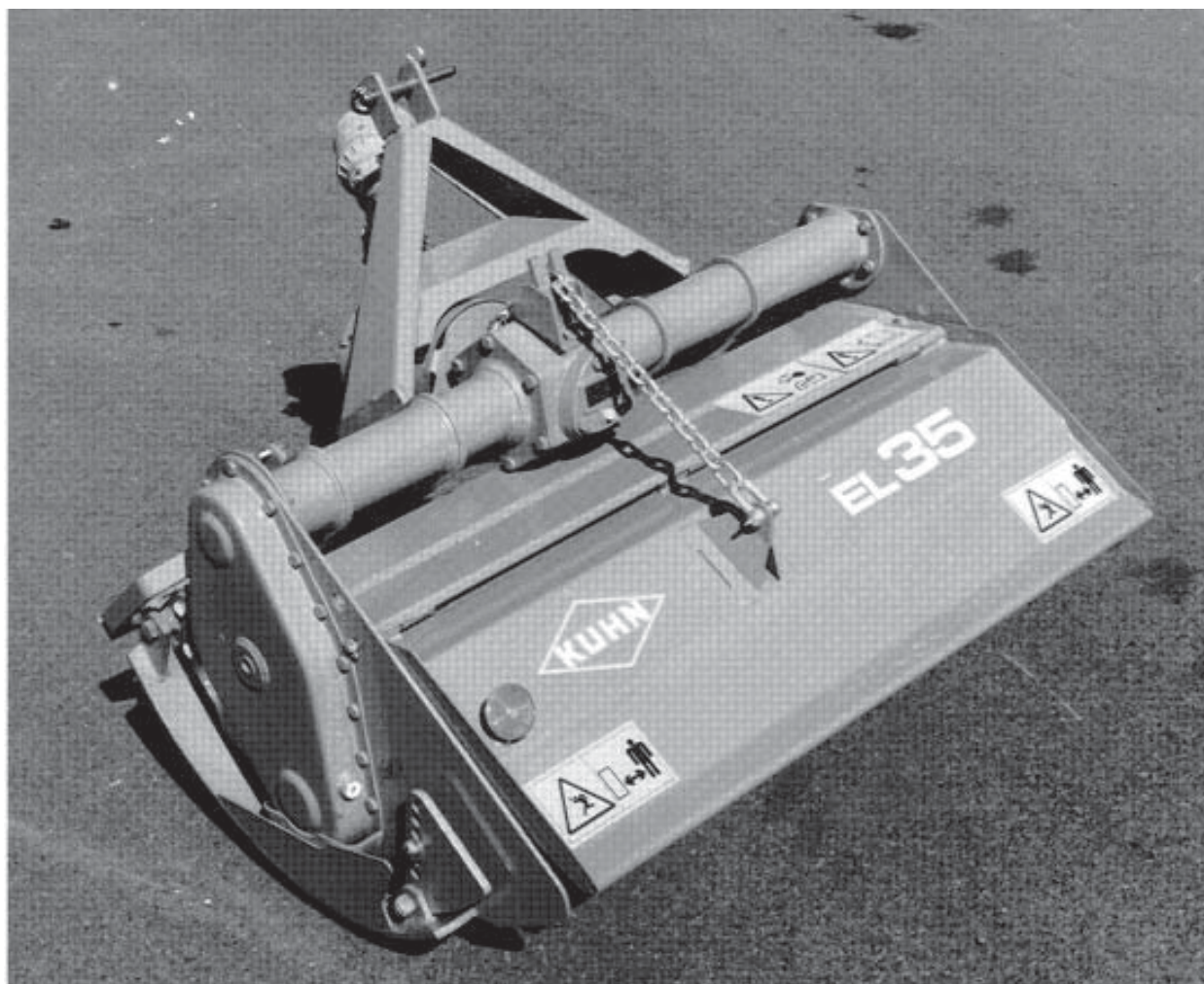
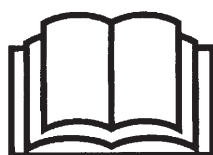




OPERATOR'S MANUAL



POWER TILLER EL 35



PLEASE READ CAREFULLY
BEFORE USING THE MACHINE

DEAR OWNER,

In buying a **KUHN** machine you have chosen wisely. Into it have gone years of thought, research and improvements. You will find, as have thousands of owners all over the world, that you have the best that engineering skill and actual field testing can produce. You have purchased a dependable machine, but only by proper care and operation can you expect to receive the performance and long service built into it.



This manual contains all the necessary information for you to receive full efficiency from your machine. The performance you get from this machine is largely dependant upon how well you read and understand this manual and apply this knowledge. Please **DO NOT ASSUME THAT YOU KNOW HOW TO OPERATE AND MAINTAIN YOUR MACHINE** before reading this manual carefully. **KEEP THIS MANUAL AVAILABLE FOR REFERENCE.**

Your **KUHN** dealer will instruct you on the general operation of your machine. He is interested that you get the best performance possible and will be glad to answer any special questions that may arise regarding the operation of the **KUHN** machine.

Your **KUHN** dealer can offer a complete line of genuine **KUHN** service parts. These parts are manufactured and carefully inspected in the same factory that builds the machine to assure high quality and accurate fitting of any necessary replacements.

When ordering service parts it is important that you indicate the type of machine concerned and its serial number.

For this reason please complete the model identification plate diagram below with the required information. This will provide you with an easy reference for future service parts orders.

	KUHN S.A.
	67700 SAVERNE - FRANCE
TYPE _____	N° _____
MASSE XXXX kg	
	
*XXXXXXXX XXXXX *	MADE IN FRANCE

ABOUT IMPROVEMENTS

KUHN is continually striving to improve its products and, therefore, reserves the right to make improvements or changes when it becomes practical to do so, without incurring any obligations to make changes or additions to the equipment sold previously.

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SAFETY



The above symbol is used throughout this manual every time recommendations are made concerning your safety, the safety of others, or the good operation of the machine.

These recommendations must be made known to all machine operators.

DESIGNATED USE OF THE MACHINE

The **EL 35** must only be used for the work for which they have been designed :

- Seedbed preparation on ploughed or unploughed ground.
- Stubble ploughing or reclamation of grassland.
- Orchard and vineyard cultivation.

The manufacturer is not held liable for any damage resulting from machine applications other than those specified by the manufacturer.

Any use other than the designated operation is at the risk and responsibility of the operator.

Designated use of the machine also means :

- following operation, maintenance and repair recommendations given by the manufacturer ;
- using only genuine spare parts, equipment and accessories as designated by the manufacturer.

The **EL 35** must only be operated, maintained and repaired by competent persons who are familiar with machine specifications and operations and are aware of any danger involved.

The operator must imperatively respect current legislation concerning :

- accident prevention,
- work safety,
- public traffic circulation.

All safety advice indicated on the machine must be strictly observed.

The manufacturer is not held liable for any damage resulting from machine modifications carried out by the operator himself or by a third party without previous written agreement from the manufacturer.

GENERAL SAFETY RECOMMENDATIONS

Before operating the machine, always ensure that tractor and machine meet with work safety and road traffic regulations.

BASIC PRINCIPLES

1. In addition to the recommendations given in this manual, legislation on work safety and accident prevention must also be respected.
2. Advice is indicated on the machine, specifying safety recommendations in order to prevent accidents.
3. Before travelling on public roads, the operator must ensure that the machine conforms to road traffic regulations.
4. Before starting work, the operator must be familiar with all machine controls, handling devices and their functions. Once at work, it is too late to do this !
5. Do not wear loose clothing which could become caught up in moving elements.
6. Use a tractor equipped with a safety cab. Keep windows and roof hatch closed for reduced sound level while operating the PTO driven implement.
7. Before starting up the machine and beginning work, check the surrounding area (beware of children !). Make sure there is sufficient visibility.
Keep all people and animals away from the danger zone of the machine (risk of projection !)
8. Carrying people or animals on the machine when working or in transport is strictly forbidden.
9. Machine must only be attached to tractor using means provided and in accordance with current safety standards.
10. Special care should be taken when attaching or removing the machine from the tractor.
11. Before attaching the machine, ensure that the front tractor axle is sufficiently ballasted.
Ballast is to be placed on the supports provided in accordance with instructions of the tractor manufacturer.
12. Do not exceed the maximum axle load or the overall transport weight prescribed by the tractor manufacturer.
13. Do not surpass the maximum transport width authorized by road traffic regulations.
14. Before transporting the machine on public roads, ensure that all legally required guards and indicators (lights, reflectors ...) are in place and in good operation.
15. All operating controls (cords, cables, rods...) must be positioned so that they cannot be set off accidentally, risking accident or damage.

16. Before traveling on public roads, put the machine into its transport position as instructed in this operator's manual.
17. Never leave the tractor seat while the machine is operating.
18. Drive speed must be adapted to ground conditions as well as to roads and paths. Always avoid abrupt changes of direction.
19. Precision steering, tractor adherence, road holding and efficient braking are influenced by the type of implement, weight, ballast of front axle, ground or road conditions. It is therefore of utmost importance to be cautious in every given situation.
20. Be particularly cautious when turning corners, paying attention to machine overhang, length, height and weight.
21. Before operating the machine, ensure that all safety guards are firmly in place and in good condition. If worn or damaged, replace immediately.
22. Before operating the machine, check the tightness of all nuts and bolts, particularly on fixing elements (blades, tines, knives, spades ...)
23. Keep clear of the machine operating area.
24. **WARNING !** Danger of crushing and shearing can exist when components are operated by hydraulic or pneumatic controls.
25. Before leaving the tractor or before adjusting, maintaining or repairing the machine, turn off the engine, remove the ignition key and wait until all moving parts have come to a complete stop.
26. Do not stand between the tractor and the machine unless the hand brake is tight and/or stops have been placed under the wheels.
27. Before any adjustments, maintenance or repairs are carried out, ensure that the machine cannot be started up accidentally.

ATTACHMENT

1. When attaching or removing the machine from the tractor, position hydraulic lift control lever in such a way that it cannot be set off accidentally.
2. When attaching the machine to the tractor hydraulic linkage, ensure that diameter of the link pins correspond to the diameter of the ball joints.
3. **WARNING !** Danger of crushing and shearing can exist in the lifting zone of the tractor hydraulic linkage !
4. Do not stand between the tractor and the machine when operating the outer control lever of the lift mechanism.
5. In transport, the machine lift mechanism should be stabilized by tractor tie rods to avoid floatation and side shifting.
6. When transporting the machine ensure that it can not be lowered accidentally.

POWER TAKE-OFF

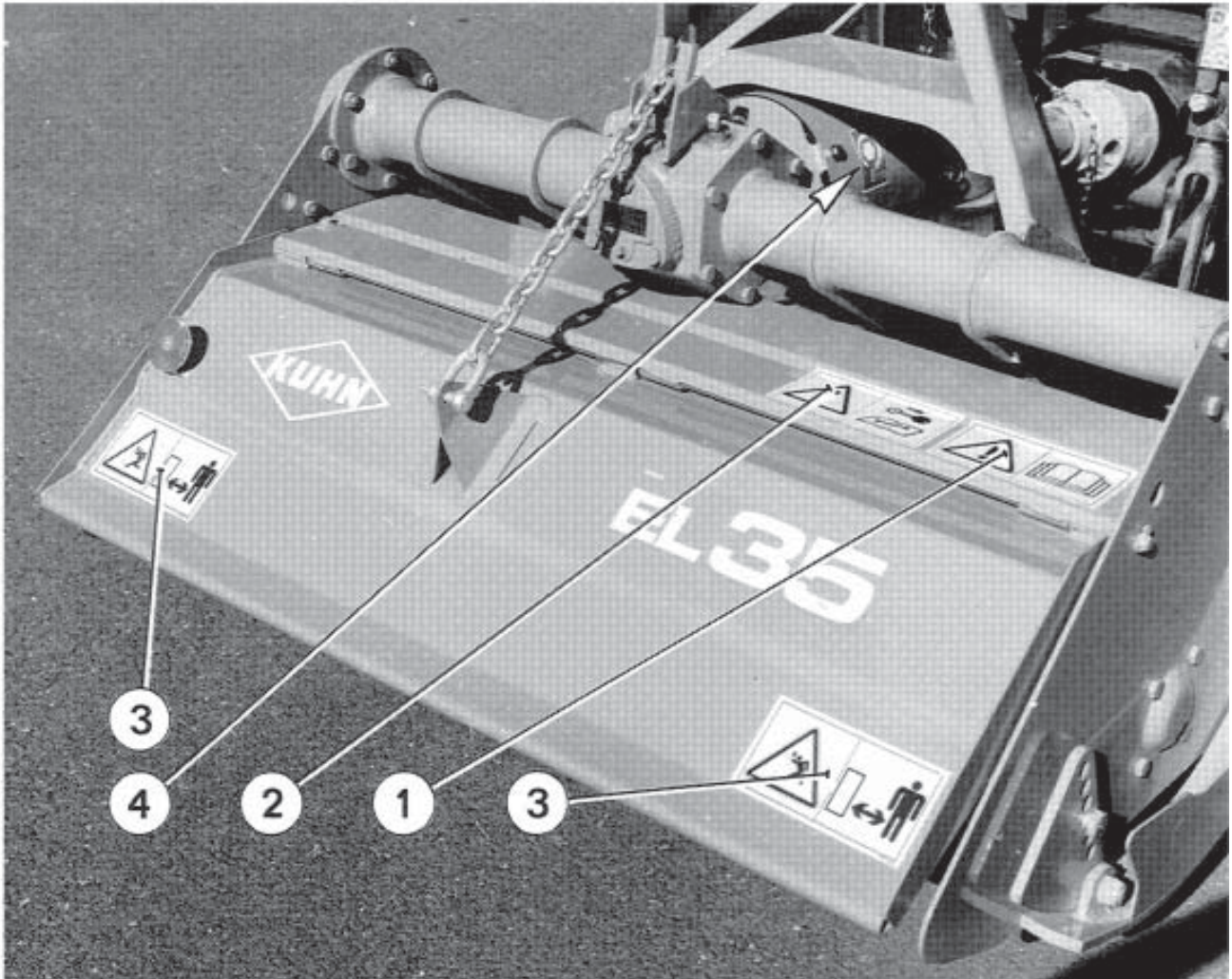
1. Use only the PTO shaft supplied with the machine or recommended by the manufacturer.
2. PTO guards must always be in place and in good condition.
3. Check for correct PTO overlap when at work and in transport.
4. Before attaching or removing the PTO shaft, disengage PTO shaft, turn off engine and remove ignition key.
5. If a primary PTO shaft is equipped with a slip clutch or a free wheel, these must be fitted on the machine PTO.
6. Ensure that PTO shaft is always correctly fitted and locked into place.
7. Make sure guards are correctly in place and secured with the safety chains provided.
8. Before engaging PTO, ensure that PTO speed and direction are in accordance with manufacturer's recommendations.
9. Before engaging PTO, keep all people and animals clear from the machine.
10. Never engage PTO shaft when tractor engine is turned off.
11. Never surpass the PTO angle recommended by the manufacturer.
12. **WARNING !** Rotating elements can continue turning momentarily after PTO is disengaged. Keep clear until all rotating elements are at a standstill.
13. When removing the machine, place PTO shaft on the supports provided.
14. Fit the safety cap on tractor PTO.
15. Replace any worn or damaged PTO guards immediately.

MAINTENANCE

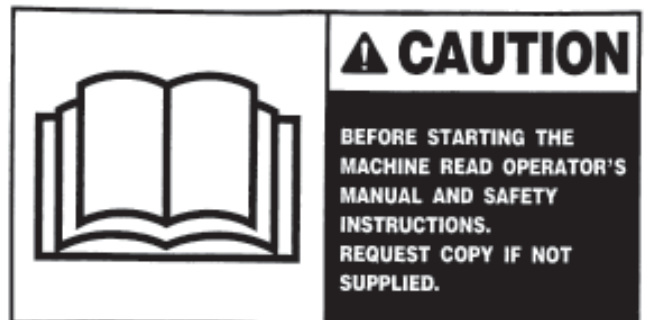
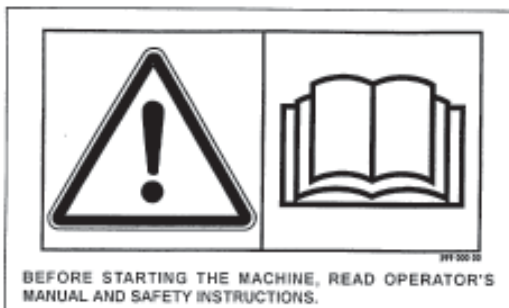
1. Before checking for any machine malfunction and before adjusting, maintaining or repairing the machine, disengage PTO, turn off engine and remove ignition key.
2. Check nut and bolt tightness regularly. Retighten if necessary.
3. If the machine is raised, prop it up in a stable position before carrying out any maintenance work.
4. When replacing a working part, wear protection gloves and use only standardized tools.
5. It is forbidden to discard any oil, grease or filters. These must be given to waste disposal organisations to protect the environment.
6. Disconnect power source before any work is done to the electric system.
7. Check safety guards regularly, particularly those that are subject to wear. Replace immediately if damaged.
8. Spare parts used must be in accordance with specifications and standards as defined by the manufacturer. Use only genuine KUHN parts !
9. Before any electric welding is carried out on tractor or attached machine, disconnect generator and battery terminals.
10. Repairs on elements under pressure or tension (springs, accumulators etc...) must only be carried out by competent persons with standardized equipment.

SAFETY DECALS

THE FOLLOWING SAFETY PICTORIALS HAVE BEEN PLACED ON YOUR MACHINE IN THE AREAS INDICATED. THEY ARE INTENDED FOR YOUR PERSONAL SAFETY AND FOR THE SAFETY OF THE PEOPLE WORKING WITH YOU. THE TEXT SHOWN ON THEM GIVES THEIR PRECISE MEANING. KEEP THE PICTORIALS LEGIBLE. IF THEY ARE NOT, REPLACE THEM.



①



2

BEFORE ADJUSTING, MAINTAINING OR REPAIRING THE MACHINE, TURN OFF THE ENGINE, REMOVE IGNITION KEY AND WAIT UNTIL ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

CAUTION

BEFORE ADJUSTING, MAINTAINING OR REPAIRING THE MACHINE, TURN OFF THE ENGINE, REMOVE IGNITION KEY AND WAIT UNTIL ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

599 004 10

3

ROTATING TOOLS !
Objects and debris can be thrown a long distance.
Keep a safe distance from the machine.

WARNING

ROTATING TOOLS

OBJECTS AND DEBRIS CAN BE THROWN A LONG DISTANCE.
KEEP A SAFE DISTANCE FROM THE MACHINE.

599 002 10

4

099 150 00

540

T/min.
R/min.
U/min.
G/min.
R/min.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	EL 35 92	EL 35 105	EL 35 117	EL 35 130	EL 35 155
Working width cm (")	92 (36")	105 (41")	117 (46")	130 (51")	155 (60")
Maximum tractor DIN power kW (hp)	26 (35)				
Minimum power requirement kW (hp)	12 (16)	13 (17,5)	14 (19)	15 (20,5)	16 (22)
P.T.O. speed (rpm)	540				
Rotor speed (rpm)	248				
Rotor diameter mm (")	420 (16")				
Number of mulch blades (3 pair formation)	21 *	24	27 *	30	36
Working depth mini / maxi cm (")	6 - 18 (2" - 7")				
Working depth control	with skids or gauge wheels				
P.T.O. shaft	standard without friction slip clutch				
Off-setting to the right by 18 cm / 7"	no	yes	yes	yes	yes
Attachment	Cat. 1 N (narrow) - 0 - 1				
Total width cm (")	108 (43")	121 (48")	133 (53")	146 (57")	171 (67")
Weight with gauge wheels kg (lbs)	196 (431)	216 (475)	226 (497)	233 (513)	256 (563)
Weight with skids kg (lbs)	186 (409)	206 (453)	216 (475)	223 (491)	246 (541)

* see note on page 22 for proper installation

SAFETY GUARDS

The safety guards protect against accidents and therefore ensure maximum machine safety.

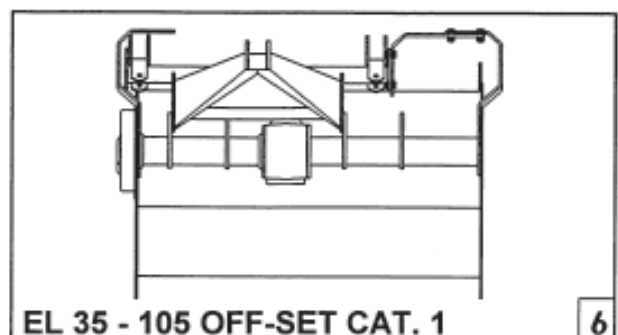
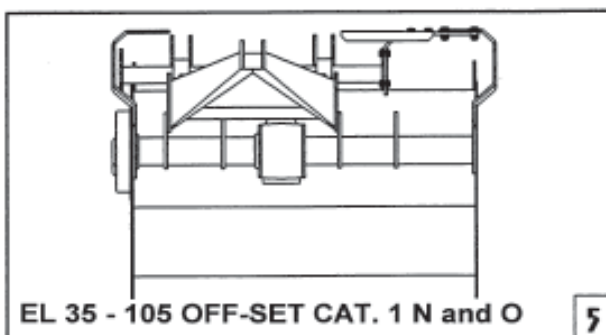
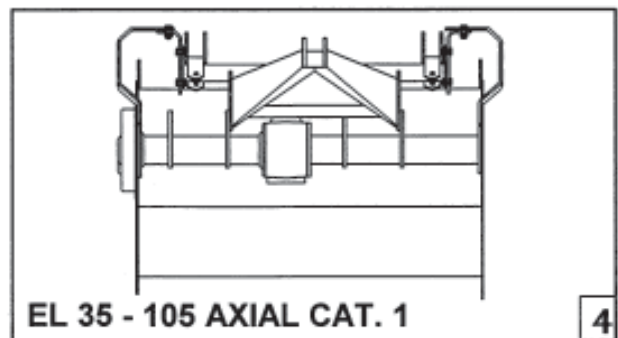
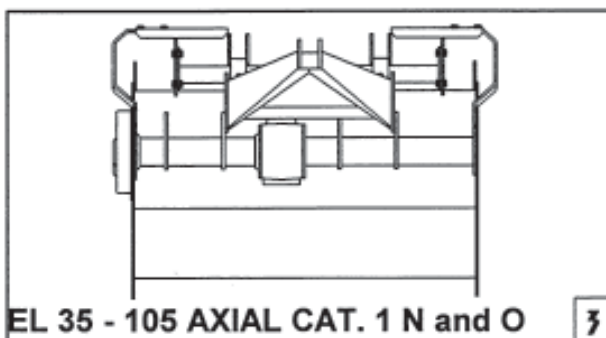
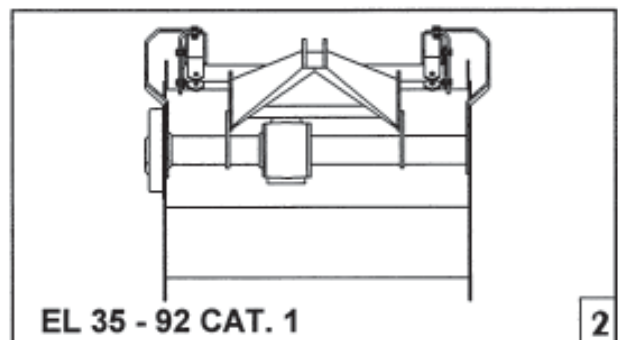
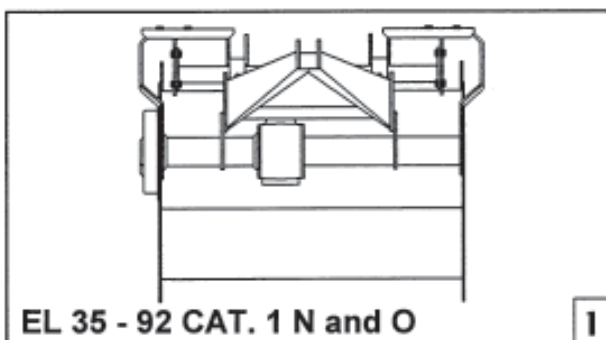
Figures 1, 3, 7, 11 and 15 (pages 10, 11 and 12) indicate the guards factory setting for category 1N (narrow lower link spacing) and category "O" attachments with the head stock in the central position.

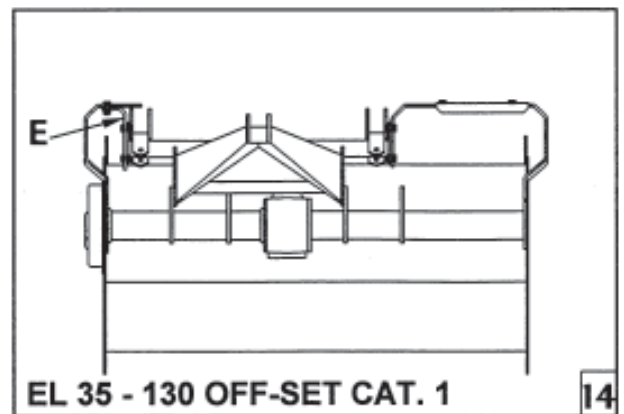
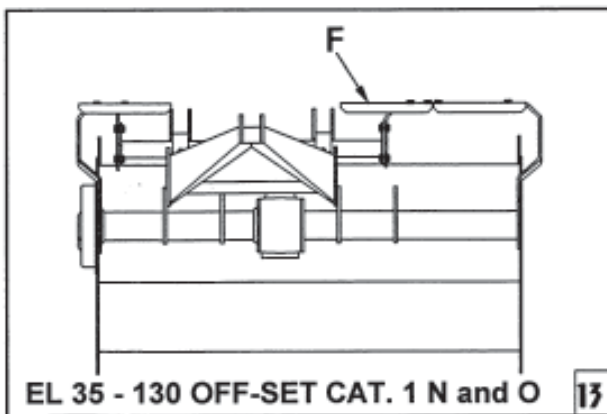
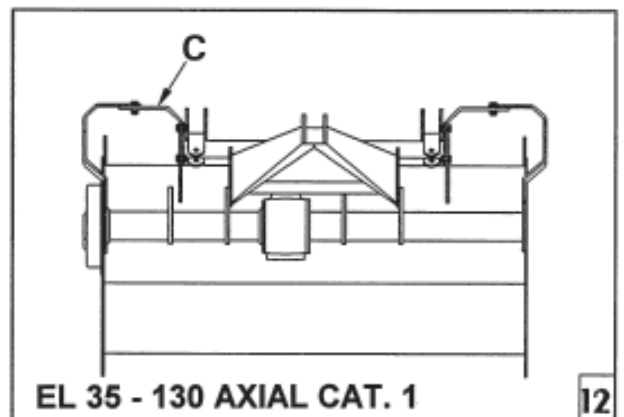
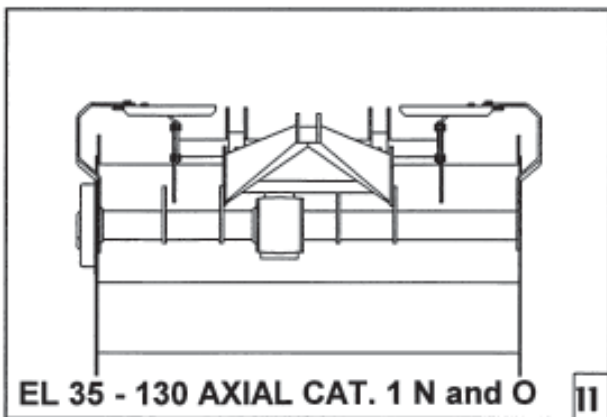
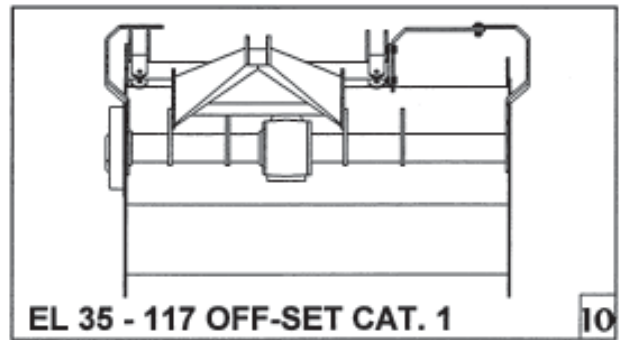
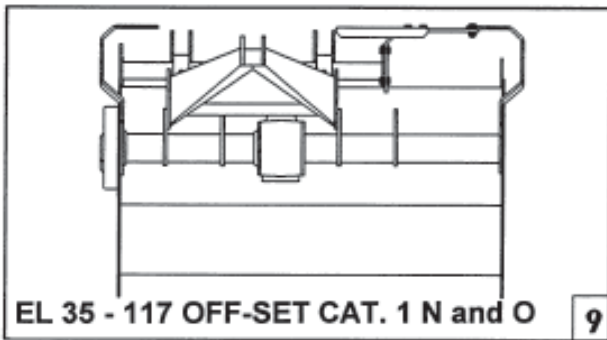
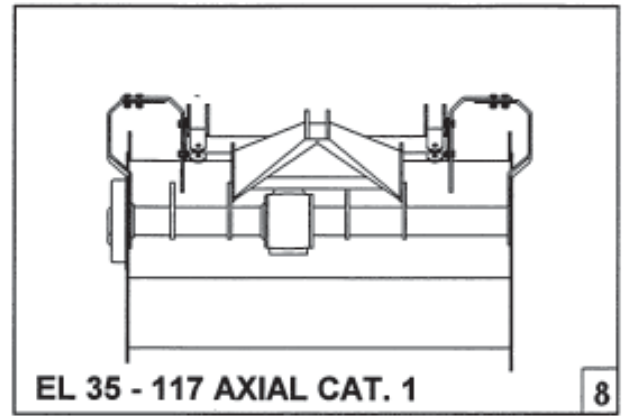
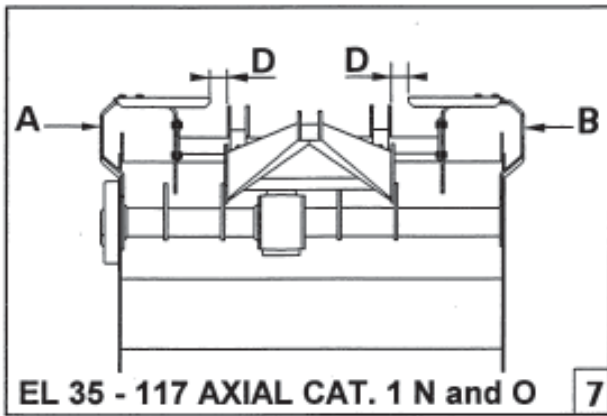
This setting provides the optimal guarding whatever the machine width, hitch category and head stock position. When using a tractor with a category 1 linkage or when coupling to a machine with the head stock in the offset position, the guards may also be fitted as shown in figures 2, 4, 5, 6, 8, 9, 10, 12, 13, 14, 16, 17 and 18 to increase clearance around the lower link brackets.

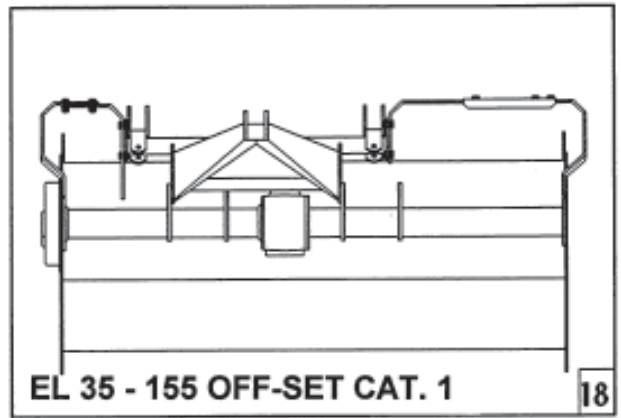
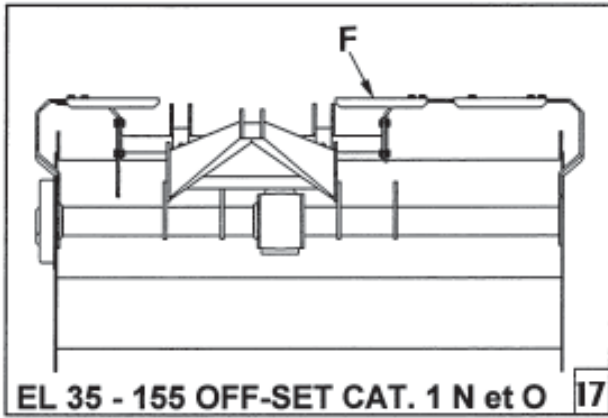
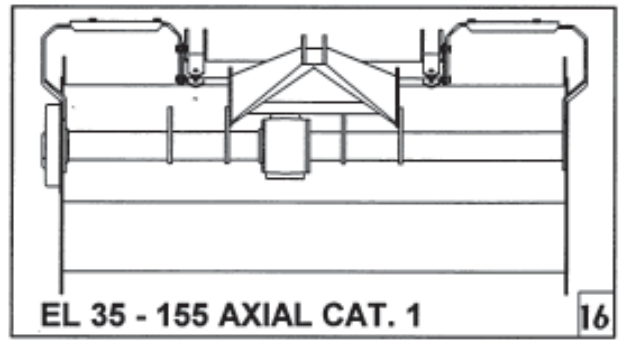
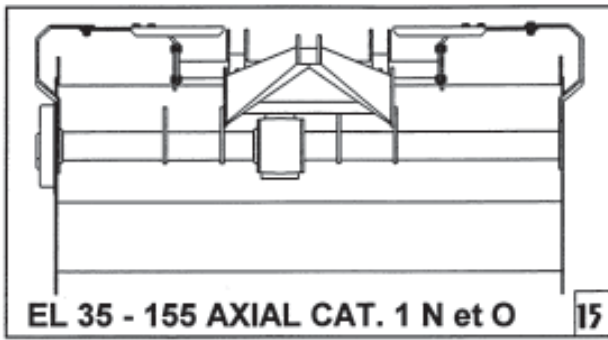
However, on no account must the clearance between guards and lower attachment yokes exceed 60 mm / 2.3" (see distance D in figure 7). Lateral guard support (A and B in figure 7) must always remain fitted.

Note : - When mounting the EL 35 - 130 headstock in the offset position remove guard (C, figure 12) and replace it with bracket (E) supplied with the machine as shown in figure 14.

- A third angle iron (F), also supplied with the machine, must be installed as shown in figures 13 and 17 whenever the EL 35 - 130 or EL 35 - 155 is attached in the offset position to a category 1 N or category "O" tractor.







OFF-SETTING

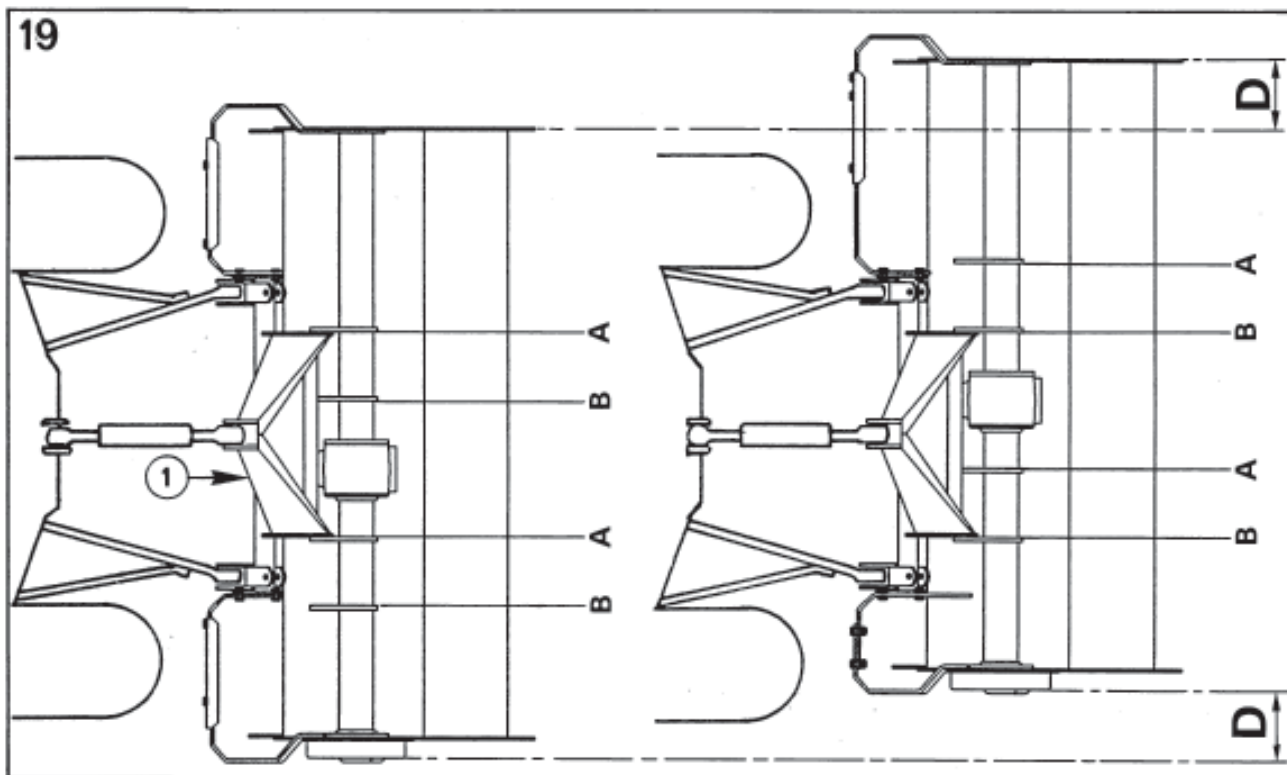
(fig. 19) (only for 105 / 117 / 130 / 155)

The **EL 35** Power Tiller can be mounted behind a tractor in an off-set position to the right (or in line with the tractor). The setting of the machine in this position should be carried out before mounting to the tractor.

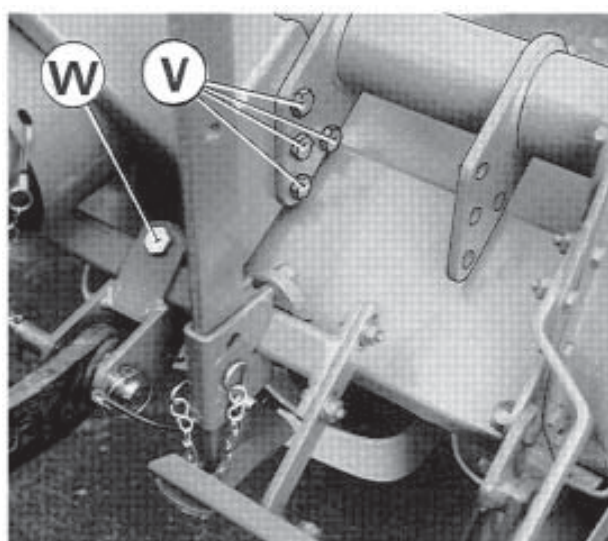
The offset position is obtained by removing the head stock (1) from its central position (A) and mounting it in position (B). To avoid accidents, make sure the power tiller is properly secured before removing the head stock. Use a hoist, lifting from the tube. Avoid using makeshift props that are unsafe.

Position A : in line

Position B : 18 cm (7") off-set to the right by distance "D".



When reassembling, make sure all bolts (V and W) are tightened to a **torque of 14 daNm (100 ft.lbs)**.



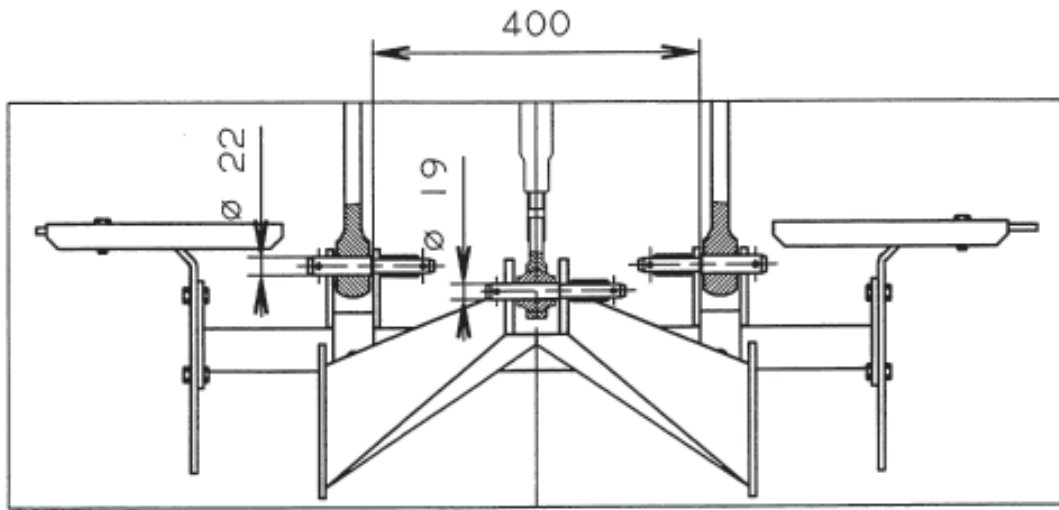
After reassembling the head stock, make sure the front safety guards are correctly fitted (see pages 10, 11 and 12).

Note : The **POWER TILLER EL 35 type 92** cannot be off-set by moving the hitch frame but it is possible to obtain adjustment of 6 to 8 cm (2 to 3 ins) by adjusting the lower link brackets.

FITTING TO THE TRACTOR

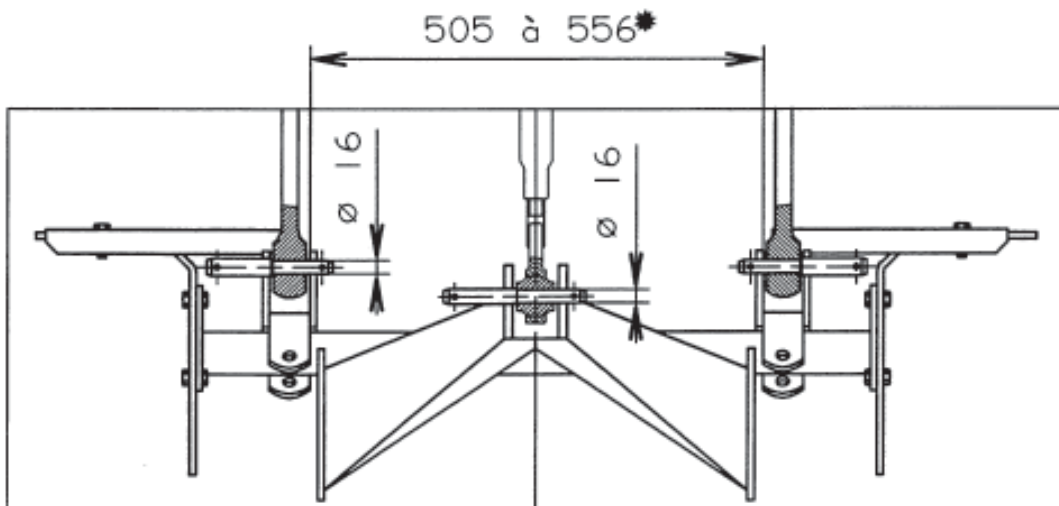
The EL 35 has two adjustment settings giving the following attachment possibilities :

CATEGORY «1 N» (NARROW) LINKAGE



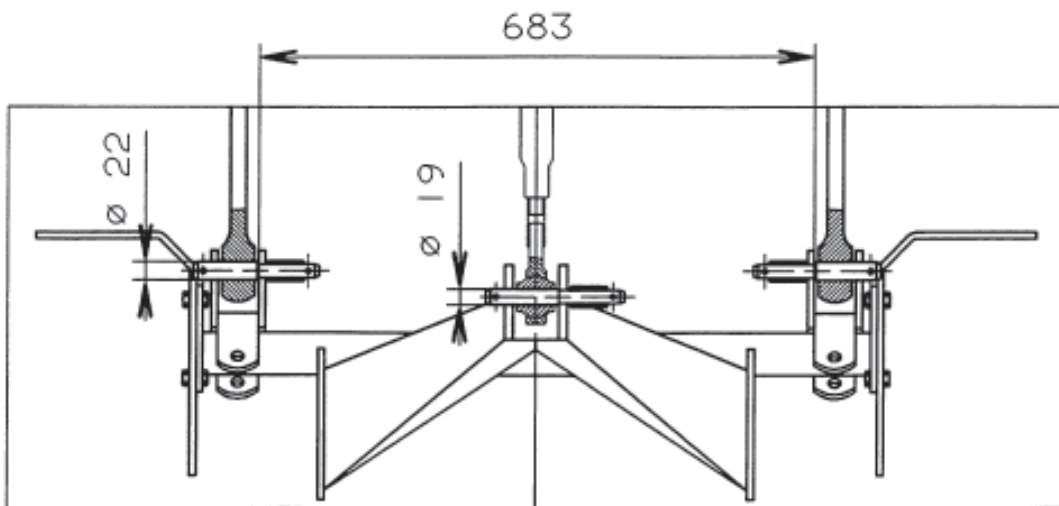
CATEGORY «0» LINKAGE

20



CATEGORY «1» LINKAGE

21



22

* The lower link brackets are mounted symmetrically to the head stock.

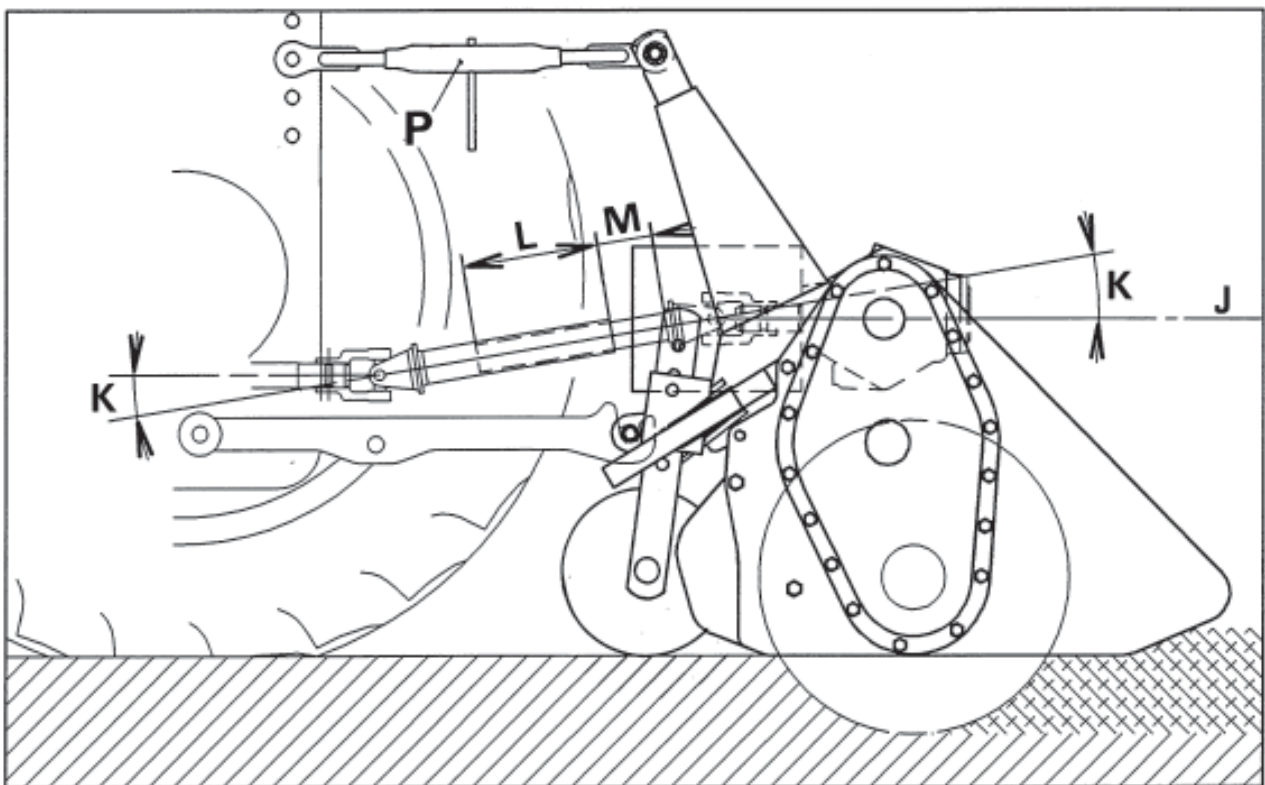
P.T.O. DRIVE SHAFT

Make sure the **EL 35** is resting on the ground and is maintained in a stable position with the parking stand or with the front wheels. Clean and lubricate the gearbox input shaft and slide the mating PTO shaft yoke in place.

After mounting the Power Tiller, stabilize the tractor 3-point linkage with whatever means are recommended (tie bars, chains etc.).

Be sure the tractor P.T.O. shaft drive is disengaged and stop engine.

Couple the PTO shaft to the tractor P.T.O. stub.



Attachment is correct when machine is horizontal in work position.

With the machine resting on the ground, adjust the top link (P) length to a position where the tractor PTO stub and the tiller input shaft are parallel.

In working position :

- The 2 angles (K) formed by the centre lines of the yoke and the sliding tubes must be equal and not exceed a combined angle of 30° when working.
- The sliding tube overlap (L) must be at least 22 cm (8.5") (fig. 23).

With the machine fully raised on the tractor hydraulic linkage :

- The 2 sliding tubes must not completely overlap each other ; a gap (M) of 1 cm (3/8") should exist between end of sliding tube and yoke.
- Both U joints (K) should operate approximately at the same bent angles which must never exceed 40° (figure 23).

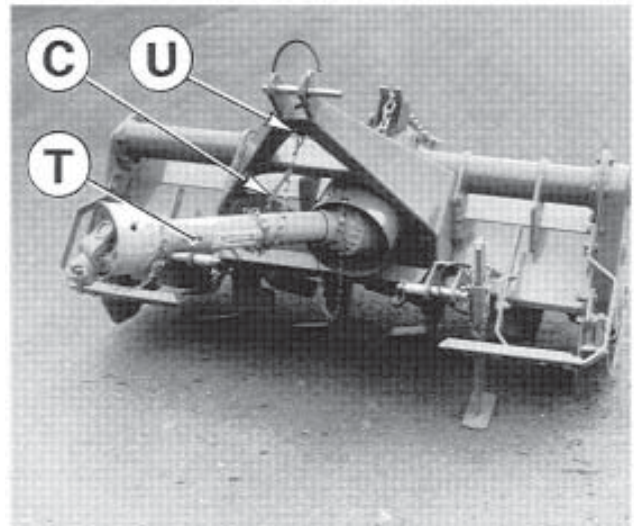
Should the above mentioned conditions not exist :

- Shorten both tubes by an equal length, chamfer edges and grease liberally before refitting.
- To avoid noisy running of the PTO shaft when lifting the machine out of work, attach top link (P) so that it is almost parallel to the lower links (fig. 23).

Important : Always disconnect the tractor PTO drive before lifting the machine into the transport position, otherwise permanent damage can be caused to the transmission shaft.

Repeat these adjustments each time the machine is mounted to a different tractor.

A safety chain (C) is delivered with the machine to support the PTO shaft (T) when the machine is parked. This prevents the PTO shaft from becoming soiled or deteriorated when in contact with the ground. Attach the chain (C) to the support (U) as shown in the photo 24 opposite.



Always make sure the PTO shaft guards are in good condition and secured with the safety chains provided to prevent them from turning. The safety chains should be attached to the side of the machine at the safety guard of the central gearbox (photo 24). Replace guards immediately if they become damaged.



ROTOR SPEED

The rotor speed of the **EL 35** is 248 rpm with a P.T.O. speed of 540 rpm.
No other PTO speed is allowed.

USE



BEFORE ADJUSTING, MAINTAINING OR REPAIRING THE MACHINE, TURN OFF THE ENGINE, REMOVE IGNITION KEY AND WAIT UNTIL ALL MOVING PARTS HAVE COME TO A COMPLETE STOP.

The tilth varies with the work required. The degree of tilth is governed by combining the following factors :

- rear shield position, regulated by suspension chain,
- forward speed,
- working depth,
- mounting of 2 or 3 pairs of blades,
- number of passes.

Coarse tilth :

- Rear shield up
- Fast forward speed (approx. 2.5 mph - 4 km/h)
- 2 pairs of blades.

Fine tilth :

- Rear shield down
- Slow forward speed (approx. 1 mph - 1.5 km/h)
- 3 pairs of blades.

Hints on use :

- Allow the rotor to rotate at its working speed before engaging it into the soil. Gradually lower the machine while pulling forward with the tractor.
- Always work in a straight line. When turning, lift machine out of work.
- Never work in reverse, otherwise damage could occur to some component parts.
- Do not disengage the PTO drive unless the machine has been lifted out of work.

Important remarks :

Like many farm machines, the use of the **EL 35** entails limits which must be respected in all situations. These limits are often tied in with :

- **meteorological conditions** : avoid working during and immediately after rainfall, wait until ground to be worked is completely drained,
- **soil types** : smooth clods indicate too malleable or too humid soil to be worked in. Wait until ground is completely drained. Soil consistency is ideal when clods crumble without sticking,
- **tractor power** : adapt share depth, working depth and forward speed to power available and type of work to be done.
Never exceed the maximum allowable tractor DIN power : 26 kW (35 hp).

OPTIONAL ACCESSORIES

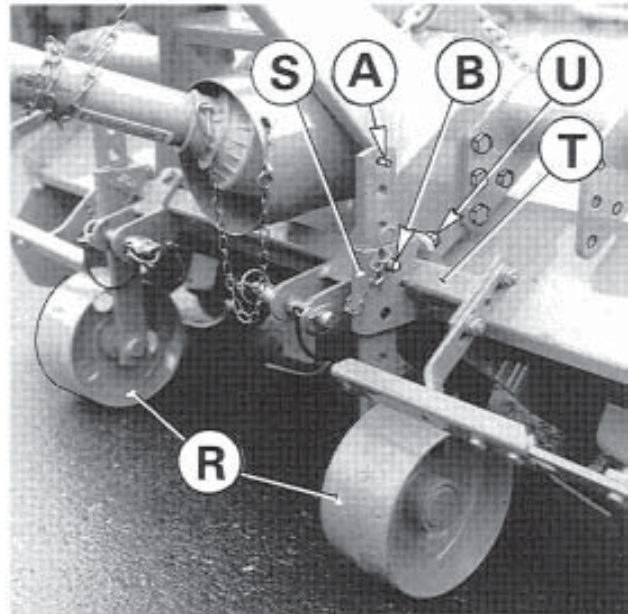
1° WHEEL ASSEMBLY - Kit No 120 6600

The **EL 35** can be equipped with a gauge wheel kit to control working depth. Wheels (R) are fitted on cross tube (T) in front of the machine (photo 26).

The wheels (R) are adjustable :

- In height on the inside of their suport (S) using the adjustment pin (B) (see photo 26). To avoid any risk of accident, don't forget to install safety pins (A).
- The wheels are also adjustable sideways so that they may be positioned in line with the tractor wheels.

Tighten screws (U) to 14 daNm / 100 ft.lbs.



26

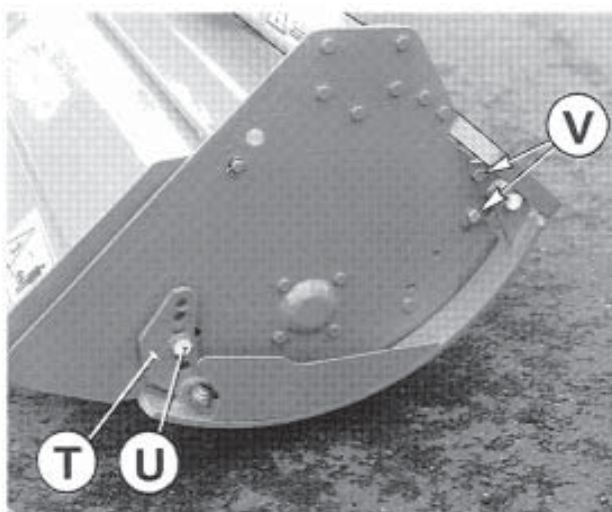
2° SKIDS + STAND Kit No 120 6840

The **EL 35** may also be equipped with a set of two skids to be mounted on each side of the machine for setting and adjusting the rotor working depth. The skids are attached to the front of the machine with bolts (U) (**torque 8 daNm / 60 ft.lbs**) and to the rear of the machine with the holed bars (T) and bolts (U) (**torque 21 daNm / 155 ft.lbs**).

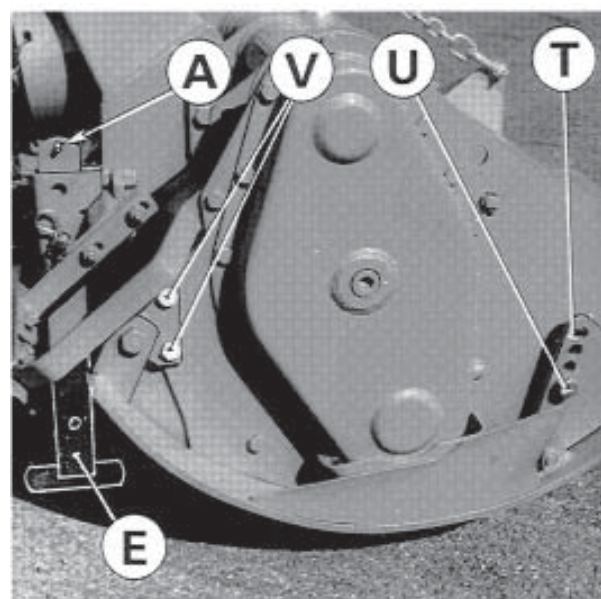
Depth control is adjusted by means of the holed skid bars (T) (photos 27 and 28).

A stand (E) is supplied with the skids to ensure stability when machine is parked (photo 28).

To avoid any risk of accident, don't forget to install safety pin (A) (photo 28).



27



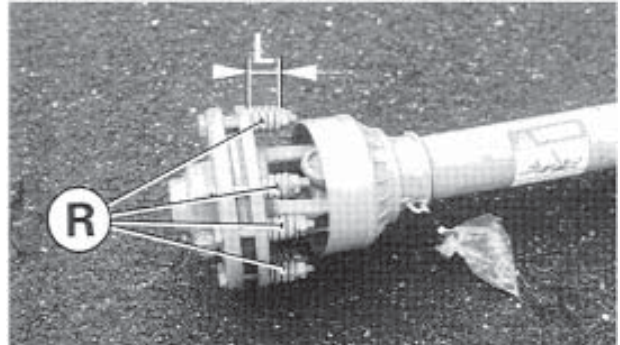
28

3° P.T.O. SHAFT WITH FRICTION SLIP CLUTCH (photo 29) - No 4500 402

The **EL 35** can be equipped with a PTO transmission shaft complete with friction slip clutch.

The spring pressures are adjusted before delivery to a length of 27 mm to give a correct load with PTO speed of 540 rpm.

The theoretical length «L» of springs «R» is an average setting and slight deviations can be made according to working conditions and tractor engine rating.



29

The springs of the slip clutch must all be equally adjusted to a setting where the implement can operate under normal conditions without the plates slipping. However, when extreme conditions are encountered, such as obstructions, the friction plates must slip.

- IMPORTANT :**
- * Always check if the clutch is set correctly for the work to be carried out. It should feel warm to the touch during work.
 - * If the clutch slips excessively (too light a spring pressure, obstacles, etc.), readjust if necessary and wait until the temperature of the clutch drops to a normal work temperature of approximately 40°C (104 °F) before continuing work. If the clutch overheats it will slip more easily, thus increasing disc wear.
 - * With L = 26 mm the springs (R) will be completely coil bound and the clutch cannot operate. Never work with springs fully locked as this risks deteriorating drive line components if an obstruction jams the rotor. Always loosen them by at least half a turn.



NEVER FULLY LOCK THE SPRINGS.

Check clutch setting regularly, especially after the machine hasn't worked for a long time. Completely slacken off the 6 springs (R) (photo 29) by unscrewing their securing nuts, let the friction plates slip for a few seconds then retighten springs as explained above (to L = 27 mm).

Note : For easier access when wishing to adjust the slip clutch, we strongly recommend that you firstly remove the clutch guard. **Do not forget to replace the guard after adjustment is made.**

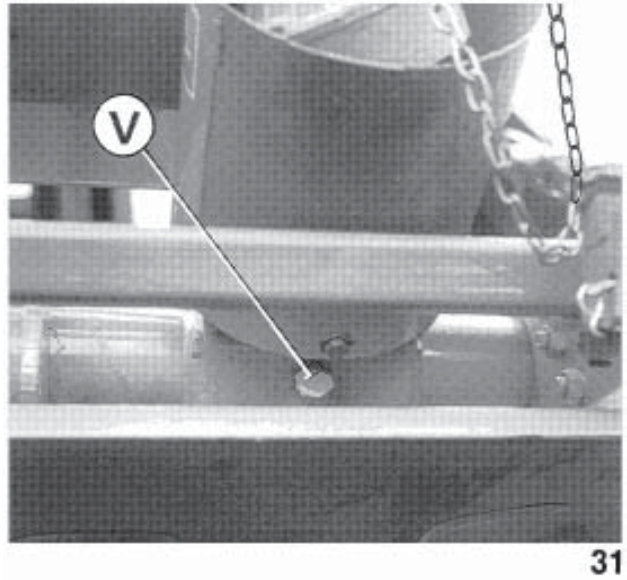
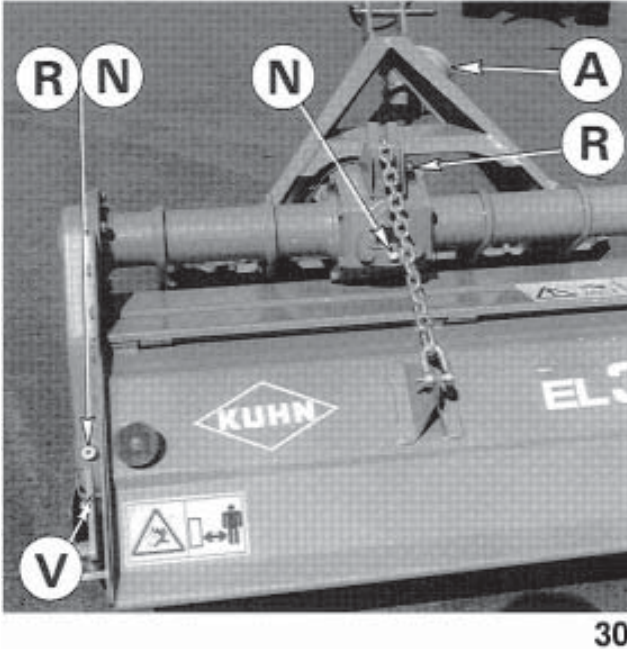
4° P.T.O. SHAFTS

The following PTO shafts are available :

- part no. **4500 400** : PTO shaft supplied as standard with the machine, tractor end yoke : 1 3/8" - 6 splines
- part no. **4500 402** : optional PTO shaft with friction slip clutch, tractor end yoke : 1 3/8" - 6 splines.

MAINTENANCE

1° LUBRICATION



PTO transmission shaft (A) (photo 30) : Grease the telescopic tubes and universal knuckle joints every 8 hours with SHELL Multi-Purpose grease NLGI grade 2. Also grease the spring loaded peg daily.

Central and side gearboxes (photos 30 and 31) : Change oil after first 10 hours of operation and thereafter every 100 hours (oil filler plugs "R", Oil drain plugs "V"). Fill both boxes up to the level plug (N) for central gearbox or N' for side gearbox with SHELL SPIRAX SAE 90 or 80 W 90 EP (GL4 or GL5).

Quantities : Central gearbox : 0,75 l (1.32 imp. pts)
Side gearbox : 0,5 l (0.88 imp. pts)

Check oil levels weekly.

Lubricate all other exposed pivot joints and hinges.

After working in the field and at the end of every season, clean and lubricate the machine.

WE RECOMMEND SHELL LUBRICANTS TO SAFEGUARD YOUR MACHINE.

2° FITTING THE BLADES

The **EL 35** Power Tiller is equipped with curved blades.

The blades can be fitted in two different ways, depending on the job to be done :

- 3 pairs of blades per flange (fig. 32 a) :
3 right blades (D) and 3 left blades (G) (as fitted at the factory)
- 2 pairs of blades per flange (fig. 32 b) :
2 right blades (D) and 2 left blades (G).

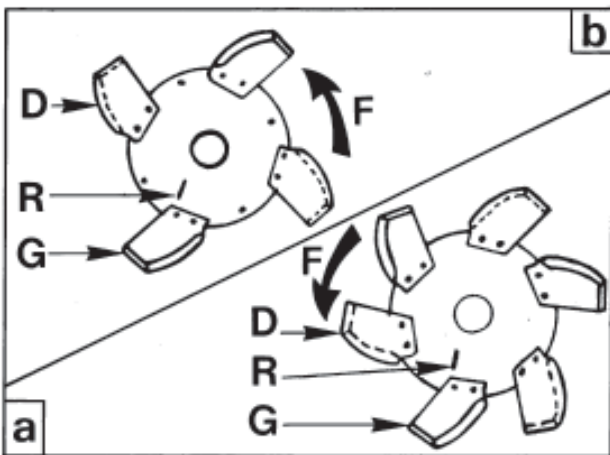
To recognise if the blades are right (D) or left (G), hold the blade with the bolt holes facing downwards, point the cutting edge in the direction of rotation (F) and note the direction of their curved portion.

A = machine forward direction (fig. 33).

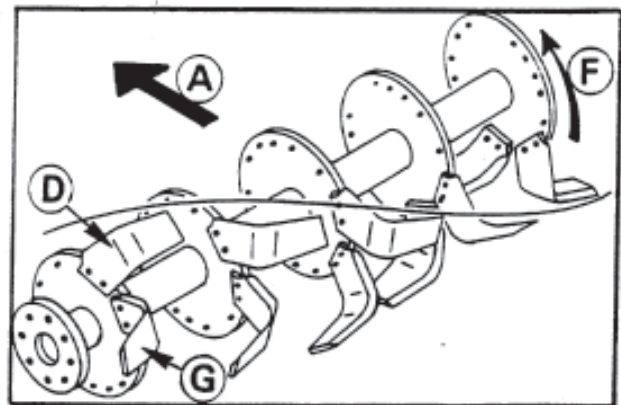
To fit blades helicoidally, proceed as follows :

- Always start fitting each flange with the same type of blade, placing it opposite mark (R), shown by a chamfer or a hollow (see fig. 32) ;
- all blades should be fitted on the left face of the flanges (see fig. 33).
- Fixing bolt heads should face the blades, washers and nuts should face the flanges.

Tighten nuts to a torque of 12 daNm (88 ft.lbs).



32



33

TYPE		92	105	117	130	155
Number of rotor flanges		4	4	5	5	6
TYPE OF FORMATION	TYPE OF BLADES	NUMBER OF BLADES				
2 pair formation	RIGHT	8	8	10	10	12
	LEFT	6	8	8	10	12
3 pair formation	RIGHT	12	12	15	15	18
	LEFT	9	12	12	15	18

Note : Due to the small distance between the furthest right-hand flange and its adjacent flange, on the **92 cm / 36"** and **117 cm / 44"** wide rotors, only fit right-hand blades (curved towards the outside) on the furthest right-hand flange. Make sure that all right-hand blades are mounted in a spiral fashion with the left-hand blades on all other flanges.



TROUBLE SHOOTING

PROBLEM	CAUSE	REMEDY
Noisy drive when lifting the machine	Top link of 3-point hitch badly positioned/adjusted	Position the top link parallel to the lower lift arms
	Excessive lifting height	Reduce lifting height
Noisy drive during work	Machine is tilted to the front or rear	Lengthen or shorten top link to set the machine horizontally during work. (The tractor PTO stud and machine input shaft must be parallel to each other)
	Machine insufficiently stabilized and moves from side to side	Tighten the tractor's anti-sway stabilisers
Too much power needed when working in dry conditions	Too much worked ground	Adjust the machine to a higher setting by means of the skids or the gauge wheels Make sure it is set no deeper than necessary
	Working depth too deep	
	Blades too worn	Change the complete set of blades so that the rotor stays balanced.
Ground is projected too much to the rear	Hood is badly positioned	Readjust hood position
Too much power needed when working in humid conditions	Too much worked ground	Adjust the machine to a higher setting by means of the skids or the gauge wheels. Make sure it is set no deeper than necessary.
	Working depth too deep	
	Hood clogged	Open the hood so that the ground can flow more freely.
Tilth produced is too coarse	Hood too open	Close the hood
	Forward speed too high	Reduce forward speed
Irregular mix of vegetable residue	Insufficient working depth	Adjust the skids or the gauge wheels to increase the amount of ground to be worked
Ridging across the pass width	Machine jerks and jolts during work.	Make necessary adjustment on : - forward speed (reduce slightly) - working depth (increase slightly) - hood opening

SOUND LEVELS

Sound levels given out by : power tillers **EL 35 - 92 / 105 / 117 / 130 / 155**

Sound levels have been measured in accordance with the measuring methods as defined in :

HM Agricultural Inspectorate
AGRICULTURAL MACHINERY NOISE
 Legislation and guidance on methods of testing
 (Annex to AIC 1896/117 REV)
 February 1988
 Health and Safety Executive

The method employed corresponds to the method No. 4 in this document. Unspecified testing conditions comply with ISO 5131 standard.

Measuring equipment conforms to NF S 31-009 standard. The tractor used has a power of 40 kW.

A-weighted emission sound pressure level :

Model	Tractor only	Tractor + machine
EL 35 - 92	86,0 dB (A)	87,6 dB (A)
EL 35 - 105	86,0 dB (A)	87,0 dB (A)
EL 35 - 117	86,0 dB (A)	87,5 dB (A)
EL 35 - 130	86,0 dB (A)	87,7 dB (A)
EL 35 - 155	86,0 dB (A)	88,2 dB (A)

Sound power level :

Model		Tractor only	Tractor + machine
EL 35 - 92	Lw in dB (A) P in mW	102,0 dB (A) 15,8 mW	102,9 dB (A) 19,5 mW
EL 35 - 105	Lw in dB (A) P in mW	102,0 dB (A) 15,8 mW	103,7 dB (A) 23,4 mW
EL 35 - 117	Lw in dB (A) P in mW	102,0 dB (A) 15,8 mW	103,3 dB (A) 21,4 mW
EL 35 - 130	Lw in dB (A) P in mW	102,0 dB (A) 15,8 mW	103,9 dB (A) 24,5 mW
EL 35 - 155	Lw in dB (A) P in mW	102,0 dB (A) 15,8 mW	104,3 dB (A) 26,9 mW

LIMITED WARRANTY

KUHN S.A. of 4 Impasse des Fabriques, 67706 SAVERNE CEDEX, France (hereinafter called the «Company») warrants, in accordance with the provisions below, to each original retail purchaser of KUHN new equipment of its own manufacture, from an authorized KUHN dealer, that such equipment is, at the time of delivery to such purchaser, free from defects in material and workmanship and that such equipment will be warranted for a period of one year starting from the date the goods are delivered to the end user and during this period up to a limit of 500 hours use, providing the machine is used and serviced in accordance with the recommendations in the Operator's Manual.

THESE CONDITIONS ARE SUBJECT TO THE FOLLOWING EXCEPTIONS :

1. Parts of machines which are not of our manufacture i.e. tyres, belts, P.T.O. shafts, clutches etc., are not covered by this Limited Warranty but are subject to the warranty of the original manufacturer. Any claim falling into this category will be taken up with the manufacturer concerned.
2. Warranty claims applying to these types of parts must be handled in the same way as if they were parts manufactured by KUHN. However, compensation will be paid in accordance with the warranty agreement of the manufacturer concerned in as much as the latter justifies such a claim.
3. This Limited Warranty will be withdrawn if any equipment has been used for purposes other than for which it was intended or if it has been misused, neglected or damaged by accident or let out on hire. Nor can claims be accepted if parts other than those manufactured by us have been incorporated in any of our equipment. Furthermore, the Company shall not be responsible for damage in transit or handling by any common carrier and under no circumstances within or without the warranty period will the Company be liable for damages for loss of use or damages resulting from delay or any consequential damage.

We cannot be held responsible for loss of earnings caused by a breakdown or for injuries either to the owner or to a third party, nor can we be called upon to be responsible for labor charges, other than originally agreed, incurred in the removal or replacements of components.

THE CUSTOMER WILL BE RESPONSIBLE FOR AND BEAR THE COSTS OF:

1. Normal maintenance such as greasing, maintenance of oil levels, minor adjustments, etc.
2. Transportation of any kind of any KUHN product to and from the place the warranty work is performed.
3. Dealer travel time to and from the machine or to deliver and return the machine from the workshop for repair.
4. Dealer travelling costs.

Parts defined as normal wearing items are listed as follows and are not in any way covered under this Limited Warranty :

V belts, discs, knives, wear plates, disc guards, tires, torque limiters, hydraulic hoses, pitman shafts, swath sticks, blades, tines and tine holders.

KUHN Limited Warranty will not apply to any product which is altered or modified without the expressed permission of the Company and/or repaired by anyone other than Authorized Service Distributors or Authorized Service Dealers.

LIMITED WARRANTY IS DEPENDENT UPON THE STRICT OBSERVANCE BY THE PURCHASER OF THE FOLLOWING PROVISIONS :

- That this Limited Warranty shall not be assigned or transferred to anyone unless the Company's consent in writing has first been obtained.
- The warranty/product registration form has been correctly completed by dealer and purchaser with their names and addresses, dated, signed and returned to the appropriate address as given on the warranty/product registration form.
- The claim form sent to KUHN has been correctly completed stating:
 - * dealer's name and address
 - * owner's name and address
 - * type of machine
 - * machine serial number
 - * delivery date to buyer
 - * date of failure
 - * tractor make and type
 - * description of the failure and its cause
 - * quantity, reference number and name of the damaged parts
 - * reference number, quantity and date of the invoice for the replacement parts.
- The judgement of the Company in all cases of claims under this Limited Warranty shall be final and conclusive and the purchaser agrees to accept its decisions on all questions as to defect and to the exchange of any part or parts.
- That all safety instructions in the Operator's Manual shall be followed and all safety guards regularly inspected and replaced where necessary.

No warranty is given on second-hand products and none is to be implied. Persons dealing in the Company's products are in no way legal agents of the Company and have no right or authority to assume any obligation on their behalf, express implied, or to bind them in any way.

KUHN S.A. reserves the right to incorporate any change in design in its products without obligation to make such changes on units previously manufactured.

Moreover, because of the constant progress in technology, no guarantee is given to the descriptions of equipment published in any document by the company.

DISCLAIMER OF FURTHER WARRANTY

There are no warranties, expressed or implied, except as set forth above. There is no warranty of merchantability. There are no warranties which extend beyond the description of the product contained herein. In no event shall the company be liable for indirect, special or consequential damages (such as loss of anticipated profits) in connection with the retail purchaser's use of the product.

- NOTES -



This machine complies with the safety requirements of the European machinery directive.



The Operator should respect all Health and Safety regulations as well as the Highway Code. For your own safety, use only genuine KUHN spare parts. The manufacturer disclaims all responsibilities due to incorrect use or non-compliance with the recommendations given in this manual.



**For your safety
and to get the best from your machine,
use only genuine KUHN parts**

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