Moritz implement carriers

In 2016, Moritz revolutionised the forestry tractor concept. The two new models are true to the original concept, but are technically in a new league. They offer a combination of the aspects of the proven mini felling tractor and the requirements of multifunctional, high-performance forestry tractors.

The appearance changed only little, but the technology of the compact and powerful Moritz felling tractor has been revised to a much greater extent.

Technical specs ▶ Page 128

Convincing technical details:

- Powerful and energy-efficient four-cylinder engine
- Large ground clearance of 320 mm
- Optimal climbing ability
- Proportional travel drive and drift adjustment to compensate for the slope downforce across the slope
- Variable chassis for easy transport and perfect stability with automatically and hydraulically tensioned double guide wheel
- Low ground pressure of only 0.28 or 0.33 kg/cm^2
- Separate traction, on-board, and power hydraulics
- Full vehicle and cable winch control via radio

50 / 75 hp

96 l/min
300 bar

mechanical
PTO

4x prop.
2x s/w

72 kN
110 m

Remote-controlled Moritz implement carrier Technical details at a glance:

1 The undercarriage can be hydraulically extended by 400 mm to achieve an optimum undercarriage width.

2 The Moritz offers a large, lockable storage compartment, several shelves, and a chainsaw holder.

3 The new hydraulic system consists of three systems: Traction drive, on-board, and power hydraulics

4 The TUTUM crush protection protects the operator from injuries.

5 Different mounting options for different categories of lower links allow an uncomplicated attachment.

6 The Moritz can be equipped with a professional geared cable winch for felling and forwarding, or for pre-delivery.

7 The PTO is directly driven, allowing high efficiency in use.

8 A second attachment compartment is optionally available at the front of the vehicle.

9 Safe and ground-saving use in extreme terrain is provided with the auxiliary winch.

10 All functions of the forestry tractor can be controlled and monitored by radio on the completely new, ergonomic control panel.

11 The dimensions and weight of the machine without implements allow uncomplicated transport on a car trailer.

12 To optimally illuminate the working environment, Moritz can be equipped with additional headlights on two positions.

13 The new high-torque (max. 260 Nm) 4-cylinder DEUTZ engines now have 36.4 kW and 55.4 kW.

14 The CLEANFIX reversible fan enables thorough cleaning, and thus the maximum air flow and pressure for efficient cooling

15 Thanks to the universal three-point linkage, other implements from different manufacturers can also be attached.

16 For the travelling to the field of application in the forest or for forwarding, the travel drive is equipped with two speed levels.

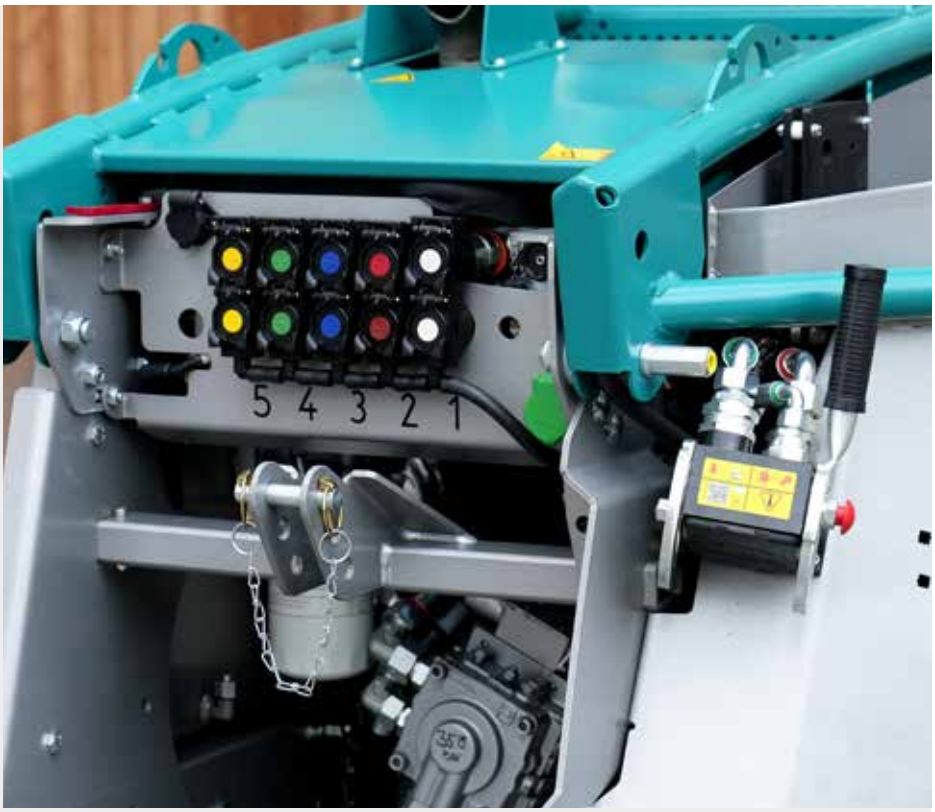
17 The integrated cable winch is installed into the vehicle with a low center of gravity.

18 A slope angle of 50° at the front or 40° at the rear enables a large climbing capacity through ditches.

19 Automatic belt guidance with a hydraulically tensioned double guide wheel prevents the belts from jumping off.

20 The largely dimensioned chassis and the low dead weight allow a minimum ground pressure.

Moritz Fr70/75 mini forestry tractor Technical details that will convince you



More power for the application

The high-torque four-cylinder DEUTZ engines have 36.4 and 55.4 kW respectively. The powerful common rail injection system and the highly efficient combustion with cooled external exhaust gas recirculation ensure optimum engine performance with the lowest fuel and emission values. The water-cooled in-line four-cylinder engine with cooled external exhaust gas recirculation is installed in the Fr75 model with turbocharging, and in the Fr70 model without turbocharging.

Together with the powerful hydraulic system and the additionally available mechanical PTO, these new motor classes allow the operation of more performance-demanding implements and cable winches with higher pulling power.

Hydraulics for high demands

The hydraulic system consists of three separate systems for travel drive, onboard, and power hydraulics.

This separation enables a new dimension for all three systems.

- Travel hydraulics | 2x 11 kW
- On-board hydraulics | 18 l/min, 200 bar 6 double-acting control units
- Power hydraulics | 96 l/min, 300 bar with multicoupler

The operating hydraulics now offer up to four proportional and two b/w double-acting functions, all of which can be operated simultaneously via the radio control.

Full power, less fuel

The Moritz mini forestry tractor Fr70/75 is equipped with a CLEANFIX reversible fan as standard. This allows thorough cleaning and thus always the maximum airflow and pressure for efficient cooling.

More operating comfort for higher work performance

For travelling to the area of application in the forest, or for forwarding or mulching, the proportional travel drive is equipped with two speed levels. The maximum speed is 6.0 km/h.

For comfortable working, a drift can be preset on the travel drive to compensate for the slope downforce when mowing across slopes. In addition, the final speed can also be infinitely adjusted.

Optimised for sensitive soil and demanding terrain

The largely dimensioned chassis and the low dead weight enable a minimum ground pressure of only 0.28 and 0.33 kg/cm^2. Soil-saving driving and working is therefore unproblematic even on wet surfaces.

A slope angle of 50° at the front or 40° at the rear enables a large climbing capacity and uncomplicated driving through ditches. The large ground clearance of 320 mm allows driving over rootstocks as well as driving on forwarding lanes. The slope capability is 100%.

Easy to transport

The dimensions and the weight of the machine of 1.4 t without implement allow uncomplicated and fast transport on a car trailer.

Traction drive in a new league

To get an optimum chassis width for both transport and off-road use, the chassis width of Moritz Fr70/75 can be varied. The chassis can be widened hydraulically by 400 mm. The forestry track can therefore also be used safely on slopes. The chassis, which has a length of 1,650 mm, is available in two widths of 250 and 300 mm for special applications.

Chassis (narrow)

1.2 m

Chassis (wide)

1.6 m

Always under tension

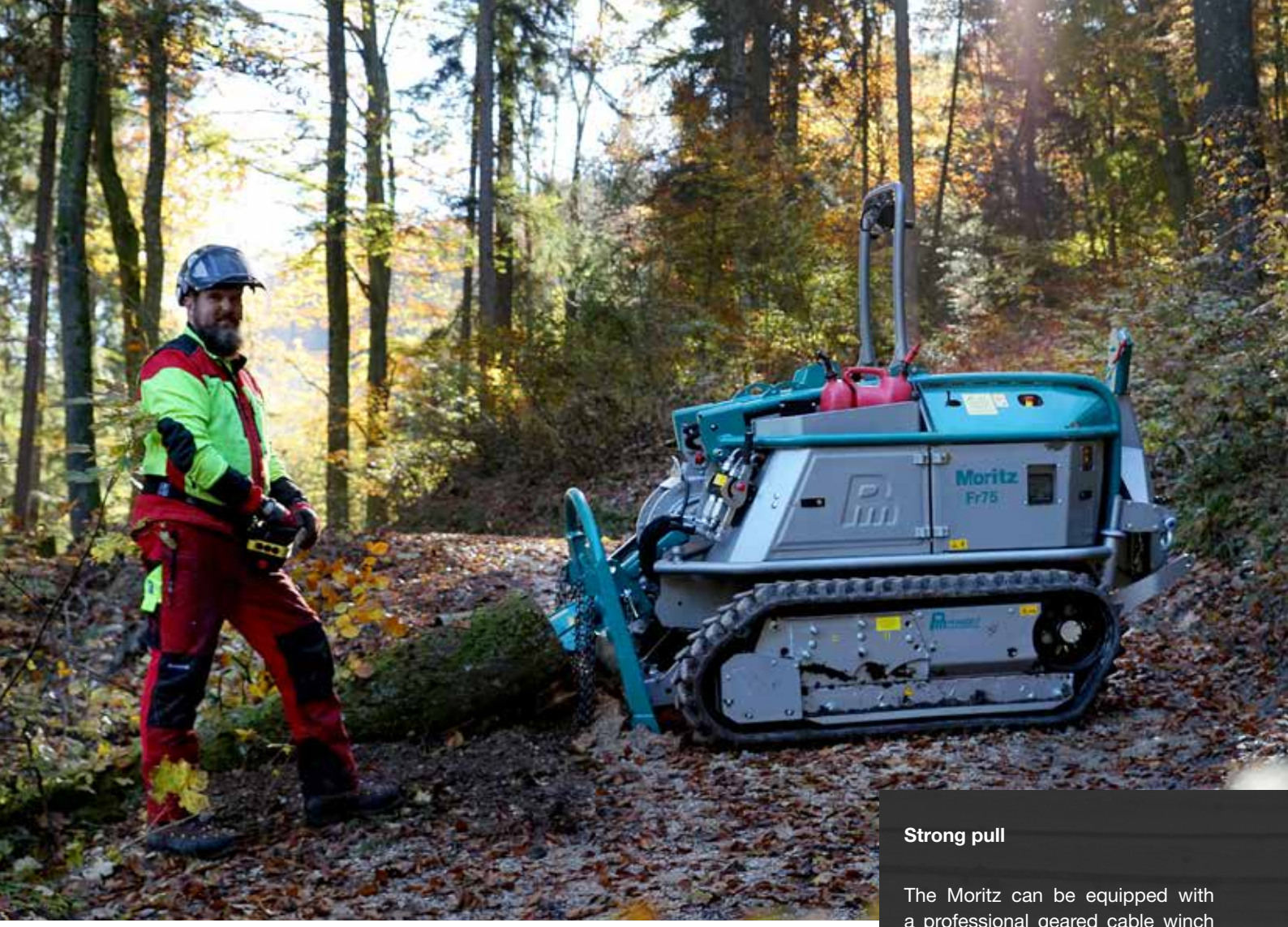
The new, automatic belt guide via a hydraulically tensioned double guide wheel prevents the belts from jumping off even on uneven terrain or when driving over obstacles.

All functions under control

All functions of the forestry tractor can be controlled via radio using the ergonomic control panel. In addition to the operation of the traction and winch drive, this also allows the rope speed or engine speed to be adjusted. If the vehicle is not needed for a short time, the engine can also be stopped and then started again via the radio control.

If the Moritz is equipped with a third-party implement, this can also be conveniently operated via the radio control.

1. Throttle control
2. Proportional control units
3. Operation of rear and front linkage as well as unloading
4. Preselection of the direction of travel
5. Drift setting
6. Preselection of the final speed with the drive lever pressed down
7. Preselection of the chassis width
8. Adjustment of the cable speed (proportional for both directions)
9. Lowering speed of the rear power lift
10. B/w control units



Strong pull

The Moritz can be equipped with a professional geared cable winch with a pulling force of 5.0 t to 7.2 t and a cable capacity of up to 110 m for felling, forwarding, or delivery.

A proportional rope speed in both directions enables a high level of safety by adapting the rope speed to different work situations.

It can be equipped with a rope infeed brake for proper cable winding.

Technical details ▶ from page 24

Stowage space

The Moritz offers a large, lockable storage compartment, several shelves, and a chainsaw holder. Fuel canisters and other accessories can be stored here and are cleared up.

Secure stand

The forwarding shield is the basis for roping. It is equipped with double-acting hydraulic cylinders. If the tractor's own weight is not sufficient for roping work, it can be additionally secured to another object (for example a tree) within a very short time. The rope entry height of the felling tractor is variable. YIn order to be able to vary the height of the rope infeed during use, it is integrated into the height-adjustable forwarding shield.

Moritz as a remote-controlled equipment carrier.

Mechanical PTO

Unique on the market in the field of forestry and mulching tractors is Moritz's mechanical PTO. It is directly driven with almost no loss of power, thus enabling high efficiency in use. In combination with the universally usable three-point hydraulic system cat. 1, Moritz becomes a multi-functional tractor.

Optimum weight distribution - as a remote-controlled implement carrier and as a mini forestry tractor

In addition to a cable winch which is installed on the vehicle with a favourable centre of gravity, the Moritz can be used multifunctionally as an off-road carrier vehicle. The cable winch, which is mounted using a quick-change system, can be dismantled in just a few steps. After that, implements can be attached to the vehicle via the three-point linkage (Cat. 1).

1 Onboard hydraulics with up to 4 proportional and 2 b/w double-acting control units.

2 Float position, optional power lift relief, and adjustable lowering speed for the rear power lift.

3 Power hydraulics with 96 l/min, 300 bar and multicoupler for demanding applications.

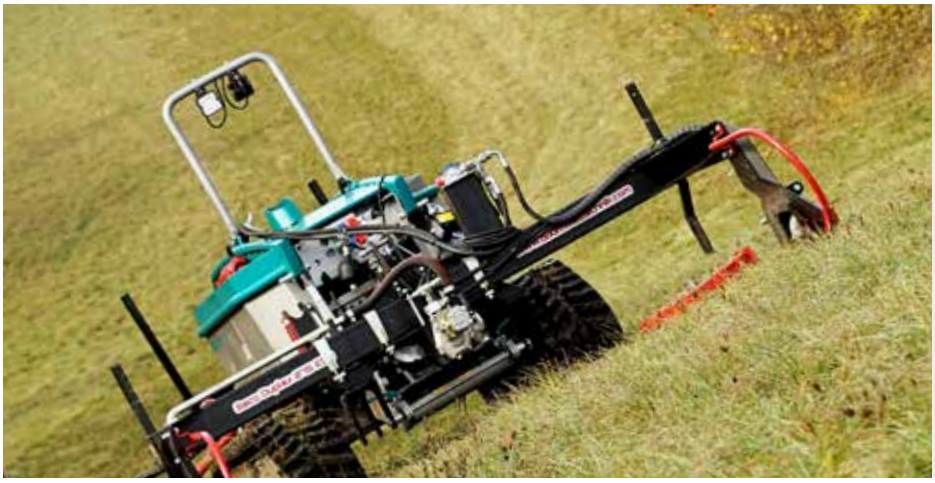
4 Mechanical PTO for driving implements with high efficiency and almost no loss of power.

5 The cable winch can be removed in a few minutes with a lift-out device and without tools.

6 Three-point linkage cat. 1 with maximum lifting force of 11 kN with optional hydraulic lift relief

Multifunctional front mounting space

The right equipment for the Moritz in every field of application. A second mounting space is optionally available at the front of the vehicle. The front power lift has a maximum lifting capacity of 7 kN and can also be equipped with a top link point.



Safety and lighting

In order to optimally illuminate the working environment, additional headlights can be installed at two positions on the Moritz.

An auxiliary headlight can be mounted on the foldable roll bar, which can be switched on and off via radio control.

Implements and accessories for professionals.

MAX forestry cutter

With the MAX forestry cutter, the Moritz becomes a problem solver - for crop maintenance as well as for planting preparation and many other applications in the forest.

Technical specs:

- Standing tools
- Hydraulic front flap
- Hydraulic downholder
- Option: hydraulic side shift
- Working width 1,200 mm

Two rotors with different tools are available for the MAX forestry tiller:

- 40 carbide-tipped round chisels
- 20 firmly screwed blade tools, also suitable for tree stumps above the ground

MAX forestry mulcher

The MAX forestry mulcher is designed for mulching grass and scrub.

Technical specs:

- Swinging Y flails
- Option: hydraulic front flap, hydraulic side shifting
- Working width 1,200 mm

Auxiliary winch

For use on steep slopes, the Moritz forestry tractor can be equipped with an auxiliary winch which can be used with 360°. Safe and ground-conserving operation is thus possible even in extreme terrain.

Technical specs:

- Pulling force 10 kN
- Cable length max. 50 m
- Forward/reverse with freewheel clutch

Traction winch

Hydraulically driven traction winch for securing the crawler on steep and difficult terrain, and minimising ground damage.
Cable infeed with all-round rotating cable infeed pulley, mounted on the vertically supported rotation arm, so that the vehicle is not hindered by the tensioned traction cable, and all directions of travel can be freely selected.

Natural re-forestation, Forest con-version and maintenance

The Moritz felling tractor is the basis for near-natural and sustainable reforesta-tion. The remote-controlled implement carrier impresses with its possibilities, from surface preparation to sowing and planting to surface care.

Attachments for reforestation:

- Sowing strip milling machine
- Sowing plough
- Plantomat container-planter
- MAX forestry tiller

Planter Plantomat and Plantomat Flex

- Automated planting
- Milling wheel for preparing the planting site
- Magazine for 50 container plants
- Operation via Moritz radio control

The planter is equipped with a hy-draulically driven milling disc to clear the planting bed of unwanted growth and forest soil. Afterwards, the plant-ing spade is used and digs the plant-ing hole. Now the plant falls into the ground hole; the plant is pressed on by a hydraulically operated device to en-sure the required ground contact. Af-ter planting is finished, the machine is moved back to its initial position.
The Plantomat planter is available in two versions: either as a compact unit or a separate system. In the latter, the strip mulcher is located at the front of the machine and the planting unit at the rear.

Sowing strip cutter

- Mechanically driven by PTO
- Milling depth 250 mm
- Trench is V-shaped
- Carbide tipped teeth
- Coarse and fine seed wheel

Stump grinder

The stump grinder is the supplement to the Moritz for all arborists, problem tree cutters, and gardeners and landscapers.

- Hydraulic support (parallel)
- Swivel radius +/- 45
- Working depth maximum 620 mm
- Hydraulic front and rear adjustment of the swivel arm
- Grinding wheel diameter 600 mm
- 24 carbide round chisels, can be used on three sides

More safety in forestry work

The entire felling process including the access to the zone is possible with the personal protection screen for forestry tractors. The protective screen is built up by the radio control before entering the danger zone.

Protection from dead wood

There is a high risk of accidents for the forestry worker when felling trees by hand. Vibrations (for example from hitting the wedge) or wind can cause dead wood to come loose and fall down. This can cause injuries that may even be fatal. The personal protection screen for the Moritz mini forestry tractor offers the greatest possible protection for the forestry worker during the entire felling process.

Project: Natural reforestation

The area to be reforested has increased significantly in recent years. This is due to drought, bark beetles, storms and forest fires. Pfanzelt is showing how forests can be reforested in a near-natural way without large-scale technology in a large-scale project that will be supported for years.

The project area

The area is approx. 1.5 hectares. Most of the area's forest stock fell victim to a storm and bark beetle. The old stock, of which very little remains, and small areas with natural regeneration are preserved. The material still lying on the surface and sticks are also not processed if possible. So that reforestation can take place near-naturally and adapted to the terrain, a combination of planting and sowing strips and 8 x 8 m planting squares is established. The focus is on ensuring that maintenance can be carried out mechanically to the greatest possible extent in the coming years.

Surface preparation

On 15 and 16 December 2021, two Moritz mini felling tractors, each equipped with a MAX forestry mulcher, prepared the area for planting and sowing. According to exatrek machine tracking, we have laid 1.8 km of planting and sowing strips and 32 planting squares of 8 x 8 m. In addition, a 500-metre-long fence path was prepared. The Federal Forests do not normally erect wildlife protection fences. In order to rule out wildlife browsing in this project, we deviated from the standard and instead of individual protection for the plants, we set up a complete wildlife protection fence.

Seeding and planting

„Our new container planter is partly automated, with the operator taking over the driving and positioning of the Moritz. The planting process itself is completely automatic," explains Voderholzer. Container plants were planted with the new Plantomat planter. For an optimal comparison, some of the planting squares were also planted by hand. Both container and bare-root plants are used. This allows us to compare the differences in results after three years at the KWF conference. The planter planted approx. 2,300 trees: 70% oak and 30% Douglas fir.

Pelleted Douglas Fir seeds were applied to around 600m² with the sowing strip mulcher. However, this is against the background that this is actually the wrong area for this, as it is very weedy.

Maintenance

To facilitate mechanical maintenance, the planting and sowing strips were laid out at intervals of two metres. The MAX forestry mulcher, with its working width of 1.2 metres, is therefore able to effectively remove unwanted vegetation between the rows. With this method, it is not necessary to clear the individual plants in the row. At the beginning of July 2023, we carried out the first crop maintenance of the year. Due to the rainy months, the accompanying vegetation was very lush and the MAX forestry mulcher had its work cut out. In some places, the marker sticks, which were a good metre high, were difficult to see.

Conclusion

Compared to many other areas in the Schwarzenborn federal forest district, this cultivated area is in very good condition. Even though the weather conditions were very difficult, with almost no rainfall for months in 2022, the losses are low. And thus significantly lower than in other newly planted areas in Hesse. Three years after planting, the crop is in very good condition in 2025. Some areas no longer need to be maintained, as the planted trees there have already grown taller than a man.

Further information and online diary

www.pfanzelt.com

Areas of application of the Moritz