

**McCORMICK INTERNATIONAL**

# **B-450**

**DIESEL TRACTOR**



***THE BEST IN  
USABLE POWER***

# B-450 TRACTORS PACK

## FEATURES



*B-450 with 11 x 38 rear and 6.00 x 19 front tyres is suited to all agricultural applications. With the optional adjustable front axle shown here, a large range of adjustments are available for row-crop work. 88 or 100 inch rear tread axle is also available.*



*B-450 with 13 x 30 rear and 6.00 or 7.50 x 16 front tyres with fixed front axle shows operational advantages where the narrow tyre is unsuitable and wheel adjustment is not imperative.*

- **Big 264 cu. in. capacity engine**  
develops 55 horsepower. High pressure pintle nozzles slash diesel service costs.
- **International indirect injection**  
gives two-stage burning for complete combustion and low engine speed lugging characteristics. Simple, reliable injection pump.
- **Direct electric all-weather glowplug starting**  
with new long life circuit components. Heavy-duty 12-volt electric starter motor and system.
- **Heavy-duty clutch**  
for transmission of full engine power with low 45 lb. pedal pressure for less driver fatigue.
- **Five forward and one reverse speed,**  
heavy-duty transmission with extra built-in strength.
- **Differential lock**  
beats power-wasting wheel spin and puts maximum power on *both* wheels.
- **Self-energising disc brakes**  
provide long life with equal braking performance forward or reverse! Independently operated foot pedals, latched for road work. Parking latch is standard.
- **Engine-driven fully 'live' hydraulics**  
with large 3-gallon reservoir and light grade oil gives instant all-weather response.
- **Traction-boosting two-stage hydraulic control valve**  
provides additional weight transfer for those extra tough spots.
- **New geometry 3-point linkage**  
utilises full engine power for high linkage performance. New handy automatic hitch.
- **Robust swinging drawbar,**  
wide range of adjustments for correct draught for all conditions.
- **Choice of axle and tyre equipment**  
to suit the job. Full line of attachments to meet special requirements.

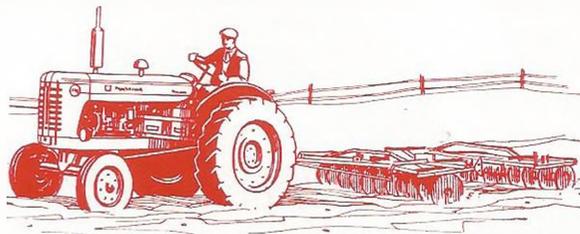
# POWER PERFORMANCE 5 WAYS



**PLOUGH POWER** Five furrows, 7 inches deep and 12 inches wide, general purpose ploughing or three furrows 14 inches wide and 12 inches deep, digger work, are normal working standards with the B-450. Traction is outstanding due to the new design linkage and two-stage hydraulic control



valve, both of which effect amazing new standards in weight transfer efficiency. Added to this, a weight of nearly 4,000 lb. on the rear axle (*without* wheel weight or water ballast) increases traction still further. B-450 traction means an extra furrow or a higher gear.



## **POWER-TAKE-OFF SHAFT DELIVERS MAXIMUM POWER**

555 r.p.m. at the P.T.O. shaft at rated governed speed and this means *FULL* power. No need to reduce engine speed and power to get the correct P.T.O. speeds. Balers, Harvester Threshers, Rotary Cultivators and all P.T.O. driven machines receive *full* power at the *right* speed, giving you *full* output with safety.

## **BELT POWER**

Power aplenty for your belt-driven machinery. Grinders, crushers, saws powered in minutes with the versatile B-450.

## **PULL FOR TRAIL-BEHIND IMPLEMENTS**

Heavy-gang discs fully angled, or other heavy trailing loads are handled with ease. The fully adjustable drawbar ensures that you always get the correct line of draught.

## **TIME-SAVING POWER VIA QUICK-HITCH**

With this easily operated Automatic Hitch, your equipment is hitched and unhitched in seconds, saving time and energy. Changing to a pickup trailer job is so easy. Take the ball socket off the main frame hitch point, turn the links over and put them on to the hook frame. You are then ready for pickup work. This pickup hitch is the easiest yet to bring into action.

***THERE'S FULL USABLE B-450 POWER FOR EVERY JOB***

# HOW THE B-450 GAINS



## 55 H.P. WORKING IN A BIG WAY

Big engine power is no use to you unless your tractor is capable of putting it to work—effectively and efficiently. That's where the B-450 scores over other tractors. It's a genuine *big* tractor, designed from the outset to utilise *big* power to do a *big* job. Here is where you gain with the B-450—it has both the *power* and the *ability to use it*.

## BIG DRAWBAR PULLS PROVE PERFORMANCE

The ability of a tractor to convert **all** its big power to useful work is measured in terms of drawbar pull. OFFICIAL TESTS on the B-450 have proved these outstanding results.

(i) Maximum Sustained Pull .....	9,300 lb.*
(ii) Maximum drawbar horsepower.....	50
(iii) Operating Maximum Drawbar Pull:	
1st Gear .....	8,800 lb.
2nd Gear .....	4,700 lb.
3rd Gear .....	3,650 lb.
4th Gear .....	2,650 lb.

The B-450 enables you to get the full value of BIG engine horsepower to do a BIG job!

\* B-450 N.I.A.E. Test No. 213/BS

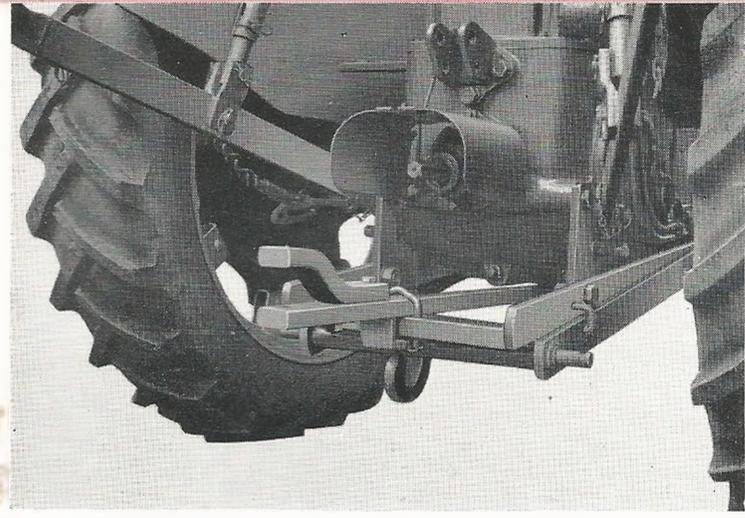


An unballasted rear axle weight of nearly 4,000 lbs. enables the B-450 to obtain maximum wheel grip on both linkage *and* drawbar work. Big drawbar pulls result from this rear axle weight because it gives optimum tyre deflections for traction. Work with linkage implements benefits, too, because B-450 traction is not so dependent on the implement, and therefore a regular working depth is maintained.

**3,930**

**2,130**

# BIG WORK CAPACITY



## UNDERFRAME PULL GIVES MAXIMUM ALL-WEATHER TRACTION FOR DRAWBAR EQUIPMENT

Drawbar of the B-450 is attached well forward, under the tractor main frame. This gives maximum traction by increasing the amount of downward thrust that the drawbar load exerts on the rear wheels. The greater the drawbar pull the greater this downward thrust becomes. Result, increased traction as drawbar load increases. The swinging drawbar is of robust construction. Simple, drawbar frame and hitching clevis adjustments offer the widest range of settings for maximum traction or correct power shaft alignment.

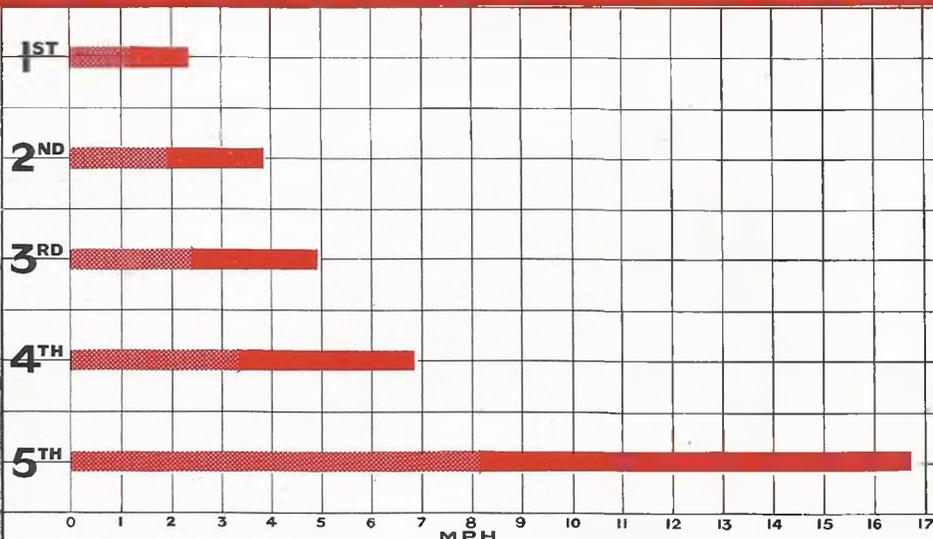


## HITCH POINTS THAT GIVE MAXIMUM ALL-WEATHER TRACTION FOR LINKAGE-MOUNTED EQUIPMENT

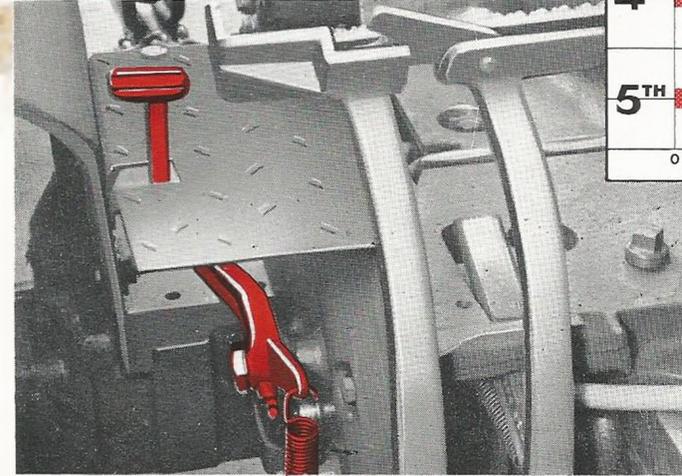
The B-450 rear-frame bracket-mounted hitch points are bolted high on the main frame. This is ideal for linkage-mounted equipment for all-weather traction, because the resulting angle of the lower links in work exerts a downward thrust on to the rear wheels giving extra traction. The Category 2 linkage is provided with two lower link hitch points, the lower one providing deeper penetration. Adjustable check chains and two-position check chain brackets provide a sway and no-sway linkage.

## WORK-MATCHED GEAR RATIOS GIVE ECONOMICAL POWER MATCH FOR ANY JOB

The B-450 gives the four most practical field speeds for big production output that you could possibly have in a big wheeled tractor. This enables you to fully match tractor pull power to field conditions and so obtain maximum fuel economy. A fifth gear provides a fast road speed of nearly 17 m.p.h.



B-450 tractor speeds based on 11x58 tyres from half-throttle to full governed speed



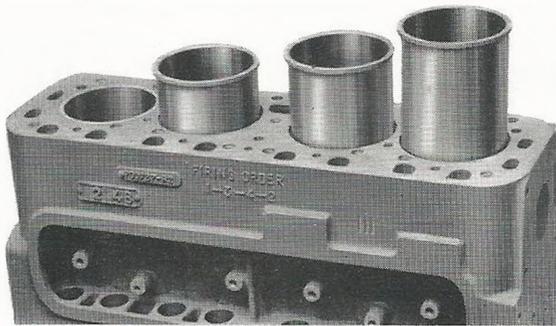
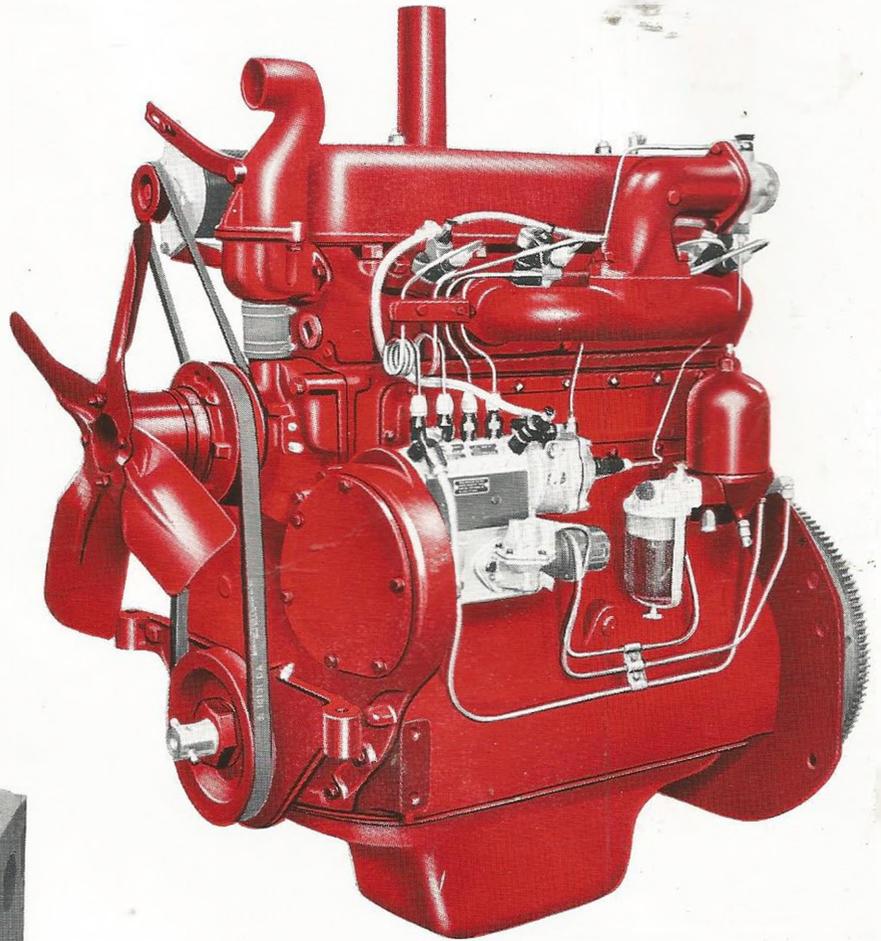
## DIFFERENTIAL LOCK BEATS POWER-WASTING WHEEL SPIN

Every farmer knows how wheel spin can reduce work output. The B-450 differential lock is the answer to this critical problem. The lock, which is engaged by an easily reached heel pedal, gives the effect of a straight-through rear axle. Under most conditions when wheel spin occurs the differential lock effectively restores traction.

# Reliable IH BD-264 indirect injection diesel engine

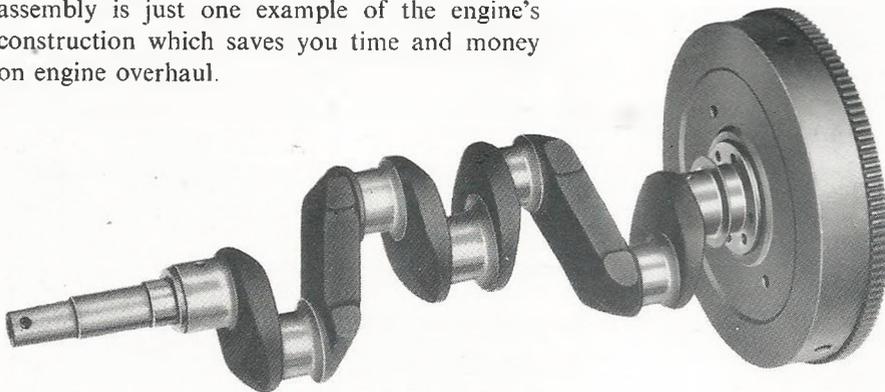
## for SMOOTH ECONOMICAL POWER

This robust, reliable IH engine gives you big power output with good fuel economy. It is built and equipped to outlast other engines and to require less maintenance, too. Key to its overall superiority is proved basic design and high quality production engineering methods.



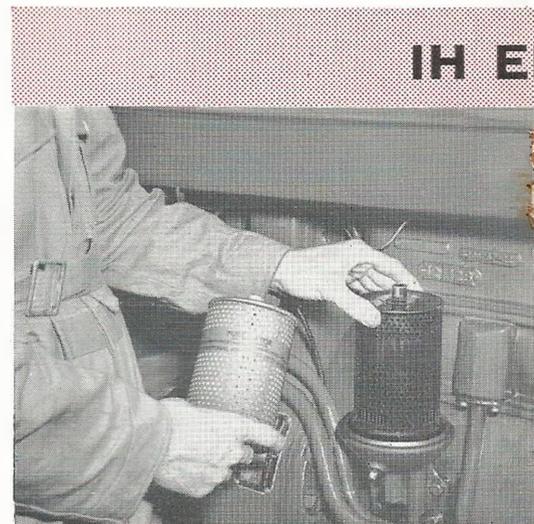
### **IH SERVICEABILITY IS AN ASSET**

The BD-264 replaceable piston and sleeve assembly is just one example of the engine's construction which saves you time and money on engine overhaul.



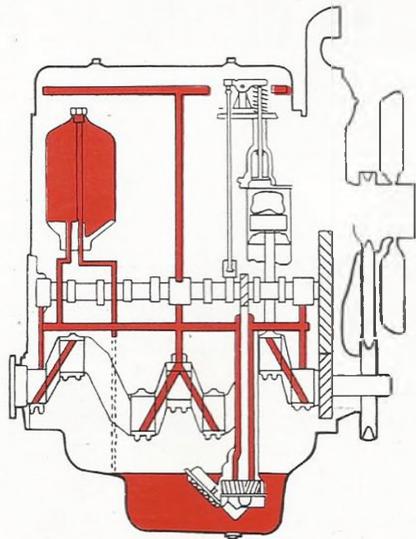
### **HEAVY-DUTY FORGED STEEL, INDUCTION-HARDENED CRANKSHAFT GIVES SMOOTH RUNNING WITH LONG JOURNAL AND BEARING LIFE**

The forged steel crankshaft is typical of the quality engineering in the BD-264 engine. As well as being dynamically balanced to give vibration-free performance, it is induction-hardened to provide hard wearing surfaces and yet retain a flexible centre to withstand shock-loading.



**Easily Replaceable Oil Filter**—element is renewable in seconds. It keeps lubricating oil free from harmful, abrasive sludge.

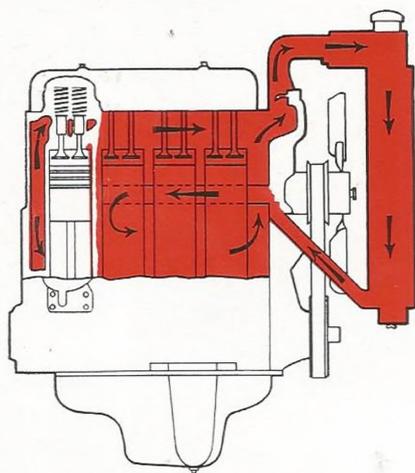
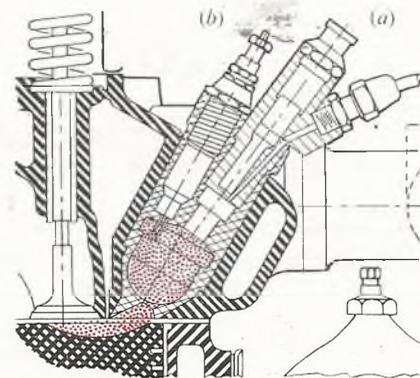
# Designed to lengthen engine life



**Positive Pressure-fed Lubrication** keeps all moving parts efficiently lubricated. Gear-type pump forces oil through drilled passageways to main, connecting rod and camshaft bearings. Positive lubrication is also maintained to the timing gears and valve mechanism. Deep well sump ensures positive oil feed on steep hillside workings. Oil is filtered by a fine mesh float-type gauze screen and by a 240-hour replaceable element.

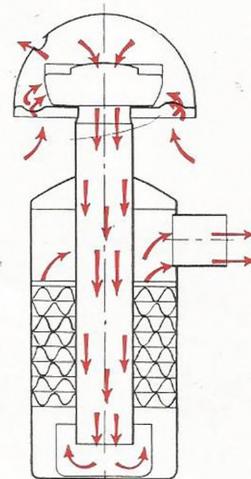
**IH Indirect Injection.** Fuel and air, pre-mixed in a combustion chamber start burning and, on expansion, meet the large volume of highly compressed air where complete combustion takes place to give a long steady power stroke.

(a) Pintle nozzles slash servicing cost because their superior operating advantages prevent harmful carbon build up. (b) Glowplugs inserted in the pre-combustion chamber ensure all-weather starting by assisting fuel vaporisation.

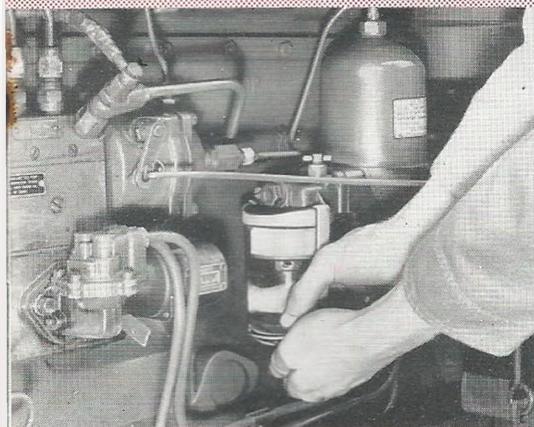


**Pressurised Positive Circulation Cooling System.** Thermostat and radiator by-pass assist 'fast warm-up' and a heavy-duty pump positively circulates water throughout the cooling system.

**Big Capacity Oil-Bath Air Cleaner** protects the engine from being damaged by airborne dust and grit, ensuring long engine life by threefold cleaning action. Heavy dust particles are initially removed by centrifugal action in the pre-cleaner, then the finer particles are separated in the oil bath with final filtration taking place in the gauze elements.



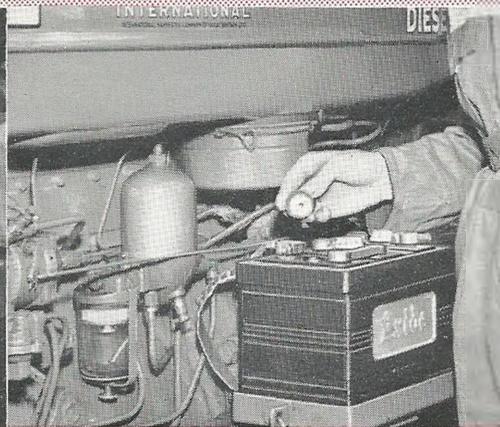
## ENGINEERING MAKES MAINTENANCE EASY!



**Accessible Water Trap in Full View** gives easy check on fuel pollution. Clean fuel ensures long life to fuel injection equipment, which is also protected by replaceable micro-filter element.



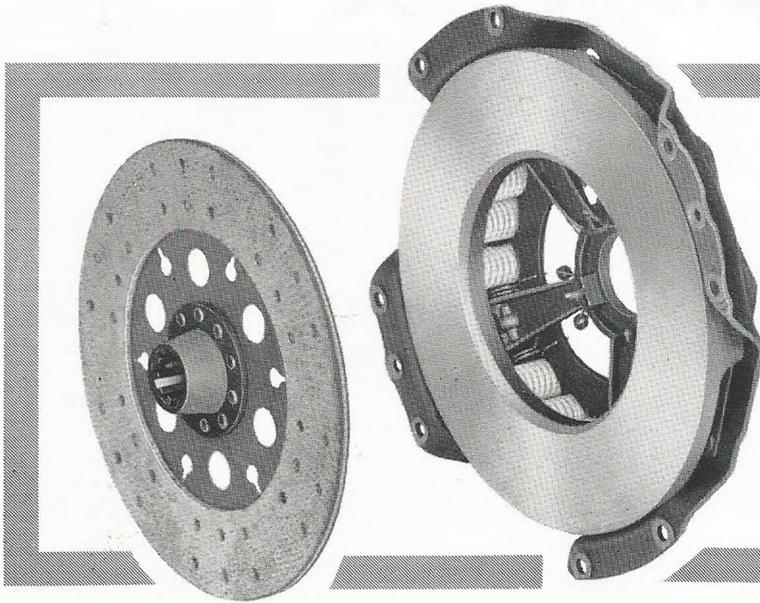
**Easily Maintained Air Filter** collects dust in accessible oil cup which is quickly removed for easy cleaning.



**Readily Accessible Batteries** simplify the maintenance which is essential to continued performance of an electrical system.

# EXTRA STRENGTH ALL THROUGH

*for the toughest jobs*

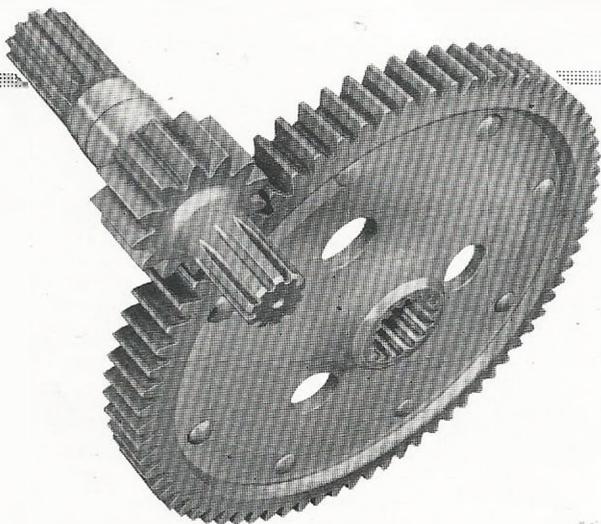
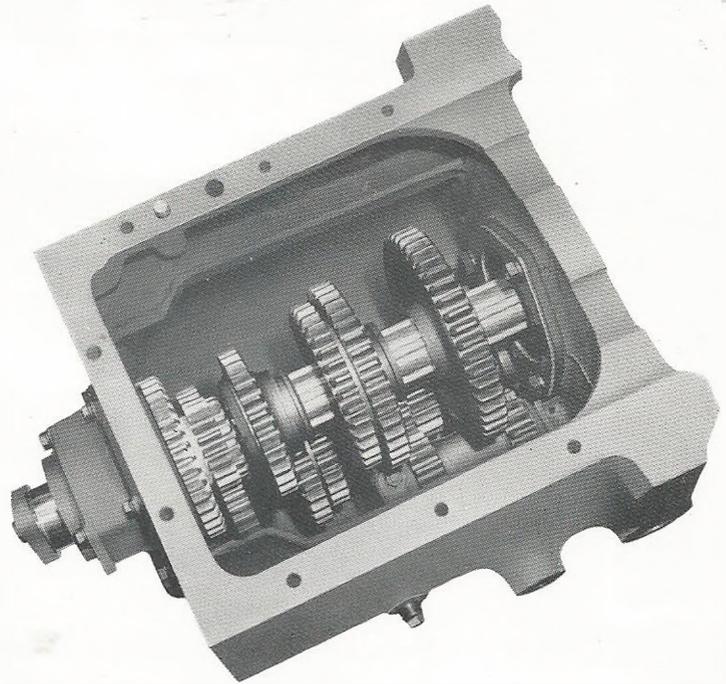


## LARGE CAPACITY CLUTCH

Like the rest of the B-450, the massive 12-inch clutch is engineered to give long trouble-free life. With a total lining area of more than 140 square inches, it is capable of handling full engine power under the toughest working conditions—yet it is extremely light to operate, giving a considerable reduction in driver fatigue.

## EXCEPTIONALLY RUGGED TRANSMISSION

An extra heavy section rear-end casting gives great rigidity and is machined to provide exact alignment of bearings and shafts. Increased gear life has been provided by the choice of high-performance alloy steels and by designing the gears with extra length for the active profiles. Shaving of the transmission gears is another refinement that ensures extra trouble-free performance. Oil trough collection assures positive lubrication to driving shaft bearings at all times. A new, high capacity needle roller-bearing supports the main drive shaft.



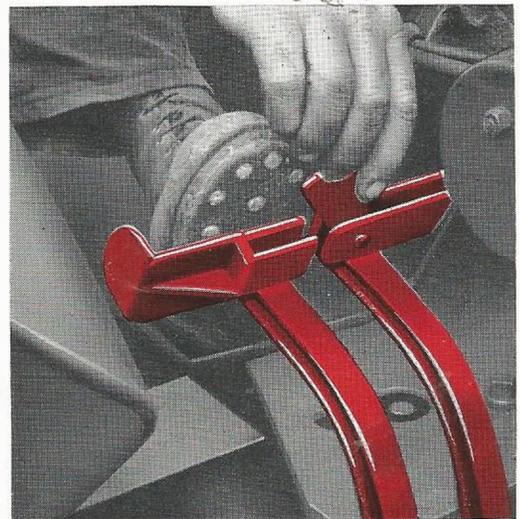
## MASSIVE FINAL DRIVE

Final drive is taken through tough, massive bull gears that are engineered to take loads far in excess of any they will have to withstand in service. Gears and pinions are forged from special steels, and are machined and hardened in our own factory under the closest manufacturing controls, ensuring that only the highest quality goes into the B-450.

# BRAKED AND STEERED FOR SAFE POSITIVE CONTROL

## SELF-ENERGISING DISC BRAKES BETTER, SAFER, LONGER-LASTING BRAKES

The B-450 disc brakes are immensely powerful, and once the braking surfaces are brought together they *apply themselves*—without grab or chatter. With tractor moving forwards or backwards you can make pivot turns, stop quickly, and hold the heaviest loads on gradients. Simple, adjustment is provided to maintain equalised braking on both wheels, while linings outlast those of conventional type brakes. Easy-to-reach brake pedals may be operated individually for tight turning or latched together to give uniform braking on both wheels for road work. A convenient latch is provided for parking.

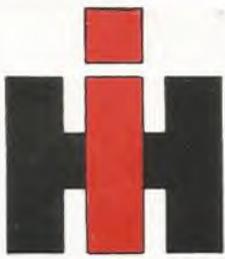


How B-450 disc brakes work. When brake pedal is depressed, parallel plates (A) make a partial revolution in opposite directions and are forced apart by steel balls which operate in a conical track (B) bringing revolving brake linings (C) into contact with stationary braking surfaces (D). Brakes are self-energising—tractor movement forcing the plates farther apart, thus increasing braking action.

## COMPLETE STEERING EASE TAKES THE FATIGUE OUT OF STEERING

New, easy-action, self-centring steering with inclined king pins gives particularly high leverage that reduces manual effort to a minimum, and makes the B-450 a joy to handle, particularly when turning on headlands and in confined spaces. This simple, robust steering system is designed for long life and will remain rock-steady even after years of hard work-a-day wear.

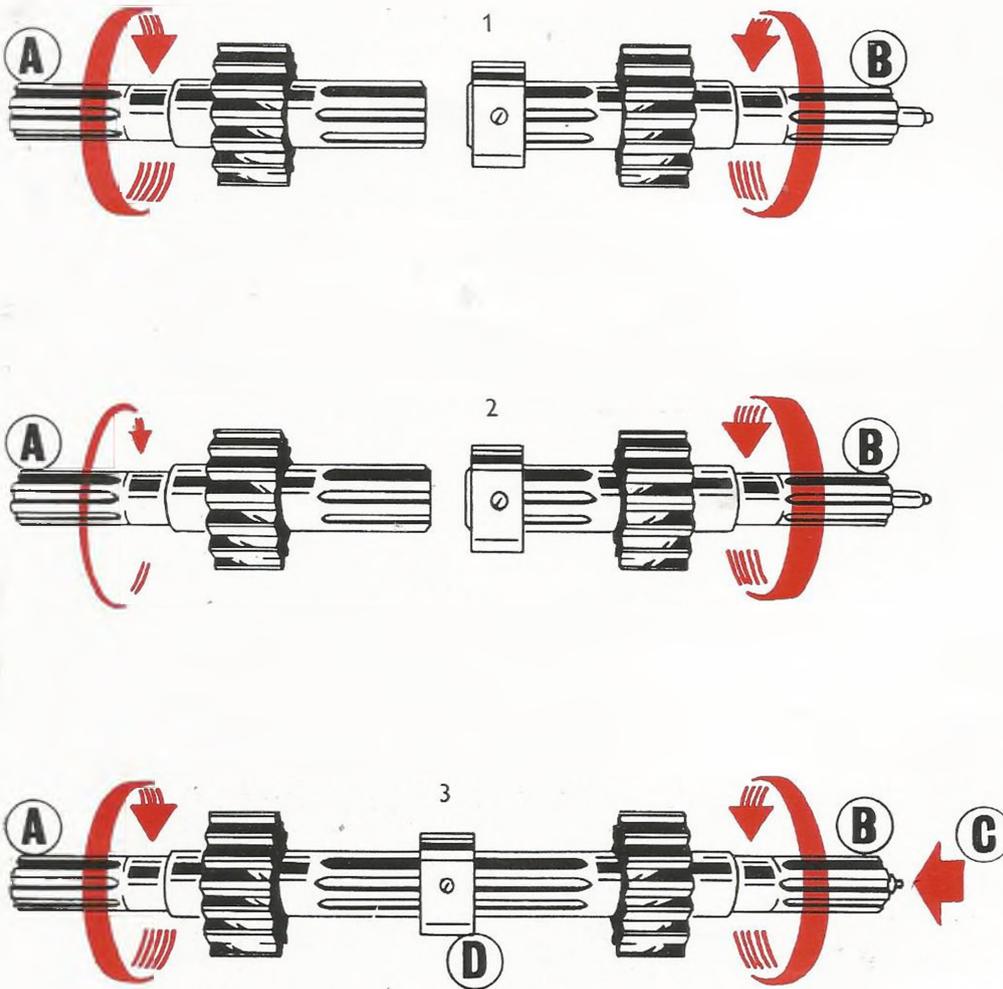




# DIFFERENTIAL LOCK

*gets a grip on wheel slip!*

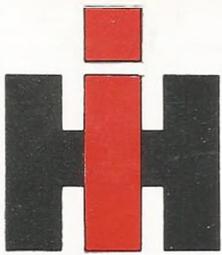
Power-wasting, time-consuming wheel spin is a thing of the past with IH differential lock. Now, however slippery the going, however heavy the load, you can get on top of the job and keep moving. Wheel slip on any tractor, when ploughing occurs mainly on the land side wheel and IH differential lock owes its effectiveness to its ability to keep the land side wheel gripping under the most difficult conditions.



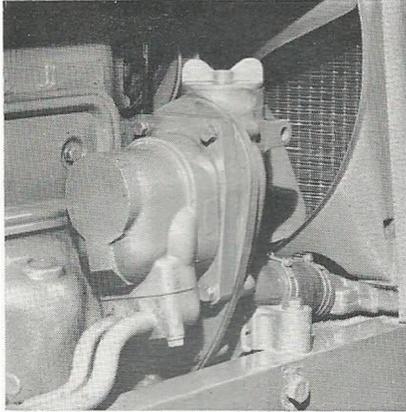
## SIMPLE, ROBUST POSITIVE ACTION

IH differential lock is simple, robust, positive in action and completely reliable. Here's how it works:

- 1 Half-shafts (A) and (B) turning normally, no wheel spin—full traction.
- 2 Right-hand wheel starts to spin, half-shaft (B) turns faster, while left-hand wheel and half-shaft (A) slow down. Traction is lost.
- 3 Slight heel-pressure on differential lock pedal depresses plunger (C) and moves collar (D) along splines on half-shaft (B) engaging it with splines on half-shaft (A). Both half-shafts are now locked together giving the effect of a straight-through rear axle. Wheel spin is checked and full traction is restored.



# INDEPENDENT FULLY 'LIVE' HYDRAULICS *with traction-boosting two-stage response control valve*



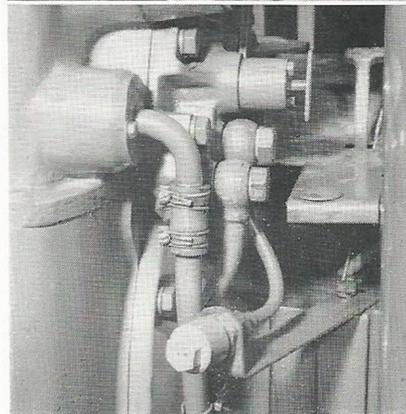
## **ENGINE-DRIVEN PUMP** *provides hydraulic power which is completely unaffected by clutch operation*

The hydraulic pump on the B-450 is powered directly from the engine, not the power-take-off, and is therefore completely unaffected by clutch or power-take-off operation. Full hydraulic power is available whenever the engine is running. This simple, reliable, gear-type pump forces oil through the system at a rate of 6½ gallons per minute, giving a working pressure of over 2,000 lb./sq. in.



## **SEPARATE RESERVOIR WITH THIN OIL** *gives instant all-weather response*

The system has its own oil reservoir completely separate from the transmission oil. THIN oil is used, ensuring instant response even in cold weather and a faster rate of lifting and lowering. The reservoir holds three gallons of oil, providing ample capacity for all hydraulic equipment. The oil is constantly filtered for long, trouble-free service. The hydraulic cylinder is built into this reservoir, and is provided with an unloader valve in the piston to limit piston stroke and stop excessive pressure build-up and over-heating.



## **CONTROL VALVE** *with two-stage response boosts traction by weight transfer*

Increased traction through tough spots and really sensitive control of heavy implements are available with this two-stage hydraulic response. Two inches of a total three-inch lever movement in the raise position can be used for progressively transferring up to 1,000 lb. extra weight to the back axle when tough wet patches of ground afford less traction. This effectively boosts traction with no measureable difference in your working depth! The final one inch of lever movement makes available 2,000 lb./sq. in. pressure for raising implements out of work.

## **TOUGH CATEGORY 2 LINKAGE** *handles the heaviest equipment*

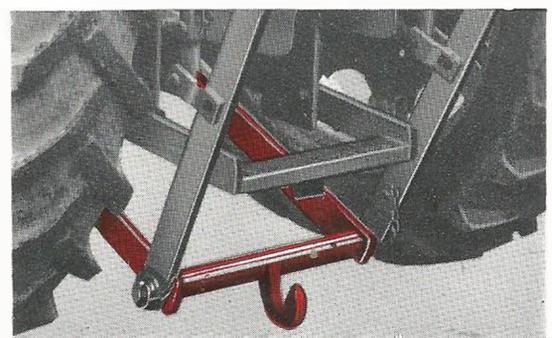
A lifting force of OVER 3,000 lb. is available at the end of the lower links.

## **SELF-SEALING COUPLING AND ISOLATING VALVE** *for quick, easy application to externally mounted equipment*

Remote cylinder-operated implements are powered from an external tapping with self-sealing coupling. The coupling allows quick, clean detachment under pressure and the handy isolating valve permits quick transfer of lifting power from linkage to auxiliary equipment or vice versa. It also provides a safe and positive hydraulic hold for linkage transportation.

## **AUTOMATIC HITCH** *gives small tractor versatility*

Changing to a pickup trailer job is so easy. Remove the check chains, take the ball socket off the main frame hitch point, turn the links over and put them on to the hook frame. You are then ready for pickup work. The pickup hitch is the easiest yet to bring into action.



# SPECIFICATIONS

# B-450 DIESEL TRACTOR

**Engine**—4-stroke diesel, valve-in-head type, with electric all-weather glowplug starting.

IH Model .....	BD-264
Horsepower (stripped) .....	55
Number of cylinders .....	4
Bore and stroke, in. (mm.) .....	4 (101.6) × 5½ (133.35)
Piston displacement, cu. in. (litres) .....	264 (4.329)
Rated governed engine speed, r.p.m. ....	1,500
Maximum torque, lb. ft. ....	200
R.p.m. at maximum torque .....	1,100

**Electric starting and lighting**—12-volt electric starting system which includes manually engaged starter motor with safety key isolation, glowplugs, resistance indicator, generator, voltage regulator and two 6-volt batteries. 12-volt front and rear working lights and R.T.A. lighting set are available as attachments.

**Engine clutch**—Single dry plate, spring loaded.  
Diameter, in. (cm.) ..... 12 (30.5)

**Transmission**—Five forward speeds, one reverse, foot operated differential lock.

**Tractor speeds**—computed at rated governed engine speed.

	11.00—38		13.00—30	
	M.P.H.	K.P.H.	M.P.H.	K.P.H.
†First .....	2.3	3.7	2.1	3.4
Second .....	3.8	6.15	3.5	5.65
Third .....	5.0	8.0	4.6	7.4
††Fourth .....	6.8	11.0	6.3	10.1
Fifth .....	16.8	27.0	15.45	24.9
Reverse .....	3.05	4.9	2.8	4.5

†Low-low gear of 1.75 m.p.h. (2.8 k.p.h.) is available as an attachment in place of first gear.

††High fourth speed gear of 10.3 m.p.h. (16.65 k.p.h.) is available as an attachment in place of fourth gear.

**Brakes**—Foot operated, totally enclosed, externally mounted, disc brakes acting on bull pinion shafts, one on each side. Foot pedals latched for road work. Ratchet and latch for parking.

Disc diameter, in. (cm.) .....	6½ (16.5)
Effective friction area (each lining), sq. in. (sq. cm.) .....	21.4 (34.54)
Number of linings (each side) .....	4
Total effective friction area, sq. in. (sq. cm.) .....	171.3 (1,106)

**Hydraulic system**—Independent fully 'live', single acting system, with single lever two-stage control valve and isolating tap for remote cylinder work.

Working pressure, lb. per sq. in. (kg. per sq. cm.).....2,000 (140.6)

**Power take-off**—Rear mounted 6-spline.

Diameter, in. (mm.) .....	1½ (34.9)
R.p.m. at rated governed engine speed .....	555

**Belt pulley**—Side mounted with sliding gear engagement.

Diameter, pulley, in. (mm.) .....	11 (279)
R.p.m. at rated governed engine speed .....	929.6
Belt speed, ft./min. (M/min.) .....	2,677 (816)

**Capacities (Imperial and metric measures)**

Cooling system, gals. (litres) .....	5½ (25.0)
Fuel tank, gals. (litres) .....	17¾ (79.0)
Engine lubrication, qts. (litres) .....	8 (9.1)
Transmission case, gals. (litres) .....	11 (50.0)
Hydraulic reservoir, gals. (litres) .....	3 (13.5)
Air cleaner cup, pints (litres) .....	2½ (1.2)

**Tractor dimensions** (based on 11-38 rear tyres and 6.00-19 front tyres).

	in.	cm.
Length, overall .....	131 ⅞	333.3
Tread, front		
Fixed axle .....	51¼, 55¼, 57, 61	131.4, 141.6, 144.8, 154.9
Adjustable axle (in 4 in. (10.16 cm.) stages) also obtained by rim adjustment	52 to 76 80, 81¼, 85¼	132.1 to 193.0 203.2, 206.4, 216.5
Tread, rear (in 4 in. (10.16 cm.) stages)	52 to 72	132 to 182.9
Width, overall		
Front wheels:		
Fixed axle .....	63½ to 73½	160.3 to 186.7
Adjustable axle .....	63½ to 97½	160.3 to 248.3
Rear wheels .....	64 to 84	162.6 to 213.4
Height to top of steering wheel .....	71	180.3
Wheelbase .....	79½	201.9
Minimum ground clearance (under fixed front axle) 6.00—19 tyres	14¼	37.5
Turning radius (52 in. tread) Without brakes applied .....	160	406.4
With brakes applied .....	127	322.6
Drawbar height above ground (adjustable)		
Flat bar .....	14¼, 17¾	37.5, 44.8
Clevis .....	11, 13¾, 18¼, 21¾	27.9, 35.5, 37.0, 54.3
Drawbar, lateral swing each side of centre .....	10¾ lb.	27.0 kg.

**Operating weight** (approximate):

Basic tractor, including fuel, oil, water, hydraulic system with linkage, belt pulley, P.T.O., automatic trailer hitch and lighting .....	6,062	2,749.7
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**Attachments:**

Independent fully 'live' hydraulics · Double acting ram valve · 3-point linkage Cat II · Self-sealing coupling · Automatic trailer hitch P.T.O. (555 r.p.m.) · P.T.O. safety cap (export only) · Bolt pulley, side mounted, 11 in. (27.9 cm.) diam. · Fan-belt adjusting pulley Linkage drawbar · Front and rear working lights · R.T.A. lighting set Hourmeter · Heat indicator · De luxe seat (for use with hydraulic attachment only) · Foam rubber cushion (for use with pan seat) Auxillary fuel filter · Increased capacity batteries · Radiator curtain 4th speed gear (10.3 m.p.h.) · Low-low speed gear (1.75 m.p.h.) Adjustable wide tread front axle · 88 in. or 100 in. tread rear axle Front-end weight (400 lb.) (181.4 kg.)

**Optional Tyre Equipment:**

Front: 6.00—16 4 ply	Rear: 12—38 6 ply
6.00—16 6 ply	13—30 6 ply
7.50—16 6 ply	14—30 6 ply

**Wheel weights:**

Wheel Size	No. of Sets	Weight (per set)
Front: 6.00—19	2	90 lb. (40.8 kg.)
6.00—16	2	90 lb. (40.8 kg.)
7.50—16	2	90 lb. (40.8 kg.)
Rear: ALL	3	290 lb. (131.5 kg.)

Specifications subject to change without notice

INTERNATIONAL HARVESTER COMPANY OF GREAT BRITAIN LIMITED, HARVESTER HOUSE, 259 CITY ROAD, LONDON EC1

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