

Operator manual Maredo® GT 190 REV03 Fraise-Groomer

Serial number:

IMPORTANT: The required (hydraulic/ electric) power to drive the GT190 Fraise-Groomer heads depends on the working depth, soil conditions, working speed etc. The ambient temperature and the greensmower's condition determine the available power of the greensmower. Fraise-Groomer users should check the greens mower during work and act to prevent overloading at any time.

MAREDO DOES NOT TAKE ANY LIABILITY FOR GREENSMOWER DAMAGES



Note: For a safe operation it is essential, that the operator reads and understands this manual of the Maredo machine

MAREDO BV, RIJKSSTRAATWEG 16, 3956 CR LEERSUM, THE NETHERLANDS

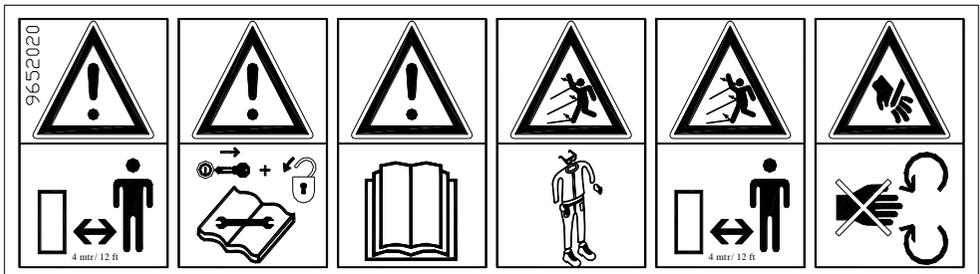
WWW.MAREDO-BV.COM

ENG 1841

1.0 Safety instructions

1. **Never disconnect or shortcut** any of the safety devices.
2. Every **MAREDO user must be fully informed** and understand the safe use of the MAREDO machine.
3. **Inspect the surface** where the MAREDO machine will be used. Remove loose obstacles and avoid uneven areas.
4. **Drive carefully** during work and during transport.
5. **Ensure that other people are standing at least 4 m. /12 ft. away** from the MAREDO machine during work and transportation.
6. **Use appropriate clothing**. Wear strong shoes with steel enforced toe caps, long trousers, gloves, tie up long hair and use eye protection glasses.
7. **Never overload** the MAREDO.
8. **Check the MAREDO** minimal once a week and to make sure there are **no loose bolts and nuts**. Check for damages and repair them.
9. The MAREDO **may never be used without protection covers** and safety decals.
10. **Use only original MAREDO spare** parts to ensure a safe operation of the machine.
11. **Never use the MAREDO** in darkness, in heavy rain, on frozen grounds, on surfaces which hold stones or on slopes steeper than 30 degrees.
12. **Maintain a log book** of repairs
13. Be aware that changes to the MAREDO release MAREDO from any CE-regulations.
14. Maredo heads are an **add-on to a greensmower**. Make sure you **know the safety rules of the greensmower** and make sure the operator acts to the safety rules.

Act to the safety rules as shown on the safety decal:



2.0 Introduction

Congratulations on the purchase of your MAREDO®. To ensure a safe and long lasting operation of the MAREDO machine, you and anyone using the machine, must read and understand this operator-manual. Make ensure to understand and practice the safety rules as described in this manual.

This MAREDO machine is delivered accomplished by a guarantee against material and assembly errors. This guarantee applies for a period of 12 months, as from the date of purchase.

3.0 Technical specifications

Model	: GT190 Fraise-Groomer REV. 03
Working width	: 520 mm. / 21" per head
Working depth	: 0 - 6 mm. / 0 - ¼"
"Slit" spacing	: 4 mm. / 1/8" (side to side)
Ground speed	: 0.5- 3.0 km/h / 0.3- 2 mph.
Weight	: 37 kg. /90 lbs. per head

4.0 EU-Declaration

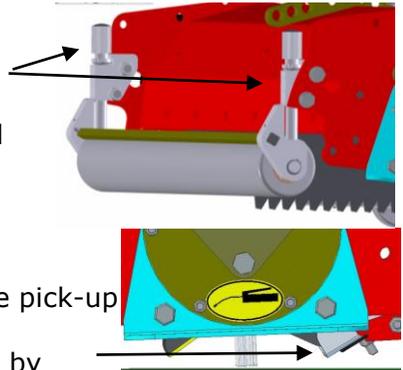
We, MAREDO BV, Rijksstraatweg 16, 3956 CR Leersum, The Netherlands, hereby declare, fully on our authority, that the product: MAREDO® GT190 Fraise-Groomer, with serial number as indicated on the machine and in this manual, to which this declaration applies, has been manufactured in line with NEN-EN -ISO 141211:2007, according to the stipulations of The Machine Directive 2006/42/EG.



Marinus Reincke CEO Maredo BV The Netherlands.

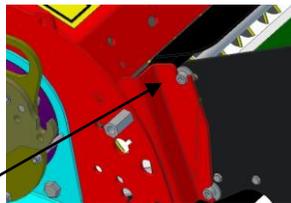
5.0 Instructions

- 1 Never use the machine under wet conditions. The material may clog.
- 2 Clean the GT190 with air or low-pressure water regularly. Never use high pressurized water or heated water.
- 3 Be careful when dropping the units on a hard (concrete) surface. **Put protection underneath to protect the blades against damages.**
- 4 Check bolts and nuts every 50 hours of operation.
- 5 Drive straight passes. It is allowed to make light curves, but never turn too tight to prevent surface or machine damages.
- 6 **Never adjust the working depth too deep.** Maximum working depth is -5 mm. Adjusting the depth too deep might cause severe turfgrass damage. A lower groundspeed results in a more intense job. Never stop with lowered and engaged reel motors. This will cause severe damage to the turf.
- 7 **Starting and stopping procedures:** Set the engine throttle at approximately 80%. Drive forward and drop the heads on the surface which needs to be treated. Make sure to drop the GT190 heads while driving forward. Dropping the GT190 heads in a standstill position with engaged reels might cause severe damage to the turf. Continue driving in a straight line and increase engine rpm, if necessary. Raise the GT190 at the end of the pass without stopping. Next turn around and start the next pass by following the same procedure.
- 8 Check the hydraulic and electric drive system regularly. **If the system appears to be overloaded, reduce depth settings or groundspeed immediately.**
- 9 Working depth can be adjusted by turning the two knobs of the quick-height-adjusters. Each click of the knob adjusts the GT190's working depth 1 mm. up or down. The actual (theoretical) depth can be read on the depth decals. Never adjust the depth any deeper than 5 mm. working depth.
- 10 Also check the pick-up plate position. The pick-up plate should have a minimum clearance of 3 mm. / 1/16". This distance can be checked by putting a strip on the front and rear roller and measure the distance between the strip and pick-up plate.
- 11 Check the position of the brush elements. The two incorporated brushes are adjustable. The brushes are mounted with
The brushes should be approximately be adjusted 3 mm. / 1/16" above the



surface. This can be measured by holding a metal strip on the front and rear roller and measure the distance between the strip and brushes.

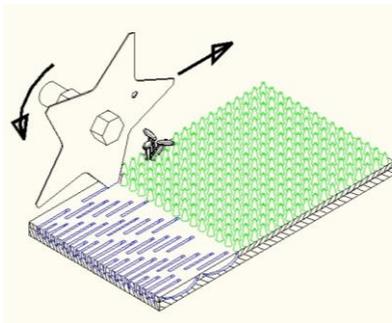
12. When the Maredo GT190 Fraise-Groomer heads are fitted with connection to Jacobsen, John Deere, Baroness or Toro 3400 Triflex series, the Maredo collecting box is attached to the GT190 with the standard Maredo connection. The heads of the Allen bolts in the collecting box fit exactly in the GT190's support brackets.



For Toro 30**, 31** and 32** series greensmowers a different connection is used. Two support plates will be added, left and right, to the collecting box. With these support plates the Maredo collecting box will fit directly on Toro's sub-suspension frame.



13. The GT190 Fraise-Groomer works different compared to any other verticutter or groomer. Thanks to the integrated gearbox, the rotation direction of the blades will be reversed. This means that the blades of the GT190 rotate against driving direction. This rotation direction helps the blades to `lift-out` the material instead of dragging it through the slit.



Another unique feature of the GT190 is that the cutting blades are mounted on a slight angle on the main shaft. The result is that each tip of a blade creates a short slit. As a result, there will be no visible lines or damage in a green after a treatment with the GT190.

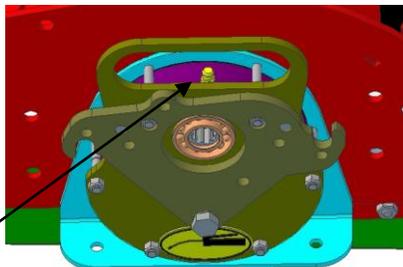
6.0 Maintenance

-Check nuts and bolts regularly

- Regularly clean the GT190 Fraise-Groomer heads. **Never use high pressure, or hot water cleaners to clean the GT190.** Clean (carefully) with compressed air.

-Every GT190 head has one grease nipple located on top of the side gearbox.

Grease this nipple with 2 shots of EP02 grease every 50 hours.

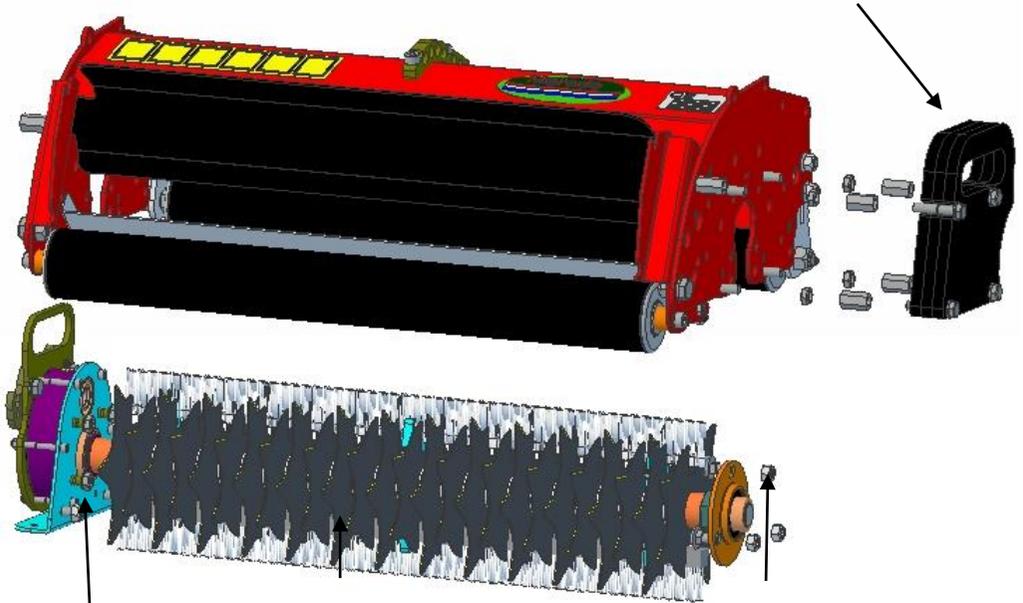


7.0 First installation

Standard the GT190 heads are delivered with a right-hand drive side. A fitting kit will need to be mounted to the head to make it fit a certain brand and type greensmower. Please find mounting instructions in the attached instruction sheet or digital on www.maredo-bv.com/support

In some occasions a right-hand (RH) drive will have to be changed into a left hand (LH) drive. To change drive side on the GT190 the complete main shaft with gearbox will need to be taken out of the frame, be turned around and re-mounted in the main frame (The side weights + all nuts/bolts will have to be re-mounted on the other side as well). **Please note that the gearbox itself will never have to be opened when changing the drive side.**

Remove all weights, bolts + nuts and
Re-mount them on the other side



The complete shaft with gearbox will have to be taken out of the frame.

Remove the 4 nuts + 2 bolts & nuts at the gearbox side and the 3 bolts which hold the bearing. Remove the whole shaft + gearbox from the chassis, turn it 180 degrees around and mount it back in the chassis. Carefully tighten all bolts and nuts one by one. Check if the shaft and gearbox run smooth. If not, change the sequence of tightening.

NOTE: This procedure works in case the standard symmetric blades are mounted. As these blades can be used in to directions, the rotation direction doesn't matter. However when the (optional) carbide tipped blades are mounted, the blades aren't symmetrical anymore. In case a GT190 heads must be rebuilt from RH to LH, the carbide tipped blades must be mirrored one by one on the main shaft as well.

Quantity	Part Number + Name		
26	1832179-00 Carbide tipped blade 170-12 5 tips	1	3911315 Key 6 x 6 x 15 DIN 6885 A
2	1848054-00 Brush element L=535 H=45 08 GT180	1	6001411-00 Interplate Top for collecting bag 250
4	2012101 Bearing 6201 2RS	1	6001412-00 Bottom interplate collecting bag 250
2	2017104-01 Bearing 6003 2RS NR with shortened circ	1	6001560-01 Bottom guide plate GT180_250 1150
1	2020144 Bearing 6204 2RS NR	4	6002027-02 Washer 30- 12- 1,5 1150
1	2420202 Bearing SB 204	1	6002037-01 Washer 37 - 20 -2 204 bearing
1	2420209 PF 204 housing	2	6002290-03 Side panel collecting bag GT250
2	2611902-01 O Ring 90 x 2 gearbox GT	1	6003130-03 Interplate gearbox GT 250 1150
2	2612170 Nilos seal 6003 AV	1	6003147-04 Collecting bag support LH GT180_250 1150
1	2612203 Nilos seal 6204 AV	1	6003148-04 Collecting bag support RH GT180_250 1150
4	3006200 Large washer M6 DIN 9021	1	6003578-06 Top guide plate GT180_190_250 black 1150
9	3008121 Springwasher M8 6798 A	1	6003581-01 Front roller scraper plate GT180 250
6	3008160 Washer M8 DIN 125A	1	6004025-00 Washer 25- 8 -4 countersunk
2	3010200 Washer M10 DIN 125A	2	6004356-05 Side plate GT frame
20	3504004 Self lock nut M4 D985	1	6004591-05 Central bridge for 7435060
17	3505004 Self lock nut M5 D985	1	6005107-04 Inner plate gearbox 250 1150
2	3506000 Nut M6 DIN 934	2	6005150-01 Roller support GT180_190_250 1150
8	3508000 Nut M8 DIN 934	1	6005173-03 End plate with hand grip gearbox 250 1114
7	3508004 Self lock nut M8 D985	1	6006156-03 1114 Hydraulic mount plate 250
4	3508008 Self lock nut with washer D6926	6	6008130-01 Brush clamp GT
6	3508040 Nut M8 DIN 6334	3	6010176-02 Counter weight GT black
2	3510004 Self lock nut M10 D985	4	6012060-00 Bearing support front roller GT
2	3512000 Nut M12 DIN 934	1	6012120-02 Pick up cam for GT D shackle
2	3512004 Self lock nut M12 D985	2	6308180 Rubber U seal for bag 250
1	3522026 Low height nut M22 x 1,5	3	6410520-01 Rod for collecting bag Gt250 1021
20	3604081 Bolt M4 x 8 DIN 933	1	6416578-00 Front roller shaft GT 190 front roller 1150
3	3605164 Mushroom head bolt M5 x 16 DIN 603	1	6416613-00 Front roller shaft 6201 GT
6	3605451 Bolt M5 x 45 DIN 933	1	6422616-00 Main shaft for GT190 M22
6	3605454 Hex socket screw M5 x 45 DIN 912	1	6505597-00 Roller scraper 5 x 597
6	3606123 Hex socket screw M6x12 8.8 D912 plated	1	6506595-00 Threaded rod M6 x 595 GT180-250
3	3608121 Bolt M8 x 12 4017 S	1	7020006 Distance washer 27-20- 6_5 GT 250
2	3608161 Bolt M8 x 16 4017 SELF	1	7030014 Distance bush Hex 22 L14
1	3608165 Tapered hex screw M8 x 16 DIN 7991	1	7030034-01 Distance bush Hex 22 L34
6	3608201 Bolt M8 x 20 ISO 4017	2	7060542-02 Front roller GT
2	3608203 Hex socket screw M8 x 20 DIN 912	1	7083032-03 Gearbox house 25_250 1114
7	3608204 Mushroom head bolt M8 x 20 DIN 903	1	8062191-01 Input gearwheel z20 m15 GT 250
4	3608207 Stud M8 x 20 DIN 938	1	8062452-01 Gearwheel m15 z45 d45 250
2	3608303 Hex socket screw M8 x 30 DIN 912	2	9653000-01 Maredo Logo oval decal
4	3608400 Bolt M8 x 40 DIN 931	1	9653010 CE Decal standard
2	3610201 Bolt M10 x 20 DIN 933	1	9653018 Grease decal
1	3660600 Grease nipple M6 straight	1	9653020 Safety decal standard
2	3811215 Distance bush d12x D20 x L15	1	9999006-01 GreaseKroon EP0_131393 45cc
25	3812520 Distance bush 25-32-20	1	9999010 Silicon liquid gasket paste GT250

