

*Introducing . . .*

# **POWER-TURN**

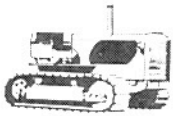
for the New **OLIVER OC-18** Crawler

# **OC-18**

**most important development in**



# crawler steering in **35** years



Not since Oliver developed the revolutionary controlled differential steering some thirty-five years ago, has a steering method been devised with so many operating advantages as the new Power-Turn featured on the OC-18 Crawler.

The best features of differential steering and clutch steering, *plus* a series of vital new principles in crawler control, are what Power-Turn offers. You can make *spot* turns or *gradual* turns of any angle . . . brake without declutching . . . and vary ground speed and drawbar pull without shifting or stopping.

Mechanically, Power-Turn is compact, ruggedly built and dependable . . . and the simplest of all to operate and maintain. Mighty important, too, Oliver's Power-Turn is a tested and proven mechanism approved for use under the most severe conditions by our military forces.

Power-Turn adds to the power, performance and easy operating features of the new OC-18 a whole range of steering advantages found on no other tractor. But let's go on and see just what Power-Turn is —and what it means to you . . .



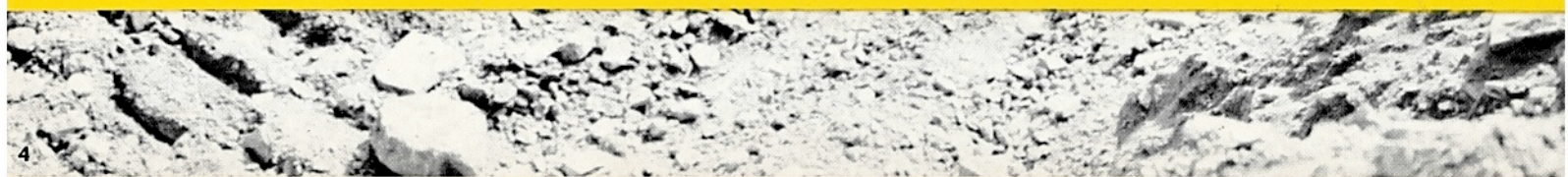
## power-turn gives you the best features of

### **spot turns with positive track lock**

Clutch steering is one of the features integrated into Oliver's Power-Turn. But unlike ordinary clutch steering, finger-tip controls operate powerful band brakes on each track. When the power turn control is operated, it brakes and locks the pivot track to the ground and automatically

declutches the power to the track. At the same time, power delivered to the opposite (outside) track remains at normal speed.

You can spin on a dime, maneuver in the tightest spots, work under any conditions and never have the stopped track wander uncontrolled as on other clutch steering tractors.





## clutch and controlled differential steering

### **gradual turns with power on both tracks**

Power-Turn also gives you turning with power on both tracks. It lets you slow down one track as little or as much as you want to, while the opposite track maintains normal speed. You can swing around at any angle from a wide, gradual turn to a small, tight turn and still

maintain power on both tracks.

Power on both tracks means extra stability on grades . . . no loss of power pulling loads on turns . . . does away with cross-steering downhill . . . and you still have the extra high clearance and traction in mud so famous with differential steering. Think what it will mean to have both spot turn and power turn at your finger tips.



## power-turn lets you start, stop . . . vary

### **increase, decrease speed and drawbar pull with no shifting**

Suppose you're pushing a scraper in first gear and you hit a tough spot. You pull down the two Power-Turn levers and *automatically* you change from direct drive to planetary reduction drive. There's an instant speed reduction of 38%, and an increase in drawbar pull of up to 60% depending on weight and traction. You

sail through that tough spot with power and pull to spare—and never touch the clutch. Out in the clear again, you release the levers and the tractor resumes regular transmission speed.

Power-Turn lets you start heavy loads in higher gears (in reduction drive), get the load moving and then—instantly—return to regular speed without clutching. Reduction drive multiplies your four forward and two reverse speeds to eight speeds forward, four reverse!





## speed and pull without declutching

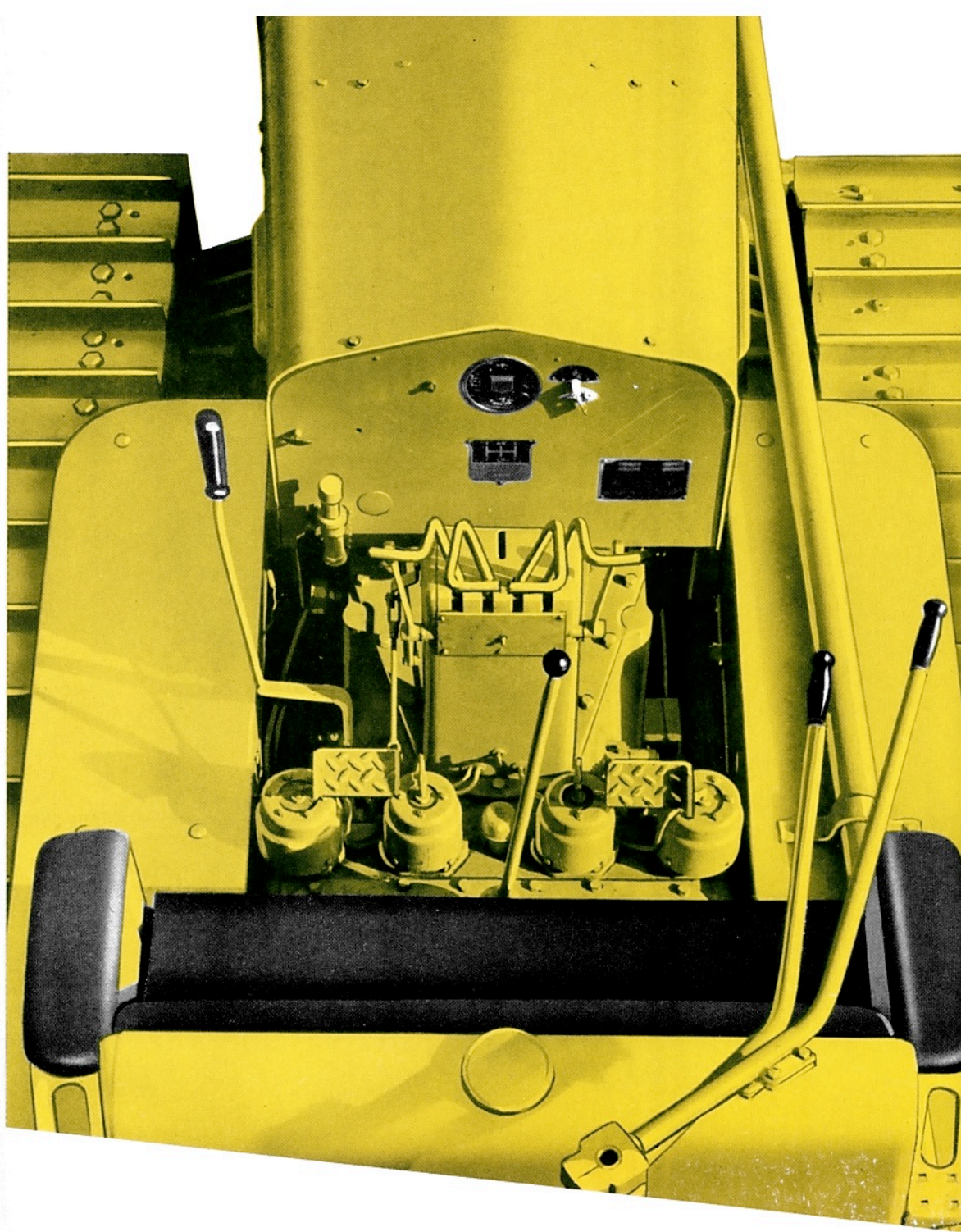
### **positive braking (hand or foot) without declutching**

To provide spot turns, Power-Turn employs hydraulic disc clutches that disconnect power to the pivoting track. At the same instant the clutch disengages the power from the track, a band brake holds the track in position. And, when you pull down both outside turn levers (or step on the connected foot brake pedal), you

brake both tracks . . . but the engine keeps on running and you are *still in gear*. Release the levers and you resume speed.

You can start and stop as often as you like with no clutching, no shifting and without interrupting power take-off operations for winch or blade. This simple, positive braking system makes it easier and safer for the operator to control the tractor under all conditions—leaves him free to watch the work closely and do a better job.





A glance at the control platform on the OC-18 and you will see why operators praise its safety, comfort and convenience. The seat is comfortable, wide enough so operator can move to either side and obtain a clear view of operation.

A single-dial instrument panel places all gauges in one easy-to-read group. Even the shift lever is centrally located where it can be operated quickly with little effort. Finger-tip air control levers for the Power-Turn and

throttle levers are on a pedestal located for easy reach from either side of the seat or while standing.

Simplicity and ease of operation were designed into this control platform for one reason — to keep operator fatigue at an absolute minimum. Reduced fatigue means an alert, safe operator . . . one who does a better job without lost motion . . . one who turns in more production every day.

# safest, easiest of all to operate

## finger-tip air controls

These four simple levers put the OC-18 through any maneuver with only finger-tip pressure. The two inside levers are turned in for single-hand operation. These levers operate Power-Turn's planetary reduction system and provide gradual turns, or when depressed together, engage the low-range planetary gearing available in all forward and reverse gears.

The outside levers are the spot turn controls. When depressed, they automatically disengage and brake the power to the track. Depressing both together brakes the tractor instantly—yet the engine continues to run. Releasing the levers returns the tractor to its original transmission setting without shifting or clutching.

## wide, comfortable platform

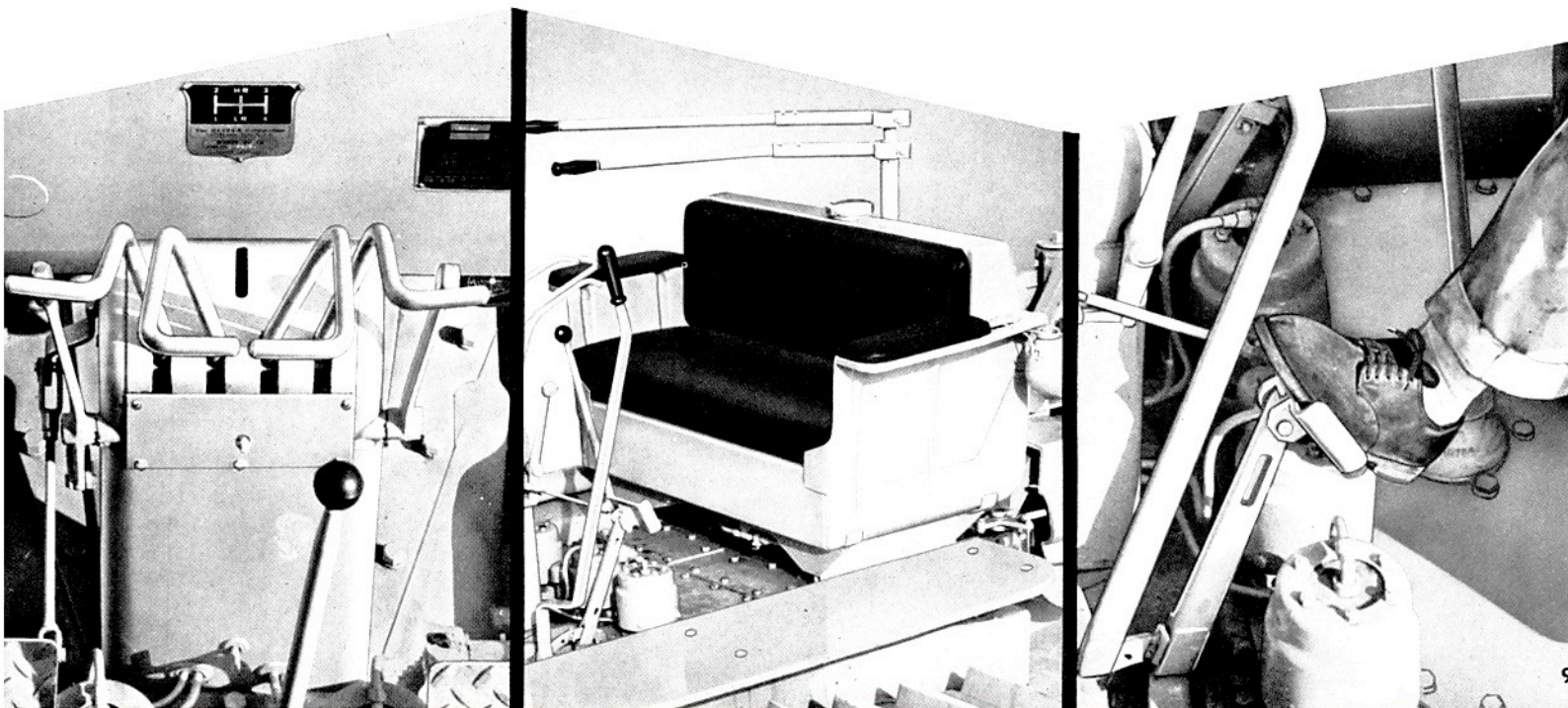
The operator can really take it easy on this platform—wide, foam rubber seat and arm rests—flat deck with plenty of leg room—simple, uncluttered control lever arrangement.

The OC-18 is a clean, well-designed tractor. It affords perfect visibility on all sides. From the seat, the operator can see all around the tractor without craning or stretching and quickly slide from one side of the seat to the other on the wide, uncramped platform.

## convenient foot brake, hand clutch

In motion, the tractor is brought to a stop by depressing the two outside steering levers or foot brake as shown here. When, however, the operator wishes to park the tractor, an independent mechanical foot parking brake is provided on the right side. Mechanical brake can be set for parking on hills and is quickly released by a simple latch mechanism.

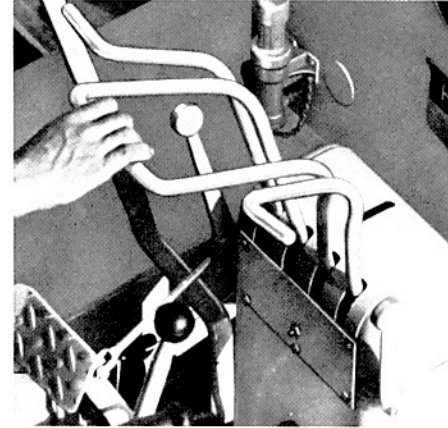
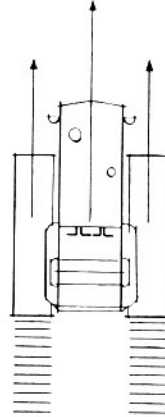
The convenient hand clutch lever is easy to operate and provides instant clutching without shifting weight to a foot-operated pedal. Because the new Power-Turn in the OC-18 permits stopping and speed reduction without de-clutching, clutch operation and maintenance are greatly reduced.



## simple, positive control fo

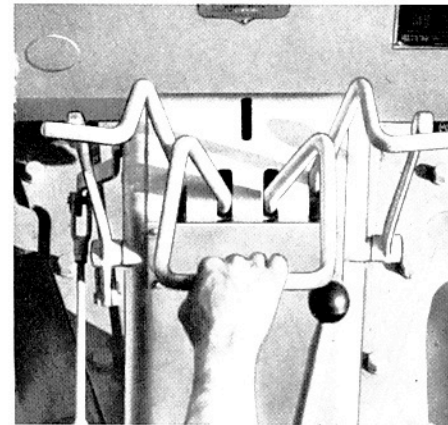
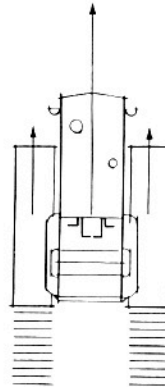
### straight travel—normal speed

In any gear, at normal speed, the tractor travels in a straight line without touching control levers. It operates on a "locked" system and will not drift.



### straight travel—reduced speed

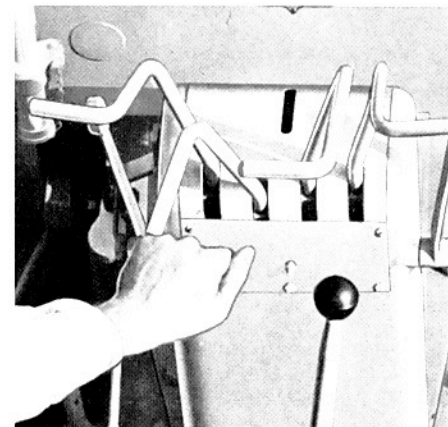
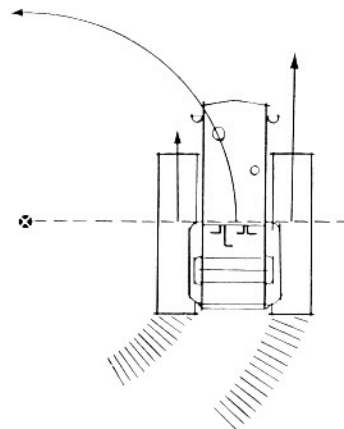
In any gear, the two inside control levers may be depressed to their limit, thus engaging the planetary reduction drive to produce a 38% decrease in speed and at the same time cause a torque build-up that provides maximum pushing and pulling power in each gear. Releasing the levers returns the tractor to normal speed without clutching or shifting.



### gradual turns

To turn left, the left inside lever is depressed to reduce the speed of the left track. The tractor turns toward the side having the reduced speed. Opposite lever for right turn.

Feathering either of the inside controls gives any degree of turn between straight ahead and the smallest planetary turn radius (22 feet).



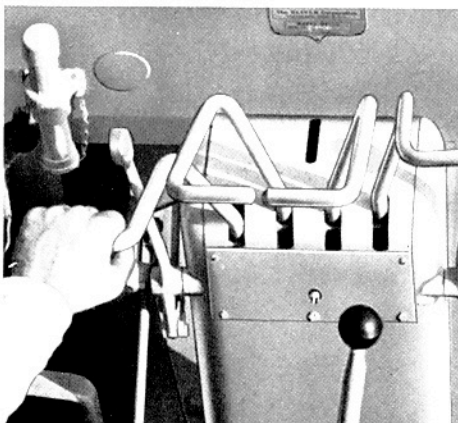
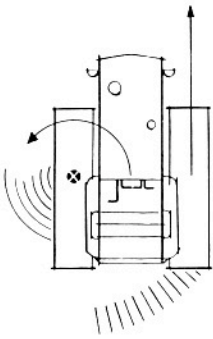
# every operating condition



### spot turns

By depressing the left outside lever, the left track is stopped and held. The right track still in motion at normal speed pivots the tractor to the left. Opposite lever for right pivot.

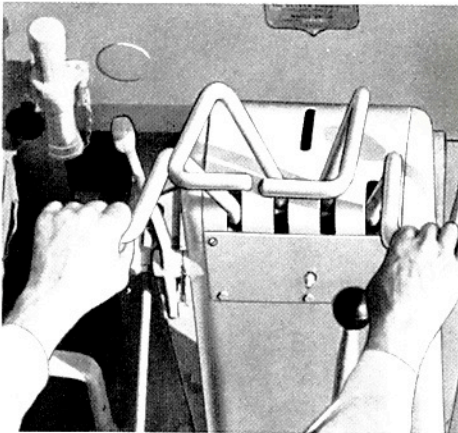
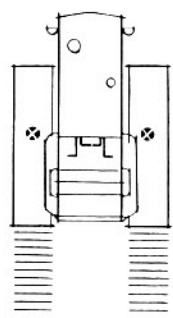
Power turns can be made at a reduced speed. Depressing the *right inside* turn lever causes a speed reduction on the right track. Then, if the *left outside* lever is depressed, the tractor makes a spot turn to the left at reduced speed. Reverse procedure for a right spot turn at reduced speed.



### braking and stopping

Depressing both outside steering levers or foot brake stops the tractor without need to declutch. When both levers are released, the tractor starts smoothly and continues at normal speed in the previously set gear.

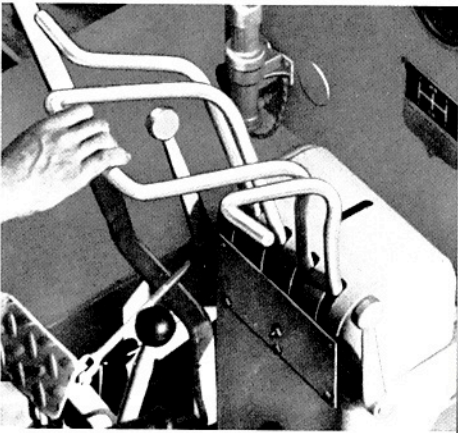
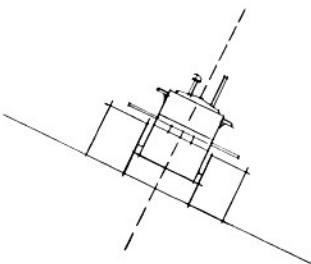
This feature of the Oliver Power-Turn enables the operator to stop the tractor in any normal or emergency operation without the bother of declutching. With this braking mechanism, the operator can also stop and start up without affecting the operation of power take-off-driven winch or power control unit.



### grade steering

Uphill, downhill, pushing, pulling, with load or without, or with off-center loads—steering is always the same on the OC-18.

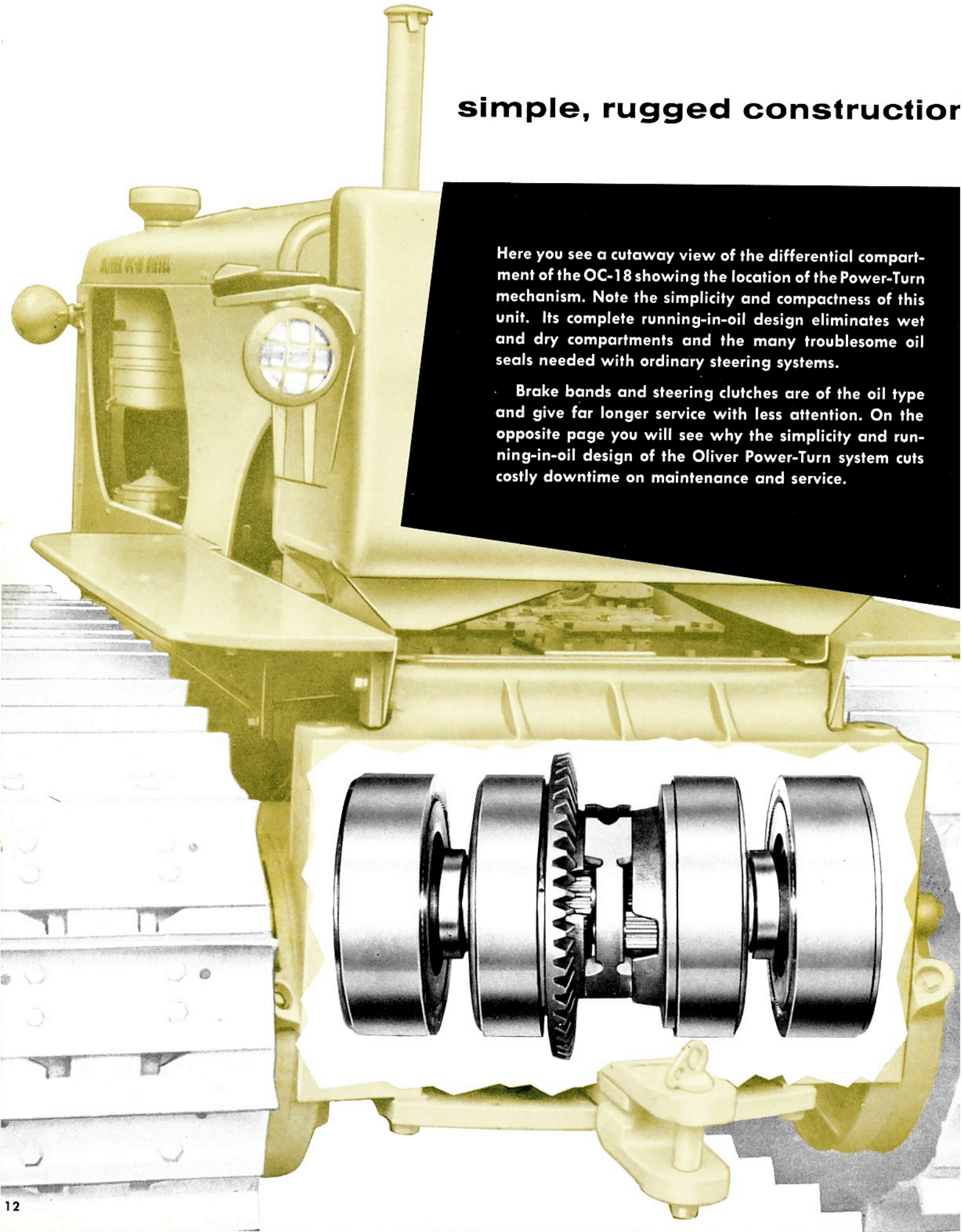
The operator has every advantage of clutch steering and planetary steering in Oliver's new Power-Turn—for perfect control no matter what the terrain. He can manipulate the "inside" steering levers to offset side-draft when pulling or pushing loads on hillsides. And there's *never* any need for cross steering.



## simple, rugged construction

Here you see a cutaway view of the differential compartment of the OC-18 showing the location of the Power-Turn mechanism. Note the simplicity and compactness of this unit. Its complete running-in-oil design eliminates wet and dry compartments and the many troublesome oil seals needed with ordinary steering systems.

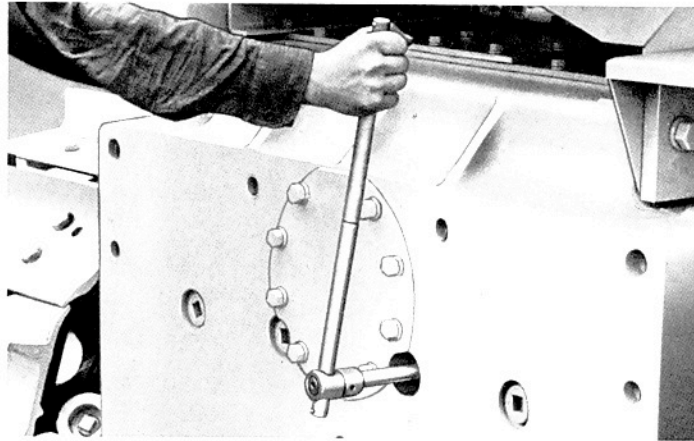
Brake bands and steering clutches are of the oil type and give far longer service with less attention. On the opposite page you will see why the simplicity and running-in-oil design of the Oliver Power-Turn system cuts costly downtime on maintenance and service.



## cuts service and maintenance costs

### **steering brake adjustment— a field job that takes less than 30 minutes!**

Four plugs at the rear of the drive case are all that need be removed to adjust steering brakes. This job is only required to take up slack from normal band wear. It is not a major project as required on other makes.



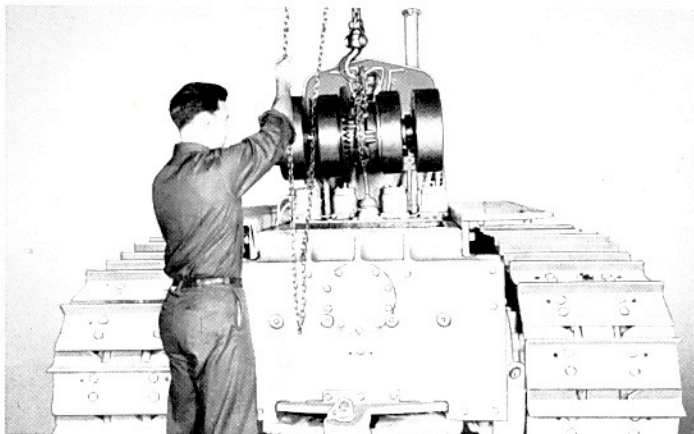
### **steering brake replacement— only 3 hours from start to finish!**

By removing the seat and differential case cover, the steering brakes are completely exposed and bands can be replaced by one man in just three hours. On other machines this job is complicated and expensive and requires two or three times as much labor.



### **steering assembly removal—comes out through the top as a unit**

No need to tear down the whole tractor should it be necessary to replace the steering clutches. With the OC-18, the entire steering mechanism comes out as one unit through the differential case cover, and can be repaired and replaced in much less time than other tractors.



# OLIVER OC-18

industrial crawler  
with power-turn

## ENGINE

Drawbar h.p. (corrected to sea level)*		133
Net engine h.p. (flywheel h.p.)		161
Drawbar pounds pull:		
	At Normal Speed**	Calculated at maximum engine torque
1st gear	31,030	34,534
2nd gear	18,510	20,605
3rd gear	11,770	13,120
4th gear	6,880	7,657

\* With adequate weight and traction, over 60% greater drawbar pull will result with tractor in planetary reduction drive in any gear position.

Bore and stroke	5 5/8" x 6"
Number of pistons	6
R.p.m.	1500
Fuel	Diesel
Starting	Electric

## SPEEDS—m.p.h.

	Normal speed	Planetary reduction
1st gear	1.50	0.93
2nd gear	2.61	1.61
3rd gear	3.76	2.32
4th gear	5.45	3.37
Reverse low	1.83	1.13
Reverse high	3.53	2.18

## TRACK AND TRACK FRAME

Diameter track frame shaft	4"
Length track frame shaft	109"
Number of lower track wheels	6
Track shoe length—center to center pins	81 3/32"
Length of track on ground	100 1/4"
Total ground contact area (sq. in.)	4,411

## DRAWBAR

Height above grouser tip	19 1/16"
Width of drawbar opening	4"
Lateral movement—right or left of center	15 5/16"
Diameter drawbar pin	2"

## DIMENSIONS

Length overall	167 1/8"
Width overall	111 3/4"
Height at dash	82 13/16"
Ground clearance with grousers	16 7/16"
Gauge	78"

## WEIGHT

Shipping—pounds approx.	32,800
Operating—pounds approx.	33,300
Ground pressure—pounds per sq. in.	7.55

(specifications subject to change without notice)

\*\* This tractor tested at the University of Nebraska, Test No. 489.

Designed and engineered for sustained, 1

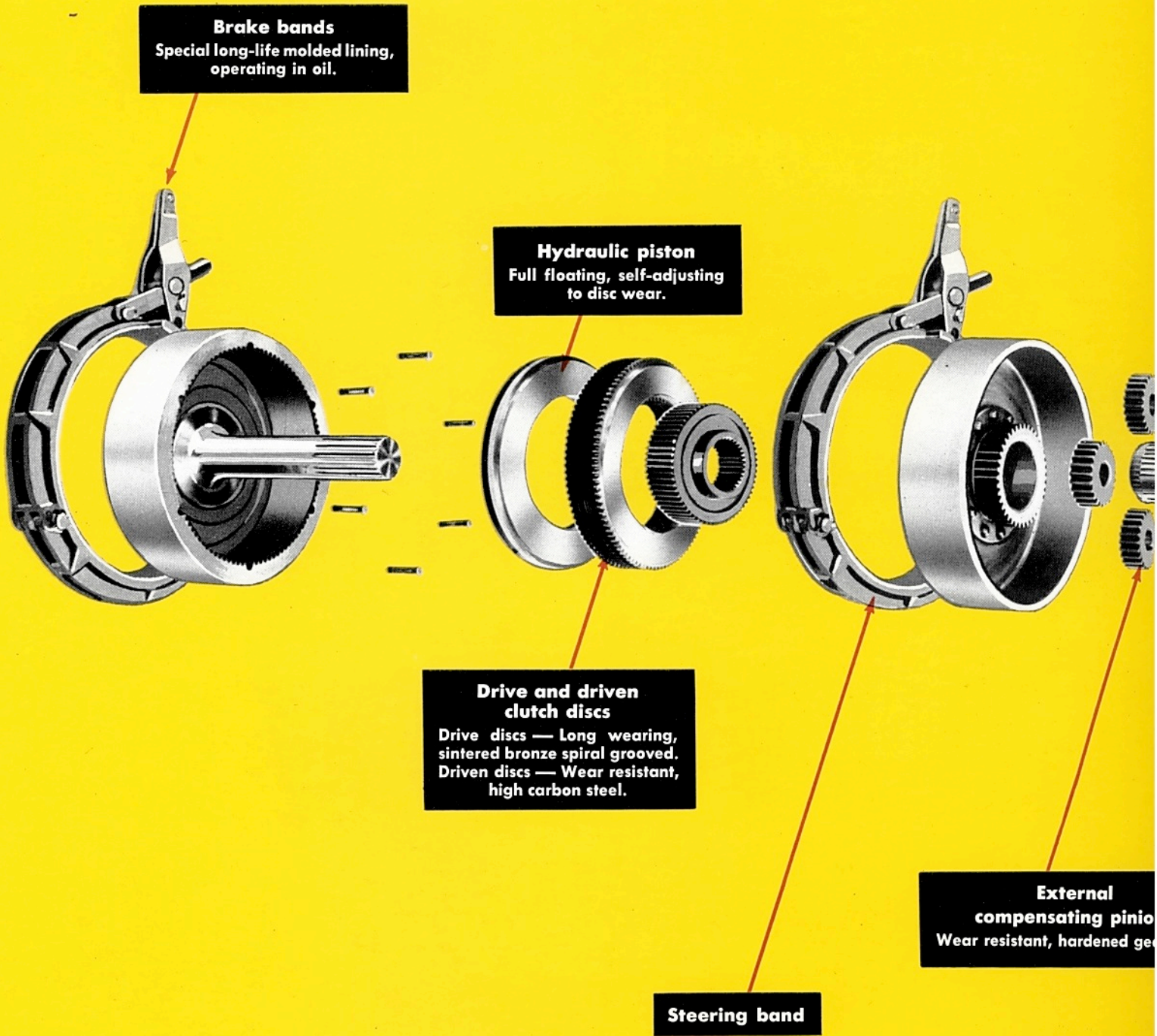
**Brake bands**  
Special long-life molded lining,  
operating in oil.

**Hydraulic piston**  
Full floating, self-adjusting  
to disc wear.

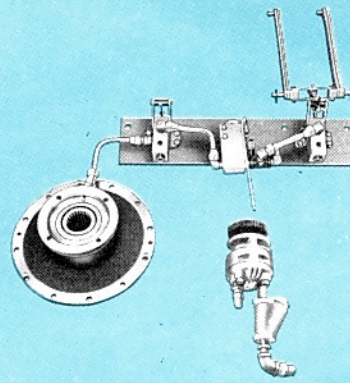
**Drive and driven  
clutch discs**  
Drive discs — Long wearing,  
sintered bronze spiral grooved.  
Driven discs — Wear resistant,  
high carbon steel.

**External  
compensating pinion**  
Wear resistant, hardened ge

**Steering band**



w-cost operation

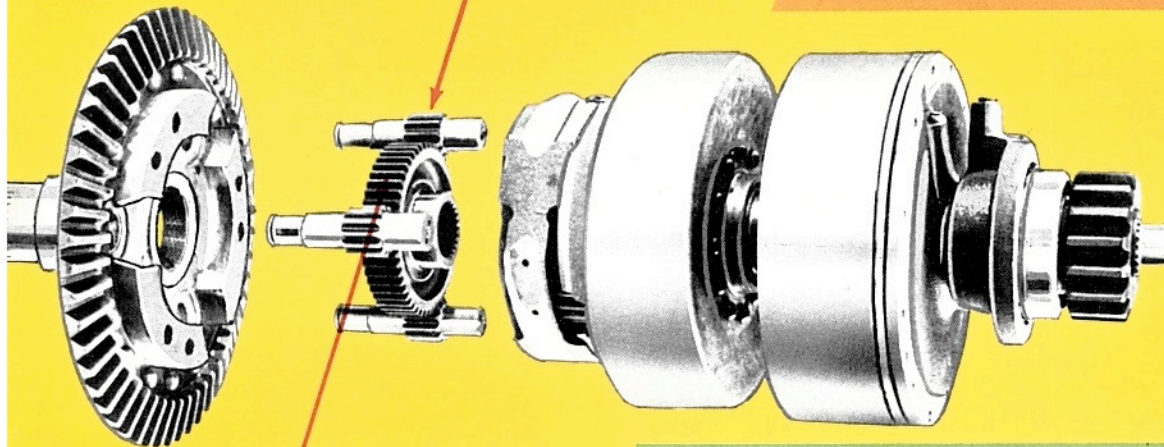


### Low pressure hydraulic system

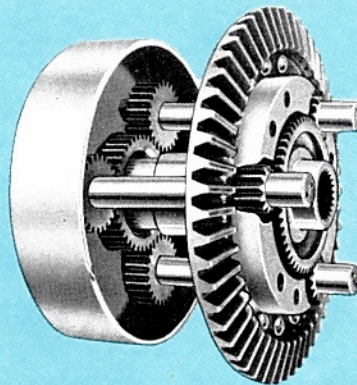
A one-hundred-pound-per-square-inch hydraulic system is employed to actuate the hydraulic disc clutch. Positive mechanical linkage is used from air-actuated control levers to hydraulic valves.

Clutch compartments are relieved of hydraulic pressure when any one of the four control levers are actuated (turning or reduced speed). There is hydraulic pressure on clutch discs only when tractor is in normal straight forward or reverse motion. There is no possibility for inexperienced operators to slip and wear clutch facings.

**Internal compensating pinion**  
Shaft and gears hardened for long life.



**Main driven compensating gear**  
Heavy-duty, hardened gear steel.



### Planetary reduction gears

The term "planetary" is derived from the solar system where planets, such as the earth, rotate about their own axis, while rotating about the sun's axis.

In the above system, when a control lever is actuated, the small planetary gears rotate about their own axis, while also rotating about the axis of the compensating gear. This system is employed to produce lower sprocket speed and higher torque ratio with few parts.

steel.



**Power-Turn**

**OC-18**

**THE OLIVER CORPORATION**  
400 West Madison Street  
Chicago 6, Illinois

A complete line of industrial wheel and crawler tractors and matched allied equipment