

Duster VEGA 120

377.563-A ENGLISH

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**to be read attentively
and kept for further reference**

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GENERAL AND SAFETY

WARNING

- Successful treatment depends on correct **operation** of your duster.
- Correct **operation** depends on precise calibration of the equipment, and this requires careful **checking**.
- When this **checking** has been undertaken, the duster must be **commissioned** correctly, this also being necessary for correct spraying and operation.
- Finally, to be certain that your duster can give you the performance you expect, for a long time, make sure that you undertake the **maintenance** operations required.

CHECKING, STARTING-UP, OPERATION, MAINTENANCE

are therefore essential operations, and you have every reason to carefully read the details in this booklet.

"This duster has been manufactured using materials which withstand most plant protection chemicals currently available on the market. Nevertheless, BERTHOUD cannot assume responsibility for any damage resulting from an incompatibility of the crop protection chemicals or product mixtures with the plastic materials (polyethylene, polyvinyl chloride, polypropylene, Vitton, nitrile polyamide, ABS)."

CLEANING THE DUSTER

- Only BERTHOUD is qualified to assist you concerning the maintenance of the duster and the choice of cleaning products.
- Care should be taken with products containing solvents. Such products may attack and damage plastic and rubber elements and paint. Berthoud cannot be held responsible in cases where inappropriate cleaners are used. We recommend the **ALL CLEAR** cleaner.

IMPORTANT

- **According to the terms of article R 149 of the Highway Code, any towed agricultural machine with a GVWR over 1.5 tonnes must be fitted with a braking mechanism for driving on the public highway.**

*Because of our policy of constant product improvement,
we reserve the right to modify product specifications or design without prior notice.*

TECHNICAL SPECIFICATIONS

Duster VEGA 120

- Fan speed : 3,490 rpm
- Air flow per outlet : 880 m³/h
- Absorbed power : 4.5 HP

- **CHASSIS**
 - Steel profile and plate.
- **HOPPER**
 - Sheet plate.
 - Capacity : 120 litres.
 - Wide filling orifice.
 - Discharge hole.
- **MECHANISM**
 - Speed-increasing gear to V-belts.
- **MIXER**
 - Finger agitator to prevent bridging, fitted with a torque limiter.
- **FEEDING**
 - By endless screw.
 - This system ensures the powder flows evenly.
 - As the powder does not go through the rotor, micro-granules can be used.
- **FAN**
 - Aluminium.
 - Rotation speed: 3,490 rpm.
- **ADJUSTMENT**
 - 8-position notched lever.
 - Flow of 4 to 88 kg/ha.
- **DISTRIBUTION**
 - Through double swivelling blades.
 - Powder equalising device to ensure perfectly even left-right balance.
- **MAINTENANCE**
 - All greasers located on the right-hand side with grease ducts.

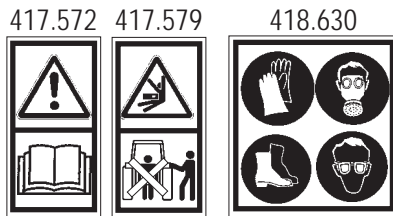


DIMENSIONS AND WEIGHT

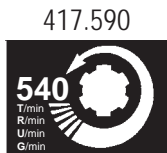
- Length : 1.040 m.
- Width : 0.760 m.
- Height : 0.980 m.
- Weight : 93 kg.

POSITION OF THE SAFETY STICKERS

- Duster VEGA 120 -



On the hood in front of the duster



In front of the duster



On the hood in front of the duster



Constructeur : BERTHOUD agricole	
Z.I. du Bois Sarrin 1, rue de l'Industrie 69220 BELLEVILLE SIS - FRANCE	
Type : <input type="text"/>	N° de série : <input type="text"/>
Poids à vide: PV. <input type="text"/> kg	
Poids total autorisé en charge: P.T.A.C. <input type="text"/> kg	
CE 200	

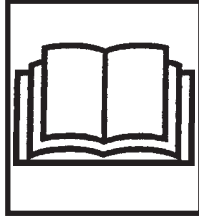
It is very important to keep the safety stickers in location and in good condition as they draw your attention to possible dangers and refer to the operator's manual.

See the following pages and check their location on the duster.

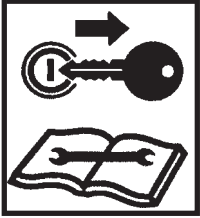
MEANING OF THE SAFETY STICKERS



GENERIC WARNING SYMBOL



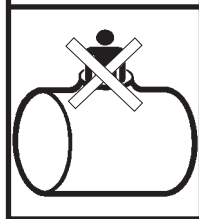
READ THE OPERATING MANUAL BEFORE ANY OPERATION



SWITCH OFF THE ENGINE AND REMOVE THE IGNITION KEY BEFORE UNDER-TAKING WITH ANY INSPECTION, MAINTENANCE OR REPAIR OPERATION



RISK OF ASPHYXIA DO NOT ENTER IN THE TANK



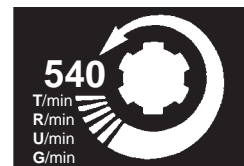
RISK OF ELECTRIC SHOCK AND ELECTROCUTION



HAND PROTECTION OBLIGATORY



AIR PASSAGE PROTECTION OBLIGATORY



ROTATING SPEED OF 540 REVOLUTIONS PER MINUTE RECOMMENDED

FOOT PROTECTION OBLIGATORY



EYE PROTECTION OBLIGATORY



HAND PROTECTION OBLIGATORY



OBLIGATION TO WASH YOUR HANDS



FILL WITH CLEAR WATER

MEANING OF THE SAFETY STICKERS



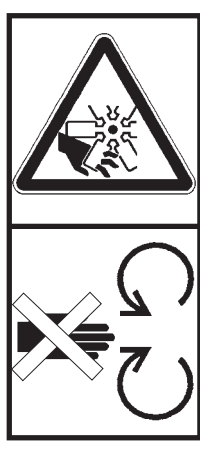
GENERIC WARNING SYMBOL

KEEP HANDS AWAY FROM THE SCREW WHILE THE TRACTOR POWER TAKE-OFF SHAFT IS CONNECTED AND THE ENGINE IS RUNNING



RISK OF PROJECTION

STAY AT A SAFE DISTANCE FROM THE SPRAYER



RISK OF INJURY

KEEP HANDS AWAY FROM VENTILATION FAN WHILE THE TRACTOR POWER TAKE-OFF SHAFT IS ENGAGED AND THE ENGINE IS RUNNING



RISK OF SNATCHING

DO NOT OPEN OR REMOVE THE PROTECTIVE COVERS WHILE THE TRACTOR POWER TAKE-OFF SHAFT IS ENGAGED AND THE ENGINE IS RUNNING



RISK OF SNATCHING

DO NOT OPEN OR REMOVE THE PROTECTIVE GUARDS WHILE THE TRACTOR POWER TAKE-OFF SHAFT IS ENGAGED AND THE ENGINE IS RUNNING



RISK OF CRUSHING

KEEP A SAFE DISTANCE FROM THE SPRAYER

ACCEPTABLE USE OF THE DUSTER

- Do not use your duster out of its function:
 - spraying crop protection chemicals, spraying of plant protective products.
- In the event of any damage related to the use of the duster outside the framework of the applications specified by the manufacturer, the latter shall not be liable.
- Any extrapolation of the sprayer's original intended use shall be at the user's risk.
- Acceptable use of the duster also implies:
 - compliance with the operating, servicing and maintenance instructions laid down by the manufacturer,
 - the exclusive use of original spare parts, equipment and accessories or those recommended by the manufacturer.
- The duster must only be used, serviced and repaired by trained people, familiar with its characteristics and methods of use.

These people must also be aware of the dangers they may be exposed to.
- The user must comply strictly with existing regulations as regards:
 - accident prevention,
 - safety at work (Labour Code),
 - travelling on the public highway (Highway Code).
- He must strictly observe the warnings affixed on the duster.
- Any change to the duster done by the user himself or any other person, without the manufacturer's prior written agreement, shall mean that the latter is not liable for any damages which may result.



GENERAL SAFETY INSTRUCTIONS

- This duster should be used by a fully trained operator in spray techniques.
- Do not allow anyone to enter the duster's working radius.
- When using hydraulic, electrical or other controls, first ensure that there is no-one within range of the spray.
- The only workpost is the tractor's cab when the duster is in operation.
- In addition to the instructions contained in this manual, comply with the legislation relating to safety and accident prevention regulations.
- The stickers on the duster indicate safety measures to be complied with to prevent accidents.
- The user must train himself in the operation of this duster before doing any work.
- Protect yourself from spray drift during spraying.
- No passengers should be carried on the duster.
- Take care when hitching or unhitching the duster.
- Before hitching the duster, make sure that there is sufficient ballast on the tractor's front axle.
- All the remote controls must be placed so that they cannot cause a dangerous situation.
- Before doing anything on the duster, disconnect the power take-off, switch off the engine, remove the ignition key and wait until the sprayer has stopped completely.
- Make sure that all the safety covers are in place.
- Carry out the adjustments and a water spray test before preparing the spray mixture.
- Dispose of chemical cans in accordance with the instructions given by the manufacturer.

HITCHING

- Beware of crush risks in the 3-point lifting area.
- Disconnect the power take-off, switch off the engine and remove the tractor's ignition key while the duster's drive shafts are being connected.
- Use only EC-approved drive shafts. Fit them and service them in accordance with their manufacturer's instructions. Replace their protectors as soon as they are damaged.
- The protective covers must always be in place and properly secured.
- Rest the drive shafts on their supports as soon as they are disconnected.

HYDRAULIC CIRCUIT

- Before connecting a hose to the tractor's hydraulic system, make sure that the tractor and sprayer-side circuits are not pressurized.
- Check that the hydraulic hoses are in good condition and replace them if they are damaged.

MAINTENANCE

- For all maintenance work, the PTO has to be disconnected, the tractor engine must be switched off, the ignition key removed.



IMPORTANT: For manually or hydraulically operated equipment with lifting, folding or extension gear, etc. and prior to all maintenance work, even of minor importance, mechanical parts must be at the limit of their travel, jack pressure off, arms on their supports and sliding or swinging frames locked in position.

- Only use recommended spare parts by BERTHOUD.

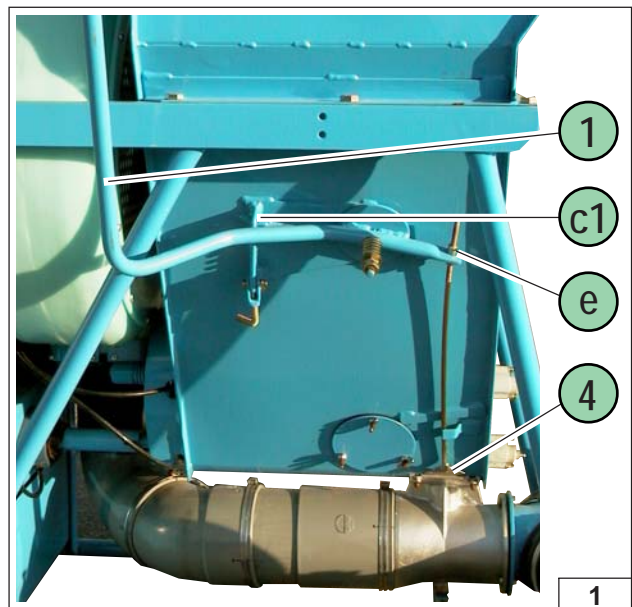
STARTING-UP THE DUSTER

HITCHING THE DUSTER TO THE TRACTOR

- Attach the tractor's lifting arms to the two pins on the drawbar.
- Mount the cardan drive shaft. If necessary, cut the tube to the required length and remove any burrs. Lubricate the tubes.
- Attach the top link to the duster mounting pin.
- Lift the device to the required height using the lifting arms so that the drive shaft angle is as flat as possible. The drive shaft angle must not be greater than 15° in relation to the PTO.
- PTO operating speed: 540 rpm.

FILLING THE HOPPER

- Rest the bag of powder on the rear edge of the hopper.
While pouring it in, check that there are no foreign bodies (pieces of bag or other) in the powder.
- Before filling the hopper, check that the opening lever (1) is in the closed position, i.e. with the lever in the top position, notch No. 1 (figure 1, ref. c1).
- Check that the gate (4) is fully blocking the powder outlet aperture in the closed position (notch No. 1). Use the nuts and locknuts (e) to adjust the position (figure 1).



OPERATION

OUTPUT ADJUSTMENT (figure 2)

- Adjust the flow rate with the device powered by the tractor PTO (540 rpm), going from:

notch No. 1 (c1) = closed position, to notch No. 8 (c8) = maximum opening.

Select the opening notch position from the flow rate chart (see page 18).

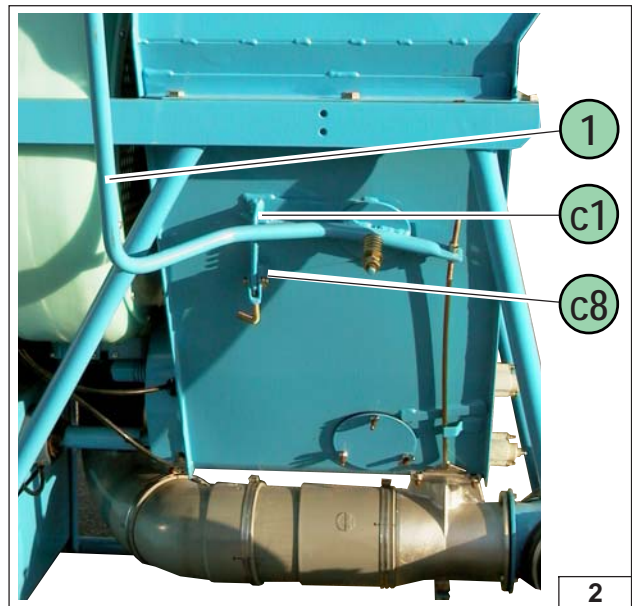


CAUTION:

To avoid overheating and to prevent the sulphur from solidifying we advise you:

- 1 - Not to use the VEGA with notch No. 1 (c1).
- 2 - To count 4 rows treated at a time. This performance corresponds to the device's power.
- 3 - To drive at a normal working speed (between 4 and 6 km/h).
- 4 - Not to allow the VEGA run with the lever (1) in the closed position.

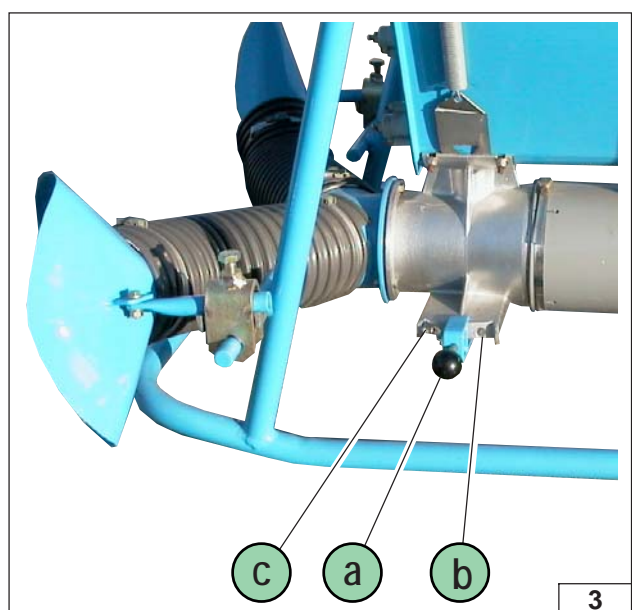
With certain mixtures or sulphurs and when the headland makes it necessary to manoeuvre, disengage the PTO at the end of the rows.



SELECTING THE PRODUCT OUTPUT DIRECTION (figure 3)

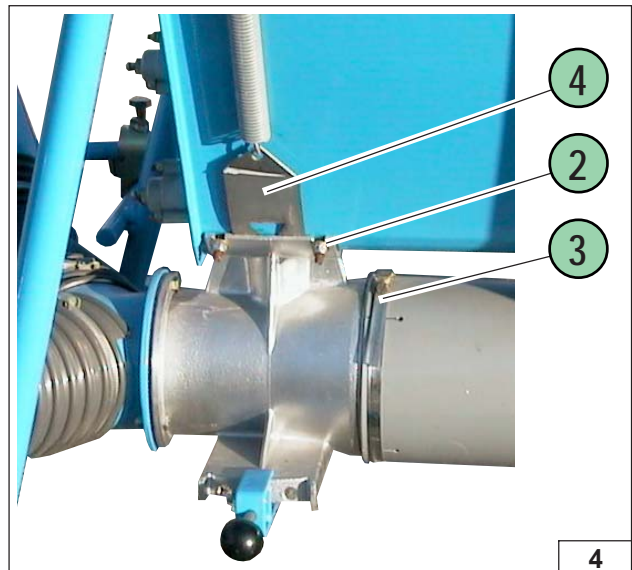
- The product output direction lever is located on the right side of the machine, on the product feed venturi nozzle (black knob).

- a - central position:
even flow through both product outlet vanes.
- b - right position:
flow through right vane only.
- c - left position:
flow through left vane only.



CLOGGING IN THE PRODUCT FEED VENTURI NOZZLE (figure 4)

- The feed pipe to the swivelling venturi nozzle is blocked by powder adhering to the walls due to humidity.
 - Disassemble the fixed venturi by removing the 4 nuts (2) attaching it to the hopper.
 - Loosen the connecting collar (3) on the ventilation pipe.
 - Clean the powder feed pipe so that the walls are completely smooth.
 - Before reassembling, check that the flow rate control gate is working properly (4).



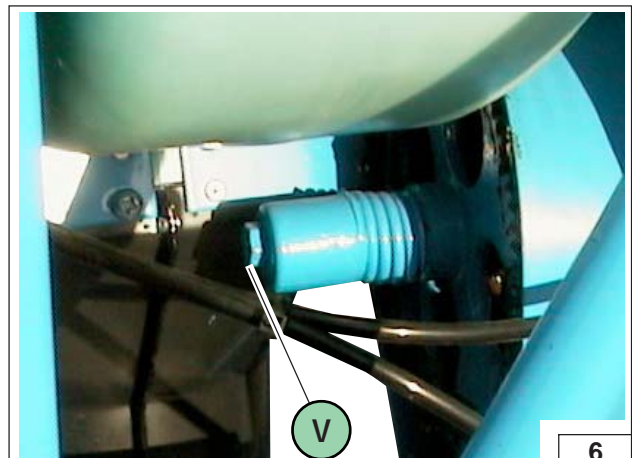
FLOW BALANCING (figure 5)

- To balance flow at the outlets:
 - with the machine running:
 - put the product output direction lever in the central position,
 - loosen the nuts (e),
 - use a screwdriver to adjust the balancing screw (v).



TORQUE LIMITER (figure 6)

- The agitator must not disengage if there is no foreign body.
- To increase or decrease torque, turn the screw (v).



DETERMINATION OF THE FLOW RATE

TABLE OF FLOW RATES

Selecting the notch No.	Flow rates / minute	Width treated	Flow rates in kg/hectare according to the forward speed		
			4 km/h	5 km/h	6 km/h
2	0.4 kg	6 m	10	8	7
		8 m	7.5	6	5
		10 m	6	5	4
3	0.8 kg	6 m	20	16	13.5
		8 m	15	12	10
		10 m	12	10	8
4	1.5 kg	6 m	37.5	30	25
		8 m	28	22.5	19
		10 m	22.5	18	15
5	2.0 kg	6 m	50	40	33
		8 m	37.5	30	25
		10 m	30	24	20
6	2.5 kg	6 m	62.5	50	41.5
		8 m	47	37.5	31
		10 m	37.5	30	25
7	3.3 kg	6 m	82.5	66	55
		8 m	62	49.5	41
		10 m	49.5	39.5	33
8	3.5 kg	6 m	87.5	70	58
		8 m	65.5	52.5	44
		10 m	52.5	42	35

- These flow rates have been determined using fluid sulphur (fluidosoufre). They are therefore indicative and significant differences may arise with powders which are more or less fluid.

- To obtain flow rates corresponding to different treatment widths, apply the following coefficients.

example:

- width 3 m: double the 6 m indications,
- width 12 m: divide the 6 m indications by 2.

MAINTENANCE

DRIVE MAINTENANCE

- **During the first hours of use, retighten the belts frequently.**
 - Remove the front cover (5) by unscrewing the nuts (6) (figure 7).
 - Loosen the collar on the fan outlet tube elbow (7) (figure 7).
 - Loosen the 4 screws (8) on the crosspiece (9) (figure 8).
 - Unscrew the 2 nuts (10) (figure 8).
 - Tighten the belts using the two tension screws (11) located under the crosspiece (figure 8).
 - Retighten the nuts (10) and screws (8) (figure 8), and remount the cover (5) (figure 7).
- **Lubricating the bearings: approximately every 100 hours.**
 - 8 greasers:
 - 6 are centrally placed on the right side of the vertical support (12) (figure 9).
 - 2 on the bearings (13) (figure 10).
- **Use a brush to apply grease to the agitator shaft movement transmission pinions.**
 - Running without lubrication will result in premature wear.
- **Recommended greases:**

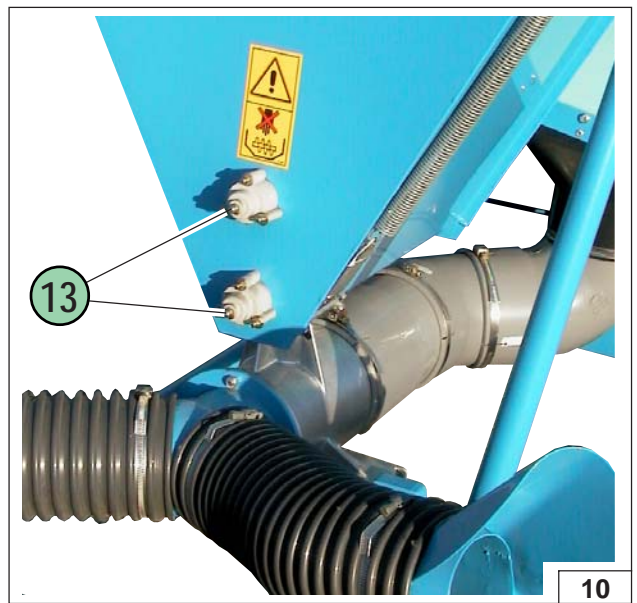
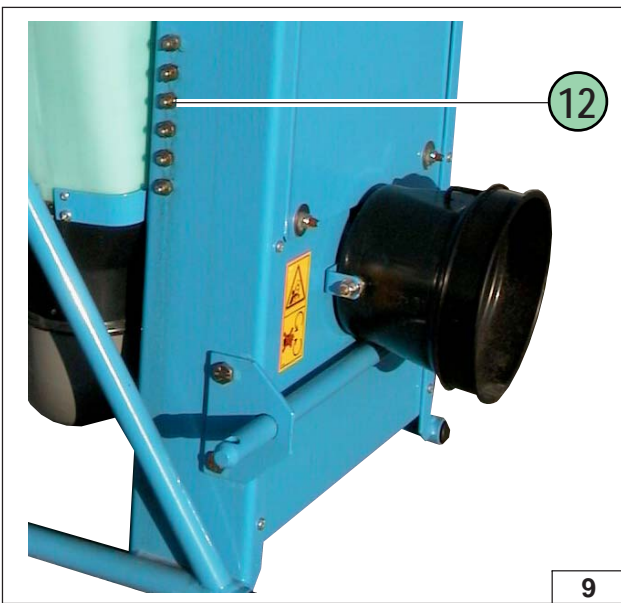
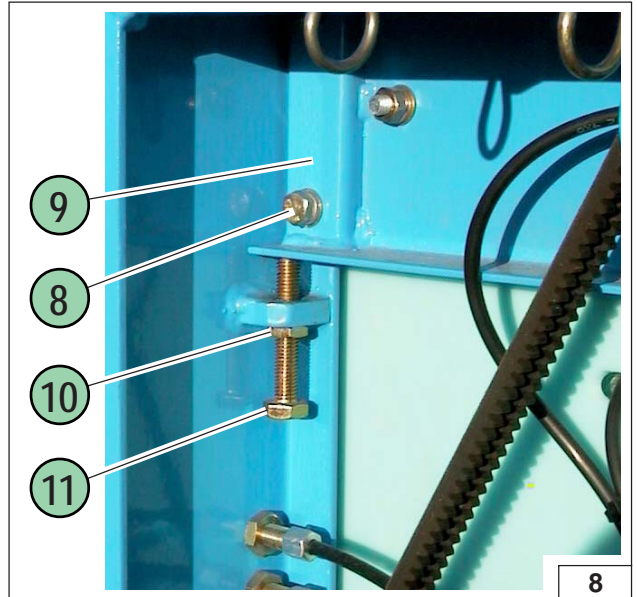
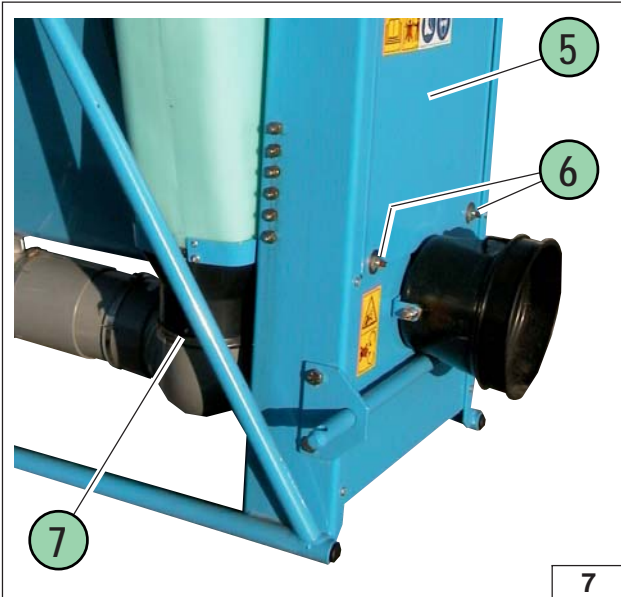
MOBILUX:	Grease 2 or 3
SHELL:	Alvania 2 or 3
ESSO:	Beacon EP 2

MAINTENANCE DURING PERIODS OF USE

- After each day's work: empty the hopper.
- After cleaning: open and close the flow regulation gate several times and leave in the open position: notch No. 8.

MAINTENANCE WHEN NOT IN USE

- Carefully clean the hopper.
- Loosen the belts.
- Unhook the return spring from the flow regulation gate which is open at its maximum position.



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we reserve the right to modify product specifications or design without prior notice.*

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