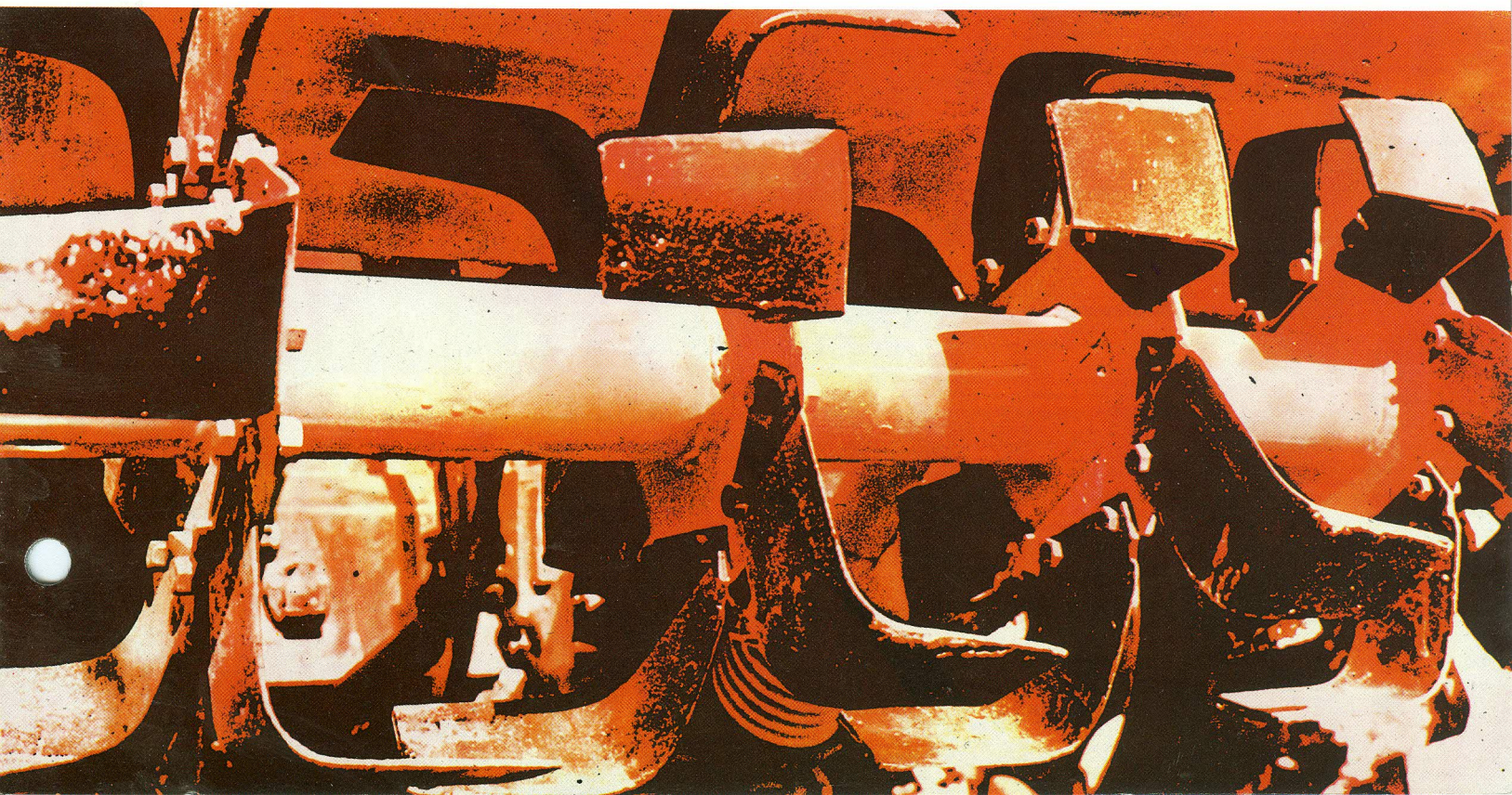




# SOIL MANAGEMENT SYSTEMS

**You Can't Beat  
Howard Know-How**





# There is a Howard Rotavator for every crop application, for every size farm.

**YOUR SOIL** is your single greatest resource. In the end, it is how you treat your soil that will determine the success of your operation. There is no better treatment you can give your soil than ROTAVATION, because ROTAVATION actually *re-structures* your soil . . . makes it richer and mellower, with better moisture retention properties. It is less compacted. Crop residues are chopped and evenly distributed throughout to form soil-building humus. The bed will warm up faster in spring, encouraging earlier germination and better yields. In addition, ROTAVATED fields are more resistant to wind and water erosion. They "hold their shape" better and are therefore easier to work year after year. **Why are ROTAVATORS superior to other rotary tillage implements?** For one thing, HOWARD manufactures the longest line of power tillers available. There are no gaps between power requirements. There is an *exact* model to meet your needs, considering all factors of your tractor power, soil condition, and crop requirements.

**Corn, Beans and Small Grain Farming:** However you rotate your crops, one or two passes with a ROTAVATOR in the fall will put you way ahead in the spring. ROTAVATION produces better soil fertility and moisture retention, quicker warm-up in the spring, and earlier germination.

**Groves and Orchards:** There are special low silhouette, off-set ROTAVATORS that allow cultivation close to trees without disturbing low, overhanging branches. Extremely accurate depth control allows protection of roots, even of the youngest trees.

**Fruits and Vegetables:** The ROTAVATOR is ideal for preparing fine tilth seedbeds, even for deep root vegetables. Cultivation with simultaneous mulching action can be done very close to the crop with plant guards attached to prevent soil from being thrown onto the crop. One-pass ROTAVATION makes easy work of tomato, sweet corn, cabbage, lettuce, strawberry and bushberry culture. Vine or bush trimmings as

## Howard Distributors



## HOWARD, U.S.A.

An arm of one of the world's largest farm implement manufacturers

ROTAVATION, the pioneering concept of rotary tillage engineered by A.C. Howard, has for over half a century been an important factor in soil management throughout the world. HOWARD, with international headquarters and four plants in England, has additional manufacturing facilities in Australia, Brazil, France, Germany, Greece, Italy and Spain, as well as in the United States. In addition, it has marketing facilities in Austria, Ireland, Malaysia, New Zealand, and South Africa, further expanding its world wide distribution.

HOWARD came to America in 1947 head-quartering in the heart of the Midwestern farm belt in Harvard, IL. Establishing a strong network of dealers and distributors throughout the United States, as well as branch warehouses and parts centers in Sacramento, CA., and Savannah, GA. It has also established a manufacturing facility in Muscoda, Wisconsin, where both the HN and J Model ROTAVATORS, plus the popular V-CHISELS are produced for worldwide distribution.

HOWARD®  
ROTAVATOR® are registered trademarks of the  
TURF-QUAKER® HOWARD ROTAVATOR COMPANY  
SELECTATILTH®  
V-CHISEL®



# ROTAVATI

## The fastest and most economical means of preparing perfect seedbeds.

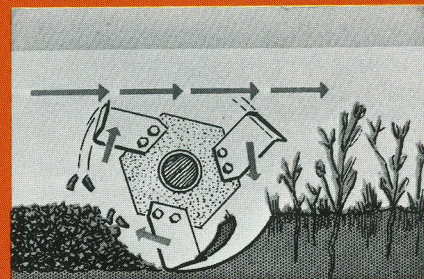


well as crop residues can be chopped and blended with the soil to build humus.

**Renovating Pastures:** To prepare a seedbed from pastureland, two passes are required; the first at a shallow depth to break up the sod, and the second (about two weeks later) at a greater depth to bring up more soil and produce the seedbed. If the pasture is to be saved or rested, a complete kill is unnecessary; one pass is usually sufficient.

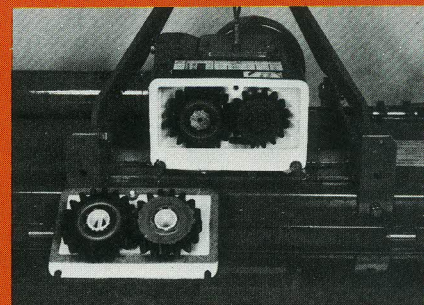
**Reclaiming Wasteland:** Even land which has not been worked for many years can be easily reclaimed because of the ROTAVATOR'S remarkable ability to handle all kinds of brush, even some that is 8' to 10' high and up to 2" thick at the stem.

Another factor is HOWARD Know How. HOWARD introduced agricultural power tillage in the early 1920's and has been the world leader ever since. There are more ROTAVATORS in use in world agriculture today than all other rotary tillers combined.



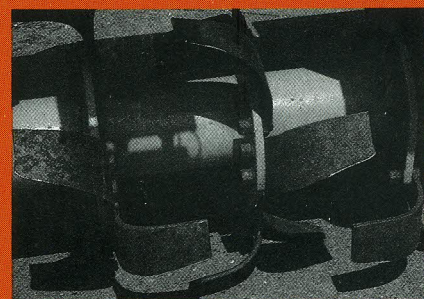
**Q: How does ROTAVATION work?**

**A:** Operating through the tractor's PTO, the rotating blades work the soil, mulching roots, weeds, and stubble. The uniformly tilled soil is in better condition for planting, without using choppers, shredders, discs, or harrows.



**Q: What is "SELECTATILTH?"**

**A:** It is HOWARD's exclusive gearbox that allows you to change rotor speeds to match the condition of the soil so that you can achieve the exact tilth you desire. Changes can be made in the field without special tools.



**Q: What blades should I choose?**

**A:** Two basic blade types are available. The 'C' blade for general agriculture applications, such as corn, beans, etc.; and the 'L' blade more suitable for seedbed and cultivating work for vegetable, fruit, landscaping and nursery work. A special blade guide is available on request.

ON

You Can't Beat  
Howard Know-How



# Model ST

For tractors 85 to 160 HP  
for secondary tillage only.



**Designed for operation on big acreage farms and ranches**, the Model ST is the ultimate in secondary tillage. Equipped with a bladed rotor, but also available with a spike rotor, the ST Model is ideal for both seedbed preparation and cultivating. Bedding attachments may be fitted as a local option. You can also combine tillage with planting, fertilizing, and chemical incorporation, preparing seedbeds and planting simultaneously at rates up to nine acres per hour.

**Q: What about minimum tillage?**

**A:** Because the ROTAVATOR is able to combine the work of several implements, it is in itself a superb minimum tillage implement. In addition, ROTAVATION can be combined with planting or chemical incorporation equipment. There are several ways to achieve minimum tillage

with a ROTAVATOR: (1) Deep chisel plow in the fall, then once over in the spring with the ROTAVATOR. (2) ROTAVATE once only in the spring using the planter and fertilizer attachment. (3) Strip tillage or cultivating can be accomplished by removing the appropriate blades from the rotor.

## SPECIFICATIONS

**Tillage width:** 160" & 180"

**Tractor:** For tractors of 85 to 160 HP with 1000 P.T.O. (for secondary tillage only)

**Linkage:** Category II or III-point linkage.

**Tillage Depth:** Adjustable to 8"

**Rotor Speeds:** Multiple speeds available with "Selectatilt" gearbox, 183 and 222 rpm standard. 202 and 244 rpm optional.

**Planting and cultivating kits available.**



# Model M

For tractors of 85 to 160 HP

## The Most Powerful ROTAVATOR, Designed for the Big Acreage Operator

Here is a primary tillage tool designed for dependable operation under the most adverse conditions. Its usage is broadened with a variety of blades available for special working conditions. The "Selectatilt" gearbox and positive depth control, combined with varying travel speeds, add up to usefulness in every season and working condition. Planters can also be added, for tilling and planting in one operation.

### Q: Why do I need a ROTAVATOR?

A: For conservation of the soil, of the tractor, and of tractor fuel. One ROTAVATOR can chop stalks, plow, disc, harrow, cultivate, renovate pastures, control weeds, reclaim wasteland, and prepare the best possible seedbed. It saves time, labor, power, and the capital outlay required for all the other implements it will replace. In addition, a ROTAVATED

seedbed will hold moisture better, warm up faster, seeds will germinate earlier.

### Q: Will a ROTAVATOR handle Brush?

A: Yes. It will easily remove Willow, Buckbrush, Scotchbroom, Sagebrush, Sumac, etc. Large stumps should be removed prior to ROTAVATION, and if large acreage is covered, somewhat higher maintenance costs should be expected.

## SPECIFICATIONS

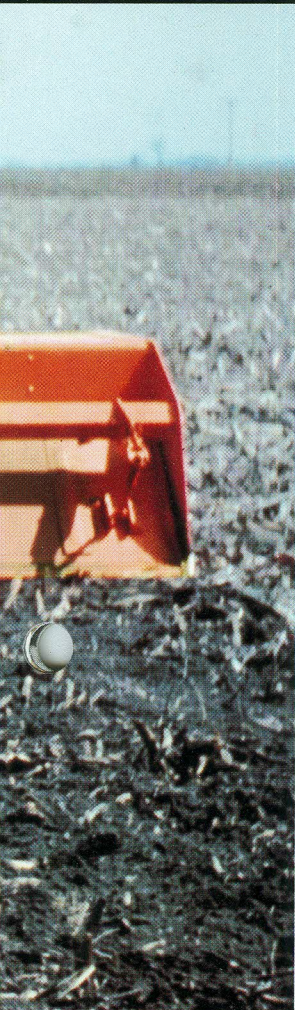
**Tillage Widths:** 80", 100", 130"

**Tractor:** For tractors of 85 to 160 HP with 1,000 rpm P.T.O.

**Linkage:** Category II and III 3-point linkage or trailer frame

**Depth:** Adjustable to 8"

**Rotor Speeds:** Multiple speeds available with "Selectatilt" gearbox; 179, 211, 229, and 269 rpm standard; 164, 193, 248, and 292 rpm optional.





# Model S

For tractors of 65 to 100 HP

**Adaptable to all types of primary tillage operations**, the rugged Model "S" series will work well in all soils and all crops. It is suitable for medium to large scale operations, providing dependable and economic operations where the going is tough, or high speed operations when used for secondary tillage. It has the stamina and power to dig into hard compacted soils not easily handled by comparable equipment. As a secondary tillage tool, it requires only one pass to produce a perfect tilth for planting.

**Q: How fast should I ROTAVATE?**

**A:** Speed depends on tractor size, tillage width, soil type and the specific application. As a general guide, 2½ to 4 m.p.h. can be expected in primary tillage, 4 to 6 m.p.h. in secondary tillage, and 1½ to 3 m.p.h. for landscaping and nursery work. The lower the available horsepower, the slower the forward speed. But remember that a single pass across the land with a ROTAVATOR would mean three or four passes using other tillage methods.

**Q: How does a ROTAVATOR work in alfalfa or hay pastures?**

**A:** Pastures or alfalfa, like crop residues are chopped by the ROTAVATOR blades and mixed evenly throughout the soil. Two passes spaced 10 to 14 days apart will effect a complete kill. If this is not required, alternate strips may be ROTAVATED to stimulate growth of the existing plants.

## SPECIFICATIONS

**Tillage Widths:** 80" & 100"

**Tractor:** For tractors from 65 to 100 HP with 540 or 1,000 rpm P.T.O.

**Linkage:** Category II 3-point linkage.

**Tillage Depth:** Adjustable to 8"

**Rotor Speeds:** Multiple speeds available with the "Selectatilt" gearbox; 165, 181, 199 and 216 rpm standard. Optional rpm available; 126, 138, 151, 237, 259, and 284 rpm



## Model HB ROTASPIKE

For tractors 60 to 80 HP in primary tillage and up to 100 HP in secondary tillage.

Tillage Width 90" & 120"

Provides higher speed secondary tillage with less power consumption. The blades are replaced by spikes, giving speeds to 6 MPH while working a 10 foot path behind an 80 HP tractor; wider and faster operation than is possible with any other bladed tiller.





# Model E

For tractors of 35 to 65 HP



Model E-80 shown above is equipped with an optional crumble roller.

**The most popular of all ROTAVATORS,** the Model E is available with central mounting for cultivation in specialty crops such as canes or bushberries, or offset mounting for general farmwork. Special models are available for cultivating strawberries. Designed for primary tillage operations, the Model E is ideal for landscaping, nursery work and black dirt operations. It is also highly effective in secondary tillage providing level seedbeds with an excellent mixture of soil and crop residues for both general crops and specialized vegetable operations. Both operations are made possible through the control afforded by the exclusive "Selectatilt" gearbox.

**Q: Is ROTAVATION really economical?**

**A:** It's probably the most economical tillage method. You save in fuel and

operating time during those periods when field time is most limited. You save on the tractor, putting fewer working hours on it. You also save your land, for with less traffic there is less compaction, which causes hardpan and poor drainage.

## SPECIFICATIONS

**Tillage Widths:** 50", 60", 70" and 80"

**Tractor:** 35 to 65 HP with 540 or 1,000 rpm P.T.O.

**Linkage:** Category I or II 3-point linkage; IH Fast Hitch kit available.

**Tillage Depth:** Adjustable to 8"

**Rotor Speeds:** Multiple speeds available with "Selectatilt" gearbox; 122, 153, 172, and 216 rpm is standard. Optional 85, 95, 110, 140, 195, and 245 rpm available.



# Model J

For tractors of 18 to 28 horsepower.

A new high in performance for low horsepower tractors; ideally suited for use by farmers, nurserymen, vegetable growers, plus serious weekend farmers and home gardeners working with smaller tractors. Built to give the same performance as any other model providing it is kept within its designed horsepower range. Perfect seedbeds are possible in a single pass with an even mix of crop residues. It may be used as a primary tillage tool, or for weed control, and it has the added advantage of maneuverability for working in areas where large equipment is impractical.

## SPECIFICATIONS

**Tillage Width:** 32", 40", 50" or 60"

**Tractor:** For tractors of 18 to 28 HP with maximum engine capacity of 100 cu. in. or 75 ft./lbs. torque

**Linkage:** Category 1, 3-point linkage

**Tillage Depth:** Adjustable to 7"

**Rotor Speeds:** 250 rpm at 540 PTO

### Q: How deep can I ROTAVATE:

**A:** As deep as necessary for a good seedbed. Usually four to seven inches. The ROTAVATOR is not designed to be a deep tillage tool, however, greater depths can be achieved by multiple passes. Remember that the top few inches contain the richest topsoil, but it requires ROTAVATION to put it in the best possible condition.





# Model HN

For tractors of 12 to 18 HP



## MODEL HN 40

A new ROTAVATOR for the small agricultural tractors, scaled down in size, but not in performance. Built with all the power and stamina of any other model, it is guaranteed to outdig, outlast, and outperform any other tiller in the same power class. It is capable of all tillage applications from primary tillage, preparing ground directly from pasture, alfalfa or old lawns, to perfect seedbeds for vegetables, grass seed, or flowerbeds, plus efficient weed control in nursery and berry operations. This capability brings all of the benefits experienced by large scale farmers and commercial growers to the owners of tractors in the smaller horsepower range. Features include availability for tractors with both clockwise and reverse direction P.T.O. protection of tractor and machine by shear pin drive assembly, and low power consuming blades.

## SPECIFICATIONS

**Tillage Width:** 40"

**Tractor:** For tractors of 15 to 18 HP

**Linkage:** Category 1 or 0, 3-point linkage

**Tillage Depth:** Adjustable to 7" via optional depth control systems

**Rotor Speeds:** 150 to 240 rpm, depending on tractor PTO

### **Q: What will ROTAVATION do to cornstalks and other crop residues?**

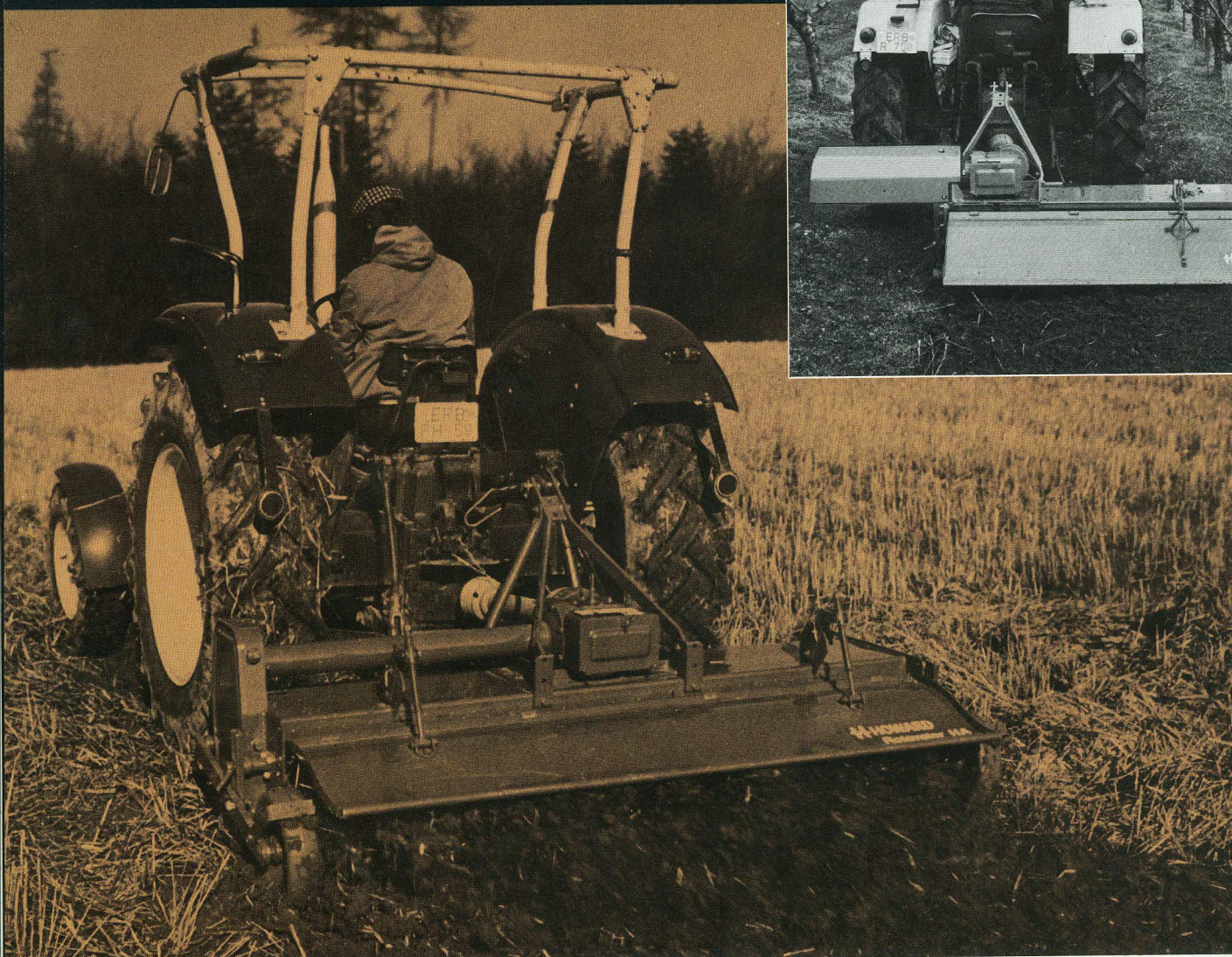
**A:** A ROTAVATOR is unexcelled in its ability to chop residues of any crop and evenly mix them with the soil; a practice that adds fertility to the soil, reduces compaction, increases its moisture retention capacity, and allows the soil to warm up earlier in the spring. No other tillage method can cut crop residues into a manageable size and incorporate them so evenly in the soil.



# Model HA

For tractors of 25 to 55 HP

Special variable offset model available for orchards, groves, and vineyards.



Model illustrated is fitted with optional depth control wheels. (Skids are fitted as standard)

**Ideal for the small farmer, nurseryman, and specialty crop grower**, this machine is light and maneuverable and easily transportable, making it ideal for multi-location operations or rental yards. It has the full capability of all HOWARD ROTAVATORS, chopping and mixing residues throughout the soil, eliminating soil compaction and preventing erosion. No matter what the season, you'll find the HA will figure prominently in soil management programs. Used as a primary tillage tool in the spring, fall and winter, or as a secondary tillage tool to produce perfect seedbeds in a single pass. In summer, weed control and cultivation in vineyards, bushberries, orchards, nurseries and similar operations are accomplished easily with either the Selectatilt or the single speed models. The variable offset option permits close work without damage to low hanging branches.

#### **Q: Do I have to plow if I ROTAVATE?**

**A:** No. The HOWARD ROTAVATOR is designed as a complete tillage tool, dispensing with all other tillage implements. Only under special conditions, such as poorly drained soil high in clay content, which tends to pack and form hardpan, is some form of deep tillage tool necessary. Ideally, a V-CHISEL plow would be used here to undo the damage caused by years of compaction. ROTAVATORS are also ideal secondary tillage tools for seedbed preparation after plowing.

#### **SPECIFICATIONS**

**Tillage width:** 40", 50", 60" and 70", center and offset mounting

**Tractor:** For tractors in the 25 to 55 HP range

**Tillage Depth:** Adjustable to 7"

**Linkage:** Category I or II 3-point mounting

**Rotor Speeds:** Single speed model — 190 rpm  
Selectatilt model — 165, 190, 210 and 235 rpm



# Total Tillage

The fastest and most economical means of preparing perfect seedbeds.

The complete soil management system that is called "Total Tillage" involves just two steps: First a pass with the deepcutting V-CHISEL (preferably in the fall) to break the hardpan and leave a cloddy surface that will hold moisture and prevent runoff. This leaves the rich topsoil on top instead of turning it under, as with a moldboard plow.

Then Step Two; fast seedbed preparation with a ROTAVATOR just before planting. The result is a perfect seedbed in a single pass. Your entire operation can become even more efficient and time saving by incorporating chemicals and

adding planting equipment to the ROTAVATOR accomplishing tilling, planting or seeding in a single pass.

Bladed Rotors are available in widths from 32" to 180". Spike Rotors from 70" to 180". The SPIKE ROTOR, designed for secondary tillage, combines all the advantages of rotary tillage equipment, yet is capable of working at much higher forward speeds and with far less power requirement. The crumble roller also helps level the final seedbed eliminating wheel marks. THE ULTIMATE IN POWERED TOOLS FOR SECONDARY TILLAGE.

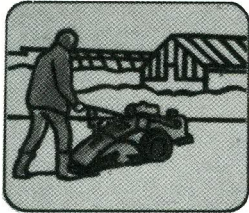




# SPECIAL APPLICATIONS FOR HOWARD EQUIPMENT

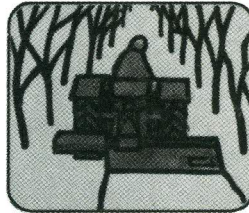
## NURSERY

Both hand-controlled and tractor-mounted units designed for the commercial user. For work under glass, preparing soil for liners, inter-row cultivation, turning in cover crops, mixing compost and as general clean-up tools around the nursery. Widths available for the narrowest rows.



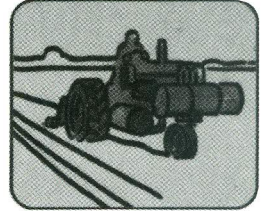
## ORCHARDS AND GROVES

Special variable offset models are available for working orchards, groves and vineyards. These fully offset models work close to the trunks and accurate depth control prevents damage to the feeder roots. The variable offset model can be centrally mounted for general primary tillage fieldwork.



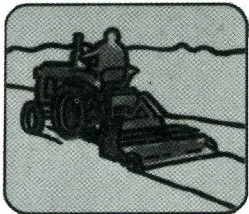
## CHEMICAL INCORPORATION

Unsurpassed for incorporating both dry and liquid chemicals. The slice, loose and mix action of the HOWARD Blades provides superior incorporation to that accomplished with discs or harrows. Accurate depth control puts the chemical exactly where required.



## LANDSCAPE

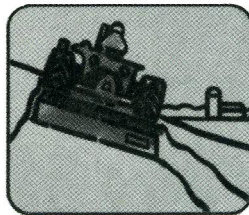
ROTAVATORS® are used by all leading landscape contractors. Dependable commercial units designed for working eight to ten hours a day, every day. Suitable for new building site work,



gardens, parks and highway verges. True workhorses that will outdig and outlast all other tillers in their class.

## CONTOUR FARMING

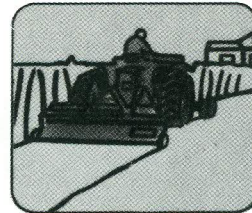
A perfect application for HOWARD ROTAVATORS®. Accurate depth control leaves the soil where it belongs. Since there are no dead furrows, work can be accomplished both up and across the hillside. A ROTAVATED



seedbed will hold more water, and the mixture of crop residues act as miniature dams to prevent run-off and protect against wind erosion.

## MINIMUM TILLAGE

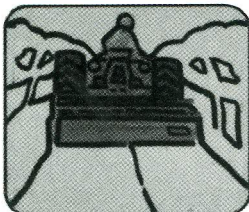
True minimum-trip tillage is the one-pass application with a primary-tillage ROTAVATOR® to prepare seedbeds for planting. Secondary tillage models also reduce the number of trips in heavier clay soils. Seedbed



preparation, chemical incorporation and planting can be accomplished in one pass on land plowed or chiseled in the fall.

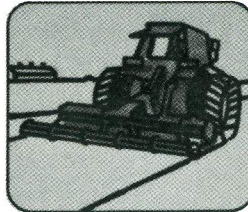
## VINEYARDS AND BUSHBERRIES

ROTAVATORS® have been used in vineyard work since the early 30's and are still ideal machines for weed control and turning in cover crops and prunings. Be it Europe or the U.S.A., HOWARD® leads the field in vineyard culture.



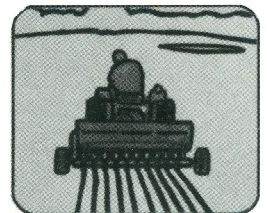
## SECONDARY TILLAGE

The ROTASPIKE® is ideal for high-speed secondary tillage applications, breaking the clods and mixing the top of the seedbed without bringing up cold, wet soil from the bottom. Crumble rollers accurately control depth and consolidate the seedbed, leaving a perfect finish for planting and chemical incorporation.



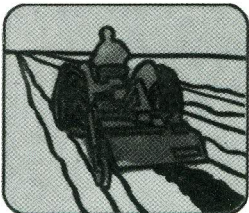
## TURF AND PASTURE AERIFICATION

Total turf aerification with special blades that slice through the turf into the soil, shaking the upper layers without damage to the surface. The soil in the root area is loosened with the shaking action, relieving all compaction. Both overseeding and sprigging may be accomplished either with or directly behind the TURF QUAKER®



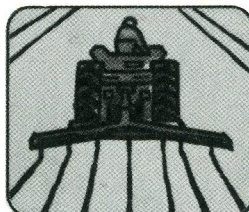
## STRAWBERRY CULTURE

Special row crop models with adjustable rotor flanges and crop guards are available for cultivating between the rows, turning in the straw mulch, cutting back the runners and controlling the bed width.



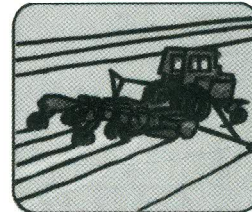
## TOTAL TILLAGE

Deep primary tillage with the HOWARD V-CHISEL® plow followed by one-pass secondary tillage for perfect seedbed preparation. Complete soil management in two passes.



## PLANTING

Planters or drills can be used in conjunction with the ROTAVATOR® reducing the number of trips over the land.



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