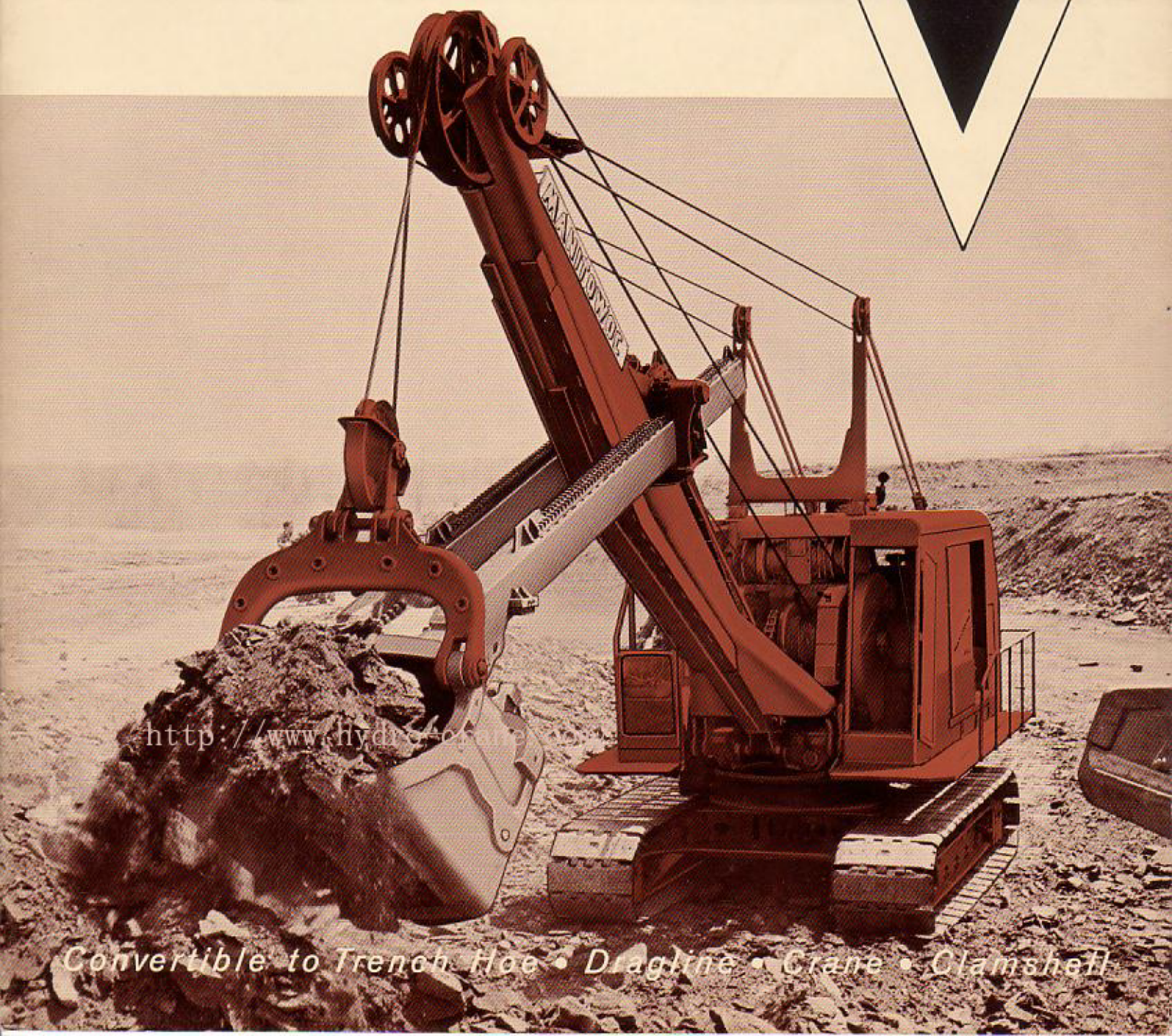


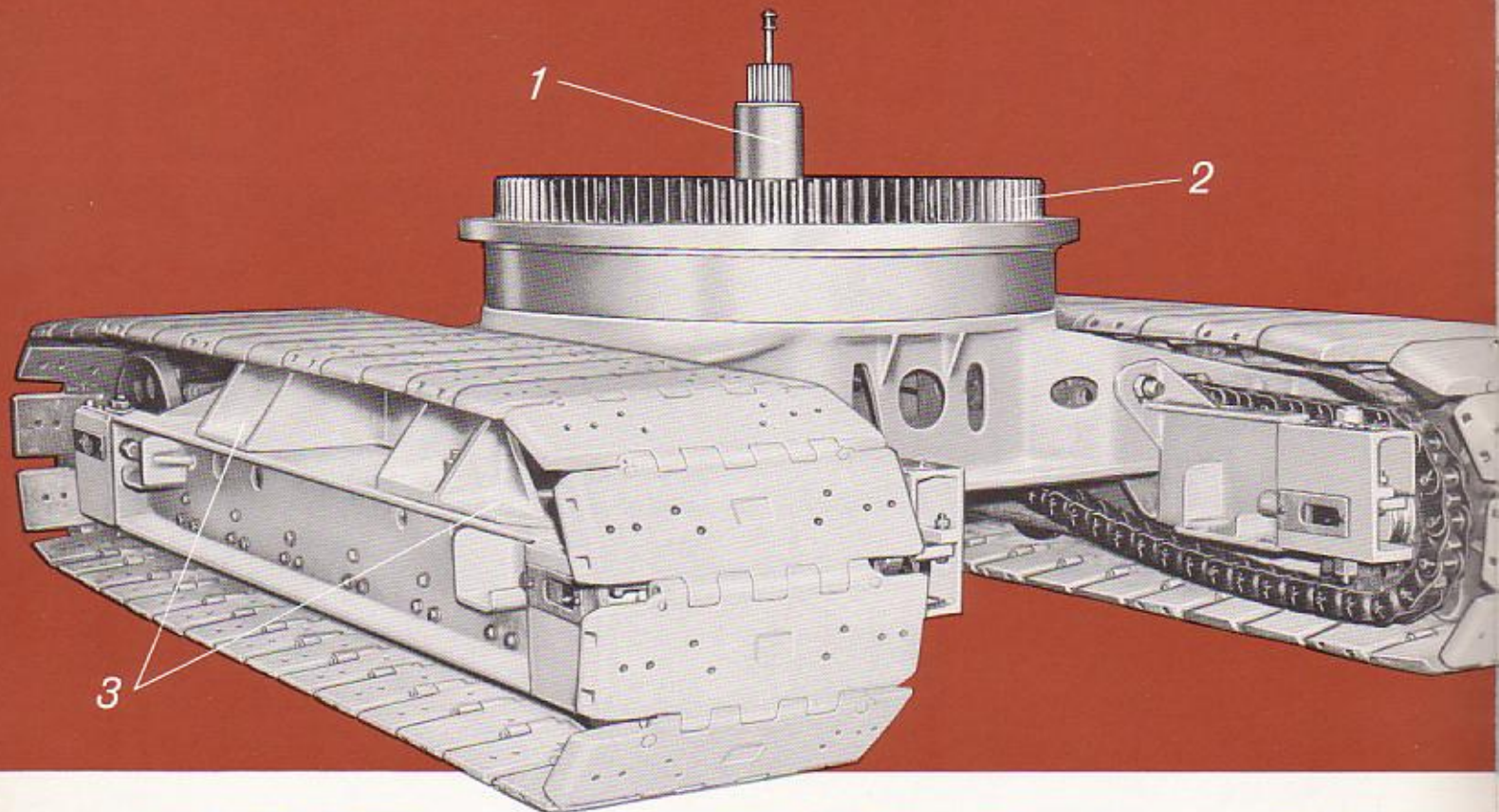
MANITOWOC 3600

3 cubic yard shovel..
champion in its class



<http://www.hydracore.com>

Convertible to Trench Hoe • Dragline • Crane • Clamshell



A SOLID CRAWLER BASE FOR

1. LONG LIFE KING PIN

Large diameter, long life king pin can easily take the full load of the machine if necessary. While there has never been a king pin failure in the long history of Manitowoc machines, for purposes of easy major disassembly the king pin can be dropped through the carbody for removal.

2. MASSIVE RING GEAR

Has extra heavy cut teeth, is machined from alloy steel forging. Big diameter "machined" roller path (removable) provides a smooth, solid foundation for house rollers when lifting bonus capacity loads over the sides, front or end.

3. DIRECT MOUNTING OF CARBODY ON CRAWLER FRAMES

Integral wings of the huge, one-piece carbody bear directly on the crawler frames for a firm, solid base.

This proven design eliminates "through axles" which tend to bend with use, causing abnormal tread wear, "throwing" of crawler treads, misalignment of drive chains and loss of stability. Entire crawler assemblies can be removed easily for shipping.

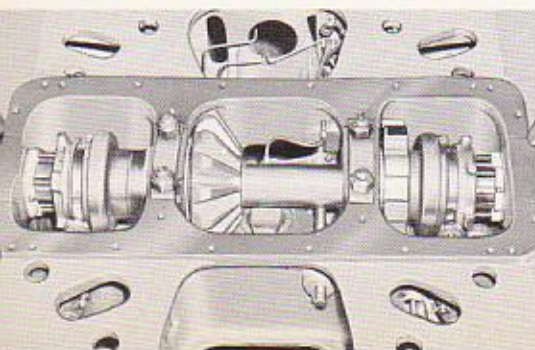
4. SELF-CLEANING CRAWLER DRIVE

Designed for self-cleaning — dirt falls free because of open type sprockets, tumblers and rollers. Drive and chain sprockets mounted between bearings keep shafts from carrying torque or over-hung load.

5. PROTECTED DRIVE CHAIN

By positioning the drive chain within the tread band, complete protection is assured. There's less maintenance, no downtime from a jammed crawler drive.

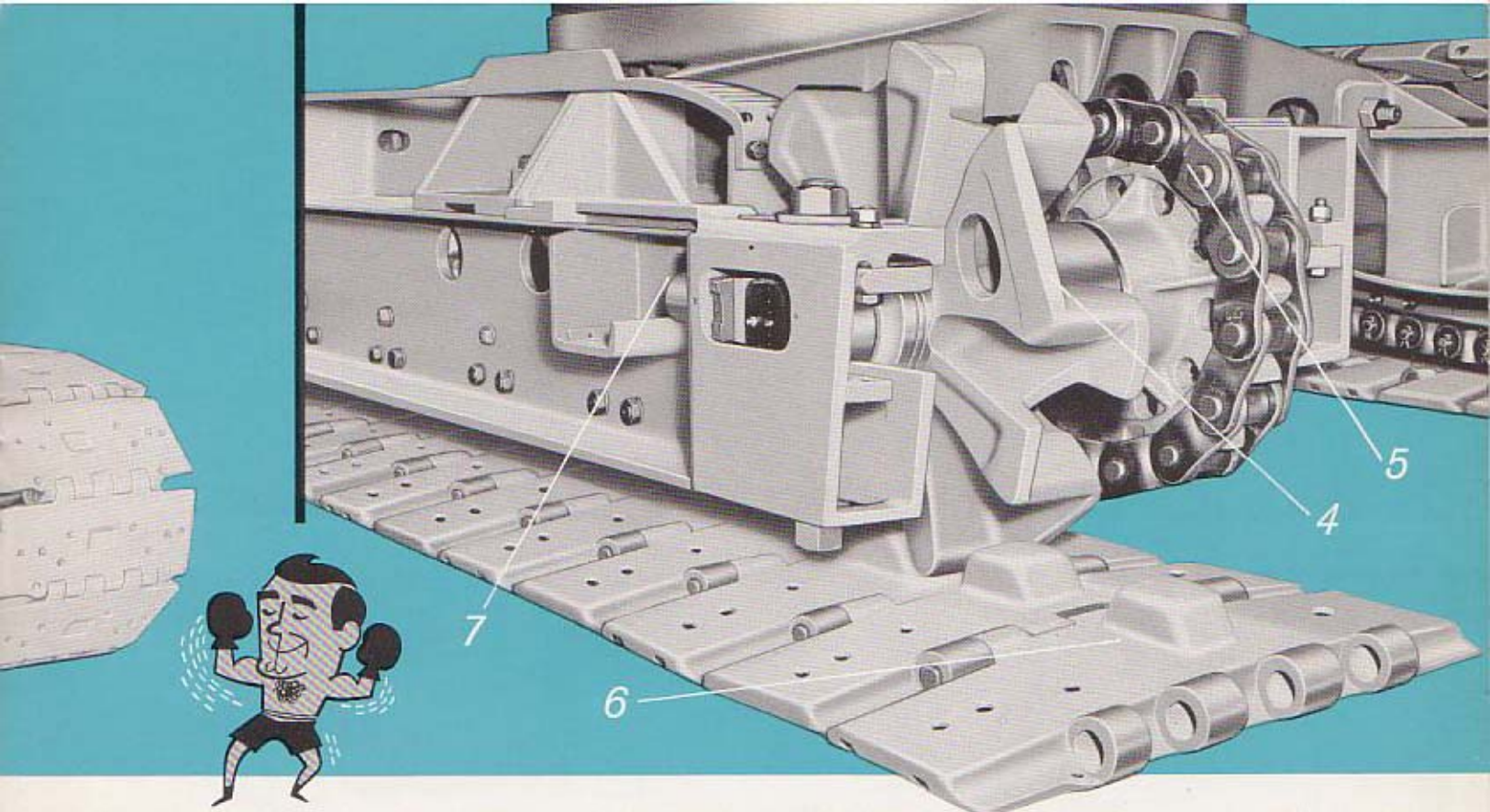
SHORT, RIGHT-ANGLE TURNS IN EITHER DIRECTION



Here's the most simple travel mechanism made for the number of functions involved. Horizontal travel shaft has only one bevel gear and two "jaw-type" steering clutches. Either crawler can be locked for steering in close quarters, with cab in any position. You don't need a "40 acre field" to turn! Neither dirt nor grease affect the jaw-type clutches . . . unlike brake band type, no adjustment is needed. All travel gears have close-fitting covers and run in oil . . . require only occasional servicing. Air controlled steering is available.



NEUTRAL POSITION — Diagrammatic view from below of right travel clutch (solid color) in disengaged position. Left travel clutch — not shown — is identical in form and function.



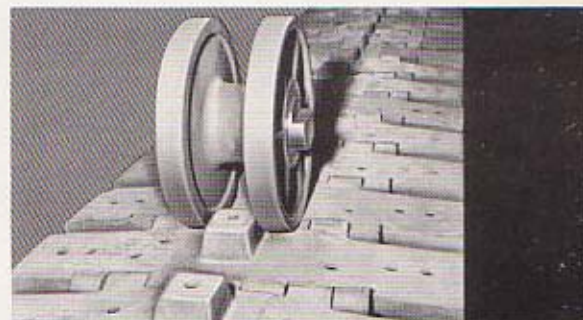
CHAMPIONSHIP PERFORMANCE

6. BOX SECTION TREADS

Husky treads are internally bridged for extra strength . . . have beveled top so dirt will spill off. There are no open pockets to hold rust-producing dirt and moisture . . . rounded edges will not dig in.

7. SIMPLE ADJUSTMENT OF PAD TENSION AND DRIVE SPROCKET ALIGNMENT

Only Manitowoc can give you ultra-modern Jack Adjustment of crawler pad tension. With the old-time, "set bolt" method it's almost impossible to properly balance pad tension on the two crawlers. However, with the modern Manitowoc method, your jack does all the hard work, providing "leeway" for the insertion or removal of precise adjustment shims between the frame and the axle. This same method of adjustment keeps the crawler drive sprockets in perfect alignment . . . provides more even tread and drive chain wear without side-cutting or twisting. You don't have to remove crawler pads and break or burn off fittings to make this adjustment.

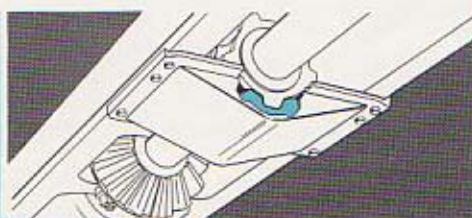


SELF-CLEANING, "SKID-PROOF" IDLER ROLLERS — The Manitowoc idler roller is carried in a socket with a locking plate which positively prevents skidding and uneven wear. Shafts on intermediate rollers have room to oscillate so roller can't bind or skid . . . can never "freeze". Manitowoc gives you the largest roller shaft of any machine available. Unlike less modern rigs, these rollers are on shear blocks — not mounted with unsatisfactory U-bolts or clamps.

These closely spaced rollers (six on each side) are of the double flange design to keep treads running true and prevent buckling. Made from forged, heat treated steel, each roller by itself can support the total weight of the whole machine!

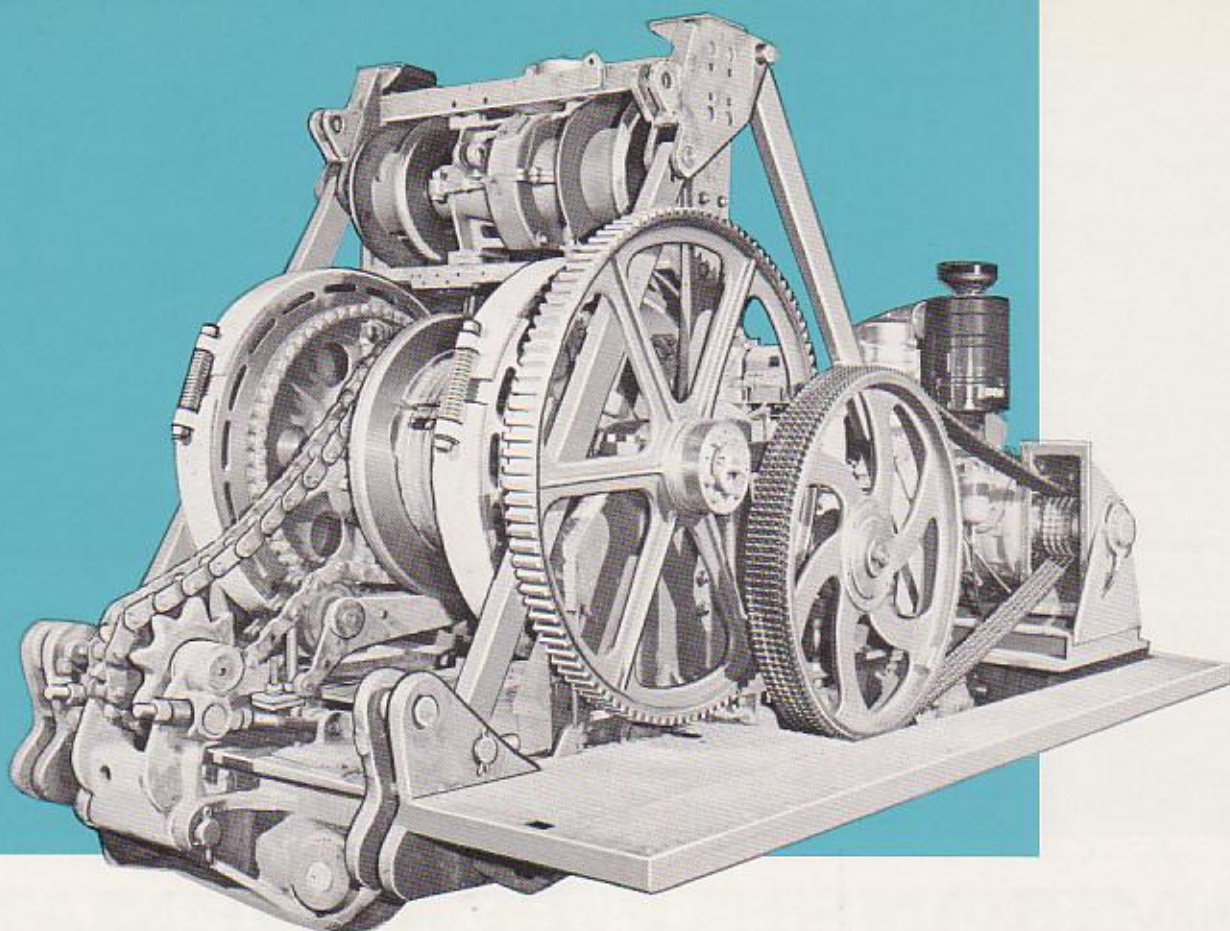


ENGAGED POSITION — Right travel clutch shown engaged with drive gear for right turn. Either or both travel clutches may be engaged. Either can be placed in neutral or locked.



LOCKED POSITION — For a positive travel lock, sturdy ratchets on the clutch shaft engage locking lug in gear cover. (See solid color portion of cut-away view.)

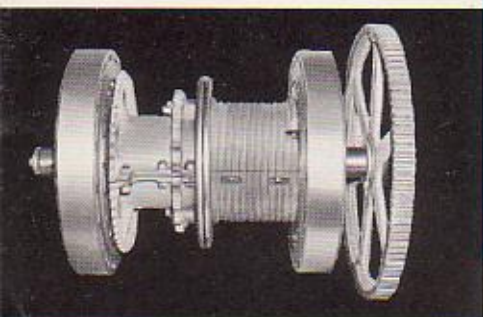
- ✓ **Box Section Crawler Frames** provide complete protection for the intermediate rollers, idler roller and drive member. Intermediate rollers are safely "cradled" within the frames for perfect alignment.
- ✓ **Positive Digging Lock** is cab-operated, locks firmly against shovel crowd or dragline forces. Manitowoc digging lock is integral part of travel gear train and not merely a brake as on many old-style machines.
- ✓ **One-Piece, Cast Alloy Steel Carbody** completely encloses travel shaft and gears for minimum maintenance. Will not change shape or become loose even after years of heavy work. Keeps shafts and gears in permanent alignment.



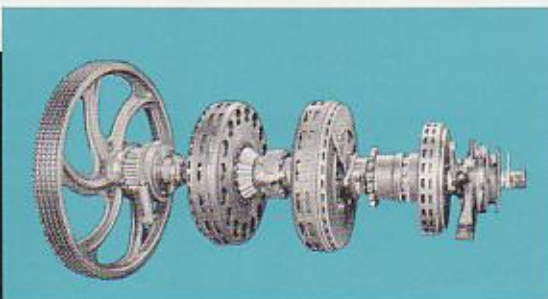
With only 14 gears, including the boom hoist, there's no wasted power, no gears turning unnecessarily. Just a smooth flow of power for maximum line pull and faster cycles. Model 3600 machinery components are logically grouped so that every part is easily accessible — service time is cut. As standard equipment, you get torque converter power application. And power is harnessed — simplified Manitowoc control insures no

excessive torque build-ups — no "runaway" machinery speeds. Use of the torque converter reduces shock loads, prevents engine stalling, automatically fits the "gear ratio" to the load, and is easier on all driven parts. The husky rotating bed is a single alloy steel casting. Rotating bed is jig drilled, for precise accuracy and life-long alignment of all main machinery.

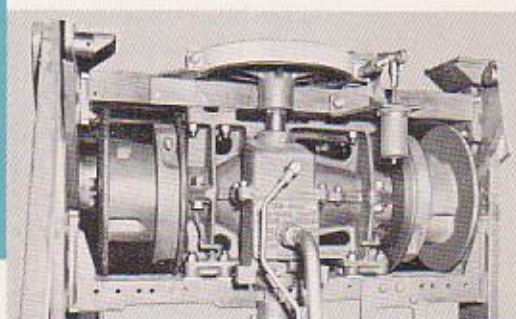
Simple, compact upper works for power-



MAIN DRUM ASSEMBLY — Single shaft carries both hoist drums. Air-activated drum clutches give you positive application for accurate control at all times. Two piece external brake bands are readily accessible for simplified single-point adjustment. "Power Assist" on the drum brakes reduces operator fatigue. Drum gear is induction hardened . . . dips in oil. The cast steel drums have removable cast steel laggings or sprockets for fast changes to different front end equipment.



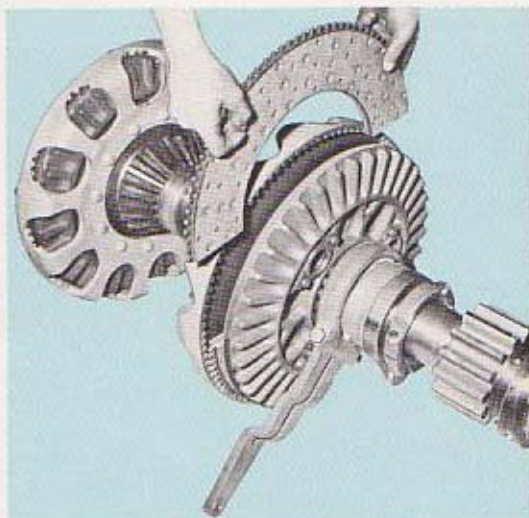
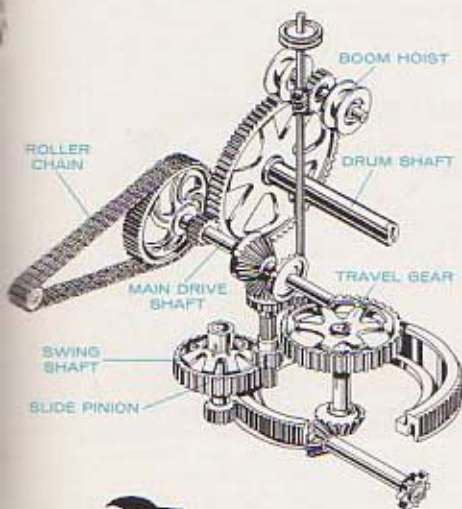
COMPACT MAIN DRIVE SHAFT — All driven parts spline-fitted to the heat treated, alloy shaft. Every pinion — the part receiving the toughest punishment — is made from forged alloy steel, heat treated. Big volume, forced air system maintains the normal working temperature of friction surfaces, assuring the greatest clutch life.



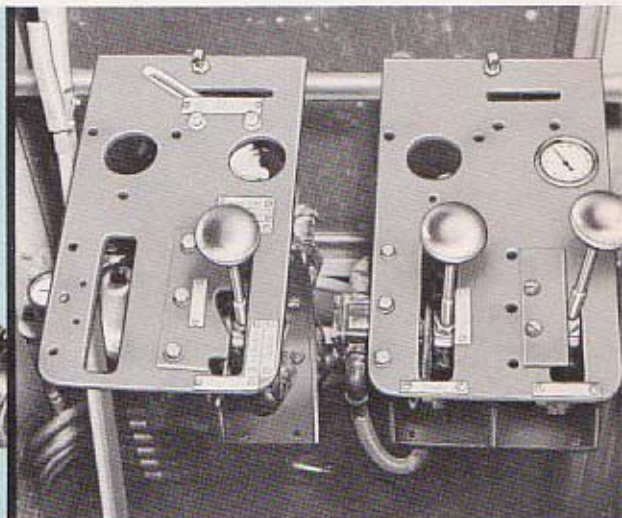
DIRECT-PULL DUAL DRUM BOOM HOIST — Has two big drums for direct, straight line, equalized pull on the boom . . . giving longer cable life. You get fast power booming up and down — driven by the reversing clutches of the main drive shaft. Includes automatic, spring-applied, full-safety brake — plus emergency brake. Independent boom hoist, similar to the standard unit, is available for high speed jobs where simultaneous booming and traveling or swinging is necessary. Operates completely independent of other functions through a separate set of disc clutches.

EXCLUSIVE
POWER-FLO
ELIMINATES
WASTED POWER

Follow the simple power train arrangement in the diagram and you'll see why Manitowoc "adds power by saving power." Exclusive Manitowoc *Slide Pinion* is driven by the main drive shaft — uses only one set of clutches to drive either travel, swing, or boom hoist. All other gears are disconnected till their function is needed. With the Slide Pinion in the *top* position, power flows in a straight line from the reversing clutches through the center pin to the travel shaft only. In the *centered* position — as shown here — reversing clutches remain free to operate the boom hoist only. When Slide Pinion is *down*, power flows directly to the swing shaft only. That's all there is to it — the most simple power train ever devised: with no wasted power, faster operation, and easier on every part.

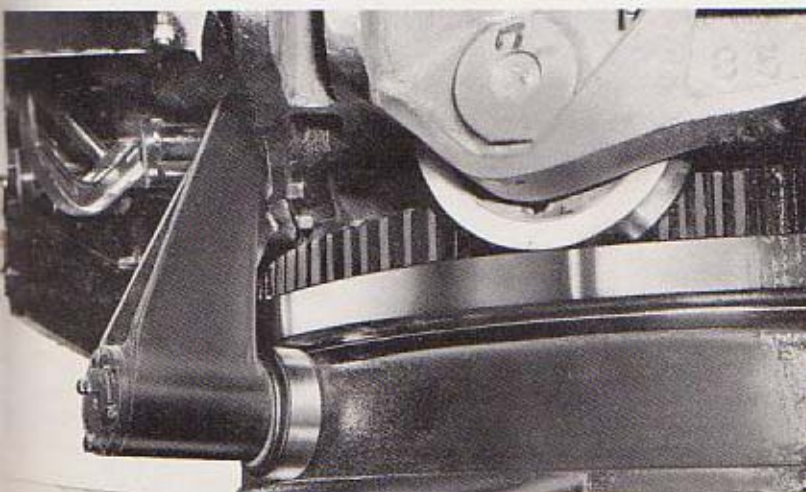


SMOOTH, FAST-ACTING CLUTCHES — Disc-type swing-travel and retract clutches give you smooth control in these hard working components. There's no need for constant adjustment, and replacement is easier, too. Merely slide the pressure plate back and lift out clutch segments.

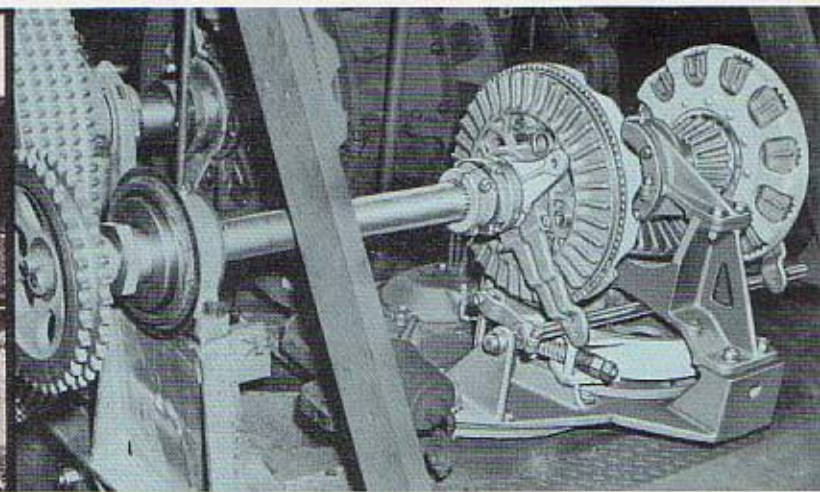


SIMPLE, FOOL-PROOF AIR CONTROLS — "Short-throw" air controls are best for any excavator work . . . easier on the operator, insuring increased production. Sensitive variable pressure valves keep the all-important "feel" of the machine. Air controlled steering is available.

packed Championship Performance



SIX LARGE SELF-ALIGNING HOOK ROLLERS — Four rollers in back and two in the front. Use of tough alloy steel means rollers don't "squash" under adverse loading conditions . . . keep machine trimmed up like a billiard table for years of hard service. Precise, easy adjustments assure a consistently perfect match with the roller path.



CONVENIENT INDEPENDENT SWING — Here's an option that's well worth the extra money if your usual job schedule calls for a fair amount of steel setting. And it's really handy for "tight quarters" maneuvering. Operates through a separate set of disc-type clutches with all the advantages of the main reversing units. Manual type swing brake is handy for slowing the swing or holding in any position.

Big, comfortable all-weather cab provides full vision with no blind spots. Ample, padded, "4-way" adjustable seat assures operator comfort the entire shift.

Underdrive dipper sticks apply full digging power at the dipper. The digging force is applied at the lip of the dipper, pivoting at the dipper bail to push the stick ends upward into firm mesh with the drive pinions.

Rugged, 27' tubular boom can take the toughest twisting punishment offered. Tubular shaped design gives you the strongest possible boom with minimum weight.

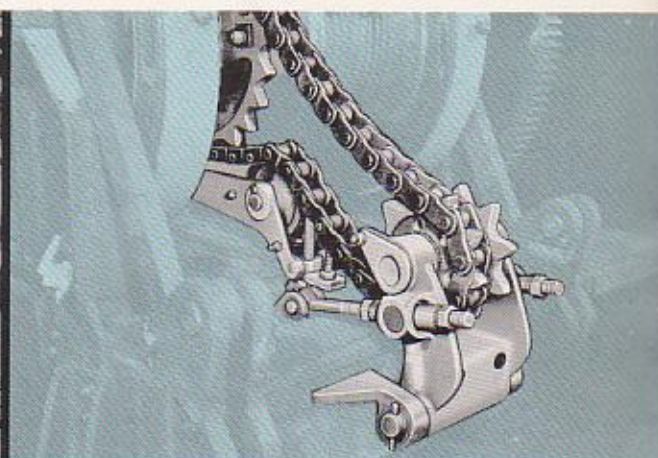
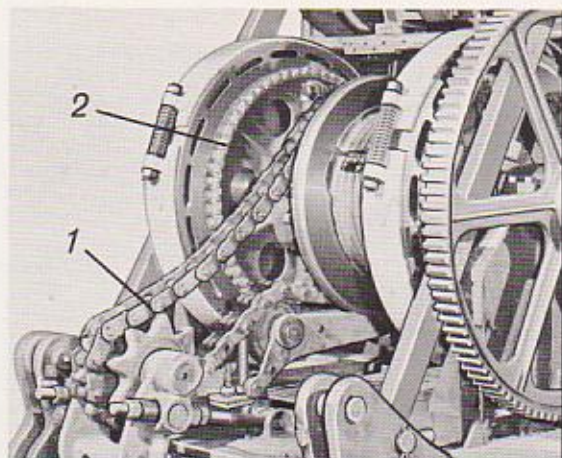
Reinforced, box section, twin sticks are fabricated from alloy steel; carefully positioned to provide maximum strength to resist twisting and bending. Racks are forged and heat treated alloy steel.

Husky shipper shaft with dual guide rollers is positioned to keep dipper sticks in perfect mesh at all times. There's no power loss from dipper sticks binding and twisting in the saddle block under the stress of hard digging. Hardened alloy drive pinions and chain sprocket are connected to the shaft by involute type spline. Four adjustable guide rollers provide powerful crowding action and less wear on the sticks.

Easy to ship because design forethought makes it easy to disassemble the Model 3600 shovel to meet shipping dimensions. Simplified counterweight removal and crawler disassembly eliminates extensive, time-wasting advance preparations.

MODEL 3600 SHOVEL

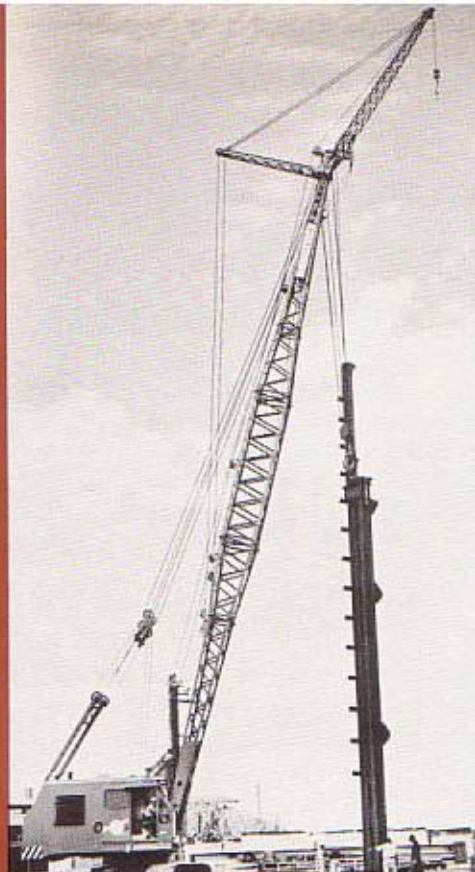
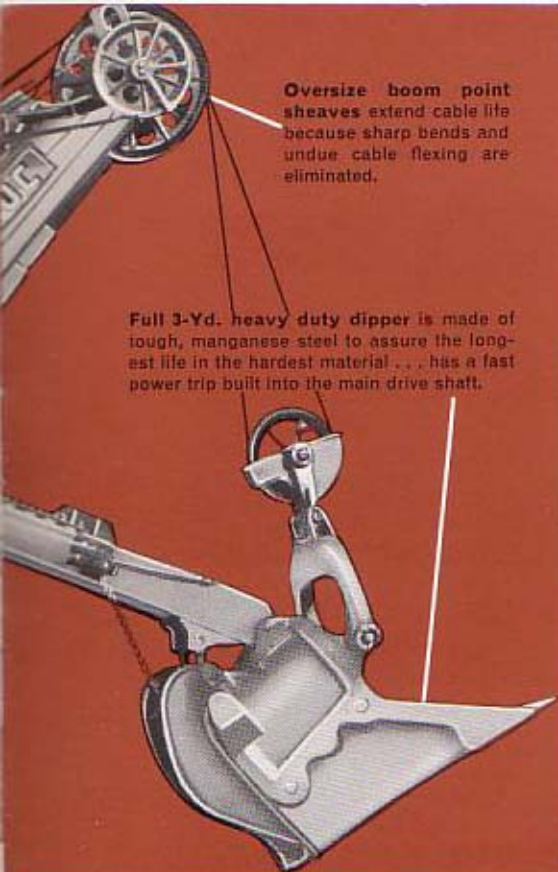
A TWO-FISTED OUTPUT CHAMP



1. INDEPENDENT CHAIN CROWD is quick-acting—driven from a detachable sprocket mounted on the right main drum. Independent and positive power applied instantly to all digging functions.

2. HIGH SPEED RETRACT has double disc clutch reversing on the main drive shaft for a fast retract that speeds the cycle considerably.

SIMPLE, POSITIVE CHAIN TIGHTENER — Quickly accessible . . . crowd or retract strands are easily set or locked with adjusting nuts. Precise matching and proper positioning of the chain tightener, crowd and retract, controls chain tension — cancels out any possibility of misalignment of these components.



CRANE, CLAMSHELL

For a fast switch to crane duty, merely change removable laggings where needed and mount the desired boom. Strong, high tensile, alloy boom (liftcrane) has large diameter, multiple sheaves and open throat boom point, with anti-friction bearings. Boom sections available in various sizes and weights. Flanged boom joints simplify "insert" additions and removal. Also available are jibs of various capacities and lengths.



FOLDING GANTRY

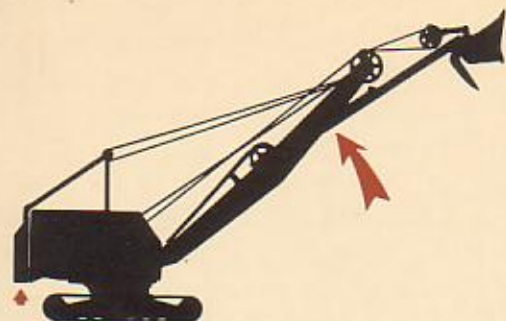
Gantry is quickly lowered for moving machine under low overhead obstacles without removing the boom. (See photo at left.) Front portion of gantry folds forward to form "A" frame for raising extra long booms. In normal operation, the gantry gives the boom hoist cables a better working angle for more lift advantage . . . "steadies" the boom during excavator operations.

Quickly convertible to championship Crane, Clamshell, Dragline and Trench Hoe Performance

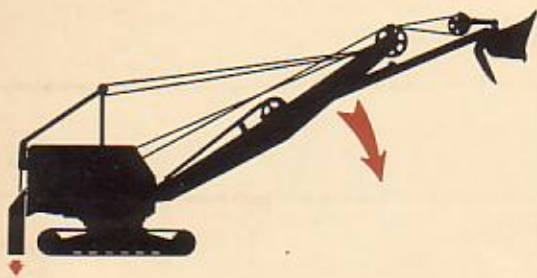


DRAGLINE

A low center of gravity and excellent weight distribution makes the Model 3600 a real long-reaching dragline. Long crawlers and wide pads give you low ground bearing pressures, essential for long reach drag operations. The powerful dragline spools on the right drum with the faster hoist line off the larger left drum. The big, wide-flange boom point is a cable saver . . . assures an ample seat for the cable when it is pulled at an angle.



Boom hoist "power-up" and the counterweight is up!



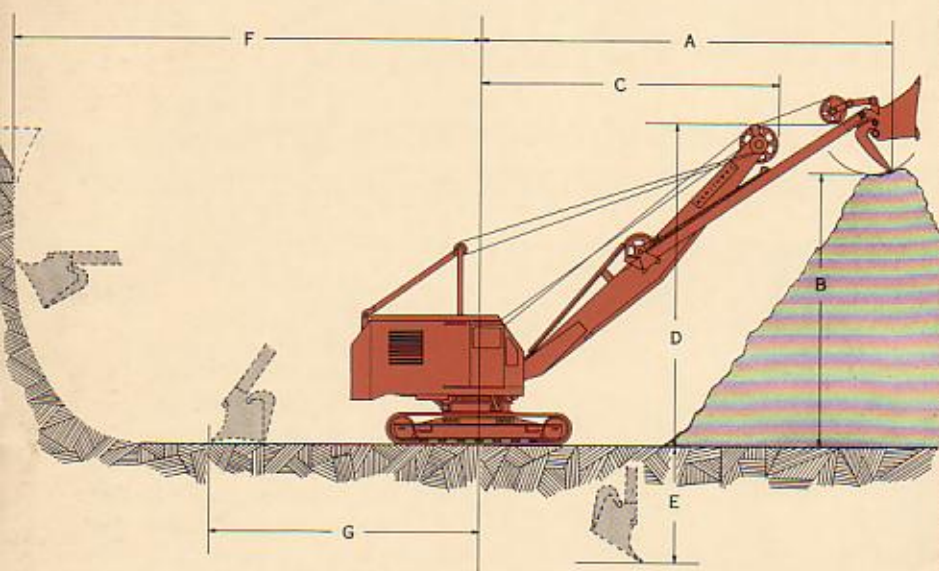
Boom hoist "power-down" and the counterweight lowers!

Fast, easy **Counterweight Removal** . . . machine does all the work

Counterweight removal is handled completely by the Model 3600 itself — no jacks, blocking or other machines are needed. Here's the exclusive method: By attaching two cables from the counterweight through two sheaves in the top cab rear to a temporary hookup on the boom hoist drums and merely removing retaining pins and bolts, the counterweight can be raised or lowered by powering the boom hoist one direction or the other. Guide rails on the cab rear serve as aligning guides for installation or removal of the weight. Manitowoc's dual drum boom hoist provides even tension on the counterweight at all times.

When the weight is removed, the machine can maneuver or travel completely free of the counterweight.

MODEL 3600 GENERAL SPECIFICATIONS



GENERAL SPECIFICATIONS

Dipper Capacity		3 Cu. Yds.
Boom Length		27'
Length of Sticks		20'
Boom Angle		45°
Dumping Radius	A	34'-5"
Clear Dumping Height	B	21'-3 1/2"
Boom Clearance Radius	C	24'-7"
Boom Clearance Height	D	27'-8"
Depth Cut Below Floor Level	E	7'-7"
Maximum Digging Radius	F	40'-0"
Floor Level Radius	G	26'-2"

MACHINE DIMENSIONS

Crawler Shoe Width	38"
Crawler Length (Overall)	16'-5"
Outside Width	12'-10 1/2"
Height (Top of Cab)	13'-0"
Height (Gantry Lowered)	14'-6 1/2"
Minimum Clearance Above Ground	12 3/4"
Tail Swing — Shovel	12'-7 1/2"

WEIGHT

Standard Shovel	162,100 Lbs.
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SPEEDS

Diesel power with torque converter. Consult factory for engineering data relating to line pulls and speeds.

Because of continuing improvements, the Manitowoc Engineering Co. reserves the right to change these specifications at any time, without notice.

Manitowoc 3600

MANITOWOC ENGINEERING CO.

A Division of The Manitowoc Company, Inc. **MANITOWOC, WISCONSIN**