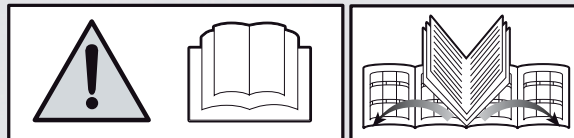


RM

300
Garden
404
Sport



- I Istruzioni d'uso**
Si prega di leggere le istruzioni e di conservarle.
- GB Instruction for use**
Please read and save these instruction.
- F Instruction d'utilisation**
Prière de lire et de conserver.
- E Instrucciones de manejo**
Lea y conserve estas instrucciones por favor.
- D Gebrauchsanweisung**
Bitte lesen und aufbewahren.
- P Instruções de serviço**
Por favor leia e conserve em seu poder.
- NL Gebruiksaanwyzing**
Lees en let goed op deze advizen.
- DK Bruksanvisning**
Var god läs och tag tillvara dessa instruktioner.
- SF Käyttöohje**
Lue ja säilytä.
- S Brugsanvisning**
Beakta säkerhetsföreskrifterna och var rädd om bruksanvisningen.

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G.L. Comunicazione s.r.l.



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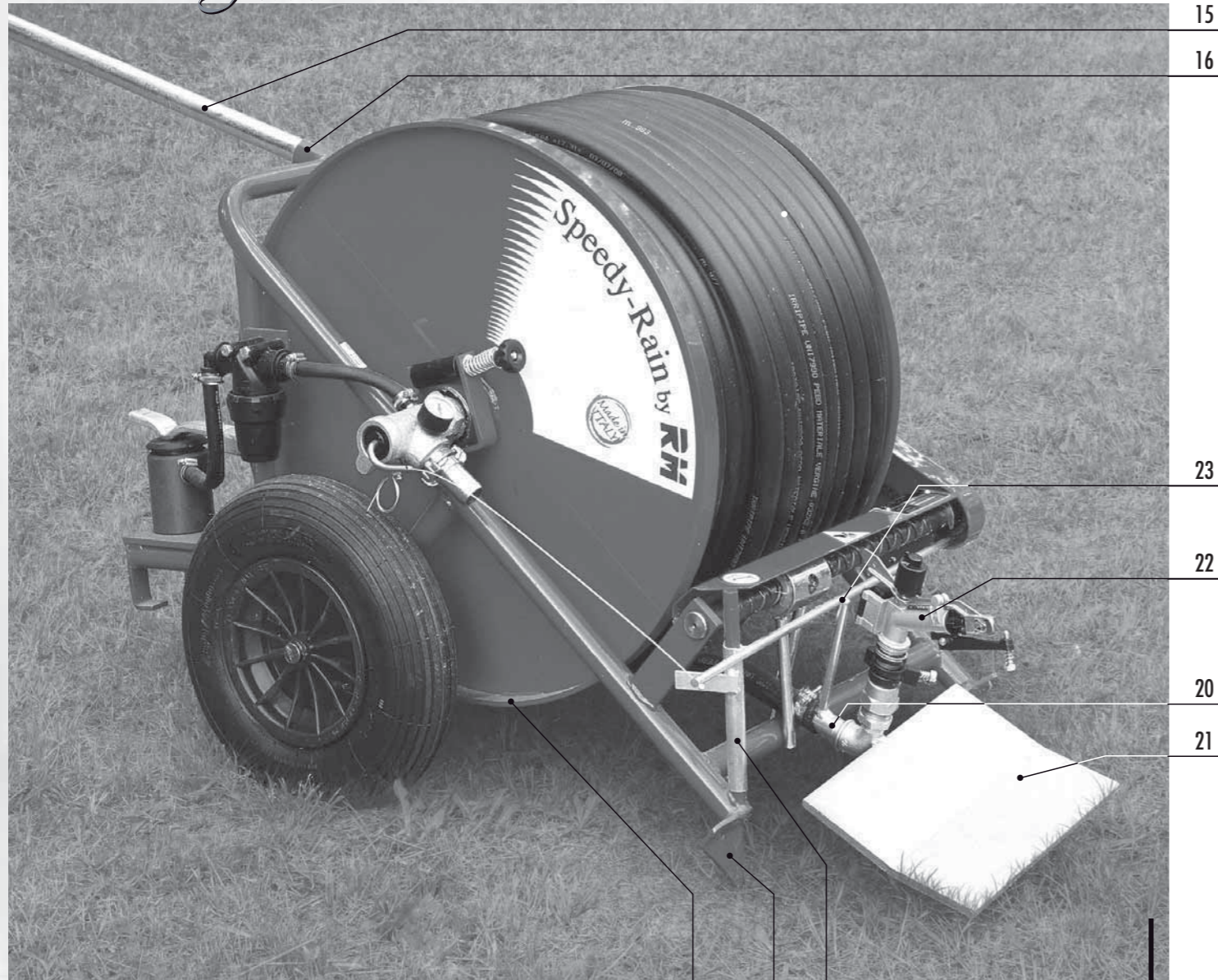
43010 S. Quirico di TreCasali (Parma) - ITALY

Telefono 0521.872.321 - Telefax 0521.874.027

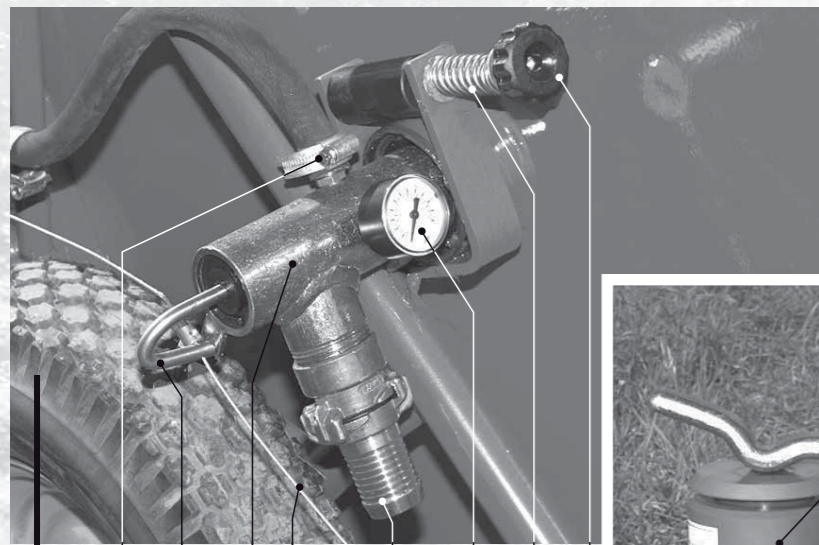
International telephone: +39.0521.872.321

<http://www.rmirrigation.com> • E-mail: info@rmirrigation.com

RM 300 Garden

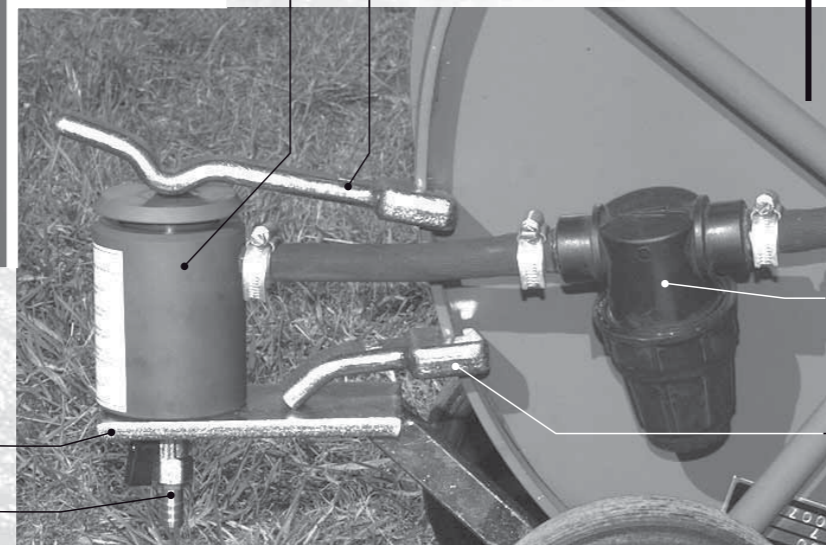


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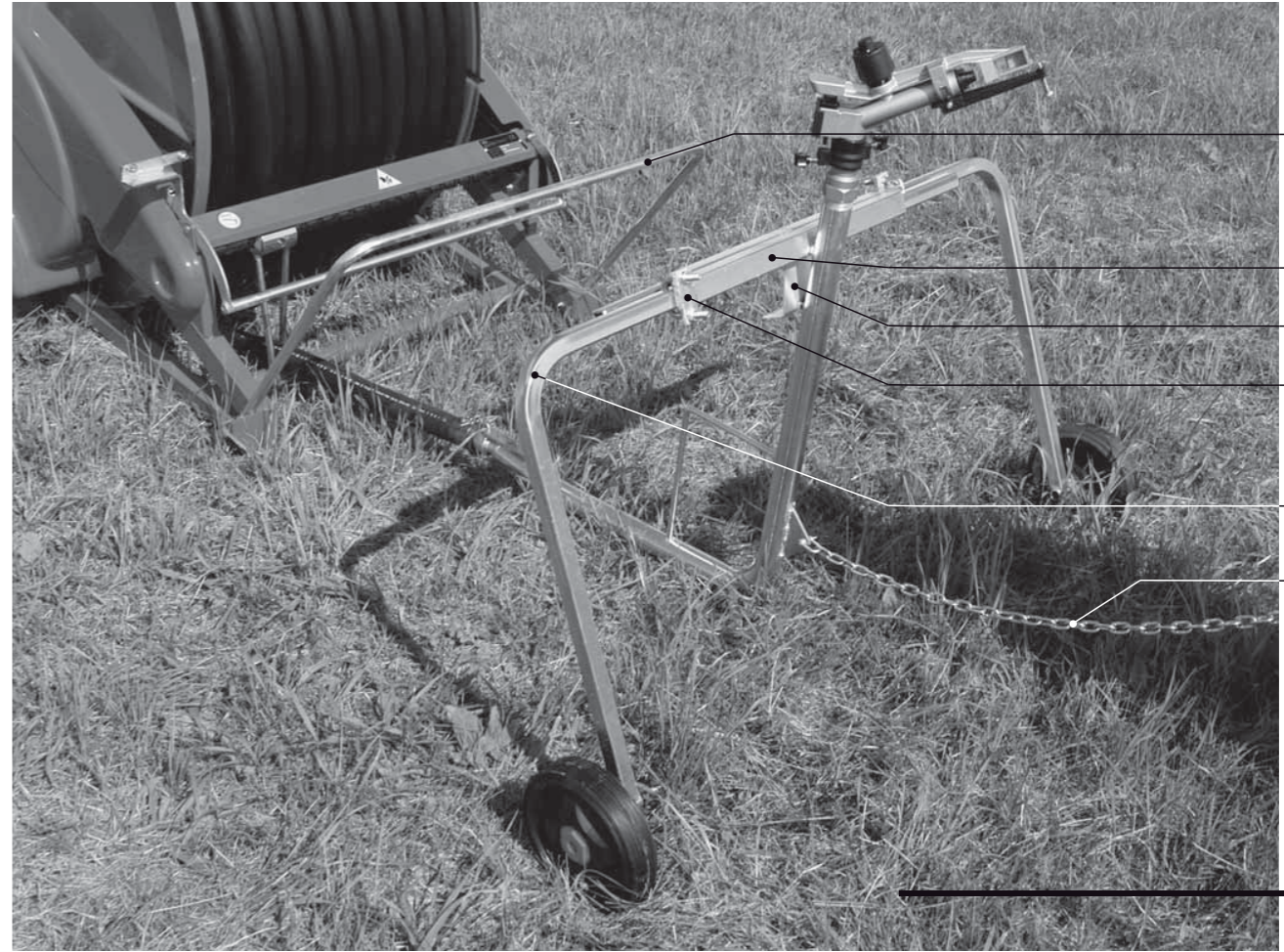
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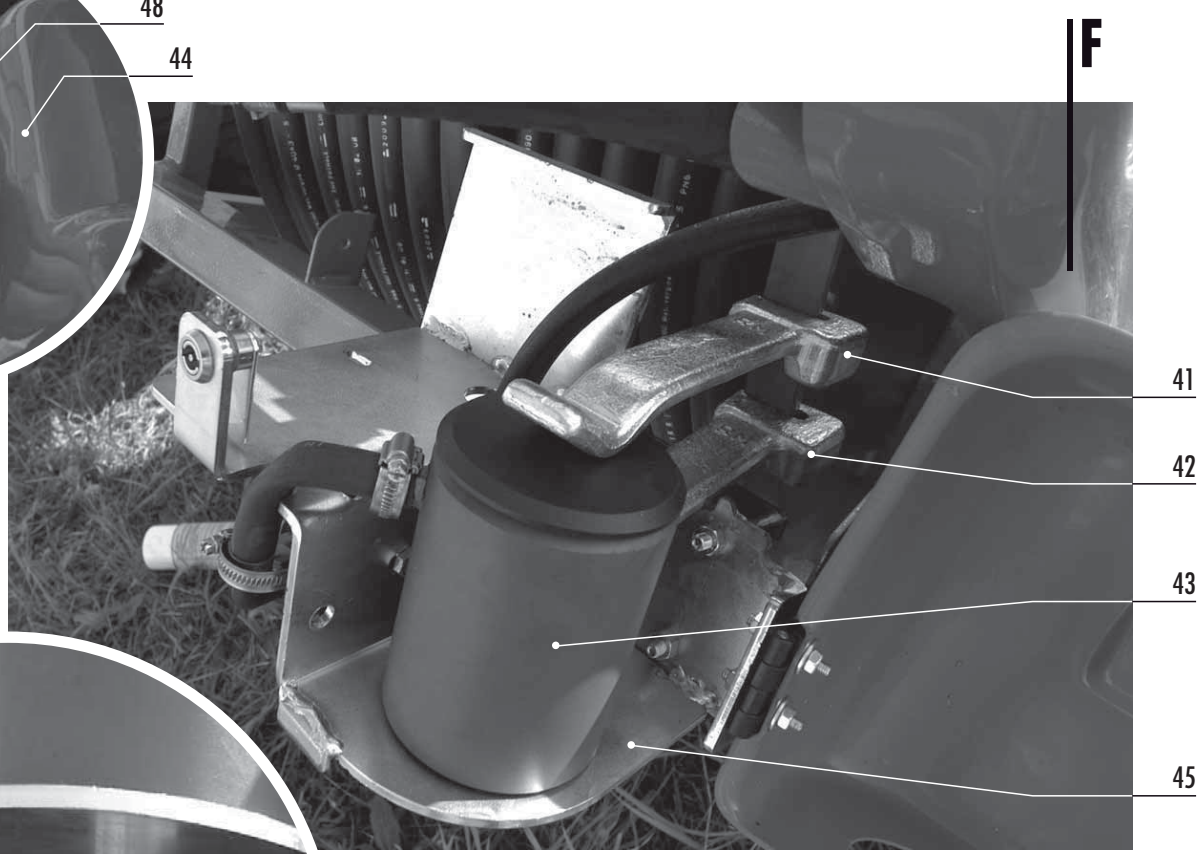
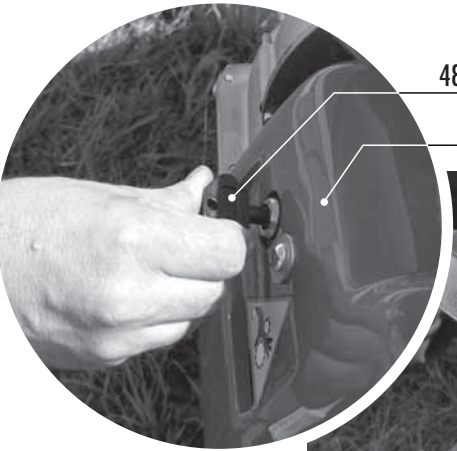
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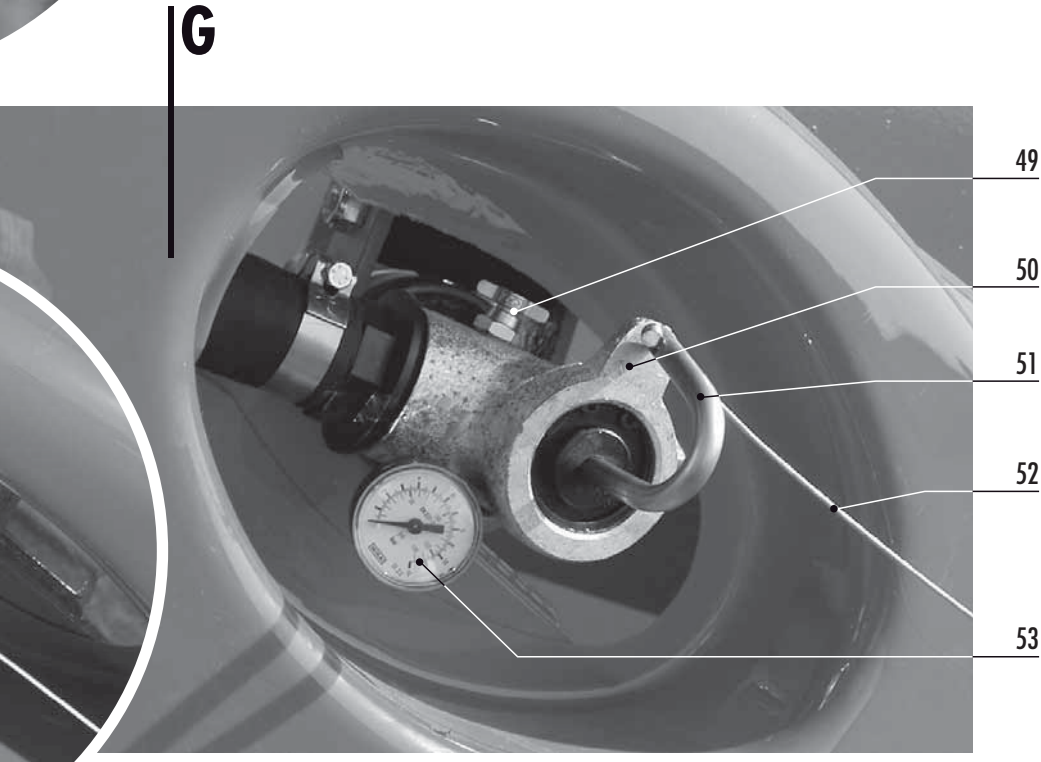
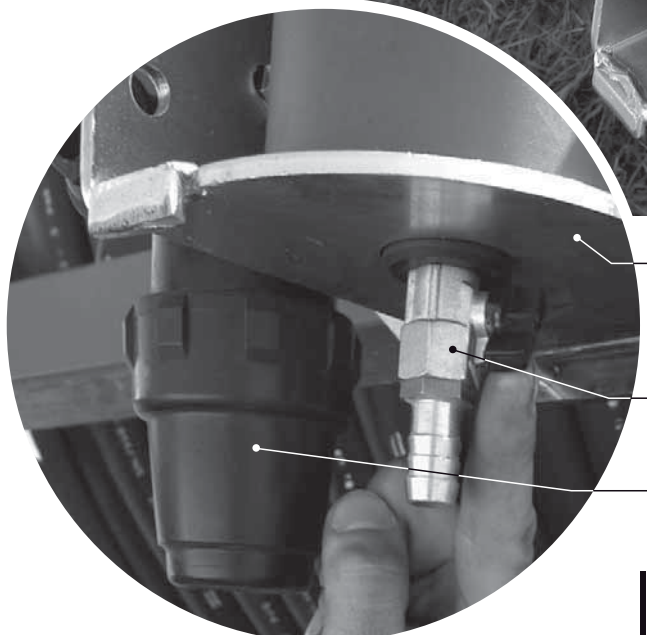


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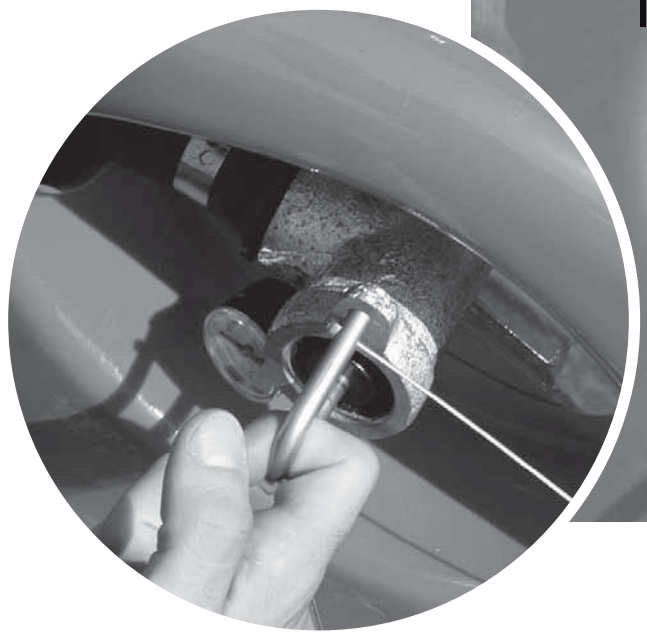
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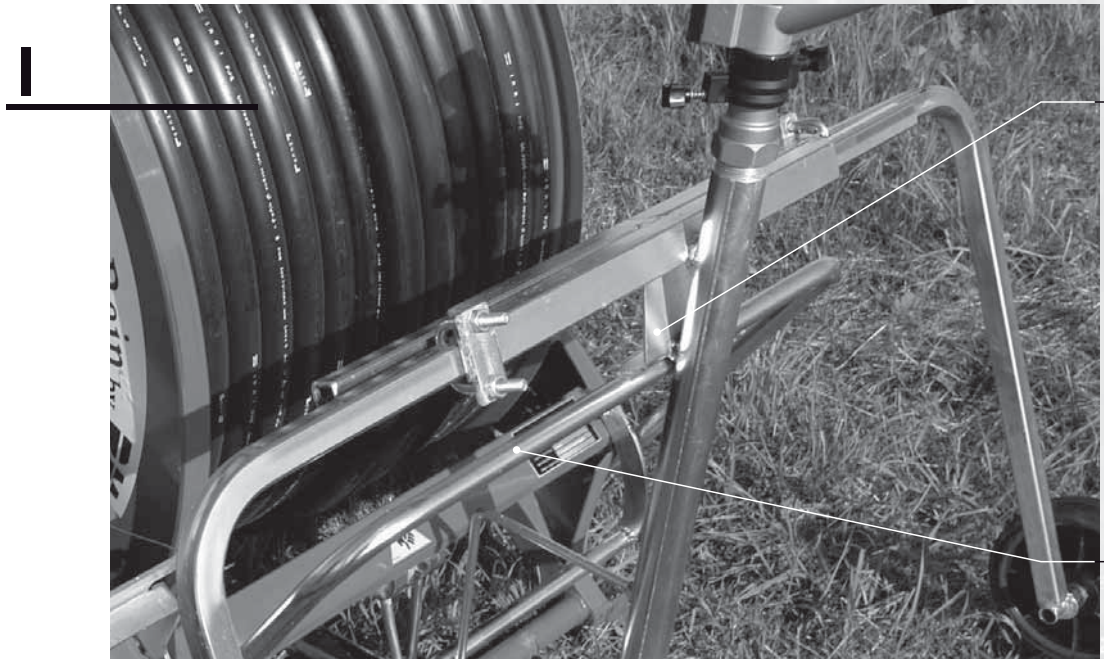
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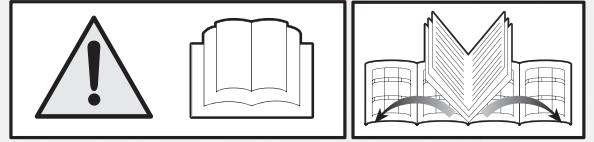


L

RM

300
Garden

404
Sport



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Speedy-Rain

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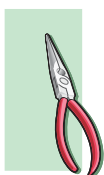
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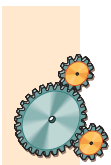


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SPARE PARTS

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INTRODUCTION

PART I



NOTICES

This Use and Maintenance Manual is an integral part of the irrigation sprinkler and must follow the machine whenever sold to another owner or transferred.

The manual should be kept carefully, read and placed readily at the disposal of all persons involved with its use. This manual, as well as the overall design of the machine, has been prepared in full compliance with the European Union directives EEC 89/392, EEC 91/368, EEC 93/44 and EEC 93/68 (Machinery Directives). Furthermore, the manual has been prepared in compliance with the latest regulations and legislation concerning hygiene and safety in the workplace published under EEC Directive 89/391.

LEGEND

The symbols detailed below have been adopted in this manual to warn the reader of potential danger to persons or risk of damage to the machine. There are two types of symbols:

Danger symbols: they are triangular and are used to signal that an operation executed incorrectly can cause serious personal injury.

Warning symbols: they are round and used to forbid specified operations to prevent the machine malfunction.



DANGER

Danger deriving from mechanical moving parts



DANGER

Generic danger



WARNING

Generic warning

WHOM TO CONTACT IN CASE OF TROUBLES

In case of troubles, the customer can apply to our After-Sales Technical Service Department by calling the following numbers:

in ITALY: 0521.872.321
 from ABROAD: ++39/0521.872.321
 or send us an e-mail to: info@rmirrigation.com

This department offers the customers proper solutions to the various problems that might arise or arranges an on-site visit by a specialist Service Engineer. Many technical problems can be solved through minor service interventions. We therefore recommend reading this manual carefully before contacting our Technical Service Department.

Should any part of the manual be unclear to you, do not hesitate to apply to the customer service by calling the above telephone numbers.

MACHINE IDENTIFICATION

Machine identification is particularly important over the years since it ensures that the manufacturer can provide the customer, quickly and correctly, the technical information and support services needed. Do not modify or remove the information needed to identify the machine. The machine identification data are indelibly stamped and engraved on a plate. This data allows recognition of the machine and should be included in all the communications between the user and the manufacturer-e.g., when applying for Technical Service, or placing an order for spare parts, etc.



IT IS ABSOLUTELY FORBIDDEN TO REMOVE OR TAMPER WITH THE IDENTIFICATION PLATE.

The plate specifies the following data:

Essential data to be specified in all communications between the user and the manufacturer:

MACHINE MODEL:

It identifies the irrigation sprinkler type as well as the diameter (in mm) and length of the hose (in m).

YEAR OF CONSTRUCTION:

It refers to the year of construction of the sprinkler

SERIAL NUMBER:

It identifies the serial number of the sprinkler

RM S.p.a.		CE
43010 S. Quirico di Trecasali (Parma) - Italy		
MACHINE MODEL	<input type="text"/>	
YEAR OF CONSTRUCTION	<input type="text"/>	
SERIAL NUMBER	<input type="text"/>	

The identification plate is positioned on the frame, on the front side above the sprinkler hose exit end.

TECHNICAL SPECIFICATIONS

- ENVIRONMENTAL SPECIFICATIONS

-Operating temperature range min.+ 10 °C max. + 40 °C

- NOISE LEVEL

Due to its very nature, the irrigation sprinkler is not noisy.

- REFERENCE STANDARDS

EUROPEAN UNION DIRECTIVES

Machinery Directive

98/37/CEE

TECHNICAL REGULATIONS

UNI EN 12100-1 April 2005

Safety of the machine - Risk assessment

UNI EN 12100-2 April 2005

Safety of the machine - Specifications and technical principles

ITALIAN LEGISLATIVE DECREES

DPR 459/1995 Rules on accident prevention and hygiene in the workplace.

- MACHINE'S TYPOLOGY AND FUNCTIONING

Our irrigation sprinklers guarantee an efficient operation if used correctly. It is hence advisable to carefully read the use instructions. "Speedy-Rain" irrigation sprinklers, series 405-505 turbine, have been tested to be operated at pressures ranging between 3,5 Atm and 8 Atm (max.). Hence, the company will not be held responsible for any possible troubles deriving from the use of the sprinklers at higher pressure values. To be able to use the sprinklers at a working pressure of over 8 ATM please apply to the manufacturer for the relevant system adaptation.

It is advisable to feed the machine by means of a rubber hose with an inner diameter of at least Ø 32, while water can be fed through an electrical pump, a motor pump, or the aqueduct.

Once the hose has been unwound, the hose drawing system is disabled and water keeps being fed from the rain gun. It is hence possible to require to the manufacturer a modification kit (Water stop System) which stops water feeding into the machine at the end of rewinding.

All Speedy-Rain models, series 405-505, are supplied with an endless screw hose guiding system enabling a perfect hose rewinding.

GUARANTEE CERTIFICATE

All irrigation systems manufactured by our company have a one-year guarantee starting from the date of purchase. The guarantee entitles both to the free substitution and repair of the relevant components that have been returned as damaged or showing defects either due to the construction process or to the materials used.

The guarantee does not include:

- wrong or inadequate use of the instructions enclosed in every irrigation system manual;
- accidental damage caused by external factors;
- incautious handling.

Any tampering with will void the guarantee.

The guarantee only covers the cost for the spare parts, while the shipment, assembly and/or replacement costs shall be totally charged to the customer.

Any possible construction defects cannot justify the return of the irrigation system.

PROHIBITIONS

The following prohibitions must be observed when operating the machine:

- Do not tamper with or cut out safety devices.
- Do not inspect the machine while it is running.
- Do not sit on the protective casings.
- Do not lean on the machine when it is running.
- Do not sit on the components making up the machine.
- Do not use the machine or parts of it for uses other than those detailed in this manual.
- The machine adjustments must be performed by a single person and while the work is under way, unauthorised people must be kept away from the machine.
- Do not modify and/or move parts of the machine.
- Do not add other equipment to the machine.
- Do not use any kind of solvent, such as alcohol, petrol or thinner to clean any surface on the machine.
- Do not allow personnel whose qualification level is different from those detailed in the section concerning «MACHINE OPERATORS» to perform any kind of work on the machine.
- Keep hands, arms and, in general, all parts of the body, away from moving parts.
- When trouble-shooting and fixing any kind of malfunction on the machine, take all the precautions described in this manual. These, in fact, are designed to prevent injury to people or animals and damage to property.
- Before beginning any job, concentrate fully on what you are doing.
- Always be very attentive and ensure that your reflexes are quick and sharp. This is extremely important for the operator.
- Do not operate the machine or its equipment under the influence of alcohol, drugs or medicine.
- Operator clothing must be as suitable as possible. **So not too loose nor too tight. Do not wear flapping or dangling items that could become trapped in moving parts.**
- Do not wear belts, rings, bracelets, chains, etc.
- This machine must not be used by people with physical handicaps.
- **This machine must not be used by people under 18 years of age.**
- Do not aim the rain gun towards **roads, railway lines and near high voltage lines, electric power cabinets, houses and inhabited centres.**
- During work transfers, **do not exceed a speed of 3 km/h.**
- Do not use the machine **on a gradient of more than 3%.**
- Do not disconnect the feed hose when the water is under pressure.
- All Speedy-Rain irrigators **cannot be towed on public roads, unless loaded on to an approved road-going trailer;**
- **Speedy-Rain irrigators are not toys nor domestic tools, but machines for the irrigation of public or private gardens. The use of the same requires at least a low technical training.**

IMPORTANT

RM Spa declines any and all responsibilities for possible malfunctions or accidents ensuing from failure to comply with the safety regulations and prohibitions detailed above.

GENERAL SAFETY RULES

Safety warnings and notices, in addition to specific notices, have been used in this manual to call operator and servicemen attention to potential dangers stemming from improper use of the machine.

PAY THE UTMOST ATTENTION TO THE INSTRUCTIONS SUPPLIED AND ASK YOUR PERSONNEL TO DO THE SAME.

- Follow the safety prescriptions given on the machine and in this manual. Do not modify the safety devices. Use the machine in full compliance with its operating instructions.
- Failure to observe safety prescriptions and/or improper use of the machine can cause serious injury to people and domestic animals or damage to property.
- The instructions and safety notices are not intended to take the place of current safety regulations. They are intended to integrate the latter and enhance their application.
- An efficient machine is a safe machine. It is hence highly important to fully comply with the maintenance and testing schedule.
- Safety notices do not, by themselves, eliminate danger!
- All the information and notices given in this manual do not refer solely to factory new machines but are usually applicable to second-hand machines as well.

GENERAL SAFETY CONDITIONS

When the machine is commissioned and when started up each day, during the automatic cycle, the normal working cycle and, in fact, whenever the machine is used, the following general safety conditions must be applied:

- Before starting the machine, read this manual completely and carefully and apply all the safety precautions it details.
- Circulate the contents of this manual and hence inform all the people who work with the machine and also those in charge of safety matters in general.
- Comply with general work site hygiene and safety rules, industrial accident prevention rules and the prohibitions set by the manufacturer of the machine to protect people from injury and the machine from damage.
- Do not become over-confident in the use of the machine. Always pay complete attention to what you are doing. Before confirming an operation, check to make sure that everything is in perfect working condition.
- Prevent any possible unexpected movements of the machine (for instance by keeping it at a standstill in an tilted position, or suspended, etc...)
- Do not wear ties, shawls, open clothes or chains while using or adjusting the machine. The entanglement of such objects in the machine might cause serious injuries.
- Tie back long hair
- During the working cycle of the machine, the casing (Pic.C,pos.31) **must be closed and carefully locked up. (Pic. C, pos. 1).**

GENERAL SAFETY RULES

It is very important for the user to carefully observe all industrial accident prevention rules. Furthermore, notices should be affixed beside the machine to ensure immediate visual identification of dangerous conditions. These notices should have the following specifications:

TRIANGULAR	to identify danger
ROUND	to identify compulsory/prohibited actions
RECTANGULAR	to give information

PERSONAL PROTECTION EQUIPMENT

When you are working near the machine, installing it or during ordinary maintenance and regulation, carefully comply with general industrial accident prevention rules and, in particular:

Do not work with bare hands. Wear adequate gloves. Always wear safety shoes.



Do not work with bare hands. Wear adequate gloves.



Wear safety shoes (with steel reinforced toe-cap).

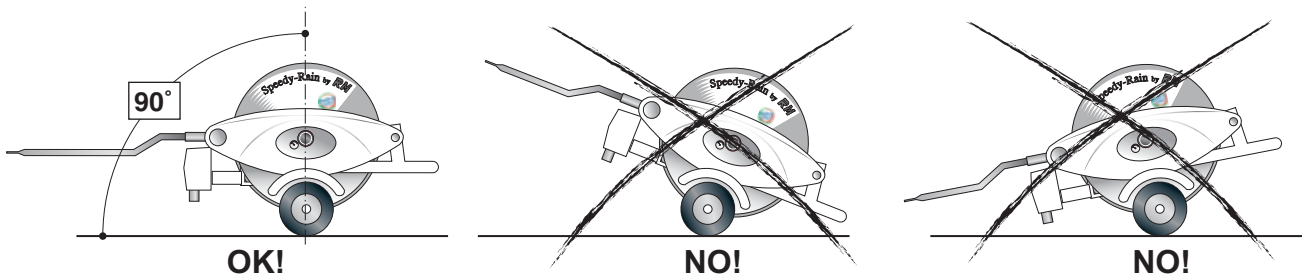
HANDLING

PART II

TRANSPORTING THE MACHINE

Handling this machine is not very difficult, but the utmost attention is anyway required mainly during manual towing.

Fix the drawbar to the appropriate seat through a spring pin (**Pic. H, pos.25**). Since the drawbar has been conceived for a double use, position the "S" shaped drawbar upwards during ordinary transfers of the machine; position it downwards (turned to 180°) for towing through the use of tractors, motor cultivators, etc.



WARNING

The weight of the complete machine is the following:

- **200 model** **about Kg 50**
After the first use, the weight of the machine can reach 65 Kg due to the water that remains inside the polyethylene hose.
- **300 garden model** **about kg 80**
After the first use, the weight of the machine can reach 130 Kg due to the water that remains inside the polyethylene hose.
- **404 sport model** **about kg 185**
After the first use, the weight of the machine can reach 285 Kg due to the water that remains inside the polyethylene hose.

Bear in mind the above weight in case of manual handling, transfers on slopes, wet ground, transfers across on bridges etc...



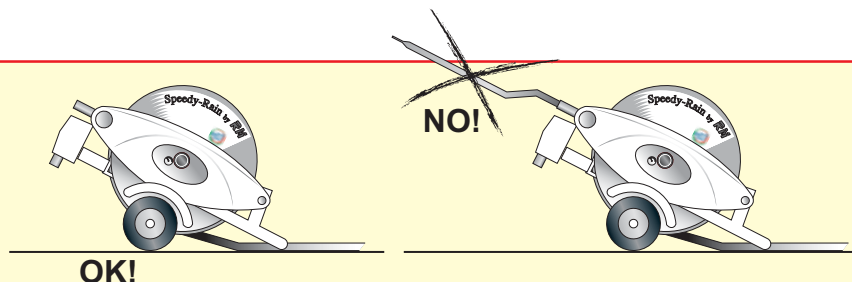
WARNING

DO NOT UNDERESTIMATE THE GLOBAL MASS OF THE MACHINE WHEN FULL OF WATER.



WARNING

The drawbar must not be left installed on the irrigating system during operation or pause. It must be inserted in the relevant seat only during the transfers.



STORING THE MACHINE

If the machine is not installed immediately and needs to be stored temporarily, it must be stored in a dry sheltered place and with the tyres raised from the ground.

DISPOSING OF THE COMPONENTS

The estimated working life of the machine is 8.000 work hours under normal conditions. At the end of the machine's working life, the owner must dispose of it in full compliance with current regulations. First of all, lubricants should be drained out and all the parts cleaned. Then the various materials making up the machine should be disassembled and separated.

Each type of material can then be disposed of in compliance with the regulations in force in the country where the machine is operated.



WARNING

During disposal, comply with all the regulations in force in your country. Store polluting materials such as oil and solvents in metal containers only.

MATERIALS USED IN THE MACHINE:

MATERIAL	USE
PAINTED METAL	Frame
NICKEL PLATED IRON	Rain gun trolley/ accessories/ fittings
POLYETHYLENE(PEMD)	Irrigator hose
RUBBER	Tyres, sleeves
NICKEL-PLATED CAST IRON	Water infeed in reel

INSTALLATION

PART III



INSTALLATION mod. 200/300

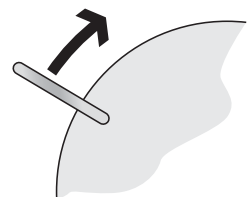
The irrigating sprinkler is sent packed by the customer, therefore the customer shall first have to remove all the packaging components. Then, the following parts shall have to be assembled:

1. Insert the drawbar (**Fig. A, pos. 15**) and fix it with the spring pin (**Fig. A, pos. 16**).
2. If the rewinding cylinder (**Fig. B, pos. 10**) is not installed on its support, rest it (**Fig. B, pos. 10**) on its support (**Fig. B, pos. 11**), screw the regulating valve (**Fig. B, pos. 12**) and insert the rubber hose, already connected to the micro filter (**Fig. B, pos. 13**) and to the cylinder (**Fig. B, pos. 10**), in the hose-end fitting set on the water-stop system (**Fig. C, pos. 1**).
Tightly clamp the supplied strap with a screwdriver (**Fig. C, pos. 8**).
3. Remove the actuating lever (**Fig. B, pos. 14**), if installed, and the brake lever (**Fig. B, pos. 9**). In order to facilitate this operation, lift the levers, taking them at the opposite side of the reel. Then, lift up the actuating lever, remove the brake lever, and finally remove also the actuating lever.
4. When the two levers are removed, the reel is released. At this stage, pull out the polyethylene hose at least 30 cm and pull the terminal (**Fig. A, pos. 20**).
Screw the rain gun supporting plate (**Fig. A, pos. 21**) holding back the sleeve joint inserted in the hose with the help of pliers.
5. If the sprinkler is equipped with a rain gun trolley (optional), the trolley has to be previously assembled inserting the legs with wheels (**Fig. E, pos. 35**) from the side of the frame with the fastening U-bolt (**Fig. E, pos. 37**).
Pay attention not to invert the position of each leg. At this stage, screw the trolley to the hose terminal through the joint with ring nut.
6. Screw the rain gun (**Fig. A, pos. 22**) on the plate or on the trolley operating exclusively on the lower brass ring nut, strongly clamp by the hands.
7. In the model equipped with trolley (optional), insert the supporting flag of the trolley in the axis (**Fig. A, pos. 24**) and fasten the two supporting chains to the trolley. In this way it is possible to move the sprinkle and the trolley together without forcing the ending part of the polyethylene hose.



Do not force the rain gun in the part above the ring nut; tighten the ring nut manually.

8. Position again the brake lever (**Fig. A, pos. 22**) as it is shown in the Fig., and insert the actuating lever in the upper part of the reel, lift it up, in order to rewind the hose.
9. Continue until the end-of-stroke (**Fig. A, pos. 23**) activates the stop bar.
10. Transfer the sprinkler in the working area following the handling instructions.





WARNING

RM Spa declines all responsibility for any possible injury to people or animals or damage to property caused by neglect or lack of attention during installation and connection of the machine.



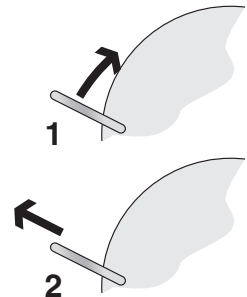
INSTALLATION mod. 404

The irrigating sprinkler is sent packed by the customer, therefore the customer shall first have to remove all the packaging components. Then, the following parts shall have to be assembled:

1. After opening the protection casing of the driving cylinder by rotating the key (**Fig. F, pos. 48**) by 90° clockwise, remove the actuating lever (**Fig. F, pos. 41**) (if installed) and the brake lever (**Fig. F, pos. 42**).

In order to facilitate this operation, lift the levers by grabbing them from the side opposite to the reel, as it is shown in the picture.

Firstly, lift up the actuating lever, then, remove the brake lever; finally, remove the actuating lever too. Removing the levers, the reel is released so that it can rotate in the unwinding direction.



2. Once the reel has been released, it is necessary to pull out at least 80 cm of the polyethylene hose by pulling it from the rain gun (**Fig. H, pos. 54**) in order to allow the easy insertion of the rain gun supporting plate. (**Fig. H, pos. 57**).
3. If the sprinkler is equipped with a rain gun trolley (optional), the trolley has to be previously installed inserting the legs with wheels (**Fig. E, pos. 35**) from the side provided with the relevant fastening U-bolt. (**Fig. E, pos. 37**)
4. Through the lever (**Fig. H, pos. 55**) hook the rain gun plate (**Fig. H, pos. 57**) or the rain gun trolley (**Fig. E, pos. 36**)
5. Install the rain gun (**Fig. D, pos. 30**) onto the plate or onto the rain gun trolley, by screwing the brass ring nut (**Fig. H, pos. 56**) onto the proper threaded seat and by tightening manually with strength.

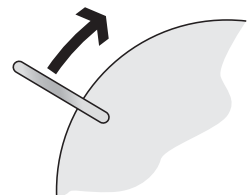


Do not force the rain gun in the part above the ring nut; tighten the ring nut manually.



The models fitted with trolley must have trolley end of travel lifting device (**Fig. E, pos. 39**) lowered (as shown in the figure).

6. Insert again the brake lever, as shown in the picture (**Fig. F, pos. 42**), and insert the actuating lever (the longest one) in the upper part of the reel, by pushing it manually upwards as a feeding lever in the aim to rewind the partially pulled out hose. Continue until the end-of-travel (**Fig. H, pos. 58**) activates the stop bar. (**Fig. D, pos. 29**)



WARNING

Make sure that the trolley is hooked through the pin (**Fig. I, pos. 40**) to the support (**Fig. I, pos. 39**), by keeping on the manual rewinding phase until the end of travel device beats the stop bar (**Fig. D, pos. 29**)

7. Insert the drawbar (*Fig. D, pos. 25*) by fixing it through the relevant pin (*Fig. D, pos. 26*), and insert the safety device too.
8. Bring the sprinkler to the working area by complying with handling instructions.

**WARNING**

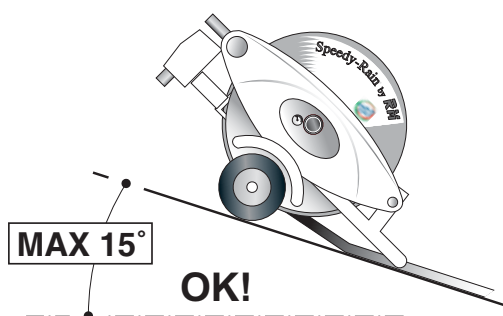
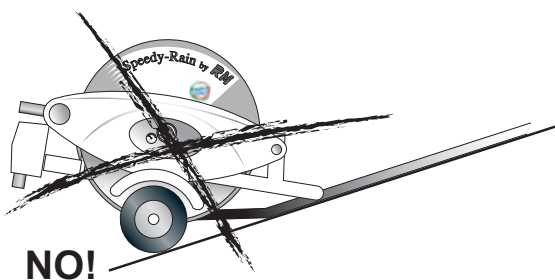
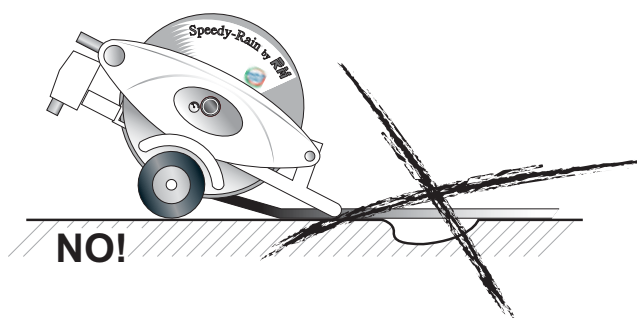
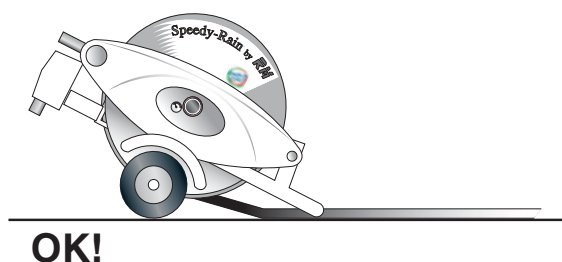
RM Spa declines all responsibility for any possible injury to people or animals or damage to property caused by neglect or lack of attention during installation and connection of the machine.



USING THE SPRINKLING SYSTEM ON LAND THAT IS NOT FLAT

The RM sprinkler was designed to work on flat land but, in exceptional cases, it can be used on hilly land as well. If this is the case, make sure the following conditions exist:

1. The gradient (both transversal and longitudinal) must not exceed 15% ;
2. There must not be large differences in height along the rain gun route ;
3. The rain gun trolley must be perpendicular to the down slope;
4. The rain gun trolley must be perpendicular to the axis of the reel;
5. The rain gun trolley must always be positioned downstream to the sprinkling system;



CAUTION

It is absolutely forbidden to work on land featuring sudden height differences.
Risk of overturning!

USING THE MACHINE

PART IV



COMMISSIONING mod. 200

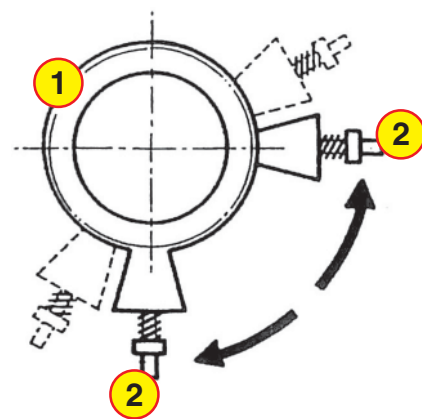
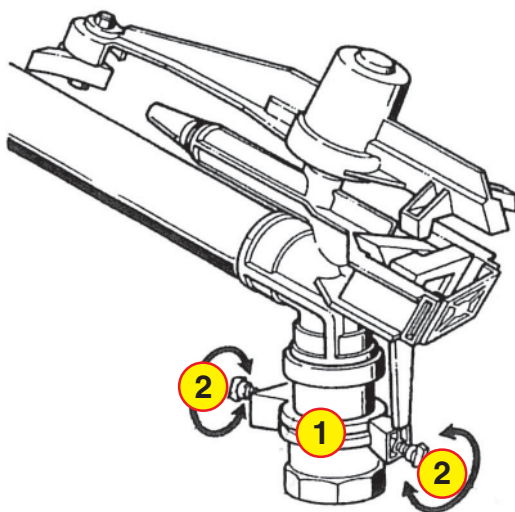
- A) Position the sprinkling system in front of area of land to irrigate
- B) Anchor the sprinkler by driving the feet into the ground (**Fig. A, pos. 19**); in case the ground is too wet, anchor the sprinkler to position with additional safeties as to prevent it from accidentally moving
- C) Remove the brake lever (**Fig. B, pos. 9**) and the actuating lever (**Fig. B, pos. 14**).
- D) Before unwinding the hose, be sure there is no obstacle, excessive unevenness (which might cause the overturning of the rain gun holding plate or trolley), small plant or bush. The hose cannot be unwound on an unmowed lawn (in any case on a lawn higher than 5 or 6 cm) due to the excessive friction between the hose and the lawn; consequently, mow the area on which the polyethylene hose has to be unwound. Unwind the hose by bringing the rain gun supporting plate to the desired point to start irrigating.



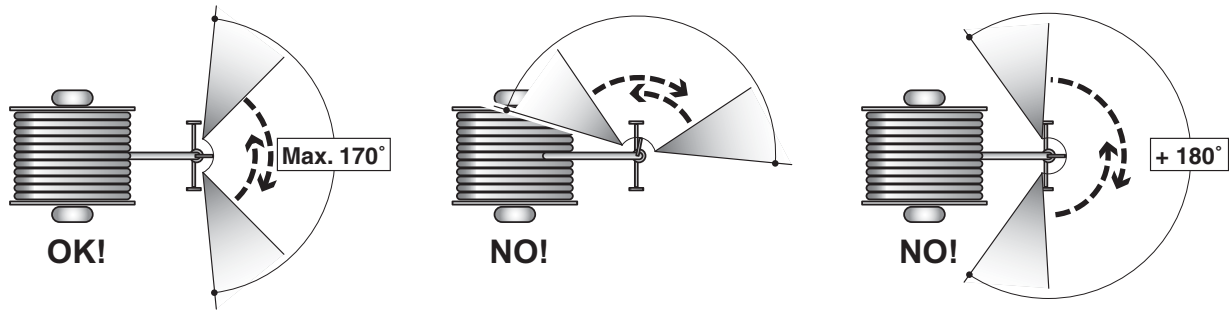
CAUTION

DO NOT UNWIND THE HOSE ON AN ALREADY WET GROUND: THE SPRINKLER MIGHT NOT HAVE ENOUGH POWER TO REWIND IT.

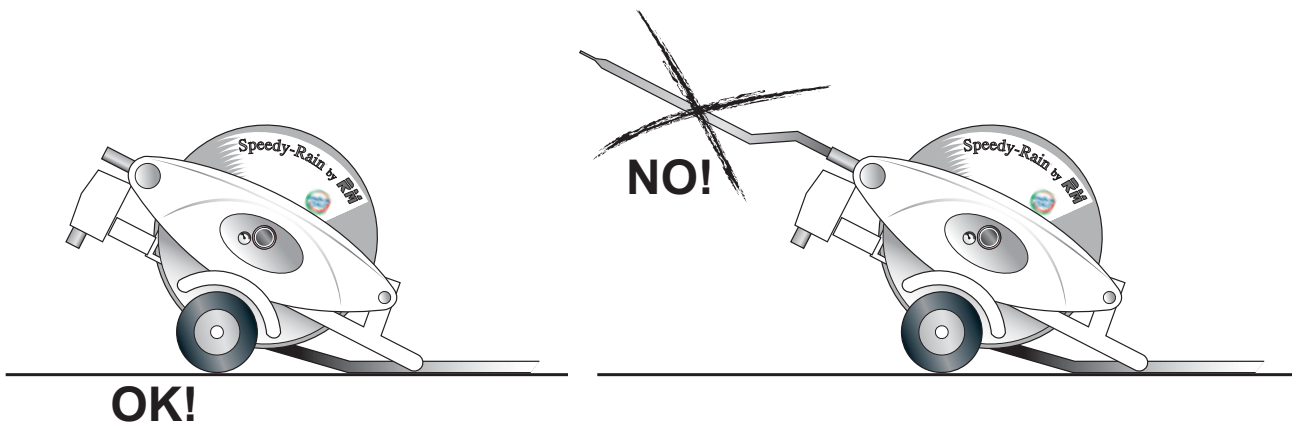
- E) In order to allow the hose to rewind perfectly, it is advisable to leave at least two hose coils wound against the around the reel, one near the other. In any case, the remaining coils shall have to be perfectly aligned and stretched onto the reel. Do not start rewinding the hose if the coils remaining on the reel are not well aligned
- F) Activate again the actuating lever and the brake lever
- G) Be sure the rewind hose keeps perpendicular to the reel axis for the first 10 mt..
- H) Connect the sprinkling system to the water pipings through the feeding quick coupler (**Fig. C, pos. 4**), and be sure the waterstop system (**Fig. C, pos. 3**) is opened. To open the waterstop system fit the tongue between flywheel and the waterstop system; make sure the washer does not fall thus closing the waterstop system acting as closing valve A 170° sector is suggested in order not to reach the sprinkler with the jet when the rain gun is activated.



A 170° sector is suggested in order not to reach the sprinkler with the jet when the rain gun is activated.



- I) Adjust the rain gun (**Fig. A, pos. 22**) so that the water jet covers the intended area and not the Speedy-Rain. Lift the rings (1) by selecting the wished circle sector and tighten the screw (2).
- L) During the functioning, the drain water of the cylinder (**Fig. B, pos. 10**) can be conveyed through a rubber hose far from the sprinkler. Be sure that the hose is not clogged and that it is not positioned higher than the mini-valve. (**Fig. B, pos. 12**).
- M) Once rewinding is completed, the sprinkler stops automatically, when the water feeding is closed through the waterstop system. In order to open again the waterstop system, it is necessary to drain water feeding, for example by unhooking the quick coupler (**Fig. C, pos. 4**).
- N) It is advisable to remove the drawbar during the rewinding in order to avoid that the sprinkler will be accidentally moved from the initial position.



CAUTION

THE DRAWBAR CAN CAUSE INJURY TO PEOPLE THAT ACCIDENTALLY BUMP AGAINST IT.

COMMISSIONING mod. 300 GARDEN

- A) Transfer the sprinkler opposite to the area to irrigate. Be careful to position the reel axis perpendicular to the rewinding direction.
- B) Anchor the sprinkler by driving the feet into the ground (**Fig. A, pos. 19**); in case the ground is too wet, anchor the sprinkler to position with additional safeties as to prevent it from accidentally moving during rewinding
- C) Remove the brake lever (**Fig. B, pos. 9**) and the actuating lever (**Fig. B, pos. 14**). To facilitate this operation, it is advisable to slightly pull upwards the actuating lever, to remove the brake lever by lifting it and moving it towards the outside of the sprinkler. Finally, remove the actuating lever and rest the levers on the ground being careful not to loose them.



CAUTION

DO NOT PUT THE LEVERS ON THE REEL.

- D) Brake slightly the reel by screwing the knob (**Fig. C, pos. 5**) and being careful not to press the spring completely (**fig. C, pos. 6**).
- E) Before unwinding the hose, be sure there is no obstacle, excessive unevenness (which might cause the overturning of the rain gun holding plate or trolley), small plant or bush. The hose cannot be unwound on an unmowed lawn (in any case on a lawn higher than 5 or 6 cm) due to the excessive friction between the hose and the lawn; consequently, mow the area on which the polyethylene hose has to be unwound. Unwind the hose by bringing the rain gun supporting plate to the desired point to start irrigating. Unwind the hose by manually bringing the rain gun supporting plate (**Fig. A, pos. 21**), (or the rain gun trolley) to the desired point to start. The hose cannot be unwound by simple human strength; use the proper towing chain to pull out the plate or the trolley by hooking it up to a towing tractor with a minimum mass of 300 Kg or equipped with suitable hook.



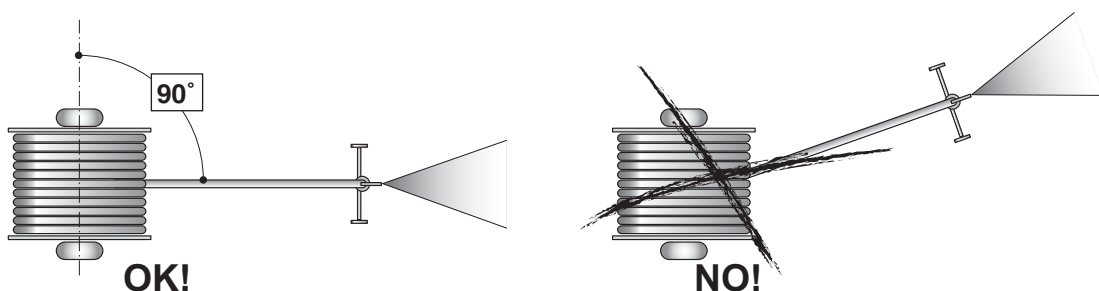
CAUTION

DO NOT UNWIND THE HOSE ON AN ALREADY WET GROUND: THE SPRINKLER MIGHT NOT HAVE ENOUGH POWER TO REWIND IT.



CAUTION

THE UNWOUND HOSE MUST BE PERPENDICULAR TO THE AXIS OF THE HOSE REEL.



- F) Tow the hose at a constant speed by avoiding jerks and sudden speed changes by slowly stopping unwinding at the starting point for irrigation.



CAUTION

THE HOSE SHALL HAVE TO BE UNWOUND AT THE MAXIMUM SPEED OF 1,6 KM/H, HENCE UNWINDING 80 METRES OF HOSE MUST TAKE AT LEAST ABOUT 3 MINUTES.

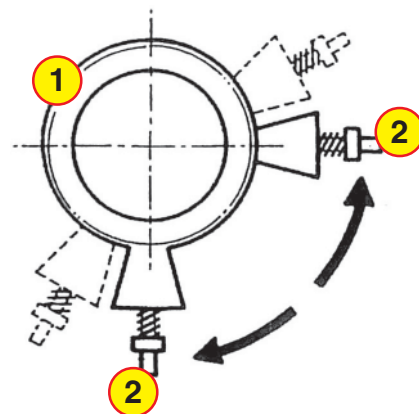
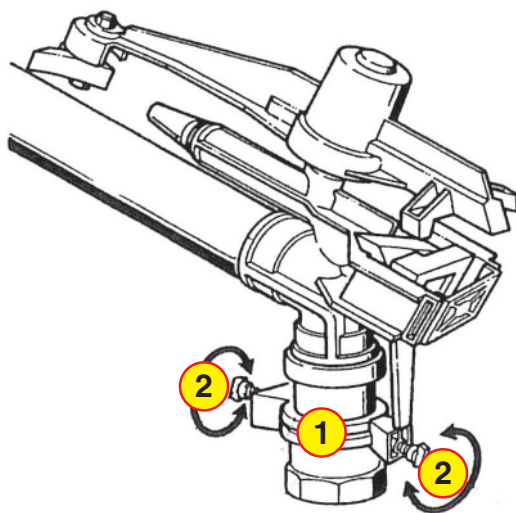
- G) In order to allow to the hose to rewind perfectly, leave at list two hose coils wound against the side, around the reel, one near the other. In any case the remaining coils shall have to be perfectly aligned and stretched onto the reel. Do not start rewinding the hose if the coils remaining on the reel are loose or if they are not well aligned. If necessary stretch the coils as indicated at point 8 of the installation instructions.



CAUTION

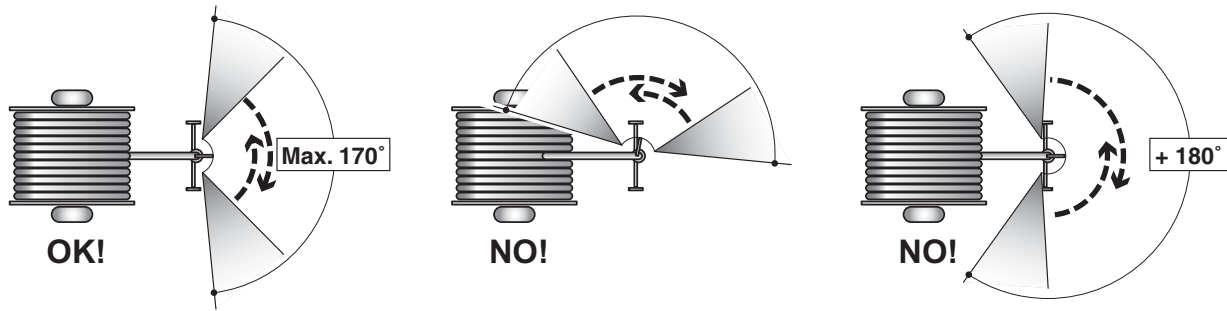
DO NOT TO LEAVE LOOSE COILS ON THE REEL. THE POLYETHYLENE HOSE COULD BREAK DURING THE REWINDING!

- H) Put the brake lever (*Fig. B, pos. 9*) and the actuating lever (*Fig. B, pos. 14*) in working position and loosen the brake by unscrewing the knob (*Fig. C, pos. 5*)
- I) Open the water stop system pulling outwards the U-shaped steel lever (*Fig. C, pos. 3*) and lean it on the relevant tab, after rotating it slightly. Take care that the steel cable (*Fig. C, pos. 7*) is well stretched and not twisted.
- L) Connect the sprinkling system to the water pipings through the feeding quick coupler (*Fig. C, pos. 4*) after checking the perfect locking of all the sprinkler couplers present on the water feeding line to the sprinkler. Open the water feeding **very slowly**, wait until all the air contained in the polyethylene hose is purged and check on the manometer (*Fig. C, pos. 2*) that water pressure is within the indicated limits.
- M) Adjust the rain gun sector (*Fig. B, pos. 9*) so that the water jet covers the wished area. Lift the rings (1) by selecting the wished circle sector and tighten the screw. (2)

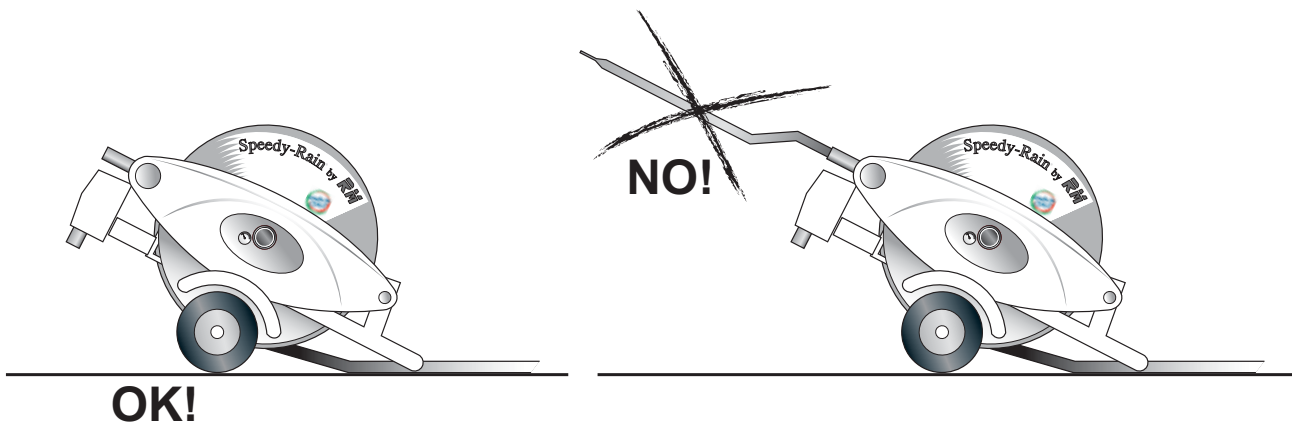


A 170° sector is suggested in order not to reach the sprinkler with the jet when the rain gun is activated.





- N) The system is automatically stopped once the hose rewinding has been completed, because the brake (**Fig. A, pos. 23**) activates the water stop system, the U-shaped lever (**Fig. C, pos. 3**) comes back and stops completely the water feeding to the sprinkler. In order to reopen the water stop valve, it is necessary to stop the water feeding temporarily, to purge the remaining air from the hose, using the mini-valve positioned in point 1 of figure C. Position the U-shaped steel lever (**Fig. C, pos. 3**) on the tab and reopen the water feeding.
- O) The drawbar must be removed (**Fig. A, pos. 15**) during rewinding to avoid the system is not accidentally moved from its initial position.



CAUTION

THE DRAWBAR CAN CAUSE INJURY TO PEOPLE THAT ACCIDENTALLY BUMP AGAINST IT.

COMMISSIONING Mod. 404 SPORT

- A) Transfer the sprinkler opposite to the area to irrigate. Be careful to position the reel axis perpendicular to the rewinding direction.



CAUTION

If the reel axis is not perpendicular to the hose rewinding, the polyethylene hose could break.

- B) Anchor the sprinkler by driving the feet into the ground (*Fig. D, pos. 32*); in case the ground is too wet, anchor the sprinkler to position with additional safeties as to prevent it from accidentally moving during rewinding.
- C) Remove the brake lever (*Fig. F, pos. 42*) and the actuating lever (*Fig. F, pos. 41*). To facilitate this operation, it is advisable to slightly pull upwards the actuating lever (*Fig. F, pos. 41*), to remove the brake lever by lifting it and moving it towards the outside of the sprinkler. Finally, remove the actuating lever and rest the levers on the ground (not on the reel) being careful not to loose them.
- D) Rub slightly the reel acting on the knob (*Fig. D, pos. 34*) of the brake system, be careful not to press excessively on the spring under the knob.
- E) Before unwinding the hose, be sure there is no obstacle, excessive unevenness (which might cause the overturning of the rain gun holding plate or trolley), small plant or bush. The hose cannot be unwound on an unmowed lawn (in any case on a lawn higher than 5 or 6 cm) due to the excessive friction between the hose and the lawn; consequently, mow the area on which the polyethylene hose has to be unwound. Unwind the hose by bringing the rain gun supporting plate (*Fig. D, pos. 31*) (or the rain gun supporting trolley) to the area to be irrigated, keeping the reel stopped through the brake. The hose cannot be unwound by simple human strength, it would be better to use a tractor with a minimum mass of 350 Kg equipped with a towing hook.



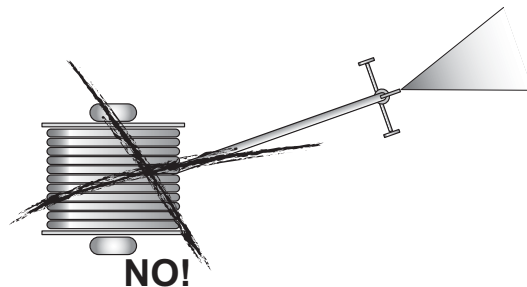
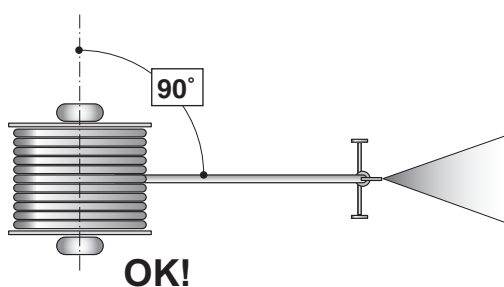
CAUTION

DO NOT UNWIND THE HOSE ON AN ALREADY WET GROUND: THE SPRINKLER MIGHT NOT HAVE ENOUGH POWER TO REWIND IT.



CAUTION

THE UNWOUND HOSE MUST BE PERPENDICULAR TO THE AXIS OF THE HOSE REEL.



- F) Tow the hose at a constant speed by avoiding jerks and sudden speed changes by slowly stopping unwinding at the starting point for irrigation.



CAUTION

THE HOSE SHALL HAVE TO BE UNWOUND AT THE MAXIMUM SPEED OF 1,6 KM/H, HENCE UNWINDING 80 METRES OF HOSE MUST TAKE AT LEAST ABOUT 3 MINUTES.

- G) In order to allow to the hose to rewind perfectly, leave at list two hose coils wound against the side, around the reel, one near the other. In any case the remaining coils shall have to be perfectly aligned and stretched onto the reel. Do not start rewinding the hose if the coils remaining on the reel are loose or if they are not well aligned. If necessary stretch the coils as indicated at point 6 of the installation instructions.



CAUTION

DO NOT TO LEAVE LOOSE COILS ON THE REEL. THE POLYETHYLENE HOSE COULD BREAK DURING THE REWINDING!

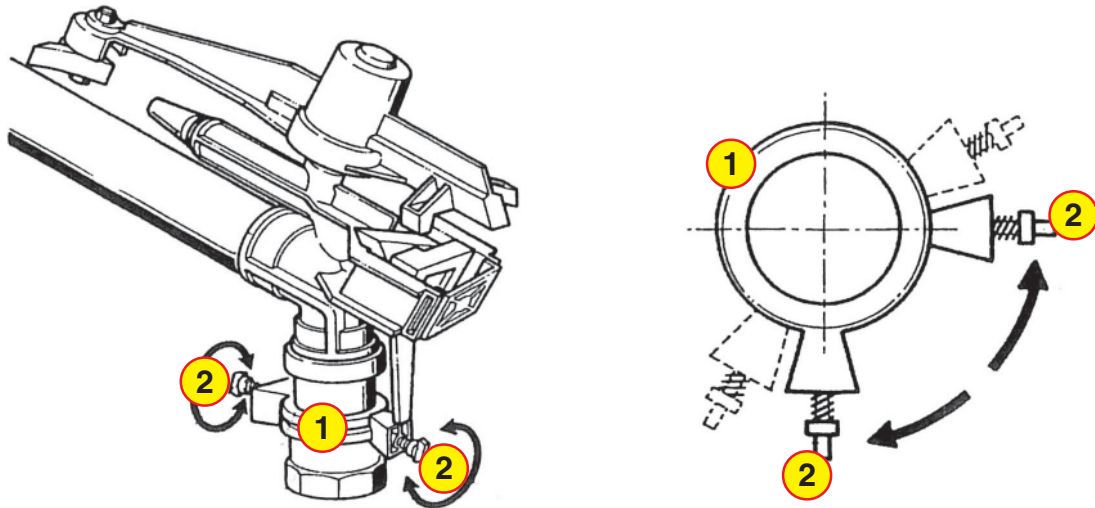
- H) Put the levers (**Fig. F, pos. 41**) (**Fig. F, pos. 42**) in working position, be careful not to lean the actuating lever on the driving cylinder (**Fig. F, pos. 43**). Loosen the brake completely unscrewing the knob (**Fig. L, pos. 17**), so that the brake rests only on the reel and does not brake the sprinkler.
- I) Open the water stop system pulling outwards the U-shaped steel lever (**Fig. G, pos. 51**) and lean it on the relevant tab (**Fig. G, pos.50**), after a slight rotation. Make sure that the steel cable (**Fig. G, pos. 52**) is well stretched and not twisted. Close the casing (**Fig. D, pos. 33**) clockwise with the appropriate key.



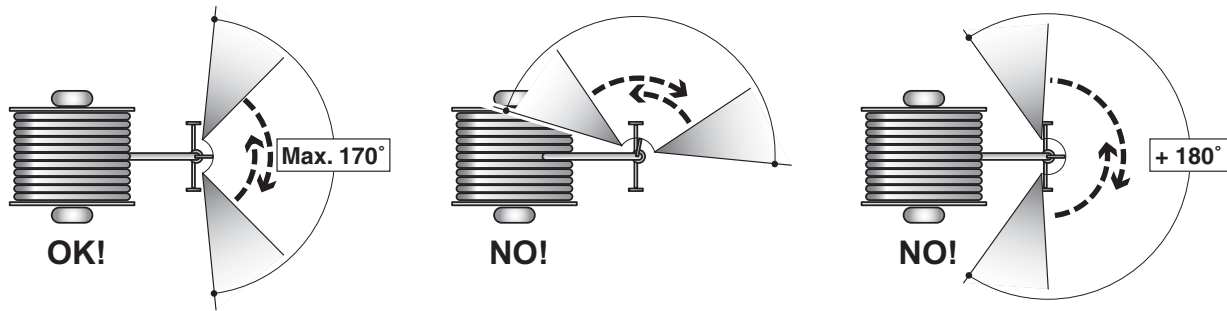
CAUTION

REMOVE THE KEY AND KEEP IT AWAY FROM UNAUTHORIZED PEOPLE.

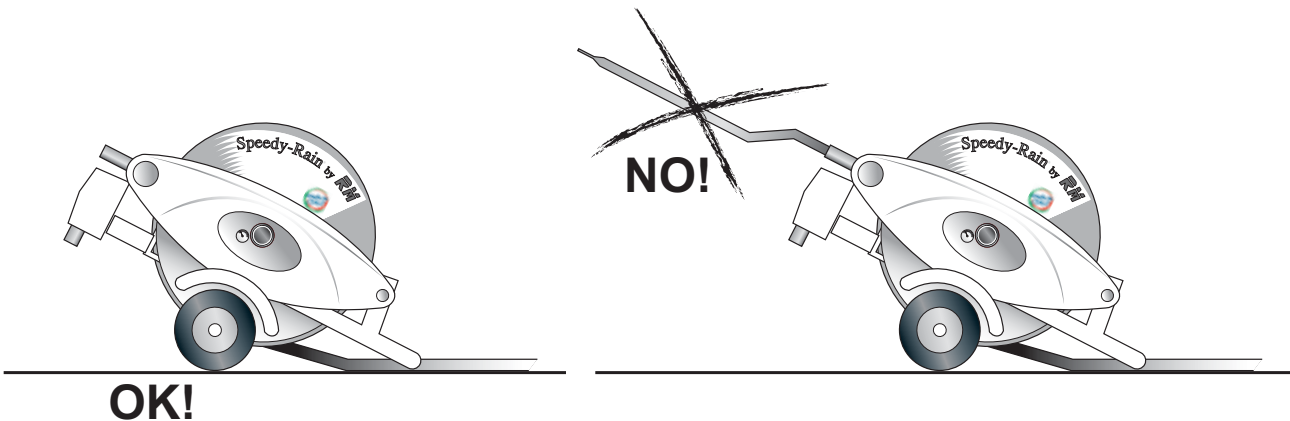
- L) Connect the sprinkling system to the water pipings through the feeding quick couple after checking the perfect locking of all the sprinkler couplers present on the water feeding line to the sprinkler. Open the water feeding **very slowly**, wait until all the air contained in the polyethylene hose is purged and check on the manometer (**Fig. G, pos. 53**) that water pressure is within the indicated limits.
- M) Adjust the rain gun sector (**Fig. D, pos. 3**) so that the water jet covers the wished area. Lift the rings (1) by selecting the wished circle sector and tighten the screw (2).



A 170° sector is suggested in order not to reach the sprinkler with the jet when the rain gun is activated.



- N) The system is automatically stopped once the hose rewinding has been completed, because the brake (**Fig. D, pos. 29**) activates the water stop system, the U-shaped lever (**Fig. G, pos. 51**) comes back and stops completely the water feeding to the sprinkler. In order to reopen the water stop valve, it is necessary to stop the water feeding temporarily, to purge the remaining air from the hose, using the mini-valve positioned in point 49 of figure G. Position the U-shaped steel lever (**Fig. G, pos. 51**) on the tab (**Fig. G, pos. 50**) and reopen the water feeding.
- O) The drawbar must be removed (**Fig. A, pos. 15**) during rewinding to avoid the system is not accidentally moved from its initial position.



CAUTION

THE DRAWBAR CAN CAUSE INJURY TO PEOPLE THAT ACCIDENTALLY BUMP AGAINST IT.



REWINDING STOP

The rewinding can be stopped at any moment by cutting water feed to the sprinkling system. When water feeding is restarted, the rewinding will restart too.

The machine can also be stopped by actuating the by-pass lever, by pulling it vigorously towards the outside of the machine.



CAUTION

DO NOT CLOSE COMPLETELY THE TAB BECAUSE THIS WOULD STOP COMPLETELY THE REWINDING.

The water from the tab is used for the functioning of the driving cylinder: in case, it can be conveyed at a 3/4 meters distance from the sprinkler through a pneumatic or PVC hose. This has to be **always downhill** to the tab axis.

In the table below, it is possible to calculate, on the basis of the rewinding speed, the pluviometry of the ground as mm of distributed water.

RAIN CHART MOD. 300 GARDEN

Standard pipe length	Pipe	Nozzle	Pressure		Flow capacity		Rain gun range	Irrigated area width		Rewinding speed in m/h:					
			Infeed	Outfeed	lt/sec.	mc/h		With calm air	Our suggestion	10	15	20	25	30	40
										Rewinding time in hours					
	Ø mm								85%	9,0	6,0	4,5	3,6	3,0	2,3
mt	Ø inch.	mm	bar	bar	lt/sec.	mc/h	mt.	mt.	mt.	mm / H2O					
90	32 1"	6	2,0	1,5	0,47	1,68	13	26	22,1	7,6	5,1	3,8	3,0	2,5	1,9
			2,7	2	0,53	1,92	14,5	29	24,7	7,8	5,2	3,9	3,1	2,6	1,9
			5,2	4	0,75	2,7	17,5	35	29,8	9,1	6,1	4,5	3,6	3,0	2,3
		7	2,4	1,5	0,62	2,22	14	28	23,8	9,3	6,2	4,7	3,7	3,1	2,3
			3,1	2	0,70	2,52	15	30	25,5	9,9	6,6	4,9	4,0	3,3	2,5
			6,1	4	1,00	3,6	18,5	37	31,5	11,4	7,6	5,7	4,6	3,8	2,9

RAIN CHART MOD. 404 SPORT

Standard pipe length	Pipe	Nozzle	Pressure		Flow capacity		Rain gun range	Irrigated area width		Rewinding speed in m/h:					
			Infeed	Outfeed	lt/sec.	mc/h		With calm air	Our suggestion	10	15	20	25	30	40
										Rewinding time in hours					
	Ø mm								85%	9,0	6,0	4,5	3,6	3,0	2,3
mt	Ø inch.	mm	bar	bar	lt/sec.	mc/h	mt.	mt.	mt.	mm / H2O					
130	40 1 1/4"	8	1,9	1,5	0,82	2,94	15,5	31	26,4	11,2	7,4	5,6	4,5	3,7	2,8
			2,5	2	0,95	3,42	17	34	28,9	11,8	7,9	5,9	4,7	3,9	3,0
			5,0	4	1,33	4,8	20,5	41	34,9	13,8	9,2	6,9	5,5	4,6	3,4
		10	2,4	1,5	1,27	4,56	17	34	28,9	15,8	10,5	7,9	6,3	5,3	5,9
			3,2	2	1,47	5,28	18	36	30,6	17,3	11,5	8,6	6,9	5,8	4,3
			6,1	4	2,07	7,44	22	44	37,4	19,9	13,3	9,9	8,0	6,6	5,0

MAINTENANCE

PART V



GENERAL MAINTENANCE RULES

All the maintenance operations shall have to be carried out in full compliance with the safety rules.



CAUTION

Never lubricate the machine during the working cycle!

ROUTINE MAINTENANCE

- A) At least every 30 working hours grease the driving cylinder external rod and the internal valve, after removing the circular cap of the cylinder. It is advisable to use the RM water-repellent oil in spray bottles (as shown in Fig. L). Anyway, use the spray in order to reach more easily the cylinder internal gaskets. Grease occasionally the steel pin of the water stop valve (**Fig. G, pos. 51**) and every 30 hours unscrew manually the micro filter bottom (**Fig. F, pos. 47**) and clean the internal cartridge.
- B) Grease occasionally the supports of reel, hose guiding screw, and the hose guiding screw. Be sure the chain is always stretched, if necessary, adjust the tension acting on the chain tensioner on the support of the rewinding screw.
- C) Before winter, it is advisable to unwind partially the hose in order to eliminate the remaining water. To do this operation unwind at least 20 cm as indicated before.
The rewinding can be done also manually using the actuating lever as explained in the installation procedure.
- D) Grease accurately the motor cylinder and drain completely water before winter storage.
- E) NEVER GREASE the reel edge on which the brake lever and the actuating lever run.



CAUTION

The company RM shall not be held responsible for any damages caused by improper maintenance.

MANUTENZIONE PREVENTIVA

- 200 h Grease the hose guiding screw shaft and the relevant supports on the shaft
- 200 h Grease the reel supports on the frame
- 200 h Lubricate the by-pass valve shaft through a manual greaser
- 400 h Visually check for the integrity of the rubber hoses feeding water from the mains to the turbine and from the turbine to the reel infeed.



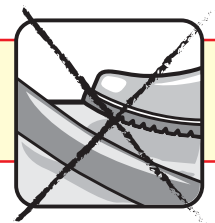
CAUTION

After unwinding the irrigating hose and connecting the water feeding piping make sure that there are no leakages along the unwound hose.



CAUTION

Do not tread on the polyethylene hose and do not cross over it with tractors, lawn mowers or any other mechanical means. Do not perform any gardening activity while irrigating.



NO!



CAUTION

Never lubricate the outer profile of the reel onto which the levers are fitted.



CAUTION

It is forbidden to lubricate the parts that are not indicated in the manual.



CAUTION

Never leave the polyethylene hose unwound on the ground if not used to irrigate; as a matter of fact the hose laid on the ground irrigated by the rain performs at very high friction such as to irreparably break the machine. RM shall not be held responsible for any damage caused by leaving the hose unattended on the ground even during the guarantee period of validity.

TROUBLE SHOOTING

PART VI



TROUBLE SHOOTING INSTRUCTIONS



CAUTION

The sprinkling system might present more serious damage than expected. After ascertaining the failure and verifying the possible solutions described in the "TROUBLE SHOOTING" section, in case the safety conditions that ensure the servicing intervention will fully succeed are not present please apply to the machine dealer.

WHAT TO DO IF ...

A) **To be applied to 404 Sport model only**

If the levers (**Fig. F, pos. 41, pos.42**) cannot freely be shifted downwards, make sure that there are no raised edges on the side edge; on the contrary remove them by means of a file or an abrasive disc. If the actuating lever (**Fig. F, pos. 41**) prevents the reel from rotating during the upwards travel, it is necessary to dress the upper corner of the lever, which is in contact with the side edge by means of a lime or a lapping sprinkler. In case this solution does not solve the problem, then replace the actuating lever (**Fig. F, pos. 41**). During the functioning of the sprinkler make sure the actuating lever (**Fig. F, pos. 41**) works in perfect square axis to the axis of the driving cylinder. In other words, the actuating lever (**Fig. F, pos. 41**) has to lean on the driving cylinder centre; if necessary, adjust the position of the cylinder support through the 4 fixing bolts fixing the cylinder support to the frame so as to obtain the above indicated condition. So if necessary laterally shift the turbine-gearmotor assembly so that the actuating lever can properly work as described above.

B) If the hose cannot be rewound correctly:

- repeat the operations suggested under "commissioning" points "F" and "G" and make sure that the rewinding screw works properly, and in particular that the chain is properly stretched.
- Make sure that the system has not been moved from its initial position.
- Make sure that the hose is positioned perpendicularly to the reel axis.

C) If the motor cylinder stops or does not function:

- adjust the tap under it;
- make sure the manometer indicates at least 1,5 ATM;
- make sure the cylinder drain is not clogged;
- make sure the routine maintenance has been done.

D) If water leaks from the cylinder, please apply to your own dealer. Remember that a small leak of water is normal.

E) If the rain gun has an insufficient range, select the proper nozzle among those provided (either a bigger or smaller one).

F) E) If the irrigation system is not able to rewind a polyethylene hose almost entirely unwound, the cause could be the excessive friction between the ground and the polyethylene hose.

This often happens in case the hose is unwound on a wet ground or on a high or humid lawn.

To solve the problem close temporarily the water and lift the polyethylene hose from the ground, place transversally under it some wooden beams having a thickness of at least 11 cm (every 3 or 5 meters).

Now restart the rewinding phase with water and be sure the sprinkler does not move from its initial position.



SPARE PARTS

PART VII

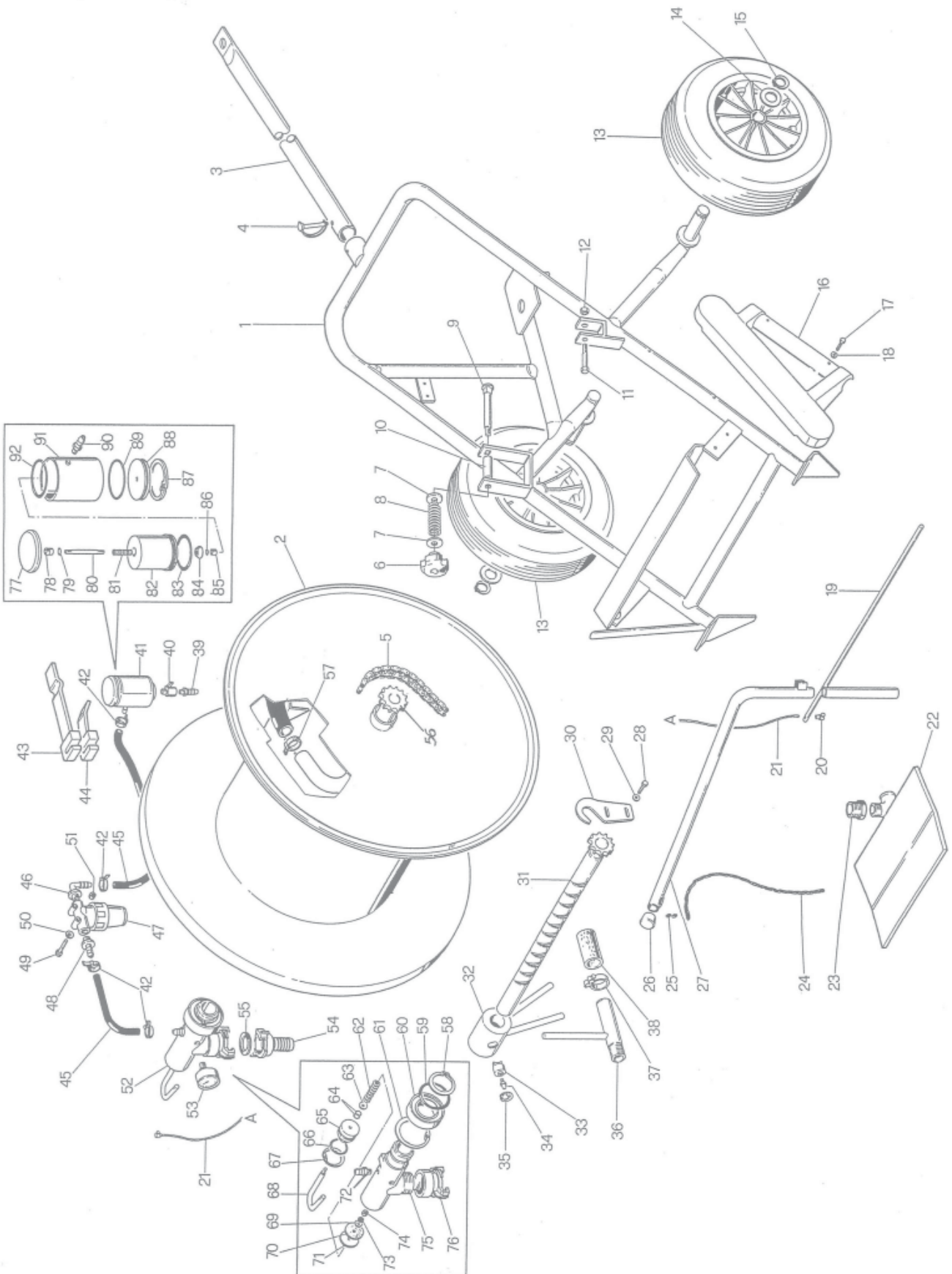


SPARE PARTS

When ordering the spare parts, always specify the following pieces of information

1. The machine year of construction.
2. The machine's serial number.
3. Diameter and length of the hose installed (as an alternative to the machine's serial number).
4. Order code number for the part to be replaced or an exact description of the requested part.
5. Short description of the presumed breakage or wearing cause.
6. Type of shipment required.

SELF-PROPELLED SPRINKLER



FUNNY K1 RAIN GUN

