

# 115-90 130-90 140-90 2WD AND DT THE FIAT GIANTS



**FIATAGRI**



# **GREAT POWER = PERFORMANCE AND VERSATILITY**

This is the equation that large farms engaged mainly in growing grain and large acreage crop farming, from beet to peas, soya to rape, have to solve. They need weight and power for heavy jobs but also power, speed and versatility for surface work, such as sowing, soil preparation, harvesting and road hauls, all on a commercial scale, which implies careful control of costs, limited manpower, the highest possible productivity of the implements used.

The FIAT GIANTS with their 115 to 140 hp solve this equation as follows:

- sufficient ballasting for the most demanding jobs with high performance engines providing maximum torque, speed reserve and fuel economy.
- the versatility provided by the wide choice of speeds, ranging from creeper speeds of 300 meters/hour with the super reduction gear unit to top speeds of 30 or 40 km/hour according to version.

The FIAT GIANTS are the right answer to the needs of large farms and contractors: the response of the leader in Europe, FIATAGRI.



# Designed with man in mind

A long working day is a general rule for this category of tractors. Contractors and large farming enterprises demand high performance of their tractors, reckoning their return on investment in terms of area ploughed or crops harvested and transported in a unit of time.

In these cases, the driver plays an essential part in achieving maximum productivity. These tractors have therefore been designed with "man in mind", giving priority to comfort, ease of movement when using the various controls, complete instrumentation for constant control of all tractor functions, reduced noise in the cab, air-conditioning and safety combined with all-round visibility, essential working conditions for continuity and top performance of the man-tractor duo.

The cab of the FIAT GIANTS combines all these essential features with the very best in Italian style and tradition. These are their strong points:

- **Comfort or Supercomfort cab**, welded pressed steel module with built-in roll bar, fully suspended on silent blocks for complete isolation from the body of the tractor. Inside lining and floor in washable sound-deadening material.
- **Noise levels of less than 80 dbA with the Supercomfort cab!** Standard heating and ventilation system and optional air conditioning system. Opening side and rear windows, fully glazed access doors, all-round visibility. This is a superbly comfortable cab designed with the driver in mind.
- **Extremely comfortable cloth or imitation leather upholstered driver's seat**, fully adjustable for all builds, progressively sprung with compressed air suspension, with 10 degree swivel, especially important during ploughing to reduce uncomfortable twisting of the body.
- **Three-spoke soft grip steering wheel** with adjustable height and rake for different height drivers and preferred driving position.
- **Complete visibility** forwards and downwards, **easy-reach hand and foot controls**, non-slip pedals and floor, gear-change on the steering column, with gears on the right and range selection on the left.
- **Instrument panel with multi-function check panel** incorporating the latest in electronics for full operator control of tractor functions. Led's, telltales, buzzer for immediate feedback of tractor malfunction, for accident prevention, enhanced safety on the job. Engine oil level can be checked from the cab.



Front view of driver's seat: there is also an LCD clock.





Steering wheel with adjustable height and rake according to height and preferred driving position.



# An endless source of power

The Fiat Group's foremost position and reputation worldwide as a manufacturer of Diesel engines for industrial purposes, ranging from cars and trucks, to tractors and agricultural and construction machinery, from generator sets to the racing Diesel engines for the huge off-shore speed-boats, is well known. The secret of their success? To put it in a nutshell - their sturdiness, low fuel consumption, exceptionally long life; the leading edge technologies and materials used for turbocharging, the design of the combustion chambers and intake ducts, heat exchangers. Not forgetting their top level performance, versatility of operation, torque reserve, low operating costs, extensive standardization of components for fast, troublefree servicing and reduced costs of spare parts.

The Diesel engines mounted on FIATAGRI tractors have a further advantage - their extra long service life even if run full out for long periods, because they are always rated for the most demanding jobs envisaged at the design stage for use on trucks or stationary installations. A 20-30% margin in terms of speeds, power and maximum torque which means safety, continuity of operation and high trade-in value.

## - The 8065 engine

A 6 cylinder, naturally and supercharged engine with a displacement of 5.7 ltrs, the biggest engine of the new Series 8000, featuring widescale standardization of parts, a modular structure with 3, 4, 5 and 6 cylinders, with a common stroke of 115 mm and 100 and 104 mm bore according to power required.

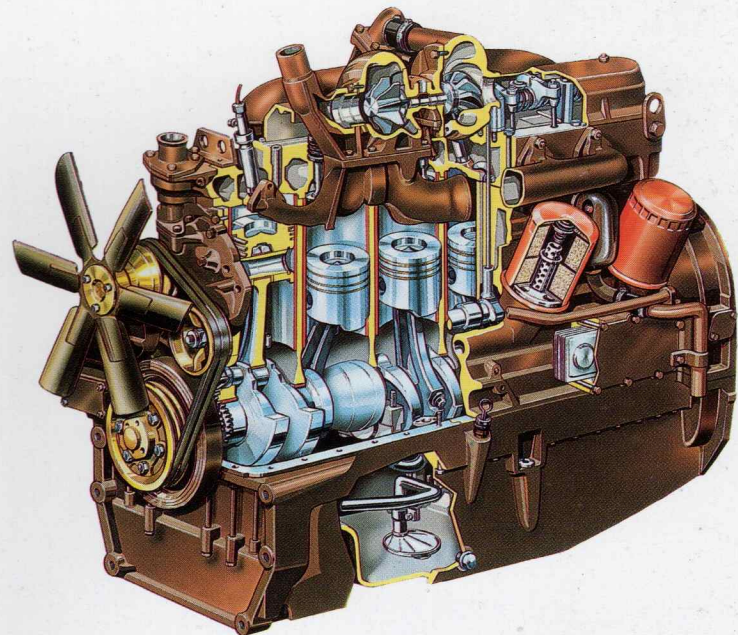
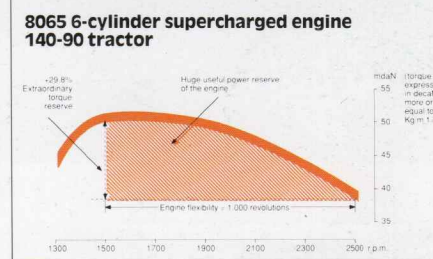
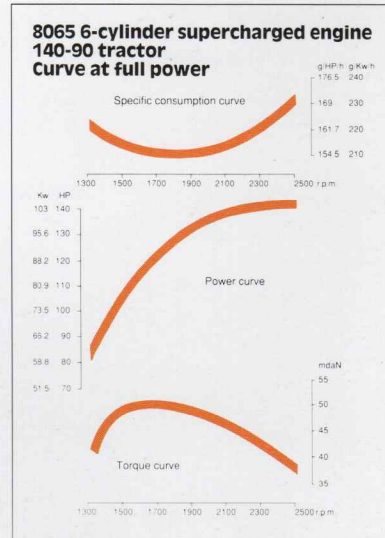
The naturally aspirated version of the 8065 is mounted on the 115-90 while the 130 and 140-90 are equipped with the supercharged version with special ratings, with a power at the flywheel of 115, 130 and 140 Hp DIN respectively, developing max. power at 2500 rpm and max. torque at less than 1500 rpm. Great flexibility of 1000 rpm between max. power and an over 20% torque reserve. These figures give some idea of the remarkable

characteristics of this untiring "powerhouse", with reduced running costs for low fuel consumption. Just take a look at the two diagrams to the right which give OECD test data of the 140-90 to appreciate the optimal trend of the power curve, especially at the top end, which gives 140 hp at 2500 rpm and 130 hp at 1900 rpm, and the progression of the torque curve which reaches a value of 53 Kgm at just 1450 rpm. This engine still has a huge power reserve so that few gear-changes are required. Its flexibility and torque reserve enable it to overcome resistant loads and to cope with heavy take-offs under load.

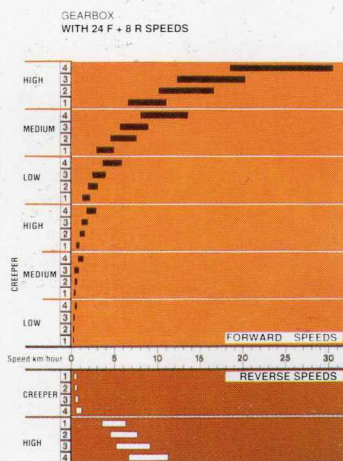
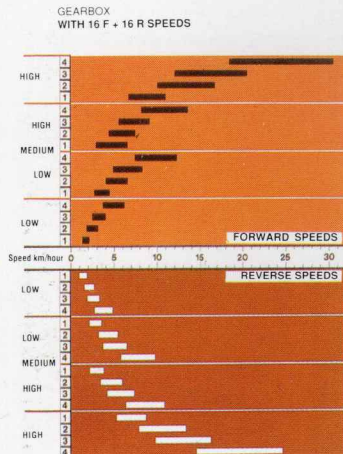
One of most important technical features are the redesigned "spiral" intake ducts which increase "twist and swirl" and speed of air flow, cutting fuel

consumption even further, reducing smoke and enhancing all-round engine performance. Other strong points include:

- high twist and swirl "Omega-shaped" combustion chamber;
- heat exchanger for engine oil to preserve the lubricating qualities of the oil;
- counterweighted crankshaft for maximum dynamic balance and vibration free running;
- all the power and pickup of the supercharger combined with fuel saving by increasing the air supplied to the cylinders.



# Conversion of power into work: the Transmission



This is the heart of the tractor, where engine power is converted into performance, to meet the wide range of different customer requirements. Super-reduced creeper speeds for special jobs such as ditching which require very slow forward speeds but full power at the power take-off, the right speeds for all jobs, from deep ploughing to surface work and harvesting, fast speeds for road hauls.

Extremely sturdy parts, nodular cast iron gearboxes, helical tooth gears, synchronized ranges and speeds, forcefeed lubrication are just some of the strong points of the transmissions of the 115, 130 and 140-90.

## Engine clutch

Hydraulic single 14" dry plate central clutch with "Cermetallix" buttons with automatic backlash elimination. Large friction surfaces with smooth gradual engagement, long life, no adjustment, minimum pedal pressure. Designed to transmit even the heaviest loads. The transmission of the 115/90 has the same characteristics with a 12" plate.

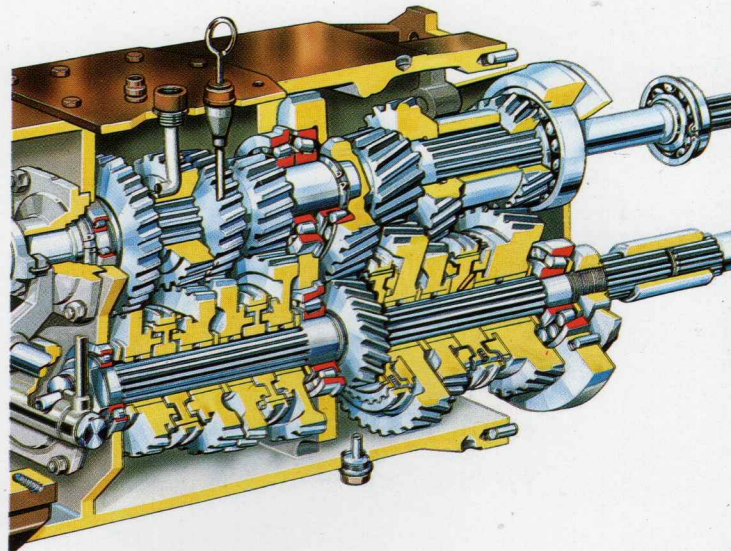
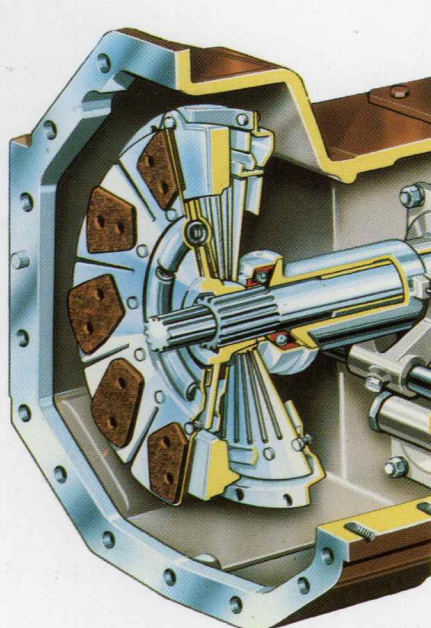
## Mechanical gearboxes

Choice of gearbox with 24 F + 8 R speeds with creeper speed reduction gear or 16 F + 16 R speeds with mechanical reverse gear. In particular, the 24 F + 8 R gearbox provides a wide range of super-reduced creeper speeds starting from 200 metres/hour while the 16 F + 16 R gearbox provides 8 speeds for field work between 3 and 11 km/hour.

These gearboxes also feature "overlapping" of the ranges, i.e. the 1st speed of each range is slower than the 4th speed of the previous range with considerable benefits as regards take-off under load. The speed reserve of the engine makes it possible to achieve a speed of 7-8 km/hour at full load in 1st speed high range. The 115H, 130 and 140-90 4WD models are available in the normal 30 km/hour version and the "fast" approx. 40 km/hour version, with a different ratio of the bevel gear pair and with an electro-hydraulic device for automatic engagement of the four wheel drive operated in field work by a button on the dash or whenever the service brakes are applied together.

## Strong points

- helical tooth gears for low noise and long life.
- All the gears are synchronized for "car" type driving; synchronization of the ranges is also available.
- All the gears of the transmission are forcefeed lubricated.





### "Power Shift" gearbox

FIATAGRI offers an optional "Power-Shift" hydraulic gearbox, i.e. with activation under load without using the clutch.

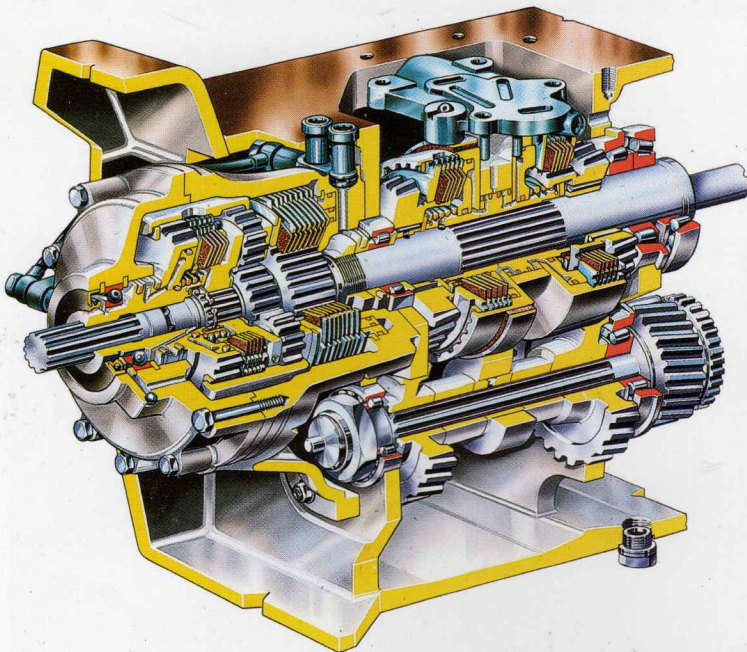
This gearbox has four ratios that can be engaged under load, shifting up or down in sequence, driven by four hydraulic multi-plate clutch "packs" in oil bath which - together with the creeper gear unit or synchronized mechanical reverse gear - provides two possible combinations of 24 F + 8 R or 16 F + 16 R speeds with sequential speeds instead of "overlapping" speeds.

The advantage of this gearbox, which is housed in place of the standard mechanical gearbox, is the fast continuous shifting provided without interrupting

power transmission. This is the ideal solution for road hauls, work on undulating terrain and for coping with varying loads.

Instead of the conventional clutch, the connection with the engine consists of a sturdy antishock plate which protects the gearbox against unexpected overloads. When starting the tractor, the driver presses the clutch pedal which acts on the hydraulic distributor of the first speed of the selected range and not, as before, on the central clutch which has now been eliminated. Subsequent speeds are selected merely by moving the gear lever.

The Power-Shift gearbox is available on the normal and 4WD 115H, 130 and 140-90 models.





## Final drive and brakes

A rugged rear differential able to enhance the huge torque provided by the engine through the gearbox with **strong points** such as:

- bevel gear set with "Gleason" helical gears for quiet operation. Available with ratios for the 30 km/hr and 40 km/hr version on 4WD models (except for the 115-90).
- hydraulic locking of the differential which can be engaged/disengaged with/without load and with the tractor moving. The lock is quickly disengaged with a light touch on one or both brake pedals.
- overspecified epicyclic final drives.

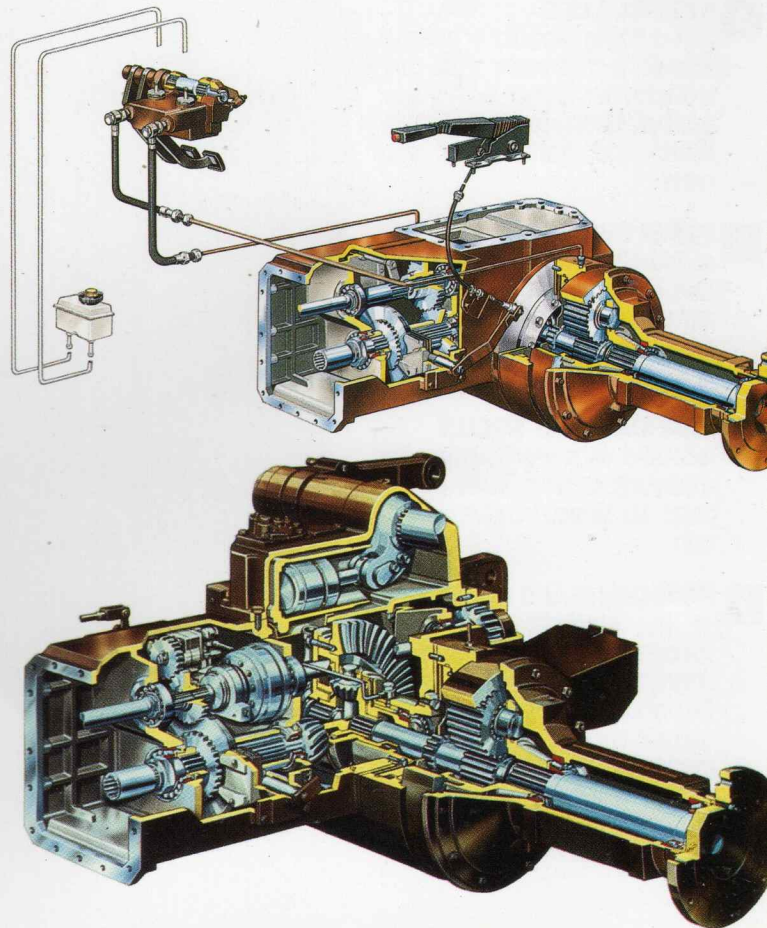
**Double circuit hydraulic braking system** with low pressure pedals that can be joined for simultaneous braking. On the 40

km/hr version of the 4WD models, the 4WD is automatically engaged when both pedals are pressed.

**Disc brakes in oil bath** with large braking surface with high heat dissipation for constant efficiency even under the most exacting conditions of use and with automatic adjustment.

**An exceptional emergency and parking brake** with hand control lever that activates a powerful caliper that acts on the discs on the secondary shaft of the gearbox upstream of the PTO for the front axle of the 4WD.

The braking system of the normal and 4WD 115, 130 and 140 models guarantees not only fast efficient braking but maximum safety with minimum effort and is more or less maintenance free.



# 10 strong points

## 1 ENGINE

6 cylinder, with a total displacement of 5.7 liters with a rating of 115 hp and supercharged for 130 and 140 hp/DIN at the flywheel of the respective models. High torque reserve, low fuel consumption and a flexible 1000 rpm range of use from max. rpm to max. torque rpm.

## 2 SUPERCOMFORT CAB

Designed with man in mind. Quiet operation (80 dBA) safe, all-round visibility, unbeatable driving comfort.

## 3 INSTRUMENT PANEL AND CONTROLS

Electronic control of all functions for maximum safety. Smooth gradual operation of levers and pedals engineered for maximum comfort and ease of use.

## 4 HYDRAULIC LIFT

With a lifting capacity of over 6.6 tonnes, with precise draft control with flexion bar, with mixed draft-position control. "Lift-O-Matic" and "Vario-Speed" systems.

## 5 POWER TAKE-OFF

at 540/1000 rpm with progressive engagement using multi-plate clutch in oil bath. Over 90% of max. engine power available at the PTO.

## 6 REAR AND FRONT WHEELS

Available with PAVT system for track adjustment, with helical cams to select required position.

## 7 FINAL DRIVES AND BRAKES

of the epicyclic type, over-specified for maximum strength and long working life. Disc brakes in oil bath with hydrostatic control. On 40 km/hour models automatic engagement of four-wheel drive by operating both brake pedals together.

## 8 DIFFERENTIAL LOCK

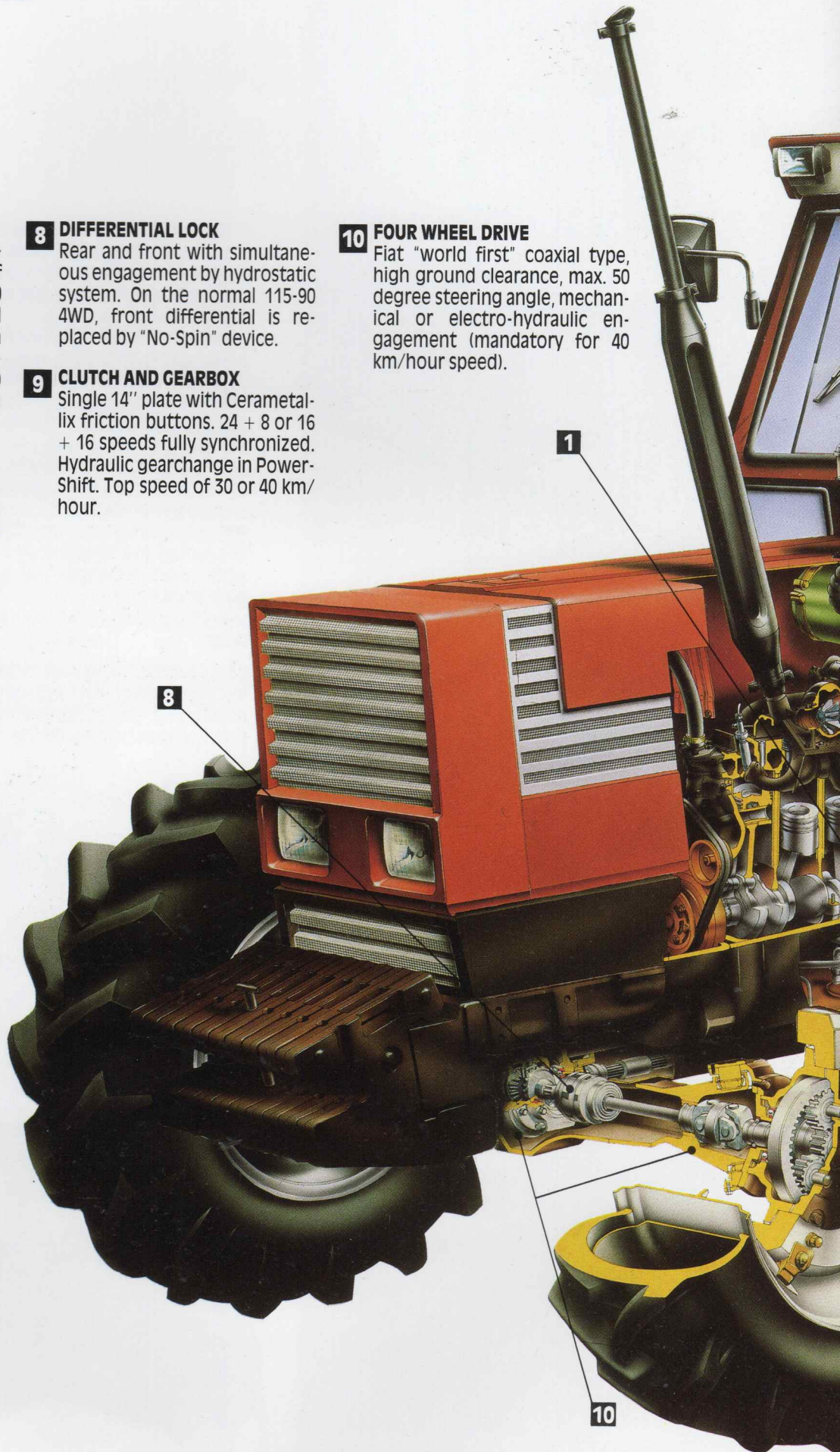
Rear and front with simultaneous engagement by hydrostatic system. On the normal 115-90 4WD, front differential is replaced by "No-Spin" device.

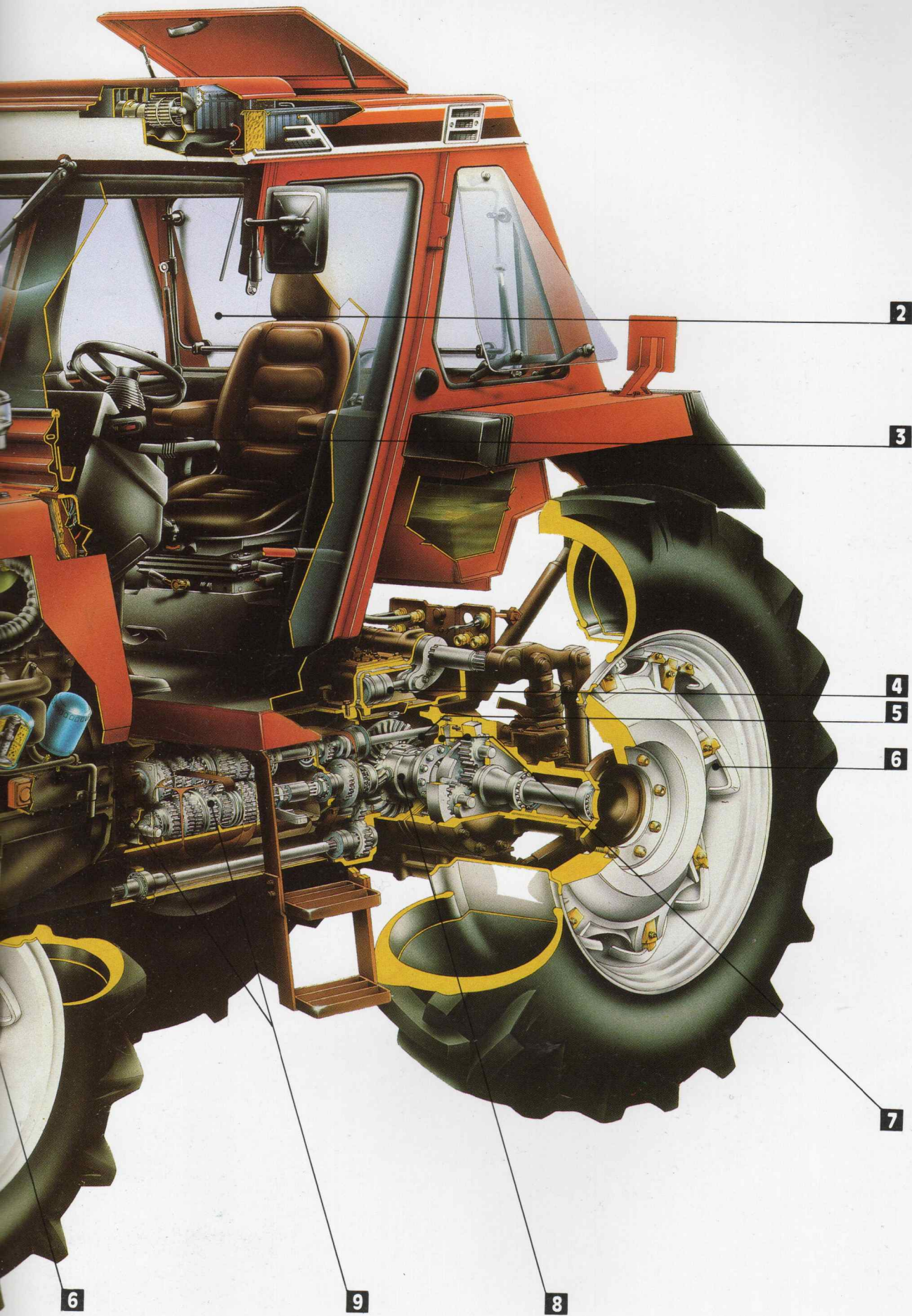
## 9 CLUTCH AND GEARBOX

Single 14" plate with Cerametalix friction buttons. 24 + 8 or 16 + 16 speeds fully synchronized. Hydraulic gearchange in Power-Shift. Top speed of 30 or 40 km/hour.

## 10 FOUR WHEEL DRIVE

Fiat "world first" coaxial type, high ground clearance, max. 50 degree steering angle, mechanical or electro-hydraulic engagement (mandatory for 40 km/hour speed).





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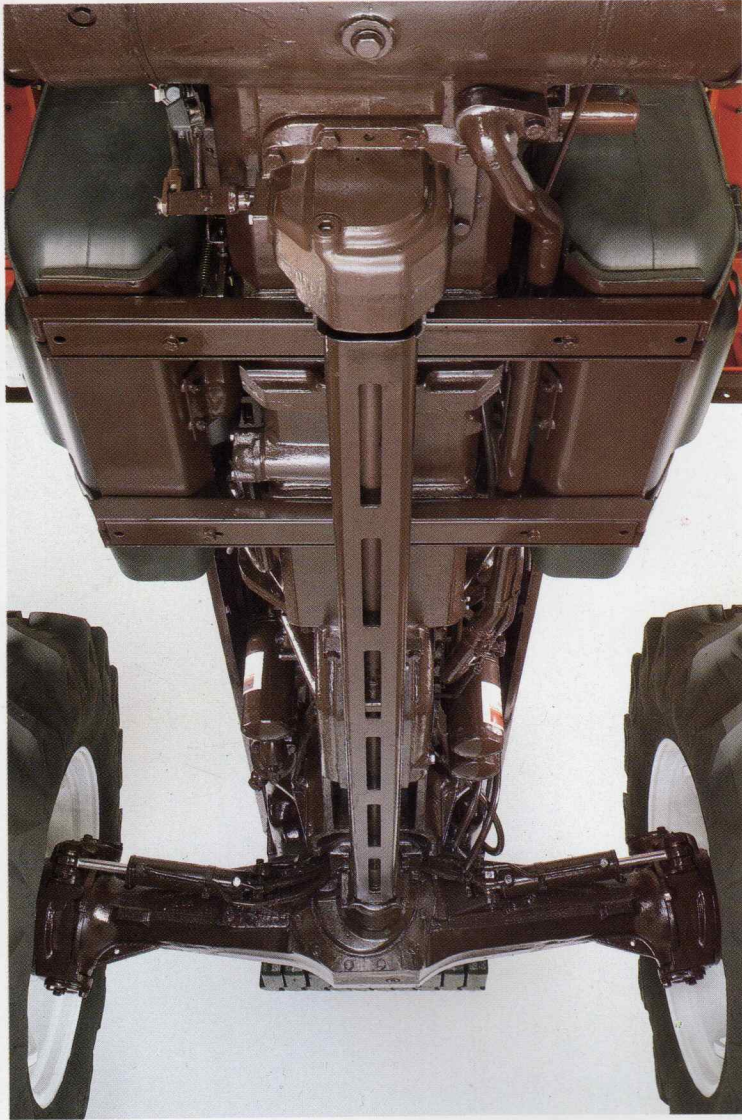
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# 4WD "The Fiat Formula": the reasons behind a "world first"



For many years now, Fiat Four Wheel Drive tractors have been beating the competition hands down on world markets in all the various power categories but particularly at the top end of the range, for many good reasons. These are the **Strong Points** which make the 115, 130 and 140-90 4WD outright winners and tractors with exceptionally high performance.

**Fiat tractors are purpose-designed for four wheel drive** according to the classic "co-axial" formula with high ground clearance. They are not mere adaptations of 2WD versions to which shafts and axles have been added.

**Direct drive** with gears in sequence from the secondary shaft of the gearbox, without torque limiters, which allows full transmission of power and continuous use of the 4 drive wheels.

**Lever controlled mechanical engagement or button controlled electro-hydraulic engagement** (mandatory for 40 km/hour version tractors), with automatic engagement when the two brake pedals are pressed at the same time.

**Straight-through propshaft** with no universal joints, in line with the center line of the tractor, high up and fully protected.

**One-piece nodular cast iron high strength front axle** able to support heavy front-mounted implements.

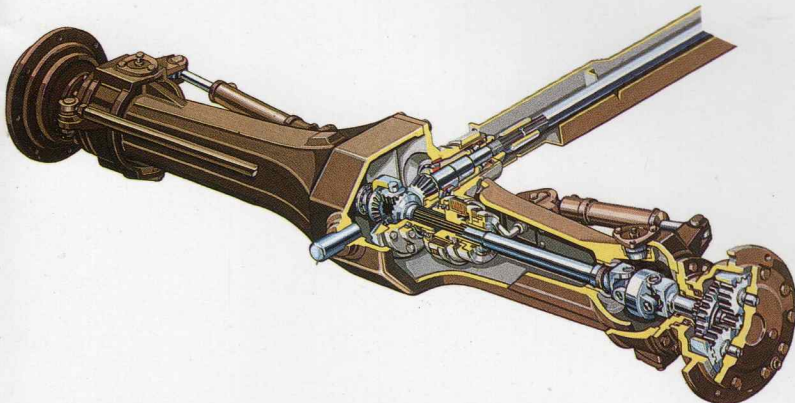
**Compact centrally mounted differential** for maximum ground clearance and with hydraulic multi-plate clutch differential locking simultaneous with rear differential locking (automatic "No-Spin" type on the normal version 115-90 4WD).

**Mud, straw and dust proof twin universal joints** which transmit power to the wheels with no kicking even on the tightest bends.

**Large diameter epicyclic final drives** which prevent overloading of the differential and axle shafts.

**Hydrostatic steering** with independent hydraulic circuit and anti-shock valves actuated by two cylinders located behind the axle for maximum protection.

**50 degree steering angle** for ease of manoeuvre when working on narrow tracks.



# Full power at the Power Take-off

The Power Take-off is an important feature of these high power tractors designed for use with large implements. It must give smooth progressive engagement for safe operation of big machines such as pneumatic sowing machines or the huge 4800 baler at high harvesting speed. These are all **Strong Points** of the 115, 130 and 140-90 tractors:

**PTO at 540/1000 rpm** with over 90% of engine power available at PTO rated speed.

**Speed changeover either** replacing the flanged end or using the lever alongside the driver's seat in the cab.

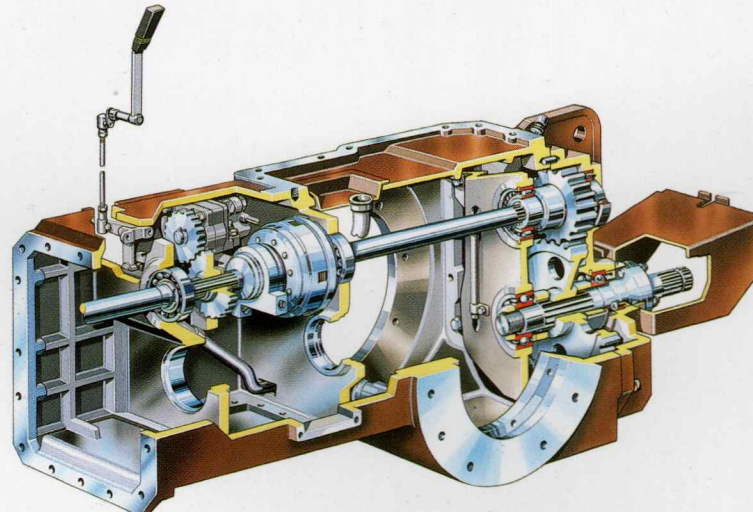
**Fully separate operation** through multiplate hydraulic clutch in oil bath and hydraulic control with brake and progressive engagement. On the 115-90 normal version, independent operation is provided with mechanical control of the second 12" clutch.

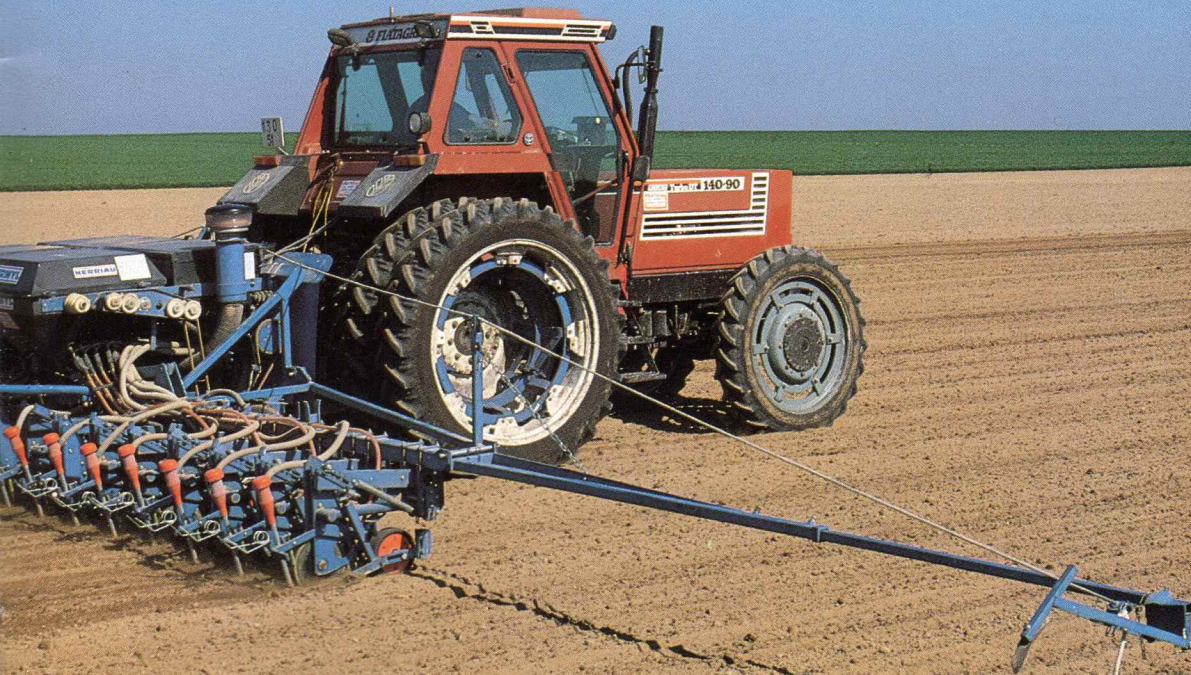
## Independent hydraulic circuit and pump.

**Oil filter** with purpose-designed cartridge accessible from outside the body of the tractor.

A set of extremely important features when using implements with large start-stop in-

ertia, combined with technical solutions that guarantee efficient operation and long life of parts under stress. Smooth easy engagement also contribute to driver comfort.





# Hydraulic power: a complete system

With a lifting capacity at the ball ends of 6650 kg (5210 kg for the 115-90), with links horizontal, the lift of these three tractor models ensures correct hitching of the largest and heaviest implements for any type of work. In addition to this lift capacity, FIATAGRI has also incorporated the following exceptional features to meet all possible user requirements with tractors that are literally at the top of the class for technical innovations and performance:

**Draft control** on the lower links obtained with a flexion bar: effective length can be adjusted with purpose-designed spacers to adjust sensitivity according to the weight-size of the implements used.

**The flexion bar and the levers and links** which transmit the draft signals to the distributor are housed inside the body of the tractor for complete protection against dust, water, mud etc. thus ensuring long life and constant efficiency.

**Position Control** through an appropriate lever for presetting of maximum working depth.

**Mixed draft-position control** for working on ground with varying soil resistance and providing a bottom limit stop to the working depth.

**Float position** for all types of implements whether towed or mounted with depth control wheels.

**All controls grouped in an easily accessible console** on the driver's right, within easy reach and with accurate fingertip control.

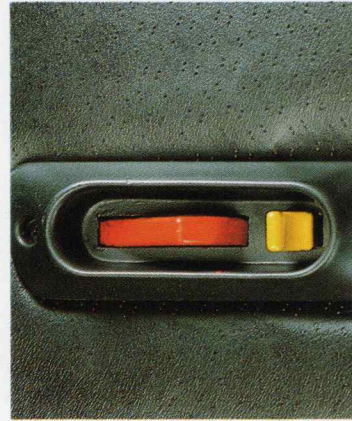
**The "strong points"** of this lift are not only its wide range of features. They include other more versatile and practical functions:

**The "Lift-o-Matic" system**, a two-button device for raising/lowering **without having to adjust the control levers** and therefore retaining the positions set at the start of the job.

**The "Vario-Speed" device** to increase/reduce sensitivity of the lift when working under controlled draft, according to the type of implement used and the terrain.

**The "adjustable lowering speed"** according to weight and type of implement: **tighten/untighten** the knob to **increase/reduce** speed or **tighten the knob all the way** to lock the lift, a useful feature to enhance safety when travelling with implements in the raised position.

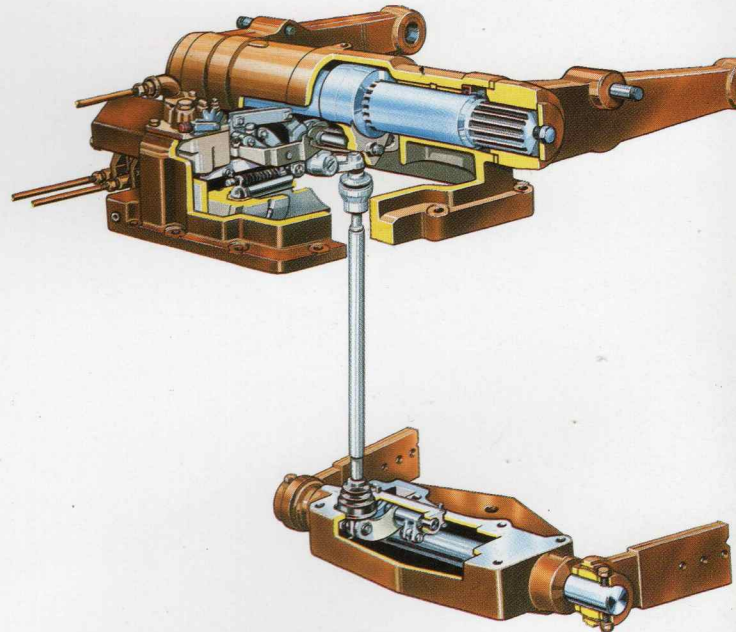
**External position control** with a purpose-designed lever so that one man can make the necessary adjustments for hitching the implements.



"Lift-O-Matic" buttons.



Console on the operator's right with the controls/adjustments of the hydraulic lift and auxiliary control valves.



# The hydraulic system



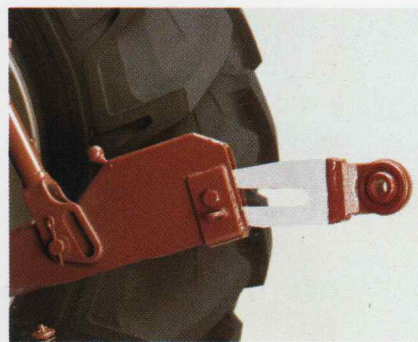
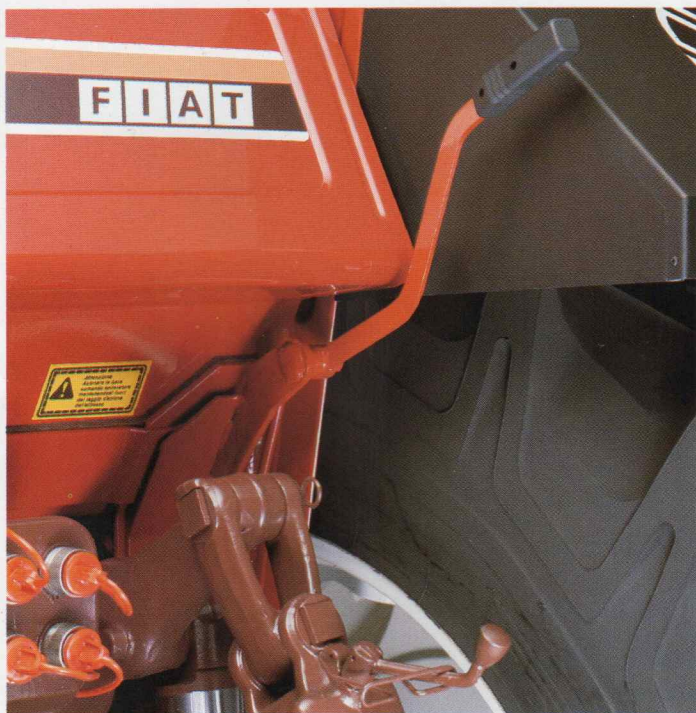
Driven by a large gear pump with a capacity of 50.8 litres/min and with a rated pressure of 175 kg/cm<sup>2</sup> with double cartridge filter on the delivery side.

Mounted on the timing cover, the pump is driven directly by the tractor engine. Pump capacity is sufficient to raise the linkage through its full stroke in 1.7 seconds.

These tractors can be equipped with up to 3 single and double acting **auxiliary control valves** with float option, with or without automatic "uncoupling" for the widest possible range of implements requiring remote hydraulic control.

**A hydraulic trailer braking system** is also available, operated by foot pressure on the tractor brake pedals and which gives priority to trailer braking.

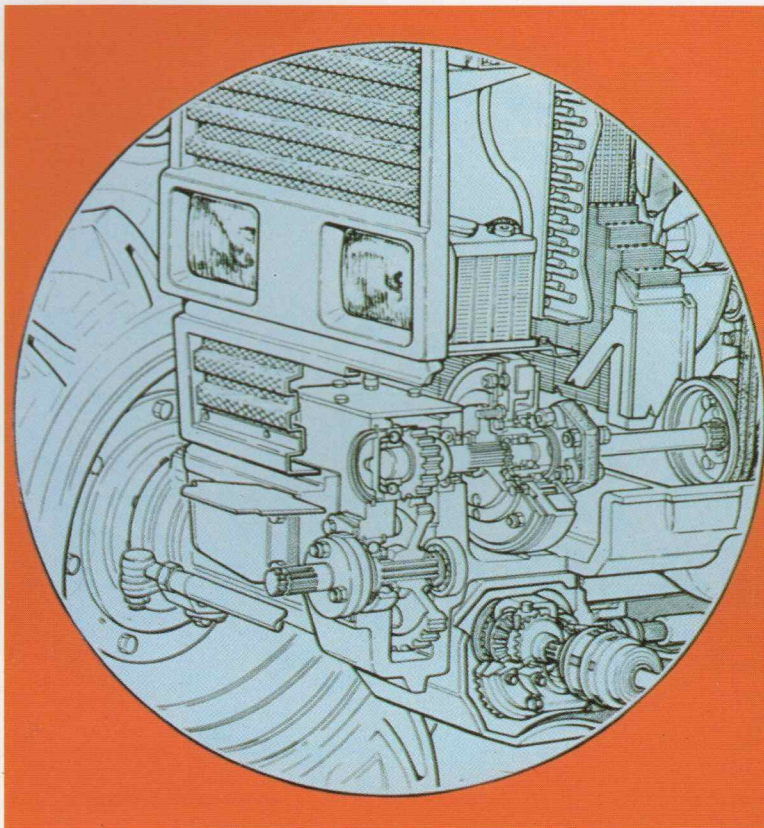
**3-point linkage** Cat. 2 and Cat. 3 with lower links with telescopic sway restrictor ends. Quick coupling lower link ends and hydraulic cylinders for adjustment of right lower link and top link are also available, requiring only one additional control valve with solenoid operated diverter valve.



# Front linkage and PTO

**PTO** directly from the engine shaft is of the single reduction type with electromagnetic coupling controlled by a button in the cab and rated for 1000 rpm. It is mounted in a purpose-designed cast housing in the supporting cradle of the front linkage.

**The front linkage** with two hydraulic jacks has a lifting capacity at the ball ends of 3500 kg and is supported by a factory-fitted cast "cradle". Strong side plates reinforce the tractor body structure. The lift is controlled from the cab and is equipped with position control.



A very practical group that extends the tractor's working range allowing full cycle harvesting, thus enhancing cost effectiveness of implements.





# Main technical specifications

Model	Weight*	HP**	Engine	Transmission
<b>115-90</b>	4580 Kg	115	Fiat 8065.05 6 cylinders direct injection, normally aspirated  Bore and stroke: 104 x 115 mm  Piston displacement: 5851 cc  Rpm at max. power: 2500	"Cerametallix" single-disk (12") clut with hydraulic contr Gearbox with 24 F + with super reduction 16 F + 16 R with reverse g Synchronized gear
<b>115-90 DT</b>	5010 Kg			
<b>115-90 H</b>	4610 Kg			"Cerametallix" single-disk (14") clut with hydraulic contr Gearbox with 24 F + with super reduction 16 F + 16 R with reverse g Synchronized gear
<b>115-90 DT H</b>	5045 Kg			
<b>130-90</b>	5040 Kg	130	Fiat 8065.25 6 cylinders direct injection supercharged with different ratings  Bore and stroke: 104 x 115 mm  Piston displacement: 5861 cc  Rpm at max. power: 2500	"Cerametallix" single-disk (14") clut with hydraulic contr  Gearbox with 24 F + with super reduction 16 F + 16 R with reverse g  Synchronized gear
<b>130-90 DT</b>	5420 Kg			
<b>140-90</b>	5810 Kg	140	Piston displacement: 5861 cc  Rpm at max. power: 2500	"Power-Shift" hydraulic gearbox
<b>140-90 DT</b>	6350 Kg			

\* operating weight, with Supercomfort cab, including fluids.

\*\* at engine flywheel, OCDE tested power.



Power Take-off	Hydraulics	Capacities	Tyres
Mechanical fully independent single-plate (12") clutch 540/1000 rpm and synchronized with wheels	Pump capacity: 50.8 lt/min Rated pressure: 175 Kg/cm <sup>2</sup> Draft, position and mixed control lift Max. capacity: 5210 kg at the ball ends with horizontal links and 1 auxiliary cylinder Up to 3 auxiliary control valves CAT 2 linkage.	Fuel tank: 180 lt  Engine oil sump and filter: 15.2 lt  Transmission and hydraulic lift: 43.1 lt for DT (4WD): 44.4 lt	2 WD: front: 9.00-16; 10.00-16; 11.00-16 rear: 16.9/14-38; 18.4/15-38; 23.1/18-30; 23.1/18-34  DT (4WD): front: 13.6/12-28; 14.9/13-28 rear: 16.9/14-38; 18.4/15-38; 23.1/18-34
Fully independent hydraulic multi-plate clutch in oil bath 540/1000 rpm	Pump capacity: 50.8 lt/min (58.3 lt/min for 140/90) Rated pressure: 175 Kg/cm <sup>2</sup> Draft, position and mixed control lift Max. capacity: 6650 kg at the ball ends with horizontal links and 2 auxiliary cylinders Up to 3 auxiliary control valves CAT 2 linkage.	Fuel tank: 180 lt  Engine oil sump and filter: 15.2 lt  Transmission and hydraulic lift: 44.7 lt for DT (4WD): 46.1 lt	2WD: front: 9.00-16; 10.00-16; 11.00-16 rear: 18.4/15-38; 23.1/18-34; DT (4WD): front: 14.9/13-28; rear: 18.4/15-38; 23.1/18-34  As for 130 with: 2WD: rear: 20.8-38 DT (4WD): front: 18.4R70-28 rear: 20.8-38



# FIATAGRI's after-sales and spares service, a guarantee for its customers worldwide

The San Matteo (Modena) parts centre with a covered area of 21,600 square meters is the very heart of the FIAT-AGRI after-sales service, handling 60,000 items and 21 million parts and meeting over 3000 orders daily.

The San Matteo facility is flanked by the Service School where the workshop managers and mechanics who will follow up the working life of the machines at the various centres of the FIATAGRI retail network and at customer sites worldwide, are trained.

The FIATAGRI after-sales service operates in over 100 different countries through Branches, Dealers, Importers, offering the same level of efficiency and ensuring continuity of operation of the machines and maintenance of their market value. The Product, Servicing and Organization are the 3 mainstays of the success of Fiat Tractors.

- 1st in Europe for the last 8 years, constantly increasing its market share.
- 1st in the world for 4WD.
- 1st in the world for agricultural crawlers

**In Italy, the strongest, most widespread Network:** 74 farmers' co-operatives which can call on 3000 Branches and more than 500 authorized workshops. No wonder one farmer out of two chooses FIATAGRI!



Fiatagri is the Agricultural  
Tractor and Machinery  
division of FiatGeotech S.p.A.

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