PRICE 50c

HOWARD ROTAVATOR®

SELECTATILTH

MODEL

K

70" 80" 90"

MOUNTED AND TRAILING

OWNERS HANDBOOK

SECOND EDITION
1963

HOWARD ROTAVATOR COMPANY, Inc.
HARVARD, ILLINOIS

WIRE
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Howard Rotavator K Model

In 1922 Mr. A. C. Howard built the first tractor powered Rotavator, and he has been designing, developing, and building Rotavators ever since. This new K Model which is the latest Howard Rotavator comes to you therefore with nearly 40 years of experience in it.

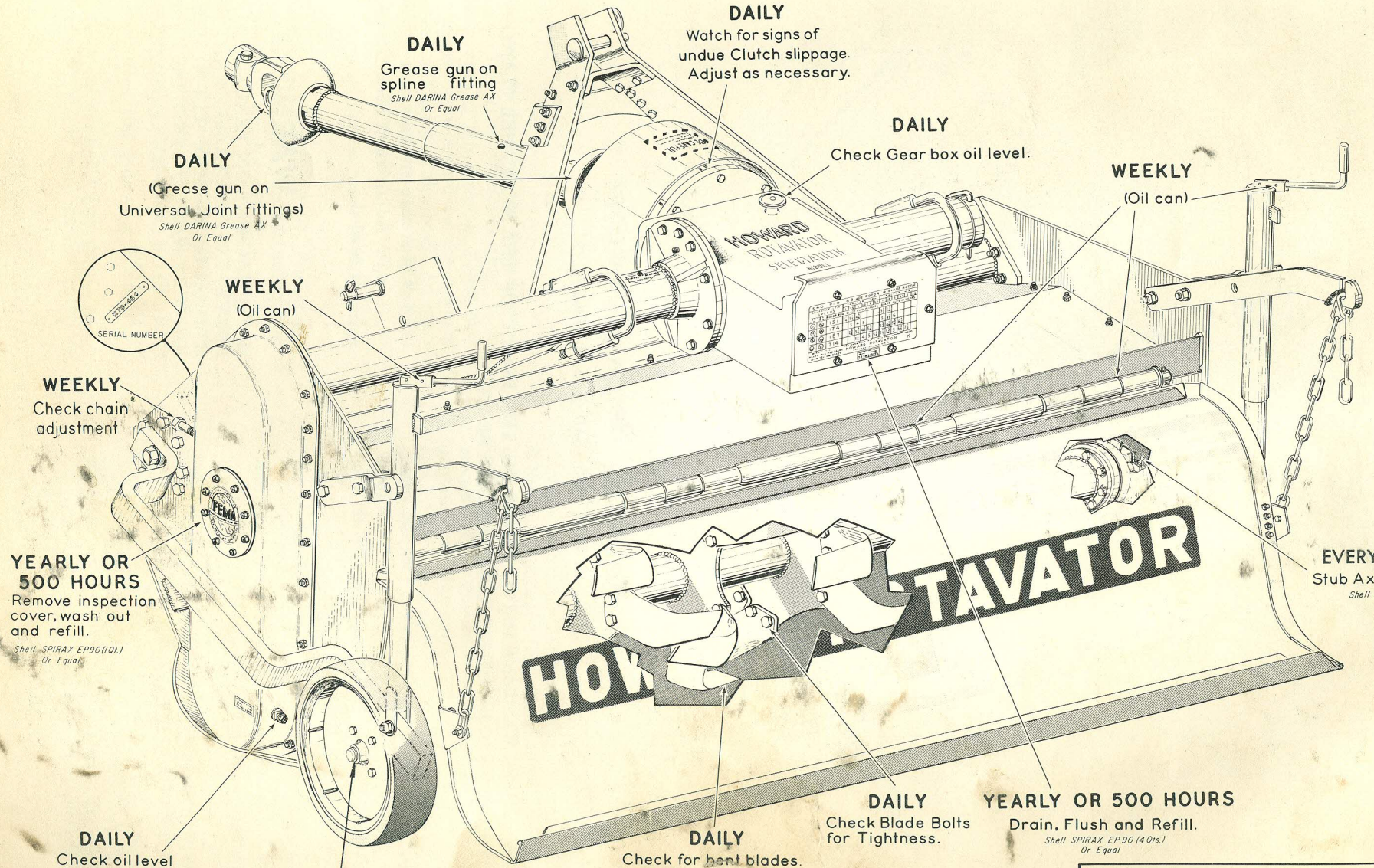
We consider it to be the finest machine of its class in today's market.

This Howard Rotavator is built of the highest quality materials and is engineered to give you years of efficient and profit-making service. If you maintain it properly and use it correctly it will pay for itself many times, by improving the condition of your land, increasing its productivity and giving you savings in time and labor.

We ask you to read this book carefully. In addition to explaining how to set up your machine and operate it, we include sections on "Basic Farm Uses for the Howard Rotavator" and "Making the Most of your Rotavator." We do not presume to tell you how to farm your own land but we do believe that a careful study of these sections which are based on wide experience over a number of years will help you towards more profitable farming.

Maintenance And Lubrication Guide

MODEL K ROTAVATOR



RECOMMENDED LUBRICANTS		
Gearbox	4 Qts.	EP 90
Chain Case	1 Qt.	EP 90
Zerk Fitting Shell Darina AX or Equal		

MAKING THE MOST OF YOUR ROTAVATOR

This section of your handbook is based not only on long experience of rotary tillage, but on tests and and actual farming operations under all weather conditions in over 100 countries throughout the world.

Research of this kind and the experience of owners in all states of the U.S.A. raising crops in varied soil conditions prove that the Rotavator when used wisely and with understanding is one of the most valuable and versatile agricultural implements available to today's modern progressive farmer.

The following notes on crops and soil conditions are based on the American system of farming; but it is obvious to the reader that the principles of rotary tillage as applied to the Howard Rotavator can be taken as standard practice in all countries of the world.

Before going into the various applications there are several points that must be understood in order to get the best results from your Rotavator.

The Rotavator takes its power direct from the tractor power take off through a universal drive joint and safety clutch, to a multi-speed transmission: this transmission permits the operator to select the speed of the rotor. Blades are mounted on the rotor in a pre-determined scroll pattern. As the blades enter the soil the size of the blade cut is determined by the speed of the rotor and/or the forward speed of the tractor. The tractor P.T.O. speed always remains constant with the engine R.P.M. Full details of the Selectatilth transmission are listed on pages 10 and 11.

PRODUCING TILTH.

The type of tilth, coarse or fine, produced by the Rotavator can be controlled. The following factors affect the type of tilth produced:

1. The type of soil, light or heavy
2. The speed of the rotor.
3. The forward travel speed of the tractor.
4. The position of the soil shield.
5. The moister content of the soil.

1. THE EFFECT OF SOIL TYPE.

The amount of clay present in heavier soils gives them cohesion. It is therefore possible to obtain a greater variation of tilth on a heavy soil, cloddy for fall seedbeds and winter fallow, and fine for spring work.

The amount of clay present in a light soil is usually insufficient to give cohesion to groups of particles. A finer tilth is therefore, produced on a light soil.

2. THE EFFECT OF ROTOR SPEEDS.

At a constant forward tractor speed, the speed of the rotor controls the size of the slice cut in the soil, a slow rotor speed will produce a large blade cut leaving a rough cloddy finish. A high rotor speed reduces the blade cut resulting in a fine finish. Slow rotor speeds require much less power than high speeds. Extremely high rotor speeds should be used with care. High rotor speeds are available for special applications where a very fine tilth is required, but medium speeds are usually quite adequate for general agriculture. Do not use a very low rotor speed when the moister content is high, the rotor speed must be maintained in order to keep the soil moving through the rotor. Wet soil will tend to clog if the rotor speed is not fast enough to throw the soil clear.

3. THE EFFECT OF TRAVEL SPEED.

Assuming that the rotor speed and engine speed are constant, the size of the soil slice can be varied by use of the tractor gears; low gear will produce a fine tilth, higher gears will produce a progressively rougher finish.

Travel speeds between 1 through 3 1/2 miles per hour are usually used, but higher speeds may be used for scalping passes, for weed control and shallow seedbeds in previously broken ground.

4. THE EFFECT OF THE SOIL SHIELD.

When the soil shield is raised, a relatively coarse tilth is produced since the soil cut by the blade is not broken by impact on the shield, and the larger particles of soil remain on top. Trash and weed roots are also thrown up and stay on the surface to die. Crop residues when left on or near the surface give protection against washing, blowing, heavy rains and the intense heat of the sun.

With the soil shield lowered clods are broken on impact and a fine tilth is produced, trash is buried and the shield will have a levelling effect.

Less power is required to operate with the shield raised, allowing the tractor to be driven at higher speeds for a coarse tilth in the fall, or producing a winter mulch for protection against soil erosion. There is also less tendency for damp clay soil to clog the rotor and stick to the underside of the shield.

5. THE EFFECT OF SOIL MOISTURE CONTENT.

There is a certain range of soil moisture content which the farmer easily recognizes when the soil is in a condition which is most suitable for tillage operation. Rotavation within this range of moisture content enables the tilth required to be produced. If the soil has a high moisture content it tends to ball, and slow rotor speeds must be avoided. If the soil is dry, dust will be produced and blade wear will be increased. Generally speaking, satisfactory results can be obtained by Rotavation in both wetter or drier conditions than possible with drag type implements. but care must be taken not to work soil when the moisture content is too high. Working extremely wet soil with any implement will tend to break down soil structure.

THE EFFECT OF THE 4 BLADED ROTOR.

The rotor flanges are drilled to facilitate the fitting of either 4 or 6 blades per flange. Your Rotavator is fitted with 6 blades per flange as standard, which has been found to be the best all round standard for general agriculture. It is possible, however, that when working in wet sticky conditions, four blades per flange will tend to clear better than six, i.e. the slice of the soil cut by the blade is allowed to get free whereas when six blades are fitted, movement of the soil is restricted to a certain extent.

When using four blades per flange the rotor speed must be increased by use of the Selectatilth gears. See Decals (Fig. 3) and (Fig. 4), Page (11). This increased speed moves the soil at greater velocity while maintaining the same blade cut.

MAIN FACTORS GOVERNING THE 4 BLADED ROTOR.

Requires higher rotor speeds.

Produces a larger blade cut without clogging.

Does not increase power requirements in sticky conditions.

Maintains a coarse tilth with high rotor speed.