

**DRAPER**[®]

INSTRUCTIONS FOR

Belt Driven Air Compressor

Stock No.05637
05638
05639

Part No.DA200/580
DA270/841
DA270/1080

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY TO ENSURE THE SAFE AND EFFECTIVE USE OF THIS PRODUCT.

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GENERAL INFORMATION

These instructions accompanying the product are the original instructions. This document is part of the product, keep it for the life of the product passing it on to any subsequent holder of the product. Read all these instructions before assembling, operating or maintaining this product.

This manual has been compiled by Draper Tools describing the purpose for which the product has been designed, and contains all the necessary information to ensure its correct and safe use. By following all the general safety instructions contained in this manual, it will ensure both product and operator safety, together with longer life of the product itself.

All photographs and drawings in this manual are supplied by Draper Tools to help illustrate the operation of the product. Whilst every effort has been made to ensure the accuracy of information contained in this manual, the Draper Tools policy of continuous improvement determines the right to make modifications without prior warning.

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How to use this instructions manual

This manual is an integral part of your compressor, and shall be kept with it for future reference. Retain this manual in a suitable place and when consulting it, take care of not spoiling it. Should your compressor be resold, entrust it to the new owner who will obviously need the information contained.

Before starting the compressor read this manual carefully so as to understand the contents clearly; consult it whenever any doubt arise.

This manual contains information useful for your safety. Follow the indications contained in it and perform the recommended procedures which, if not properly observed, could result in damage to equipment or could cause personal injury.

Moreover, you will find useful information which will make the use and maintenance of your compressor easier.

Should the manual be lost, ask for a new copy.

This manual does not include the spare parts list, which is available by our Authorized Resellers.

Symbols used in this manual

In order to make evident same special information, the following symbols are used:



WARNING

It refers to safety instructions to be complied with in order to ensure maximum safety conditions to the operator as well as to people in the working area.



NOTE

Recommended instructions or precautionary measures to facilitate maintenance operations or to clarify special operations.



SPECIALIZED PERSONNEL

Symbols indicating operations to be carried out by specialized personnel only.

Service and Spare Parts



In case of replacement of any part of your compressor, use only ORIGINAL SPARE PARTS. Contact any Authorized Service Centre which, having its own stock, will supply you at its best.

Imitation spare parts hide potential risks including the risk of injuries to people. In order to grant you efficient service or to remove any doubt, when asking for information always quote model, type and serial number of your compressor, which are printed on the cover of this manual and on the compressor's nameplate.

Product identification

The compressor You have purchased has its own CE plate showing the following data:

- 1) Manufacturer's data
- 2) CE mark – year of manufacture
- 3) TYPE = name of the compressor
CODE = compressor code
SERIAL NO. = serial number of the compressor You have purchased (to be always mentioned when calling for technical assistance)
- 4) air delivered by the compressor expressed in (l/min) and (cfm)
- 5) max. operating pressure (bar and PSI) – compressor noise level in dB(A)
- 6) electric data: voltage (V/ph), frequency (Hz), absorption (A) - power (HP and kW), rotations per minute (Rpm).
- 7) other approvals

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1. MAIN INFORMATION

1.1 Description

The compressors dealt with in this manual belong to the belt-drive line, which includes single-stage compressors in a power range from 1 to 4 HP and two-stage compressors in a power range from 4 to 20 HP.

All UE compressors are equipped with receivers according to EEC 87/404 Specifications.

1.2 Expected use



In addition to pneumatic tools, your compressor may be connected to several accessories suitable for blowing, washing and spraying.

For technical specifications and detailed instructions, please see the instructions provided for each accessory equipment.

Compressors are equipped with an overload cut-out which trips automatically and cuts off power when safety limits are reached. However, we recommend that compressor duty cycle never exceed 50% and continuous operation never exceed 15 minutes.

Compressors having a power of more than 5.5 HP should be used indoor only.

1.3 Standard Accessories Supplied (Fig. 1)

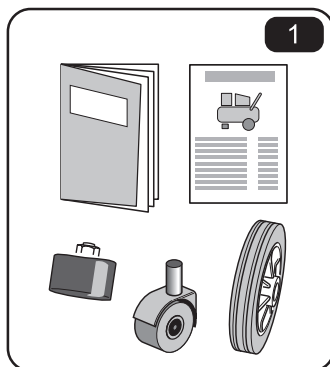
- Manual for Use and Maintenance
- Oil Dipstick / oil plug
- Wheels, Vibration-damping Pad (if not already fitted)

1.4 Safety general warnings



Before operating your compressor read this Manual very carefully.

Your compressor was thought, manufactured and arranged for the operations depicted below. Any other use is not allowed. The MANUFACTURER assumes no responsibility for any damages resulting from improper use or for not compliance with the instructions described in this manual.



1.4.1 WHAT YOU MUST DO:

Learn how to use all controls and how to stop the compressor suddenly.

Before carrying out any service or routine operation to your compressor, ensure the power has been cut off and all pressure has been released from the tank, so as to prevent any sudden unexpected re-start.

After any maintenance operation, make sure all components have been fitted correctly.

Before switching on the compressor, in order to ensure working safety, always follow the recommended procedures described in the § Installation.

Keep out children or animals from the operating area so as to prevent damages or injuries caused by any accessory connected to your compressor.

Read carefully the instructions regarding the accessory fitted; moreover, if you mount the spray gun, ensure that the area is provided with proper air change system.

On the three-phase models, it is essential to always use the wall-mounted main switch to start and stop the compressor.

An operator working close to the compressor should wear ear protection devices.

1.4.2 WHAT YOU MUST NOT DO:

Do not spray in closed areas or near naked flames.

Do not touch the cylinder heads, the cooling fins, and the feed pipe. During operation, because of the high temperature achieved, those parts keep hot for a certain time even after switching off the compressor.

1. MAIN INFORMATION

- Do not leave inflammable, nylon objects, or cloths near the compressor.
- Do not move the compressor with the tank under pressure.
- Do not use the compressor with the supply cord damaged or with precarious electric connection.
- Do not direct the air jet towards people or animals.
- Do not allow anyone to operate the compressor unless he/she has received correct instructions.
- Do not hit the flywheel and the fans with metallic or sharp objects as they could break during operation.
- Do not operate the compressor without air filter.
- Do not carry out any repair or adjustment operations on safety valve and tank.
- Do not use the compressor in a potential explosive environment.
- Do not connect a hose which has a flow rate lower than that of the compressor to the air outlet cock.
- Do not use the compressor at temperatures lower than 0°C (temperature range: +5°C / +45°C).

2. TRANSPORT AND HANDLING

2.1 Unpacking

• This machine, depending from the model, can be supplied on a wooden pallet and protected by a top paper cover; or in a carton box. Wear safety gloves and cut straps with scissors and withdraw the paper from the machine top, or lift the compressor with the help of another person.

Hoist the compressor using a means with a suitable lifting power. Fit the wheels and/or the anti-vibrating elements.



• When handling compressors with tanks holding over 100 litres, be sure to keep the machine well balanced at all times. However, these compressors should be handled by skilled personnel trained to operate lifting equipment. Clear any possible hindrance from the area (fig. 2).

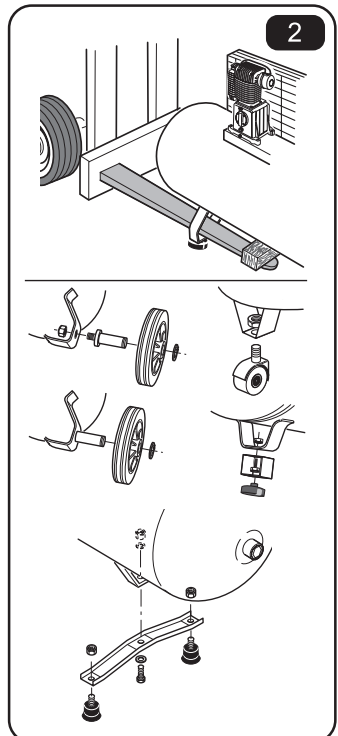
• Once the compressor is in the designed place of installation, fit the vibration dampers and/or the wheels supplied with it.

• Pay attention to the accessories contained into the packing case, then verify the perfect integrity of your compressor.

2.2 Packing disposal

Save the packing material in case you ever need to transport the compressor in the future. We recommend that you store the packing in a safe location, at least within the period of the guarantee. In case of need, it will be easier to send the compressor to the service centre.

Afterwards, put it into the care of the company or board in charge of elimination.

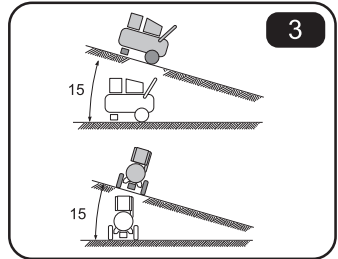


3.SETTING UP

3.1 Positioning



- In order to avoid damaging the compressor, do not incline the compressor transversally or longitudinally more than 15° (Fig.3).
- In order to facilitate maintenance and cleaning operations and to ensure proper air flow, rear ventilation grills of compressors shall be fitted or positioned at least at 50 cm from any obstacles which may prevent air from flowing out correctly.



3.2 Installation

All compressors are delivered only after a successful testing period at the factory. In order to get the best performances from your compressor, follow the indications hereunder.

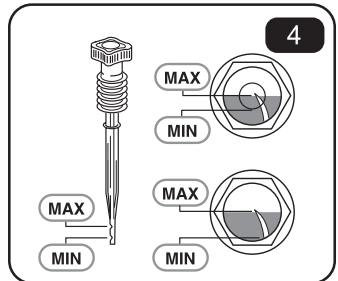


- Install the wheels and the vibration-damping pad (Fig.2),
- Make sure that the level of oil ranges between the max. and min. mark (Fig.4). After the first 50 working hours, replace the oil with one of those listed in the table 4.8.

• Check that mains power corresponds to the power data written on the label, and make sure that the power mains is protected by a switch provided with plug fuses and ground connection.

SINGLE-PHASE: please note that the compressor is equipped with a plug type EEC 7. If any adaptation is necessary, have the plug replaced by a qualified electrician.

THREE-PHASE: make sure that the main supply is fitted with a switch of suitable amperage for the total installed power (see table 4.9).

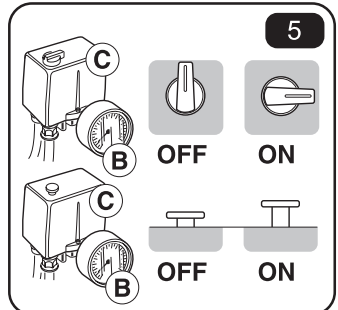


3.3 Starting



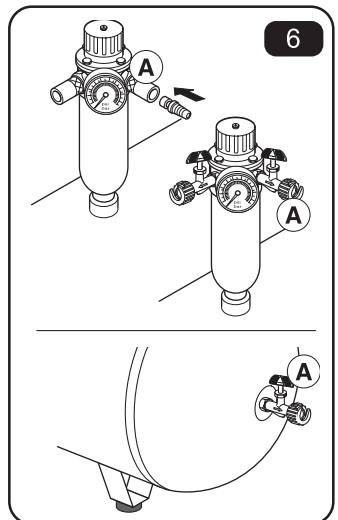
After completing the installation your compressor is ready to work. Make sure the main switch is in position "OFF" (Fig. 5). Plug in the equipment and start up the compressor by turning the pressure switch to position "ON" (Fig. 5).

• When starting the compressor for the first time, leave it running for about 10 minutes with air cocks **A** completely open (Fig. 6). After such a time, close cock **A** and make sure that pressure in the tank is properly delivered and the compressor stops automatically when the max. pressure value allowed - written on the plate and shown on the manometer **B**-is achieved (Fig. 5). Now you may appreciate the easiness of use of your compressor. The pressure switch **C** (Fig.5), which stops the motor when the max. pressure allowed is achieved, makes the compressor start again when pressure goes below the minimum threshold (about 2 bar less than the max. pressure).



• The compressors equipped with the loadless running system will not stop as soon as they reach maximum pressure, but will keep running under "no-load" conditions while the excess air in the head and end manifold is discharged thanks to a suitable (solenoid) valve.

On these compressors, a timed stop delay can be set within a 1 to 6 minutes' range depending on your air requirements. This will avoid useless and costly starts. After running 6 minutes under loadless conditions, the compressor will stop automatically.



3.SETTING UP



- Never stop the compressor by unplugging it; rather turn OFF the switch located on the pressure switch (Fig. 5). The compressed air inside the compressor head will flow out and will make the re-start easier.

When the compressor runs correctly, you note:

- a whistle of compressed air whenever the motor stops,
- a protracted whistle (about 20-30 seconds) whenever you start the compressor with no pressure in the tank (single-phase model).

3.4 Overload cutout

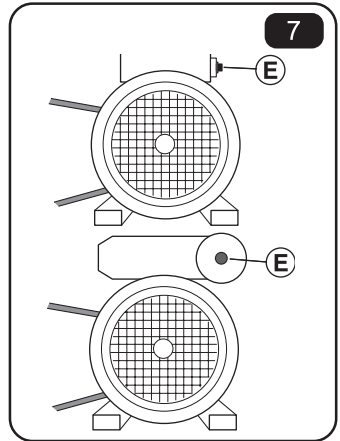


- The SINGLE-PHASE compressors are equipped with an overload cutout **E** (Fig. 7) which operates as a safety device to protect the motor. When the motor overheats because of any fault arisen, the overload cutout automatically releases and cuts off power, thus preventing motor from being damaged. Wait a few minutes (about 5) before resetting the device, then start working again.

If you restart the compressor and the **overload cutout releases again**, turn the main switch to position "0" OFF, unplug the equipment, and **contact any Authorized Service Centre**.

- The THREE-PHASE compressors can be equipped with an automatic pressure switch or a magnetic overload cutout plus automatic starter. In this case, the overload cutout incorporated in the automatic pressure switch will protect the motor, i.e. the heat relay will stop the compressor in the event of an overload. **In this event, please contact a specialised technician** to have the relay setting checked and changed as required.

• NOTE: On the models equipped with an "OIL CONTROL" system, a power-off event may also be due to low oil level (see par. 4.5). Check oil level through the suitable oil window before resetting the relay.



3.5 How to adjust working pressure (Fig. 8)

In order to use all accessories at their best, see in the manual the rated pressure value of the accessory you are going to use.

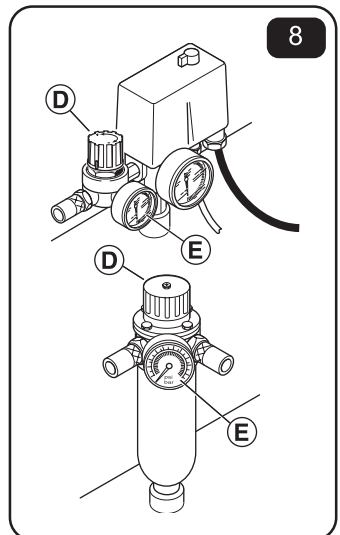
- By means of the pressure reducer **D** you can adjust delivery compressed air pressure.

Simply turn the knob clockwise to increase pressure and anti-clockwise to reduce it. The pressure setting will appear on the manometer **E**.



After having used your compressor, set pressure to zero, so as to avoid damaging the pressure reducer.

- For those machines that have no pressure reducer, suitable cut-off devices and regulators should be fitted along the supply line.



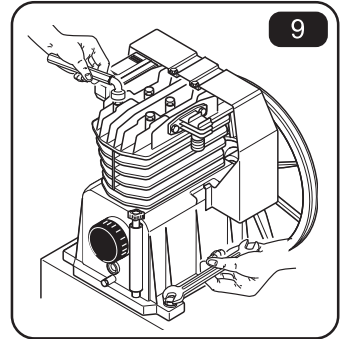
4.1 Warning



In order to keep your compressor in good working conditions we recommend you to perform periodical servicing operations. Before performing any maintenance operation, switch off the compressor and make all air in the tank release.

4.2 Operations to be carried out after the first 50 working hours:

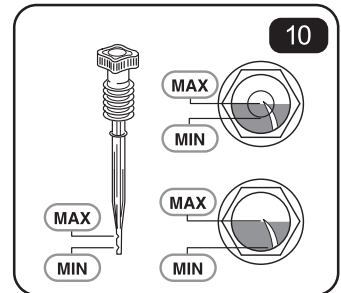
- **Check that all screws** are properly tight, paying special care to the head and crank case (Fig.9).
- **Replace the lubricant** (see § 4.5) with one of the recommended oil listed in the table 4.8.



NEVER MIX DIFFERENT OILS TOGETHER

Do not use non-detergent oils or low quality oils as they have very poor lubricating properties.

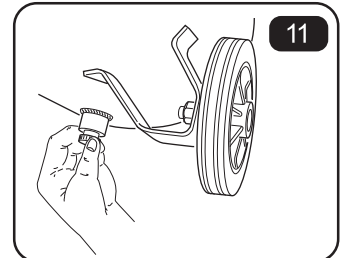
Do not pour out oil in the environment, rather apply to the body in charge of the collection.



4.3 Weekly operations:



- Check **the oil level** and if necessary, top up. Do not exceed the mark corresponding to the max. level (Fig. 10). Otherwise, make sure the oil does not drop below the minimum, so as to avoid any damage or seizure.
- **Drain condensation** by opening the cock located under the tank (Fig. 11) or under the pressure reducer (if supplied); as soon as air flows out, turn off the cock.



4.4 Monthly operations:

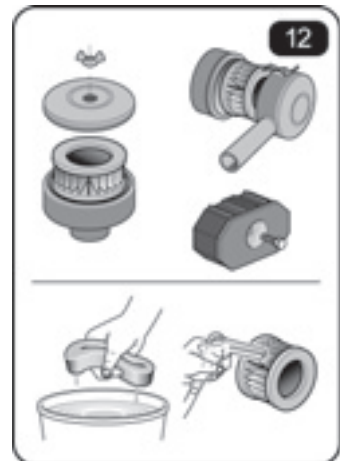
(Or more frequently, if the compressor operates in very dusty areas)

Remove the suction filter and clean or change the filter element as required. Clean the filter element as follows (fig. 12):

PAPER ELEMENT: blow with compressed air from the inside towards the outside.

SPONGE ELEMENT: wash in a solution containing normal detergent, rinse and dry completely before refitting.

METAL ELEMENT: wash in grease-free thinner and then blow with compressed air.



Do not operate the compressor without the suction filter fitted, as foreign bodies or dust could seriously damage the inside components.

4.5 Operations to be carried out every 6 months:

- In order to **change the oil**, remove the dipstick/plug and unscrew the screw **A** (Fig.13), then make oil drop into a container. You should perform that operation when the compressor is hot so as to allow the oil sump to drain rapidly and completely. Tighten screw **A** in its housing and pour oil up to the max. level (for proper quantity, see the oil table enclosed to the instructions book).

Do not pour out oil in the environment.

Contact the body in charge of the collection.

- The BKV40 unit comes with an oil level control system (at request available for the other models, too). When oil drops below minimum level, a heat probe will cut out the power supply so that compressor starting is inhibited.

- It is advisable to **clean all the finned parts** of your compressor, so as to keep the cooling system efficient and to ensure a long work life to your equipment (Fig. 14).

- **Check belt tension.** Hang a weight of about 3 kg at the mid point of the belt (fig. 15). Belt flexion should be about 10 mm. If necessary, tension up the belt taking care not to disturb the pulley-to-flywheel alignment.



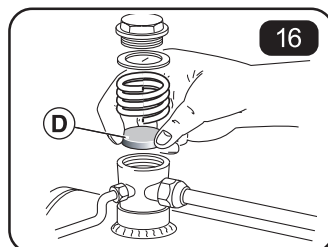
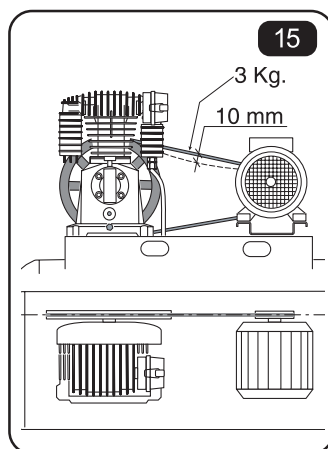
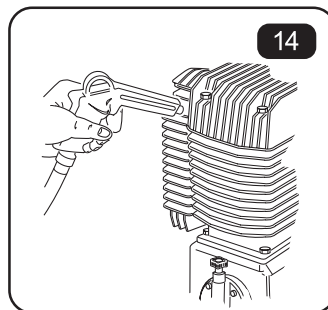
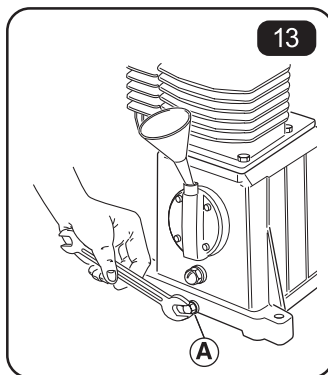
Some models are not fitted with any adjuster for this operation. If this is the case and you find some slack in the belt, please contact a specialised technician.

4.6 Operations to be carried out every 2 years:



- **Check the non-return valve** and if necessary replace the seal **D** (Fig. 16).

- **Check intake and delivery valves.**



4.MAINTENANCE

4.7 Scheduled maintenance table

MAINTENANCE OPERATIONS	Every week	Every month	Every 6 months	Every 2 years
Checking the oil level	X			
Draining the condensation	X			
Cleaning the intake filter		X		
General cleaning of compressor			X	
Replacing the oil			X	
Check belt tension			X	
Check/cleaning valves				X

4.8 Recommended oils (suitable for room temperature ranging from +5°C and + 25°C)

SHELL Rimula D Extra 15W-40
AGIP Dicrea 100
BP Energol CS100
ESSO Exxc Olub H150
MOBIL Rarus 427

FUCHS Renolin 104L VG100
API CM-8X
CASTROL Aircol PD100
IP Calatia Oil ISO 100
TOTAL Dacnis P100

Room temperature below +5°C: ISO 68 - Room temperature above +25°C: ISO 150

4.9 Electrical data

Power	Voltage	Absorption	Direct start relay setting	start/delta relay setting	Cable cross section	Sectioning switch
HP	volt	A	A	A	mm ²	A
2	230	6	6,5	/	1	10
	400	3,5	3,9	/	1	6
3	230	8,7	9,2	/	1,5	16
	400	5	5,4	/	1	10
4	230	12	12,6	7	1,5	30
	400	7	7,4	4	1	20
5,5	230	15,7	16,5	9,5	2,5	36
	400	9	9,5	5,5	1,5	25
7,5	230	21,7	22,5	13,1	4	50
	400	12,5	13,1	7,6	2,5	30
10	230	27,7	28,8	16,5	4	50
	400	16	16,5	10	2,5	36
15	230	39	/	23	6	80
	400	22,5	/	13,4	4	40
20	230	54	/	32	10	80
	400	31,2	/	18,5	6	50

5.TROUBLESHOOTING

Fault	Cause	Remedy
Pressure drop in the tank.	Air leaks at connections.	Make the compressor get to maximum pressure. Switch it off and brush a soapy water solution onto all connections. Look carefully for air bubbles flowing out. Tighten those connections where leaks are present.  If the problem is still present, contact the after-sales service.
The pressure switch valve leaks when the compressor is idle.	Non-return valve seal defective.	Make air in the tank flow out. Then remove the non-return valve plug and clean the seat. If necessary replace the seal D, then mount again all components (Fig. 16).
The pressure switch valve leaks when the compressor has been running for more than 1 minute.	Failure of the empty-start valve.	 Replace the valve.
The compressor stopped and does not start.	Overload cutout tripped (SINGLE-PHASE). Heat relay tripped (THREE-PHASE) Low oil level.	 Power off through the pressure switch, then press the restart button (fig. 7). If the overload cutout or the relay trip again, contact a specialised technician. Top up with oil.
The compressor stopped and does not start.	Winding burnt out.	 Contact a specialised technician.
The compressor does not stop eventhough the max. pressure allowed has been reached; the safety valve operates.	Wrong operation or pressure switch broken.	 Contact a specialised technician.
Compressor does not hold regular speed.	Belt is slipping.	Tension up.
The compressor does not get to the set pressure and overheats too much.	Compressor head gasket broken or valve faulty.	 Stop the compressor and contact a specialised technician.
The compressor is noisy with metallic clangs.	Bearing or bush seizure.	 Stop the compressor and contact a specialised technician.

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