

HOWARD

HR30-HR35-HR40-HR50-HR60
Rotavator®





■ **HR30 : for tractors up to 90 hp.**

Robust transmission (fig. 6)

The transmission on all Howard machines, particularly the gearbox and side drive, are designed to withstand extreme demands and provide long term reliability.

The robustness follows the true tradition of the Rotavator manufacturing reputation.

Selectiltih gearbox (fig. 7)

This gearbox offers as standard a choice of 4 speeds. The simple pick off gear system provides a progressive range of rotor speeds enabling the Rotavator to be correctly set for the required standard of work. Additional gears, for very low or very high rotor speeds are available as an option thereby providing the selectiltih gearbox with a wide range of speeds. Moreover it's reliability is well known to all users of Rotavators.

Leverchange gearbox (fig. 8)

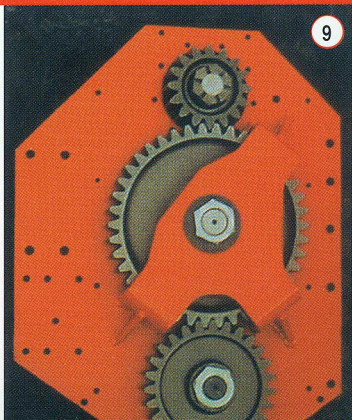
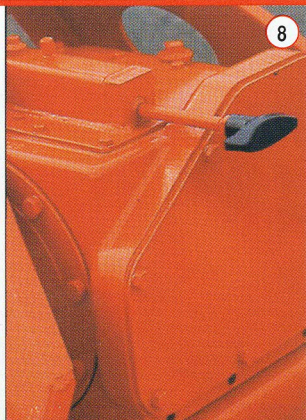
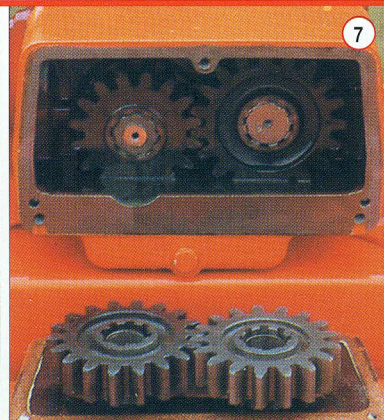
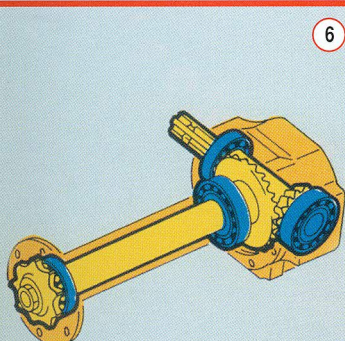
The lever change gearbox offers 3 speeds as standard and may be set up on HR40 machines for 540 or 1000 r.p.m./PTO by simply reversing the rear gears. In either case the range of rotor speeds are the same. Additional rear gears are available as an option to provide a wide range of rotor speeds.

Gear Side Drive (fig. 9)

Gear side drives are for the more demanding cultivation applications where higher horse power tractors are used. The gears, shafts and bearings are of heavy duty design as is the special "Y" idler gear support bracket which guarantees perfect alignment. The HR50 has two gear side drives and the rotor is driven from both ends : this provides long term reliability even when used in the most arduous of conditions.

Offset linkage (fig. 10 et 11)

All models up to 1.80 m may be operated centrally mounted or offset to the right hand side by simply repositioning the sliding clevis brackets. Offsetting enables the Rotavator to work close to the border line and even with the narrower models the right and tractor wheel mark is taken out.



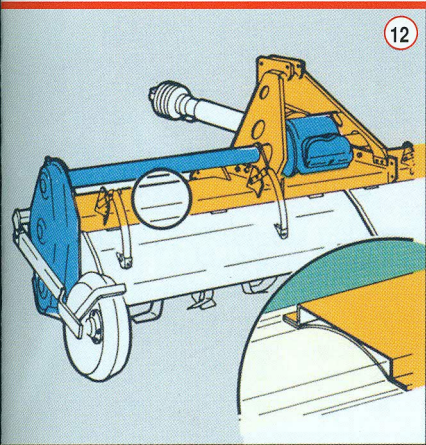
■ HR 35 Rotavator®



■ HR35 : for tractors up to 105 hp.

Topmast independant of the transmission (fig. 12)

The linkage points and topmast are mounted on the Rotavator frame not on the gearbox or transmission assembly. Any stresses which may occur in difficult cultivation conditions are therefore isolated from the transmission system. The double skin hull is fully welded and particularly rigid due to its design and the heavy gauge material used in its construction. The inner shield is radiused and absorbs any damage which may occur from stones thereby leaving the upper visible surface free from dents.

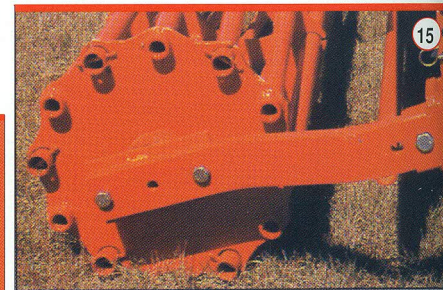


Skids (fig. 13)

The working depth down to 25 cm can be controlled by 2 adjustable side skids. The skids are supplied with a wearing sole which can be replaced and protects the skid itself.

Side wheels (fig. 14)

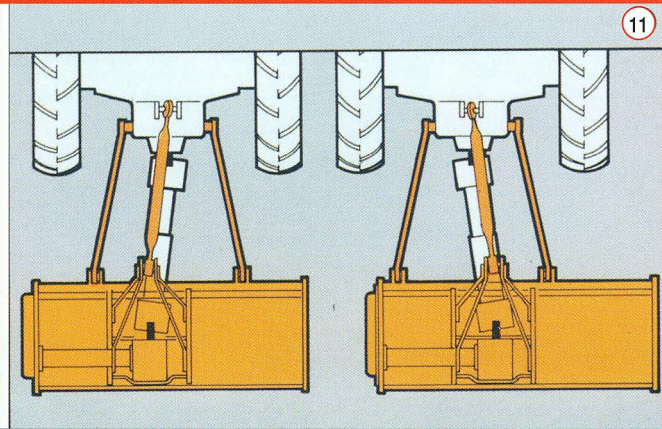
The side depth control wheels are recommended for the wider, heavier models. A multistop system is used ensuring fast depth control adjustments which are easily checked for identical setting on either wheel. The wheels are positioned inside the arms thereby reducing the overall width.



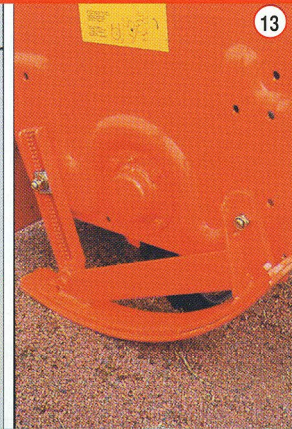
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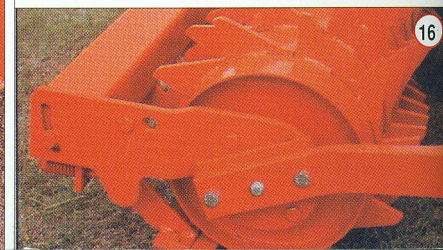
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16



■ HR 40 Rotavator®



■ HR40 : for tractors up to 130 hp.

Rollers option extra

(fig. 15 and 16)

The Rotavators from 2.05 m can be equipped with crumble roller or teeth packer roller ensuring at the same time both the working depth control, the levelling and the consolidation of the seed bed.

Rotor Rotavator (fig. 17)

The Rotavator rotor may be fitted with the 90° "L" blades or the "C" shaped speed blade. The "L" blade is a versatile blade suiting all kinds of applications. The speed blades which are less demanding in terms of horse power are suitable for sticky soil types and for chopping and incorporating crop residue. The large diameter rotor enables deep cultivation, down to 25 cm according to conditions.

"Spike" rotors Rotalabour and Rotapointe

(fig. 18 and 19)

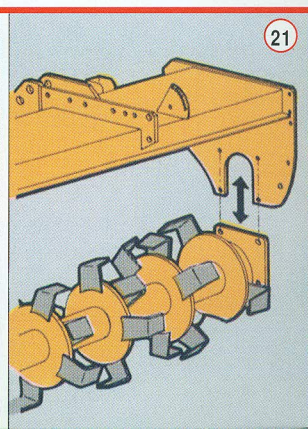
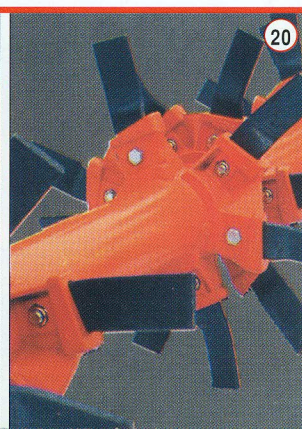
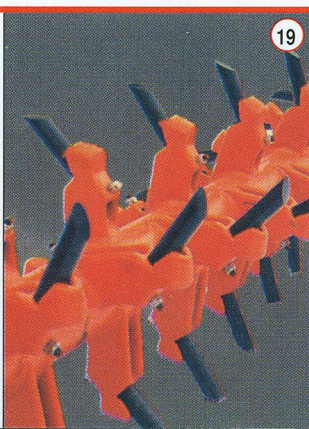
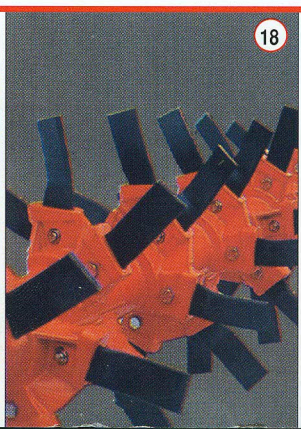
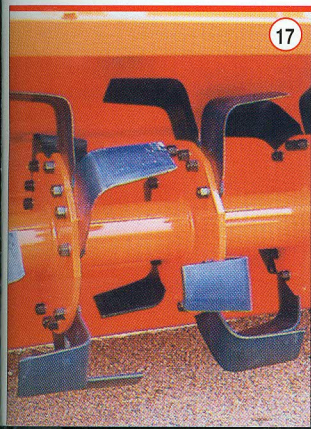
Most models may be fitted with a Rotalabour or alternatively a Rotapointe rotor. These rotors are suited for primary cultivation but perform particularly well in secondary tillage seed bed preparation, either deep for potatoes or shallow for cereals.

Rotasemis rotor (fig. 20)

This rotor is intended for direct seed bed preparation for row crops such as maize, sunflowers, etc. It can successfully be used in combination with the Paraplow with a view to direct planting of these types of crops (Parasemis technique).

Rapid rotor change (fig. 21)

The HR40 is designed to accommodate a choice of rotor types. It is quick and simple to transform the machine to accomplish the cultivation job required.





■ **HR50 : for tractors up to 180 hp.**

■ **Double-flanges** (fig. 22)

These are standard equipment on the HR50 Rotavator and optional on the HR40. For heavy duty application the flanges create a clevis which double the shear capacity of the blade bolts and provides additional strength to the rotor flange.

■ **Quick coupling** (fig. 23)

The HR50 Rotavator is equipped as standard with a quick coupling Cat. III and a clevis type attachment Cat. II. All the other models are provided with clevis type Cat. II attachments and can also be equipped with quick coupling as an optional extra.

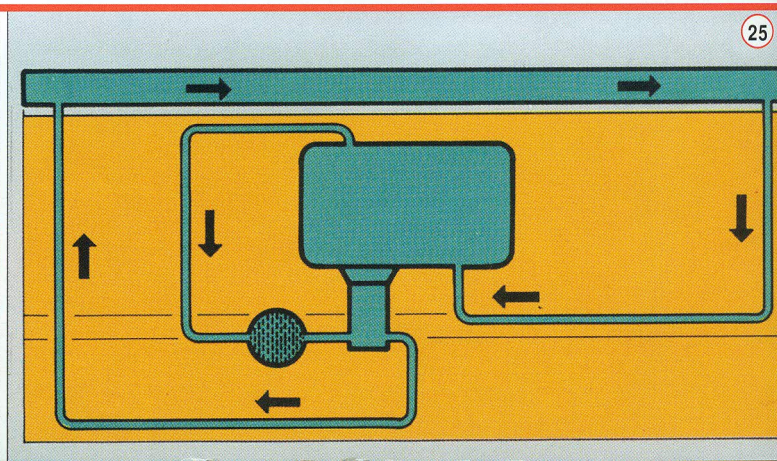
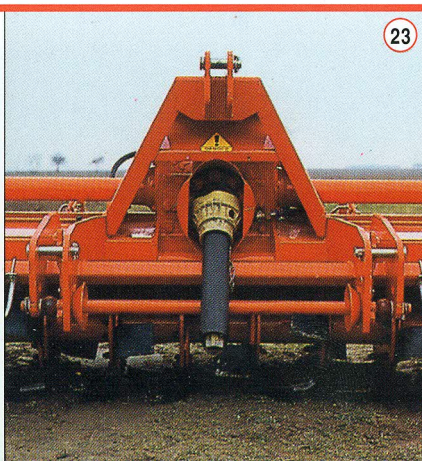
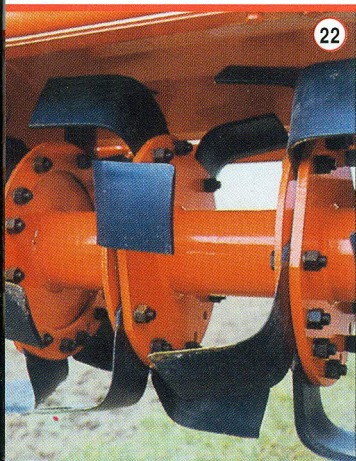
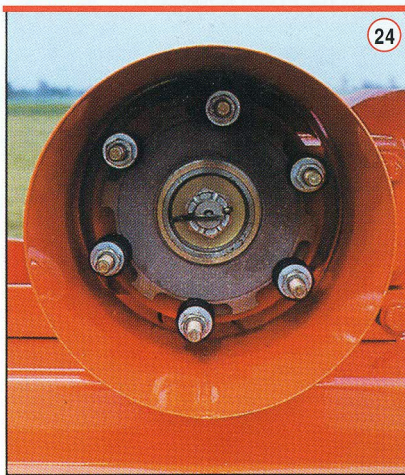


■ **Safety clutch** (fig. 24)

The Rotavators are equipped with a safety (friction) clutch, with bronze discs for intensive use, which protect both the tractor transmission and the transmission of the machine. This clutch can be adjusted according to the horse powers of the tractor. All machines are supplied with telescopic pto shafts.

■ **Oil cooling system** (fig. 25)

The HR50 model is equipped with a gearbox cooling system which is achieved by oil circulation. A pump which is driven directly from the gearbox circulates the oil through the front square tube of the hull where it is cooled before returning to the gearbox, thereby providing the gears and bearings with a lubricant which is operating at it's most efficient temperature.



Technical specifications

	HR 30							HR 35			HR 40					HR 50			HR 60	
Working width (m)	1,05 40"	1,15 45"	1,30 50"	1,55 60"	1,80 70"	2,05 80"	2,30 90"	2,05 80"	2,30 90"	2,55 100"	1,80 70"	2,05 80"	2,30 90"	2,55 100"	3,05 120"	2,55 100"	3,05 120"	4,05 160"	4,05 160"	
Overall width on skids (m)	1,28	1,41	1,53	1,79	2,04	2,29	2,54	2,29	2,54	2,79	2,14	2,40	2,64	-	-	-	-	-		
Overall width on wheels (m)	-	-	-	-	-	2,68	2,93	2,68	2,93	3,18	-	2,50	2,73	3,00	3,50	3,10	3,60	4,60	4,60	
Max (hp)	90							105			130					180			250	
Min (hp)	28	31	35	42	49	53	63	53	63	69	59	68	76	84	100	84	100	140	150	
Mounting category	Cat. I & II				Cat. II			Cat. II			Cat. II					Cat. II & III			Cat. III	
Possible offset (cm)	25	23	25	27	27	-	-	-	-	-	26	-	-	-	-	-	-	-	-	
Single speed gearbox 540 rpm/pto version (rpm)	202						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selectatilh gearbox 540 rpm/pto version (rpm)	-	-	170-190-213-240				170-190-213-240			170-200					-	-	-	-	-	
Selectatilh gearbox 1000 rpm/pto version (rpm)	-	-	220-250				220-250			175-195-215-235					-	-	-	-	-	
Leverchange gearbox 540 and 1000 rpm/pto (rpm)	-	-	-	-	-	-	-	-	-	-	-	-	-	180-200-230	185-210-235			175-200-218-248 251-286-312-356		
Side drive	chain							gears			gears					gears (double)			gears (double)	
Number of blades	24	27	30	36	42	48	54	48	54	60	42	48	54	60	72	60	72	96	96	
Weight on skids (Kg)	335	370	390	425	460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	-	-	415	450	485	540	575	529	619	737	-	-	-	-	-	-	-	-	-	
Weight on wheels (Kg)	-	-	-	-	-	-	-	-	-	-	716	784	890	952	1082	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	-	-	-	972	1102	1359	1400	1700	2200	
Accessories (optional extra)																				
Quick coupling	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	standard cat III			standard cat III	
Combi-hitch	-	-	-	-	-	-	-	-	-	●	-	-	-	●	●	●	●	●	●	
Front tines	●	●	●	●	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	
Counter flanges	-	-	-	-	-	-	-	-	-	-	●	●	●	●	●	standard			standard	
Crumble roller	-	-	-	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	-	
Teeth packer roller	-	-	-	-	-	-	-	-	●	●	-	-	-	●	●	●	●	●	●	
Special pick off gears	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	standard	

Single speed gearbox
Selectatilh gearbox
Lever change gearbox

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