

GRASSLAND ROLLER

GW 250 M1, GW 300 M1, GW 400 M1

OPERATING MANUAL



PLEASE READ CAREFULLY BEFORE INITIAL OPERATION!

Version: 2.0 EN; item number: 00602-3-732

Translation of the original operating instructions



TABLE OF CONTENTS

1	EC DECLARATION OF CONFORMITY	4
2	UK CONFORMITY ASSESSED	5
3	IDENTIFICATION OF THE IMPLEMENT	6
4	SERVICE	6
5	WARRANTY	6
5.1	Warranty activation	7
6	SAFETY INSTRUCTIONS	7
6.1	Intended use	7
6.2	General safety-related instructions and accident prevention regulations	8
6.3	Mounted implements	9
6.4	Maintenance	9
6.5	Mounted seeders	10
6.5.1	Filling the seeder	10
7	INFORMATION SIGNS / HAZARD LABELS	11
7.1	Information signs	11
7.2	Hazard labels	11
8	OPERATING MANUAL	12
8.1	Mounting on the tractor	12
8.2	Layout of the implement	13
8.3	Settings and working with the implement	13
9	MAINTENANCE AND CARE	13
9.1	General maintenance instructions	13
9.2	Regular maintenance instructions	14
9.3	Repairs and service	14
10	INFORMATION ON NATURE CONSERVATION AND ENVIRONMENTAL PROTECTION	14
11	TECHNICAL DATA	14
12	ROAD TRANSPORT	15
12.1	Transport on public roads (general information)	15
12.2	Transport on public roads (most important specifications)	15
12.3	Calculation of the weight ratios	15
12.3.1	Table for the weight ratios	17
13	LIGHTING CIRCUIT DIAGRAM	17
14	DECOMMISSIONING, STORAGE AND DISPOSAL	18
14.1	Decommissioning the implement	18
14.2	Storage of the implement	18
14.3	Disposal	18
15	CROP CULTIVATION TIPS WHEN USING THE GRASSLAND ROLLER	18
16	ACCESSORIES	19
16.1	Warning signs and LED lighting	19
16.2	Platform kit	19
16.3	Dispersion plate installation accessories kit	19



16.4 Mounting kit for Pneumatic Seeder 19

16.5 Multi-Metering System mounting kit 20

17 SPARE PARTS..... 20

18 INDEX..... 20

1 EC DECLARATION OF CONFORMITY



according to Machinery Directive 2006/42/EC



APV-Technische Produkte GmbH
Dallein 15
A-3753 Hötzelstdorf

hereby declares that the mounted implement model series designated below complies with the applicable basic safety and health requirements of the Directive cited above in terms of its concept and design as well as the versions put on the market.

This declaration loses its validity if there are any changes to the mounted implement that are not approved by APV-Technische Produkte GmbH.

Designation of the mounted implement model series:

GRASSLAND ROLLER GW 250 M1
GRASSLAND ROLLER GW 300 M1
GRASSLAND ROLLER GW 400 M1

Year of manufacture: as of 2020

Serial number(s): as of 06014-01000 (GW 250 M1)
Serial number(s): as of 06015-01000 (GW 250 M1)
Serial number(s): as of 06016-01000 (GW 250 M1)
Serial number(s): as of 06017-01000 (GW 300 M1)
Serial number(s): as of 06018-01000 (GW 300 M1)
Serial number(s): as of 06019-01000 (GW 300 M1)
Serial number(s): as of 06030-01000 (GW 400 M1)

Applied relevant EC Directives:
Machinery Directive 2006/42/EC

For the planning, design, construction and marketing of the mounted implement, the following harmonised European standards were applied in addition to the Directives, in particular:

EN ISO 12100:2010 – Safety of machinery, general principles for risk assessment
EN ISO 13857:2020 – Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 13849-1:2015 – Safety of machinery – Safety-related parts of control systems

Responsible for the technical documentation: Planning and Design department, Dallein 15

Ing. Jürgen Schöls
Managing Director
(authorised person in the EU)

Dallein/Hötzelstdorf, 11/2022

2 UK CONFORMITY ASSESSED

according to Machinery Directive 2006/42/EC



APV-Technische Produkte GmbH
Dallein 15
A-3753 Hötzelstdorf

hereby declares that the mounted implement model series designated below complies with the applicable basic safety and health requirements of the Directive cited above in terms of its concept and design as well as the versions put on the market.

This declaration loses its validity if there are any changes to the mounted implement that are not approved by APV-Technische Produkte GmbH.

Designation of the mounted implement model series:

GRASSLAND ROLLER GW 250 M1
GRASSLAND ROLLER GW 300 M1
GRASSLAND ROLLER GW 400 M1

Year of manufacture: as of 2020

Serial number(s): as of 06014-01000 (GW 250 M1)
Serial number(s): as of 06015-01000 (GW 250 M1)
Serial number(s): as of 06016-01000 (GW 250 M1)
Serial number(s): as of 06017-01000 (GW 300 M1)
Serial number(s): as of 06018-01000 (GW 300 M1)
Serial number(s): as of 06019-01000 (GW 300 M1)
Serial number(s): as of 06030-01000 (GW 400 M1)

Applied relevant EC Directives:
Machinery Directive 2006/42/EC

For the planning, design, construction and marketing of the mounted implement, the following harmonised European standards were applied in addition to the Directives, in particular:

EN ISO 12100:2010 – Safety of machinery, general principles for risk assessment
EN ISO 13857:2020 – Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 13849-1:2015 – Safety of machinery – Safety-related parts of control systems

Responsible for the technical documentation: Planning and Design department, Dallein 15

A handwritten signature in black ink, appearing to read 'Jürgen Schöls'.

Ing. Jürgen Schöls
Managing Director
(authorized person in the EU)

3 IDENTIFICATION OF THE IMPLEMENT

The Grassland Roller can be clearly identified by the following information on the type plate:

- Designation
- Model
- Production number

Position of the type plate

The type plate is found on the main tube on the outer left.

The following image (Figure 1) shows the layout of the type plate:



Figure 1

The data on the type plate have the following meaning:

- 1: Designation
- 2: Model
- 3: Product number / serial number
- 4: Weight
- 5: Year of manufacture



NOTE!

In cases of inquiries or warranty claims, please always tell us the production number / serial number of your implement.

4 SERVICE

Please contact our service address in the following cases:

- If you still have questions regarding the handling of this implement despite the information provided in this operating manual
- For questions regarding spare parts
- To order maintenance and repair work

Service address:

APV - Technische Produkte GmbH
Zentrale: Dallein 15
A-3753 Hötzelstdorf
AUSTRIA

Telephone: +43 2913 8001-5500
Fax: +43 2913 8002
Email: service@apv.at
Web: www.apv.at

5 WARRANTY

Please check the implement for any transport damage immediately upon receipt. Later claims regarding transport damage can no longer be considered.

We grant a six-month factory warranty starting on the date of delivery and based on a warranty activation (see Point 5.1). Your invoice or the delivery slip serve as a warranty certificate.

This warranty is applicable for cases of material or construction faults and does not include parts that are damaged by normal or excessive wear.

The warranty expires

- if damage is caused by external forces.
- in cases of operating errors.
- if the kW/HP limits are significantly exceeded.
- if the implement is modified, expanded or equipped with third-party spare parts without our permission.

5.1 WARRANTY ACTIVATION

Every APV implement must be registered immediately after delivery. The registration activates the claim for warranty services and APV can guarantee the best service.

To activate the warranty for your implement, simply scan the QR code with your smartphone - you will then be taken directly to the service area on our website.

Of course, you can also activate the warranty through our website www.apv.at in the service area.



6 SAFETY INSTRUCTIONS

This chapter contains general rules of conduct for the intended use of the implement and safety-related information that should always be observed for your safety.

The list is very extensive, and some of the information does not apply exclusively to the delivered implement. However, the summary of the information often reminds you of unconsciously neglected safety regulations for the everyday operation of machines and implements.

6.1 INTENDED USE

The Grassland Roller GW 250/300 M1 is intended as a front- and rear-mounted implement - the GW 400 M1 may only be used for rear-mounted operation.

The Grassland Roller is designed and built for use in agricultural operations. It is used to prepare the soil for subsequent tillage and use.

Any other use is considered to be non-intended. The manufacturer is not liable for any resulting damage, the operator alone bears the associated risk.

Intended use also includes compliance with the conditions for operation, maintenance, and repairs prescribed by the manufacturer.

The implement may only be used, maintained and repaired by persons who have relevant experience and were instructed on the risks. The safety instructions must also be handed over to other users.

The applicable country-specific accident prevention regulations as well as the other generally safety-related, occupational health and road traffic regulations must also be observed.

The manufacturer is not liable for any damage resulting from unauthorised modifications and the use of components and auxiliary parts.

The Grassland Roller is intended for outdoor operation in dry weather, within a temperature range from +5 °C to +40 °C. Water penetration must be avoided. Do not use the implement in rainy conditions!

6.2 GENERAL SAFETY-RELATED INSTRUCTIONS AND ACCIDENT PREVENTION REGULATIONS

- **The operator has read and understood this operating manual before handling the implement.**
- **The operator must train and instruct their personnel. The personnel must have read and understood this operating manual before handling the implement.**
- Always keep the operating manual close to the implement for reference purposes.
- When passing on the implement, be sure to pass on the operating manual.
- Do not use the implement if you are tired or under the influence of drugs, alcohol or medication.
- **Check the implement and the tractor for road and operational safety before every use (e.g. defective parts, connections, hoses, protective equipment, etc.)!**
- Inspections before and during operation as well as regular care and maintenance of the implement must be performed.
- **Before starting work, get to know all of the equipment and operating elements as well as their functions. It is too late to do so during operation!**
- Observe the generally applicable safety and accident prevention regulations for the respective country.
- Always secure the parked implement against unintentional rolling.
- The implement may only be used by persons who are informed of the hazards and who know the regulations for transport on public roads. The owner/operator is responsible for regularly checking the user's competence / driver licence.
- The warning and information signs applied to the implement provide important instructions for safe operation, observe them for the sake of your own safety!
- The implements must be checked regularly by the operator/user (before each use) for any fractures and cracks, chafe marks, leaks, loose bolts and connections, vibrations, unusual noises, and for correct function.
- Observe the respective country-specific road traffic regulations when using public roads!
- The user should wear close-fitting clothing. Avoid wearing loose clothes!
- To reduce the risk of fire: Keep the implements clean!
- Before starting up and operating the implement: Check the surrounding area! (Children!) Ensure sufficient visibility!
- Do not, under any circumstances, allow anyone to ride on the implement! The operator must ensure that no one is riding on the implement before placing the implement in service.
- The implement may only be climbed onto with a platform kit.
- When using the platform kit, ensure that the implement is at standstill and is lowered onto the ground!
- It is forbidden to transport working materials on the implement!
- The implement must be coupled according to the instructions and only onto the specified devices!
- Special caution is required when coupling and uncoupling implements to or from the towing vehicle!
- When mounting and dismounting, put the support devices in their respective positions! (Stability)
- Always attach ballast weights at the intended attachment points according to the specifications!
- Observe the permissible axle load, total weight and transport dimensions!
- Transport equipment - e.g. lighting, warning signs and any protective equipment, must be checked and mounted!
- Triggers for fast couplers must be hanging loosely and must not trigger themselves when lowered.
- Never leave the driver's platform while driving!
- The driving behaviour, steering and braking capacity are affected by mounted or towed implements and ballast weights. For this reason, always ensure sufficient steering and braking capacity!
- When driving in curves, take account of the wide radius and/or the centrifugal mass of the implement (pay attention to the minimum turning curve)!
- The implement may only be operated when all of the protective devices are installed and in safety position!
- **It is forbidden to stand in the working area of the implement!**
- **Do not stand near rotating and swivelling parts of the implement!**
- Danger due to thrown parts! Observe the safety distance!

- Danger after lifting due to centrifugal mass that is still rotating! Only approach the implement when it has come to a standstill!
- Before exiting the tractor, lower the implement onto the ground, switch off the motor and remove the ignition key!
- Standing between the tractor and the implement is forbidden unless the vehicle is secured against rolling away using the parking brake and/or with wheel chocks!
- Folded frames and lifting devices must be locked in transport position!
- Safety glasses, hearing protection and safety shoes must be used.
- The view on the mounted implement and the hazardous movement area must be clear to check the procedure.
- Cleaning is recommended as specified in the maintenance instructions. The procedure in in maintenance instruction must be observed and protective equipment must be used.
- Working under the implement is forbidden.
- The implements must be checked regularly by the operator (before every use) for any fractures and cracks, chafe marks, leaks, loose bolts and connections, vibrations, unusual sounds, and to ensure they function correctly.
- During assembly, the operator must ensure that the requirements for the tractor in terms of the power, axle loads and weight distribution as specified in the operating manual are met and that the connections specified in the operating instructions are made correctly.
- When performing the work passes, the tractor's speed must maintained as specified in the operating instructions. This can be between 6 and 15 km/h.
- Additional lighting (e.g., flashlight) should be used for repair or maintenance work if necessary.
- When implement parts are moving (e.g. during the folding or pre-tensioning procedure) it must be ensured that there is no one standing in the danger zone of the implement – there is a risk of crushing.
- When driving through low or narrow obstacles (e.g. power lines, underpasses, etc.), attention must be paid to the height and width of the implement to avoid collisions.
- In case of loss or breakage of implement parts, they must be immediately replaced with original parts by trained specialist personnel.

6.3 MOUNTED IMPLEMENTS

- Before mounting and dismounting implements on the three-point linkage, the operating devices must be moved into the position that excludes unintentional lifting or lowering!
- For three-point mounting, the mounting categories of the tractor and the implement must match or be adapted!
- There is a risk of injury due to crushing and shearing points in the area of the three-point linkage!
- Do not stand between the tractor and the implement when actuating the external controls for the three-point mounting!
- When the implement is in transport position, always ensure that the tractor three-point linkage is sufficiently locked to the sides!
- When driving on roads with the implement lifted, the operating lever must be locked against lowering!
- When mounting the implement, the operator must ensure that there is a metallic connection (ensured by the lower link) made to the tractor.
- The operator must ensure that no one is standing in the vicinity of the implement when it or its components are being moved by the tractor's hydraulic system. Visual check by the driver!
- Mounting of any sort of accessories onto the implement must be performed according to standards.

6.4 MAINTENANCE

- Maintenance, repair, and cleaning work as well as the elimination of malfunctions should always be performed when the drive is switched off and the motor is at a standstill (remove the ignition key) and the implement is uncoupled from the towing vehicle!
- The maintenance work itself may only be performed by trained specialist personnel and may never be performed alone.

- Extreme caution must be taken when changing defective components or tools. Replacing components that cannot be removed with tools such as a screwdriver or wrench may only be replaced by specialist personnel from an appropriately authorised company or by APV Customer Service.
- If repairs or maintenance are required on the implement that can only be performed in conjunction with the towing vehicle, this work must be identified by a clearly visible information sign "Caution: maintenance work".
- Check the nuts and bolts regularly for tight fit and retighten if necessary!
- When performing maintenance on the lifted implement, always ensure safety through suitable support elements!
- When changing work tools with sharp edges, always use suitable tools and gloves!
- Dispose of oils, greases and filters according to the national regulations!
- Always cut the power supply when working on the electrical system!
- When performing electrical welding work on the tractor and mounted implement, disconnect the cable on the generator and the battery!
- Spare parts must at least comply with the technical requirements specified by the implement manufacturer! This is ensured with original parts!
- Cleaning must be performed with water or compressed air. Cleaning must be carried with the implement lowered, shut down and secured to prevent it being switched on again.

6.5 MOUNTED SEEDERS

- When using a seeder, all of the specifications of the implement manufacturer must be observed.
- The seeder can be easily reached with using a ladder and platform. They must be clean and dry during use.
- It is strictly forbidden to stand on the platform or its access ladder while driving.
- When not in use, the ladder must be folded up and secured.
- An ascent must be established conforming to the standards. This ascent is available from APV.

6.5.1 FILLING THE SEEDER

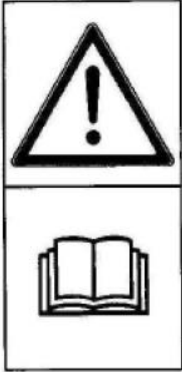
- The seeder is filled using a supply vehicle.
- The platform kit may not be used to fill the seeder or as a storage area for objects or seed. When filling the seeder, never stand under a suspended load!
- When driving up to the implement with seed, nobody may be standing on or around the implement.
- During the loading procedure, avoid any contact with the treated seed and wear gloves, a dust mask and safety glasses.

PLEASE NOTE!
Misprints, errors and omissions excepted!

7 INFORMATION SIGNS / HAZARD LABELS

Pay special attention to these stickers on the implement, as they warn you of specific dangers!

7.1 INFORMATION SIGNS



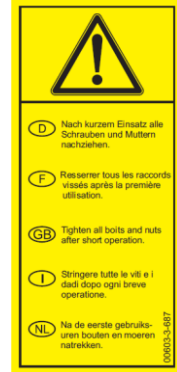
Read and observe the operating manual before operating the implement!



Do not stand on the implement while driving!



Loading hooks.
When loading the implement, attach the ropes or chains to these points!



After a short period of operation, re-tighten all bolts and nuts.



Labelling of the lubrication points.



Label for the recess for installing the 24-mm pins.

7.2 HAZARD LABELS



Do not climb onto rotating parts, use the intended access ladders!

8 OPERATING MANUAL

8.1 MOUNTING ON THE TRACTOR

- The air pressure in the rear tractor tyres should be 0.8 bar during operation.
- Under difficult operating conditions, additional wheel weights can be useful. Please also refer to the operating manual from the tractor manufacturer.
- The tractor should be equipped with sufficient ballast weight at the front to ensure the steering and braking capacity. At least 20 % of the empty vehicle weight is required on the front axle.
- The lifting links must be adjusted to the same height on the left and on the right.
- Mount the implement on the 3-point linkage of the tractor. The lower link pins must be inserted in the upper bushing and the lower link ball must be secured against lateral slipping by the two spacer bushings (Figure 2). The spacer bushings can be found in the toolbox, on the right in the roller frame.
- Mount the top link so that it slants down towards the tractor during operation. Also refer to the sticker on the implement (observe the specification of the tractor manufacturer).
- After coupling, the parking support (Figure 3) is stowed in the shaped tube of the roller frame (Figure 4).
- When the seeder is mounted, the rear parking support must also be folded up (Figure 5).



Figure 2



Figure 3



Figure 4

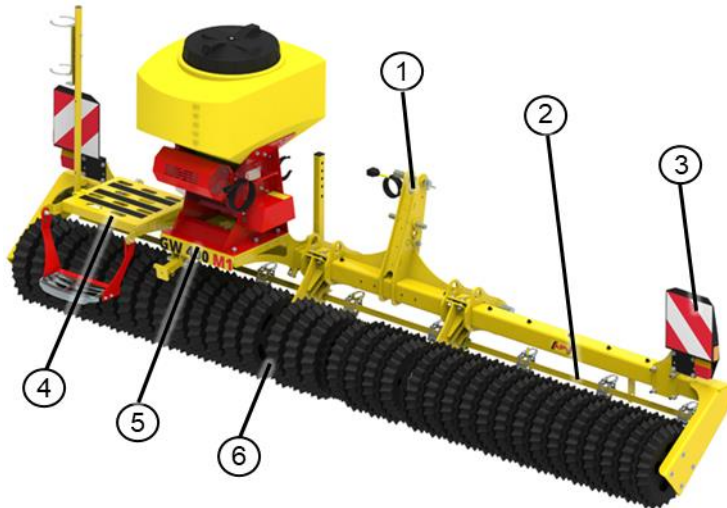


Figure 5

- When mounting on the front, an additional mounting kit is not required, since the roller is equipped with a CAT 2 three-point linkage.

CAUTION!
In a lowered state, driving in curves is not permitted!

8.2 LAYOUT OF THE IMPLEMENT



- 1: Three-point linkage (CAT 2 lower link)
- 2: Dispersion plate installation (accessories)
- 3: Lighting incl. warning signs (accessories)
- 4: Platform kit (accessories)
- 5: PS/MD mounting kit (accessories)
- 6: Cambridge (530 or 390) or Toothed Ring Roller

Figure 6

8.3 SETTINGS AND WORKING WITH THE IMPLEMENT

Before beginning operation, the following must be performed:

- Check bolted connections for firm seating
- Relubricate the bearing
- Check the mechanical integrity of all components

The recommended working speed is max. 8 km/h. On stony soils, a lower speed should be selected; otherwise, the roller rings can break. The maximum transport speed is 25 km/h.

9 MAINTENANCE AND CARE

9.1 GENERAL MAINTENANCE INSTRUCTIONS

To maintain the implement in good condition even after a long service life, the following instructions must be observed:

- In Point 6, you will find some basic safety regulations for maintenance work.
- Original parts and accessories are designed especially for the machines or implements.
- Please note that spare parts and accessories not supplied by us have also not been tested and approved by us.
- The installation or use of such products can therefore possibly negatively change or impede the constructional properties of your implement. The manufacturer rules out any liability for damages resulting from the use of non-original parts and accessories.
- The manufacturer is not liable for any unauthorised modifications and the use of components and auxiliary parts.
- PLEASE NOTE! Liquids escaping under high pressure can penetrate the skin. For this reason, a physician must be consulted immediately in case of accident!!!
- After cleaning, lubricate all of the grease points and distribute the grease evenly in the bearing points (e.g. perform a short test run).
- Do not use a high pressure cleaner to clean bearing and hydraulic parts.
- The paint can be damaged by cleaning with excessive pressure.
- During the winter, the implement should be protected against rust with an environmentally-friendly product.
- Park the implement protected from weather conditions.

9.2 REGULAR MAINTENANCE INSTRUCTIONS

- All bolted connections should be re-tightened at the latest after 3 operating hours and again after 20 hours, and then checked regularly (loose bolts can cause significant consequential damage, which is not covered by the warranty).
- The grease points on the joints and bearings must be lubricated regularly (approx. every 10 operating hours with universal grease).
- For implements with fast coupler, the guide slots must also be lubricated.
- The platform kit and its access ladder must be visually inspected on a regular basis.
- The rubber for fastening the access ladder of the platform kit must be checked regularly for wear and replaced if necessary. It should only be replaced by trained specialist personnel and with original parts.

9.3 REPAIRS AND SERVICE

In case of failure or damage to the implement, please contact the manufacturer. The contact data can be found in chapter 4.

10 INFORMATION ON NATURE CONSERVATION AND ENVIRONMENTAL PROTECTION

Reduction of noise pollution during use

Any loose parts should be attached to prevent unnecessary noise.

Recyclable raw materials during disposal

Many parts of the implement are made of steel or spring steel (such as the centre frame, roller ring, ...) and can be accepted and recycled by a waste disposal plant.

11 TECHNICAL DATA

Type designation:	GW 250 M1	GW 300 M1	GW 400 M1
Mode of operation:	Function: Fine crumbling of clods, reconsolidation, and pressing down of the seeds		
Working width:	2.40 m	2.96 m	3.98 m
Transport width:	2.44 m	3 m	4.13 m
Dimensions (with seeder) (H x W x D):	1.71 m x 2.44 m x 0.95 m	1.71 m x 3.00 m x 0.95 m	1.71 m x 4.13 m x 0.95 m
Dimensions (without seeder) (H x W x D):	1.10 m x 2.44 m x 0.80 m	1.10 m x 3.00 m x 0.80 m	1.31 m x 4.13 m x 0.80 m
Mounting/hitch (three-point, ...):	linkage		
Weight (full):	900 kg	1060 kg	1430 kg
Roller (410):	756 kg	910 kg	1316 kg
Roller (530):	640 kg	792 kg	1236 kg
Roller (390):	478 kg	564 kg	870 kg
Ground adaptation:	Minimal adaptation thanks to flexible roller rings		
Roller types:	Cambridge roller d = 530 mm Cambridge roller d = 390 mm Toothed ring roller d = 410 mm		
Minimum tractor performance:	40 PS	50 HP	60 PS
	The performance requirement strongly depends on the lifting power of the tractor.		

Type designation:	GW 250 M1	GW 300 M1	GW 400 M1
Combination options:	<ul style="list-style-type: none"> Meadow Harrow WS 250 Pneumatic seeder PS 120-300 with electric and hydraulic fan MD multi-metering unit 	<ul style="list-style-type: none"> Meadow Harrow WS 300 Pneumatic seeder PS 120-300 with electric and hydraulic fan & MD multi-metering unit 	<ul style="list-style-type: none"> Meadow harrow WS 400 Pneumatic seeder PS 120-500 with electric and hydraulic fan

12 ROAD TRANSPORT

12.1 TRANSPORT ON PUBLIC ROADS (GENERAL INFORMATION)

- Make sure than none of the safety splints or similar were lost during operation.
- Comply with the road traffic regulations of your country's legislation.
- Only relieve the hydraulic hoses at home by putting the tractor control unit into float position.
- The holder for the warning sign with lighting (optional equipment) is mounted on the carrier for the roller and should be positioned vertically to the road.
- If you are using a ground wheel for the pneumatic spreader with a side bracket, please remove it and hang it on the frame so that the transport width of 3 m is maintained.
- Protective covers and devices warning of the danger points for road traffic must be checked before each use!

12.2 TRANSPORT ON PUBLIC ROADS (MOST IMPORTANT SPECIFICATIONS)

- The axle load and the total weight of the towing vehicle may not be exceeded.
- The mounted implement must be identified with country-specific warning signs or stickers with red and white slanted lines (according to DIN, ÖNORM or the respective country-specific STANDARDS).
- Any part posing a traffic hazard or dangerous parts must be covered and additionally identified with warning signs or stickers. Warning signs or stickers should be visible at a height of max. 150 cm above the road when driving.
- Lighting equipment of the towing vehicle may not be hidden by the implement; otherwise, they must be installed on the mounted implement.
- The steering capacity of the tractor must not be impeded or reduced by the mounted implement!

12.3 CALCULATION OF THE WEIGHT RATIOS

If you want to drive with an implement that is attached to the 3-point linkage, you must ensure that you do not exceed the tractor's permissible axle loads and tyre load capacities with the mounted implement. The front axle of the tractor must be loaded with at least 20 % of the net weight of the tractor. The necessary ballast weight as well as the actual axle loads can be determined using the following formulas:

Specifications:

- T_L Tractor net weight
- T_V Front axle load of the empty tractor
- T_H Rear axle load of the empty tractor
- G_H Total weight of the rear-mounted implement
- G_V Total weight of the front-mounted implement
- a** Distance from the centre of gravity of the front-mounted implement to the centre of the front axle
- b** Wheelbase of the tractor
- c** Distance from the centre of the rear axle to the centre of the lower link ball
- d** Distance from the centre of the lower link ball to the centre of gravity of the rear-mounted implement

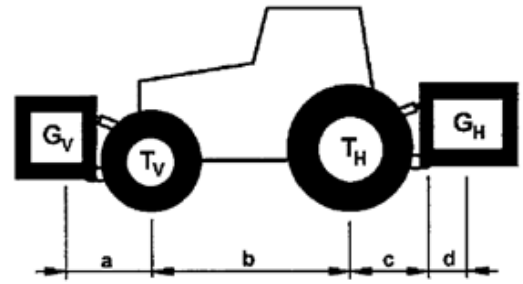


Figure 7

Weight calculations:

1. **Calculation of the minimum front ballast for rear-mounted implements $G_{V \min}$:**

$$G_{V \min} = \frac{G_H \cdot (c + d) - T_V \cdot b + 0,2 \cdot T_L \cdot b}{a + b}$$

This result is entered in the table under Point 12.3.1.

2. **Calculation of the minimum rear ballast for front-mounted implements $G_H \min$:**

$$G_{H \min} = \frac{G_V \cdot a - T_H \cdot b + 0,45 \cdot T_L \cdot b}{b + c + d}$$

This result is also entered in the table under Point 12.3.1.

3. **Calculation of the actual front axle load $T_{V \text{tat}}$:**

If the required minimum front ballast ($G_{V \min}$) is not reached with the front-mounted implement (G_V), the weight of the front-mounted implement must be increased to the weight of the minimum front ballast!

$$T_{V \text{tat}} = \frac{G_V \cdot (a + b) + T_V \cdot b - G_H \cdot (c + d)}{b}$$

Now enter the calculated actual front axle load and the permissible front axle load specified in the tractor operating manual in the table under Point 12.3.1.

4. **Calculation of the actual total weight G_{tat} :**

If the required minimum rear ballast (G_H) is not reached with the rear-mounted implement ($G_H \min$), the weight of the rear-mounted implement must be increased to the weight of the minimum rear ballast!

$$G_{\text{tat}} = G_V + T_L + G_H$$

Now enter the calculated total weight and the permissible total weight specified in the tractor operating manual in the table under Point 12.3.1.

5. **Calculation of the actual rear axle load $T_{H \text{tat}}$:**

$$T_{H \text{tat}} = G_{\text{tat}} - T_{V \text{tat}}$$

Now enter the calculated actual rear axle load and the permissible rear axle load specified in the tractor operating manual in the table under Point 12.3.1.

6. **Tyre load capacity:**

Enter the doubled value (two tyres) for the permissible tyre load capacity (see e.g. tyre manufacturer documents) in the table under Point 12.3.1.

12.3.1 TABLE FOR THE WEIGHT RATIOS

	Actual value acc. to calculation		Permissible value acc. to operating manual		Double the permissible tyre load capacity (2 tyres)
Minimum ballast front/rear	kg				
Total weight	kg	≤	kg	≤	kg
Front axle load	kg	≤	kg	≤	kg
Rear axle load	kg	≤	kg	≤	kg

PLEASE NOTE!

The minimum ballast must be attached to the tractor as a mounted implement or ballast weight!
The calculated values may not be higher than the permissible values!

13 LIGHTING CIRCUIT DIAGRAM

R	Right
L	Left
1	12 V plug, 7-pin
2	Rear light, right
2.1	Turn signal
2.2	Rear light
2.3	Brake light
3	Rear light, left
3.1	Brake light
3.2	Rear light
3.3	Turn signal

Plug and cable assignment:

No	Des ig.	Colour	Function
1	L	yellow	Turn signal, left
2	54g	---	----
3	31	white	Earth
4	R	Green	Turn signal, white
5	85R	brown	Rear light, right
6	54	red	Brake light
7	58L	black	Rear light, left

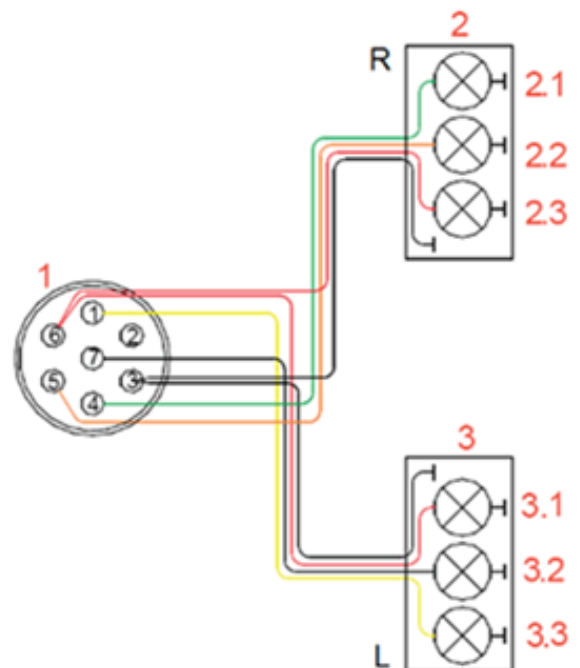


Figure 8

14 DECOMMISSIONING, STORAGE AND DISPOSAL

14.1 DECOMMISSIONING THE IMPLEMENT

To ensure that the implement remains fully functional, even if it is out of operation for longer periods of time, it is important to take precautions for storage: To do so, observe Point 14.2.

14.2 STORAGE OF THE IMPLEMENT

- The implement must be stored in a dry place protected from weather conditions to ensure that it remains functional even if it is stored for a longer period of time.
- The parking surface must be suitable for parking the implement. The ground must be firm and level, so that the stands do not sink in and the Grassland Roller does not roll away.
- To ensure safe parking of the implement, lower the stand of the Grassland Roller.
- The stand must be secured with a spring cotter on the pin to prevent accidental loosening.
- Secure the implement against unintentional rolling away.
- Nothing may be deposited or stored on the implement.
- The Grassland Roller must always be parked and stored in a secured area. Unauthorized use of the implement must be prevented.

14.3 DISPOSAL

Disposal of the implement must be performed according to the local disposal regulations for implements.

15 CROP CULTIVATION TIPS WHEN USING THE GRASSLAND ROLLER

Seedbed preparation is always required before reseeding. With its thorough and effective mode of action, the GW 250/300 M1 can be optimally integrated in your overall management concept. The goal of your concept will be to improve yields and to increase the valuable grasses.

Other effects of the GW 250-400 M1, such as

- Regulation of the water balance
- Reconsolidation and
- Pressing down the seed

make a significant contribution to the formation of good crops.

The success of weed control without chemicals and high yields, however, depend very strongly on you, as you will be required to closely observe the processes in your soil.

Reseeding of grassland is theoretically possible during the entire frost- and snow-free period. Gaps in the crops should already be reseeded in the spring to prevent weed competition. As a matter of principle, you should reseed more frequently and therefore work less aggressively and reduce the seed quantity.

Reseeding can be performed in the spring as soon as the soil has warmed up a little. The soil must have good trafficability, i.e. the seed should not be "smeared in".

Reseeding in the spring has the advantage that the spring humidity and the disturbed soil can be used as a seedbed. However, despite good germination, the grass can dry out during a summer drought, and the pressure of the old sod is greater in the spring due to the stronger growth spurt.

With the GW 250-400 M1, we counteract this disadvantage with a roller that presses down the seed and therefore improves soil contact. This allows the seed to germinate more rapidly and the risk of desiccation is reduced.

The optimal forward speed and the adjustment of the seeding rate must be set with your understanding of the correlations between the soil properties and weather conditions, which can vary greatly in different regions.

16 ACCESSORIES

16.1 WARNING SIGNS AND LED LIGHTING

Is required when the implement is transported on public roads.

Order number:
06023-2-058



Figure 9

16.2 PLATFORM KIT

To facilitate maintenance work on a mounted seeder. Please ensure that the platform kit is installed in compliance with the standards.

Order number:
06008-2-009



Figure 10

16.3 DISPERSION PLATE INSTALLATION ACCESSORIES KIT

Is required to be able to install the dispersion plates and to establish ideal conditions for uniform seeding.

Order number:
06014-2-007: for GW250 with 6 outlets (MD)
06014-2-005: for GW250 with 8 outlets (PS)
06017-2-004: for GW300 with 6 outlets (MD)
06017-2-005: for GW300 with 8 outlets (PS)
06030-2-000: for GW400 with 8 outlets (PS)



Figure 11: Symbolic image

16.4 MOUNTING KIT FOR PNEUMATIC SEEDER

Is required to mount a Pneumatic Seeder (PS) on the implement. Please ensure that the PS is installed in compliance with the standards.

Order number:
06008-2-032



Figure 12

16.5 MULTI-METERING SYSTEM MOUNTING KIT

Is required to mount a Multi-Metering System (MD) on the implement. Please ensure that the MD is installed in compliance with the standards.

Order number:

06008-2-014

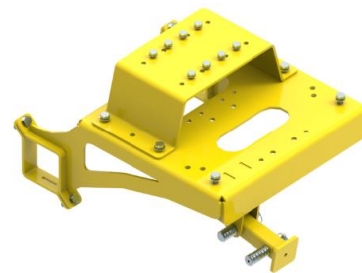


Figure 13

17 SPARE PARTS

You have the option to order your required spare parts directly through our online spare parts catalogue. To do so, scan the QR code with your smartphone - you will be taken directly to our online spare parts catalogue. Please keep your product number / serial number at hand.



You can also view our online spare parts catalogue on our website www.apv.at in the Service area.

If you have any questions regarding spare parts or your order, our Customer Service (see point 4 for contact data) is also happy to assist you.

18 INDEX

Accident prevention regulations.....	7	Nature conservation and environmental protection	14
Bearing.....	18	Operating Manual	11
Care	13	Plug and cable assignment	17
Cropping tips	18	Recyclable raw materials	14
Decommissioning	18	Reduction of noise pollution	14
Disposal	18	Road transport	15
EC Declaration of Conformity	4	Safety-related instructions.....	7
effects of the GW 250/300 M1	18	Seeders	10
Hazard labels	11	Service.....	6
Identification of the implement	6	Spare parts	20
Information signs	11	Technical data	14
Intended use	7	Type plate	6
Lighting.....	17	Tyres.....	16
Maintenance.....	9, 13	Warranty	6
Mounted implements	9	Warranty claims	6
Mounting on the tractor.....	12	Weight calculations	16



APV – Technische Produkte GmbH
Zentrale: Dallein 15
AT - 3753 Hötzelndorf

Tel.: +43 2913 8001
office@apv.at
www.apv.at

