mm) A/F



Grease Required (Specification)



Allen key Required (mm)



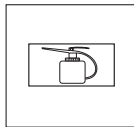
Loctite Required and Specification Number



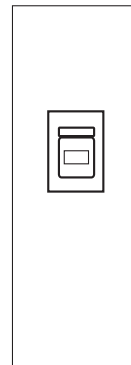
Service Tools Required and Part Reference



Lubricate With Sump Oil



| Recommended Oils |
|-------------------|
| Fluid Force Clear |
| Fluid Force 2000 |



| Recommended Grease |
|---------------------|
| Silkolene 660 |
| Motor Grease |
| Esso Unirex N3 |
| Shell Albida R2 |
| Shell Nerita HV |
| SKF LGHQ3 |
| Castrol Optimol PD2 |

Note: Do not mix oils.

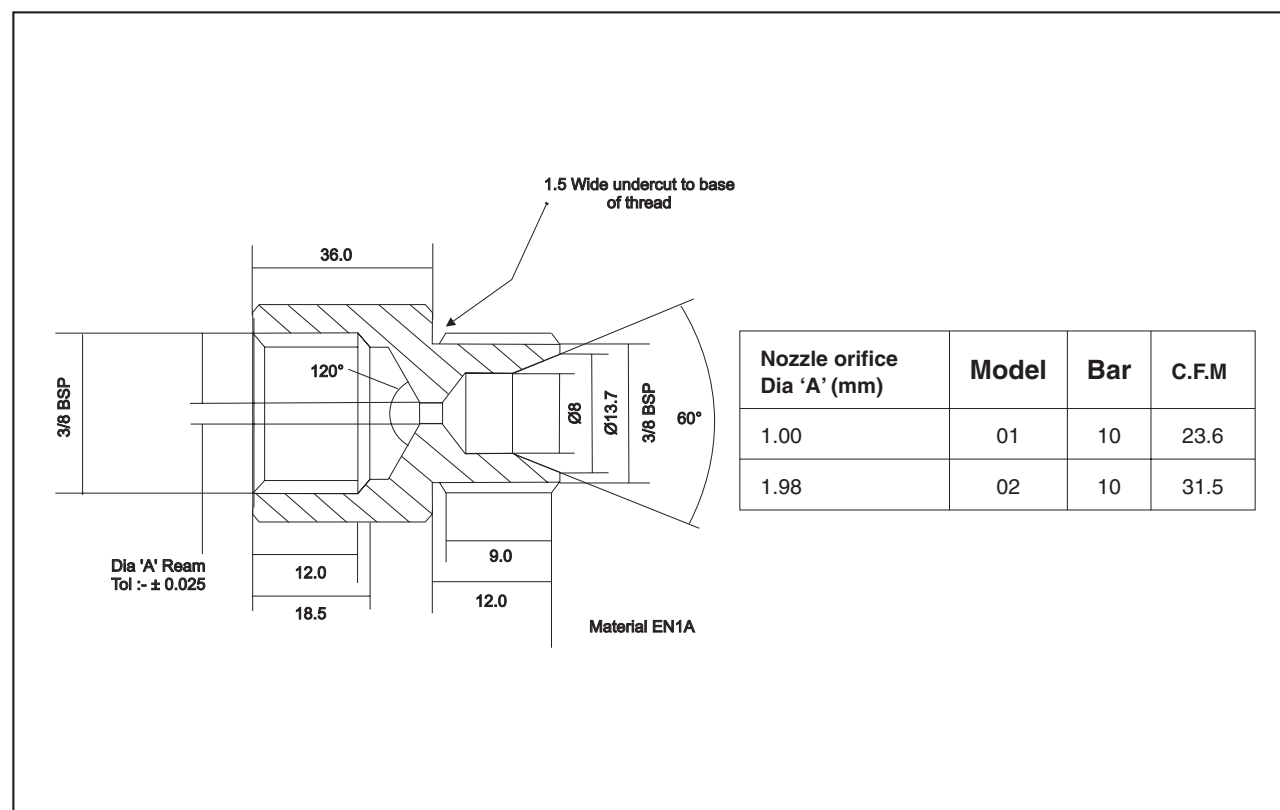
Torque settings

Listed below are recommended torque settings.

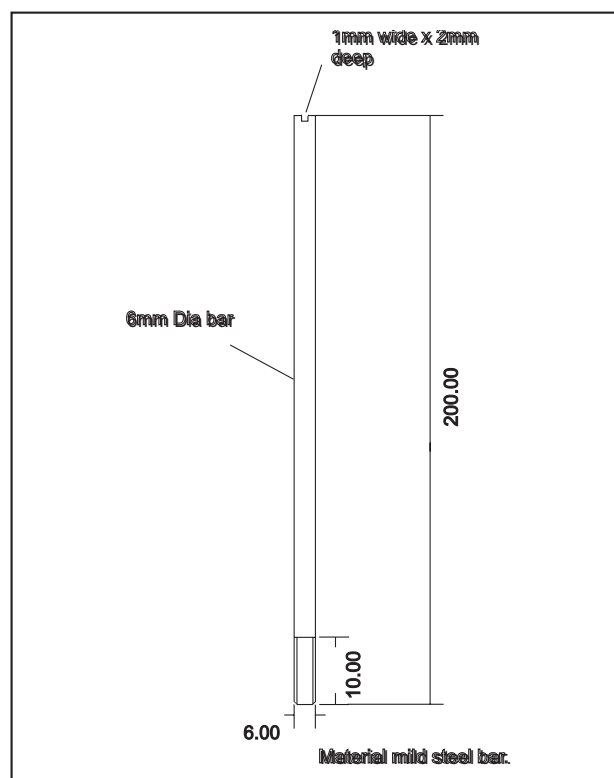
Note: Torque settings must be applied when indicated.

| Torque Settings | |
|------------------|--------------|
| Thread Size (mm) | Setting (Nm) |
| 6 | 15 |
| 8 | 35 |
| 10 | 60 |
| 12 | 95 |
| 16 | 160 |
| 42 | 400 |

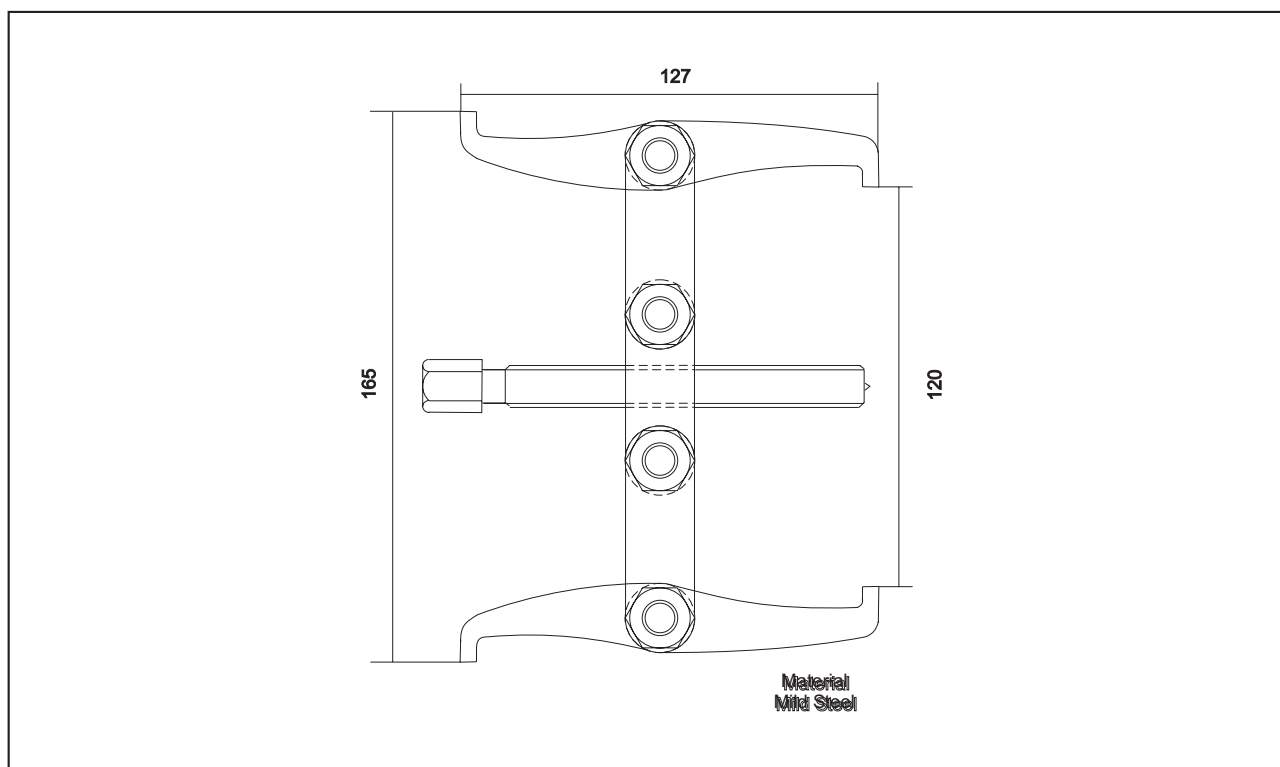
Service Tools required



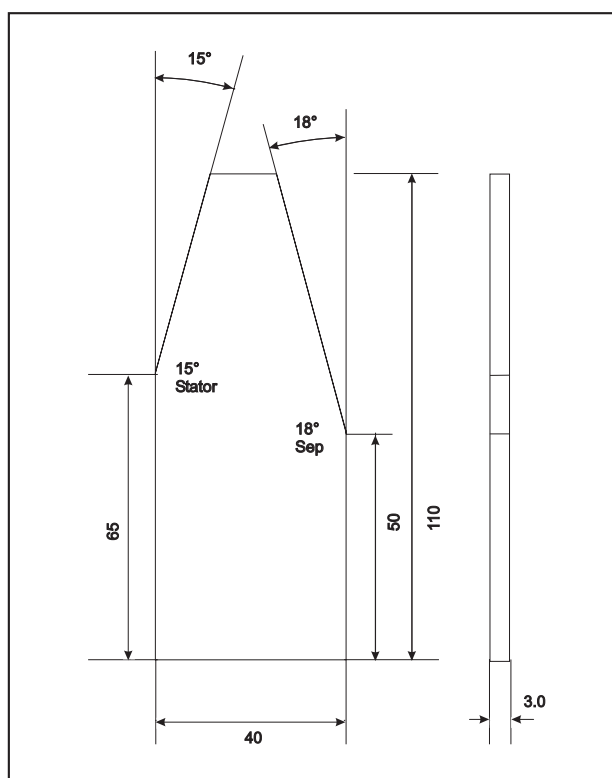
Service Tools (Test Nozzle)



Stator Slave Stud (S73)



Two Leg Puller (S34)



Setting Gauge (S89)

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Parts List and Service Manual

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Chapter 1

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A Introduction

WARNING !

READ HEALTH AND SAFETY PRECAUTIONS BEFORE YOU START ANY SERVICE WORK.

Ensure genuine parts are available for fitment.

Frequency of service work will depend on:-

- a) Time periods mentioned in introduction.
- b) Climatic conditions.
- c) Installation.

B - Checking Operation of the Compressor

Check the compressor operating temperature

Wait until air-end vent down cycle is complete.

Check that the air-end pressure gauge reads zero.

Pour a small amount of oil into the thermometer pocket of the oil filler plug. Screw a temperature gauge or thermometer into the thermometer pocket.

Assuming the compressor is serviced correctly the machine is capable of operating in ambient temperatures up to a maximum of 40°C. At this ambient the bulk oil temperature measured at the filler plug should be 70-90°C.

Check oil temperature. When the compressor is working the temperature should be:-

| | |
|--------------------------------------|------------|
| Initial start-up and warm-up period. | < 70°C |
| Optimum working temperature. | 70 - 95°C |
| High temperature. | 95 - 100°C |
| Stop ! See fault finding section. | >100°C |

Check pressure - air-line systems

Check the air-line system pressure by using the receiver mounted pressure gauge.

| Condition | 10 bar |
|----------------------------|--------------------|
| When compressor is stopped | 9.6 - 10.4 bar |
| Normal working pressure | 8.0 - 9.6/10.4 bar |

Check pressure - compressor air-end

To check the air-end pressure, use the pressure gauge located in the air-end.

| Condition | 10 bar |
|--------------------------------------|--|
| Pressure when stopped | After vent down air-end pressure should read 0 bar |
| Initial start up (3 seconds approx.) | 0 - 4.0/6.0 bar |
| When charging the air-line | 4.0/6.0 - 9.6/10.4 bar |
| Normal working pressure | 8.0 - 9.6/10.4 bar |
| When compressor is stopped | 9.6/10.4 - 0 bar |

Check oil level

- Check that the air-end pressure gauge reads zero.
- Remove filler plug and check inside oil chamber.
- Oil should be filled to overflow if not top up (see oil top-up procedure).

Draining air receiver (see fig 1.1)

- Wait for air-end vent down cycle to finish.
- Position suitable container beneath condensate drain valve (E).

WARNING !



THE AIR RECEIVER IS PRESSURISED, TAKE GREAT CARE WHEN CARRYING OUT THE NEXT OPERATION. DO NOT ALLOW ANY COMPRESSED AIR JETS TO MAKE CONTACT WITH YOUR BODY.

- Carefully open drain valve (E) and allow pressure to fall slowly to zero. Collect all condensate drained from receiver.

Note: Condensate may contain traces of oil and must be disposed of in an approved manner.

- Close drain valve (E) and open air outlet valve (A).

C - Basic Service Procedures

WARNING !



STOP THE COMPRESSOR AND ISOLATE FROM MAINS ELECTRICAL SUPPLY. LOCK THE ISOLATOR IN THE OFF POSITION. FIT A SAFETY NOTICE TO THE ISOLATOR ADVISING THAT WORK IS BEING CARRIED OUT ON THE COMPRESSOR.

CLOSE THE AIR OUTLET VALVE TO ISOLATE THE COMPRESSOR FROM THE AIR-LINE SYSTEM. FIT A SAFETY NOTICE TO THE VALVE ADVISING THAT IT IS NOT TO BE OPENED.

DO NOT PROCEED UNTIL GAUGE READS ZERO!

WHEN CHANGING RECOMMENDED OIL TYPES IT IS ADVISABLE TO FLUSH THE COMPRESSOR.

WHEN CHANGING TO FLUID FORCE CLEAR THE COMPRESSOR MUST BE FLUSHED OUT WITH FLUID FORCE PRIME.

Oil Top-up procedure (Fig 1.1)

- Wait until the air-end vent down cycle is complete.
- Check that the air-end pressure gauge reads zero.

Note: If pressure gauge does not fall to zero then non-return valve (D) may be faulty.

- Drain air receiver following procedure above. Do not reopen air-outlet valve (A).
- Carefully unscrew oil filler plug (B).
- Remove filler plug (B), retain bonded seal (C).
- Fill to overflow with an approved oil (e.g. Fluid Force) Do not overfill

Note: Oils must not be mixed

- Examine bonded seal, if not damaged refit to filler plug.
- Refit seal and filler plug, tighten to 25 Nm.
- Remove safety notices.

Check compressor air filter (Fig 1.2)

WARNING ! 

The air filter (C) is located beneath the filter cover (A). Filter cover will slide over adaptor and pipe (B).

- Wait until air-end vent down cycle is complete.
- Open test valve to vent pressure from the receiver and associated pipework.
- Check that air-end pressure gauge reads zero.
- Firmly pull filter cover (A) to remove from separator casing.
- Remove air filter (C), slide over adaptor and pipe (B).
- Clean separator casing and inside of filter cover.
- Vacuum clean or blow dust out of filter using low pressure, clean dry air. Renew filter as below if it cannot be cleaned satisfactorily.
- Refit air filter (C), locate on support gauze (D).
- Refit filter cover (A).

Compressor air intake filter replacement (Fig 1.2)

The air filter (C) is located on support gauze (D) beneath the filter cover (A). Disconnect pipe (B).

- Firmly pull filter cover (A) to remove from separator casing.
- Remove filter (C) and clean separator casing and inside of cowl.

Note: Air filter may contain traces of oil and must be disposed of in an approved manner.

- Fit a new filter (C), locate on support gauze (D).
- Refit filter cover (A) and reconnect pipe (B).

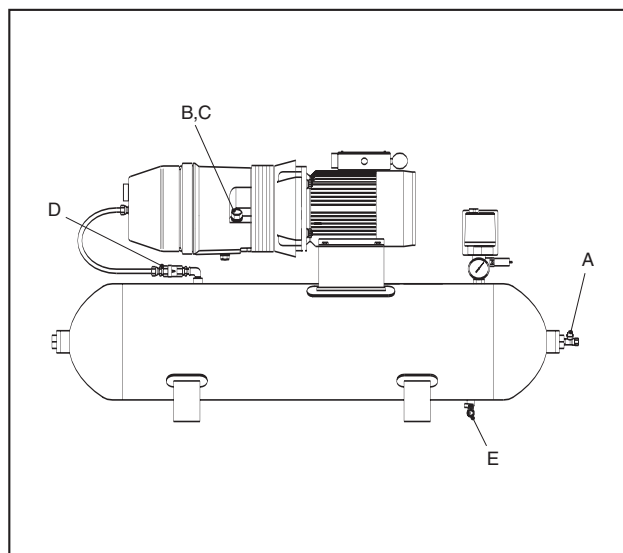


Figure 1.1 - Outlet and Filler Plug Location

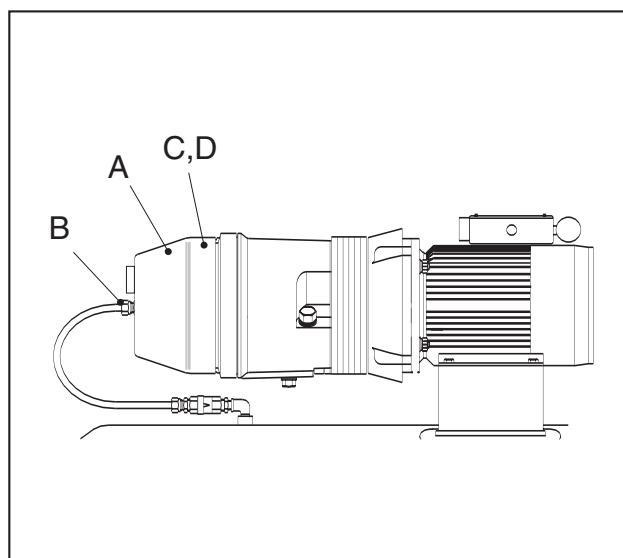
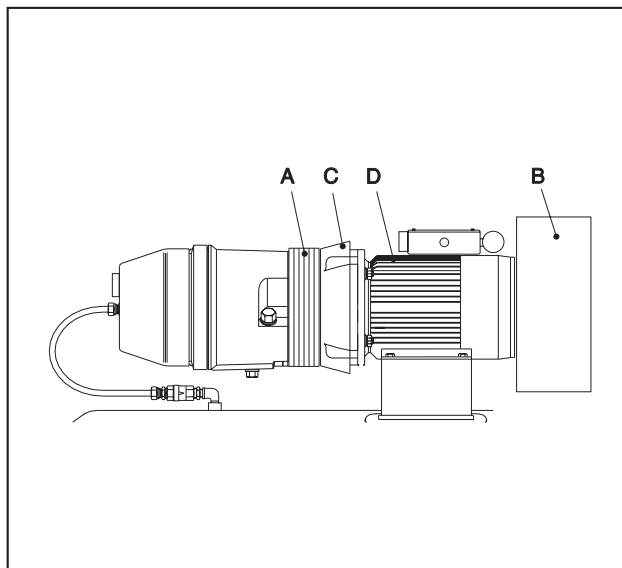


Figure 1.2 - Air filter location

Clean cooler and motor (Fig 1.3)**WARNING!**

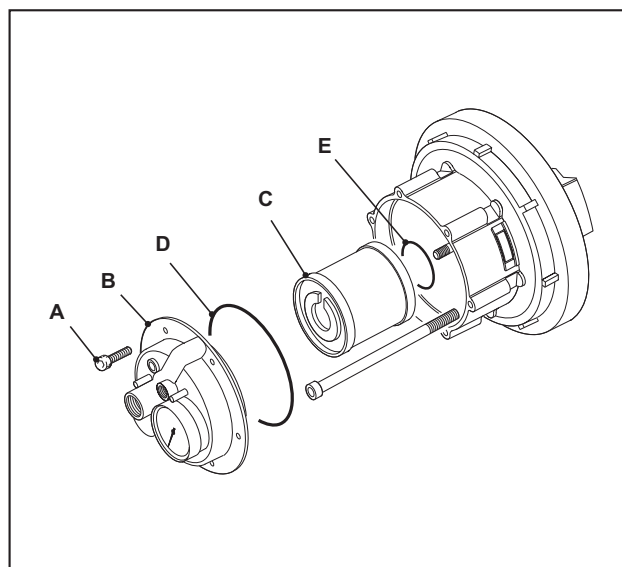
- Carefully vacuum clean the oil cooler matrix (A), aftercooler (B) if fitted and guard rings (C) on the lantern.
- Vacuum clean or blow dust from motor (D) and motor grill, using low pressure, clean dry air.
- Remove safety notices and open air-outlet valves.
- Turn mains electrical supply on. Test run compressor and check there are no air leaks.

**Figure 1.3 - Cooler and motor location****Replacing the oil separator element (Fig 1.4)**

- Remove cap head screws (A).
- Gently tap the end cover (B) until it is clear of the separator casing.
- Unscrew the oil separator element (C) and discard.

Note: Oil separator element contains oil and must be disposed of in an approved manner.

- Fit a new separator element. Ensure that the 'O' ring (E) is in place. Do not over tighten.
- Refit end cover (B). Ensure cover is positioned correctly and bolt holes are in line. Be careful not to damage 'O' ring (D) when refitting.
- Refit cap head screws (A). Tighten to 6 Nm.

**Figure 1.4 - Separator element location****Oil change procedure (Fig 1.5)**

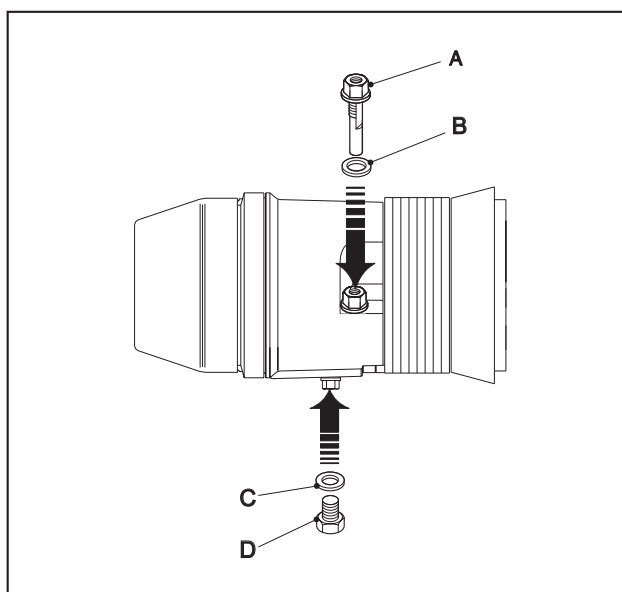
- Remove filler plug (A), discard bonded seal (B).
- Place container, at least 1.0 Litre capacity, beneath oil drain plug (D).
- Carefully remove drain plug (D) and discard bonded seal (C). Collect all the oil that drains from the compressor.

Note: Any waste oil collected must be disposed of in an approved manner.

- Refit drain plug (D) using a new bonded seal. Tighten to 20 Nm.
- Fill to overflow with an approved oil (e.g. Fluid Force). Do not overfill.

Note: Oils must not be mixed

- Refit filler plug (A) using a new bonded seal. Tighten to 25 Nm.
- Turn mains electrical supply on and open air-outlet valve.
- Test run compressor. Check pressure and Inspect for oil leaks.

**Figure 1.5 - Oil change procedure**

Electrical checks

WARNING !



- Remove the starter panel and pressure switch covers.
- Check for any signs of overheating and ensure that all electrical connections are tightened to correct torque settings.

Note: Pay special attention to power connections and cables connected to contactors and incoming terminals.

- Refit and secure covers.

Check electric motors

WARNING !

- Remove any dust or dirt from motor bodies and motor air intake grills.
- Reinstall all covers.
- Remove safety notices.

D - Minimum Pressure Valve (Fig 1.6)

- Remove separator end cover (A).
- Remove circlip (B). Parts (C) and (D) will be pushed out by spring (J).
- Remove piston (G). This is simplified using long nose pliers.
- Renew 'O' rings (E) (F) and (H). Apply smear silicon grease before fitting.
- Check piston (G) and non return valve (D) for wear. Renew if necessary.
- Testing of the minimum pressure valve is itemised in Chapter 5.

E - Pressure Control Valve; (PUTS only) Oil Return Valve (Fig 1.7)

- Drain oil.
- Remove separator housing (A).
- Remove pressure control valve (B) and note settings. (7 or 10 bar).
- Renew bonded seal (C).
- Remove oil return valve (D). Renew filter and 'O' ring (E) if unserviceable. Renew bonded seal (F).
- Renew flexible tube (G).
- When fitting separator housing use two studs S73 to ensure correct alignment of tube (G) with discharge pipe on stator.
- Separator feed tube (H) should be positioned $18^\circ \pm 2^\circ$ to machine axis on assembly. Setting gauge S83 will simplify this operation.
- Refill compressor with oil when assembly is complete.
- Testing of the control valve is itemised in Chapter 5.

F - Oil Seal (Fig 1.8)

- Drain oil.
- Before any work can be carried out on the seal the compressor must be removed from the motor.
- Remove lantern and cooler.

- Remove drive coupling.
- Remove screws.
- Pull oil seal assembly out of oil chamber.
- Clean seal housing and remove burrs on chamber (C).
- Refit new seal and remove applicator.
- Fit power coupling in correct position.
- Renew 'O' rings on cooler couplings.
- Fit new seal using service tool S72 and secure with fixing screws.
- Reassemble compressor and fill with oil.

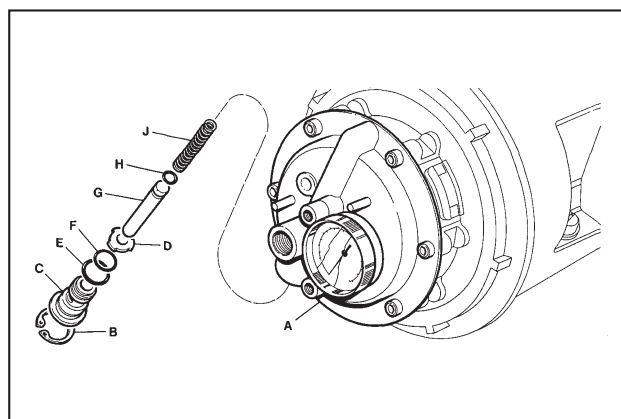


Figure 1.6 - Minimum Pressure Valve

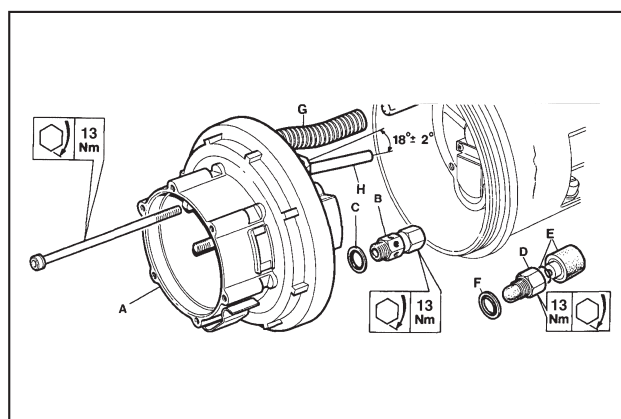


Figure 1.7 - Pressure Control Valve and Oil Return Valve

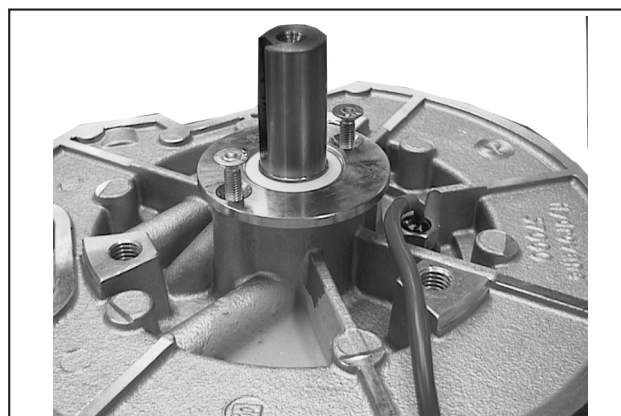


Figure 1.8 - Oil Seal

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Chapter 2

Contents

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Note: Parts contained in service kits are shown in kit column. Apply Loctite sparingly. Ensure cross drillings etc. do not become blocked.

| Item | Part Number | Description | Kit | Quantity | | |
|------|--------------|----------------------------------|------|----------|----|----|
| | | | | All | 01 | 02 |
| 1 | 56633 | Outlet tap (PUTS models only) | | 1 | | |
| 2 | 57574 | Intake filter cowl | | 1 | | |
| | 32254 | Separator cover assembly | | 1 | | |
| 3 | 56914 | Separator end cover | | 1 | | |
| 4 | 9413 | Spring | | 1 | | |
| 5 | 9703 | 'O' Ring | KM51 | 1 | | |
| 6 | 56838 | MPV Piston | | 1 | | |
| 7 | 56836 | Valve plate | | 1 | | |
| 8 | 9709 | 'O' Ring | KM51 | 1 | | |
| 9 | 9711 | 'O' Ring | KM51 | 1 | | |
| 10 | 56837 | MPV end plug | | 1 | | |
| 11 | MCI 19 | Circlip | | 1 | | |
| 12 | MS705-20 | Socket head screw M5 x 20mm | | 6 | | |
| 13 | 56391 | Pressure gauge | KT52 | 1 | | |
| 14 | 9821 | 'O' Ring | KM51 | 1 | | |
| 15 | 74015 | Intake filter | KM51 | 1 | | |
| 16 | 70416 | Intake filter support | | 1 | | |
| | 34044 | Intake end cover assembly | | | | |
| 17 | 73129 | Intake end cover | | 1 | | |
| 18 | 56637 | Bearing | | 1 | | |
| 19 | 70392 | Sleeve | | 1 | | |
| 20 | 56659 | Restrictor | | 1 | | |
| 21 | 56437 | Valve plate | | 1 | | |
| 22 | 56422 | Intake valve seat | KT52 | 1 | | |

Refer to Health and Safety section before carrying out any service work.

Changing air filter

- Refer to Basic Service Procedures.
- Fit parts contained in service kits.

Pressure control valve, oil return valve

- Refer to Chapter 1-E

Removing minimum pressure valve

- Refer to Chapter 1-D

Changing oil separator

- Remove end cover (3).
- Renew 'O' ring (14).
- Unscrew oil separator (42).
- Renew 'O' ring (43).
- Oil separator cannot be cleaned. If found to be faulty or blocked it must be renewed.

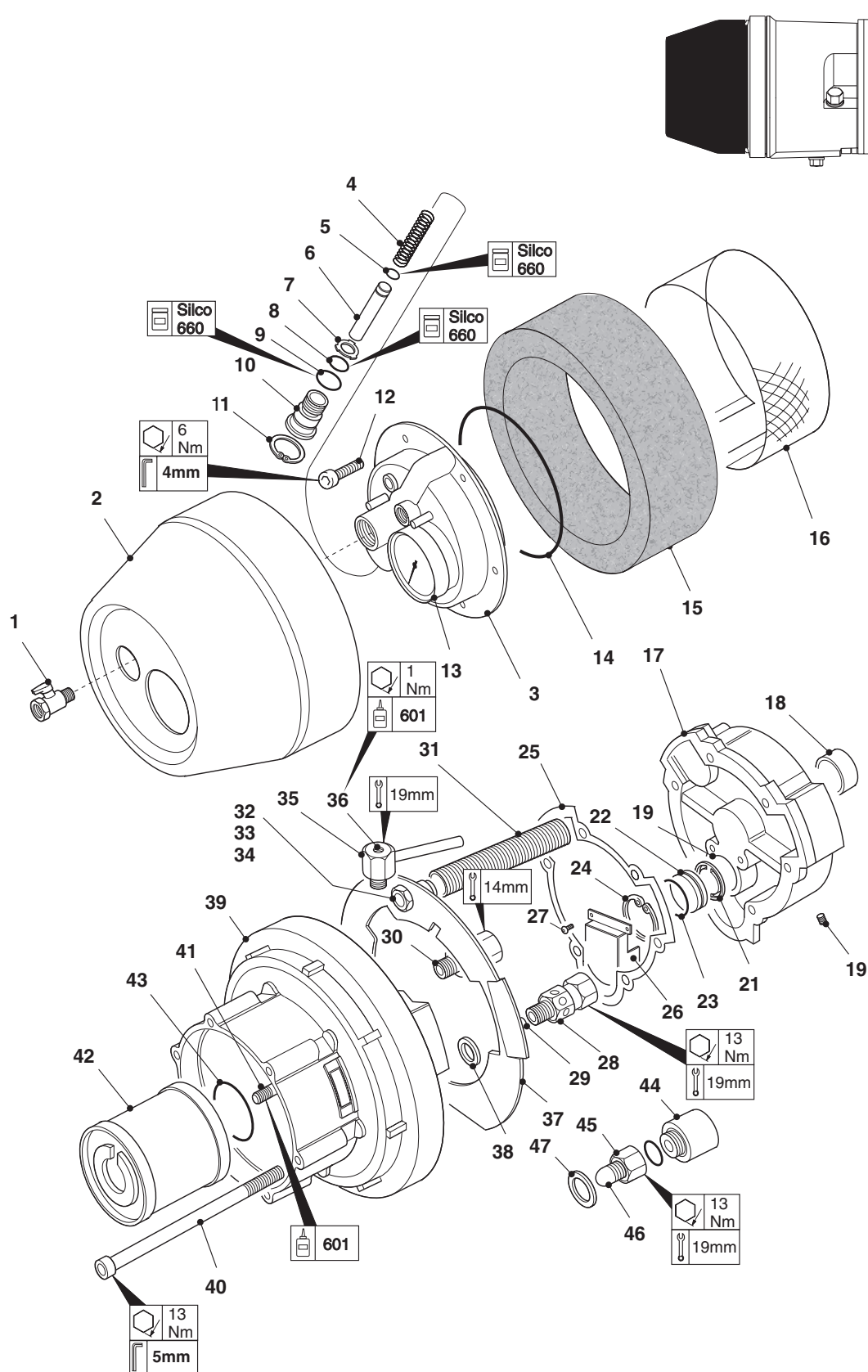


Figure 2A - Separator: Intake End Cover

| Item | Part Number | Description | Kit | Quantity | | |
|------|-------------|---|------|----------|----|----|
| | | | | All | 01 | 02 |
| 23 | 9718 | 'O' Ring | KT52 | 1 | | |
| 24 | MCI-26 | Circlip | | 1 | | |
| 25 | 73101 | Gasket | KT52 | 1 | | |
| 26 | 56801 | Lift plate | | 1 | | |
| 27 | 56426 | Screw | | 2 | | |
| 28 | 57443 | Pressure control valve (PUTS machines only) | | 1 | | |
| 29 | 57531 | Bush (PUTS machines only) | | 1 | | |
| 30 | 56289 | Safety valve (PURS machines only) | | 1 | | |
| 31 | 34078 | Discharge tube assembly | | 1 | | |
| 32 | 56431 | Discharge fitting | | 1 | | |
| 33 | 56434 | Nut | | 1 | | |
| 34 | 56624 | Fibre washer | KT52 | 2 | | |
| 35 | 32410 | Oil separator feed assembly | | 1 | | |
| 36 | MG1706-06 | Grub screw | | 1 | | |
| 37 | 73100 | Oil impingement cowl | | 1 | | |
| 38 | 58327 | Folded copper washer | KT52 | 1 | | |
| | 34407-03 | Separator casing assembly | | 1 | | |
| 39 | 73034 | Separator case | | 1 | | |
| 40 | 56299 | Socket head screw M6 x135mm | | 6 | | |
| 41 | 56275 | Separator stud | | 1 | | |
| 42 | 57029 | Oil separator element | KM51 | 1 | | |
| 43 | 9799 | 'O' Ring | | 1 | | |
| 44 | 70166 | Blowdown valve filter & 'O' Ring | | 1 | | |
| 45 | 58307 | Oil return plug | | 1 | | |
| 46 | 57244 | Filter | | 1 | | |
| 47 | 58327 | Folded copper washer | KT52 | 1 | | |

Refer to Health and Safety section before carrying out any service work.

Intake assembly

- Remove screws (27), lift plate (26) and circlip (24).
- Fit parts contained in service kit.
- Refill compressor with approved oil when assembly is complete.

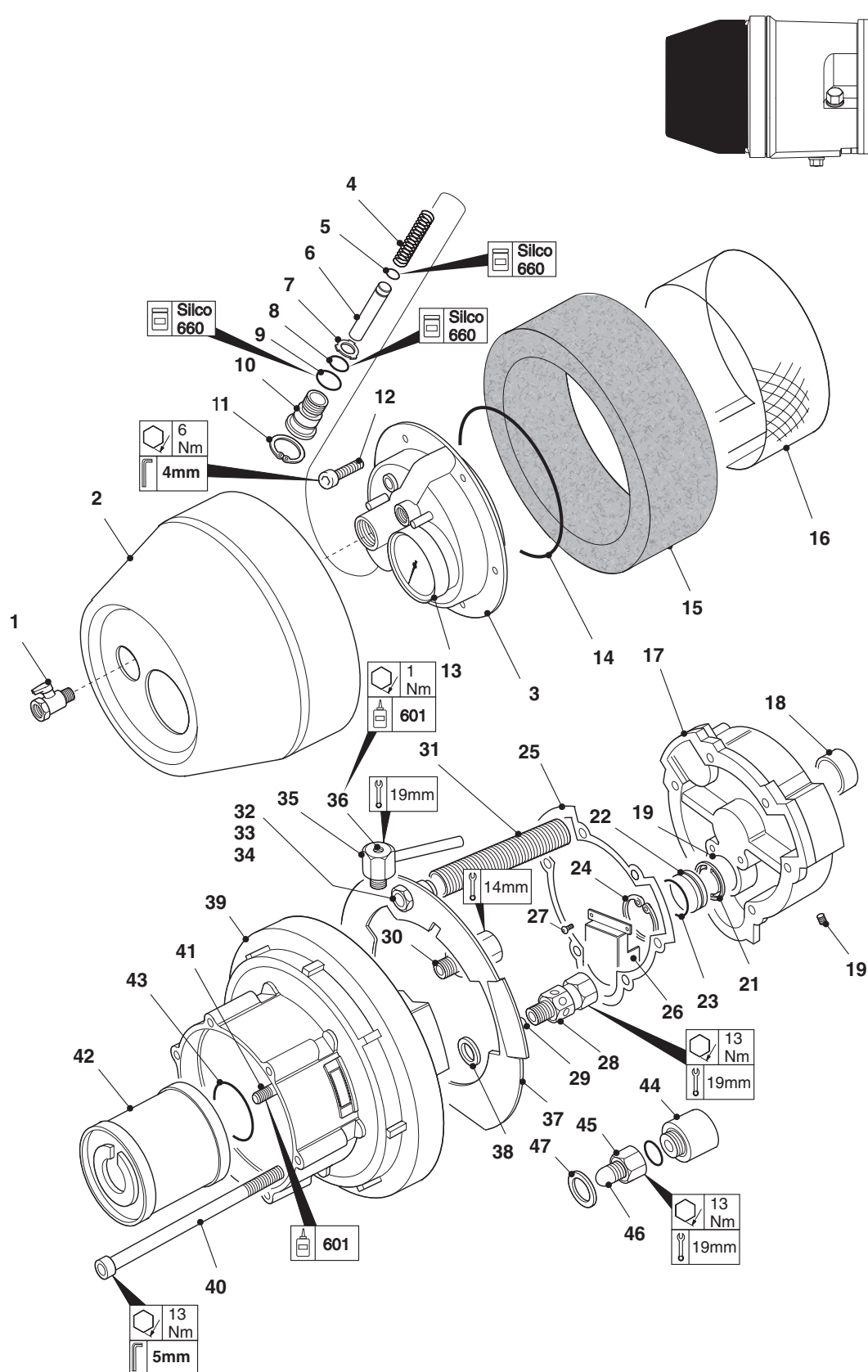


Figure 2A - Separator: Intake End Cover

| Item | Part Number | Description | Kit | Quantity | | |
|------|-------------|--------------------------|------|----------|----|----|
| | | | | All | 01 | 02 |
| 1a | 56281 | Rotor | | | 1 | 1 |
| 1b | 57775 | Rotor (PUTS models only) | | | | 1 |
| 2 | 70233 | Blade | | 8 | | |
| 3a | 74014C | Shim - green | KT52 | A/R | | |
| 3b | 74014D | Shim - amber | | A/R | | |
| 3c | 74014A | Shim - red | KT52 | A/R | | |
| 3d | 74014B | Shim - blue | KT52 | A/R | | |
| 4 | 73999 | Stator assembly | | 1 | | |
| 5 | 56302 | Valve plate | | 2 | | |
| 6 | 56586 | Valve support | | 2 | | |
| 7 | AGS203-B | Lockwasher | | 2 | | |
| 8 | FS702-3 | Socket head screw 4BA | | 2 | | |
| 9 | 57416 | Tension pin | | 2 | | |
| 10 | 73995 | Outlet assembly | | 1 | | |
| 11 | 56300 | 'O' Ring | KT52 | 1 | | |
| 12 | 73997 | Oil chamber | | 1 | | |
| 13 | 56637 | Bearing | | 1 | | |
| 14 | GHC2-6 | Helicoil | | 1 | | |
| 15 | GHC3-6 | Helicoil | | 1 | | |
| 16 | 73917 | Drain plug | | 1 | | |
| 17 | 9611 | Bonded seal | KM51 | 1 | | |
| 18 | 71127 | Filler plug | | 1 | | |
| 19 | 9615 | Bonded seal | KM51 | 1 | | |
| 20 | 71553 | Oil seal | KT52 | 1 | | |
| 21 | MS1606-20 | Countersunk screw | | 2 | | |

Refer to Health and Safety section before carrying out any service work.

Rotor stator - removal

- Remove drive coupling (refer to 3C).
- Stand oil chamber (12) vertically on wooden blocks.
- Remove intake end cover and discard gasket (refer to 2A).
- Remove stator (4). Note position and thickness of shims (3).
- Remove rotor having first removed grub screw burrs on shaft to retain blades (2) in position.
- Discard 'O' Ring (11).

Rotor stator - Examine

- Inspect both end faces and bearings for wear. Renew if necessary.
- Stand main casing on block of wood and apply oil to bearing.
- Place rotor (1) in casing. Refit new oil seal. Fit drive coupling.
- If blades (2) are to be re-used they must be removed from the slots and marked using a felt tipped pen (NOT SCRATCHED) so that each blade can be replaced in the same position.

- Blades and slots must be perfectly clean and fitted with rounded edge outwards. Marks must correspond with slots if original blades are refitted.

- Examine stator for damage. Ensure cutaway is clearly defined by two straight lines along length of bore.
- Ensure stator bore and end faces are free from debris.

Rotor stator - Refitting

- Stand oil chamber vertically on wooden block.
- Renew 'O' ring (11).
- Apply smear of oil to 0.0015" (0.038mm) shim and position pipe.
- Fit rotor complete with blades.
- Fit new oil seal.
- Fit drive coupling.
- Check overall end clearance using straight edge and feeler gauges between rotor and stator.
- Apply smear of oil to end stator and fit shims to give total end clearance of between 0.003" (0.076mm) and 0.004" (0.089mm).
- Fit intake end cover, using service tool S73.
- Renew gasket.

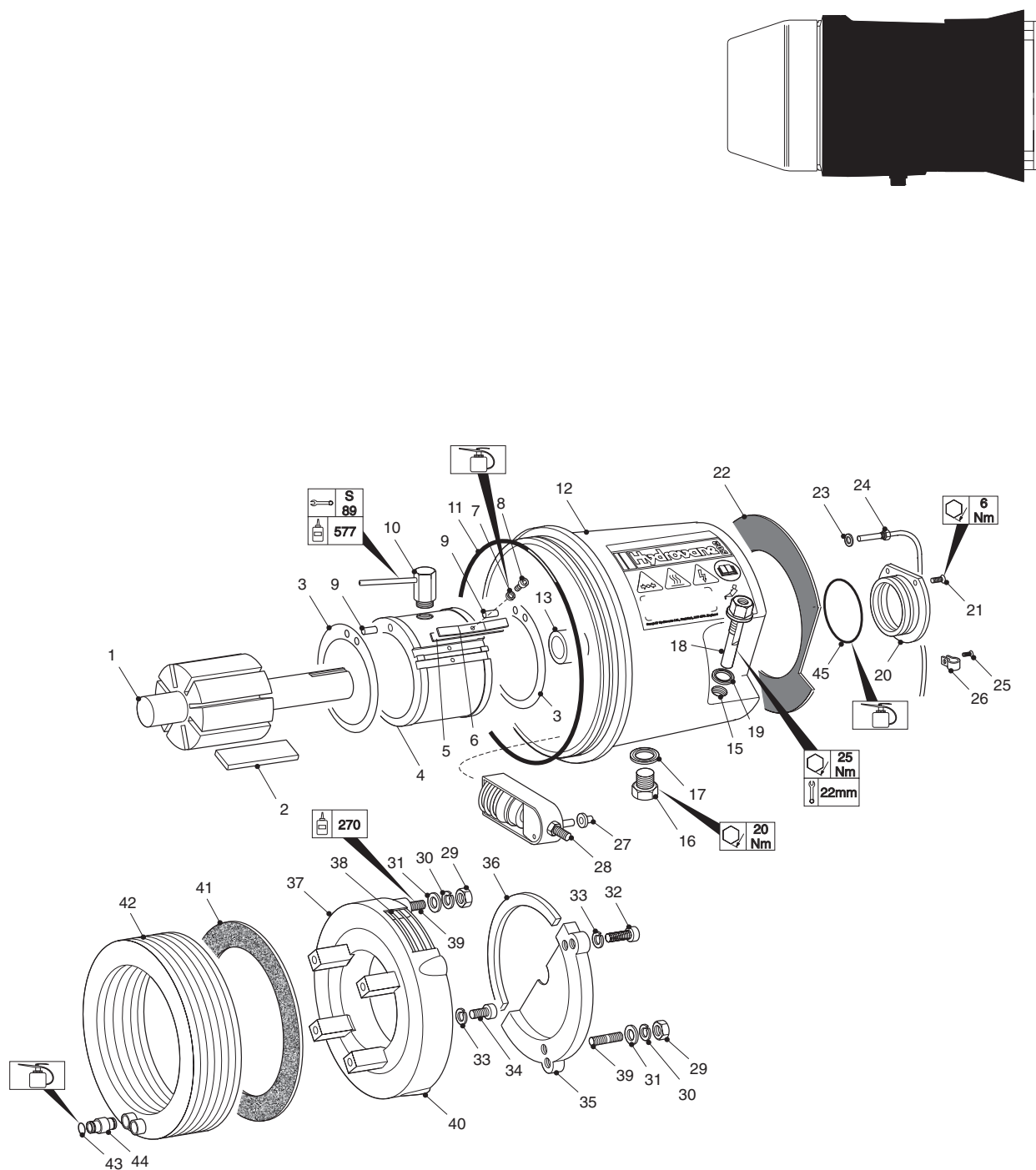


Figure 2B - Oil Chamber; Rotor Stator Unit; Lantern

| Item | Part Number | Description | Kit | Quantity | | |
|------|-------------|--|------|----------|----|----|
| | | | | All | 01 | 02 |
| 22 | 71550 | Cooler gasket | KT52 | 1 | | |
| 23 | 9607 | Bonded seal | | 1 | | |
| 24a | 73845 | Thermoswitch (PU/PURS models only) | | | 1 | 1 |
| 24b | 72079-01 | Thermistor probe (PUTS models only) | | | 1 | 1 |
| 25 | PE567-C6 | Pozipan screw | | 2 | | |
| 26 | PE553 | Cable clip | | 2 | | |
| 27 | 56528 | Insert (PURS models only) | KT52 | | 1 | |
| 28 | 32153 | Thermostatic valve assembly (PURS models only) | | | 1 | |
| 29 | MN110 | Nut | | 4 | | |
| 30 | MWG-10 | Spring washer | | 4 | | |
| 31 | MW10 | Washer | | 4 | | |
| 32 | MS708-30 | Screw M8 x 30 | | | | 4 |
| 33 | MWG-8 | Spring washer | | 4 | | |
| 34 | MS708-25 | Screw M8 x 25 | | 4 | | |
| 35 | 57630 | Backplate | | | | 1 |
| 36 | 56383 | Guide ring | | | 1 | |
| 37 | 32446 | Lantern assembly | | | 1 | |
| 38 | 57563 | Guard ring | | | 1 | |
| 39 | 56393 | Cooler stud | | 4 | | |
| 40a | 57774 | Lantern (PUTS models only) | | | | 1 |
| 40b | 70485 | Lantern (PURS models only) | | | | 1 |
| 41 | 58365 | Cooler gasket | KT52 | 1 | | |
| 42a | 56294 | Oil cooler | | | 1 | 1 |
| 42b | 57773 | Oil cooler (PUTS models only) | | | | 1 |
| 43 | 9707 | 'O' Ring | KT52 | 4 | | |
| 44 | 56386 | Cooler coupling | | 2 | | |
| 45 | 74261 | 'O' Ring | | 1 | | |

Refer to Health and Safety section before carrying out any service work.

Oil Relief Valve; Stator Discharge Pipe

- Remove screw (8) and washer (7).
- Remove support (6) and valve plate (5).
- Check plate (5) for wear or damage. Renew if necessary.
- Ensure valve seating face is perfectly flat. Use emery stone to obtain flatness.
- Remove all traces of emery dust.
- Renew washer (7) and reassemble.
- Discharge pipe (10) should be positioned $15 \pm 1/2$ to machine axis on assembly. Setting gauge S89 will simplify this operation.

Oil Cooler

- Remove compressor from motor.
- Remove drive media.
- Remove backplate if applicable (35/36) and lantern (37/38/40).
- Remove oil cooler (42).
- Remove cooler couplings (44).
- Renew self adhesive gaskets (41) and (22).
- Renew 'O' rings (43).

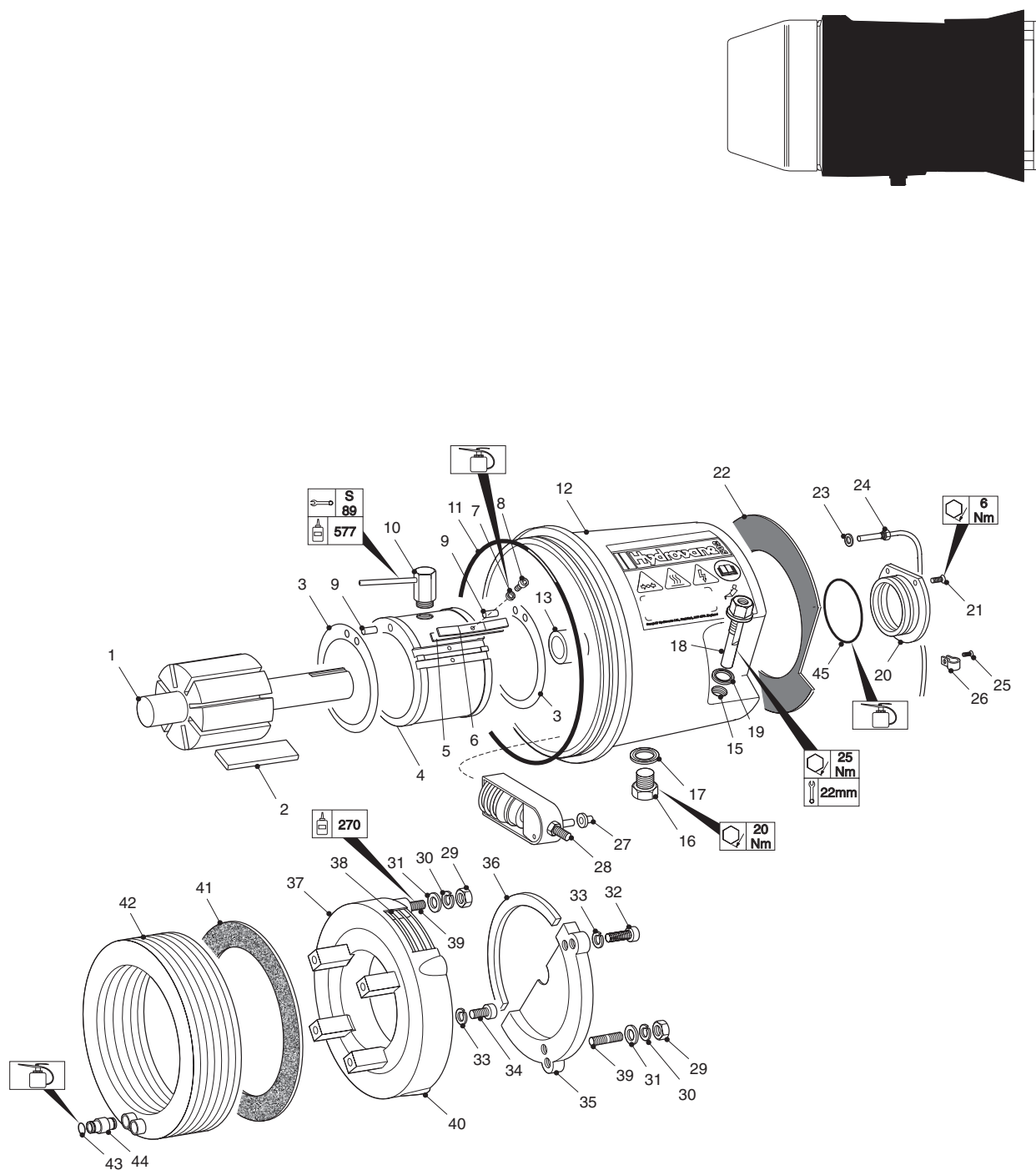


Figure 2B - Oil Chamber; Rotor Stator Unit; Lantern

| Item | Part Number | Description | Kit | Quantity | | |
|------|-------------|--|------|----------|----|----|
| | | | | All | 01 | 02 |
| 1 | 70061 | Drive key compressor | | 1 | | |
| 2a | 70068 | Coupling | | | 1 | |
| 2b | 71909 | Coupling | | | | 1 |
| 3 | 56955 | Grub screw | | 4 | | |
| 4a | 56565 | Coupling spider | | | 1 | |
| 4b | 70952 | Coupling spider | KT52 | | | 1 |
| 5a | 57487 | Impellor/Motor coupling | | | 1 | |
| 5b | 70950 | Impellor/Motor coupling | | | | 1 |
| 6 | 56589 | Drive key motor | | 1 | | |
| 7a | 56441-32 | Motor 1.1Kw 1Ø 220/240v or | | | 1 | |
| 7b | 73769-10 | Motor 1.1Kw 3Ø 380/415v or | | | 1 | |
| 7c | 57240 | Motor 1.5Kw 1Ø 220/240v or | | | 1 | |
| 7d | 73043 | Motor 1.5Kw 3Ø 380/415v or | | | 1 | |
| 7e | 72148-32 | Motor 2.2Kw 1Ø 220/240v or | | | | 1 |
| 7f | 73770-10 | Motor 2.2Kw 3Ø 380/415v or | | | | 1 |
| 8 | 74016 | Safety valve | | 1 | | |
| 9 | 56540 | 1/2" BSP Hex nipple | | 1 | | |
| 10 | 56633 | Outlet tap | | 2 | | |
| 11 | 58664 | Pressure gauge | | 1 | | |
| 12a | 74004 | Pressure switch and starter | | | 1 | |
| 12b | 74005 | Pressure switch and starter (single phase M/C) | | | | 1 |
| 12c | 74121 | Pressure switch & starter 1.1Kw 3Ø 380/415V | | | 1 | |
| 12d | 74423 | Pressure switch & starter 1.1Kw 1Ø 220/240V | | | 1 | |
| 12e | 74124 | Pressure switch & starter 1.5Kw 3Ø 380/415V | | | 1 | |
| 12f | 74122 | Pressure switch & starter 2.2Kw 3Ø 380/415V | | | 1 | 1 |

Refer to Health and Safety section before carrying out any service work.

Compressor removal / re-fitting

- Disconnect the thermistor / thermoswitch probe cable from either the pressure switch assembly (PURS) or the starter assembly (PUTS).
- Drain the oil from the compressor and cooler into a suitable container.
- Disconnect the pipework from the compressor to aftercooler, where applicable.
- Support the compressor before removing 4 off nuts and washers from the motor flange.
- If required remove 4 off cap head screw securing the backplate, where fitted.
- Remove the compressor from the support and place on a suitable work surface.

Removing bell housing

- Using an extension socket remove screws and washers.

Compressor drive coupling

- Before dismantling the drive the compressor air end must be removed from the motor.
- Remove the drive element (4) examine for wear and replace if necessary.
- For improved access the lantern and cooler assembly can be removed if desired.
- Remove the compressor coupling (2) and key (1), examine and replace necessary.
- On re-assembly ensure setting dimensions on page 30 are achieved for the coupling.
- Ensure grub screw (3) have the correct torque and locktite applied.

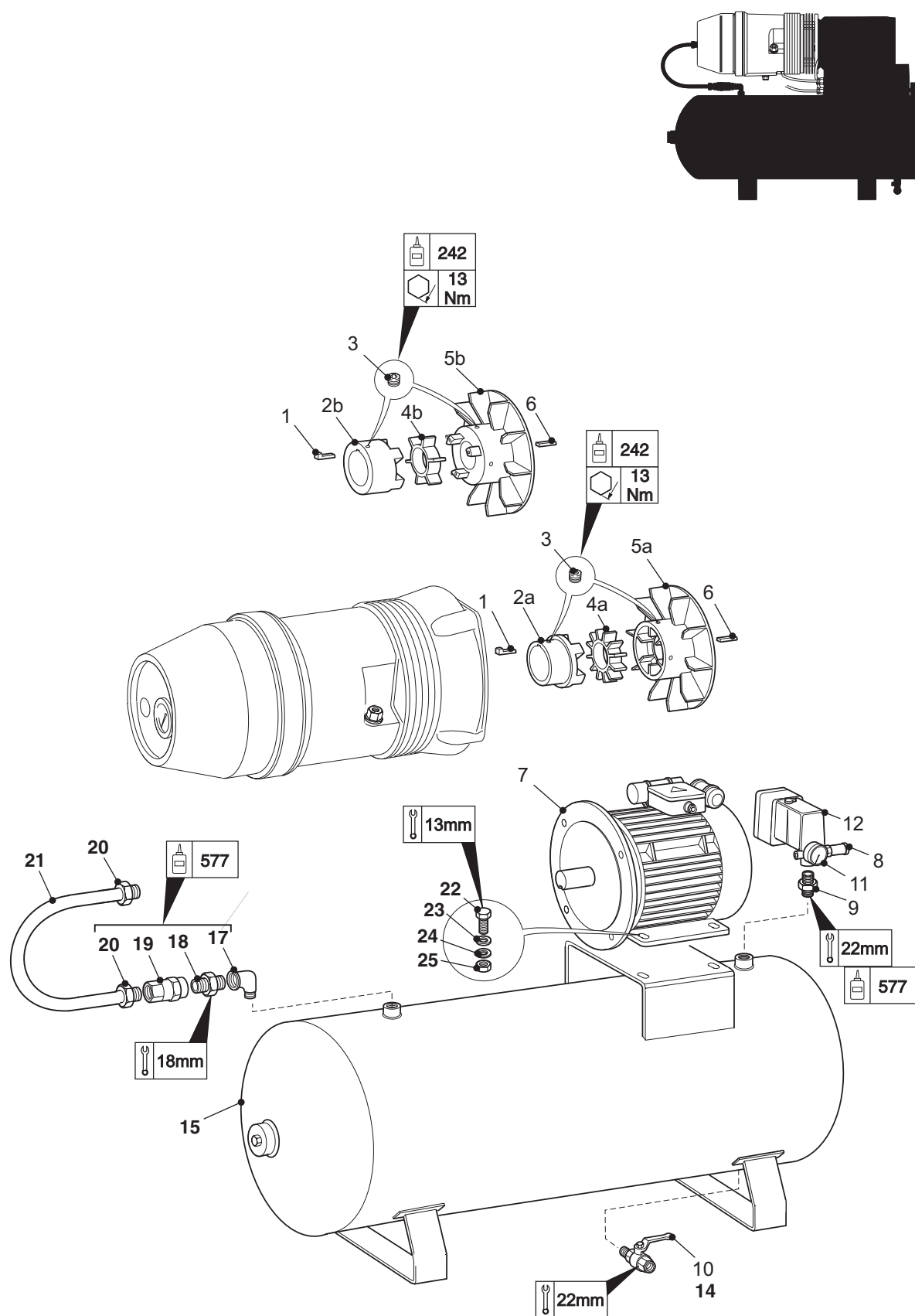


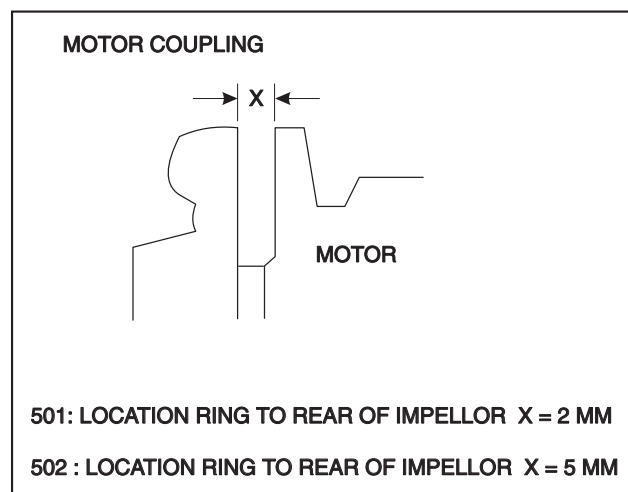
Figure 2C - PURS: Motors; Couplings; Receivers

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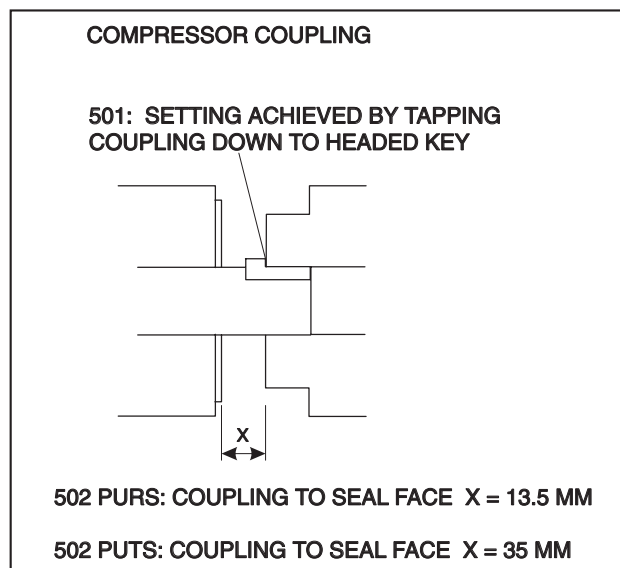
Refer to Health and Safety section before carrying out any service work.

Motor drive coupling

- Before dismantling the drive the compressor air end must be removed.
- Remove fan coupling (5) and key (6), examine and replace if necessary.



- On-reassembly ensure setting dimensions on page 34 are achieved for the coupling.
- Ensure grub screws (3) have the correct torque and locktite applied.



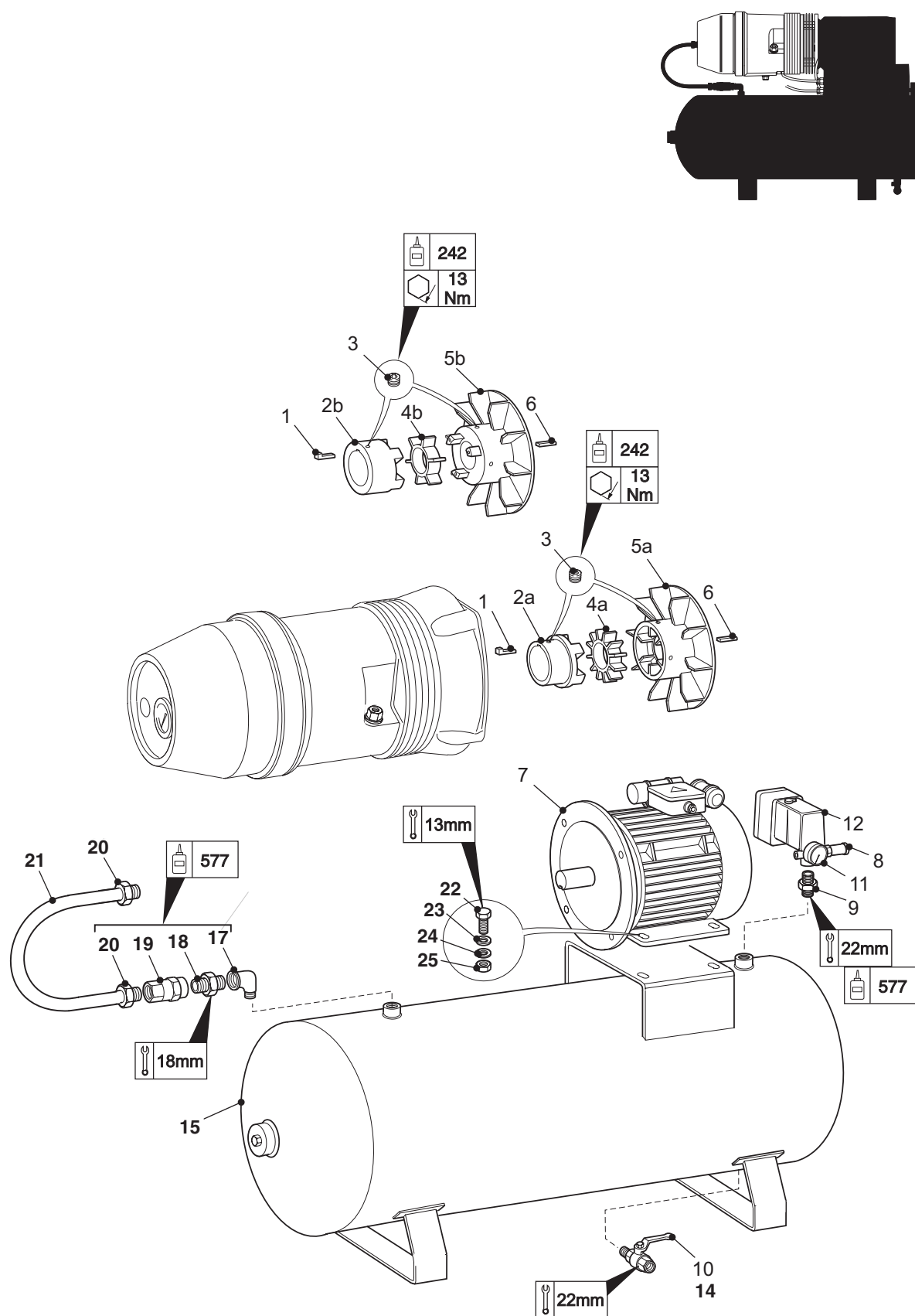


Figure 2C - PURS: Motors; Couplings; Receivers

2D**PUTS: Motors; Couplings; Tripod**

| Item | Part Number | Description | Kit | Quantity | | |
|------|-------------|------------------------------|------|----------|----|----|
| | | | | All | 01 | 02 |
| 1 | 70061 | Drive key compressor | | 1 | | |
| 2a | 70068 | Drive coupling | | 1 | | |
| 2b | 71909 | Drive coupling | | | | 1 |
| 3a | 56565 | Coupling spider | KT52 | | 1 | |
| 3b | 70952 | Coupling spider | KT52 | | | 1 |
| 4 | 56955 | Grub-screw | | 4 | | |
| 5a | 57487 | Impellor/Motor coupling | | | 1 | |
| 5b | 70950 | Impellor/Motor coupling | | | | 1 |
| 6 | 56589 | Drive key motor | | 1 | | |
| 7a | 56441-32 | Motor 1.1 Kw 1Ø 220/240V or | | | 1 | |
| 7b | 73769-01 | Motor 1.1 Kw 3Ø 380/415V or | | | 1 | |
| 7c | 57240 | Motor 1.5 Kw 1Ø 220/240V or | | | 1 | |
| 7d | 73043 | Motor 1.5 Kw 3Ø 380/415V or | | | 1 | |
| 7e | 72148-32 | Motor 2.2 Kw 1Ø 220/240V or | | | | 1 |
| 7f | 73770-10 | Motor 2.2 Kw 3Ø 380/415V or | | | | 1 |
| 8 | MS108-25 | Hex head bolt M8 x 25mm | | 4 | | |
| 9 | MW8 | Washer M8 | | 4 | | |
| 10 | MWG8 | Spring washer M8 | | | 4 | |
| 11 | MN108 | Nut M8 | | 4 | | |
| 12 | 50474D | Self tapping screw | | 2 | | |
| 13 | 56758 | Lock-nut | | 2 | | |
| 14 | 59800 | Cable gland | | 2 | | |
| 15 | | Starter (refer to chapter 3) | | 1 | | |
| 15a | 33734-01 | Starter 240V 1.1 Kw | | 1 | | |
| 15b | 33732-01 | Starter 415V 1.1 Kw | | 1 | | |
| 15c | 33736-01 | Starter 220/240V 2.2 Kw | | 1 | | |
| 15d | 33732-03 | Starter 415V 2.2Kw | | 1 | | |
| 16 | 72114 | Starter support plate | | 1 | | |
| 17 | 56572 | Tripod | | 1 | | |
| 18 | 72112 | Cable gland M16 con | | 1 | | |

Refer to Health and Safety section before carrying out any service work.

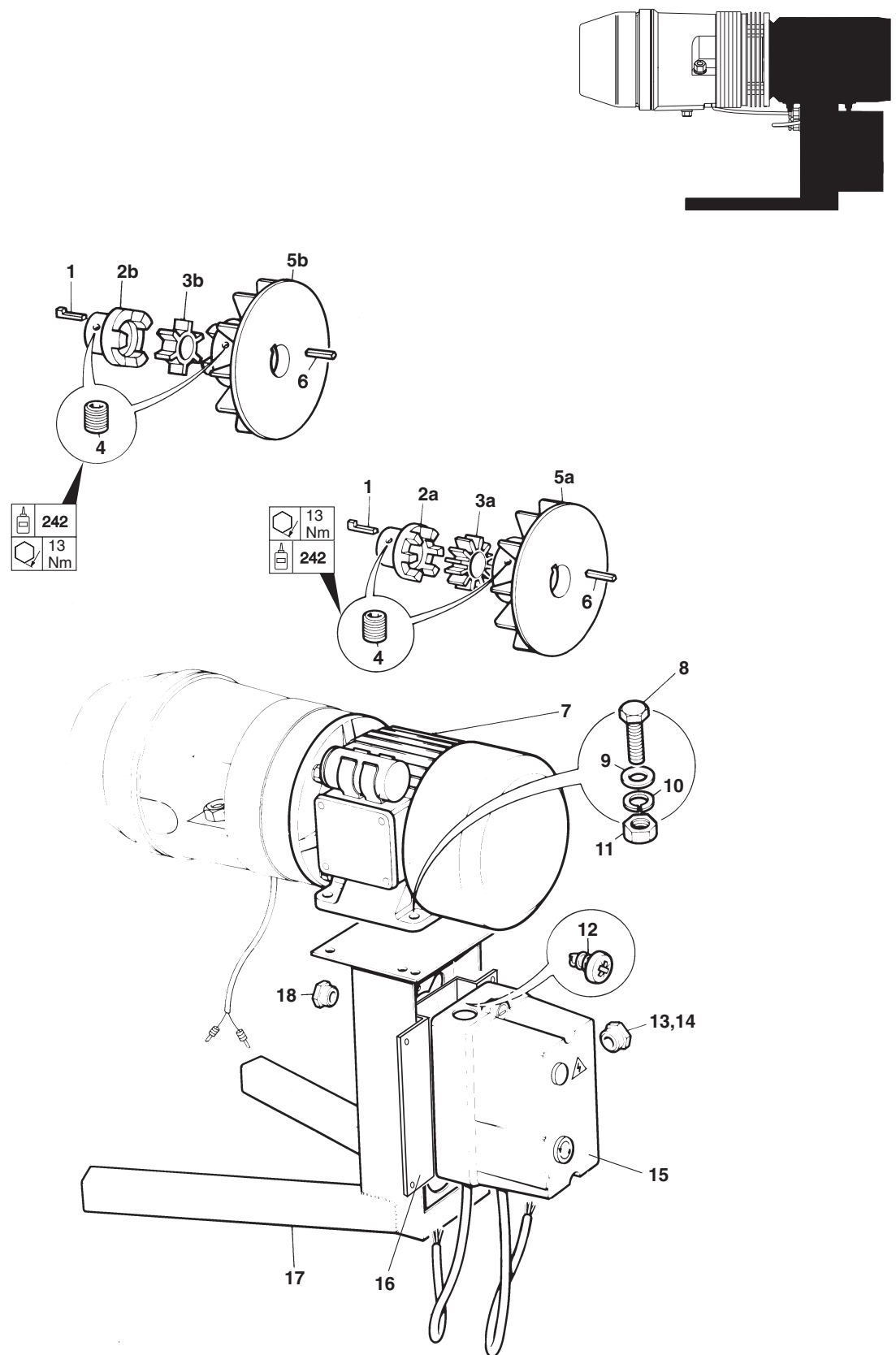


Figure 2D - PUTS: Motors; Couplings; Tripod

| Item | Part Number | Description | Kit | Quantity | | |
|------|-------------|------------------------------|-----|----------|----|----|
| | | | | All | 01 | 02 |
| 1 | 1396 | Equal coupling | | 2 | | |
| 2 | 1397 | Stud coupling | | 1 | | |
| 3 | 1892 | Stud coupling | | 2 | | |
| 4 | 3534 | Assembled drain filter | | 1 | | |
| 5 | 54474 | Spire fastener | | 3 | | |
| 6 | 59067 | Support cowl | | 1 | | |
| 7 | 59068 | Cowl (Aftercooler) | | 1 | | |
| 8 | 59069 | Aftercooler | | 1 | | |
| 9 | 70793 | Hex nipple | | 1 | | |
| 10 | 56934 | Bend | | 2 | | |
| 11 | 57687 | Valve | | 1 | | |
| 12 | 72376 | Pipe-Air end to aftercooler | | 1 | | |
| 13 | 73535 | Support bracket | | 1 | | |
| 14 | 73537 | Pipe dryer/Receiver | | 1 | | |
| 15a | 73538 | Dryer | | | 1 | |
| 15b | 73539 | Dryer | | | | 1 |
| 16a | 73541 | Bracket | | | 1 | |
| 16b | 73542 | Bracket | | | | 1 |
| 17 | 73554 | Stud elbow | | 1 | | |
| 18 | 57690 | Adaptor | | 1 | | |
| 19 | CF0005B | Filter GP 9 L/S | | 1 | | |
| 19a | CE0005B | Element | | 1 | | |
| 20 | CF0005C | Filter HE 9 L/S | | 1 | | |
| 20a | CE0005C | Element | | 1 | | |
| 21 | GP1019 | Kit-wedge | | 1 | | |
| 22 | MN105 | Nut M5 | | 1 | | |
| 23 | MN106 | Hexagon Nut M6 | | 1 | | |
| 24 | MS106-16 | Hex head screw M6 x 16mm | | 1 | | |
| 25 | MS2105-10 | Pozi panhead screw M5 x 10mm | | 3 | | |
| 26 | MS705-45 | Skt head screw M5 x 45mm | | 2 | | |
| 27 | MW6 | Plain washer M6 | | 1 | | |
| 28 | MWG5 | Spring washer M5 | | 2 | | |
| 29 | MWG6 | Spring washer M6 | | 1 | | |

Refer to Health and Safety section before carrying out any service work.

- Change the filter elements (19a & 20a) every 12 months.

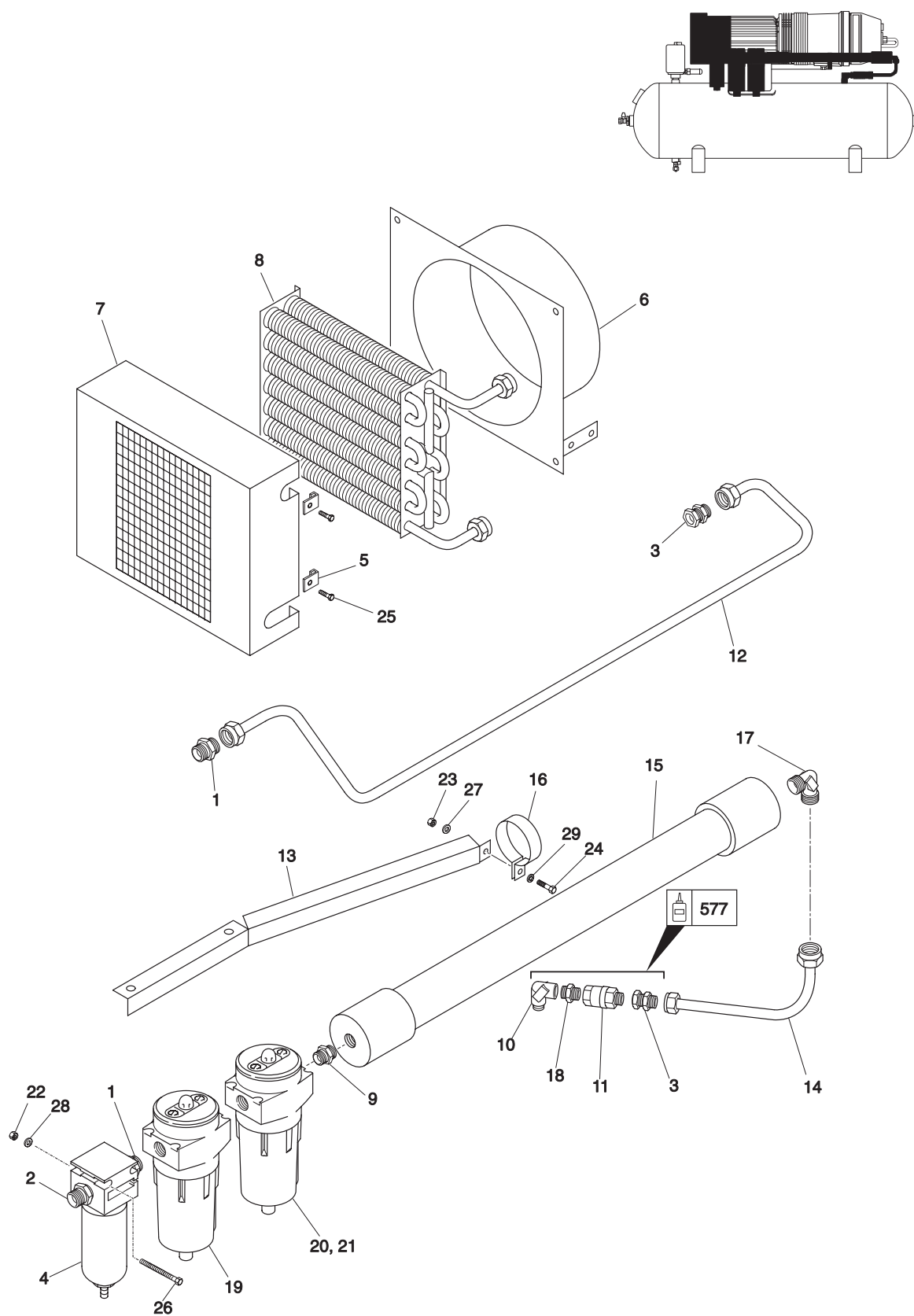


Figure 2E - Aftercooler; Dryer; Filters - Mk 1

| Item | Part Number | Description | Kit | Quantity | | |
|------|-------------|------------------------------|-----|----------|----|----|
| | | | | All | 01 | 02 |
| 1 | 73619 | Adaptor | | 2 | | |
| 2 | 1397 | Stud coupling | | 1 | | |
| 3 | 1892 | Stud coupling | | 2 | | |
| 4 | 3534 | Assembled drain filter | | 1 | | |
| 5 | 54474 | Spire fastener | | 3 | | |
| 6 | 59067 | Support cowl | | 1 | | |
| 7 | 59068 | Cowl (Aftercooler) | | 1 | | |
| 8 | 59069 | Aftercooler | | 1 | | |
| 9a | 70793 | Hex nipple | | | 1 | |
| 9b | 73619 | Adaptor | | | | 1 |
| 10 | 56934 | Bend | | 2 | | |
| 11 | 57687 | Valve | | 1 | | |
| 12 | 72376 | Pipe-Air end to aftercooler | | 1 | | |
| 13 | 74380 | Support bracket | | 1 | | |
| 14 | 73537 | Pipe dryer/Receiver | | 1 | | |
| 15a | 74373 | Dryer | | | 1 | |
| 15b | 74374 | Dryer | | | | 1 |
| 16 | 74381 | Bracket | | 1 | | |
| 17a | 73554 | Stud elbow | | | 1 | |
| 17b | 1884 | Stud elbow | | | | 1 |
| 18 | 57690 | Adaptor | | 1 | | |
| 19 | CF0005B | Filter GP 9 L/S | | 1 | | |
| 19a | CE0005B | Element | | 1 | | |
| 20 | CF0005C | Filter HE 9 L/S | | 1 | | |
| 20a | CE0005C | Element | | 1 | | |
| 21 | GP1019 | Fixing kit - filters | | 1 | | |
| 22 | MN105 | Nut M5 | | 2 | | |
| 23 | MN106 | Hexagon Nut M6 | | 1 | | |
| 24 | MS106-16 | Hex head screw M6 x 16mm | | 1 | | |
| 25 | MS2105-10 | Pozi panhead screw M5 x 10mm | | 3 | | |
| 26 | MS705-45 | Skt head screw M5 x 45mm | | 2 | | |
| 27 | MWG5 | Spring washer M5 | | 2 | | |
| 28 | MWG6 | Spring washer M6 | | 1 | | |

Refer to Health and Safety section before carrying out any service work.

Change the filter elements (19a & 20a) every 12 months.

Air End Parts Modifications

[illegible]

Chapter 3

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Note: For compressors with receivers (PURS) starters are a combined unit with the pressure switch - see 2C.12a-f.

Refer to Health and Safety section before carrying out any service work.

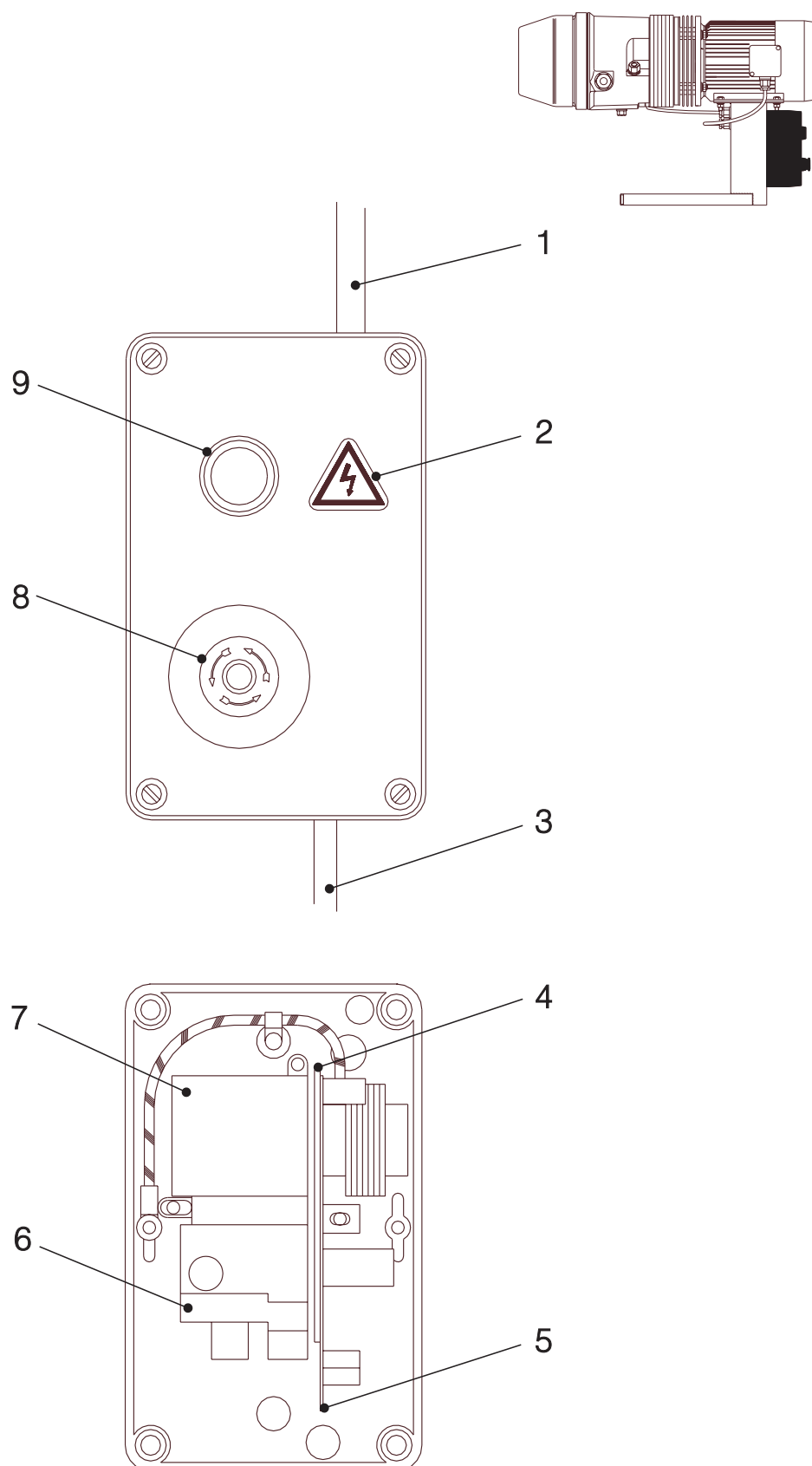


Figure 3A - 01/02 Three Phase (PUTS) Starter

01 Single Phase (PUTS) Starter

Refer to Health and Safety section before carrying out any service work.

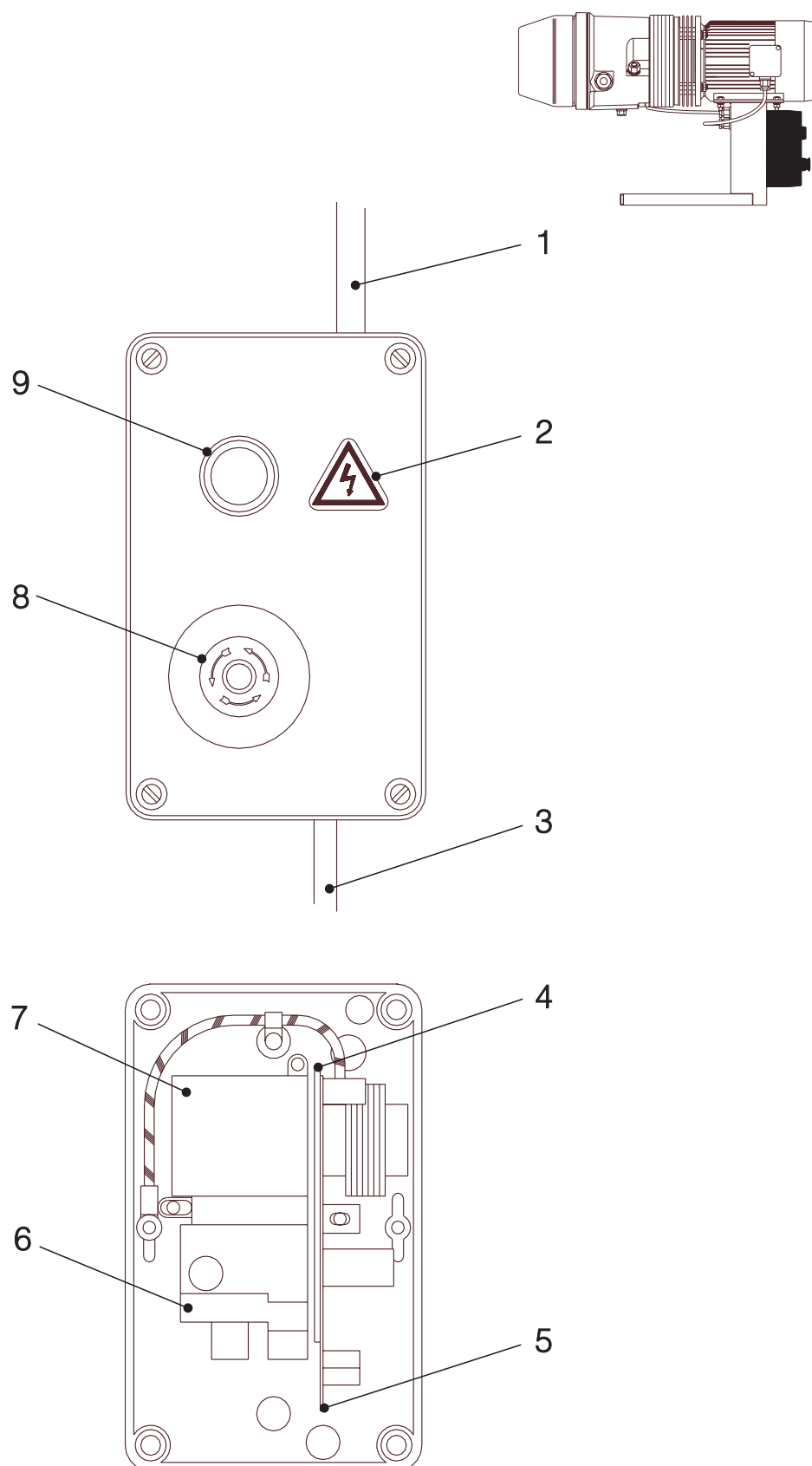


Figure 3B - 01 Single Phase (PUTS) Starter

| Item | Part Number | Description | Kit | Quantity |
|---|-------------|-------------------------------|-----|----------------------|
| | | | | Starter Assembly No. |
| | | | | 33736-01 |
| 1 | 72135 | Start push-button (green) | | 1 |
| 2 | 72134 | Emergency stop push-button | | 1 |
| 3 | 52014 | Warning label | | 1 |
| 4 | 56677 | M20 Cable gland | | 2 |
| 5 | 56758 | M20 Lock-nut | | 2 |
| 6 | 58712 | Mains cable | | 1 |
| 7 | 72112 | M16 Cable gland | | 1 |
| 8 | 72113 | M16 Lock-nut | | 1 |
| 9 | MS2104-25 | M4 x 25mm Pozi pan head screw | | 1 |
| 10 | 73145 | Transformer 240V - 24V 24VA | | 1 |
| 11 | 72461 | Enclosure | | 1 |
| 12 | 72151 | Contactor | | 1 |
| 13 | 72152 | Overload 18 - 25 Amp | | 1 |
| 14 | 72144 | Motor cable | | 1 |
| 15 | 72093 | Over-temperature control PCB | | 1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Starter assembly 33736-01 = 502 (220/240 Volt, Single Phase, 50 Hz) | | | | |
| | | | | |

Refer to Health and Safety section before carrying out any service work.

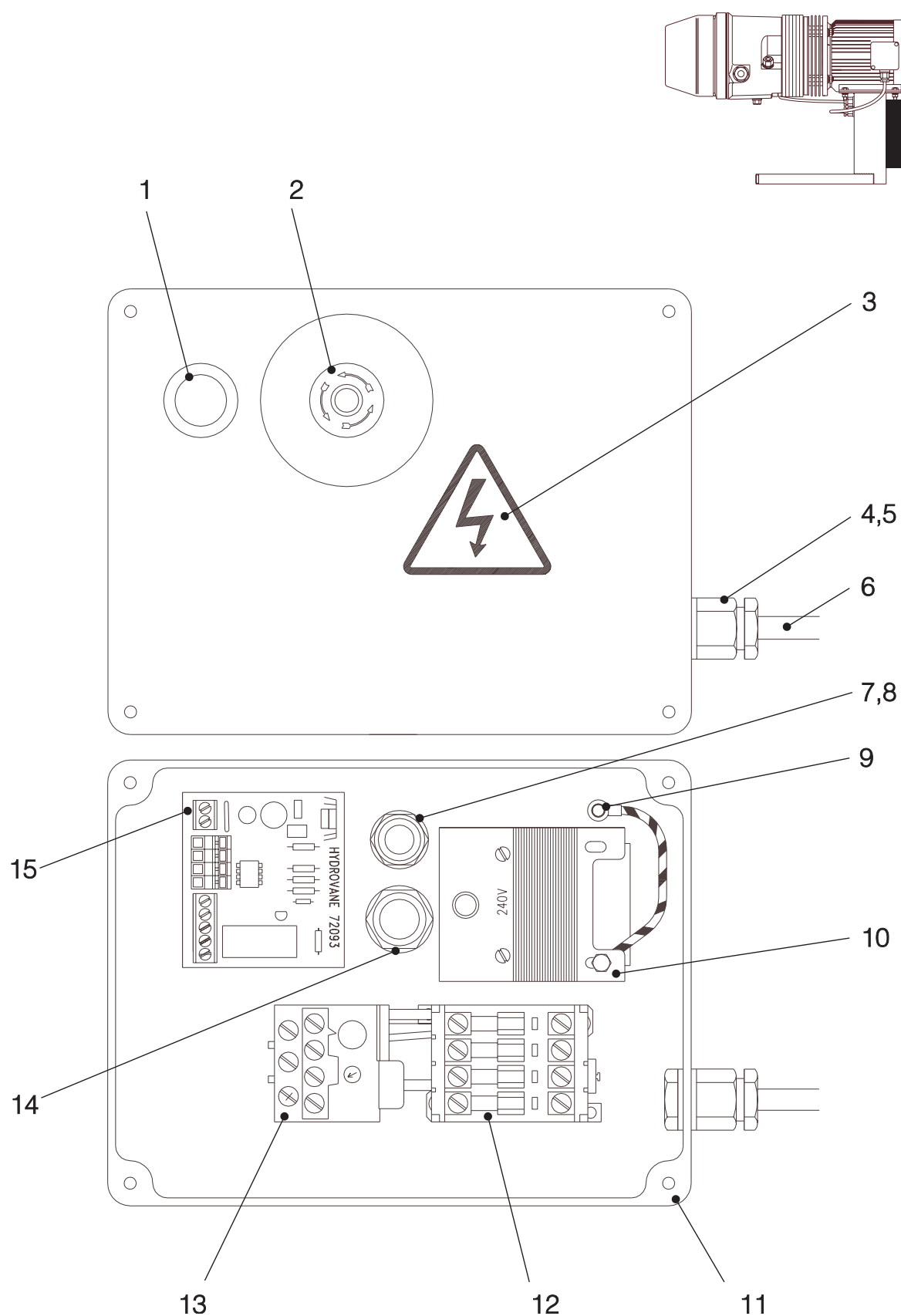


Figure 3C - 502 Single Phase Starter

Starter Assembly Part Modifications

[illegible]

Chapter 4
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| Label Assembly | 4A | 49 |
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Refer to Health and Safety section before carrying out any service work.

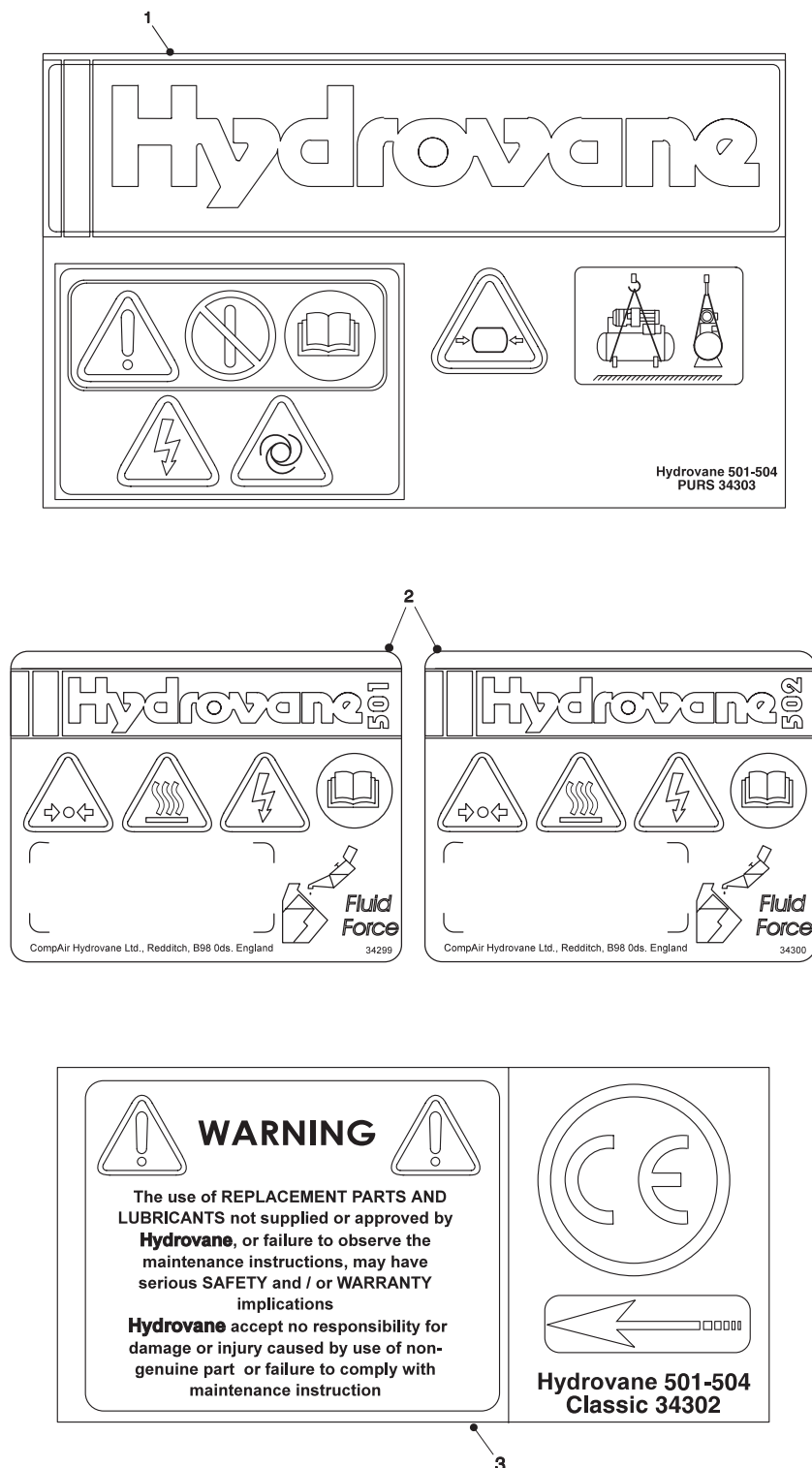


Figure 4A - Labels

[illegible]

Chapter 5

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A - Introduction

WARNING !

READ HEALTH AND SAFETY PRECAUTIONS BEFORE MAKING ANY ADJUSTMENTS.

Adjustment procedures shown must only be carried out by authorised persons fully trained and competent in the maintenance of CompAir UK Hydrovane compressors.

If you are not able to carry out the work safely, contact your CompAir UK Hydrovane distributor.

B - Pressure Switch (Fig. 5.1)

The pressure switch (C) is located in the air receiver and is pre-set at the factory. The recommended cut-out pressure (high pressure switch setting) is a **maximum** and must not be exceeded. The cut-in pressure (re-start pressure switch setting) may be adjusted to suit your application.

Factory setting 10 bar machines:-

Cut-out = 9.6-10.4 bar (max) Cut-in = 6.0 - 6.8 bar

Note: Do not adjust unless pressure switch is under pressure and the compressor has been safely isolated from the mains electrical supply.

Pressure sensing

Since the pressure switch is located into the air receiver we recommend that you do not fit a non-return valve in your air-line system.

If a non-return valve is essential for your application then the air-supply to the switch must be relocated after the non-return valve.

C - Check Setting Procedures

Cut-out (stop) pressure:-

- Close air-outlet valve (A).
- Start compressor, allow pressure to rise until compressor cuts-out (stops).
- Check and record cut-out pressure shown on pressure gauge (B).

Cut-in (re-start) pressure:-

- Carefully open air-outlet valve (A), allow pressure to fall slowly until compressor cuts-in (re-starts).
- Check and record cut-in pressure shown on pressure gauge (B).
- Stop compressor.

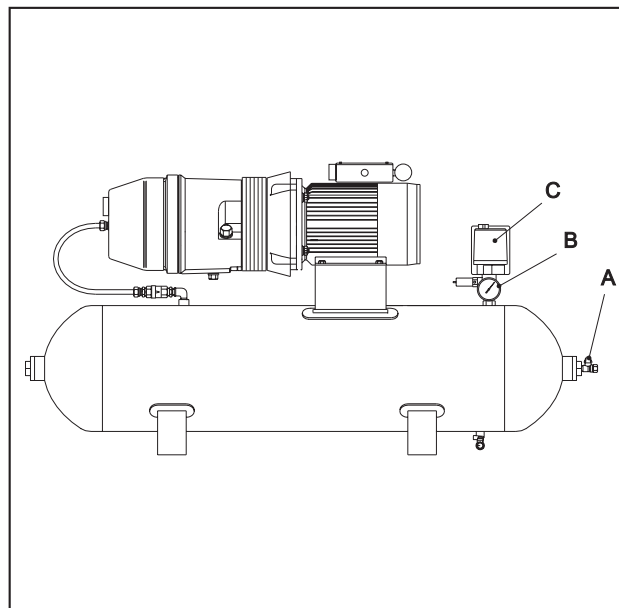


Figure 5.1 - Pressure Switch Location

D - Pressure Switch Adjustment (Fig. 5.2)

- Close air-outlet valve (A).
- Start compressor, allow pressure to rise until compressor cuts-out (stops).

WARNING !

ISOLATE THE COMPRESSOR FROM MAINS ELECTRICAL SUPPLY. LOCK THE ISOLATOR IN THE OFF POSITION. FIT A SAFETY NOTICE TO THE ISOLATOR ADVISING THAT WORK IS BEING CARRIED OUT ON THE COMPRESSOR.

- Remove pressure-switch cover.
- To adjust the cut-out higher (stop) pressure; turn the screw marked (P1) towards:-

minus (-) to reduce cut-out pressure; compressor stops at a lower pressure.

plus (+) to increase cut-out pressure; compressor stops at a higher pressure.

Note: Cut-out, higher (stop) pressure must not be set above 10.4 bar.

- To adjust the lower cut-in (start) pressure; turn screw marked (P2) towards:-

minus (-) to reduce differential and restart the compressor at a higher pressure.

plus (+) to increase differential and restart the compressor at a lower pressure.

- Re-fit pressure-switch cover.
- Switch mains electrical supply on.
- Start compressor and carry-out check settings procedure.

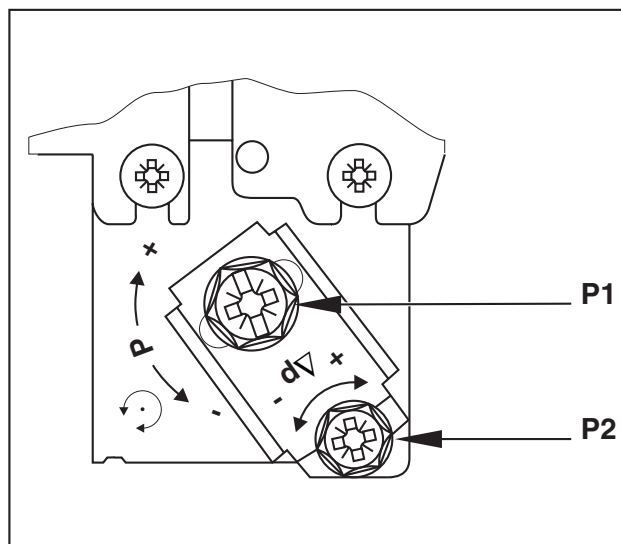


Figure 5.2 - Pressure Switch Adjustment

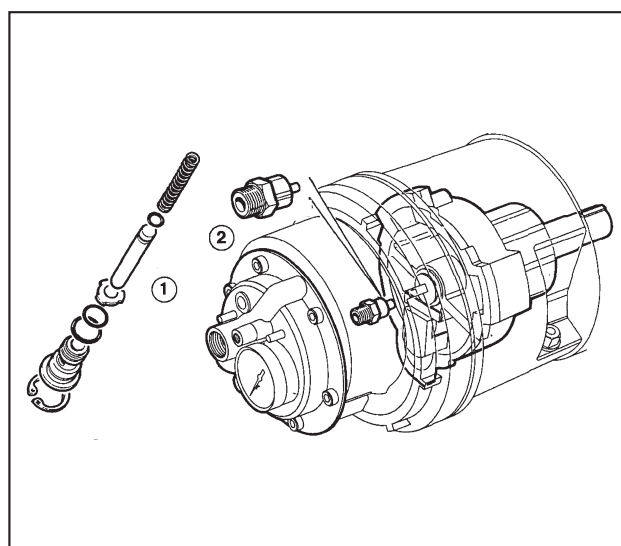


Figure 5.3 - Minimum Pressure Valve and Safety Valve Lift Pressure

E - Minimum Pressure Valve ① (Fig. 5.3)

- Close outlet valve and start compressor.
- Open outlet valve fully to atmosphere.
- Check the gauge pressure reading.
- When set correctly the gauge should show 5 bar. The valve will operate satisfactorily between 4 bar and 6 bar.

F - Safety Valve Lift Pressure ② (Fig. 5.3) (Where fitted)

- Safety valve preset to lift as follows:
10 bar compressor = 11 bar.
- Should the safety valve be faulty it cannot be adjusted and must be renewed as a complete unit.

G - Pressure Control Valve (Fig. 5.4)

- Close outlet valve and start compressor (continuous run).
- Gauge should read 10.5 bar max (10 bar PUTS).
- Should gauge read differently DO NOT attempt to adjust the valve. Renew as a complete unit.
- Note the pressure setting written on valve when reordering.

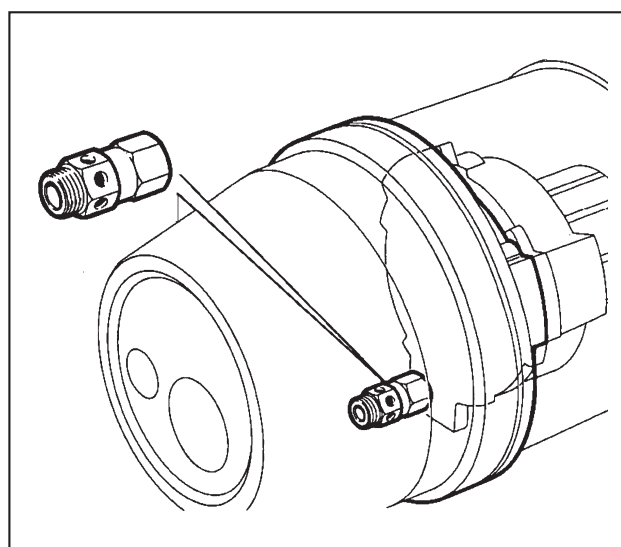


Figure 5.4 - Pressure Control Valve

H - Oil Temperature

- Allow compressor to run for 30 minutes in order to attain its normal working temperature.

Average running temperature should be approximately 60°C above ambient.

I - Air Output (Fig. 5.5)

- Screw test nozzle into compressor outlet.
- Close outlet valve and start compressor (continuous run).
- Open outlet valve fully. Pressure on gauge should not fall below 9.5 bar (10 bar machine).

J - Leakage Check

- Examine all external seals, gaskets and pipe connections for air or oil leakage. **No leaks are permissible.**

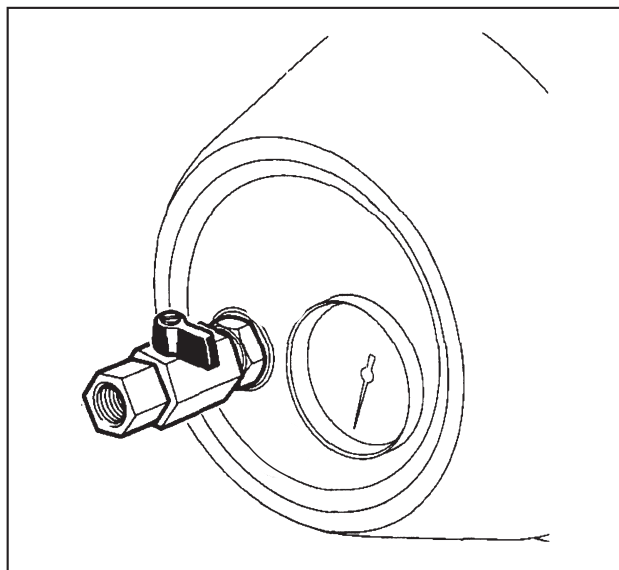


Figure 5.5 - Air Output

Chapter 6

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Introduction

WARNING !

READ HEALTH AND SAFETY PRECAUTIONS BEFORE YOU START ANY SERVICE WORK.

SERVICING OF THE COMPRESSOR MUST ONLY BE CARRIED-OUT BY AUTHORISED PERSONS FULLY TRAINED AND COMPETENT IN THE MAINTENANCE OF COMPAIR UK HYDROVANE COMPRESSORS. THEY MUST FULLY UNDERSTAND AND ADOPT CORRECT AND SAFE WORKING PRACTICES.

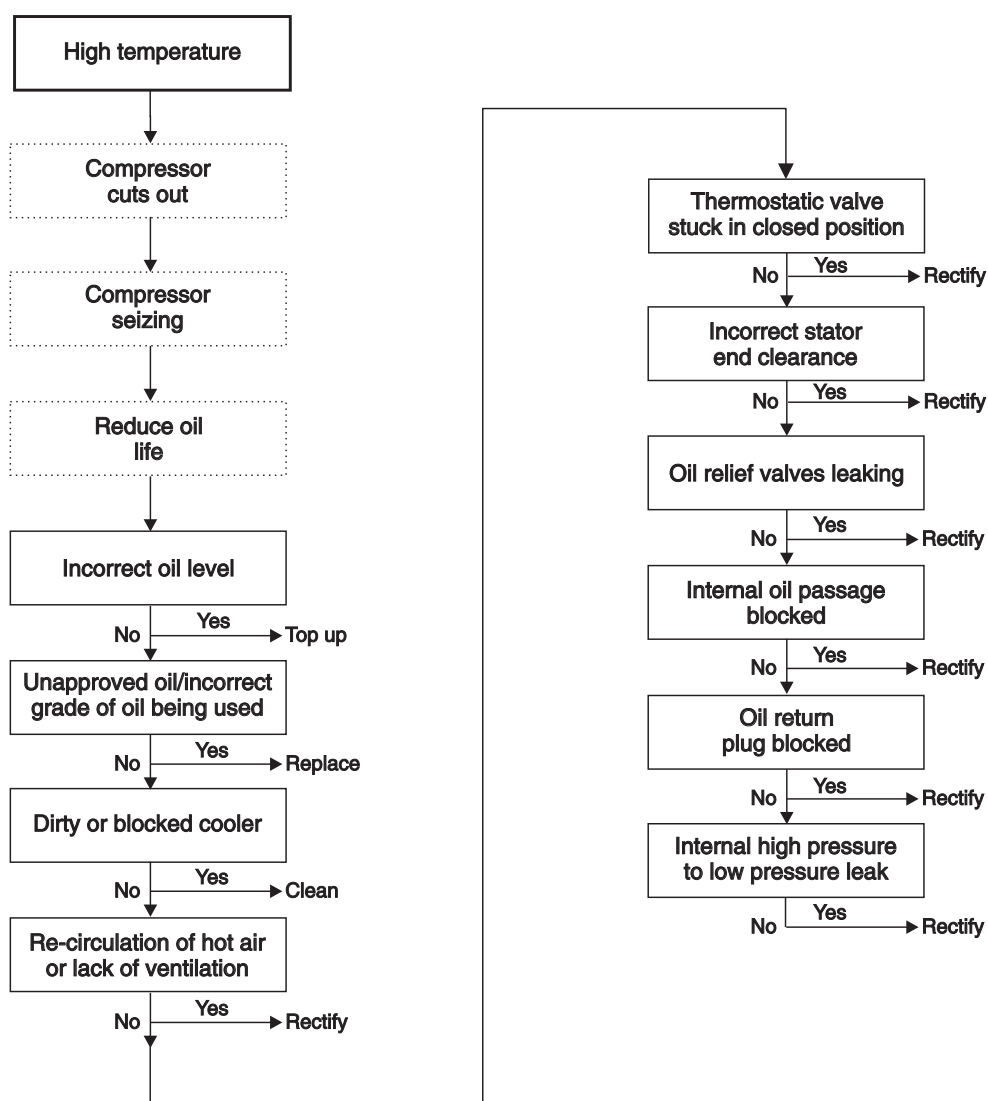
If you are unable to carry-out the work safely in the required manner then your CompAir UK Hydrovane distributor will be pleased to help.

The range of minor faults which may occur with your Hydrovane compressor can be grouped under the following four categories:

| | |
|----------------------------------|--|
| HIGH TEMPERATURE | Pressure rises until safety valve lifts. |
| HIGH PRESSURE | Oil temperature higher than 90°C. |
| LOW AIR OUTPUT | Lack of air at point of usage. |
| EXCESSIVE OIL CONSUMPTION | Oil discharged into air system. |

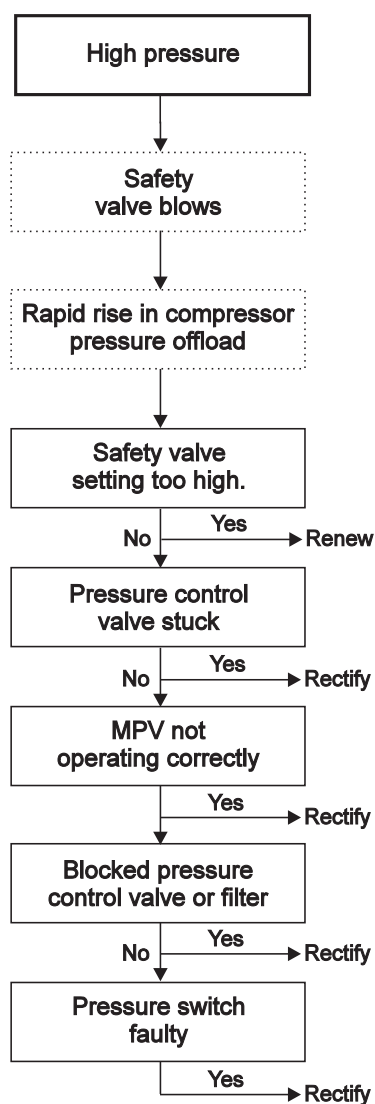
The symptoms and actions for these faults are detailed on the following pages.

High Temperature



- ☐ Fault
- ☐ Model type
- ☐ Symptom
- ☐ Cause

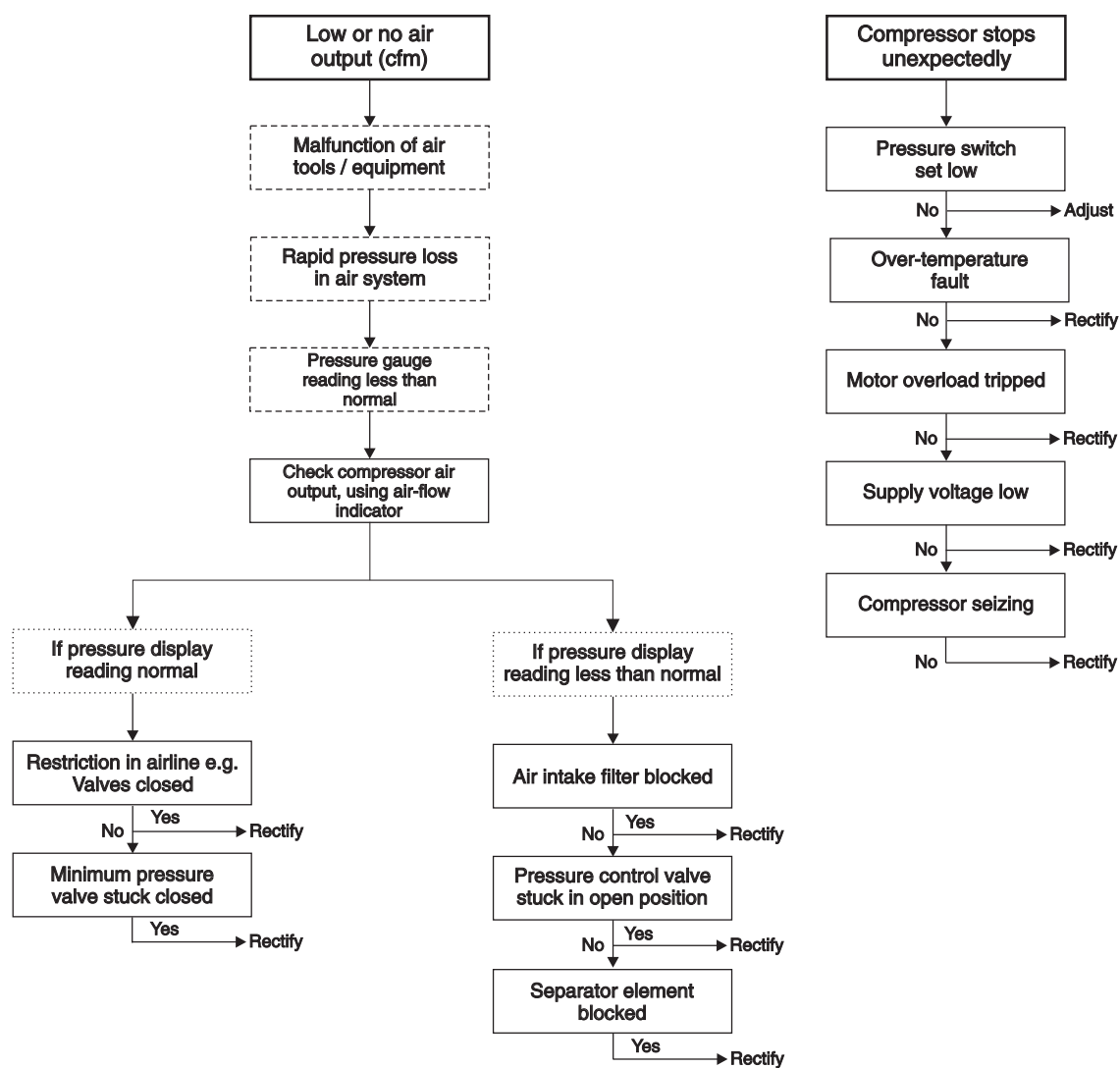
High Pressure



- ☐ Fault
- ☐ Model type
- ☐ Symptom
- ☐ Cause

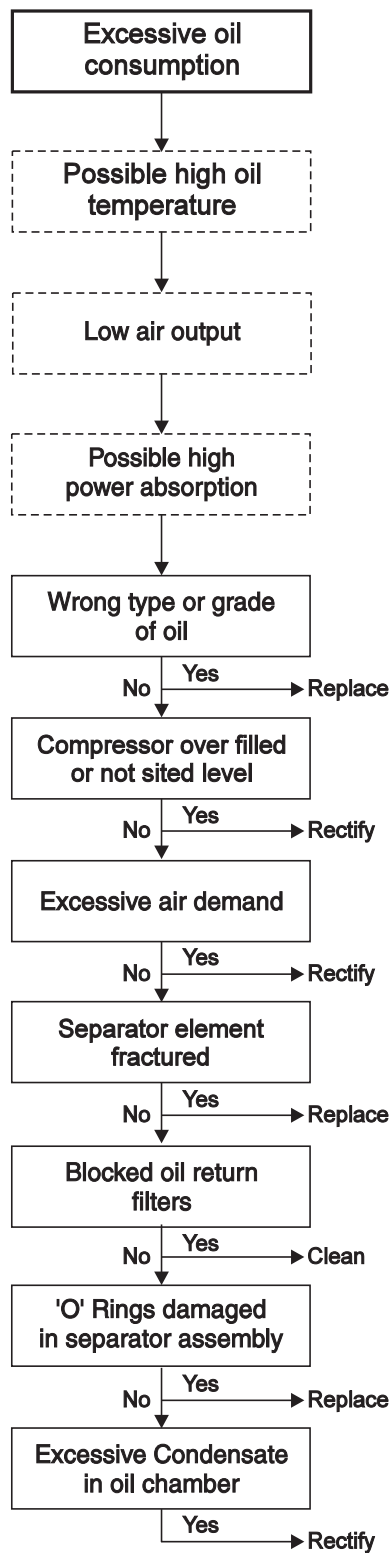
Low Air Output

Compressor Stops Unexpectedly



- ☐ Fault
- ☐ Model type
- ☐ Symptom
- ☐ Cause

Excessive Oil Consumption



- ☐ Fault
- ☐ Model type
- ☐ Symptom
- ☐ Cause