**TRACKER / TRACKER-S**

**D.P.A Regulation**

*(Proportional Flow Rate to Advance)*

*With or without TELEVOLUX, with or without BERJUST*

82.503-B ENGLISH

To be read attentively and kept for further reference

Sprayer safety, checks and maintenance: see manual 82.471

- Tables of Nozal nozzles: see manual No. 82.467
- Tracking drawbar: see manual No. 82.444
- TELEVOLUX function: see manual No. 82.470
- BERJUST 2000: see manual No. 82.441
- AXIALE boom: see manual No. 82.438
- AXIALE II boom: see manual No. 82.486 (30/32 m)
- RLD boom: see manual No. 82.450

Wiring diagrams: Refer to Dealer manual No. 589.494
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See pages
- **Maintenance of the sprayer**
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  - Checks before spray season
  - Foaming in the tank
  - Last filling operation
  - Protection against oxidising agents
  - Maintenance after operation
  - Winter storage
  - Nozzles or filters dirty
  - Suction filter
  - Delivery filter
  - Maintenance of plastic valves
  - Servicing the boom
  - Checking nut tightness
  - Lubrication and greasing
  - Safety when changing a wheel

- **Maintenance diagram**
  - Spraying circuit

- **Remember your parameters**

- **Notes on the treatments carried out during the season**
TRACKER / TRACKER-S 3200 D.P.A regulation
Trailed sprayer with proportional flow rate to advance (D.P.A.).

- Steel CHASSIS protected by U.H.R. polyester paint.
- Stainless steel NUTS and BOLTS.
- High-density polyethylene TANK:
  - Nominal capacity 3,200 litres.
  - Wide filling orifice.
- RINSE TANK in polyethylene with 330 litres capacity.
- HANDWASH TANK in polyethylene with 20 litres capacity.
- Graduated float GAUGE.
- AXLE adjustable from 1.55 to 2.10 m.
- "ACTIFLEX" SUSPENSION (TRACKER-S): spring inclined with shock absorbers, ensuring an independent operation of the load.

TECHNICAL SPECIFICATIONS

- "VOLUX 240" METERING PUMP with 2 double-acting pistons and 2 drive speeds (including one for low volume/ha) for the spraying.
- REMOTE CONTROL of the VOLUX pump via solenoid valve block
  - Manual volume/ha ADJUSTMENT on VOLUX pump (option):
    - TELEVOLUX: Remote control of volume/ha with display.
    - BERJUST 2000: In-cab; volume/hectare, speed and cumulative data information.
- VALVES BLOCK:
  - BERLOGIC with DUALMATIC: Manually-controlled valves block.
- REMOTE CONTROL of spraying operation via 4 stainless motorised ball valves with multireturn units (option: 5/6/7 motorised valves).
  - General electrical shut-off switch on cab-mounted control box.
- ELECTRIC BOX with multi-pin connectors.
  - Glycerine PRESSURE GAUGE, 0/25 bar, diameter 80 mm, with dilated scale.
- WIDE ANGLE DRIVE SHAFT.
- HYDRAULIC UNIT (option).
- ROAD LIGHTS in accordance with highway code.
- QUALIFICATIONS:
  - Road (DREAL "Regional Offices for the Environment, Planning and Housing"), overall width 2.55 m.
  - Environmental compliance.
- OPTIONS:
  - Adjustable height drawbar.
  - Hydraulic adjustable drawbar.
  - Tape gauge.
  - Electric gauge.
  - Side door.
  - Mudguard.
  - External washing equipment of sprayer.
  - 2 work lamps, lighting of the control station, pre-equipped for gyrolight (AXIALE boom).
  - "DiluNet" residual liquid dilution.

<table>
<thead>
<tr>
<th>Type of tire</th>
<th>RLD boom</th>
<th>Axiale 24/28 boom</th>
<th>Axiale 30/32 boom</th>
</tr>
</thead>
<tbody>
<tr>
<td>230/95 R48</td>
<td>Standard</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>270/95 R48</td>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300/95 R46</td>
<td>Option</td>
<td>Option</td>
<td></td>
</tr>
<tr>
<td>380/90 R46</td>
<td>Option</td>
<td>Option</td>
<td>Option</td>
</tr>
<tr>
<td>420/85 R38 (*)</td>
<td>Option</td>
<td>Option</td>
<td>Option</td>
</tr>
<tr>
<td>460/85 R38</td>
<td>Option</td>
<td>Option</td>
<td>Option</td>
</tr>
</tbody>
</table>

(*) 420/85 R38 (min. track 1.71 m; max. track 2.09 m).

- MECHANICAL parking BRAKE.
- HYDRAULIC service BRAKE.
- Coupling DRAWBAR with eye.
- Crank-operated JACKSTAND.
- CENTRIFUGAL PUMP for:
  - Filling, agitation with mixing boom, fixed rinsing, transferring, incorporation of trace elements.
- FILLING AND FILTRATION:
  - Filling via the manhole or direct filling with came lock (diameter 50 mm).
  - Incorporation hopper (25 litres) with cans rinse and circuit rinsing.
  - Filtration:
    • Filling filter (sieve, 8/10 mesh).
    • Suction filter (vannofilter, 6/10 mesh).
    • Delivery filter (1/4 turn filter, 4/10 mesh).
ATMOSPHERIC NOISE EMITTED BY: Trailed sprayer TRACKER / TRACKER-S with D.P.A regulation

- Sound pressure Driver’s environment LPA in dB(A):
  - Tractor alone = 72.2
  - Tractor + sprayer = 72.6

- Sound pressure Peak level:
  - Tractor alone = 97.5
  - Tractor + sprayer = 100.1

- Sound power LWA:
  - Tractor alone = 104.4
  - Tractor + sprayer = 106.5

Comply with the legislation in force and use ear-protectors if necessary.
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. Check their location on the sprayer and see their meaning in manual No. 82.471 (sprayers safety, checks and maintenance).
The location of the descriptive plate on your sprayer is indicated on the view on page 7.

The box "Type" is made up of letters and figures.

Example: TRM A 32 AX 24

- **24** = Width 24 metres (28 = 28 metres)
- **AX** = AXIALE boom (RD = RLD boom)
- **32** = Rated capacity of the tank 3,200 litres
- **A** = D.P.A - D.P.A TELEVOLUX regulation

**TRM** = TRACKER MAJOR sprayer (**TRR** = TRACKER RACER, **TRS** = TRACKER R-XS)

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### TABLE OF WEIGHTS (in kg)

The data below are valid for France only (see the document DREAL).

<table>
<thead>
<tr>
<th>BOOMS</th>
<th>RLD 18</th>
<th>RLD 20</th>
<th>RLD 21</th>
<th>RLD 24</th>
<th>Axiale 24</th>
<th>Axiale 28</th>
<th>Axiale 30</th>
<th>Axiale 32/33</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRACKER 3200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerb weight</td>
<td>2,600</td>
<td>2,623</td>
<td>2,635</td>
<td>2,655</td>
<td>3,115</td>
<td>3,240</td>
<td>3,550</td>
<td>3,580</td>
</tr>
<tr>
<td>Gross vehicle weight</td>
<td>6,425</td>
<td>6,455</td>
<td>6,470</td>
<td>6,495</td>
<td>6,955</td>
<td>7,025</td>
<td>7,390</td>
<td>7,410</td>
</tr>
<tr>
<td>Gross vehicle weight Axle</td>
<td>5,105</td>
<td>5,130</td>
<td>5,140</td>
<td>5,160</td>
<td>5,525</td>
<td>5,580</td>
<td>5,870</td>
<td>5,890</td>
</tr>
<tr>
<td>Gross vehicle weight Drawbar</td>
<td>1,320</td>
<td>1,325</td>
<td>1,330</td>
<td>1,335</td>
<td>1,430</td>
<td>1,445</td>
<td>1,520</td>
<td>1,520</td>
</tr>
</tbody>
</table>

These weights are understood as in the heaviest configuration of the machinery (options, tires, regulation, suspensions).
STARTING-UP
THE SPRAYER

Checking power take-off speed.
Checking tractor advance speed.
Checking engine speed.
Checking flow rate/hectare using a test tube.
Tractor wheel travel distance.

See "Sprayer safety, checks and maintenance" manual No. 82.471.
ADAPTING THE PTO SHAFT

- The length of the drive shaft may need to be adjusted to suit the tractor used with the sprayer.
- Here is the procedure to be followed once the sprayer has been hitched:
  - Align the jaw of the universal joint with the shaft of the tractor’s power-take off.
  - Separate the two half universal joint drive shafts and couple them to the corresponding shaft, putting the female protector on the tractor side.
  - Present the two half universal joint drive shafts side by side.
  - Mark and cut if necessary, being sure to leave a 10 mm clearance between the end of the tube and the heel of the jaw.
  - Carefully file down the two tubes.
  - Grease the contact surfaces.
  - Using a hack saw, cut the protectors to the same length as the half universal joint drive shafts, which should allow the half drive shafts to stick out 40 mm in relation to their protectors in the operating position. For your safety, the two half universal joint drive shafts must have a minimum covering of 300 mm.
- Refit the drive shaft ready for use.

ADJUSTMENT OF THE TRACK WIDTH

- The sprayers are delivered set at narrow track.
- To adjust the track:

  Case TRACKER (figure 1):
  - Once the nuts (2) are unlocked, slide the semi-axles (1) in the girder (3).

  Case TRACKER-S (figure 2):
  - Once the screws and nuts (2) are unlocked, slide the semi-axles (1) in the girder (3).

Then in the 2 cases:
- Measure the track (according to that of the tractor and the type of crop).

  IMPORTANT:
  *The tyres must be at equal distance in relation to the sprayer’s centre axis.*

  - Tighten well the nuts (2) (figure 1) or the screws and nuts (2) (figure 2):
  
  Tightening torque = 240 Nm.
RINSING THE SPRAYER BEFORE FIRST USE

Before using your sprayer for the first time with phytosanitary product (weedkillers, insecticide or other product), rinse the sprayer completely.

- Remove the nozzles if they are fitted.
- Undo the end plugs on the pipes.
- Fill 1/5th of the volume of the tank with water.
- Spray (Refer to the OPERATION chapter of the pump).
- Remove and clean the filters.
- Retighten the pipe end plugs.
- Fit the nozzles.

**NOTE:** Any foreign particles which may be in the spraying circuit will thus be eliminated and there will be no risk of them blocking the holes in the nozzles.

**ACTIFLEX SUSPENSION** (figure 3)

- The patented ACTIFLEX suspension comes as a standard accessory on the TRACKER-S sprayer.
- The first spring action suspension “delinearized” by variable stiffness according to the load.
- The ratio and the positioning of a lever arm between the axle (4) and the base of the spring (5) enable the spring (3) to constantly adapt to the load (empty tank / full tank), to terrain conditions (path, fields, etc.) for optimal suspension.
- Two shock absorbers (1), between the axle (4) and the chassis (2), absorb and eliminate any remaining oscillations.
- Grease via the 6 grease fittings (G) every 100 hours.

**ELF EPEXA 2 or MOBILUX EP2 grease**
*(Warning: do not use molygraphite grease)*

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**ACTIFLEX suspension in empty tank position**

**ACTIFLEX suspension in full tank position**
OPENING THE FAIRING

To open the fairing and reach at the control station:
- Unscrew the 2 threaded rods (1).
- Remove the pins (2) and the clevis pins (3).
- Open the protection door (5) of the control station.
- Rock the fairing assembly (4) forward.
CHOICE OF NOZZLES AND TABLES OF FLOW RATES

See "NOZAL nozzles" manual No. 82.467

USING THE SPRAYER

TELEVOLUX function (option).
See manual No. 82.470
BERJUST 2000 monitor (option).
See manual No. 82.441
HITCHING THE SPRAYER TO THE TRACTOR

- Couple the sprayer’s drawbar to the tractor hook or coupling pin. The sprayer must be horizontal.
- Attach the end of the drive to the power take-off.
- Attach the small chain of the drive shaft protectors to the position intended for it.
- Raise the jackleg.
- Connect the hydraulic connections.
- Connect the electric connections.
- Release the parking brake.
- Hook the small rope (1) (figure 5) tractor side (to immobilise the sprayer in case the coupling breaks).

ADJUSTABLE HEIGHT DRAWBAR (Option)

- This drawbar (figure 4) has 4 settings for the eye (1), providing a total travel distance of 180 mm.
- Adjustments are made by moving the position of the eye (1) in relation to the spacer bar (2): (2 positions).
- To configure the drawbar in positions 3 and 4:
  ▪ Remove the eye (1).
  ▪ Remove the spacer bar (2) from the drawbar (3).
  ▪ Turn the drawbar (3) 180°.
  ▪ Turn the spacer bar (2) lengthwise.
  ▪ Replace the eye (1) on the spacer bar (2) for positions 3 and 4.

PARKING BRAKE

- A parking brake (2) (figure 5) is positioned on the right-hand side of the sprayer.
- From the tractor cab, you can immobilise the sprayer by using the rope (1) linking the brake control lever.
UNHITCHING THE SPRAYER

- Put the sprayer on a flat, hard surface.
- Put the sprayer in its parking position.
- Tighten the parking brake.
- Disconnect the electric connections.
- Disconnect the hydraulic connections.
- Rest the hydraulic pipes on the sprayer mountings intended for this purpose.
- Disconnect the drive shaft from the tractor.
- Rest the drive shaft on its support so as not to damage its protectors.
- Unhitch the sprayer.

CHECKS TO BE CARRIED OUT EVERY TIME BEFORE THE SPRAYER IS USED

- Check the condition of the protectors on the drive shafts.
- Make sure that there is no foreign matter into the tank.
- Check the oil levels and the greasing of the various elements (see "Lubrication and greasing" section).
- Check the cleanliness of the filters:
  - Suction,
  - delivery.

RECOMMENDATIONS FOR USE

CAUTION
- For your convenience, the electronic unit has been programmed with theoretical values corresponding to your sprayer’s characteristics. In all cases, you must check and possibly correct the values programmed.

WHEN STARTING
- Start-up the motor.
- Use switch (1) to power-up the unit (pages 16 and 17).
- Engage the power take-off.

CHECKS
- When starting the campaign, systematically check that the nozzle pressure is below 3 bar for 1 minute.
- Reprogram the new value. If this is higher than the initial value by 10%, you must replace the nozzles.

CAUTION
- ALL THE VALVE AND THE INDEXES OPERATIONS MUST BE CARRIED OUT WITH THE POWER TAKE-OFF STOPPED.
NOTE:
- **Fuse**: The control box (2) is protected by 3 type fuses Ø 5 mm x 20 mm:
  - 5 Amps for the TELEVOLUX board (item 3),
  - 10 Amps for the boom control board (item 4),
  - 10 Amps for the boom spraying sections control board (item 5).
PRESENTATION OF THE D.P.A CONTROL BOX WITH BERJUST (Option)

NOTE:
- **Fuse:** The control box (2) is protected by 3 type fuses Ø 5 mm x 20 mm:
  - 10 Amps for the boom control board (item 3),
  - 10 Amps for the boom spraying sections control board (item 4),
  - 3.15 Amps for the BERJUST board (item 5).
Your sprayer is assembled with a "VOLUX" volumetric pump which is mechanically linked by an angle transmission, a cardan transmission and a multiplier to the R.H. wheel rotation.

PUMP FLOW RATE CAN BE MODIFIED IN 2 WAYS

1 - MANUALLY
- Move the lever (3) (figure 6) of the multiplier (4) which is located on the inside of the sprayer’s right wheel.
  • Lever in position (1-Tortoise) = Small flow rates/ha.
  • Lever in position (2-Hare) = Large flow rates/ha.
  • Neutral between the 2 positions. (To move from position (1) to the position (2), it may be necessary to rotate the output shaft (5) by some degrees).
  • Item (6): Protector and universal joint.

2 - BY ADJUSTING THE STROKE OF THE PISTONS (In 2 ways, manual or electric)
- Manually (figure 7):
  The VOLUX or SUPER VOLUX pump features two graduated dials on the left-hand side, together with an index.
  The position of this index indicates the volume/hectare when multiplied by 100.

Example:
If the index is on 5, the pump is set at 500 l/ha.

Setting the index (2):
• A special wrench and pin are used to adjust the index.
  The wrench (1) is fitted on the pump shaft.
  The pin (3) is inserted in the holes located on the dial support ring (4).
• Loosen the 2 nuts (5).
• While maintaining the shaft with the wrench (1), pivot the dial with the pin (3) and move it to the desired graduation.
• Tighten the 2 nuts (5).
• Remove the wrench (1) and the pin (3).

- Electric programming (option):
  The stroke of the Volux pump pistons is adjusted using the TELEVOLUX control box (figure 8).
  (See manual No. 82.470).

Engagement/Disengagement of the VOLUX Pump
- Use the engage/disengage switch or selector (1) (figure 8) located on the TELEVOLUX control panel (indicator on).

Flow rate/hectare table for VOLUX pump

<table>
<thead>
<tr>
<th>Boom width</th>
<th>Required flow rate/hectare</th>
<th>Position of the lever (3) (figure 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 metres</td>
<td>from 0 to 700 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 700 to 1300 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>15 metres</td>
<td>from 0 to 560 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 560 to 1000 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>16 metres</td>
<td>from 0 to 530 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 530 to 950 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>18 metres</td>
<td>from 0 to 470 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 470 to 830 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>20 metres</td>
<td>from 0 to 425 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 425 to 750 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>21 metres</td>
<td>from 0 to 400 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 400 to 700 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>24 metres</td>
<td>from 0 to 350 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 350 to 650 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>28 metres</td>
<td>from 0 to 300 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 300 to 550 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>30 metres</td>
<td>from 0 to 280 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 280 to 500 l/ha</td>
<td>2 - Hare</td>
</tr>
</tbody>
</table>

Flow rate/hectare table for SUPER VOLUX pump

<table>
<thead>
<tr>
<th>Boom width</th>
<th>Required flow rate/hectare</th>
<th>Position of the lever (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 metres</td>
<td>from 0 to 535 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 535 to 950 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>21 metres</td>
<td>from 0 to 510 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 510 to 905 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>24 metres</td>
<td>from 0 to 450 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 450 to 800 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>28 metres</td>
<td>from 0 to 380 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 380 to 680 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>30 metres</td>
<td>from 0 to 360 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 360 to 630 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>32 metres</td>
<td>from 0 to 335 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 335 to 600 l/ha</td>
<td>2 - Hare</td>
</tr>
<tr>
<td>36 metres</td>
<td>from 0 to 300 l/ha</td>
<td>1 - Tortoise</td>
</tr>
<tr>
<td></td>
<td>from 300 to 525 l/ha</td>
<td>2 - Hare</td>
</tr>
</tbody>
</table>

CAUTION: When not used for spraying operations, the VOLUX pump must be disengaged. (Actuate the switch or the electric selector (1)). Never engage or disengage the VOLUX pump while driving.
ADJUSTMENT OF THE COMPENSATED RETURN (V.M.m)

SETTING OF TRACKER D.P.A USING MULTIRETURN UNITS

- In this case, the TRACKER distributor unit is made up of motorised valves (V.M.m) (4) (figure 9) for each boom section.
- These valves supply each boom section when they are in "open" position and the return to the tank when they are in "closed" position.
- Return to the tank is calibrated by means of multireturns.
- The setting of the multireturns to the tank is set using the table below because this will depend on nozzle type used and the number of nozzles per boom section.

TABLE FOR SETTING OF MULTIRETURN UNITS

<table>
<thead>
<tr>
<th>NOZZLE TYPE</th>
<th>Position of crownwheel (with red numbers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 nozzle section</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>AFX/RFX/ALX/KWIX - green 80°</td>
<td>1.7</td>
</tr>
<tr>
<td>AFX/RFX/ALX/KWIX - yellow 80°</td>
<td>2.2</td>
</tr>
<tr>
<td>AFX/RFX/ALX/KWIX - blue 110°</td>
<td>2.8</td>
</tr>
<tr>
<td>AFX/RFX/ALX/KWIX - red 110°</td>
<td>3.3</td>
</tr>
<tr>
<td>AFX/RFX/ALX/KWIX - brown 110°</td>
<td>3.7</td>
</tr>
<tr>
<td>AFX/RFX/ALX/KWIX - grey 110°</td>
<td>4.1</td>
</tr>
<tr>
<td>AFX/RFX/ALX/KWIX - white 110°</td>
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</tr>
<tr>
<td>INOX 6/10 - white propeller</td>
<td>0.7</td>
</tr>
<tr>
<td>INOX 8/10 - white propeller</td>
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</tr>
<tr>
<td>INOX 10/10 - white propeller</td>
<td>1.2</td>
</tr>
<tr>
<td>INOX 12/10 - white propeller</td>
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</tr>
<tr>
<td>INOX 15/10 - white propeller</td>
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</tr>
<tr>
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<td>2.3</td>
</tr>
<tr>
<td>INOX 15/10 - black propeller</td>
<td>2.7</td>
</tr>
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<td>3.1</td>
</tr>
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<td>3.4</td>
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<tr>
<td>INOX 30/10 - black propeller</td>
<td>4.2</td>
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<tr>
<td>KWIX 3-holes - yellow</td>
<td>2.2</td>
</tr>
<tr>
<td>KWIX 3-holes - blue</td>
<td>2.8</td>
</tr>
<tr>
<td>KWIX 3-holes - red</td>
<td>3.3</td>
</tr>
<tr>
<td>KWIX 3-holes - brown</td>
<td>3.7</td>
</tr>
<tr>
<td>KWIX 3-holes - grey</td>
<td>4.1</td>
</tr>
<tr>
<td>KWIX 3-holes - white</td>
<td>4.8</td>
</tr>
</tbody>
</table>

SETTING THE MULTIRETURN UNITS (figure 9)

- Slacken nut (1).
- Turn crownwheel (2).
- Place selected mark in front of index (3).
- Tighten nut (1).

Example:
If Red AFX/RFX/KWX nozzles are used, and if your sprayer is equipped with a boom of 24 metres (4 sections of 12 nozzles), you must place the multireturn units at position 4.8.
ADJUSTMENT OF THE COMPENSATED RETURN (V.E.C)

- In this case, the TRACKER distribution unit is made up of electric flap valves (V.E.C.) (1) (figure 10), for each boom section.
- These electric flap valves supply each boom section when they are in "open" position and the return to the tank when they are in "closed" position.
- They are located at the rear of the sprayer.

ADJUSTMENT

- Return to the tank is calibrated by means of a micrometric screw (2).
- Adjust the screw (2) to obtain the same pressure as at the pressure gauge (3), in both "closed" and "opened" positions. (*Perform this operation for each electric flap valve*).
- Use the electrical switches to open and close spraying (figure 18, page 29).
MAIN SPRAYER FUNCTIONS WITH CENTRIFUGAL PUMP

FILLING
TRANSFERRING
MIXING
RINSING OPERATIONS
INCORPORATION HOPPER
SPRAYING
ADJUSTMENT OF THE VALVES

The main functions are listed on the Berlogic (list (1), figure 11).
To obtain the desired position, the indexes (3) and (4) must be placed opposite the arrows corresponding to the function number in the list (1).

To select index (3):
- Press the two levers then turn.

To select index (4):
- Pull the two levers then turn.

For the main functions 1 to 8, as for function 11 listed on the Berlogic (list (1)), the handle of the valve (2) must be placed in position a. This valve is used to isolate the main tank, to clean the suction and delivery filters (function 9, see page 42).
FILLING THE TANK

- **Via the tank opening (gravity):**
  - Open the cover on the top of the tank.
- **By external suction device:**
  - Close the drain orifice using valve (1) (figure 12) located under the equipment, in the sump.
  - Fill the centrifugal pump priming tank with water.
    To do this, remove the square-headed screw (1) (figure 16) located on the upper part of the pump body.

- **Filling without incorporation hopper using:**
  - Connect the fill pipe to the blue quick coupling (B) (figure 14).
  - Place the Berlogic indexes in position 1.
  - Put the fill pipe into the liquid to be suck.
  - Engage the tractor power take-off and raise speed to 540 rpm.
  - When the filling operation is finished, disconnect the fill pipe and replace the plug on the blue quick coupling (B).

INCORPORATION HOPPER

- This permits introduction, in alternation with water filling of the sprayer, of powders or liquid treatment products.
- This device ensures perfect product homogeneity in the water, and makes spraying operations easier.

OPERATION OF THE HOPPER

- Fill the tank partly (see filling operation above).
- Pull the hopper towards yourself to lower it. Open the cover.
- Fill the hopper with phytosanitary products.

3 possibilities (figure 14):
1 - **Water in the main tank used:**
   Put the indexes on Berlogic function 2.
2 - **Water in the rinsing tank used:**
   Put the indexes on Berlogic function 4.
3 - **Externally drawn water used:**
   Put the indexes on Berlogic function 3.

- Engage the tractor power take-off and raise speed to 540 rpm.
- To rapidly empty the hopper:
  - Replace the cover,
  - open the valve (3) to position 0 (figure 13).
- The product is draw up into and incorporated in the sprayer tank.

RINSING THE HOPPER

3 possibilities:
1 - **Water in the main tank used:**
   Put the indexes on Berlogic function 2.
2 - **Water in the rinsing tank used:**
   Put the indexes on Berlogic function 4.
3 - **Externally drawn water used:**
   Put the indexes on Berlogic function 3.

In the 3 cases:
- Open the fill valve (4) to position 0 (figure 15) which actuates the rinsing boom (5) (figure 17).

RINSING THE CANS

3 possibilities:
1 - **Water in the main tank used:**
   Put the indexes on Berlogic function 2.
2 - **Water in the rinsing tank used:**
   Put the indexes on Berlogic function 4.
3 - **Externally drawn water used:**
   Put the indexes on Berlogic function 3.

In the 3 cases:
- Open the fill valve (4) to position 0 (figure 15).
- Position the product can on part (6) (figure 17).
- Press handle (2) (figure 13), to actuate the cleaning nozzle (7) (figure 17).

- **After the incorporation operation:**
  - Close the fill valve (4) to position 0 (figure 15),
  - finish the filling of the tank,
  - when the filling is completed, disconnect the pipe and replace the plug on the blue quick coupling (B) (figure 14).
SPRAYING

OPERATION IN D.P.A (Proportional flow rate to advance)

Centrifugal pump

SPRAYING CONTROL

Put the indexes on Berlogic function 5.
- Engage the VOLUX pump (switch or electric selector (4) (figure 18)).

LIQUID MIXING

- Before and during the spraying operation, we recommend to mix the spraying liquid so as to obtain a homogeneous product.

NOTE:

Modulate mixing from $\bullet$ to $\circ$.
- Index (1) (figure 19) on $\bullet$ = no mixing.
- Index (1) (figure 19) on $\circ$ = max. mixing.

PREPARATION OF THE CONTROL BOX

(figure 18)

- With the power take-off stopped:
  - Power up the control box by raising switch (1), lamp (a) lights,
  - Lift switches (2) and (3).

Your equipment is now ready to work.

OPERATION

- Engage the power take-off and raise speed to 540 rpm.

TO SPRAY (figure 18)

- Lower switches (2) to open the spraying sections, the lamps (c) lights.
- Lower switch (3) to begin spraying.

TO STOP SPRAYING (figure 18)

PARTIAL STOP
- Lift switches (2) corresponding with the spraying sections you want to cut off.

COMPLETE STOP
- Lift up switch (3).

SPRAYING PRESSURE

The pressure that develops depends on the advance speed and the nozzles orifice:
- To reduce pressure, decrease your advance speed or fit the nozzles with bigger jets.
- To increase pressure, increase your advance speed or fit the nozzles with smaller jets.

CAUTION: When not used for spraying operations, the VOLUX pump must be disengaged. (Actuate the switch or the electric selector (4) (figure 18) on the boom control box). Never engage or disengage the VOLUX pump while driving.

TRANSFERRING

TRANSFER OF LIQUID FROM THE MAIN TANK TO ANOTHER TANK

Put the indexes on Berlogic function 8 (figure 19).
- To transfer the liquid contained into the tank to another one, proceed as follows:
  - Connect the hose to the red quick coupling (R) and put the other end of the hose into the tank to recover the liquid from the main tank.
  - To transfer the liquid, engage the tractor power take-off and raise speed to 540 rpm.
RINSING OPERATIONS

RINSING THE SPRAYING CIRCUIT WITH THE RINSING TANK
- Sprayer off.
- Stop the power take-off.
- Put the indexes on Berlogic function 7 (figure 20).
- Engage the tractor power take-off and increase to operating speed; let it run for 30 seconds.
- Open spraying.

This operation is not enough when changing chemical products.

RINSING THE MAIN TANK
(With wash system, see also page 36)
- Put 300 litres of clear water into the main tank.
- Put the indexes on Berlogic function 6 (figure 20).
- Engage the tractor power take-off and raise speed it to 540 rpm.
- Drain the tank through the drain valve (1) (figure 21).
- Repeat the operation if necessary.

RINSING THE SPRAYING CIRCUIT WITH THE MAIN TANK

In the case of a product change.
- Sprayer off.
- Put 300 litres of clear water with a cleaning product (All Clear type) into the main tank.
- Put the index (1) on Berlogic function 8 (figure 20).
- Put the index (2) on Berlogic function 7 (figure 20).
- Engage the power take-off and increase to operating speed.
- Open spraying.

Do not omit to rinse the incorporation circuit before there is no more water into the tank. To do this, open the valve (3) (figure 13) and the valve (4) (figure 15) in position o, then put the index (2) on Berlogic function 2 (figure 20). Let run for 30 seconds (press the handle (2) (figure 13), to actuate the cleaning nozzle (7) (figure 17)).
OTHER SPRAYER FUNCTIONS
- Open the drain orifice using valve (1) which is located under the equipment, in the sump.
- Collect the liquid in an appropriate recipient.
- You can also empty remaining liquid from the tank into another one (see page 28, paragraph "TRANSFERRING").

**FLOAT GAUGE (figure 23)**

- A float gauge located on the top of the sprayer's tank, is clearly legible from inside the tractor's cab.
- **The gauge is calibrated using the sheath (3).**
  - A graduated rule moves inside a tube.
  - To release the graduated rule (2), move the hook (1) to the right or to the left.
  - To transport the tank after filling it, put the hook (1) on the graduated rule (2), in order to avoid getting caught.

**TAPE GAUGE (Option) (figure 24)**

- A tape gauge (1) located on the top of the sprayer's tank, is clearly legible from inside the tractor's cab.

**ELECTRIC GAUGE (Option) (figure 25)**

- Your sprayer can also be fitted with an electric gauge (NIVELEC). It consists:
  - Of a gauge mechanism, item (1), located on top of the tank.
  - Of an electric gauge control unit, item (2). *(For information on control unit operation, see manual No. 82.494).*
  - Of a power cable (12 Vdc), item (3).

**HANDWASH TANK (figure 26)**

- For hygiene and convenience: An 20-litres water tank (4), independent from the rinse tank, may be used for rinsing hands and body (face, eyes.) in the event that product is sprayed or splashed on operating personnel.
- With the tank located on the left-hand side of the sprayer, the tap (5) is easily accessible (behind the protective plate).
- Washing, by opening the tap (5) more or less according to the required flow rate.
- It is ESSENTIAL for the handwash tank to be filled with clean water, through the lid (3), without any pressure.

**RINSING TANK (figure 26)**

- It is ESSENTIAL for the rinsing tank (1) to be filled with clean water, through the lid (2), without any pressure.
RINSING THE MAIN TANK (figure 27)

- The rinsing balls (1) installed inside the tank, on the gauge tube, ensure this function (refer to the various rinsing phases, page 30).

STIRRING

HYDRAULIC STIRRING WITH CENTRIFUGAL PUMP

- Hydraulic stirring permit obtain the production of homogeneous mixtures into the tank, before and during the spraying operation.
- Refer to the paragraph "LIQUID MIXING" (page 28) for indexes position.

PRESSURE GAUGE (figure 28)

- The pressure gauge (1), situated at the front of the sprayer, above the rinsing tank, can be read from inside the tractor's cab.

SAFETY VALVE (figure 29)

- The valve (1) is directly attached to the VOLUX pump delivery manifold.
  It is adjusted to 10 bar pressure.
- The function of this valve is to prevent any overpressure resulting from a mishandled use (liquid hammer).

RUNNING BOARD (figure 30)

- A running board (1) situated at the front of the sprayer gives access to the man hole.
- During treatment, lift the running board and fold back under the chassis to avoid any damage to the crop.

HEIGHT OF THE BOOM

- A working height between 50 cm and 60 cm above the surface treated is recommended. This height is defined by the nozzle spray angle and spacing.
- There is a risk of drift with greater heights.
EXTERNAL WASHING DEVICE (Option)

- This option must only be used for cleaning the tank or rinsing the boom (see page 30).
  - Handle of the valve (3) in position $\Theta$ (figure 32).
  - Unclip the brush (1) (figure 31).
  - Connect it to the quick coupling (2).
  - Put the Berlogic on function $\mathbb{1}$ (figure 32) and then beginning cleaning the sprayer.
  - When done cleaning, put the handle of the valve (3) in position $\mathbb{f}$ and correctly clip the brush back into place after use.

EXTERNAL WASHING PROCEDURE

- It is also important to rinse the outside of the sprayer as well as the tractor. This cleaning operation should be repeated during the day between applications of different products.

PROCEDURE

- Detergent is recommended to facilitate the cleaning operation: All Clear (5 litres), BERTHOUD reference 788.796, All Clear Extra NF (5 litres) BERTHOUD reference 788.792.
- Refer to the detergent manufacturer's instructions regarding exposure time and dilution. To do this, consult the instructions on the product.
- Generally speaking, spray the product on the machine using a hand sprayer, scrub as required then rinse with clean water.
MAINTENANCE
OF THE
SPRAYER

Practical recommendations.

See "Sprayer safety, checks and maintenance" manual No. 82.471.
PRACTICAL RECOMMENDATIONS FOR THE SERVICING OF YOUR SPRAYER

- By cleaning your sprayer regularly during and at the end of treatment seasons:
  - You will avoid spraying chemical residues on the crops,
  - you will ensure a good distribution of the product, while eliminating total or partial blockage of the nozzles,
  - you will increase your sprayer's life.

**Carry out the sprayer's maintenance operations with the engine switched off, the ignition off and the power take-off disconnected.**

CHECKS BEFORE SPRAY SEASON

- **Check tyres pressure:**
  - See table below.

<table>
<thead>
<tr>
<th>TYPE OF TYRE</th>
<th>PRESSURE IN BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KLEBER</td>
</tr>
<tr>
<td>230/95 R48</td>
<td>3.6</td>
</tr>
<tr>
<td>270/95 R48</td>
<td>3.6</td>
</tr>
<tr>
<td>300/95 R46</td>
<td>3.6</td>
</tr>
<tr>
<td>380/90 R46</td>
<td>3.6</td>
</tr>
<tr>
<td>420/85 R38</td>
<td>1.7</td>
</tr>
<tr>
<td>460/85 R38</td>
<td></td>
</tr>
</tbody>
</table>

- **Check the tightness of the wheel bolts.**
- **Filters:**
  - Make sure that the suction and delivery filter is clean and in good condition.
- **Pipes:**
  - Look for any leaks, check for kinks in the pipes.
- **Seals and fittings:**
  - Check to ensure that nuts and connectors are tightened, change the seals if necessary.
- **Pump, bevel gearbox, speed multiplier:**
  - Check the oil levels.
- **Nozzles:**
  - To change the nozzles once per year or when their flow rate is 10 to 15% greater than their initial flow rate. To do this, use the FLOW TEST - BERTHOUD reference 765.241, or the FLOW RATE GAUGE - BERTHOUD reference 778.887.
- **Tank:**
  - Check that there is no foreign matters inside the tank.

FOAMING IN THE TANK

- If this occurs, reduce the PTO revs to less than 540 rpm or add an anti-foaming additive to the contents of the tank when filling.

**Do not add fuel oil to the spraying mixture as an anti-foaming agent.**
LAST FILLING OPERATION

- When filling the tank for the last time, add only the amount of water and chemical necessary to spray the remaining area.

PROTECTION AGAINST OXIDISING AGENTS

- Before treatment using liquid fertilisers it is advisable to protect the equipment and boom with diesel oil in order to prevent rusting or oxidation of paint work.
- After service, the equipment can be cleaned down with a high-pressure jet to remove all traces of dust and diesel oil.

MAINTENANCE AFTER OPERATION

- Fully rinse the sprayer internally (including tanks, booms and nozzles) in accordance with the procedures given on page 30.
- Wash the outside of the sprayer as explained on page 38.
- Check the cleanliness of the nozzles and filters (see page 42).
- Place into storage.

WINTER STORAGE

- The sprayer should be wintered in a clean condition (see above).
- Rinse the circuit completely (with a cleaning product).
- Drain the tank.
- Rinse with clear water.
- Completely drain the liquid circuit, making sure that the pump is not operated too long without water (2 minutes maximum).
- Protect against the frost, using sufficient antifreeze into the tank (glycol or coolant).
- Start the pump slowly.
- Operate all the valves so as to protect the pump, valves, control valve, filters and pipes.
- Start spraying so as to supply antifreeze onto the boom. When the antifreeze reaches the nozzles, stop the spraying and disconnect the power take-off.
- Grease all mechanical parts that can be rust.
- Deoxidize the contacts on the power plugs (BERTHOUD reference 765.065 the KF F2 aerosol).
- Clean the outside of the sprayer. Paint the mechanical parts exposed (BERTHOUD reference 769.077 for the blue paint aerosol or 778.890 for the green paint aerosol).
- Garage the sprayer out of the sunlight and protected against inclement weather and on flat, load-bearing ground.
NOZZLES OR FILTERS DIRTY

- Clean and rinse dirty filters or nozzles using a brush and water.
  To do this, use the brush/wrench BERTHOUD reference 779.354

Never blow into a nozzle.

SUCTION FILTER (figure 33)

- The suction filter (2) is located at the control station.
- To clean the filter cartridge (3) of the suction filter (2), you must put the indexes on function 9 of the Berlogic (see page 25).
- To remove the filter cartridge (3) of the suction filter (2), you must first isolate the circuit.
- To do this, put the handle of the valve (1) in position b. The filter cartridge (3) is then accessible.

DELIVERY FILTER (figure 34)

- The delivery filter (1) is located at rear of the sprayer, after the main tank.
- It provides additional filtration.
- To clean the filter cartridge (2) of the delivery filter (1), you must put the indexes on function 9 of the Berlogic (see page 25).
- Before each intervention on the delivery filter, you must isolate the circuit and open the suction filter (see procedure above) to remove the pressure.
- To remove the filter cartridge, unscrew the filter body (2) of the delivery filter (1) using a 27 mm wrench (wrench not supplied with the sprayer).

The filter cartridge needs to be cleaned after each application. Grease the seals.

Reminder: The original factory-installed filter cartridge mesh is 4/10 (8/10 mesh is available separately for liquid fertilizer).
MAINTENANCE OF PLASTIC VALVES (figure 35)

- The solvents in the mixtures can cause some seals to swell.
- If, in spite of good maintenance, the ball valves should become blocked, it is possible to unblock them simply by doing the following:
  ▪ Unscrew the two nuts (2) to access the internal adjustment part (3).
  ▪ Unscrew the internal adjustment part (3) by 1/8 of a turn, until the spherical ball turns normally, without great effort.
  ▪ Reassemble the parts in reverse order and check the valve is tight.

SERVICING THE BOOM

- After each use, rinse the pipe work thoroughly, operating the sprayer for several minutes with clear water.
- Drain the pipe work, particularly if there is a risk of frost.
- After cleaning the boom with a high-pressure jet, grease the ram shafts to prevent all risk of corrosion.
- Keep the hinges on the arms, the bearing surfaces of the hinge cam and the uprights on the fixed frame greased.
- Touch up the paintwork as necessary.

Warning: For further information about the spray boom, refer to its technical documentation located in the blue information pouch provided with the sprayer.

CHECKING NUT TIGHTNESS

- With the delivery and prior to each treatment season, 1 hour after use, after 1 day and then periodically, and to check the tightening of the nuts:
  - The wheel bolts,
  - the axles fastening,
  - the coupling fastening.

- Once a year:
  - Check the play of the bearings and their greasing,
  - dust the brake assembly and check the wear of the fittings,
  - adjust the travel of the brake lever,
  - replace the pin of wheel axle nut every time it is disassembled.

- In case of intensive use, carry out these operations every 3 months.

TIGHTENING TORQUES OF WHEEL NUTS

- Ø 18: 400 to 420 Nm.
LUBRICATION AND GREASING

VOLUX PUMP (figure 36)
- The level must reach the notch on the gauge (2).

![CAUTION: 2 possibilities of oil capacity according to the position of the VOLUX pump (see below).]

- Item (4): total draining of the pump.

OIL CAPACITY OF THE VOLUX PUMP
- 2 litres in horizontal position (lower mark on the gauge (2)).
- 2.5 litres in inclined position (upper mark on the gauge (2)).

We recommend SAE 30 oil, 2-litre jug, BERTHOUD reference 769.286

- Item (3): VOLUX pump air chamber.
  • Check air chamber pressure on the VOLUX pump. The pressure should be 1/3 of the pump's working pressure.

BEVEL GEARBOX (figure 36)
- The level must reach the notch on the gauge (1).
- Item (5): total draining of the bevel gearbox.

OIL CAPACITY OF THE BEVEL GEARBOX
- 1.2 litre.

We recommend SAE 90 oil, TRANSELF TYP B 80 W 90 or MOBILUBE HD 80/90.

SPEED MULTIPLIER (figure 37)
- The filler plug (1) acts as an oil level.
- Item (2): total draining of the speed multiplier.
- Check the level, sprayer loaded with the tanks full.
  2 possibilities:
  • Total draining of the speed multiplier; put 2 litres of oil.
  • Levelling; the oil must be flush with the edge of the hole (item 1).

OIL CAPACITY OF THE SPEED MULTIPLIER
- 2 litres.

We recommend SAE 90 oil, TRANSELF TYP B 80 W 90 or MOBILUBE HD 80/90.

- Grease all the points equipped with a grease nipple (universal joint, hubs, etc.)

Grease MOBILUX EP2 or ELF EPEXA 2

![Change the oil during each spraying campaign]
- If a wheel must be changed, place a block of wood (2) under the sprayer's chassis (1) then use a jack (3) to raise the assembly.
MAINTENANCE DIAGRAM
SPRAYING CIRCUIT
DESIGNATION OF SPRAYING CIRCUIT ITEMS of page 49

1 - Regulation valves group.
2 - Delivery filter.
3 - Pressure gauge.
4 - Rinsing balls.
5 - Air chambers.
6 - VOLUX pump.
7 - Safety valve.
8 - Incorporation hopper.
9 - Suction connection.
10 - Transferring connection.
11 - Primary valves.
12 - Centrifugal pump.
13 - Main tank.
14 - Rinsing tank.
15 - Suction filter.
16 - Electric valve (residual liquid dilution option).
Fill-in the boxes below so that you can remember the values programmed, the brand of nozzles, and their colours.

NOTE:
At the start of each treatment season, check the real flow-rates of your nozzles.

Wheel circumference: 

Number of pulses: 
# NOTE ON THE TREATMENTS CARRIED OUT DURING THE SEASON

<table>
<thead>
<tr>
<th>Date</th>
<th>Field</th>
<th>Treatment</th>
<th>Product</th>
<th>Dose</th>
<th>Volume l/ha</th>
<th>Nozzle</th>
<th>Pressure</th>
<th>Speed km/h</th>
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Because of our policy of constant product improvement,
we reserve the right to modify product specifications or design without prior notice.