Operator Manual

Turf-Fix

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Vredo
The fieldcare company

OPERATOR MANUAL

DZ5 - TURF-FIX 65/95

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- # Foreword

This DZ5 Turf-Fix overseeder user manual has been prepared for the machine's user or operator and provides all necessary instructions for the overseeders general operation, functioning, daily and regular maintenance, and resolution of minor malfunctions.

This manual forms an integral part of the machine. If the machine is sold or traded in, this manual must be handed over to the new owner.

The DZ5 Turf-Fix overseeder can be coupled to a mini tractor using the CAT-1 3-point hitch receiver. The overseeder can also be equipped with a drawbar assembly enabling it to be used behind a small ride-on mower (see picture).

Aside from the usual instructions in this user manual, there are no other instructions, for example, for complex repairs or other specific actions of this kind. For any repair work (see note), always consult an official or authorized Vredo dealer.

Consequently, this user manual only contains the user instructions for operating the DZ5 Turf-Fix overseeder.

NOTE

All work, including maintenance, modifications, installations or any other work whatsoever, may only be carried out by certified, authorized and properly trained technicians qualified by VREDO Dodewaard B.V.

• General warnings and points of attention

This manual also identifies necessary areas for attention and safety measures. To avoid dangerous situations, it is important that the highlighted descriptions are specifically adhered to. A distinction is made between the following areas for attention:

These are partly set out in chapter 4, Safety instructions as well.

DANGER!
This symbol warns of a very dangerous situation that could lead to serious bodily harm and even death.

WARNING!
This symbol warns of a relatively dangerous situation that could lead to injury and possibly even death.

CAUTION!
This symbol warns of a dangerous situation that could lead to minor or moderate injury.

ATTENTION!
This symbol is a general warning. You are expected to remain alert.

TIP/RECOMMENDATION
This symbol gives the user a tip or good advice.

• Other information

This manual addresses the following areas:

- Construction of the DZ5 Turf-Fix overseeder with the most important components
- General technical specifications
- Warning stickers
- The machine’s first use
- Operating sequence
- General theory
- Operation of other components of the overseeder
- Maintenance of the overseeder
- Storage

The DZ5 Turf-Fix overseeder is designed and built to provide maximum work efficiency, cost effectiveness and ease of use under different conditions.

Before leaving the factory, the overseeder has undergone and successfully completed extensive testing.

To ensure safe and useful operation, it is very important to carry out timely maintenance in accordance with the maintenance interval prescribed in chapter 9, Service and maintenance of this user manual.

1 Introduction

This user manual should be read first before the overseeder is installed and put into use so that the user/operator becomes familiar with its workings, operation, and maintenance. This user manual will not describe any repairs.

This user manual contains an overview of the overseeder series together with the most important components and their description. In addition, a description and explanation are provided for most components, including their purpose and how they should be used.

This user manual applies to the following overseeder models:

Overseeder Model	Operating Width	Version
DZ5 Turf-Fix 65	0.63 meters	Double row of element sets
DZ5 Turf-Fix 95	0.98 meters	Double row of element sets
For additional information see: Specifications		

Both overseeder models are primarily used for overseeding or reseeding existing grass surfaces or solid raw soil. The machines can be used on existing lawns, public gardens, sports fields and golf courses.

The machines can be used with a wide range of grass seeds, including seeds with a dry coating.

1.1 Target groups

The target groups and/or the users or operators of the overseeders include contracting companies, contractors, field managers, greenkeepers, gardeners and landscapers. The user and/or operator is a person who has a proven agricultural or other pertinent training and has expertise in the operation and functioning of various agricultural machines. They are also familiar with the functioning and operation of towing vehicles with or without coupled machines.

1.2 The user

Users must have a valid driving license for the applicable tractor or tractor-overseeder combination, in accordance with the road traffic regulations applicable in the relevant country.

While working with or while maintaining the overseeder, users must wear suitable clothing in accordance with EU regulation 2016/425, as well as Class S2 or S3 safety shoes in accordance with NEN-EN 345-1.

2 Specifications

The following tables provide a simplified overview of the specifications.

Overseeder Model	Operating Width	Version	Total Elements
DZ5 Turf-Fix 65	0.63 meters	Double row of elements	18
DZ5 Turf-Fix 95	0.98 meters	Double row of elements	28

Overseeder Model	Weight	Sowing Spacing	Disc Type
DZ5 Turf-Fix 65	180 kg	3.5 cm	V-discs
DZ5 Turf-Fix 95	240 kg	3.5 cm	V-discs
Use of the drawbar option adds 30 kg of extra weight.			

Overseeder Model	Tray Volume	Pressure Roller	Max. Weights
DZ5 Turf-Fix 65	42 liters	Tyre roller (4x)	10 x 20 kg
DZ5 Turf-Fix 95	66 liters	Tyre roller (6x)	16 x 20 kg

Overseeder Model	Dimensions (LxWxH)	Disc Diameter	Sowing Depth
DZ5 Turf-Fix 65	809 x 783 x 855 mm	ø150 mm	5 - 25 mm
DZ5 Turf-Fix 95	809 x 1133 x 855 mm	ø150 mm	5 - 25 mm
Use of the drawbar option extends the machine's overall length by 635 mm.			

3 General components

This section describes the most important components with the below mentioned illustrations and tabular description. In addition, a description and explanation of the application and operation of a number of components are given.

3.1 Construction of the overseeder

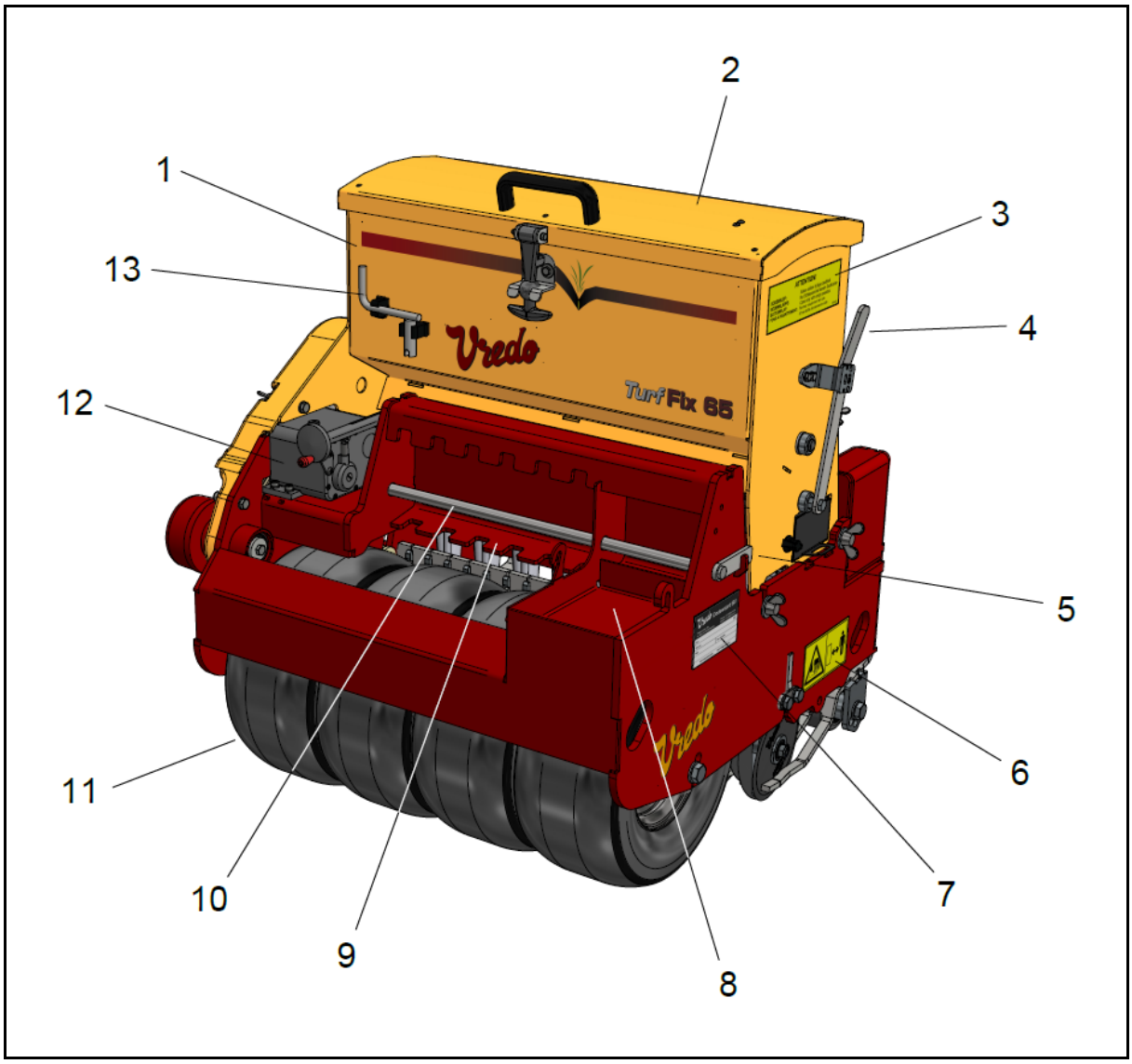

Figure 1 - Overseeder - rear view

Item	Name
1	Tray
2	Tray cover
3	Warning sticker ‘Operation of bottom flap’
4	Bottom flap adjusting handle
5	Locking shaft
6	Warning sticker ‘Maintain distance from overseeder’
7	Type plate
8	Space for battery when drawbar assembly is installed
9	Weight holding plate
10	Shaft for securing weights
11	Tyre roller wheels
12	Variator
13	Calibration crank

Table 1 - Overseeder components - rear view

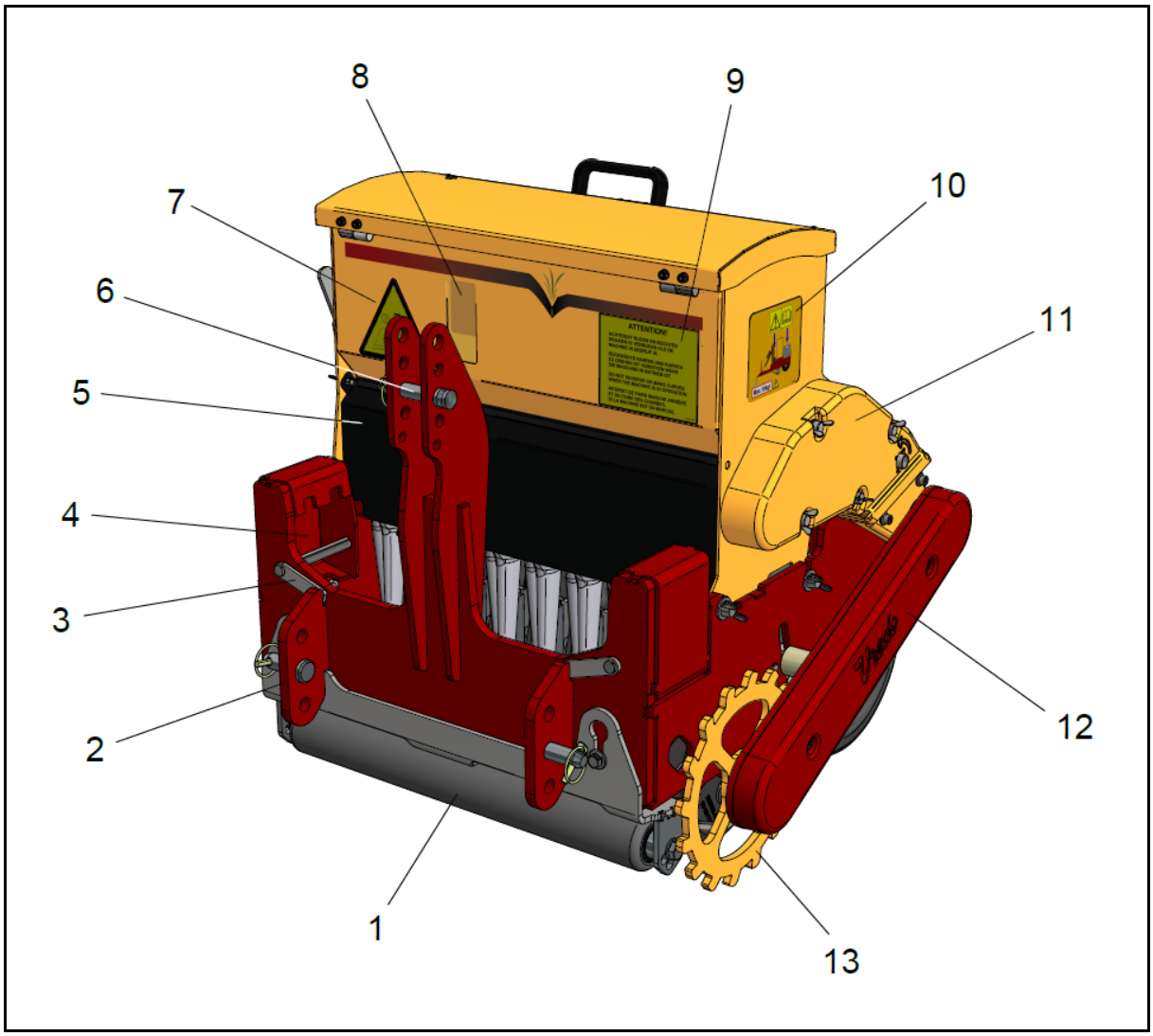

Figure 2 - Overseeder - front view

Item	Name
1	Front support roller
2	3-Point hitch receiver
3	Shaft for securing weights (left and right)
4	Space for extra weights (left and right)
5	Wind screen
6	Top link pin
7	Warning sticker ‘Remove ignition key during maintenance’
8	Seed level indicator
9	Warning sticker ‘Maintain distance from overseeder’
10	Warning sticker ‘Do not reverse or make any turns when the machine is in operation’
11	Cover for sowing drive
12	Cover for support wheel chain
13	Support wheel

Table 2 - Overseeder components - front view

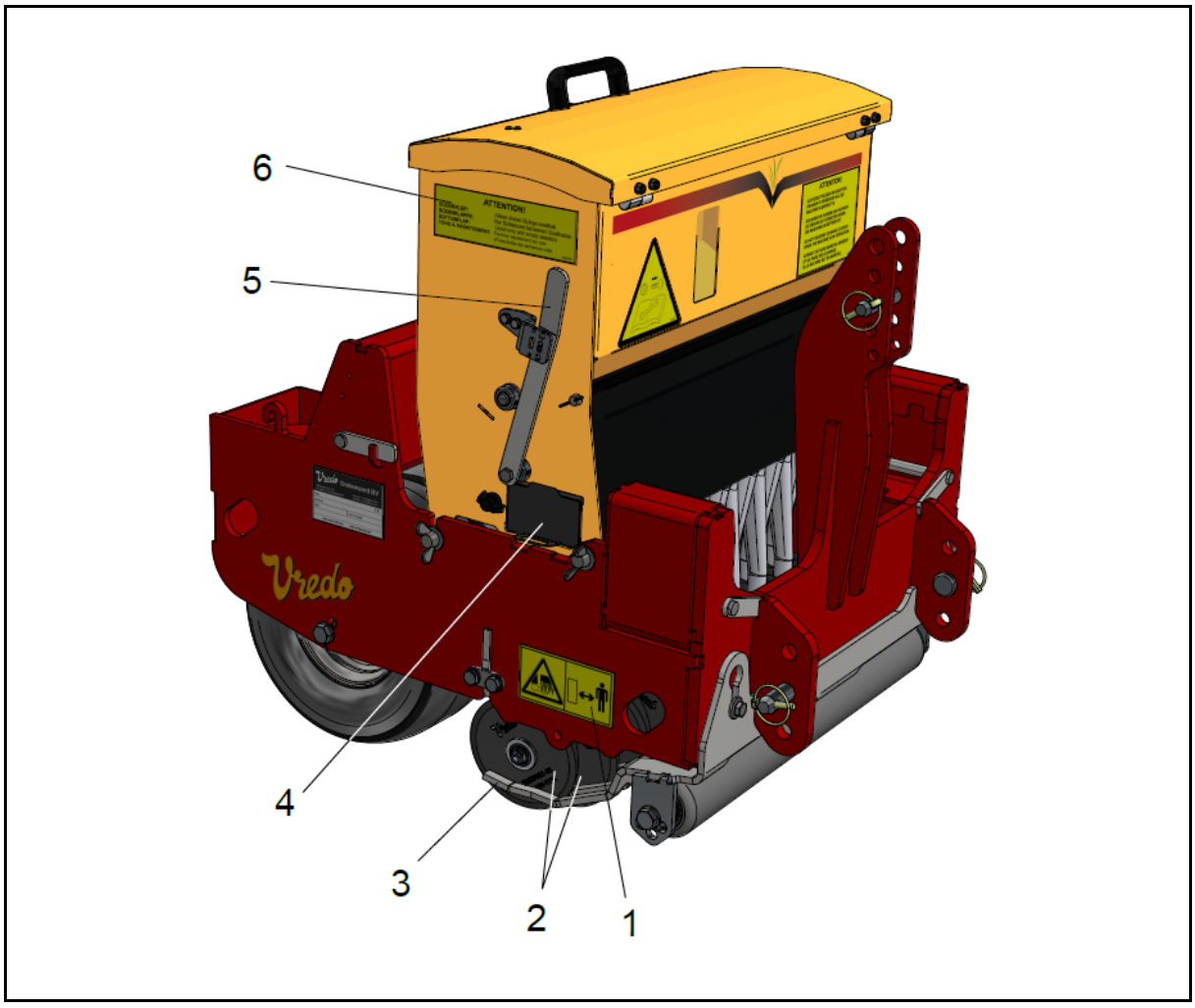

Figure 3 - Overseeder - right side view

Item	Name
1	Warning sticker ‘Maintain distance from overseeder’
2	Cutting discs
3	Trailing shoe
4	Calibration tray
5	Bottom flap adjusting handles
6	Warning sticker ‘Operation of bottom flap’

Table 3 - Overseeder components - right side view

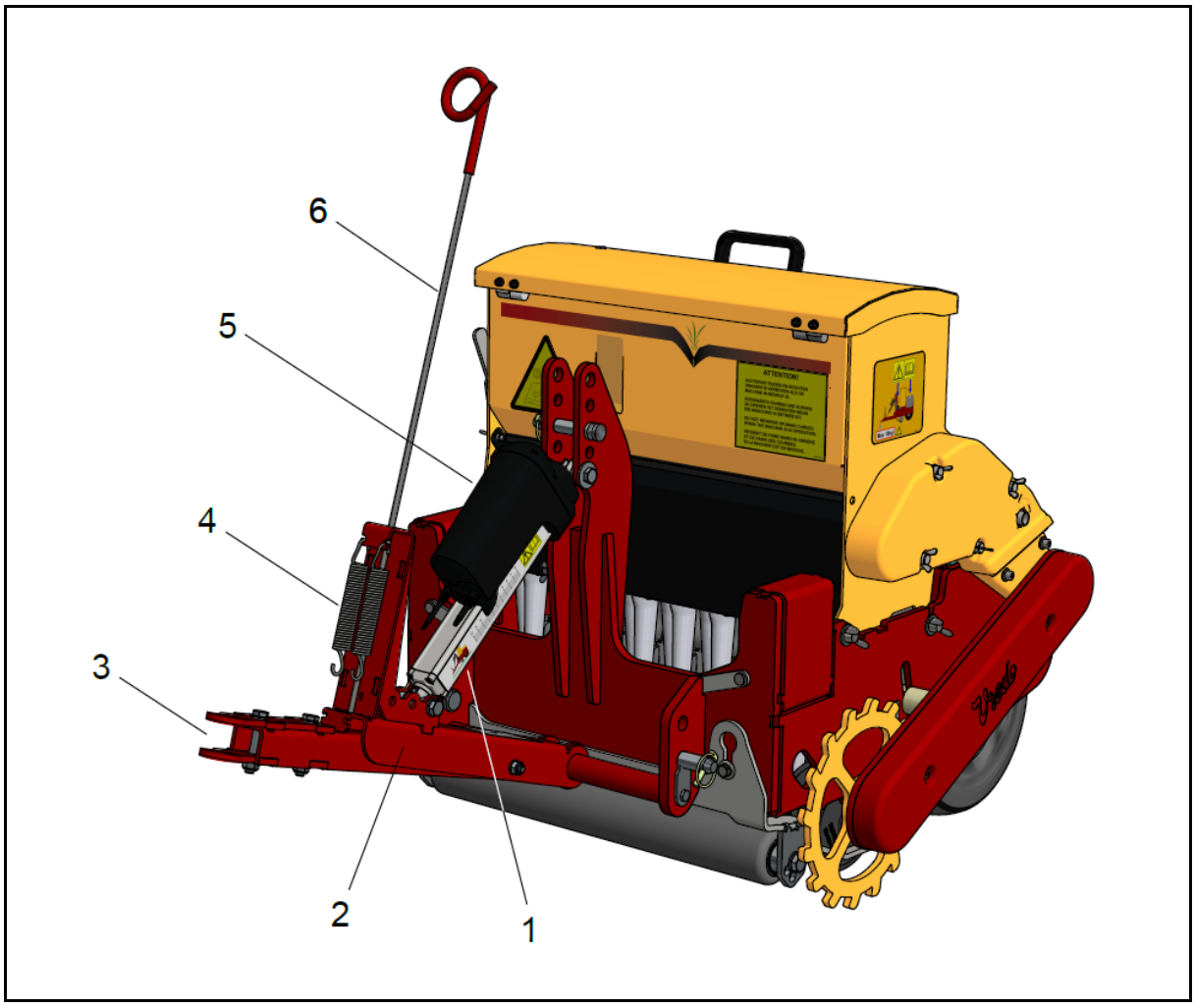

Figure 4 - Overseeder with draw bar assembly - front view

Item	Name
1	Actuator
2	Drawbar assembly external plate
3	Drawbar assembly towing eyelet
4	Tension springs for piston arm hook
5	Actuator motor
6	Cable guide

Table 4 - Overseeder components with draw bar assembly - front view

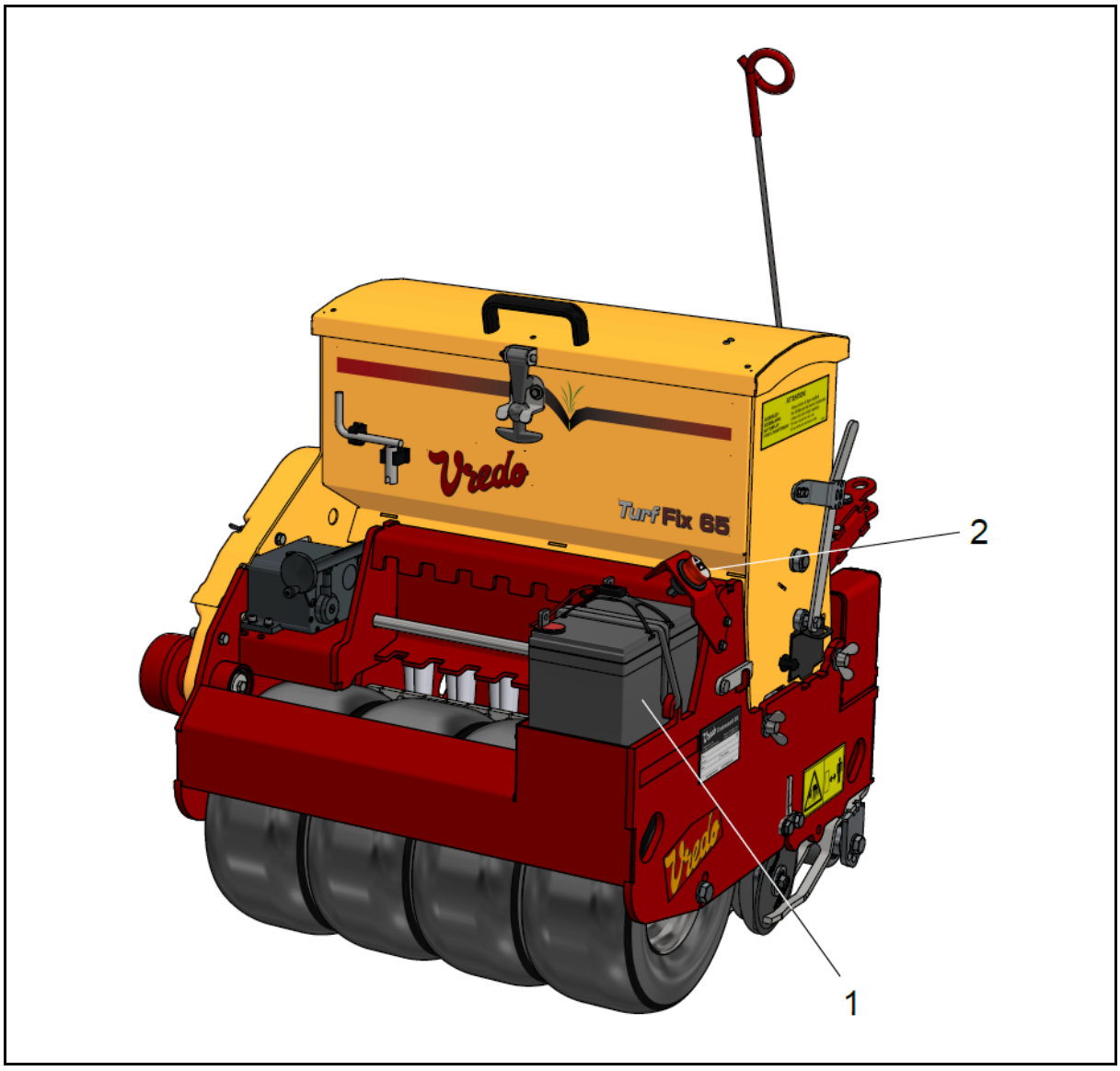

Figure 5 - Overseeder with draw bar assembly - rear view

Item	Name
1	12VDC 32AH battery
2	Main power shutoff switch

Table 5 - Overseeder components with draw bar assembly - rear view

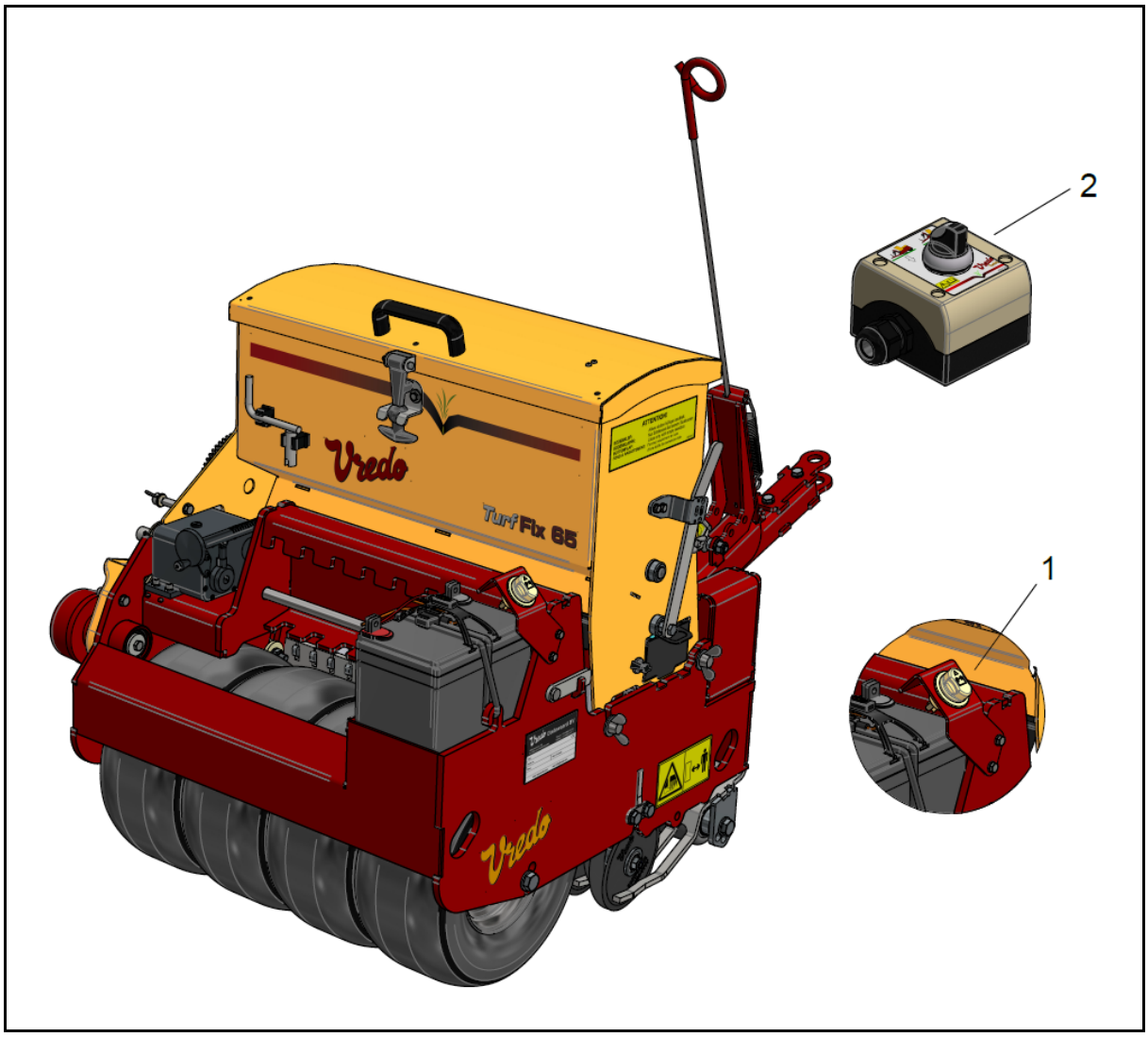

Figure 6 - Draw bar assembly controls

Item	Name
1	Main power shutoff switch
2	Switch for lifting/lowering drawbar assembly

Table 6 - Draw bar assembly controls - components

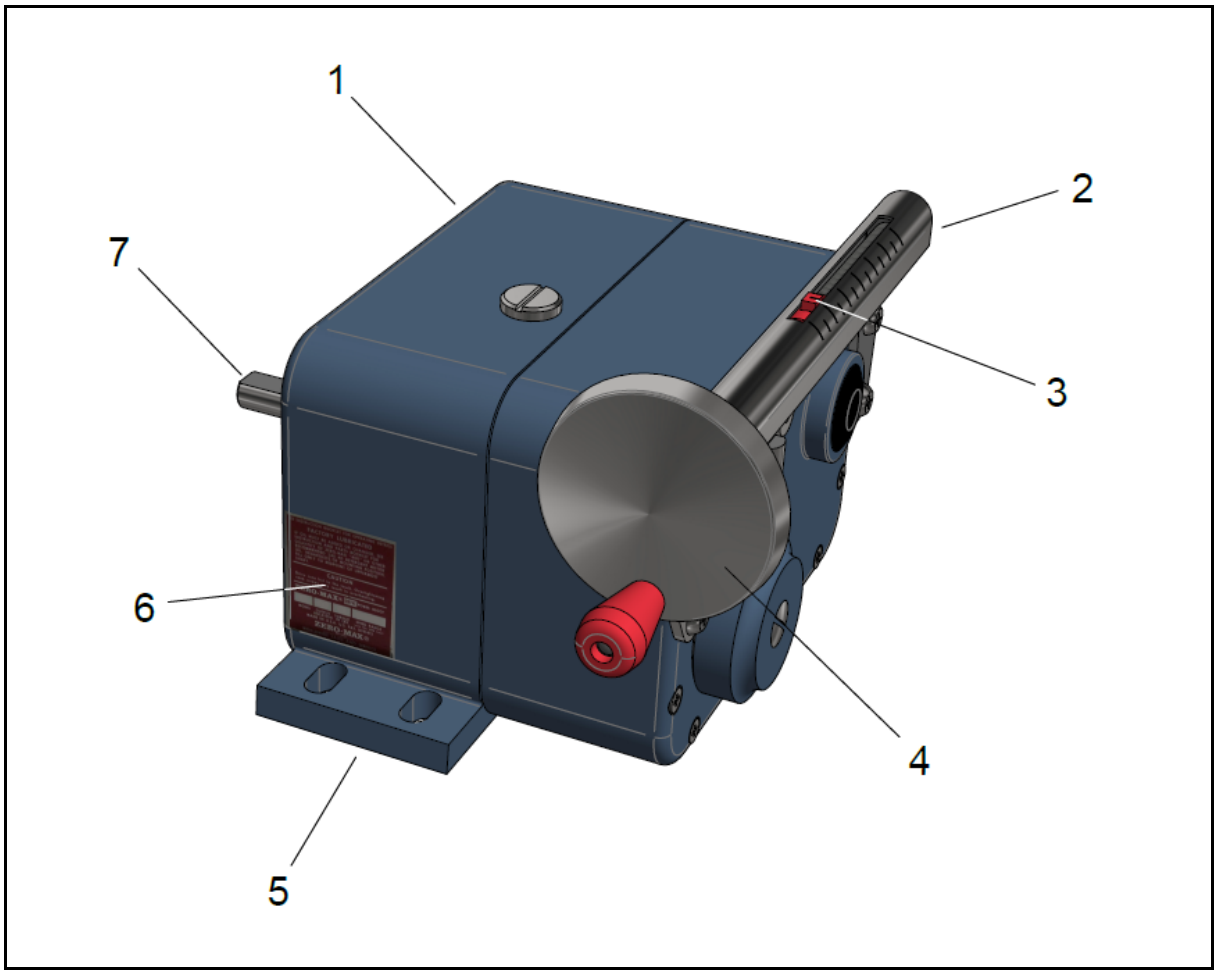

Figure 7 - Variator

Item	Name
1	Housing
2	Indicator guide with reading scale
3	Indicator
4	Hand wheel
5	Mounting plate with mounting holes - front and rear side
6	Information placard
7	Variator output shaft

Table 7 - Variator components

3.2 Dimensions

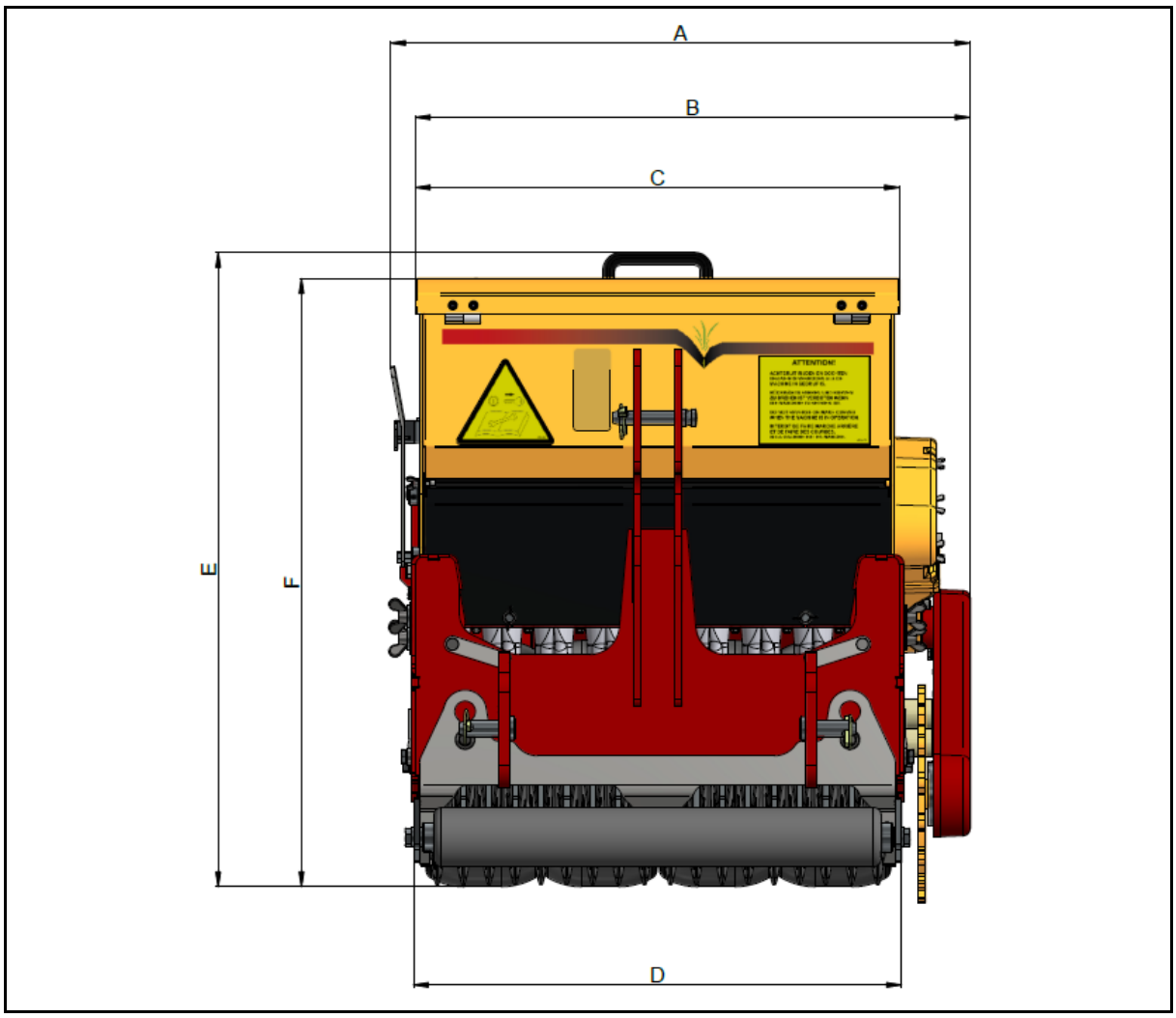

Figure 8 - DZ5 Turf-Fix 65 overseeder - front view

Dimensioning	Dimension
Dimensions are **reference dimensions** in millimetres	
A	783
B	749
C	654
D	659
E	858
F	822

Table 8 - DZ5 Turf-Fix 65 dimensions

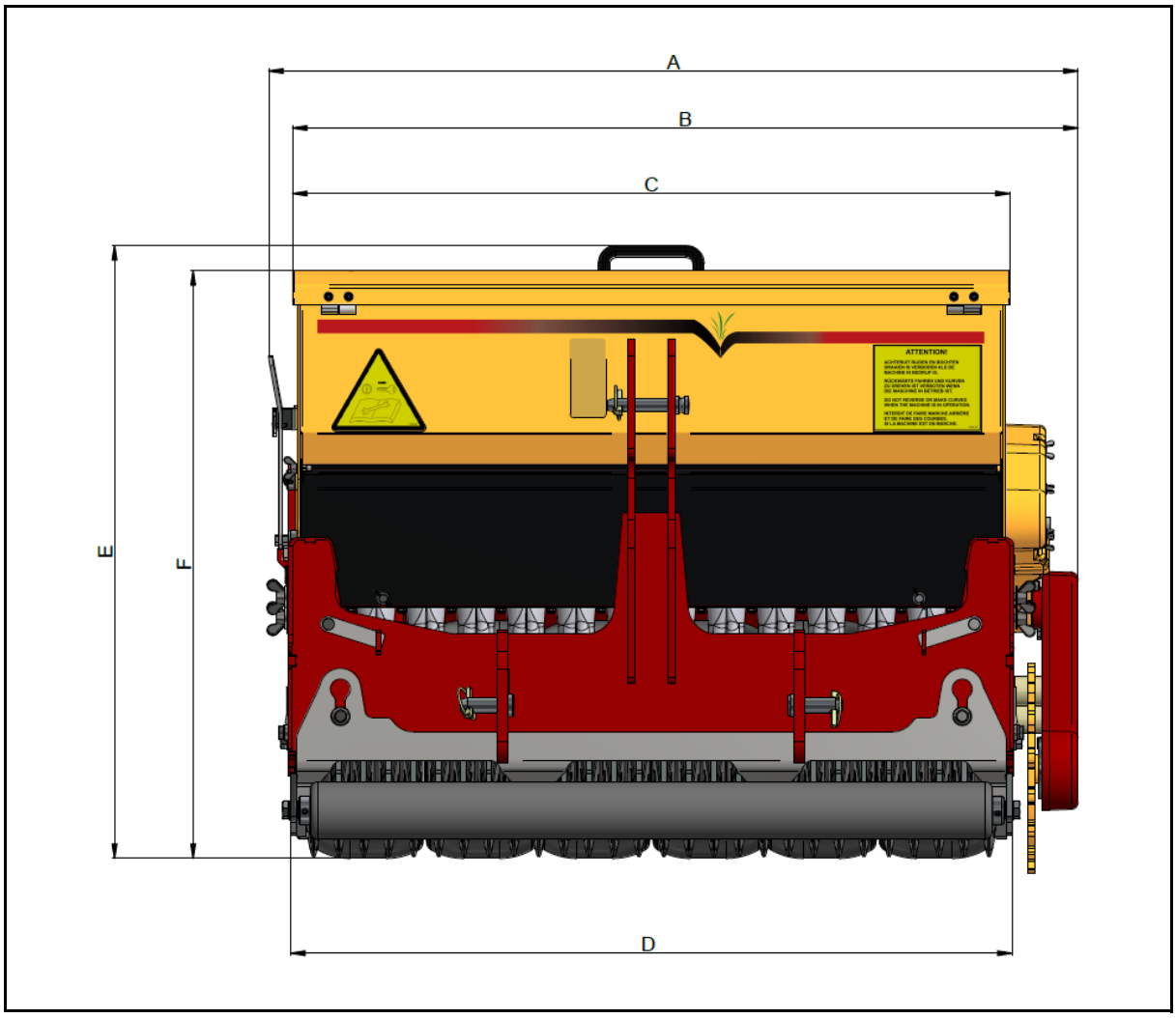

Figure 9 - DZ5 Turf-Fix 95 overseeder - front view

Dimensioning	Dimension
Dimensions are **reference dimensions** in millimetres	
A	1,133
B	1,100
C	1,004
D	1,009
E	858
F	822

Table 9 - DZ5 Turf-Fix 95 dimensions

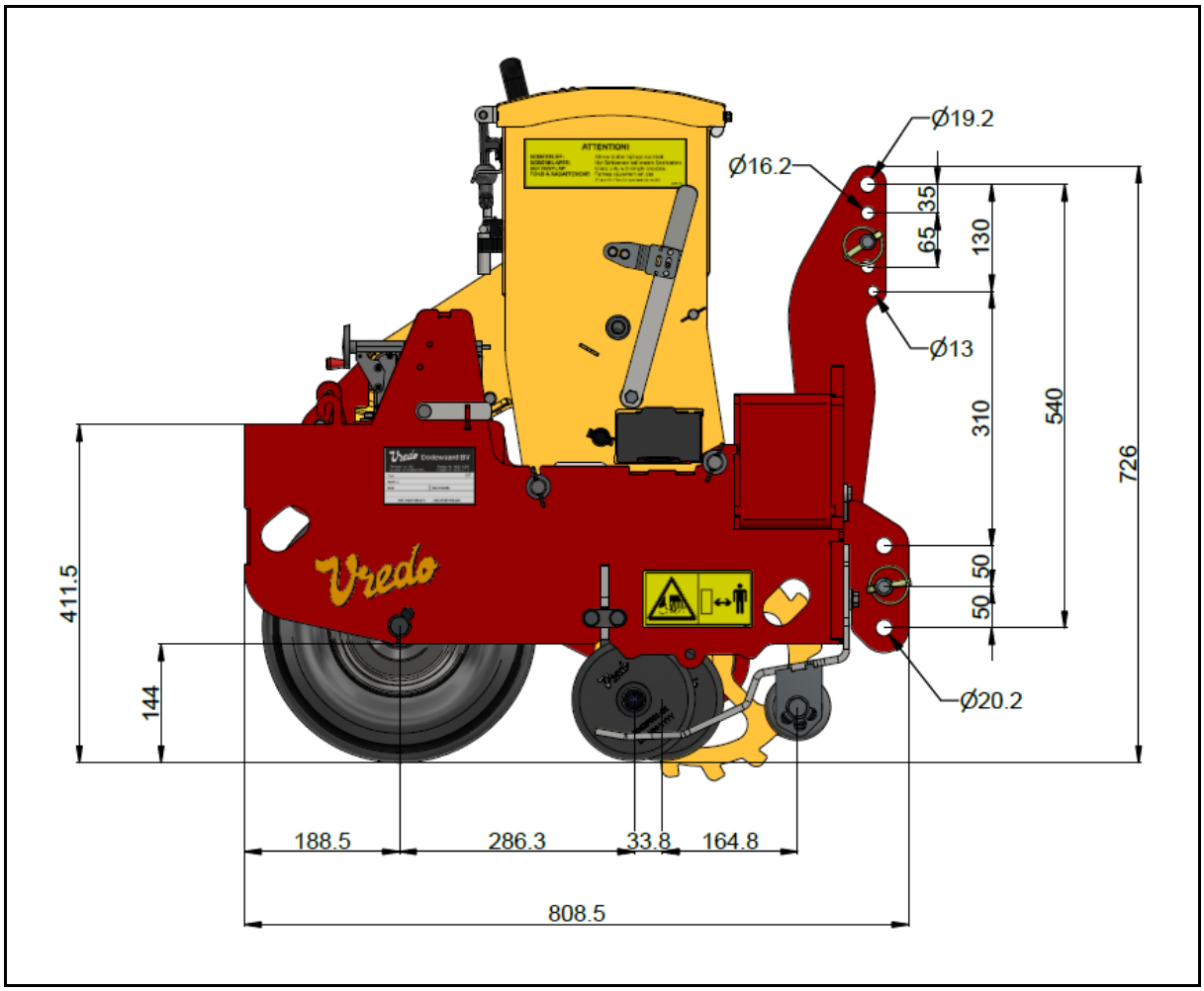

Figure 10 - DZ5 Turf-Fix 65 and 95 dimensions - side view

(Dimensions are reference dimensions)

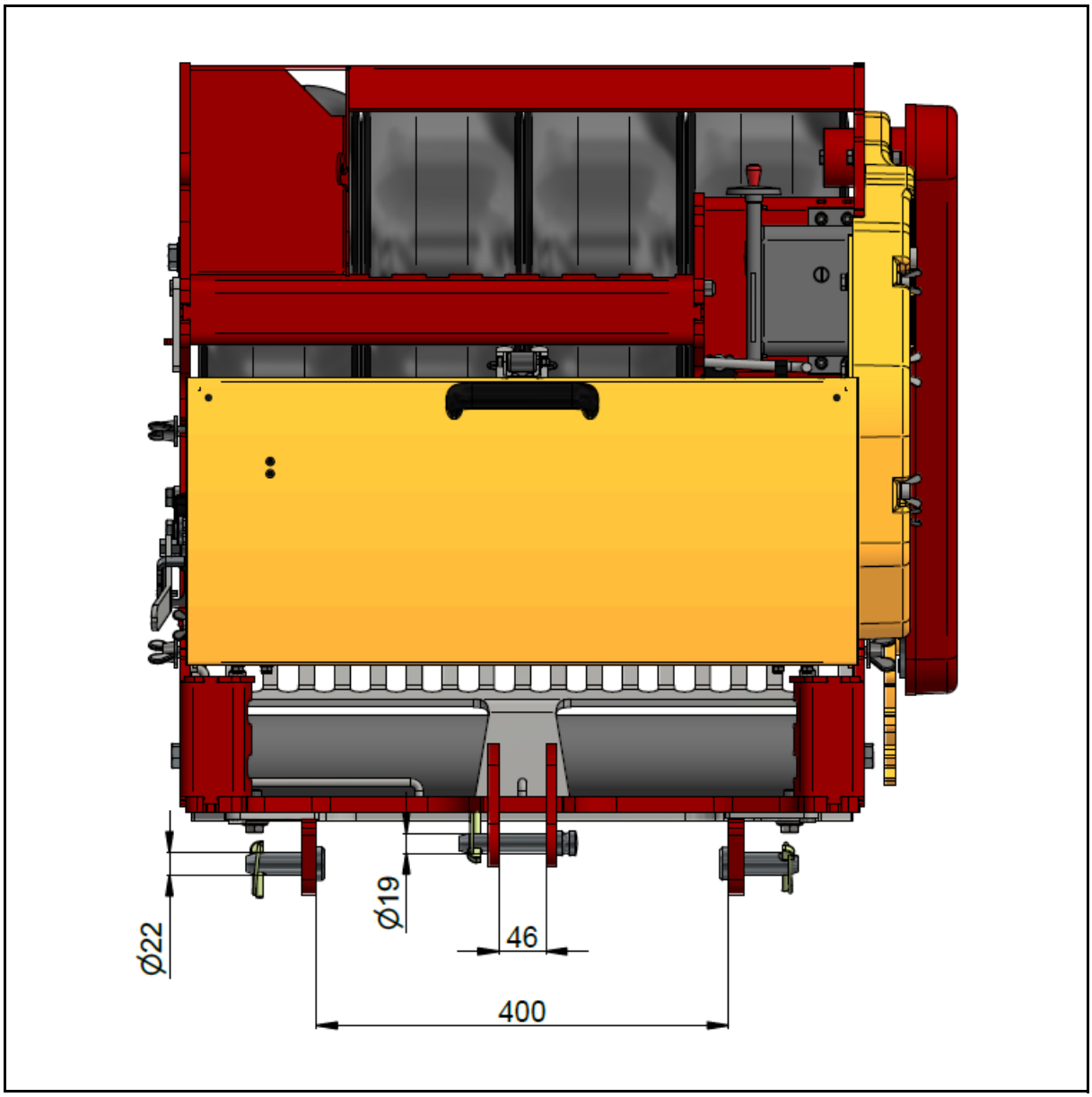

Figure 11 - DZ5 Turf-Fix 65 and 95 dimensions - top view

(Dimensions are reference dimensions)

4 Safety instructions

To be able to work safe and comfortable with the overseeder, a number of important safety instructions must always be followed.

Chapter 5 includes an overview of the warning stickers present on the machine together with an explanation.

- Replace damaged or unreadable stickers on the overseeder.
- Keep all stickers with safety instructions and directions free from mud and dirt.
- Despite the size of the overseeder, always stay away from rotating parts when the overseeder is in operation.
- If the overseeder requires minor maintenance, make sure that the pulling vehicle (mini tractor or ride-on mower) is entirely shut down.
- Before performing any minor activities, always read the user manual first.
- All repairs and maintenance may only be performed by approved, Vredo-trained service technicians or dealers.
- Always stay alert when performing any activities near the cutting discs. The cutting discs perform a cutting function and they are sharp by definition. Any contact with these discs can cause serious injury.
- Always use the right tools when performing any maintenance work.

DANGER!
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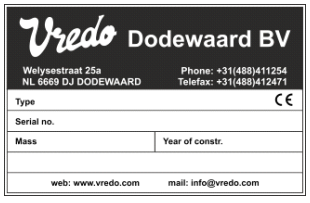
WARNING!
This symbol warns of a relatively dangerous situation that could lead to injury and possibly even death.

CAUTION!
This symbol warns of a dangerous situation that could lead to minor or moderate injury.

5 Warning stickers

Warning Sticker	Explanation
	Remove the ignition key from the ignition of the towing vehicle before carrying out any maintenance work on the overseeder. Always consult the user manual.
	Do not reverse or make any turns when the machine is in operation.
	Only close bottom flap when seed box is empty.
	Maintain sufficient distance from the overseeder to prevent accidents.
	Consult the user manual before adding ballast weights to the machine. The downward pressure on the towing eyelet may never be higher than 10 kg.
	General type plate with model type, serial number, weight and year of manufacture.

Warning Sticker	Explanation
	(This sticker is only affixed to the drawing bar.) When the Turf-Fix is equipped with extra weights, keep the overseeder's drawing bar as low as possible when moving the overseeder by hand. When the drawing bar is lifted up too high while moving the overseeder by hand, there is a chance that the overseeder will become uncontrollable and topple over.

6 The controls

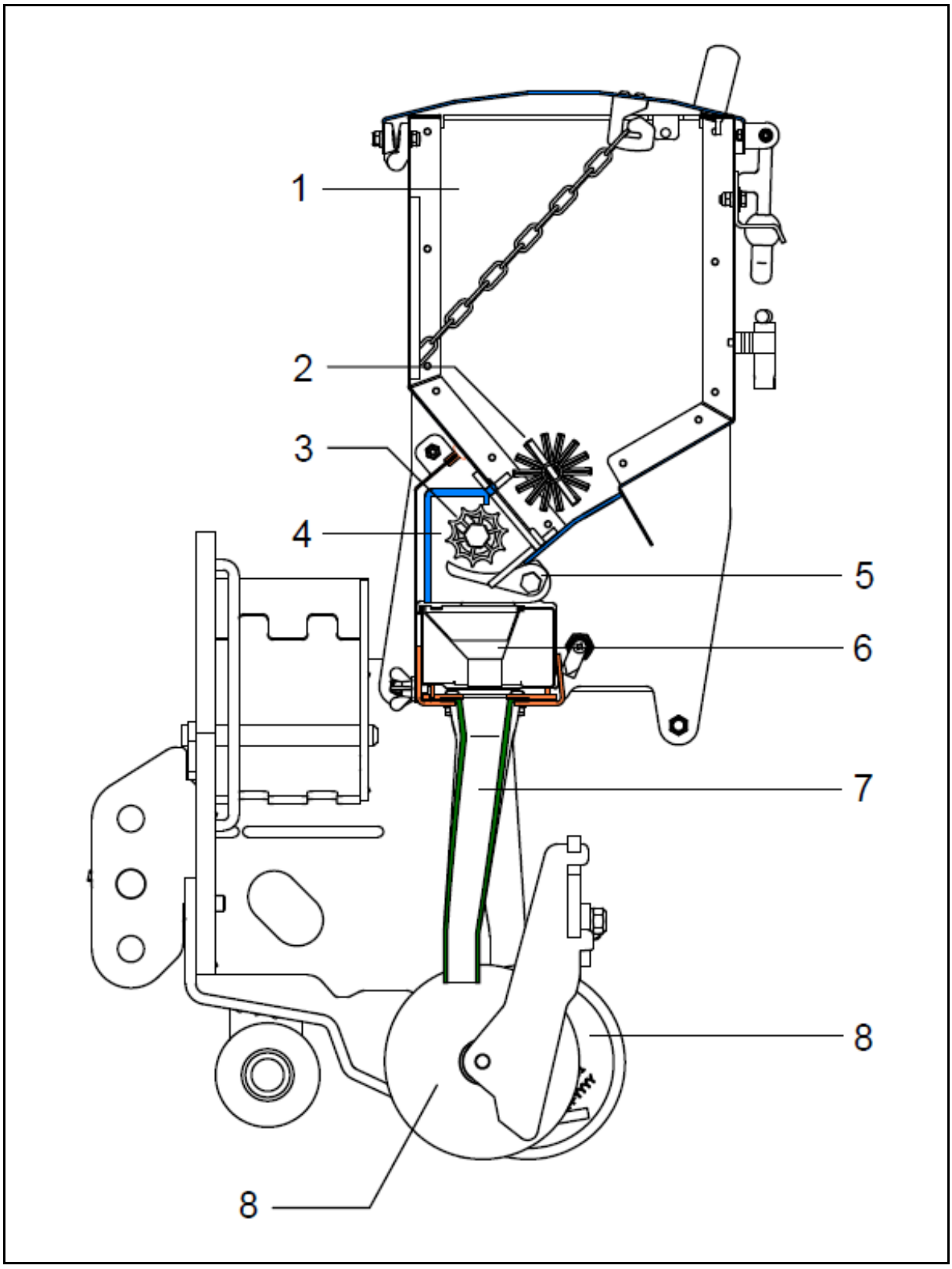


Figure 1 - The overseeder controls

6.1 The tray

The tray (1) differs between the DZ5 Turf-Fix models 65 and 95. The Turf-Fix 95 model's tray is wider than the Turf-Fix 65 model. The Turf-Fix 65 model's volume is 42 liters while the Turf-Fix 95 model holds 66 liters.

The tray has a cover with a seed chart fixed on the inside of this cover. The seed chart in various languages identifies a number of grass seed types together with their properties and the doses administered at different settings of the variator.

Two holders are mounted at the rear of the tray for attaching the calibration crank, as well as a fork bracket for securing the cover by using a rubber fastener.

6.2 The dosing axle

The dosing axle (2) is located at the bottom of the tray and is equipped with a series of dowel pins that each in turn is attached onto the shaft at a specific angle.

When the seed hopper is filled with grass seed, then during the seeding process the agitator shaft will rotate and keep the grass seed moving, this prevents bridging so that there is a constant influx of grass seed onto the cam wheels.

This type of motion is necessary because different types of grass seed can stick together inside the grass hopper, which can adversely affect the effectiveness during the seeding process.

6.3 The cam wheel

The cam wheel (3) is mounted on the seeding axle and is enclosed inside the dosing system. During the seeding process, the rotation of the cam wheel will uniformly dose the seed, after which it ends up in the seed funnel by way of the bottom flap.

6.4 The dosing system

Depending on the overseeder model, a number of plastic dosing systems (4) will be mounted inside the overseeder. The seed axle, to which a cam wheel is mounted for each dosing system, runs along the width of the overseeder. During the seeding process the seed is dosed to the seed funnel via the cam wheel and the bottom flap.

6.5 The bottom flap

Every dosing system contains a bottom flap (5) mounted on an adjustable shaft. Since the shaft is adjustable, it may only be used in its first position. During the seeding process, the grass seed dosed by the cam wheel will fall onto the bottom flap after which it will fall from the bottom flap into the seed funnel.

6.6 The seed funnel

The seed funnel (6) is located below the dosing system. The number of seed funnels in turn is fixed inside the calibration tray. The seed funnel can be used in one of two ways. First, it is used with the calibration tray in its seeding position and second, it is used with the calibration tray in its inverted position during the calibration process.

The use of the calibration tray is further explained in the calibration section.

6.7 The v-shaped tube

The v-shaped tube (7) is located below the seed funnel. The tail end of this tube is precisely placed between two cutting discs. During the seeding process, the grass seed falls between the two cutting discs after which it falls into the slit just cut into the soil.

6.8 The cutting discs

The DZ5 Turf-Fix has a set of twin cutting discs (8). Due to this configuration the sowing distance between seeds is 35 mm. This results in very dense overseeding. The sowing elements to which the cutting discs are mounted are not spring mounted but fixed.

7 Working with the Turf-Fix

7.1 The seeding principle

During the installation of the overseeder, we assume that first the turning test has been performed and then the proper depth of the disc blades relative to the ground surface have been adjusted.

The depth adjustment of the cutting discs depends on the medium to be seeded. Each type of seed naturally has its own shape and size.

As a general rule, to obtain optimal results, the seed must be placed in the soil at a depth of 2.5 times the seed's length. It may be possible to deviate from this rule as a result of growing conditions, on the recommendation of the seed's supplier or for some other reason. The formula therefore is as follows:

Multiply the average seed length by factor 2.5

Suppose that the grass seed on average is 6 mm in length and this length is multiplied by a factor of 2.5, then the depth setting of the disc blades is calculated as follows:

6 mm x 2.5 = 15 mm

The overseeder is now correctly adjusted and the tray is filled with 5% more than the required quantity of grass seed. To ensure optimal distribution/dosing of the seed, the dosing axle must always be covered with seed during seeding.

During seeding (see chapter 6, (The controls)), the dosing axle uniformly rotate the grass seed towards the cam wheel via the dosing system. The rotating direction of the cam wheel is such that the dosed grass seed is transported to the funnels via the bottom flap.

The grass seed transported to the seed tubes via the funnels falls between the cutting discs, which in turn dose the seeds into the slit at the correct, previously adjusted, cutting disc blade depth. The soil springs back by itself and is neatly pressed down with the aid of the pressure roller. This firmly encloses the seed into the soil.

The combination of twin cutting discs, pressure spring and trailing shoe ensures an optimal sowing depth, which in turn translates in the most efficient use of the grass seed.

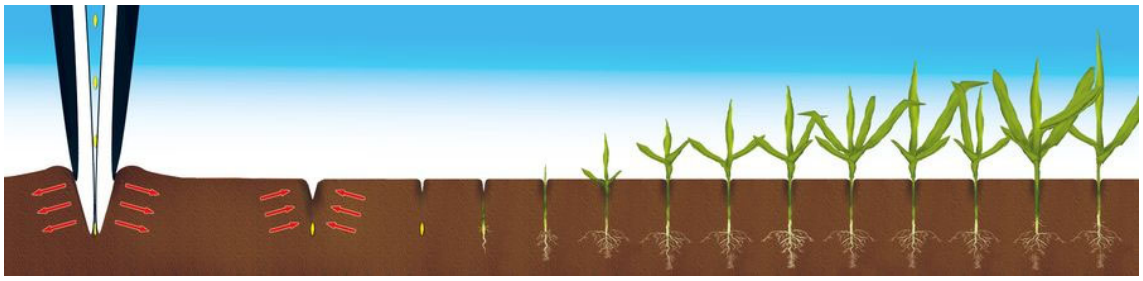


Figure 1 - Example of the seeding principle

7.2 Calibration test

The machine is calibrated to ensure the proper dosing of the seeds to be sown. The overseeder must be calibrated prior to sowing.

A sowing table is fixed to the inside of the tray cover of the DZ5 Turf-Fix 65 and 95.

The calibration process is depicted in the following illustrations:

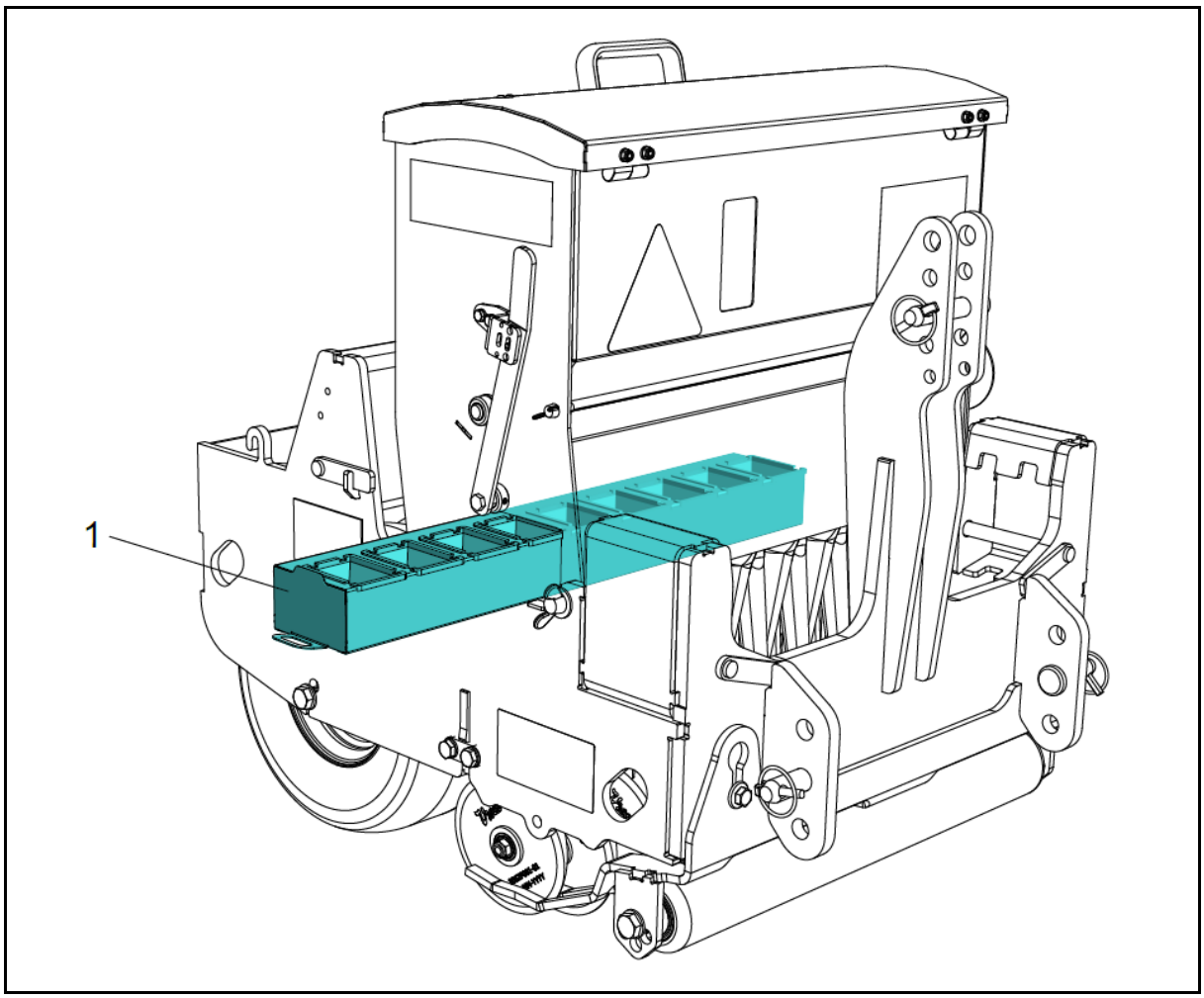


Figure 2 - Removing the calibration tray

1 Fill the tray with the desired quantity of grass seed.

2 Remove the calibration tray (1), which is located in the sowing position, from the overseeder and turn it over.

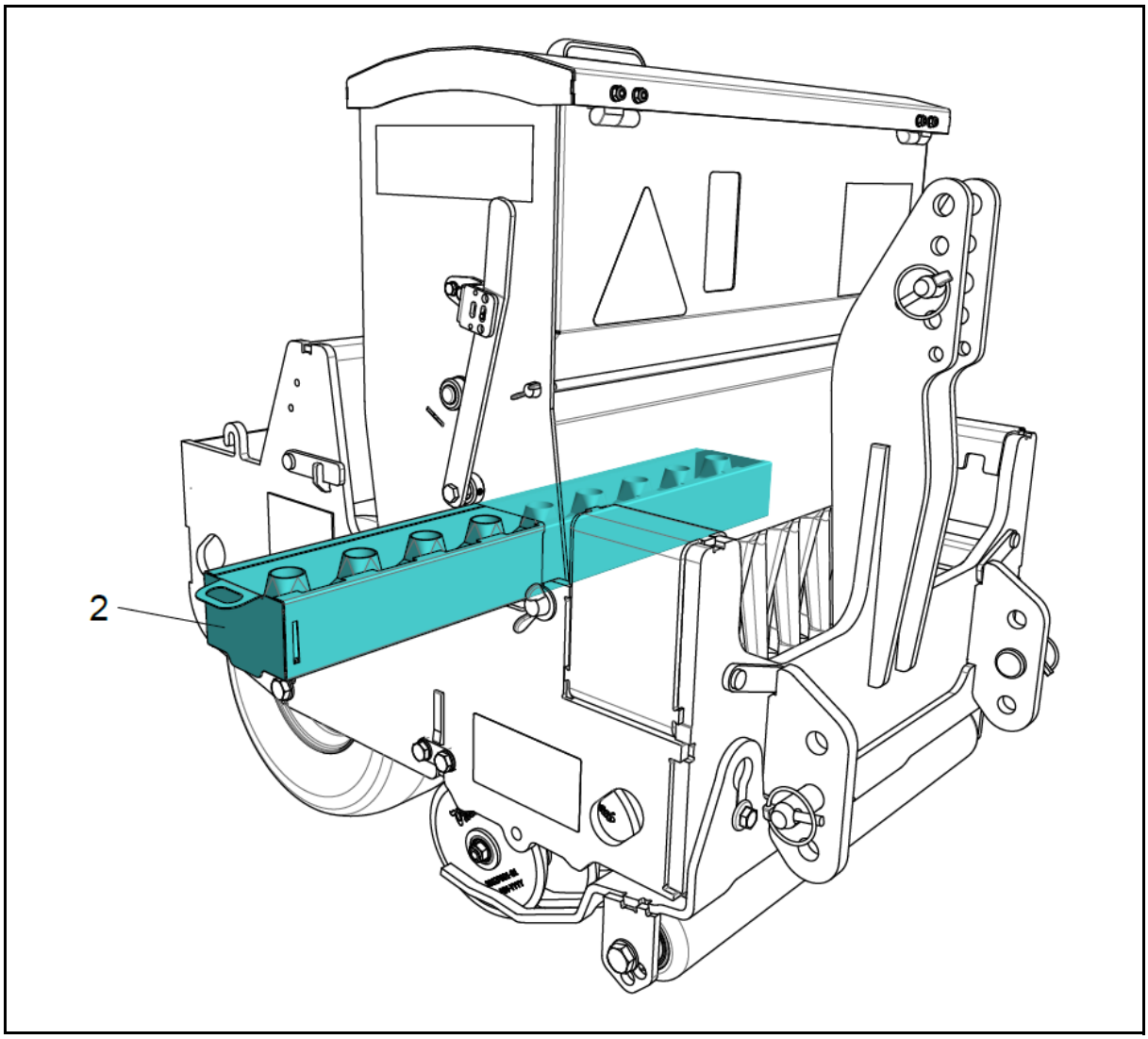


Figure 3 - Replacing the calibration tray

3 Next, put the calibration tray (2) back into the overseeder.

4 Look up the right type of grass seed and the desired dosing quantity in the sowing table.

5 Adjust the variator on the basis of the values specified in the sowing table.

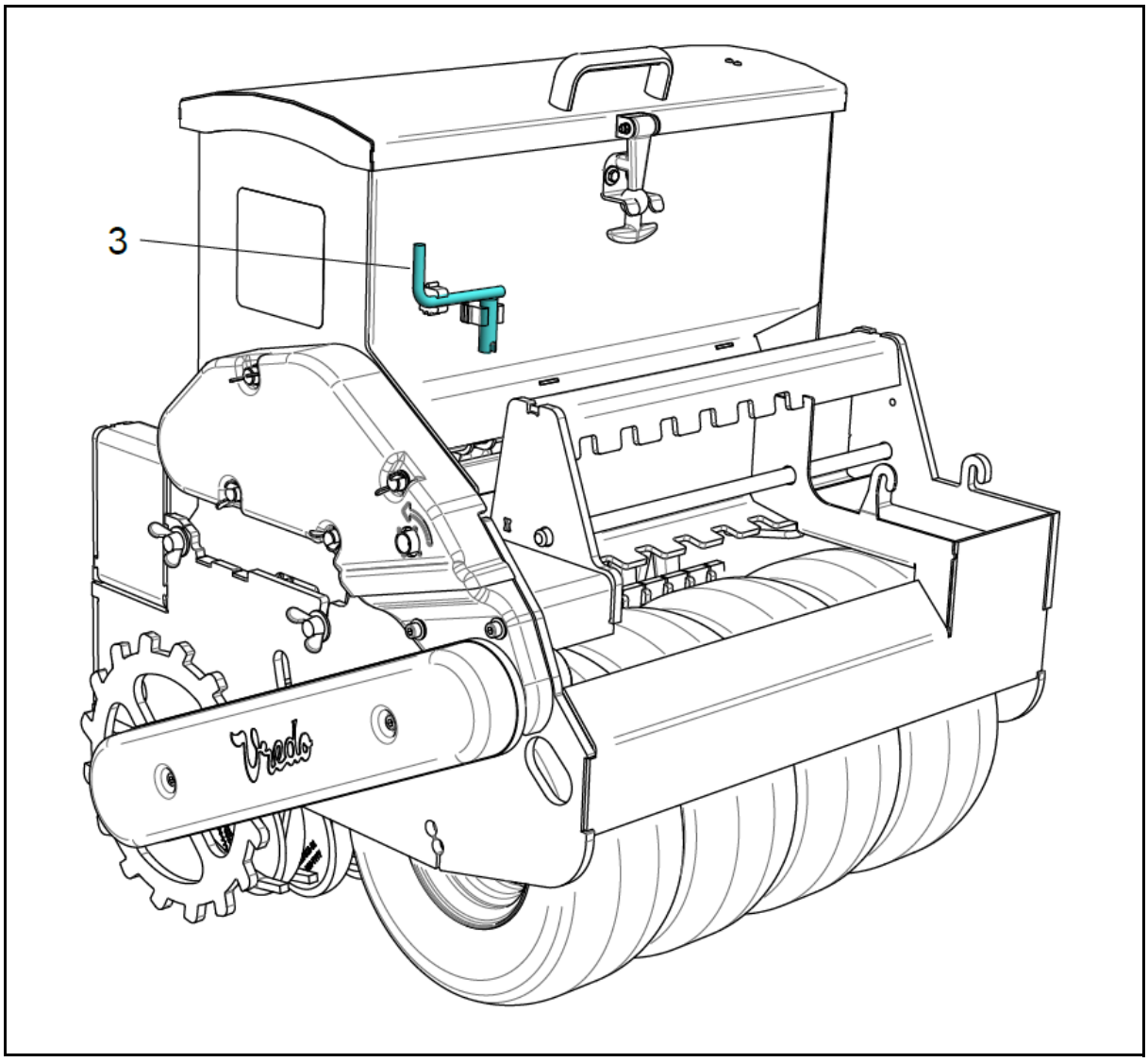


Figure 4 - Location of the calibration crank

6 Remove the calibration crank from its holders at the back of the tray.

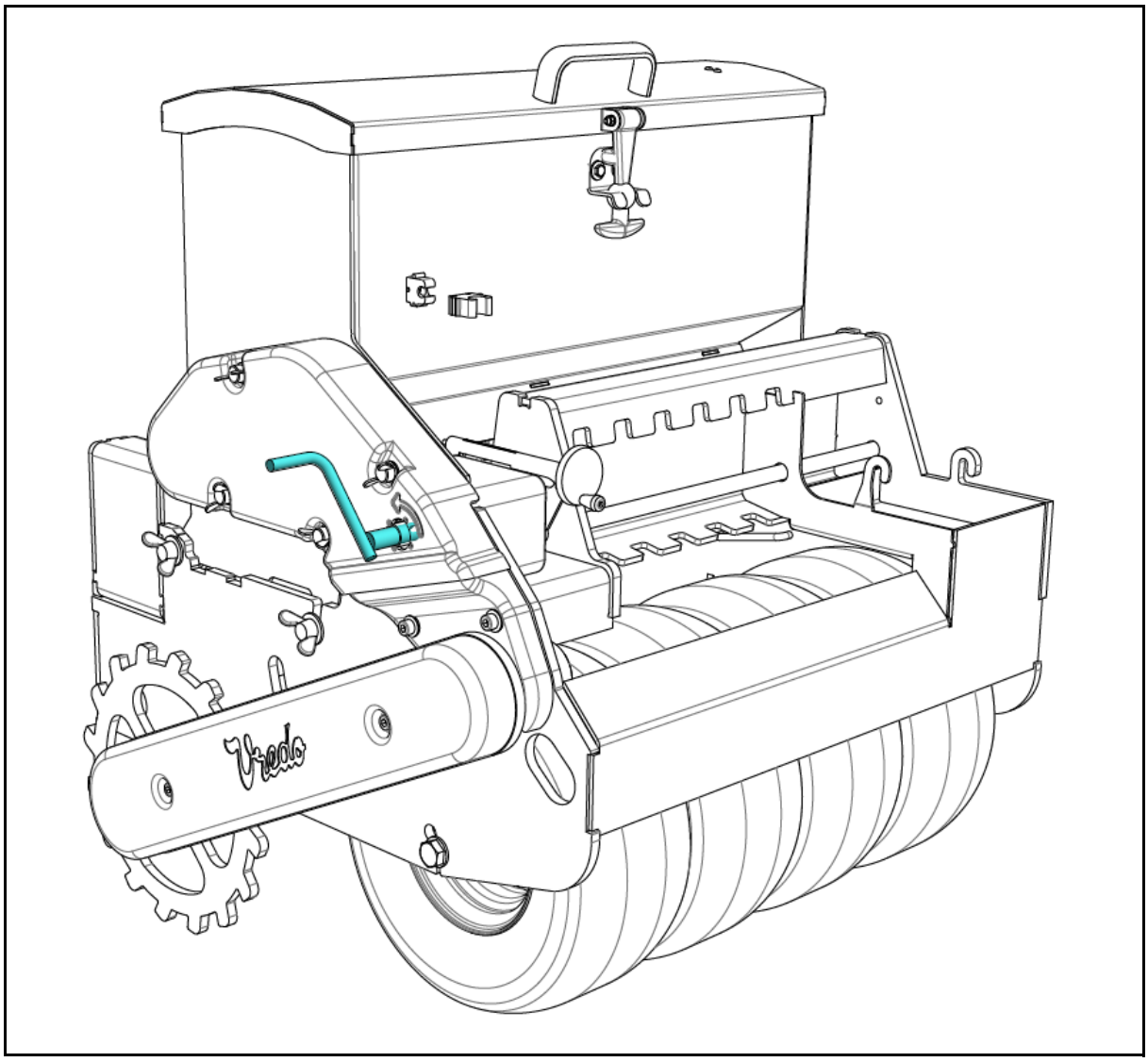


Figure 5 - Insertion of the calibration crank

7 Insert the calibration crank into the overseeders recessed slot.

8 Next, turn it a few times to first fill up the cam wheels with grass seed.

9 Empty the calibration tray and start up the first formal calibration test.

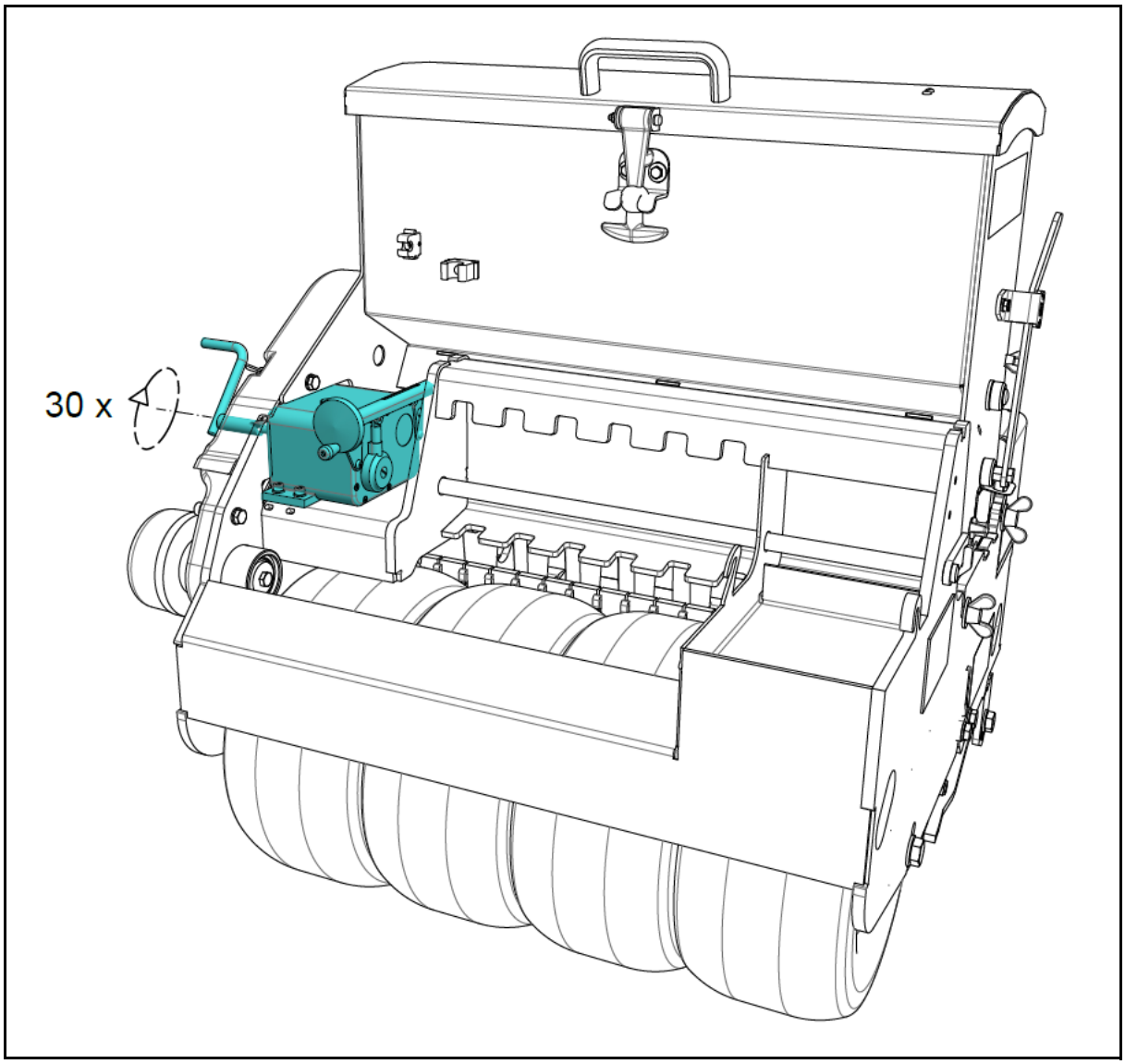


Figure 6 - Calibrating the overseeder with the calibration crank

10 Turn the calibration crank 30 revolutions in the direction of the arrow shown.

11 After calibration, remove the calibration tray and carefully weigh the total contents.

NOTE
We recommend that you use a digital kitchen weighing scale for weighing the contents obtained from the calibration test.

First adjust the variator on the basis of the sowing table. The calibration test can then be performed. After the calibration is completed, the amount of grass seed in the calibration tray is weighed and this information is used to adjust the proper position of the variator on the basis of the sowing table.

By way of example, assume the Turf-Fix 65 is used to sow a plot of English ryegrass. The tray has been filled with a quantity of grass seed and before carrying out the calibration procedure, the calibration crank is turned a number of times to first fill up the cam wheels in the dosing system.

After this action is completed, the formal calibration can be started. Note that as a result of the 30 revolutions of the calibration crank a surface area of x m^2 is registered.

For the Turf-Fix 65 this is 13.1 m^2, and for the Turf-Fix 95 this is 20.4 m^2.

The desired dosing for the sample plot (English ryegrass) is 100 kg/ha. When we look up the 100 kg/ha value in the sowing table under English ryegrass, we see that 97.6 kg/ha is the closest approximation, producing an initial setting of 20 for the variator.

After making this adjustment, the formal calibration test is carried out and after 30 revolutions, the weighed quantity of English ryegrass is found to be 120 grams. From this it follows that:

120 grams / 13.1 m^2 = 9.16 grams/m^2

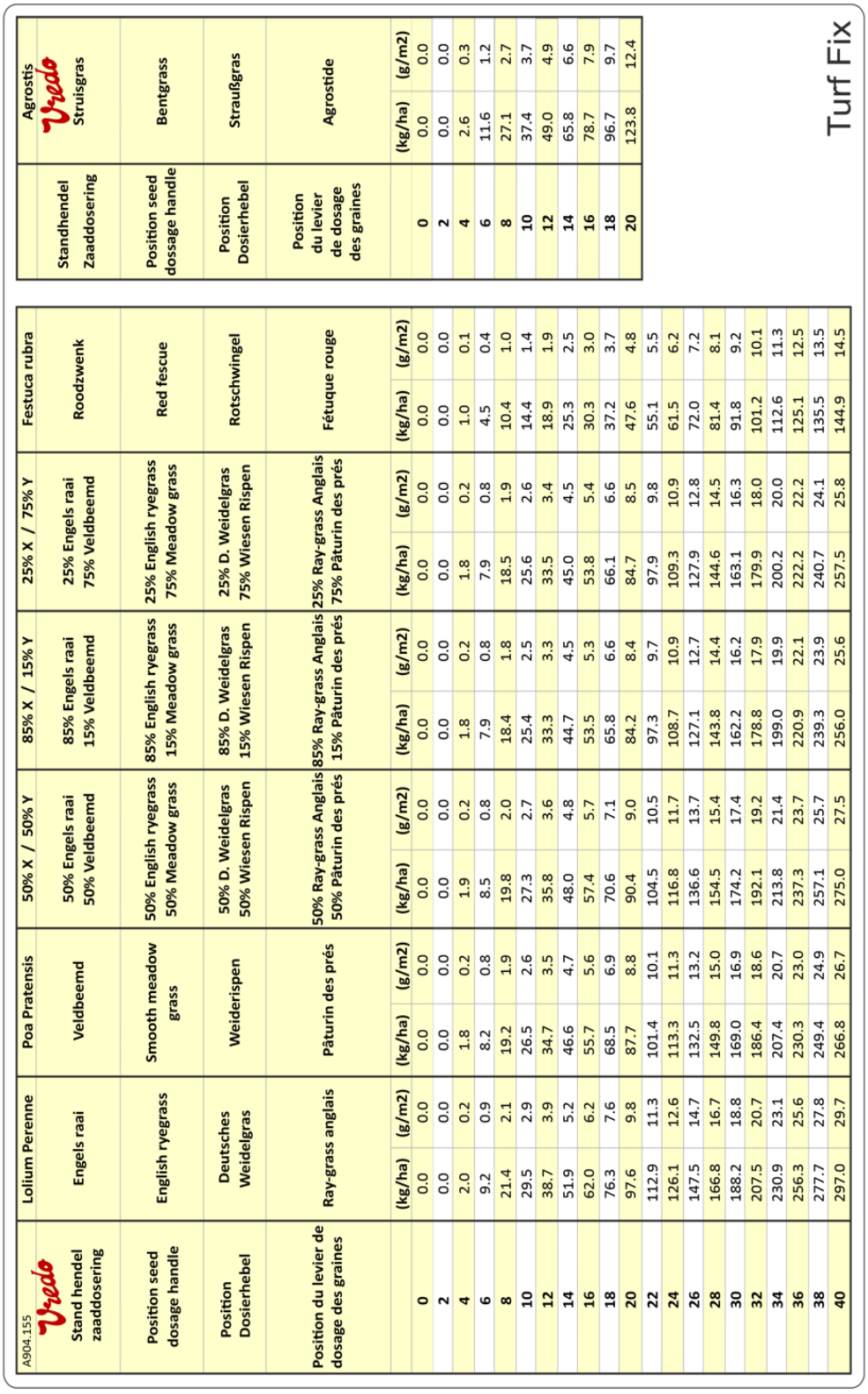
According to the table the variator's setting therefore is between 18 and 20. So in this example, after making this adjustment another calibration test is completed in order to ultimately approach the right dose of 100 kg/ha. Formally this should be 131 grams (10 grams m^2).

Assuming the quantity was accurately weighed to be 131 grams, the variator should therefore be set to between 21 and 22.

If the measured dosing deviates from the desired dosing, the setting may be increased by one graduation if the number of grams is too low or be decreased by one graduation if the number of grams is too high.

NOTE

The bottom flap handle must be set to the 'fine' position for the calibration test. The bottom flap handle may not be adjusted. The overseeder must always be used with the bottom flap handle in the 'fine' position.



Stand hendel zaaddosering	Lolium Perenne		Poa Pratensis		50% X / 50% Y		85% X / 15% Y		25% X / 75% Y		Festuca rubra	
	Engels raai		Veldbeemd		50% Engels raai 50% Veldbeemd		85% Engels raai 15% Veldbeemd		25% Engels raai 75% Veldbeemd		Roodzwenk	
Position seed dosage handle	English ryegrass		Smooth meadow grass		50% English ryegrass 50% Meadow grass		85% English ryegrass 15% Meadow grass		25% English ryegrass 75% Meadow grass		Red fescue	
Position Dosierhebel	Deutsches Weidelgras		Weiderispen		50% D. Weidelgras 50% Wiesen Rispen		85% D. Weidelgras 15% Wiesen Rispen		25% D. Weidelgras 75% Wiesen Rispen		Rotschwingel	
Position du levier de dosage des graines	Ray-grass anglais		Pâturin des prés		50% Ray-grass Anglais 50% Pâturin des prés		85% Ray-grass Anglais 15% Pâturin des prés		25% Ray-grass Anglais 75% Pâturin des prés		Fétuque rouge	
	(kg/ha)	(g/m2)	(kg/ha)	(g/m2)	(kg/ha)	(g/m2)	(kg/ha)	(g/m2)	(kg/ha)	(g/m2)	(kg/ha)	(g/m2)
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	2.0	0.2	1.8	0.2	1.9	0.2	1.8	0.2	1.8	0.2	1.0	0.1
6	9.2	0.9	8.2	0.8	8.5	0.8	7.9	0.8	7.9	0.8	4.5	0.4
8	21.4	2.1	19.2	1.9	19.8	2.0	18.4	1.8	18.5	1.9	10.4	1.0
10	29.5	2.9	26.5	2.6	27.3	2.7	25.4	2.5	25.6	2.6	14.4	1.4
12	38.7	3.9	34.7	3.5	35.8	3.6	33.3	3.3	33.5	3.4	18.9	1.9
14	51.9	5.2	46.6	4.7	48.0	4.8	44.7	4.5	45.0	4.5	25.3	2.5
16	62.0	6.2	55.7	5.6	57.4	5.7	53.5	5.3	53.8	5.4	30.3	3.0
18	76.3	7.6	68.5	6.9	70.6	7.1	65.8	6.6	66.1	6.6	37.2	3.7
20	97.6	9.8	87.7	8.8	90.4	9.0	84.2	8.4	84.7	8.5	47.6	4.8
22	112.9	11.3	101.4	10.1	104.5	10.5	97.3	9.7	97.9	9.8	55.1	5.5
24	126.1	12.6	113.3	11.3	116.8	11.7	108.7	10.9	109.3	10.9	61.5	6.2
26	147.5	14.7	132.5	13.2	136.6	13.7	127.1	12.7	127.9	12.8	72.0	7.2
28	166.8	16.7	149.8	15.0	154.5	15.4	143.8	14.4	144.6	14.5	81.4	8.1
30	188.2	18.8	169.0	16.9	174.2	17.4	162.2	16.2	163.1	16.3	91.8	9.2
32	207.5	20.7	186.4	18.6	192.1	19.2	178.8	17.9	179.9	18.0	101.2	10.1
34	230.9	23.1	207.4	20.7	213.8	21.4	199.0	19.9	200.2	20.0	112.6	11.3
36	256.3	25.6	230.3	23.0	237.3	23.7	220.9	22.1	222.2	22.2	125.1	12.5
38	277.7	27.8	249.4	24.9	257.1	25.7	239.3	23.9	240.7	24.1	135.5	13.5
40	297.0	29.7	266.8	26.7	275.0	27.5	256.0	25.6	257.5	25.8	144.9	14.5

Standhendel Zaaddosering	Agrostis Vredo Struisgras	
Position seed dossage handle	Bentgrass	
Position Dosierhebel	Straußgras	
Position du levier de dosage des graines	Agrostide	
	(kg/ha)	(g/m2)
0	0.0	0.0
2	0.0	0.0
4	2.6	0.3
6	11.6	1.2
8	27.1	2.7
10	37.4	3.7
12	49.0	4.9
14	65.8	6.6
16	78.7	7.9
18	96.7	9.7
20	123.8	12.4

Figure 7 - The sowing table

7.3 Adjusting the cutting depth

Correctly adjusting the cutting depth is carried out as follows:

- First, calculate the correct value of the depth of cut according to chapter 7.1, (The seeding principle).
- Couple the overseeder behind a mini-tractor or a small ride-on mower.
- Then drive a test distance of approx. 10 meters.
- Check the depth of cut made and compare it with the calculation made before.
- If the depth of the cut is too deep, the length of the top link must be increased in both cases on a 3-point version (mini tractors) or by means of the actuator on the drawbar (ride-on mowers).
- If the depth of the cut is too deep, shorten the length of the upper link on a 3-point version (mini tractors) or by means of the actuator at the drawbar (ride-on mowers) in both cases.

7.4 Drawbar actuator settings

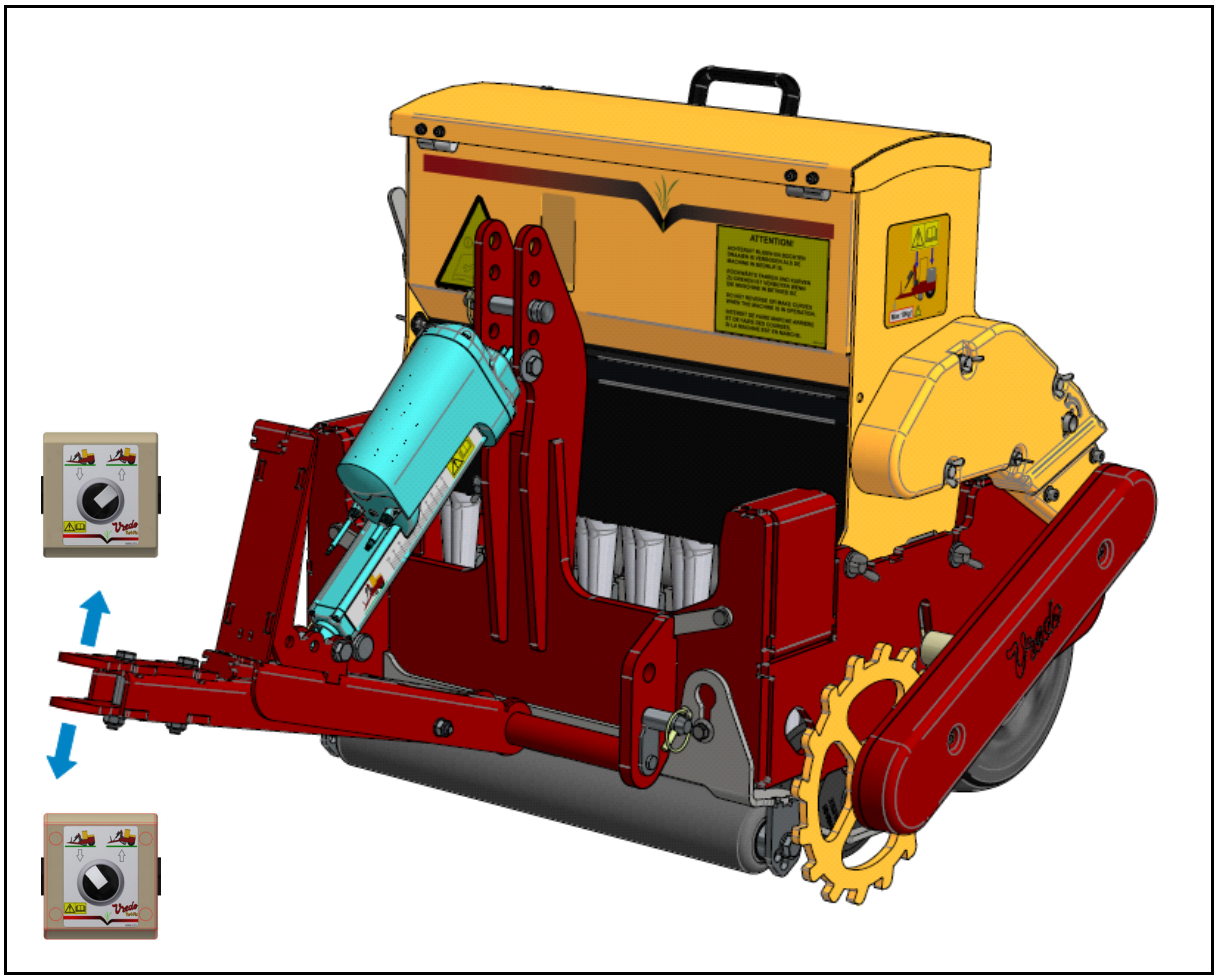


Figure 8 - Drawbar actuator settings

As shown in the illustration above, the switch can be used to move the drawbar up or down. By making this finely controlled adjustment the required sowing depth can be precisely adjusted as described in Section 7.3 (Adjusting the cutting depth).

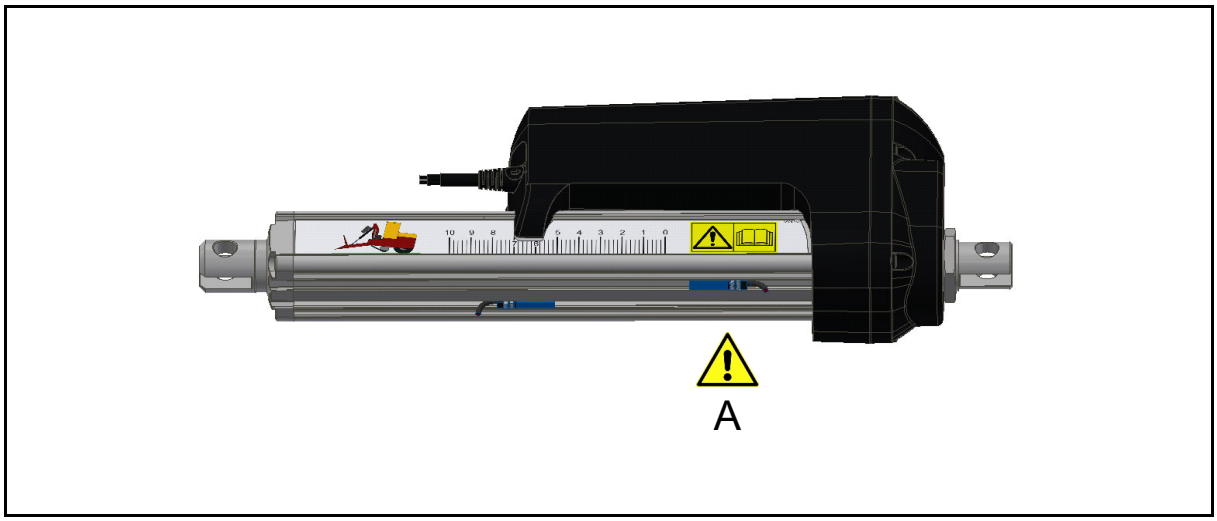


Figure 9 - Sensor adjustment for lifting the drawbar

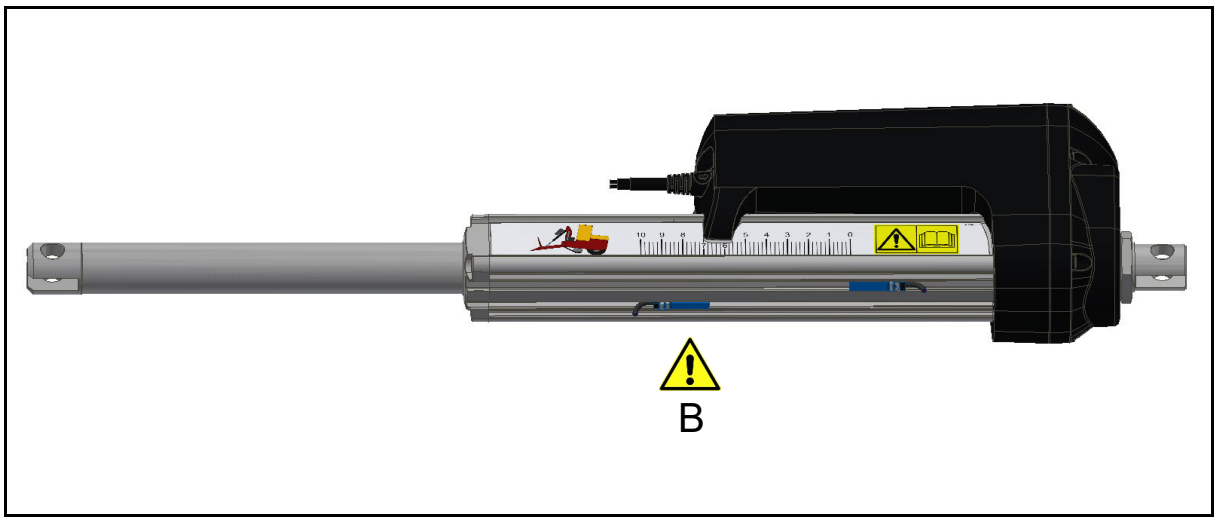


Figure 10 - Sensor adjustment for lowering the drawbar

Two sensors are located below the actuator housing that are used to adjust the settings for lifting as lowering the drawbar. In principle, these settings determine the actuator shaft's length.

By sliding both sensors, the proper position of the drawbar can be determined by trial and error in terms of its maximum or minimum position.

7.5 The use of optional weights

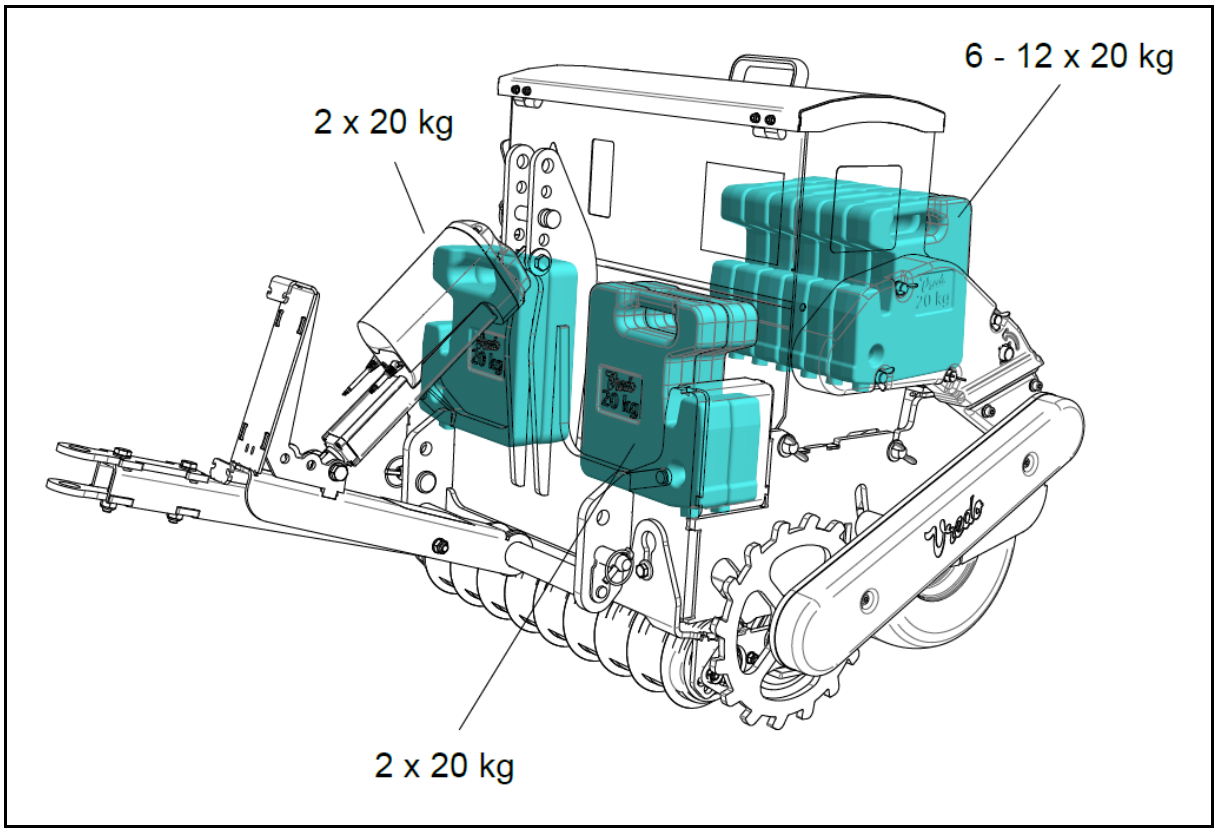


Figure 11 - Adding optional weights

As shown in the illustration above, both the Turf-Fix 65 and 95 overseeder model can be equipped with extra optional 20 kg weights.

The purpose of the extra optional weights is to make the machine heavier so that the right slit depths can be achieved in soil types of varying hardness.

Overseeder	Number of Weights	Front	Rear side	Total in kg
Turf-Fix 65	10	4	6	200
Turf-Fix 95	16	4	12	320

Table 1 - Overview distribution of 20 kg weights

NOTE
Keep in mind that after the extra weights are added, the downward pressure on the towing eyelet may not be higher than 10 kg.

8 Storage

8.1 Short period storage

When the overseeder is stored for a short period, ensure that it is as clean as possible before storage. The most important thing is for the tray to be entirely empty and no grass seed residues are left. To be absolutely certain, check to make sure that the calibration tray is empty and clean as well.

Furthermore, be sure to place the overseeder on a large pallet or on some other unhardened/ soft surface. It is important to avoid exerting a load on the cutting discs caused by having them rest on a hard surface, such as a concrete floor or clinkers.

8.2 Long period storage

When the overseeder is stored for a longer period, there are several areas for attention that must be taken into account.

- Ensure that the tray is thoroughly cleaned and that no grass seed is left behind. This is because grass seed can sprout under certain humid conditions. This can create blockages, which makes it hard to clean the overseeder.

- Use compressed air to blow the disc blades thoroughly clean. Caution, use safety goggles while blowing the cutting discs clean with compressed air.

- Check the cutting discs for corrosion and ensure they stay clean. Furthermore, carefully check the cutting discs to make sure they are still sharp enough and that they are not damaged, for example by burrs, dents or deformations.

- Check to ensure that all bolts and nuts are still properly fastened and are in their proper place. Loose fasteners must be tightened using the proper torque value. (see chapter 10 Torque table).

- Remove the battery and store it separately in a dry place. Check both battery poles for corrosion and if present clean and lubricate with acid-free Vaseline.

- If the battery is maintenance-free, it can be stored for a long period of time. If the battery is going to be used again in the foreseeable future, it is recommended that it be connected to the battery charger well ahead of time.

  If the battery is a wet-cell battery operating with battery acid and lead plates, it must be connected to a trickle charger. Carefully read the instructions in the trickle chargers user manual before connecting it to the battery.

- It may be best to store the control box together with the connector, properly capped off, in the tray. To keep it clean and dry it may be good to put the unit in a plastic bag.

- Ensure that the overseeder is placed on a proper surface (see Section 8.1).

9 Service and maintenance

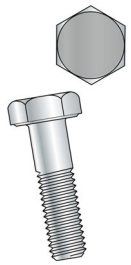
Lubricate and/or check the following overseeder components:

Component	Lubricate/Check	Frequency
Drive chains	Chain lube/spray	Regularly
Check gear wheels	Check for damage	During maintenance
General sounds	Strange noises during sowing	During operation
General components	Check for damage/leaks	Regularly
General components	Play in hinged parts	Regularly
Wheel bearings	Play or unusual noises	Regularly
Tyre pressure	Check pressure (1 bar)	Regularly

Table for lubricating and inspecting components

NOTE
In the event of any other defects, damage or problems with the overseeder, it is recommended that you do not carry out any repairs yourself, but instead contact a approved Vredo dealer or Vredo Dodewaard to perform these repairs.

10 Torque table

	8.8		10.9		12.9	
	Bolt class 8.8		Bolt class 10.9		Bolt class 12.9	
	Oil	Dry	Oil	Dry	Oil	Dry
	Nm	Nm	Nm	Nm	Nm	Nm
M6	8.9	11.3	13	16.5	15.5	19.5
M8	22	27.5	32	40	38	47
M10	43	55	63	80	75	95
M12	75	95	110	140	130	165
M14	120	150	175	220	205	260
M16	190	240	275	350	320	400
M18	265	330	375	475	440	560
M20	375	475	530	675	625	790
M22	510	650	725	920	850	1080
M24	650	820	920	1150	1080	1350
M27	950	1200	1350	1700	1580	2000
M30	1290	1630	1850	2300	2140	2700
M33	1750	2200	2500	3150	2900	3700
M36	2250	2850	3200	4050	3750	4750

Remark: All steel threaded rods and bolts used are in accordance with Bolt class 8.8

Important rules for A2-70 and A4-70 stainless steel bolts:

- **Never replace a steel bolt with a stainless steel bolt!**
- **Never use stainless steel bolts in heavily loaded mechanical or frame connections.**
- **Always apply Never Seez copper paste to the screw thread for assembly.**

A2-70					A4-70				
M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
8.4 Nm	20.6 Nm	40.7 Nm	70.5 Nm	112 Nm	174 Nm	242 Nm	342 Nm	470 Nm	589 Nm

Tightening torque for bite-type fittings 'LIGHT series' (DIN 2353)  **DO NOT EXCEED SPECIFICATION!**					**Tightening torque for bite-type fittings 'STRONG series' (DIN2353)**  **DO NOT EXCEED SPECIFICATION!**				
10L	12L	15L	18L	22L	8S	10S	12S	16S	10L
30 Nm	45 Nm	60 Nm	90 Nm	120 N m	45 Nm	55 Nm	65 Nm	95 Nm	30 Nm

11 EC Declaration

EC DECLARATION OF CONFORMITY FOR MACHINERY
(in accordance with machinery directive 2006/42/EC, Annex II.1.A)

We,

VREDO Dodewaard bv
Welysestraat 25a
NL-6669 DJ Dodewaard
The Netherlands

hereby declare, fully under our own responsibility, that the machine:

Machine: VREDO Overseeder
Series/family: DZ5-Turf-Fix
Type number: DZ5-TF 65/95

to which this declaration pertains, complies with the provisions of the following directive(s)

Machinery Directive 2006/42/EC

complies with the following standard(s) or other normative document(s):

NEN-EN-ISO 12100-2010
NEN-EN-ISO 4254-1: 2015
NEN-EN-ISO 14018+A1:2009

The Netherlands, Dodewaard, 01/03/2022

J. de Vree, Director

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