REVERSIBLE FRONT PLOUGH

Instruction manual for

Agrolux FMRT
This instruction book deals with the *Agrolux Reversible Ploughs Type FMRT*

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</tbody>
</table>

Read these instructions carefully. If you follow the instructions given, YOU can expect good results along with a good economic return from YOUR choice of plough.

If carefully operated, adjusted and maintained, the plough will meet all reasonable demands made on it and will give YOU reliable service in years to come. Should YOU need further instructions, which are not included in this manual, or require the help of experienced service personnel, we advise YOU to contact one of our local representatives, which also will have spare parts in stock.

It has always been the ambition of *Agrolux* to constantly improve its products. Consequently, in the interest of product improvement, no specification is final or binding and we reserve the right to alter the design of new machine series and equipment without previous notice.

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1. DESCRIPTION OF FUNCTION

This plough is designed only for "Reversible Ploughing" by using right-hand and left-hand plough bodies alternately, and for transportation between the farm and different fields. The plough are equipped with a hydraulic stone trip system and can be used in all types of soil.

The turn-over mechanism is only used for altering the right and left hand bodies between their working positions.

The plough is to be attached to the three-point linkage at the front of the tractor, with the hydraulic systems connected to the appropriated hydraulic outlets.

Description of the plough

Headstock    Turn-over cylinder    Landside    Depth wheel

Cross-shaft    Mouldboard    Mouldboard shin    Share    Share point

Front plough  FMRT  31075
1.1 Plough identification

Type designations
Front plough FMRT 21075-31075

Beam high 75 cm
Plough body spacing 100 = 100 cm
Number of plough body pairs

Type

Complete the sign below with the TYPE DESIGNATION and the SERIAL NUMBER of Your plough.
2. GENERAL SAFETY PRECAUTIONS WITH SAFETY SIGNS

Safety signs
Carefully follow the Operating Instructions and Safety Signs, which warns for risks when personal injuries can occur. Avoid accidents by always following the safety precautions. Replace any missing safety decals or any that have become illegible.

Read "Operator's Manual". Safety signs with no text are used on these ploughs.

§ Ensure that no person is on underneath or in the hazardous area of the plough during transport, ploughing or when manoeuvring the plough

§ Never work with components in the hydraulic stone release system unless the pressure is omitted.

§ ATTENTION! Be alert, there is always a risk for injuries while carrying out service and repair work or when adjusting disc coulters and skimmers. Wear suitable gloves when handling or working with sharp cutting elements.

§ Operator competence. The operator must be well acquainted with the different functions of the plough and be knowledgeable of how to operate it with safety.

§ Ensure that the plough is locked with the correct locking pins onto the front linkage on the tractor.

§ The brake pedals on the tractor must be locked together when driving on the road.

§ Always lift the plough prior to the turn-over action.

§ Make sure the lever for the turn-over action is in neutral prior to starting the tractor.

§ Never park the tractor with the plough in an uplifted position.

§ Always use the support leg when parking the plough.

§ Never attempt to clean or adjust the plough during operation.

§ Never touch the gas valve on the accumulator.

§ The plough must always be attached to the front linkage on the tractor when altering the working pressure in the hydraulic stone trip system.

§ Adapt the ploughing speed to suit the ground conditions.

§ Maximum transport speed 25 km/h.

§ Transport driving: Be always aware of that the front plough reach out a long distance in front of the tractor. Be therefore extra alert when crossing roads.

§ This chapter is a summary of the rules, which must always be followed when working with the plough. These rules however do not exempt the operator from the responsibility to observe relevant statutory or other national regulations dealing with road safety or labour safety issues.
3. TECHNICAL DESCRIPTION

3.1 Checking the tractor prior to ploughing

Function of the front hitch
The front hitch and the plough should operate as one unit. This function is depending of the settings for the lower links and the top link. These components must therefore be maintained in a condition that enables them to be easily adjusted. Make sure that the front hitch can be lowered approximately 20 cm below the cross shaft of the plough. The lower links should be locked so that they not can move individually.

The front hitch should be equipped with a device that shows the actual height of the front hitch.

A simple type of height indicator stick is shown on the picture.

Hydraulics
Front plough FMRT 1 double acting outlet is required.

Wheel adjustment - Track width
For ploughing purposes, track width is always measured between the inside walls on the tractor tyres.

The measurement between the inner walls of the front wheels must be at least equal to the inner measurement between the rear wheels, but may be up to 10 cm. wider.

The distance between wheels must be symmetrical, relative to the centre line of the tractor.

The following track widths are recommended: 1200 - 1500 mm
Ideal track width = 3 x the furrow width + 100-150 mm
(Example: 16” furrow width 3 x 400 + 125 = 1325 mm)

When ploughing with "wide tyres" the outside walls of the front and the rear tyres should be parallel.

The furrow widener knives should be mounted on the last pair of plough bodies.

Tire pressures
Both tyre life and optimum traction are achieved by using the correct tyre pressure. Over-inflation will increase wheel slip. Make sure that both rear tyres are inflated to the same pressure.
3.2 Preparation of the plough

Check that the quick-couplings on the hydraulic hoses are the same type as the quick-couplings on the tractor. If required fit the correct quick-couplings, to suit your tractor.

Check that the Cross shaft that are mounted on the plough has the right size.

<table>
<thead>
<tr>
<th>Cat.</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>825</td>
<td>$\varnothing$ 28</td>
</tr>
</tbody>
</table>

The cross shaft must always be mounted centrally in the headstock and locked with the lock collars.

3.3 Mounting the plough onto the tractor

The top link must be mounted to the long hole on the plough headstock.

Quick hitching of the plough

- Remove the cross shaft by removing the locking pins.
- Mount the cross shaft on to the front hitch.
- Drive forwards so that the cross shaft is placed straight under the quick coupling bracket on the head stock.
- Mount the top link in to the long hole on the headstock.
- Lift and lock the cross shaft by remounting the locking pins.

Connection of hydraulics

Connect the hoses to the tractor's double-acting hydraulic outlets. It is advisable to arrange the connections so that the hydraulic output control lever can be moved in the most convenient direction.
Identification of hydraulic hoses

- **Black**  Reversing cylinder
- **Red**  Stone release system

### 3.4 Checking the plough

- Check the tightness of all bolts and nuts
- Grease all lubrication points
- Check the tyre pressure Tyre 10.0/80x12  30kPa  3bar
- Mouldboards
  For best results, the protective paint on new mouldboards should be removed before using the plough for the first time. Use of a paint stripper is the easiest way of removing the paint. The paint can also be removed by using a scraper or a similar tool. Under no circumstances should the paint be burned off, since the necessary heat would ruin the temper of the steel. This also applies to skim coulters used.
- Check the disc coulter, the skim coulter settings and adjust so that the settings are identical.
- Raise the plough and fold up the support leg.
- **Always remember to re-tighten all nuts and bolts after about 3 hours of use.**

**Stone trip device**
Check the working pressure by reading the pressure gauge. For suitable working pressure (see page 19)
3.5 Turn-Over Mechanism

Function

The turn-over mechanism consists of two double acting hydraulic cylinders. These are connected to one double acting hydraulic outlet on the tractor.

The turn-over action is achieved by one hydraulic valve. When activated, the plough will first be aligned and then the turn-over action will begin. The oil flow in the turn-over cylinder will automatically be changed when the plough is in middle position and push the plough into the other sides ploughing position. The turn-over cycle and the re-alignment of the plough is completed with the lever kept in one position. When the turn-over action is completed lock valves will automatically lock the plough in ploughing position. The lever is to be activated in the same direction every time.
## 3.6 Fault Tracing on Turn-Over Mechanism

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible</th>
<th>Check List</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Plough does not turn-over</td>
<td>Tractor oil level to low, or oil pressure too low</td>
<td>Top up the oil, check the tractors hydraulic pressure and flow</td>
</tr>
<tr>
<td></td>
<td>Quick couplings</td>
<td>Check that the quick couplings are of the same type as on the tractor, correctly connected and not defective</td>
</tr>
<tr>
<td></td>
<td>Turn-over valve not correctly adjusted</td>
<td>Adjust the valve</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contact your local dealer</td>
</tr>
<tr>
<td>2. Plough turns over ones but not again when another attempt is made immediately</td>
<td>The hydraulic oil is cool which means that not sufficient time is allowed for the turn-over valve to reset itself</td>
<td>Wait approximately 15 seconds between each turn over action</td>
</tr>
<tr>
<td>3. Plough turns over halfway and stops</td>
<td>Binding on the turn-over axle</td>
<td>Remove the turn-over cylinder and grease the turn-over axle. Check that there are no mechanical faults</td>
</tr>
<tr>
<td></td>
<td>Turn-over valve is damaged</td>
<td>Contact your local dealer</td>
</tr>
<tr>
<td>4. Plough does not remain in ploughing position</td>
<td>Leaking lock valve in turn over valve</td>
<td>Change the locking valve</td>
</tr>
</tbody>
</table>
4. BASIC SETTINGS

4.1 Basic settings of the plough

1. Set the plough that are mounted on the back of the tractor first before setting the front plough. The basic setting of the front plough can be started when the desired ploughing depth has been reached and when the tractor wheels (right or left hand pair) are running in a furrow with the same depth.

2. Horizontal adjustment
   Mount the top link so that it is 5 - 10 cm lower on the tractor than on the plough when in working position. The top link can be mounted in three positions on the plough. The slotted centre hole should always be used on the front plough.
   Adjust the length of the top link so that the depth of ploughing is the same for the first and last bodies (the top link pin placed in the middle of the slotted hole). The frame will now run parallel to the ground.

3. Vertical adjustment
   The beams should be adjusted to right angles (90°) to the ground.

The vertical adjustment of the right-hand bodies is altered with the adjustment screw on the left side of the plough, and vice-versa.
Adjusting: Lift the plough out of the ground, turn the plough over, adjust the stop screw, turn the plough back over, lower the plough and continue ploughing.

Adjusting screw for the vertical adjustment. Basic setting 40 mm

4. First furrow width
The cross shaft must be centrally mounted in the headstock. Adjust basic setting of the rear furrow adjustment screw A and the turnbuckle B on the alignment cylinder (when the alignment cylinder is extended out to ploughing position). Basic setting for tractors with track width 1250mm rear and 1450mm between front wheels.
For 16”/400mm furrow width  A = 640 mm and  B  700 mm
For 18”/450mm furrow width  A = 620 mm and  B  715 mm
For 20”/500mm furrow width  A = 600 mm. and  B  730 mm

Shortening of B- turnbuckle = the plough moves away from the ploughed ground
Lengthening of B- turnbuckle = the plough moves towards the ploughed ground.

Drive forwards and check the result. If the rear furrow with do not have the same with as the other furrows, use adjustment screw A for adjustment.
5. Ploughing depth
The depth wheel runs in the previous furrow. The ploughing depth are depended on the dept of the previous furrow and the adjustment of the dept wheel. The set screws are used to set the individual depth for each side. The length of the wheel arm can also be adapted for different furrow depth.
Basic setting for set screw: Total length 300 mm.

6. Vertical adjustment, other side
Vertical adjustment for the other side of the plough is done as per item 3.

7. An easy way to control the searching adjustment is to stop during ploughing and raise the front plough. The plough shall move about 10 cm towards the unploughed ground.

Make sure that no one is in close proximity of the plough when turn-over action is carried out. Never attempt to adjust any of the settings while the plough is in use.
4.2 Disc coulters
The purpose of the disc coulters is to make a vertical cut, separating the furrow slices. There are two types of disc coulters, fixed and spring loaded. When ploughing in stony or very heavy soils, the spring-loaded type of disc coulter should be used. This is to protect the coulters and to ensure that they do not act like a support wheel, carrying the plough, which would prevent it from maintaining a correct ploughing depth.

Side adjustment of disc coulters
The coulters should be set to produce a clean cut. Under normal conditions, the cut should be made 10 - 20 mm outside the landside, depending on type and condition of soil. The left and right hand coulters are set individually by loosening the nut on bracket A and turning the coulter shank sideways.

Depth adjustment of disc coulters
To maintain a favourable cutting angle towards the surface, the disc coulters should never be set deeper in the ground than 1/3 of their diameter.

Depth adjustment is carried out by fitting the coulter arm to different positions, B. This applies for both fixed and spring loaded disc coulters.

Make sure that all disc coulters on the plough are set to the same depth and are on an equal distance from the landsides on both left and right hand sides.

ATTENTION! Be alert, there is always a risk for injuries while adjusting disc coulters and skimmers.
4.3 Adjustment / Setting of skimming devices

The basic purpose of the skimming devices is to cut off and turn down a corner of the surface layer with crop residues and weeds so that these are well buried. Properly used skimming devices give the best mechanical weed control. Four different types of skimming devices are available for this purpose. All skimmers are equipped with shear bolt protection (Part no. 1652 03 76 00)

1. Skim coulter EG

Skim coulter EG is used to advantage when good weed control is important and when ploughing grasslands. It works well in firmer soils, which produces a continuous furrow slice. The depth should not be set deeper than that a corner of the furrow slice is cut off and turned down. (Maximum 5 cm at the point).

When disc coulters are not mounted, the point of the skim coulter should be set to run about 10 - 20 mm outside the landside. When disc coulters are mounted, the skim coulters should run beside the disc coulters, with the points about 10 mm away from the disc.

2. Skim coulter F

Recommended for skimming in cultivated soil. Works well together with fin coulter. The point of the F- skimmer should be set to cut approximately 10 - 20 mm outside the landside. The depth should be set so that the coulter share works in the uncultivated soil.

3. Manure skimmer EM

Recommended for deeper skimming and heavy trash. The convex mouldboard allows the trash to go on both sides of the skim shank. Works well without disc coulter.

The point of the manure skimmer should be set to cut approximately 10 - 20 mm outside the landside.

4. Coverboard

The coverboard does not affect the diagonal clearance of the plough. As a result, it can be used to advantage in loose soils and where considerable quantities of straw are present, but not in sticky soils.

The operation of the coverboard is dependent on the depth and speed of ploughing. The front of the coverboard should always be in contact with the mouldboard shin, whereas the outer section can be adjusted vertically to suit the ploughing depth.

NOTE: The coverboard should only cut off a small corner of the furrow slice.
Basic setting of skimmers

RT-ploughs
The mounting position of the skimmer bracket on the beam is the same if the plough is equipped with fin coulters or disc coulters.

Horizontal measurement (H) = 300 mm

Adjust (H) to the correct measurement and make sure that the skimmer stalks are at right angle (90°) towards the beam when the bolts are tightened.

Depth adjustment (V) for 20 cm ploughing depth.

The distance V is measured between the beam and the skimmer share point and should be adjusted as follows:
Underbeam clearance 75 cm  V = 540 mm

ATTENTION!
Be alert, there is always a risk for injuries when adjusting disc coulters and skimmers.
### 4.4 Troubleshooting - Ploughing

The following common faults produce poor ploughing results, giving higher running costs and causing unnecessary wear on both the tractor and plough.

<table>
<thead>
<tr>
<th>Fault</th>
<th>Reason</th>
<th>Check List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor pulls to one side and must be steered to counteract this</td>
<td>Plough incorrectly adjusted</td>
<td>Correct the plough adjustments, see basic settings: Rear furrow width.&lt;br&gt;Check front and rear track widths.</td>
</tr>
<tr>
<td>The rear plough body cuts different furrow widths in left and right hand ploughing</td>
<td>The cross-shaft is not mounted centrally&lt;br&gt;Incorrect vertical adjustment</td>
<td>Move the cross-shaft to the centre&lt;br&gt;Adjust the vertical adjustment</td>
</tr>
<tr>
<td>Uneven ploughing result left and right hand sides</td>
<td>Vertical adjustment faulty.&lt;br&gt;different operating angles on right and left-hand mouldboards</td>
<td>Adjust vertical adjustment, both sides. Adjust the mouldboard operating angles so that the G measurement is equal on both sides, then adjust the parallelism</td>
</tr>
<tr>
<td>Rear furrow slice too low or the furrows are stepped</td>
<td>Incorrect basic setting</td>
<td>Adjust as per basic settings: Rear furrow width, horizontal and vertical settings</td>
</tr>
<tr>
<td>Furrow slices remain standing or are not fully turned</td>
<td>Skimming devices set too low&lt;br&gt;Soil resistance causes plough to trip&lt;br&gt;Plough leans excessively toward unploughed side&lt;br&gt;Furrow width too narrow in relation to depth</td>
<td>Adjust the skimmer's to reduce skimming action.&lt;br&gt;Increase the working pressure&lt;br&gt;Adjust the vertical setting.&lt;br&gt;Increase the furrow width</td>
</tr>
<tr>
<td>Furrow height alters within the same run</td>
<td>Lateral setting of disc coulters incorrect.&lt;br&gt;Skim coulters set to different depths or have incorrect side adjustment.&lt;br&gt;Parallelism of mouldboards incorrect</td>
<td>Adjust the disc coulters&lt;br&gt;Adjust the skim coulters&lt;br&gt;Adjust the parallelism of the mouldboards</td>
</tr>
</tbody>
</table>
4.5 Adjustment of working width

All Agrolux ploughs are equipped with adjustable working widths: 16”/400, 18”/450 and 20”/500

1. Alternating the beam housing position
Each plough body pair can swivel around the front bolt in the beam housing. By placing rear bolt in one of the three different positions A, B or C you will alter the working (furrow) width. The table below show you what working (furrow) widths you can achieve for the plough. When bolts has been mounted in the desired hole, tighten it up. For tightening torques see page 24

NOTE! Remember to retighten the bolts after approx. 3 hours.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widths</td>
<td>20”/500</td>
<td>18”/450</td>
<td>16”/400</td>
</tr>
</tbody>
</table>

2. Plough adjustment/alignment
Adjust the plough into the tractor's centreline and adjust the rear furrow width. See basic settings. Check that the right shares are being used.

The denomination of the shares are suited to this "hinge type" ploughing, i.e. for 16”/400 mm furrow width ploughing use a 16” share (which gives a 14” wide cut).

3. Altering the width on the depth-wheels
The depth wheel are moved together with the front beam housing and will always run parallel with the landsides.
Depth Wheel  10,0/80 X 12

When reversing the plough the wheel turns over backwards. A progressive braking system protects the wheel.

Adjustment of the braking system

- Remove the bolt and the lock washer A
- Adjust the braking force by tensioning or loosening nut B
- Mount the lock washer.
5. STONE TRIP SYSTEM

To protect the plough and tractor, all Agrolux ploughs are equipped with a stone trip system.

5.1 Hydraulic stone trip system

The tripping mechanism consists of a trip cylinder for each pair of plough bodies. The cylinder are connected with a gas/oil accumulator. The accumulator is, precharged with nitrogen gas (N²).

The trip cylinders, pressure hoses and the accumulator are pressurized with oil = working pressure as shown by the pressure gauge.

When ploughing, the pressure of the nitrogen gas acts as a spring inside the accumulator giving the plough bodies fully automatic and individual tripping and resetting actions.

The design of the trip system allows the plough bodies to move in all directions.

The precharge pressure in the accumulator is 11 MPa (110 bar)

The working pressure (oil pressure) is shown by the pressure gauge and should be at least 10% higher than the precharge gas pressure.

Working pressure should be between 12 - 14 MPa (120-140 bar).

**Rule:** The working pressure should not be adjusted higher than that the bodies keep their correct positions during ploughing and do not trip solely because of soil resistance.
5.2 Adjustment of operating pressure

Connect the filling hose to a single-acting hydraulic outlet on the tractor. Open the valve and adjust the pressure to the required value using the tractor hydraulics, close the valve and repositioning the hose in its original position.

**NOTE:** The plough must be connected to the tractor when adjusting the pressure and when depressurizing the system. Always ensure maximum cleanliness when working with the hydraulic system.

*Never attempt to disconnect any hydraulic connection while the system is pressurized!*

**Changing of the working pressure (mechanically)**

In extremely heavy and resistant soils, where consistently high working pressures (above 13 MPa) are required to prevent the plough bodies from tripping due to soil resistance, the trip resistance can be increased mechanically.

**Adjustment:** Connect the filling hose for the stone trip system as described in the preceding Adjustment of operating pressure, and depressurize the system.

Remove the piston rod from inner hole and relocate it in to the outer hole, this increases the leverage, which results in a 20% increase of the resistance.
6. Working with Front plough

Starting at the headland mark: A front plough do not follow the tractor in the same way that a plough that are pulled behind the tractor. It is therefore important to align the tractor and plough so that you can do a straight start.

Transport driving: Be always aware of that the front plough reach out a long distance in front of the tractor. Be therefore extra alert when crossing roads. Adapt driving speed to the road conditions so that the plough does not bounce in front of the tractor.

Ploughing: Adapt ploughing speed to the prevailing ground conditions and presence of stones. NOTE: Excessively high speed costs money in terms of wear and damage to the equipment.

Transport speed: Maximum transport speed 25 km/h (16 mph)

Turning on headlands: After turning on headlands, always ensure that entry is made straight. Turning on headland can be done in two different ways:

Three-point turn: This consists of raising the plough at the headland mark, turning towards the ploughed side, reversing towards the unploughed side, driving forward and then lowering the plough at the headland mark.

The plough should preferably be turned-over while driving forward or at standstill.

360° Turn: Start by raising the plough at the headland mark, immediately followed by a 360° turn starting off towards the ploughed side, re-approaching from the unploughed side and lowering the plough at the headland mark.

The plough can be turned over any time during the turn.

The method chosen will differ from driver to driver and to some extent, also on the type of tractor. The three-point turn requires more work for the driver, but requires a smaller headland, while the 360° turn, although faster, requires less labour and a somewhat wider headland.
6.1 Useful operational points

Marking of headlands
Always mark the headlands, working inward, towards the field with the rear plough, (i.e. with an extended top-link and the front end of the plough raised).

In good regular fields, headland marking is only necessary at the short sides.

In irregular fields or fields surrounded by ditches, hedges or other obstacles, the headlands should be marked out all around the field.

Headland width
Headlands should always be of an adequate width to permit the plough to be fully raised out of the ground before starting to turn the tractor. Depending on the size of the tractor and plough, and the method of turning on the headland (reversing or making a 360° turn).

Ploughing
When starting ploughing at the edge of the field or at the side headland (if marked out all around), the first furrow slice should be laid inwards using the same plough setting as when marking the headlands. Ploughing begins with the second run in which the first furrow slice is returned. All the soil will by this be ploughed through completely. On the third run, the tractor will be running in a furrow at the correct depth and the basic settings should be adjusted.

LOWERING AND RAISING OF THE PLOUGH SHOULD BE CARRIED OUT AT THE HEADLAND MARKS.

An even edge at the headland marking will make it easier to plough the headlands and eliminate double ploughing.

Drive straight!
Crooked furrows impose high stress on both tractor and plough, and contribute to an unsatisfactory result due to poor matching. Consequently, the furrows should be straightened as quickly as possible.

Always use the plough bodies alternately to equalise the wear on both right and left hand sides, otherwise, it will be impossible to produce uniform furrow slices on both sides.

Select the correct furrow width.
The working width must always be proportional to the ploughing depth, i.e. the maximum depth should not exceed 2/3 of the furrow width. This to ensure that the furrow slices are correctly balanced and turned over.

![Wrong and Correct Diagrams]

WRONG
CORRECT
7. MAINTENANCE

To ensure the plough a long life and to avoid unnecessary wear, observe the following instructions:

7.1 Replacement of wearing parts

All wearing parts should be replaced in good time in order to protect more vital parts, which will save you money. Always use original spare parts, which will ensure that you get wearing parts with good quality and which fit the plough. This is also a condition for validity of the warranty.

Point and Shares
The points and shares must be replaced before it has been worn down so far that the frog is damaged.

Mouldboards
When replacing mouldboards, ensure that the bolts are CROSS-TIGHTENED in order to avoid tension being built into the mouldboard, which may cause it to crack.

Mouldboard shin
When replacing the mouldboard shin follow the above-mentioned instruction for mouldboards.

Landsides
If the landsides are severely worn, the plough will break out towards the unploughed soil which gives a poorer turning of the furrow slice and the plough will pull heavier.

Disc coulter blades
If a good cutting function should be maintained, the coulter blade should be replaced when 1/3 of the original diameter is worn off.

Never work under a raised plough without securing it with a stand or similar, to avoid accidental lowering of the plough. Never rely solely on the tractor hydraulic system.
7.2 Parallelism and G-measurement of the mouldboards

- Check the working angle of the mouldboard. The normal position is measured on the rear plough body between the extended inside line of the landside, horizontally out against the outermost hole in the mouldboard, see measurement G. Adjust the mouldboard stay if necessary.

<table>
<thead>
<tr>
<th></th>
<th>Mouldboard normal measurement</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH</td>
<td></td>
<td>625 mm</td>
</tr>
<tr>
<td>AX</td>
<td></td>
<td>580 mm</td>
</tr>
<tr>
<td>FC</td>
<td></td>
<td>550 mm</td>
</tr>
<tr>
<td>AS</td>
<td>Measurement to the outer end of the bottom slat</td>
<td>635 mm</td>
</tr>
<tr>
<td></td>
<td>Measurement to the outer end of the top slat</td>
<td>505 mm</td>
</tr>
</tbody>
</table>

- Repeat the same procedure for the rear body on the opposite side.

- Measure from the now adjusted rear, two bodies forward and adjust the mouldboard stays if necessary, to the interbodey space 1000 mm A= B.

Tightening the bolts

Bolts of quality 8.8, 10.9 and 12.9 are used on the ploughs. When replacing these bolts, ensure that the same quality bolts and nuts are used. The following tightening torque should be used for the different bolts:

<table>
<thead>
<tr>
<th>Quality</th>
<th>Size</th>
<th>Torque</th>
<th>Nm</th>
<th>kpm*</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,8</td>
<td>M12</td>
<td>81</td>
<td>Nm</td>
<td>8.1</td>
</tr>
<tr>
<td>8,8</td>
<td>M16</td>
<td>197</td>
<td>Nm</td>
<td>19.7</td>
</tr>
<tr>
<td>8,8</td>
<td>M18</td>
<td>275</td>
<td>Nm</td>
<td>27.5</td>
</tr>
<tr>
<td>8,8</td>
<td>M20</td>
<td>385</td>
<td>Nm</td>
<td>38.5</td>
</tr>
<tr>
<td>8,8</td>
<td>M24</td>
<td>665</td>
<td>Nm</td>
<td>66.5</td>
</tr>
<tr>
<td>8,8</td>
<td>M30</td>
<td>1310</td>
<td>Nm</td>
<td>131.0</td>
</tr>
<tr>
<td>10,9</td>
<td>M12</td>
<td>114</td>
<td>Nm</td>
<td>11.4</td>
</tr>
<tr>
<td>10,9</td>
<td>M16</td>
<td>277</td>
<td>Nm</td>
<td>27.7</td>
</tr>
<tr>
<td>10,9</td>
<td>M20</td>
<td>541</td>
<td>Nm</td>
<td>54.1</td>
</tr>
<tr>
<td>10,9</td>
<td>M24</td>
<td>935</td>
<td>Nm</td>
<td>93.5</td>
</tr>
<tr>
<td>10,9</td>
<td>M30</td>
<td>1840</td>
<td>Nm</td>
<td>184.0</td>
</tr>
<tr>
<td>12,9</td>
<td>M16*</td>
<td>333</td>
<td>Nm</td>
<td>33.3</td>
</tr>
<tr>
<td>12,9</td>
<td>M20</td>
<td>649</td>
<td>Nm</td>
<td>64.9</td>
</tr>
<tr>
<td>12,9</td>
<td>M24</td>
<td>1120</td>
<td>Nm</td>
<td>112.0</td>
</tr>
</tbody>
</table>

* The M16 screws that are mounted through the link plates but outside the main frame should be tightened to 200 Nm
7.3 Greasing of the beam hinge points

Position the plough with the bodies approx. 15 cm above the ground, depressurize the system as described in Adjustment of operating pressure, see page 20.

The hinge points will now expose as the beams drop down. Grease all the upper hinge points. Also grease all other lubricating points in the stone trip linkage while depressurized. Now pressurize the system, make sure that the beams return to their correct positions. Turn the plough over to the other side, and repeat the procedure. Charge the system up to the correct operating pressure, close the valve and return the supply hose to its original position.

**NOTE!** Make sure that all beams return to their correct positions.  
**Lubricate the beam hinge points every 20 hours of work.**

7.4 Winter storage

- Clean the plough properly
- Ensure that all wearing parts are in good condition, replace if necessary (so that the plough is ready for the next season)
- Tighten all bolts and nuts
- Check the pre-charge pressure in the accumulator
- Lubricate all lubrication points with grease and oil
- Protect the mouldboards and all the shiny details by lubricating them with either oil, under coat protection or acid-free grease
- The stone trip system should be stored in a pressurized condition so that all trip cylinders are fully extended and filled with oil. Check the hoses on the stone trip system.
7.5 Lubrication cart  Front plough  FMRT

- Use grease containing molybden disulfide

* = Lubrication intervals/hours
8. Extra Equipment
The front plough can be equipped with mirrors for safer road transport driving, especially when crossing roads. The bracket also have a platform so that a rotating hazard light can be mounted.

Part no. 1652 63 40 00

9. USEFUL ADVISE
When you have completed a careful and accurate adjustment of your plough so that it works well and gives a good ploughing result, make a note of the following important measurements:

Length of top link

Left vertical adjustment screw

Right vertical adjustment screw

A-measurement (Last furrow width adjustment)

B-measurement (Last furrow width adjustment)

Adjustment sleeves Depth-wheel

These measurements and similar notes will make the adjustments easier next time you start ploughing
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