



NOTICE D'EMPLOI

Plateau de coupe

SF362



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ISEKI Rotary-Mower-Deck FM .. H-Pro-Series Safety and Operation Manual.

2.1 IMPORTANT

IMPORTANT: This is a precision machine and the service obtained from it depends on the way it is operated and maintained.

This SAFETY AND OPERATORS MANUAL should be regarded as part of the machine. Suppliers of both new and second-hand machines are advised to retain documentary evidence that this manual was provided with the machine.

This machine is designed solely for use in customary grass cutting operations. Use in any other way is considered as contrary to the intended use. Compliance with and strict adherence to the conditions of operation, service and repair as specified by the manufacturer, also constitute essential elements of the intended use.

Before attempting to operate this machine, ALL operators MUST read through this manual and make themselves thoroughly conversant with Safety Instructions, controls, lubrication and maintenance. Accident prevention regulations, all other generally recognized regulations on safety and occupational medicine, and all road traffic regulations shall be observed at all times. Any arbitrary modifications carried out on this machine may relieve the manufacturer of liability for any resulting damage or injury.

2.2 PRODUCT IDENTIFICATION

| | |
|-------------|--|
| TYP | = MODEL NAME |
| Art.Nr: | = ORDER CODE NR.MACHINE NAME SERIAL NUMBER |
| Serien-Nr.: | = SERIAL NUMBER |
| YEAR | = PRODUCTION YEAR |





This safety symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury, carefully read the message that follows, and inform other operators.

3.1 OPERATING INSTRUCTIONS

- Ensure that the instructions in this book are read and fully understood.
- No person should be allowed to operate this machine unless they are fully acquainted with all the controls and the safety procedures.
- Never allow children or people unfamiliar with these instructions to use this machine. Local regulations may restrict the age of the operator.

3.2 SAFETY SIGNS

- It is essential all safety labels are kept legible, if they are missing or illegible they must be replaced. If any part of the machine is replaced and it originally carried a safety label, a new label must be affixed to the replacement part. New safety labels are obtainable from Ransomes dealers.

3.3 STARTING THE ENGINE

- Before starting the engine check that the brakes are applied, drives are in neutral, guards are in position and intact, and bystanders are clear of the machine.
- Do not run the engine in a building without adequate ventilation.

3.4 DRIVING THE MACHINE

- Before moving the machine, check to ensure that all parts are in good working order, paying particular attention to brakes, tyres, steering and the security of cutting blades.
- Replace faulty silencers, mow only in daylight or good artificial light
- Always observe the Highway Code both on and off the roads. Keep alert and aware at all times. Watch out for traffic when crossing or near roadways.
- Stop the blades rotating before crossing surfaces other than grass.
- Remember that some people are deaf or blind and that children and animals can be unpredictable.
- Keep travelling speeds low enough for an emergency stop to be effective and safe at all times, in any conditions.
- Remove or avoid obstructions in the area to be cut, thus reducing the

possibility of injury to yourself and/or bystanders.

- When reversing, take special care to ensure that the area behind is clear of obstructions and/or bystanders. DO NOT carry passengers.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.
- When the machine is to be parked, stored or left unattended, lower the cutting means.
- While mowing, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
- After striking a foreign object inspect the lawnmower for damage and make repairs before restarting and operating the equipment.
- If the machine starts to vibrate abnormally, check immediately.

3.5 TRANSPORTING

- Ensure that the rotary deck is securely fastened in the transport position. Do not transport with cutting mechanism rotating.
- Drive the machine with due consideration of road and surface conditions, inclines and local undulations.
- Sudden decelerating or braking can cause the rear wheels to lift.
- Remember that the stability of the rear of the machine is reduced as the fuel is used.

3.6 LEAVING THE DRIVING POSITION

- Park the machine on level ground.
- Before leaving the driving position, stop the engine and make sure all moving parts are stationary. Apply brakes and disengage all drives. Remove the starter key.

3.7 SLOPES

TAKE EXTRA CARE WHEN WORKING ON SLOPES

- Local undulations and sinkage will change the general slope. Avoid ground conditions which can cause the machine to slide.
- Keep machine speeds low on slopes and during tight turns.
- Sudden decelerating or braking can cause the rear wheels to lift. Remember there is no such thing as a "safe" slope.
- Travel on grass slopes requires particular care.

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DO NOT USE ON SLOPES GREATER THAN 10° IMPORTANT:

When working on any slope set the weight transfer, if fitted to its maximum (+) setting.

3.8 PLUGGED OR OBSTRUCTED DECK

- Stop the engine, disengage the PTO's and set the parking brake. Wait for the blades to stop rotating before attempting to remove the material plugging the cutter deck.
- Remove obstructions with care. Keep all parts of the body away from the cutting edges of the blades. Keep other persons away from the cutter deck.
- Rotation of one blade will cause the others to rotate.
- Do not dismantle the machine without releasing or restraining forces which can cause parts to move suddenly.
- Stop engine before unclogging discharge chute.

3.9 ADJUSTMENTS, LUBRICATION AND MAINTENANCE

- Stop the engine and make sure all moving parts are stationary.
- Apply brakes and disengage all drives.
- Read all the appropriate servicing instructions.
- Use only the replacement parts supplied by the original manufacturer.
- When adjusting the rotary deck take care not to get hands and feet trapped when rotating cutter blades.
- To reduce the fire hazard, keep the engine, silencer and battery compartments free of grass, leaves or excessive grease.
- Replace worn or damaged parts for safety.
- When working underneath lifted parts or machines, make sure adequate support is provided.
- Do not dismantle the machine without releasing or restraining forces which can cause parts to move suddenly.
- Do not alter engine speed above maximum quoted in Engine Specification. Do not change the engine governor settings or overspeed the engine. Operating the engine at excessive speed may increase the hazard of personal injury.
- When refuelling, STOP THE ENGINE, DO NOT SMOKE. Add fuel before starting the engine, never add fuel while the engine is running.
- Use a funnel when pouring fuel from a can into the tank.
- Do not fill the fuel tank beyond the bottom of the filler neck.
- Replace all fuel tank and container caps

securely.

- Store fuel in containers specifically designed for this purpose.
- Refuel outdoors only and do not smoke while refuelling.
- If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapours have dissipated.
- Allow the engine to cool before storing in any enclosure.
- Never store the equipment with fuel in the tank inside a building where fumes may reach an open flame or spark.
- If the fuel tank has to be drained, this should be done outdoors.
- Do not spill fuel onto hot components.
- When servicing batteries, DO NOT SMOKE, and keep naked lights away.
- Do not place any metal objects across the terminals.

DANGER - Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING - Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION - Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury and property damage. It may also be used to alert against unsafe practices.

WARNING



THE SF300-RD60 COMBINATION MUST ONLY BE USED IF THE TRACTOR HAS BALLAST WEIGHT KIT LMAB868 FITTED

WARNING



DO NOT USE ON SLOPES GREATER THAN 10°

WARNING



When the machine is to be used on slopes, the CUSTOMER must carry out a RISK ASSESSMENT of the area. If a risk of overturning is identified it is recommended that ROPS FRAME (Part No. SFSSF) is fitted.

WARNING



Batteries produce explosive gases and contain corrosive acid and supply levels of electrical current high enough to cause burns.

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4.1 MACHINE SPECIFICATION

| | |
|----------------------------|---|
| Frame construction: | Heavy-duty welded sheet steel |
| Rotary deck drive: | PTO drive through bevel gearbox to single L-L poly section belt |
| PTO Speed: | 2100 rpm |
| Cutter blade speed: | 2700 rpm |
| Cutter blade tip speed: | 4500 m/min |
| Spindles: | 30 mm diameter, oneside sealed bearings |
| Blades: | Three, 560 mm, / 630 mm 8 mm thick, heat treated blades. |
| Castor Wheels: | full rubber elastic wheels diam. 270 mm, width 85 mm, |
| Anti-scalp rollers: | 1 front, 2 rear for FM 160 2 front, 2 rear for FM 180 |
| Cutting height adjustment: | Adjustable by front castor wheels / rear lift rods |
| Cutting heights: | 25 - 100 mm variable |

4.2 DIMENSIONS

| | FM 160 H | FM 180 H |
|-----------------|-----------------|------------------------------|
| Width of cut: | 1600 mm | 1800 mm |
| Overall length: | 1250 mm | 1360 mm |
| Overall width: | 1640 mm | 1840 mm |
| Overall height: | 520 mm | 630 mm |
| Overall weight: | 180 kg | 205 kg + adaptation 40 kg |

4.3 VIBRATION LEVEL

The machine was tested for whole body and hand/arm vibration levels. The operator was seated in the normal operating position with both hands on the steering mechanism. The engine was running and the cutting device was rotating with the machine stationary.

Hand / Arm acceleration level : 6.09 m/s²
Whole body acceleration level (m/s²):

4.4 SLOPES

DO NOT USE ON SLOPES GREATER THAN 10°

The slope 10° was calculated using static stability measurements according to the requirements of EN 836.

4.5 RECOMMENDED LUBRICANTS

Bevel gearbox: None (Maintanacefree)
Grease: Shell Darina R2, or equivalent.



EG - Konformitätserklärung Declaration of Conformity

entsprechend EG-Richtlinie 98/37/EG
according to directive 98/37/EC

Wir,
We,

ISEKI-Maschinen-GmbH Deutschland,
Rudolf-Diesel-Str. 4-6,
40670 Meerbusch

erklären in alleiniger Verantwortung, daß das Produkt
declare under our sole responsibility that the products

Front - Rotationssichelmäher Pro H Serie
front Rotary mower Pro H Series

FM 160 H-Pro (Mulchmaster)

und, and

FM 180 H- Pro (Mulchmaster)

ab Seriennummer:
from and after serial number

20 97 001

Kategorie/category:
Schnittbreite/cutting width:
Zapfwellenantriebsdrehzahl/pto drive speed

Frontsichelmäher/ Mounted Rotary Deck
1,60 cm, 1,80 cm
2000 U/min,rpm

auf das sich diese Erklärung bezieht, den folgenden
Bestimmungen der Verordnung entspricht:
to which this declaration relates are in conformity with the
following directives:

93/68/EWG, 89/336/EEC

Verweis auf harmonisierte Norm:
Reference to harmonised standards:

EN 836

Zu verwenden an:

ISEKI TF-, TK-, TH-, TG-Kompakt Traktor Serie,
SF 300, SF 330, SF 303, SF 333, SF 310,
SF 370 Front Mäher

Approved for use with:

ISEKI TF-, TK-, TH-, TG-compakt traktor Serie,
SF 300, SF 330, SF 303, SF 333, SF 310,
SF 370 Front-Deck-Mower

Meerbusch, 01.04.2003
ISEKI-Maschinen-GmbH
Germany

Dipl. Ing. J. Lassek
Technical Manager

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5.1 SAFETY DECALS

Keep a Safe Distance from the Machine.

bsb 451 294 Read Operator's Manual.

bsb 447 422 Do Not Open or Remove Safety Shields While the Engine is Running.

bsb 447 417 Caution Rotating Blades.



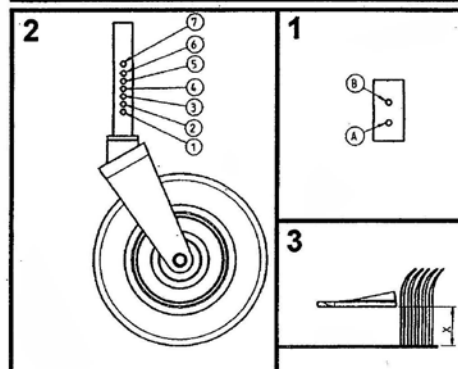
5.2 INSTRUCTION DECALS

1 Cutting Height

2 Drive Belt Adjustment

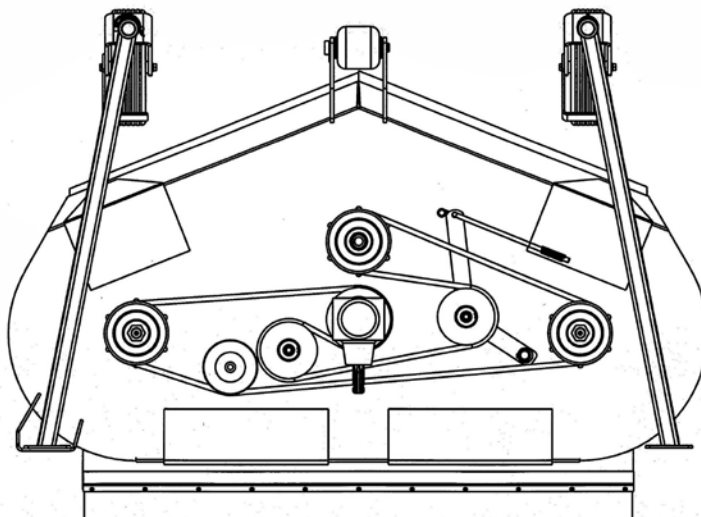
Einstellung der Schnitthöhe

| 1 Position Bolzen in Stützradträger | 2 Position Bolzen in Stützrad | 3 Schnitthöhe "X" in mm |
|-------------------------------------|-------------------------------|-------------------------|
| A | 1 | 25 |
| B | 4 | 31 |
| A | 2 | 37 |
| B | 5 | 43 |
| A | 3 | 49 |
| B | 6 | 55 |
| A | 4 | 61 |
| A | 5 | 73 |
| A | 6 | 85 |
| A | 7 | 100 |



1 Cutting Height

2 Drive Belt Adjustment



5.3 DECAL MAINTENANCE

The SAFETY and INSTRUCTION decals should always be clearly visible, that is, nothing should obscure them. When they have become dirty, wash them with soap water using a soft cloth. SAFETY decals that have become damaged or lost must be replaced as soon as possible. New decals should be placed in the same location as the old one. When fitting a new decal ensure the position is clean and dry before fitting, making sure all the air bubbles are squeezed out from under the decal.



5.4 DECAL LOCATION

- 1 bsb 447417
- 2 bsb 447417
- 3 bsb 451 294
- 4 ISEKI lable
- 5 Mulch-Master lable
- 6 Operation Manual
- 7 CE - mark

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- Place the tractor on level, hard ground.
- Apply the parking brake securely.
- Shift the transmission range shift lever to the neutral position.
- Shift the PTO lever to the neutral position
- Stop engine and remove key

INSTALLATION OF THE SF300-RD60 ROTARY DECK ON THE TRACTOR

6.1 Remove all packaging from the rotary deck and check the contents with the supplied packing list. Fit the two sliding links to the tractor mounting plate (fig 2 & 3) ensuring they slide freely after tightening the fixing bolts. Fit the two rear lift rod assemblies on to the tractor hanger pins (fig 2) and secure with the R clips supplied. (Drill the holes in the tractor hanger pins to 4.2 mm diameter if necessary). Remove the lift arms A (fig 1) from the cutter deck and fit into the righthand and left-hand lift arm sockets (fig 2) of the tractor unit. Align the fixing holes and secure with the fixing pins supplied.

6.2 Apply grease to the male half of the supplied PTO shaft tube and assemble the two halves. Remove the PTO guard cover from the cutter deck. Fit key (6 x 6 x 30) to the gearbox input shaft. Assemble the PTO shaft to the gearbox securing that the safety pin locks the universal joint in the fixed position.

6.3 Position the rotary deck in front of the tractor allowing sufficient distance to enable fitting of the PTO drive shaft to the tractor. Fit the PTO shaft to the tractor (fig 4) making sure the spring loaded retaining button has located correctly.

6.4 Align the lift arms with the fixing plates on the rotary deck. Place the lift control lever in the down position.

6.5 Align the lift arm ball ends with the fixing hole B (fig 1) and secure with the two fixing pins.

6.6 Fit the two slide links to the anchor points at the rear of the rotary deck with the pins supplied.



fig 1 Lift arms

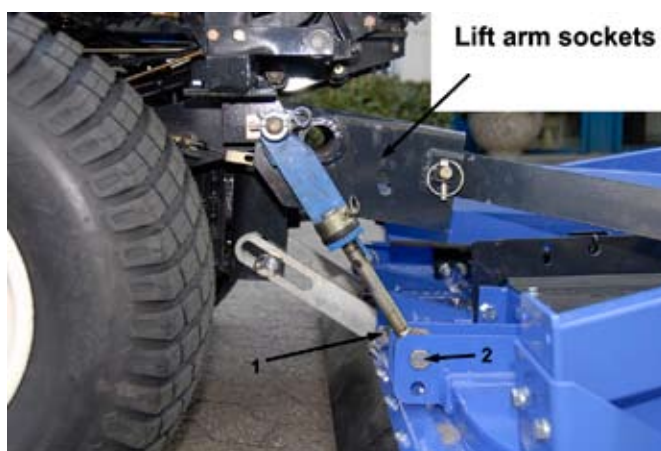


fig 2 Rotary Deck Mounting Plates

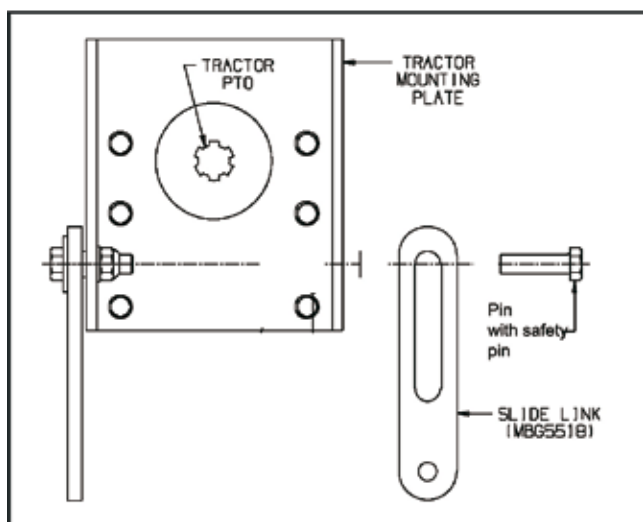


fig 3 Sliding Link Assembly

fig 1 LIFT ARMS

fig 2 ROTARY DECK MOUNTING PLATES

fig 3 SLIDING LINK ASSEMBLY

6.7 Fit the two rear lift rods to the anchor points at the rear of the rotary deck (fig 5) and secure with the supplied fixing pins.

6.8 Fit the PTO guard cover into place.

NOTE:

Having completed assembly to the tractor make a thorough inspection of all the rotary deck fixings before continuing.

BEFORE OPERATION

- Become familiar with how to operate the FM 160 H / FM 180 H rotary deck and understand safety instructions by reading the manual carefully.
- Make sure that all safety covers and guards are installed in position.
- Make sure that all blade retaining nuts are tightened securely.
- Make sure that the poly-vee belt is tensioned as specified.
- Make sure that the rotary deck cutting height has been adjusted to give adequate clearance of cutting height when using the rotary deck for the first time.
- Before moving the FM 160 H / FM 180 H mower into the work site check the entire area and remove all obstacles such as stones, wood, empty tins, bottles, wires etc to ensure safe operation.
- Make sure that the mowing operation will not cause any injury to children, animals, bystanders etc.



fig 4 PTO Drive shaft and PTO Cover

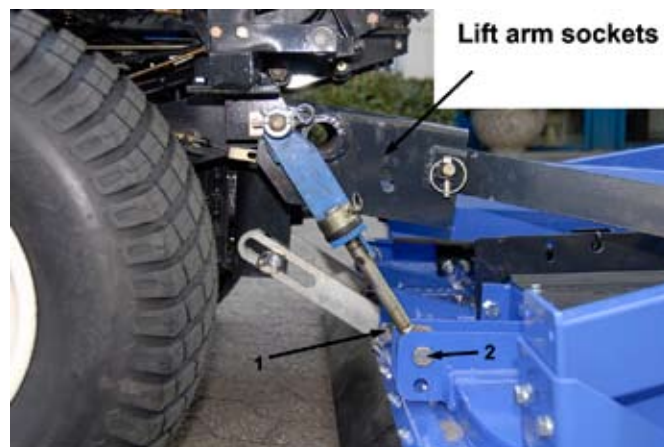


fig 5 Rear height adjusting rods

fig 4 PTO DRIVE SHAFT AND PTO COVER
fig 5 REAR HEIGHT ADJUSTER RODS

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NOTE:

Familiarise yourself with the method of adjusting the cutting height by studying the cutting height adjustment decal below and on the FM 160 / FM 180 H mower deck before adjusting the height of cut.

CUTTING HEIGHT ADJUSTMENT

7.1 FRONT CASTOR WHEELS

- 7.1.1 Raise the mower deck from the ground with the tractor lift so that the mower front castor wheels are clear of the ground.
- 7.1.2 Remove the quick pin from the top of the castor wheel pivot spindle.
- 7.1.3 Remove the castor wheel from the castor support.
- 7.1.4 Select either Position 1 or Position 2 for wheel mounting bracket. To change, remove (4) mounting bolts, move to the alternative location and bolt in place.
- 7.1.5 Place the selected number of spacers below the castor support. Place the remaining spacers above the castor support.
- 7.1.6 Replace the quick pin.

7.2 REAR LIFT RODS

- 7.2.1 Remove the retaining pin from one of the lift rod collars.
- 7.2.2 Select the position that matches the selected setting of the front castor wheels, i.e. with the wheel mounting bracket in Position 1 and front castor wheel A4, set lift rod collar at H2 to give 64 mm (2-1/2") cutting height.
- 7.2.3 Replace the retaining pin.
- 7.2.4 Repeat the operation to the other lift rod.

Please note for 'H' position fit the lift rod collar in reverse by turning over.

fig 6 Rotary deck height of cut adjustment decal

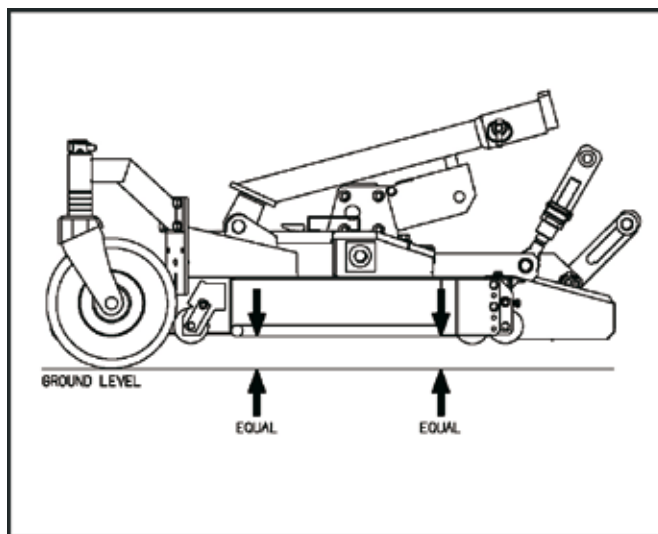


fig 7 Rotary deck height of cut adjustment

fig 6 ROTARY DECK HEIGHT OF CUT
ADJUSTMENT DECAL

fig 7 ROTARY DECK HEIGHT OF CUT
ADJUSTMENT

- 7.2.5 Lower the mower deck to the ground and check the selected setting is correct and that the mower is parallel with the ground. (see fig 7).

NOTE:

Avoid operating the mower deck in the lowest setting over rough ground or poor mowing conditions as this will give reduced blade life and cause excessive wear to the mower deck pan and component parts.

7.3 STARTING MOWING OPERATION

IMPORTANT

Before starting the tractor, sit down in the operator's seat properly, depress the clutch pedal fully, and shift the PTO lever to the neutral position, or the engine cannot be started. Always ensure the SF300-RD60 mower is clear from grass etc. before starting. Failure to do so may result in premature belt failure or serious damage to the mower and tractor.

- 7.3.1 Start the tractor.
7.3.2 Position the FM 160 H / FM 180 H mower 100 mm – 120 mm (4 in – 5 in) from the ground and clear of grass and obstacles, using the lift lever 1 (fig 8).
7.3.3 Turn the throttle lever to the intermediate speed, position between the high speed mark and low speed mark (fig 9).
7.3.4 Shift the transmission range lever to the low speed position (fig 10).
7.3.5 Turn button # 3 (yellow) and turn to lock it. PTO starts to run. To stop PTO, just push button # 3 down.

IMPORTANT:

As soon as the button is activated, the blades start rotating and grass and other debris may start being ejected from the FM 160 H / FM 180 H mower. So before starting the mower, be sure of the safety conditions around the mower.

- fig 8 LIFT LEVER
fig 9 THROTTLE LEVER
fig 10 TRANSMISSION RANGE SHIFT LEVER
fig 11 PTO LEVER



fig 8 Lift Lever # 1



fig 9 Throttle lever "A"



fig 10 Transmission range shift lever # 2



fig 11 PTO - Switch # 3

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- 7.3.6 Turn the throttle lever to the high speed setting (fig 12). Ensure the engine speed setting is in the green sector to give the required 2100 rpm PTO speed (fig 13).

IMPORTANT:

Always operate the FM 160 H / FM 180 H mower at the high speed setting when mowing – a lower throttle will cause premature belt failure and will produce a poor finish of cut.

- 7.3.7 Push down the master brake pedal to release the parking brake (fig 14).
- 7.3.8 Depress the **HST** forward travel pedal gradually and the FM 160 H / FM 180 H mower starts travelling slowly to begin the mowing operation.
- 7.3.9 Select a travelling speed for stable operation and set the speed with the cruise control lever.

IMPORTANT:

When adjustment of the cutting height is required during operation, shift the PTO lever to the neutral position, raise the mower to the highest position with the lift lever, stop the engine and remove the key. Shift the transmission range lever to the neutral position. Push the master brake pedal, and apply the parking brake.

7.4 EMERGENCY STOP

When any of the following abnormalities are encountered, stop the tractor and rotary deck immediately.

- Abnormal noise
- Abnormal vibration
- Abnormal smell
- Blade hitting an obstacle
- The front of the rotary deck hitting an obstacle

fig 12 THROTTLE LEVER

fig 13 ENGINE REV COUNTER

fig 14 BRAKE PEDALS

- (3) Master Brake Pedal
(2) Parking Brake Lever (LH side of seat)



fig 12 Throttle lever "A"



fig 13 Engine Revolution counter # 4

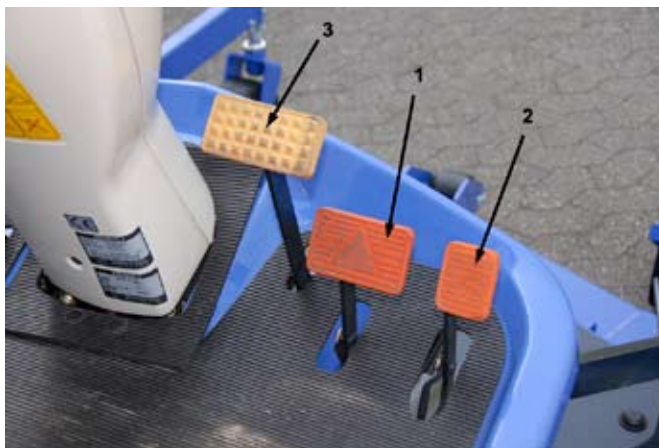


fig 14 Pedals:
3 Main brake pedal
1 HST forward pedal
2 HST reverse pedal

CUTTER BLADES MAY CONTINUE TO ROTATE FOR A SHORT PERIOD OF TIME AFTER THE DRIVE HAS BEEN DISENGAGED.

WARNING

The cause of trouble should be located and corrected immediately. If not, consult your dealer.

Never attempt to keep operating the rotary deck without locating and correcting the cause of trouble.

When the operator leaves the seat, the safety system automatically stops the engine. When leaving the tractor to remove obstacles such as twigs, stones, etc., shift the PTO lever to the neutral position and apply the parking brake, and then the engine keeps running.

7.5 EFFICIENT MOWING

- **Be sure to mow at full throttle.**
- **Choose an adequate travelling speed in accordance with the height of grass to be cut.**
- **Low cutting height will lead to poor mowing efficiency and rapid blade wear.**
- **When the screens for the air-intake openings are clogged, clean them at once. Never go on operating with clogged screens.**

7.6 MOWING PLAN AND METHOD

When mowing a large area, the following method is recommended.

7.6.1 Travel clockwise in spirals two or three times towards the centre.

7.6.2 Then travel up and down from one side.

7.7 TO PREVENT DAMAGE OF TURF

7.7.1 Mowing is desirable when the grass is dry and dew free: thus preventing the mower from clogging.

7.7.2 Always keep the rotary deck clean and well maintained.

7.7.3 Check the blades regularly for damage.

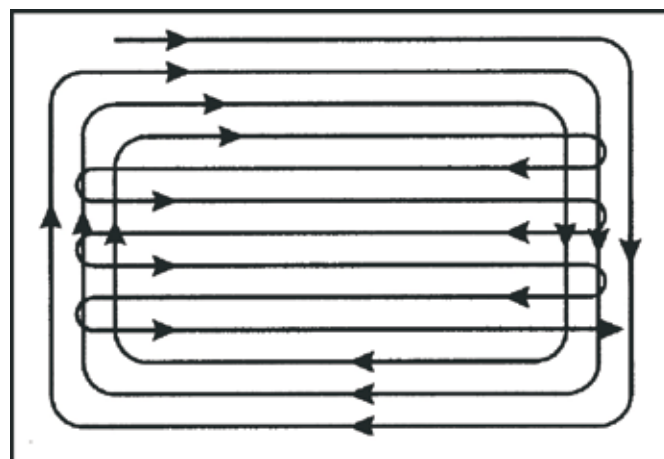


fig 15 Mowing Plan

fig 15 MOWING PLAN

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- 7.7.4 Repeated mowing is recommended before the grass grows too high to maintain a good finish.
- 7.7.5 Cutting grass too closely may damage the grass and let weeds grow easily. To maintain a green lawn, never mow more than one-third off the height in one mowing.
- 7.7.6 A slower travelling speed will result in improved mowing. Avoid selecting such a travelling speed that causes the tractor to bounce.
- 7.7.7 Short fast turns will damage the turf. Slow down sufficiently when turning.
- 7.7.8 To maintain a good finish always ensure the engine speed setting is in the green sector (fig 13) to give the required 2100 rpm PTO speed when mowing. Running the mower at a lower engine rpm will result in a poor finish and a reduced drive belt life.
- 7.7.9 Always increase the cutting height when mowing very tall grass for the very first time and make a second pass travelling in the opposite direction at a lower cutting height to maintain a good finish.
- 7.7.10 Always clean the rotary deck regularly when mowing wet grass to avoid clogging.
- 7.7.11 When mowing in dry dusty conditions clean the tractor air-intake screens regularly.
- 7.7.12 When operating the tractor in dusty conditions keep on paying attention to the coolant temperature warning lamp. Never continue operating when the screens are clogged or engine breakdown may result.

8.1 ADJUSTING DRIVE BELT TENSION

8.1.1 Stop the cutting operation, turn the throttle lever to the lower speed (idle) position and shift the PTO to the neutral position. Position the rotary deck on the ground using the lift lever. Stop the engine and remove the key.

CUTTER BLADES MAY CONTINUE TO ROTATE FOR A SHORT PERIOD OF TIME AFTER THE DRIVE HAS BEEN DISENGAGED.

WARNING

THE LIFT CYLINDER IS EQUIPPED WITH A LIFT LOCKING DEVICE.

BE SURE TO RAISE THE LIFT TO ITS UPPERMOST POSITION AND ENGAGE THE LIFT LOCK WHEN SERVICING THE TRACTORMOUNTED ROTARY DECK (fig 16)

CAUTION LIFT LEVER

With this lever, the lift is raised or lowered

⊕ Shift the lever to this mark, the lift is lowered

⊖ Shift the lever to this mark, the lift is raised

(1) Hydraulic cylinder

(2) Lift Lock

(3) Lift Link

fig 16 LIFT CYLINDER LOCKING DEVICE

fig 17 DRIVE BELT TENSION ADJUSTER

8.1.2 Remove the belt guards.

8.1.3 Check the drive belt for wear e.g. fraying edges and cracks and replace if necessary.

8.1.4 Adjust the drive belt to while tightening the nut at the tensioner end so, that the spring will have a length "A" of 48 mm

8.1.8 Clean the belt pan of any debris and refit the belt guards.

IMPORTANT:

To avoid premature belt failure always carry out the mowing operation with the engine at full throttle, avoiding grounding and stalling the cutter blades. Keep the belt guards free of built-up material and inspect the cutter blades regularly.

fig 18 DRIVE BELT ADJUSTMENT DECAL

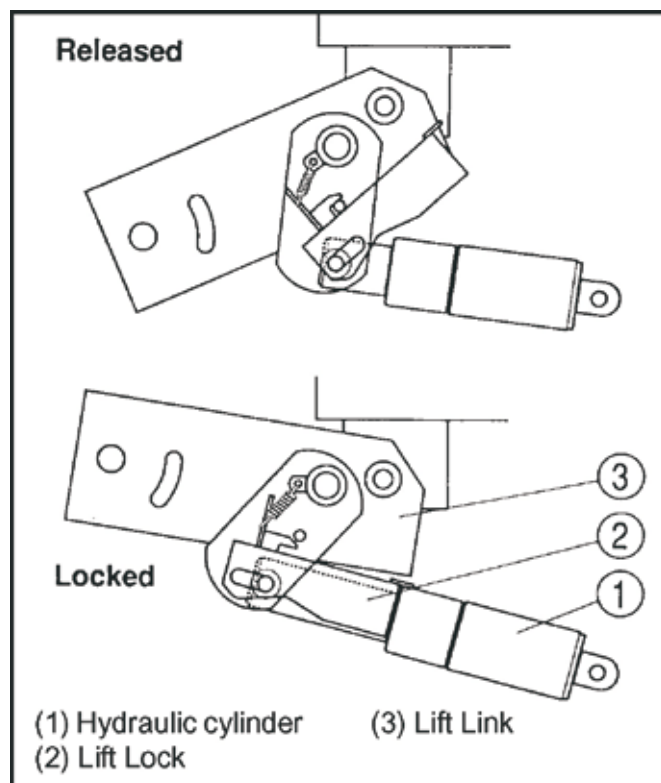


fig 16 Lift Cylinder locking device



fig 17 Drive belt tension adjuster



fig 18 Drive belt cheme

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8.2 FITTING NEW DRIVE BELT

- 8.2.1 Stop the cutting operation, stop the PTO while pushing the yellow button, position the cutterdeck 120 mm – 150 mm (5 – 6 in) from the ground on two suitable blocks, stop the engine and remove the key.
- 8.2.2 Remove the belt guards.
- 8.2.3 Slacken the belt idler by loosening the nut of the tensioner arm.
- 8.2.4 Remove the old drive belt. Clean the belt pan of any debris. Fit the new drive belt into place.
- 8.2.5 Adjust the drive belt as described under 8.1.4.
- 8.2.6 Refit the belt guards.
- 8.2.7 Run the FM 160 H / FM 180 H rotary deck in light work for 20 minutes to bed in the new belts. Stop the mowing operation and recheck the belt tension, adjusting if necessary.

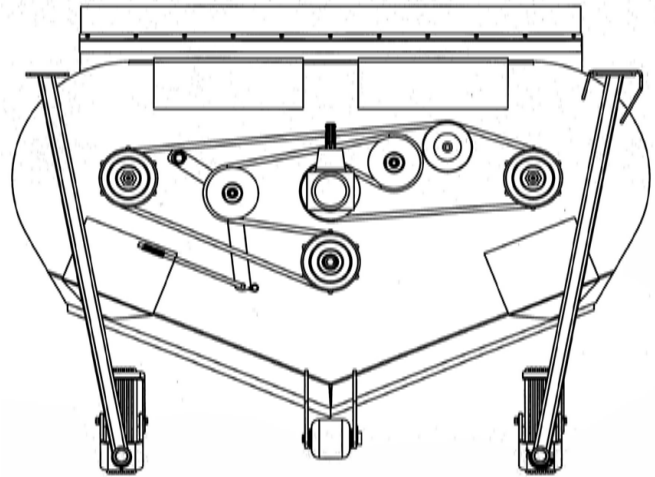


fig 19 BELT TENSION

fig 20 ROTARY DECK POSITIONING

fig 21 DRIVE BELT TENSION ADJUSTER

NOTE:

Always replace blades with original ISEKI blades, do not use another manufacturers blades.

- Service blades with the tractor turned off, and the cutter deck securely supported.
- Do not overheat or weaken the blades.
- If blade becomes cracked or bent, replace with a new blade to ensure safe operation.
- If lift portion of blade is worn thin replace with a new blade to ensure safe operation.
- Keep hands clear of rotating blades.

- 8.3.1 Stop the PTO while pressing the yellow PTO-button. Apply the parking brake, shift the transmission range lever to the neutral position, lower the rotary deck to the ground, stop the engine and remove the key.
- 8.3.2 Remove the PTO shaft guard and the PTO shaft from the rotary deck and tractor.
- 8.3.3 Remove the LH and RH foot guards.
- 8.3.4 Remove the two rear adjuster rods and slide links from the rotary deck anchor points.
- 8.3.5 Start the tractor and raise the mower to the highest position. Stop the engine, remove the key and apply the cylinder lift lock.

8.3 BLADE SHARPENING & REMOVAL

fig 22 BLADE CHANGING POSITION
fig 23 TIGHTENING TORQUE 135 Nm

CAUTION

WHEN REQUIRED, THE CUTTER BLADES MAY BE SHARPENED EITHER BY FILING OR GRINDING. WHEN SHARPENING BLADE EDGES, BOTH ENDS SHOULD BE DONE IN THE SAME WAY, OR THE BLADE BECOMES UNBALANCED. IT IS ESSENTIAL THAT THE BALANCE OF THE BLADES ARE MAINTAINED.

TO CHECK THE BLADE BALANCE PASS A ROD THROUGH THE BLADE CENTRE HOLE TO CHECK THE BLADE IS BALANCED CORRECTLY. IF THE BLADE BALANCE IS IMPROPER, CORRECT IT. UNBALANCED BLADES WILL CAUSE EXCESSIVE



fig 19 Engine Flip up preparation



fig 20 Engine flip up

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- 8.3.6 With the aid of an assistant lift the front of the rotary deck into a vertical position (fig 20) and chock the rotary deck to prevent it from moving in either direction. By placing the rotary deck in this position, the blades can be replaced easily.
- 8.3.7 Place a block of wood between the blade and deck baffle to prevent the blade turning during removal (fig 22).
- 8.3.8 Remove the nut N from the top of the blade spindle bolt.
- 8.3.9 Remove the blade spindle bolt with the washer and blade.
- 8.3.10 Replace the blade, washer and blade spindle bolt.
- 8.3.11 Tighten to 135 Nm (100 ft-lbs)

8.4 CHECKING GEARBOX

The gear-box is maintenance free and does not require any oil - check or oil-refilling!

- Check the gear-box for oil leakage.
- Place the tractor on level, hard ground.
- Apply the parking brake securely.
- Stop the PTO.
- Stop the engine and remove the key.

In case of oil-leakage please consult your dealer for further support.

CAUTION

BE SURE TO WEAR PROTECTIVE GLOVES TO AVOID CUTS BY ANY SHARP PARTS OR BLADES

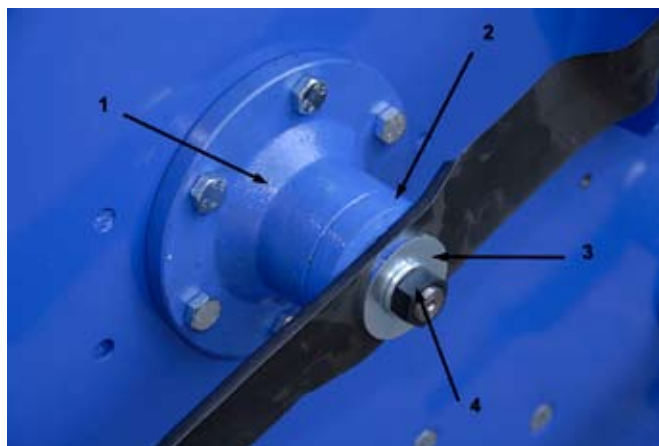


fig 21 Blade shaft housing

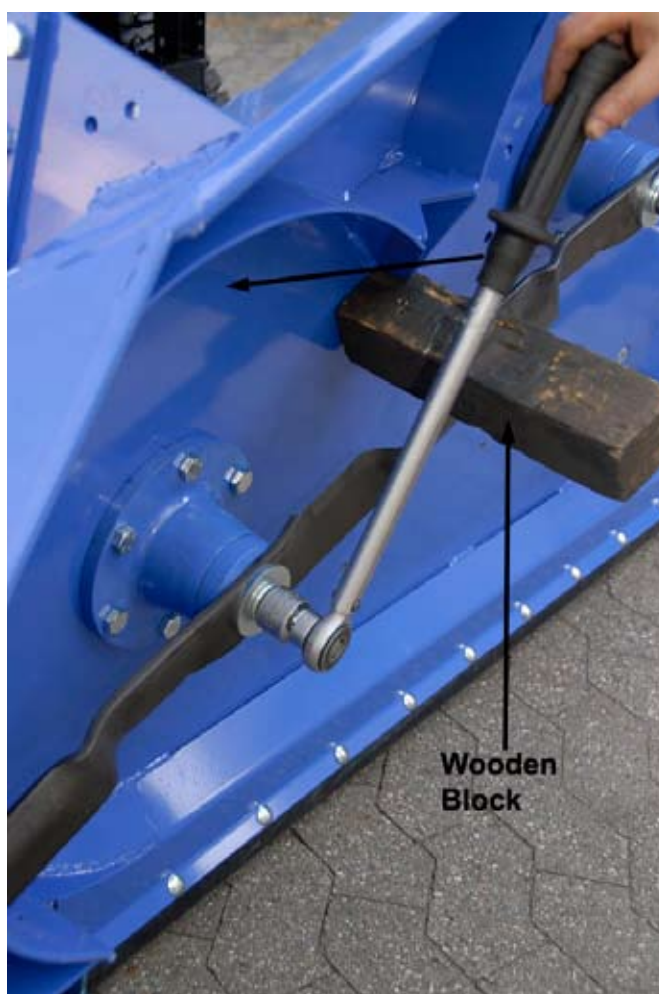


fig 22 Replacing the blades

NOTE:

The gearbox is a sealed type and should not normally require topping up. Any oil loss may indicate an oil seal failure and may require the removal of the gearbox to allow fitting of new oil seal. Inspect the gearbox for oil leaks before continuing the mowing operation.

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GREASING POINTS

Each of the following parts is equipped with grease points. Inject grease as recommended.

8.6 PTO SHAFT

- 8.6.1 Every 8 hours operation grease PTO shaft cross joints.
- 8.6.2 Every 16 hours operation grease shaft tubes.
- 8.6.3 Every 16 hours operation clean shaft spline and apply grease.

8.7 FRONT CASTOR WHEELS

- Every 8 hours operation grease castor wheel pivots.

8.9 DRIVE SPINDLE HOUSINGS

- Grease every 40 hours, or every week.



fig 23 Grease-Nipples



fig 24 Anti scalping rollers are mounted on greasable shafts.

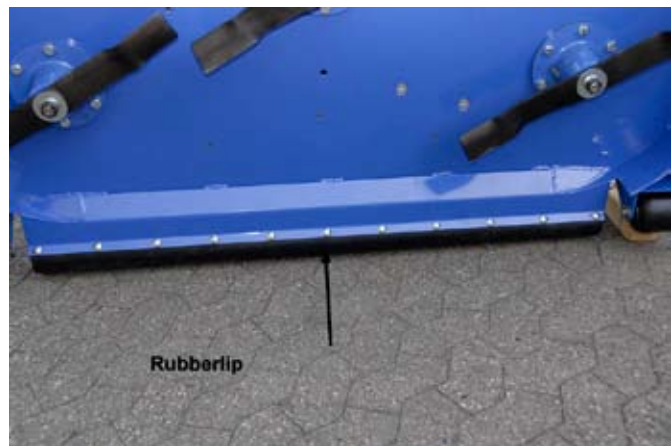


fig 25 Rubber-lip
Check frequent for damage and replace upon deamnd.

- 9.1 Remove the rotary deck from the tractor.
- 9.2 Clean the rotary deck. Take special care to remove grass and dirt from the underside of the rotary deck.
- 9.3 Check the rotary deck for damaged parts. Damaged parts should be replaced ready for the next season.
- 9.4 Remove the belt guards and clean.
- 9.5 Check the drive belts for wear and release the belt tension.
- 9.6 Check the blade bearings by rotating for any abnormal noise or movement.
- 9.7 Grease all grease points.
- 9.8 Remove all rust and repair peeled paintwork.
- 9.9 Place the rotary deck on wooden blocks and store in a dry place.
- 9.10 Check the PTO shaft for excessive wear and repair or replace as necessary.

RECOMMENDATIONS

- 9.11 If the drive belts have completed one seasons work, replace with new.
- 9.12 If the cutter blades have completed one seasons work, replace with new.
- 9.13 If the mowing conditions have been poor, i.e. a very wet season or very rough ground, it is strongly recommended that the blade bearings are replaced.

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Safety and Operation Manual.**

| SYMPTOMS | POSSIBLE CAUSE | REMEDIES |
|---|---|--|
| <ul style="list-style-type: none"> • Improper discharge | <ul style="list-style-type: none"> • Engine speed too low • Blades installed facing the wrong direction • Discharge partly blocked • Grass too moist • Grass too dense • Traveling speed too fast | <ul style="list-style-type: none"> • Run engine at full throttle • Re-install blades correctly • Stop mowing operation and clean • Wait until grass becomes dry • Mow in two steps • Slow down sufficiently |
| <ul style="list-style-type: none"> • Grass is not mowed | <ul style="list-style-type: none"> • Engine speed too low • Blades installed facing the wrong direction • Grass too dense • Traveling speed too fast • Drive belt slipping • Blades badly worn | <ul style="list-style-type: none"> • Run engine at full throttle • Re-install blades correctly • Mow in two steps • Slow down sufficiently • Adjust to correct tension • Replace all blades |
| <ul style="list-style-type: none"> • Uneven cutting height | <ul style="list-style-type: none"> • Improperly adjusted castor wheels / rods • Traveling speed too fast • Grass too dense • Engine speed too low | <ul style="list-style-type: none"> • Adjust castor wheels / rods • Slow down sufficiently • Mow in two steps • Run engine at full throttle |
| <ul style="list-style-type: none"> • Turf is peeled off in some areas (scalping) | <ul style="list-style-type: none"> • Cutting height too low • Improperly adjusted castor wheels / rods • Rough ground conditions | <ul style="list-style-type: none"> • Re-adjust cutting height • Adjust wheels / rods correctly • Slow down sufficiently, change direction of travel |
| <ul style="list-style-type: none"> • Poor drive belt life | <ul style="list-style-type: none"> • Drive belt not installed correctly • Drive belt is not being bedded in correctly • Too low engine speed • Overloading cutter blades • Badly worn blades | <ul style="list-style-type: none"> • Check belt and correct as necessary • See instructions for correct drive belt adjustment • Run engine at full throttle • Slow down forward speed • Fit new blades |
| <ul style="list-style-type: none"> • Excessive noise and vibration | <ul style="list-style-type: none"> • Broken or unbalanced blades • Blades installed facing the wrong direction • Seized or worn blade bearings • Damaged blade housing • Loose blade retaining nuts • PTO shaft cross joint worn | <ul style="list-style-type: none"> • Replace with new blades • Re-install blades correctly • Replace with new • Replace with new • Retighten them • Replace with new |
| <ul style="list-style-type: none"> • Poor engine output | <ul style="list-style-type: none"> • Engine speed too low • Blades installed facing the wrong direction • Blades badly worn or dull • Grass too dense • Traveling speed too fast • Engine air cleaner blocked • Engine fuel filter blocked • Defective engine | <ul style="list-style-type: none"> • Run engine at full throttle • Re-install blades correctly • Replace with new ones • Mow in two steps • Slow down sufficiently • Clean or fit new one • Clean or fit new one • Consult your dealer |

GUARANTEE

We **GUARANTEE** that should any defect in workmanship or material occur in the goods within one year or 600 hours for machines with hour meters from the date of purchase we will repair, or at our option, replace the defective part without making any charge for labour or for materials, provided that the claim under this guarantee is made through an authorised Ransomes' Dealer and that the defective part shall, if we so request, be returned to us or to the Dealer. This guarantee is in addition to, and does not exclude, any condition or warranty implied by law, except that we accept no liability in respect of second-hand goods, or in respect of defects which in our opinion are in any way or to any extent attributable to misuse, lack of reasonable care or ordinary wear and tear, or to the fitting of spares, replacements, or extra components which are not supplied or approved by us for the purpose. The use of non-recommended oil or lubricant nullifies the guarantee. Damage through transport or normal wear does not come under the guarantee.

SALES & SERVICE

A network of authorised Sales and Service dealers has been established and these details are available from your supplier.

When service attention, or spares, are required for the machine, within or after the guarantee period your supplier or any authorised dealer should be contacted.

Always quote the registered number of the machine.

If any damage is apparent when delivery is made, report the details at once to the supplier of the machine.



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