

FIAT 160-55 FIRST, AS ALWAYS



FIATAGRI





A totally new heavy crawler for the most difficult jobs

The first Fiat crawler bore the date 1932. It was the forerunner of the more than 260,000 of its kind that have appeared over the last 57 years, all of them designed and built to work on difficult, tough or steeply sloping ground, or where floatation is a problem. These are the figures and the features that make Fiat's agricultural crawlers the world's best sellers with over 60% of the market.

And if attention is confined to the "heavy" category, now joined by the new 160-55, over 30,000 have been built from the renowned 55L to the 1355.

This tradition and this predominance are an outcome of the difficult conditions that prevail in a large part of Italy, with the clay of its plains and hills, the need for deep ploughing, and where great stability is required to operate in safety on steep slopes. An Italian success that has resulted in the pre-eminence of Fiat crawlers throughout the world, from Spain to California, and from Venezuela to Australia, where the kind of farming requires this type of propulsion.

The new 160-55

160 hp, 9 tonnes, completely new transmission, with PTO and adequate hydraulic control valves. A crawler that is new from top to bottom, from its housing castings to its driver's position with the platform isolated from the tractor body, from its hydraulic clutch-reverse gear to its hydraulic controls and servo mechanisms. Another example of Fiatagri's attention to front-runner technologies, and of the continual evolution of products that offer even the more difficult and specialised branches of farming modern vehicles capable of satisfying the performance and comfort requirements of farmers and contractors.

In substance, a new tractor not only for deep ploughing and heavy harrowing jobs under the most arduous working conditions, but one designed as a multipurpose vehicle for use with both power driven implements at the rear and industrial-type equipment at the front.

FIATAGRI, THE WORLD'S LEADING AGRICULTURAL CRAWLER MANUFACTURER, OFFERS A NEW LEADER TRACTOR.

The engine: plenty of power to spare for maximum performance

A few words will suffice with regard to the reputation of Fiat's diesels: the Fiat Group is the world's leading manufacturer of diesel engines for all industrial uses, from cars to trucks, from tractors and farm machinery to earth-movers, generating sets, pumps and so on. There's a simple reason for this success: they are rugged, they consume little, they have an exceptionally long service life and adopt the most advanced technologies and materials. Yet even that would not be enough, were it not also for their high performance rating, low consumption figures; moreover, high parts standardisation, which makes servicing easier and cuts down the spares bill.

And the engines fitted to Fiatagri tractors have an extra advantage: an extra reserve in their long working life, even when they are constantly used to the full, because they are always under-calibrated with respect to the more onerous tasks envisaged at the drawing-board stage for their use on trucks and boats. A 20-30% margin in terms of running speed, maximum power and torque that adds up to certainty in continuous operation and a high second-hand value.

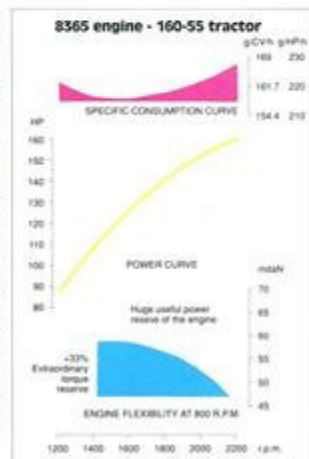
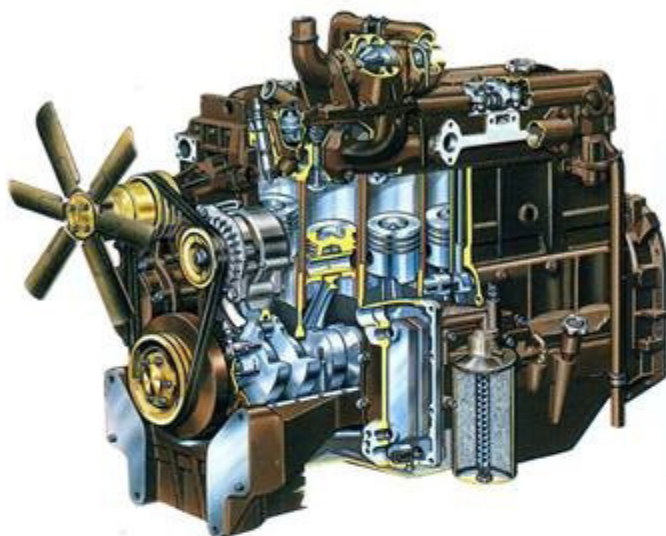
The 8365 engine

A full 8100 cc, 6-cylinder turbo with maximum power at 2200 rpm and maximum torque at 1400 rpm, delivering 160 hp DIN at the flywheel. The same engine is used to power the well-known 160 and 180 models at the top end of the Series 90 wheeled tractor range.

Enormous flexibility, the highest on the market, from the full 800 revs. between max. power and max. torque and a 33% torque reserve. These few figures sum up the formidable characteristic of a tireless power unit already renowned for its long service life and low running costs: an engine whose flexibility and torque reserve allow it to overcome heavy resistances and tackle onerous work without needing frequent gear changes.

Here are some of its MOST SIGNIFICANT ENGINEERING FEATURES:

- Twin-body HEAT EXCHANGER for the engine oil and the clutch-reverse gear assembly oil for the maximum durability and reliability
- DRIVE SHAFT WITH 8 COUNTERWEIGHTS, for the maximum dynamic balancing and "roundness"
- WATER-HEATING, for much easier starting in particularly cold weather
- ALL THE STRENGTH AND THE PICK-UP OF THE TURBO, allied to the fuel savings produced by the introduction of more air into the cylinders.



The 8365.25 engine has a very "flat-topped" power curve; at full throttle it provides no less than 150 hp at only 1900 rpm, indicating great flexibility and plenty of power available at normal operating speeds.

A platform for comfort



Crawlers are slow travellers. Their work takes them over the worst sort of terrain, often in hilly country. Their structure is enough to dispel all thoughts of comfort. None the less, the driver is expected to spend hours on and among a forest of levers and other controls, and must be for ever working the steering clutches. The transmission gives off heat and transmits vibrations. And all this gets worse the bigger the tractor.

The platform of the 160-55

The answer to these problems is provided by the driving position on the new 160-55. This is on a suspended platform that isolates the operator from the tractor body and its vibrations. This results in a degree of comfort not often found on tracked vehicles.

On the suspended platform floor, which is accessible from either side, there are only two levers which control gear range and speed; levers for the steering clutches are on the dash and act with gentle, effortless, hydraulic control. Soft, progressively acting, hydraulically servo-assisted brake pedals set well forward.

Control of central clutch-reverse gear assembly is through a single "Z-path" lever on the left-hand console. Small levers for the remote hydraulic controls and the accelerator are on the right-hand console.

Very comfortable armchair-type seat

With tilting armrests, padded, adjustable in all directions, with parallelogram suspension and hydraulic shock-absorber.

Mounted well forward for the maximum equilibrium and the best control of the tractor under all operating conditions, this being also aided by the layout and design of the various parts of the bodywork.

Safety features

Locking device to prevent accidental starting; dash generously supplied with telltale warnings and checking devices; handrails on both sides for easier access to the driving position; twin headlights and rear lights for night work; optional safety frame.

Seat tips up completely

For full inspection access to rear transmission components, oil dipstick and regulator devices. Unique in tractors of this class.





A new transmission for excellent performance

Of completely new design, this transmission combines a hydraulic clutch and reverse gear assembly with a 2-range, 4-ratio gearbox making a total of 8FWD + 8 REV gears with constant-mesh helical teeth and sliding engagement sleeves. An innovative transmission capable of enhancing the performance of this new tractor that is required to operate both in the tilling of particularly difficult terrain and in various industrial or forest applications with a wide range of implements. The new transmission is provided with forced lubrication and a heat exchanger.

Clutch-reverse gear

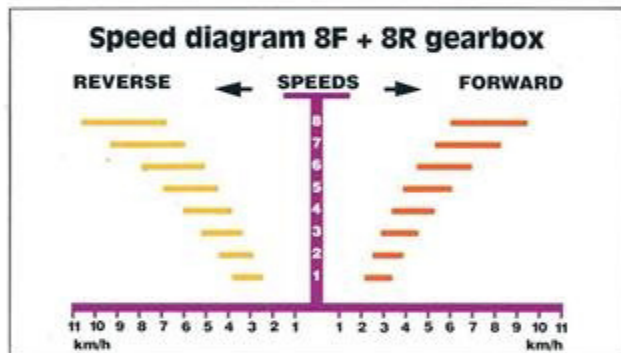
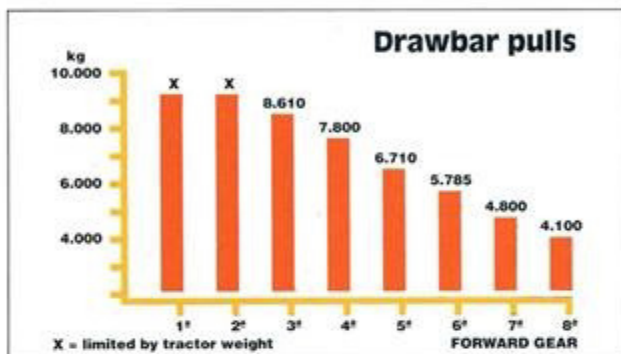
A single assembly composed of two 14" plates for the forward gears and one 14" plate for the reverse gears. It is mounted in an oil bath and cooled via a heat exchanger on the engine to ensure a long, efficient service life. It is operated hydraulically via a small lever on the console to the left of the driver. This lever follows a "Z" path to protect the mechanical components and the driver himself from kickbacks by preventing a sudden accidental switch from a forward speed to its relative reverse counterpart.

8 FWD + 8 REV gearbox

Examination of the speed range and drawbar pull diagrams will show the extent to which this new gearbox enhances the performance of the 160-55 and its engine. The length of the bars corresponding to each gear is the best possible demonstration of the influence of 800 revs of engine flexibility, and how far the torque reserve always enables one to select the most suitable speed for the job in hand. There are a full five speeds between 3 and 7 kph, i.e. the range in which nearly all farming operations are performed. One can also get 7 kph in 7th gear

(e.g. for second-pass jobs) at a reduced engine speed thanks to the flexibility of the engine, resulting in further fuel savings. The reserve speeds are 10% faster than the corresponding forward speeds for faster manoeuvring, while the maximum drawbar pulls (subject to sufficient ground conditions) are excellently stepped to suit increases in speed.

From the engineering standpoint, the functional efficiency, endurance and reliability of the gearbox are ensured both by the adoption of constant-mesh gears with sliding engagement sleeves, and by the presence of a heat exchanger to cool the lubricating oil.



Classic steering: clutches and brakes

Classic and modern at the same time, in accordance with the usual pattern on all Fiat crawlers, with hydraulic controls and servo-assisted controls that reduce fatigue and allow precise, calibrated manoeuvres, even in the most difficult conditions.

Steering clutches

One per track, large-sized, each with 10 driven plates, in oil-bath operated hydraulically through draw levers mounted on the dash. Gentle, progressive, effortless actuation.

Steering brakes

Band type passing all round the clutch drums, oil bath, large braking surface, hydraulically servo-operated via pedals and independent operation. Integrated with the parking brake which operates through its own lever.

Bevel gears and final drives

Of large dimensions, to ensure performance and endurance. Bevel gears with Gleason helical teeth and double straight-toothed cascade final drives, simple and very rugged, an arrangement tried and tested through Fiat's more than 50 years' experience in crawler manufacturing.

Track roller frames

With rear hinged on bar mounted in front of the final drives.

They are fitted with front guides with replaceable wear plates and can move up and down to adapt to the profile of the ground. Each frame is made of rugged, profiled side members and carries the drive sprocket, 6 track rollers, the front idler and carrier roller. Track tensioning is hydraulic. All the gearing is in an oil bath.

Tracks with labyrinth hinging, lubricated for life, long-lasting and really quiet, all to the advantage of the operator. 39 shoes each side (500 or 600 mm wide) ensure less packing of the soil and a very good floatation.

Drive sprockets with odd number of teeth for even contact wear, and window configuration for easier removal of mud, stones, etc.

Various ballast combinations

A casting is permanently fitted as ballast on the front of the tractor and is included in its total weight. Up to 10 additional plate weights can be added to provide an extra 540 kg.



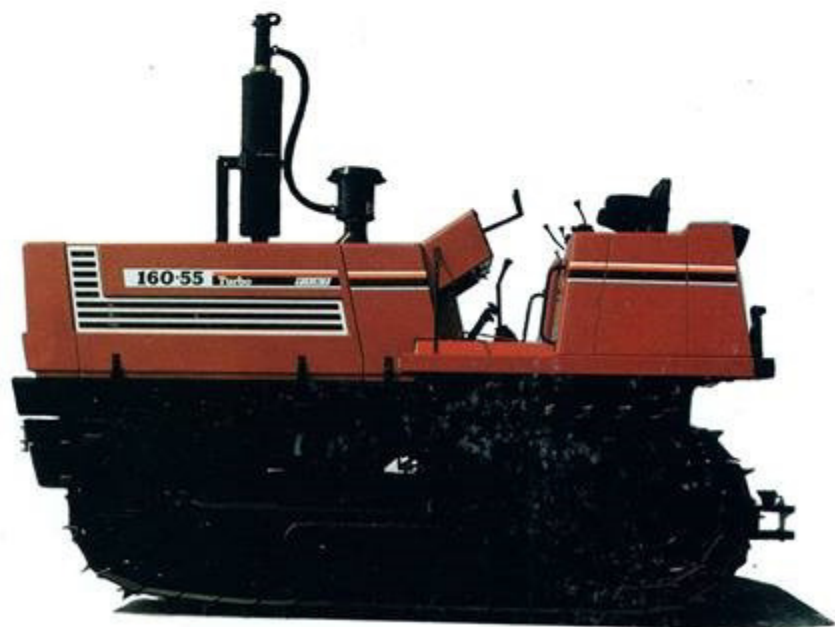


Towing members

A rear drawbar swinging on a support plate is supplied as standard. The 160-55 can also be fitted with a front hitch.

The completely independent 1000 rpm power take-off

Attention has also been given to this to ensure the maximum operating flexibility of a tractor whose power can thus drive large rotary implements or fixed hydraulic or hydrodynamic units. Actuated via a sliding sleeve, the PTO provides 1000 rpm at 2200 engine revs through a 6 splined 1 3/8" diameter shaft.



A complete hydraulic system

For the maximum operating flexibility, to actuate the most complex implements, the 160-55 is fitted with a hydraulic system that is really up to the level of its performance.

Gear pump

Directly operated by the drive shaft. Flow rate 96.8 litres per min. Operating pressure: 120 bar.

Oil tank

Capacity 27.2 litres. Located on the platform to the right of the driver and easily accessible.

Auxiliary control valves

Up to 5 double-acting control valves, including one with the floating position particularly use-

ful when working with a dozer blade - 3/4" snap half-couplings. Small control levers located to the right of the driver, easy gentle action, mounted on a console, fan-like for easy identification.

Hydraulic lift

For the maximum operating flexibility, and coupling even with heavy implements, the 160-55 can be fitted with lifting cylinders that enhance performance and multi-purpose use.



Main specifications

Model	Weight*	HP**	Engine	Transmission	Power take-off	Steering and brakes	Hydraulic system	Undercarriage
160-55	9150 kg	160	Fiat 8365 25 direct injection 6 cylinders turbo diesel Bore x stroke: 115 x 130 mm Displacement: 8102 cc Max power at 2200 rpm Max torque at 1400 rpm Heat exchanger for engine oil and reverse gear	Hydraulically operated hydraulic reverse gear in oil bath 14" Clutches, twin plate for FWD gears, single plate for REV Gearbox: 8 FWD + 8 REV Constant-mesh gears with sliding sleeves Forced lubrication Heat exchanger Double-reduction cascade final drives	Optional Fully independent 1000 rpm 6 splined 1 3/8" shaft	Two lateral hydraulic steering clutches in oil, each with 10 driven plates Fully wrap-round band brakes in oil, servo operated	Gear pump, flow rate: 96.8 l/min Calibrated pressure: 120 bar Up to 5 double acting auxiliary control valves 3/4" snap couplings Optional: hydraulic lift	Rocking tracks with 6 carrier rollers and 2 support rollers Track tension rollers and idlers Long-life in oil bath Hydraulic idler setting Labyrinth, lubricated for life track linkage 39 shoes each side Shoe width: 500 or 600 mm

* = Weight of fully fuelled tractor, ready to work with hydraulic lift.

** = Net power DIN at fly-wheel.



The Fiatagri service, Original spares and servicing system. An assurance for customers all over the world.

The San Matteo, Modena, Spares Centre is the heart of the Fiatagri Service. It extends to 2 hectares under cover and can handle more than 3000 orders a day. Its warehouses hold 21 million items classed under 60,000 headings, all original spare parts designed, inspected and checked to guarantee reliability and operating efficiency.

The Spares Centre is linked to the Service School, where workshop foremen and service mechanics are trained to serve the distribution network and customers throughout the world.

Fiatagri's sales organisation is active in more than 100 countries through branches, dealers and importers, guaranteeing the same efficiency and the same operating continuity of its vehicles everywhere.

Product quality, efficient service and dynamic organisation are the key features of the Fiatagri image and the success of Fiat's tractors:

- No. 1 in Europe for 10 years.
- No. 1 in the world for 4WD.
- No. 1 in the world for agricultural crawlers

In Italy, one farmer out of two chooses Fiatagri.

