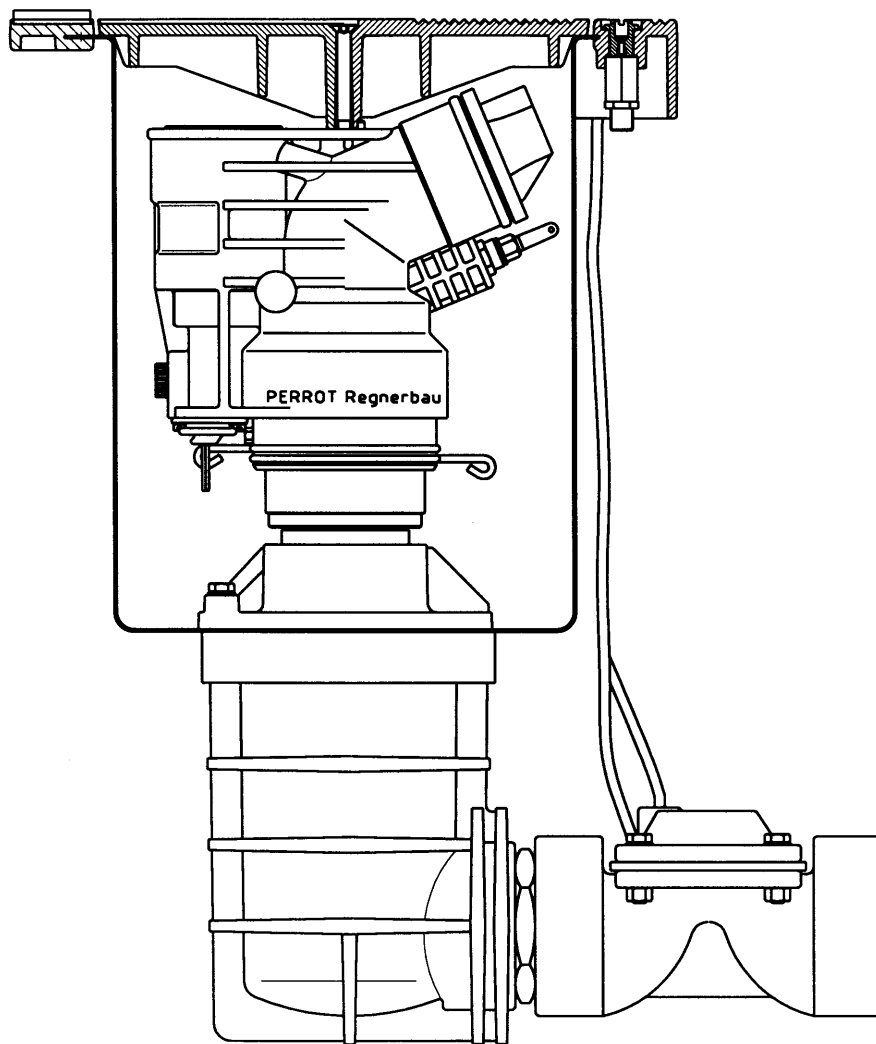


Maintenance Instructions

Large area sprinkler

Type : VP2

PERROT



Contents

- 1. General**
- 2. Safety**
- 3. Technical data**
- 4. Installation, mounting**
- 5. Commissioning**
- 6. Removal from service and winterization**
- 7. Maintenance**
- 8. Break-down and elimination of the defects**
- 9. Spare parts list**

1. General

We presume, that you are experienced in the field of irrigation. Therefore we have kept this instruction as briefly as possible, and have included such information only, which you must have for the use of this product.

A guarantee can be accepted only, if the sprinkler has been operated in accordance with these instructions, and if the defect occurs within the guarantee period.

Data subject to alteration according to the state of the art without prior notice.

2. Safety

These operation and safety instructions include basic remarks and hints for the assembly, installation, operation, maintenance, inspection and repair. For this reason these instructions must be read by the fitter, as well as by the customers authorised staff, prior to the installation and commissioning.

Apart from the general safety instructions of this paragraph the special safety instructions include in other paragraphs of these operating instructions have to be observed also.

2.1. Symbols of hints given in these operating instructions

The non-observance of the safety instructions mentioned in these operating instructions can endanger persons, are

marked with the general danger symbol



especially.



Caution of hand injuries



Caution by automatic start up process

Safety instructions which can endanger the sprinkler and it's function, if not observed, are specially marked and the word

ATTENTION

has been inserted.

2.2 Use according to regulations

The sprinkler is used for constant spreading of water on green corridors and sports fields with nature grass or artificial turfs. The water should be cleaned and be free of crude and fibrous contamination. The water and ambient temperature should lie beneath the limit, which are indicated in the technical data.

2.3 Obvious abuse use

- ☆ Operation of the pop-up sprinkler through non-authorized staff (in case the control unit is free access able).
- ☆ Operation of the pop-up sprinkler with a wrong adjustment due to vandalism. Thereby the water jet may irrigate the wrong side of the sports field.

2.4 Security advice



Please first read the operation instructions, in particular the security advice, before you start working with the sprinkler.

The specific security advices are placed in front of the individual chapters.

2.5 Dangers if the safety instructions are not observed

Non-observance of the safety instructions can endanger persons as well as the environment and the sprinkler. Non-observance of the safety instructions can result in a loss of all claims for indemnity.

3. Technical data

Recommended operating pressure 4 to 8 bar
Permissible operating pressure 4 to 10 bar

Attention

The pressure in the sprinkler should not rise up to 10bar

The static pressure on the valve should not rise up to 12,5 bar.

Connection thread: G3"
Liquid: water
Pressure loss in the valve: see separate data sheet
Liquid temperature: max 40°C
Ambient temperature: max 60°C
Operational voltage: 24V AC / 50Hz
Inrush current: 0,28 A
Holding current: 0,14 A

Further data see separate data sheet.

4. Installation, mounting



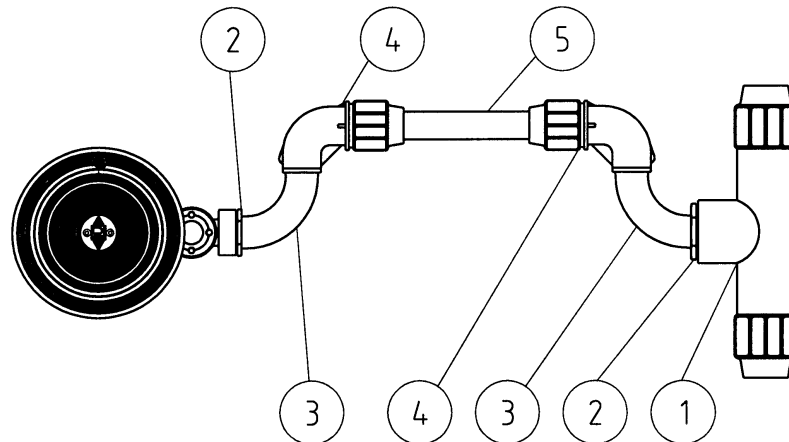
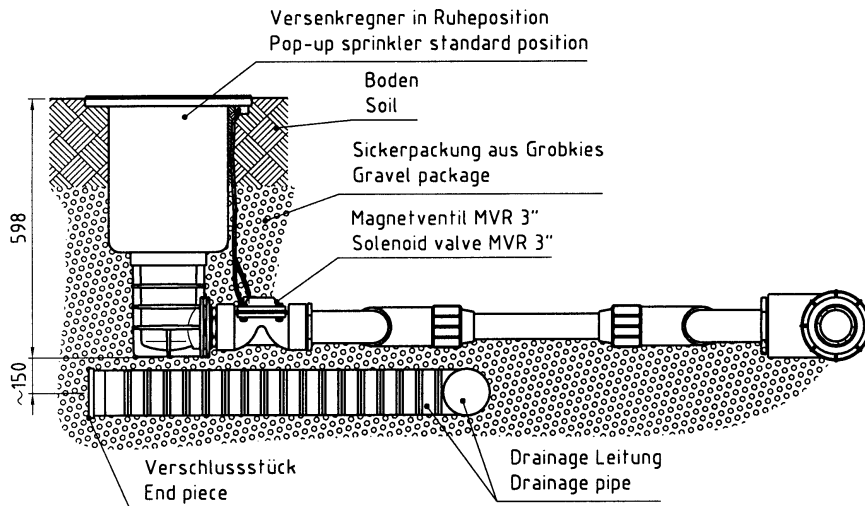
In case that contamination acquires into the sprinkler, the sprinkler can be destroyed and the assembly personnel can be hurt. Therefore flush the piping thoroughly before you connect the sprinkler to the water supply.



Unexpected appearance of a water jet can lead to severe injuries, therefore please ensure that the assembly was completely accomplished, before the water supply is opened.

- ☆ Screw thread on the pop-up sprinkler is 2½“ IG,
- ☆ On the pop-up sprinkler with valve the connection is 3“ IG
- ☆ For thread sealing please use hemp and sealing compound e.g. Fermit special.
- ☆ Installation of the sprinkler should take place in accordance with "the installation pattern for pop-up sprinklers PERROT VP 2 (see next page)
For avoiding burden pressures on the main line, a flexible connection is to be used anyway.
- ☆ Installation of a seeping water drain packing with direct connection to the drainage, as shown in the installation drawing, is urgently recommended.
- ☆ Connections to the control cables are only allowed to be implemented with certified waterproofed connections.
- ☆ To screw in the clamp connectors, the pop-in sprinkler can be held or clamped at the housing or on the edge of the housing.

Einbauschema für Versenkregner Installation layout for pop-up sprinkler PERROT VP2



ØPE-Hauptleitung / dia Main Pipe

Pos.	Benennung / Description	Ø110	Ø90	Ø75
①	T-Stück PE 110 x 4" IG x 110 T-Piece PE 110 x 4" FT x 110	1		
	T-Stück PE 90 x 3" IG x 90 T-Piece PE 90 x 3" FT x 90		1	
②	T-Stück PE 75 x 2½" IG x 75 T-Piece PE 75 x 2½" FT x 75			1
	Red. Nippel Nr. 241 4" x 2½" Reduction Socket No. 241 4" x 2½"	1		
③	Red. Nippel Nr. 241 3" x 2½" Reduction Socket No. 241 3" x 2½"	1	2	1
	Bogen lang Nr. 3 2½" AG=AG Elbow No. 3 2½" MT=MT	2	2	2
④	Winkel Anschlussverschraubung 75x2½" IG Elbow Clamp Connection 75x2½" FT	2	2	2
⑤	Rohrstück PE-HD 12,5 Ø75 pipe PE-HD 12,5 Ø75	1	1	1
		D110	D90	D75

Wir behalten uns Änderungen nach dem Stand der Technik auch ohne besondere Ankündigung vor.

Subject to change without prior notice.

Einbauschema Nr.	8
Erstellt	18.01.2005
Rev.	Datum
a	
b	
c	
d	
e	
f	

5. Commissioning

5.1

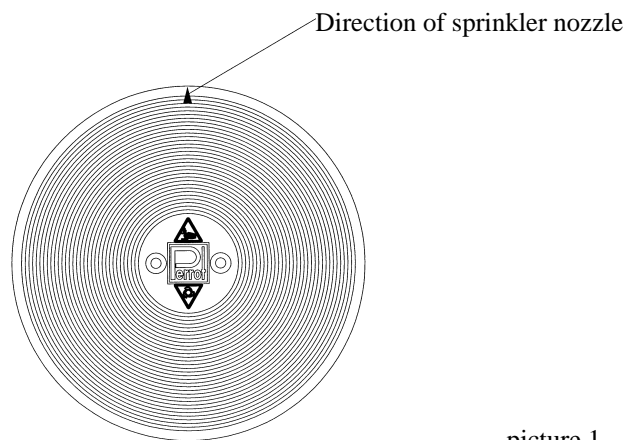
Hazard note



When starting the pop-up sprinkler itself lifts and builds up his full pressure within approx. 5 seconds. The water jet can causes injuries. For this reason, the following advices are to be considered during the commissioning of the sprinkler:



- ☆ **During the automatic operation of the sprinkler no persons are allowed to stay in this area.**
- ☆ Service personnel **must not stay in jet direction of the sprinkler.** The jet direction is marked on the cover of the sprinkler by an arrow.



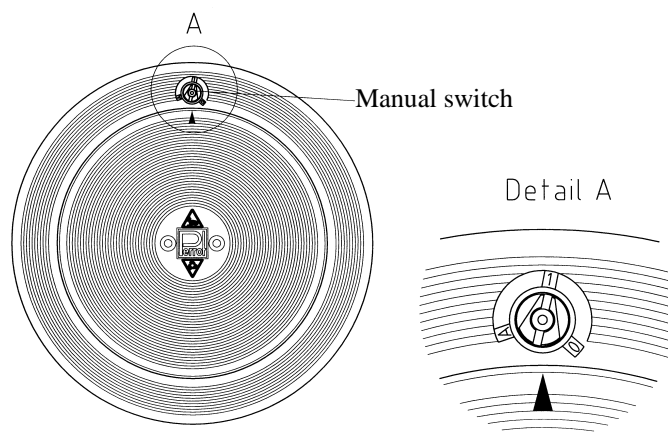
picture 1



In case the sprinkler isn't flat with the basement, persons may be hurt by a downfall caused by stumbling or getting caught. Therefore please check before starting operation and at regular intervals if the cover is flat with the basement.

5.2 Commissioning

- a) Electrical function check:
Before opening the water supply to the valve, the valve has to be actuated by help of a control unit. With an acoustic clicking at the coil the correct electrical function can be determined. (The click arises by tightening the core of the solenoid).
- b) Make sure that <manual switch> is standing on 'A' or '0' .
In that position it is warranted that the valve closes after the water supply, in case of electrical power switch off. (see picture 2).
- c) Open water supply to the valve slowly, until operating pressure is available. Possibly the valve opens briefly but after 30 seconds it should close automatically.
- d) After the water supply is opened and the max operating pressure is available, all connection points are to be examined for leakage.
- e) Examine valve for perfect function:
Open valve with < manual switch > by positioning screw for < manual switch > in position '1' (see picture. 2).
- f) Close < manual switch >
Open valve with < manual switch > by positioning screw for < manual switch > in position 'A' or '0' (see picture 2). Valve must stop water flow within 30 seconds.
- g) Repeat steps e) and f) several times, until an error-free function is reached.
- h) Examine correct function by actuating the control unit. For this screw for < manual switch > has to be positioned in position 'A'.

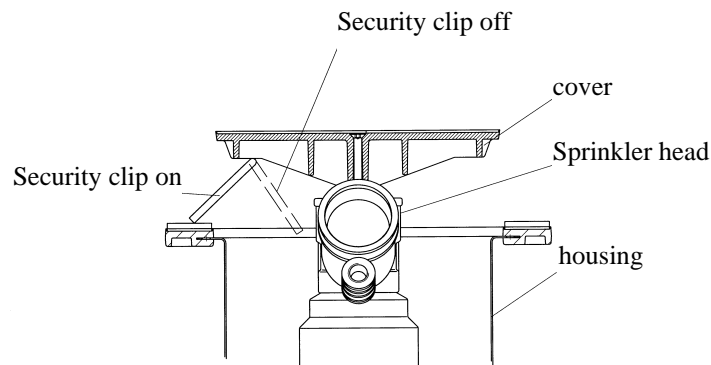


picture 2



Succeeding points 5.3, 5.4 and 5.5 are preferably carried out on the operating sprinkler.

First pull out lateral closing latch of the sprinkler head (see picture 3), in order that no extremities are jammed, in case the sprinkler closes contrary to expectations.



picture 3

For the adjustment of the sprinkler no special procedure is required. To adjust are the rotation speed of the sprinkler and the sector angle which has to be irrigated

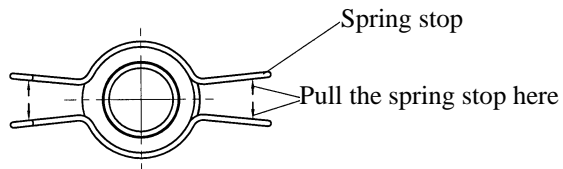
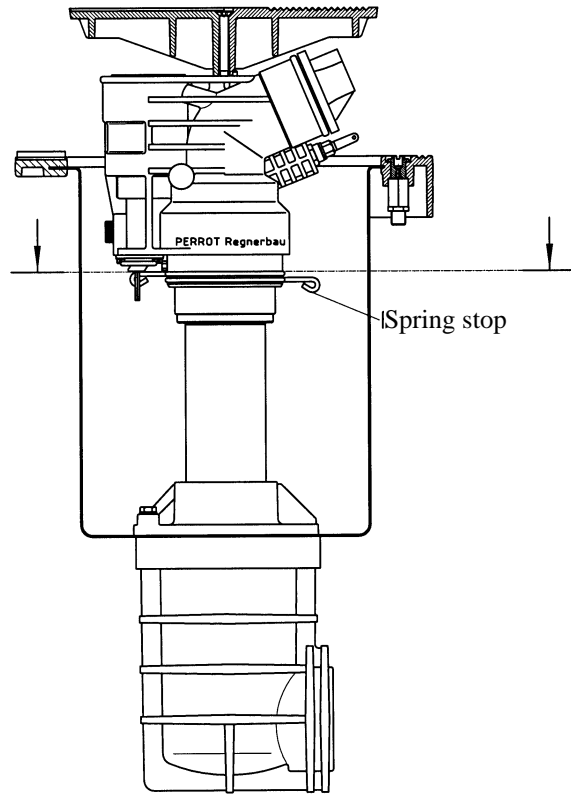
5.3 Setting the part circle angle

Infinitely variable by pulling (not pressing) the relevant end of the upper or lower spring stop. The irrigated part circle has to be adjusted by the spring stops (see sketch).

Setting part circle angle

ATTENTION

Infinitely variable by pulling (not pressing) the relevant end of the upper or lower spring stop.



picture 4

5.4 Full circle irrigation

For full circle irrigation the spring stops have to be removed.

ATTENTION

**Only pull spring stops so far that you can slip them easily.
In case of overstretching them, they can't be used again for
part circle operation.**

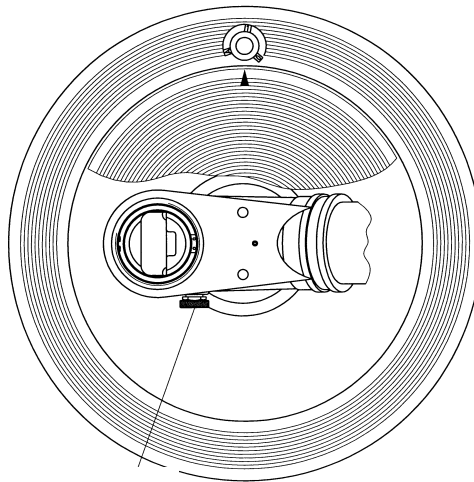
5.5 Cruise adjustment

By turning adjusting screw to the right, speed goes down, by turning to the left,
speed goes up.

ATTENTION

Only irrigate clear water with decreased speed.

**In case of dirty water the regulation screw has to be opened
completely, otherwise the sprinkler can stop its operation.**



Rotation speed adjusting screw

picture 5

6. Removal from service and winterization

To remove from service the water supply and the current supply are to be switched off.

6.1 Winter proof

During the frost period please take care, that there is no water standing in the sprinkler. Remaining water in the piston drive, does not cause problems when freezing. Is the sprinkler put again into operation, although in the piston area is still ice, it will take about 15 minutes to defrost the drive, when the ice temperature is approx. -20°C .

On sprinkler with added valve the water between valve and pop-up sprinkler has to be removed.

Therefore there are two possibilities:

- ☆ **Before beginning of the frost period the sprinkler must be emptied.**
For this a high performance compressor must be attached at the activity network. The valve at the sprinkler has to be open until only air discharges out of the sprinkler nozzle.
- ☆ **The valve has a manual drainage and can also be emptied conventionally over the force of gravity. During the frost period the “bleed off” should be opened.**

After emptying the coil should be actuated several times electrically, so that the water in the coil is pressed out.

7. Maintenance and repair work



An unexpected water jet can cause heavy injuries. Therefore make sure that before maintenance and repair work is started the water supply is surely switched off.

7.1 Maintenance

- ☆ Clean interior of sprinkler housing with an industry sucker or similar equipment (if required).
- ☆ Remove over-growing grass of sprinkler housing. These works should be done suggestive before spring.
- ☆ Examine regularly that sprinkler is flat to surrounding.

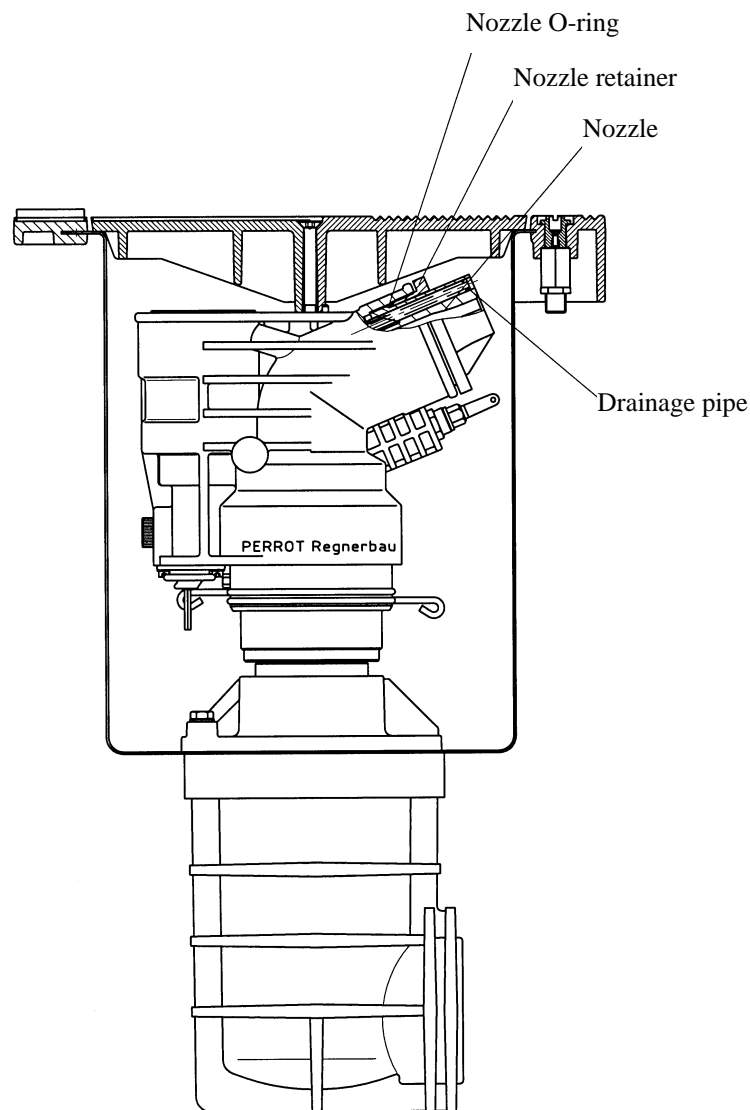
Lubricate the thread on the steel pipe and on the nozzle retainer

When changing the main nozzle, the thread on the steel pipe and on the nozzle retainer should be cleaned and lubricated.

Therefore the nozzle retainer can be removed and fixed again easily by hand.

ATTENTION

When mounting a new nozzle you must take care, that the drainage pipe is put again in the responsible nozzle hole and the O-rings are assembled correctly (picture 6).

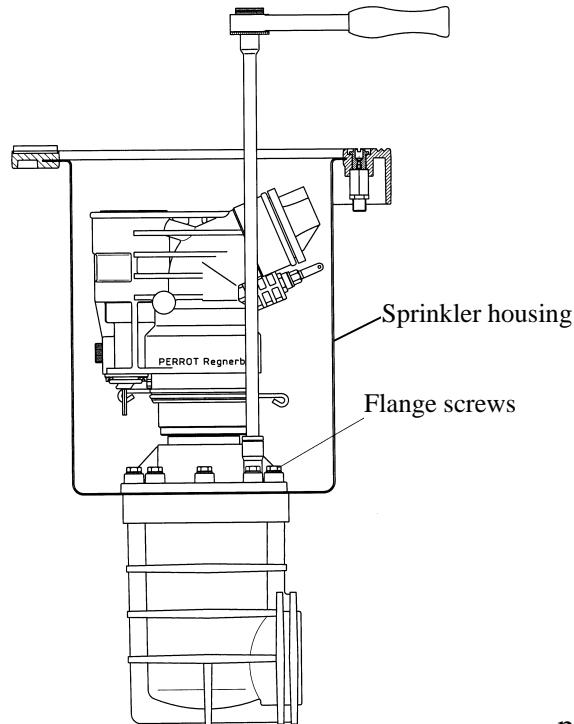


picture 6

7.2 Repair

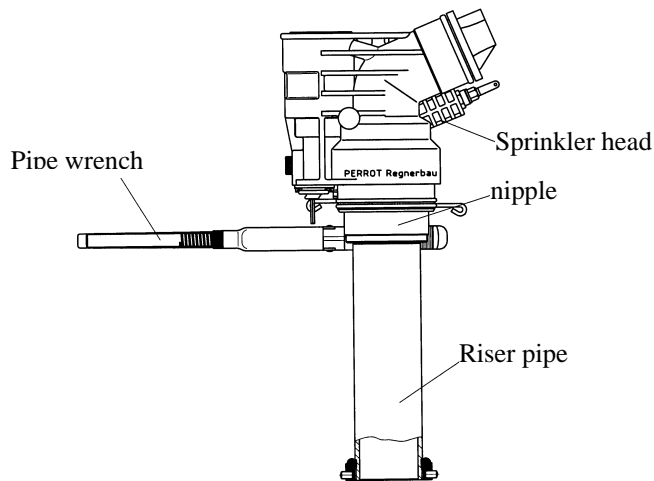
For in the following specified maintenance and repair works, the sprinkler insert must be dismantled.

- ☆ Unscrew cover with socket head wrench SW 6.
- ☆ Remove 8 flange screws with socket spanner SW 17.



picture 7

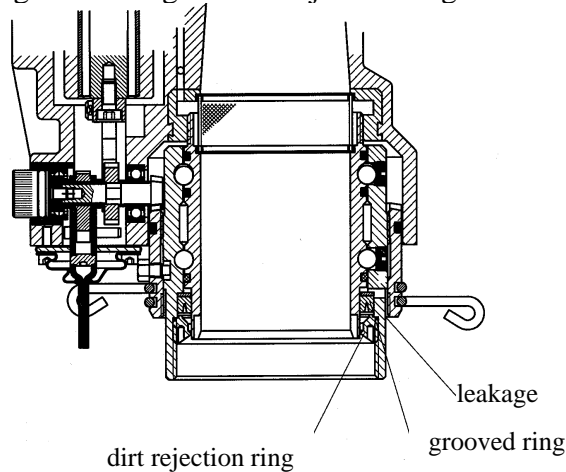
- ☆ Extract sprinkler insert out off the housing.
- ☆ Unscrew riser pipe out off sprinkler head. Since this connection with a thread adhesive is secured, the adhesive must be destroyed first. This happens by heating the riser pipe with a hot-air dryer on approx. 300°C and unscrewed with a large torsion moment out off the fixed riser pipe with help of a pipe wrench.



picture 8

7.2.1 Change grooved ring

In case that bearing of sprinkler is leaking, the grooved ring is defect. For changing the grooved ring the dirt rejection ring has to be screwed out.



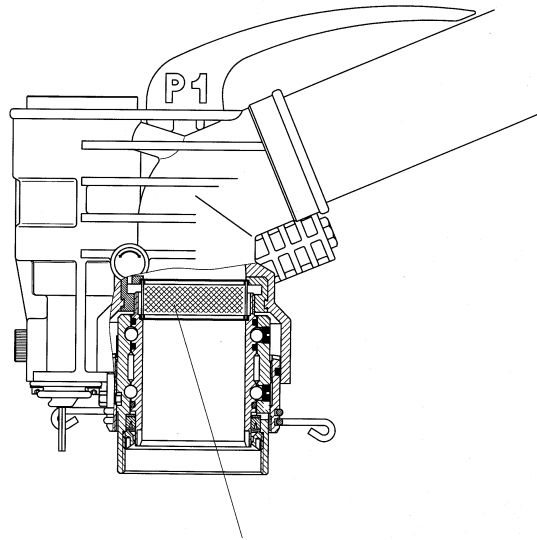
picture 9

This defect is rare and has to be repaired from the producer / manufacturer.

7.2.2 Clean filter for control water

The drive of the sprinkler takes place with help of a cylinder. The control water is pre-cleaned by means of the filter. The cleaning interval has to be fixed in dependence of the level of the pollution and operating time.

Please use brush and high pressure cleaner for cleaning the filter.



Filter for control water

picture 10

7.2.3 Clean piston drive and piston drive area

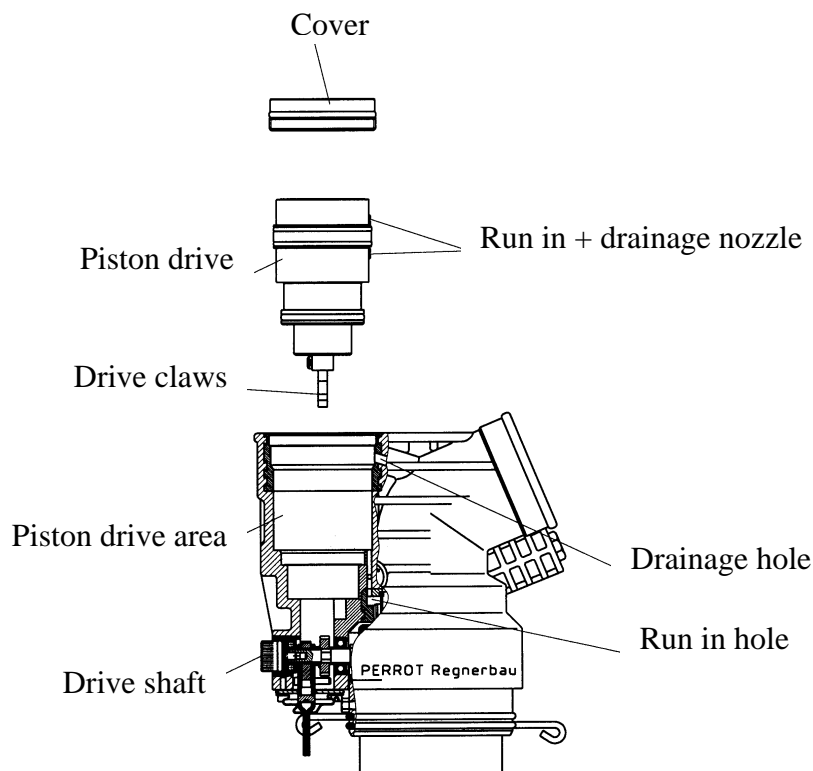
In case that the drive doesn't function because of much dirt, the piston drive has to be removed and cleaned.

Remove piston drive: (see TDP026e-rep)

- ☆ Unscrew cover with face-hole-key (Order no. ZB1198236).
- ☆ Get out drive piston with help of screwdriver.
- ☆ Clean piston drive with clear water. Above all, clean run-in and draining nozzle.
- ☆ Clean piston area. Take care of the run-in and draining holes.

Installation of piston drive: (see TDP026e-rep)

- ☆ Lubricate O-Ring lightly.
- ☆ Align piston drive that way that drive claws stand crosswise to the drive shaft.
- ☆ Press piston drive in to stop. (By hand).
- ☆ Tighten firmly cover with help of face-hole-key



picture 11

8. Break-down and elimination of the defects

8.1 Breakdown and elimination of the defects

Defects	Reasons	Elimination
Sprinkler doesn't rotate around or rotates only very slow. Sprinkler doesn't rotate at all.	The water is dirty. Speed regulation is adjusted at min. Filter is blocked.	Open regulation screw, dirt is flushed out. Clean filter, as mentioned in item 7.2.2
Sprinkler with bad water jet.	Nozzle or jet straightener is contaminated.	Remove nozzle retainer and nozzle. Clean jet straightener. Take care of the right position of the parts when installing the nozzle, lubricate steel pipe and nozzle retainer thread.
Sector angle gets bigger during operation	Spring stop is loose. Spring strength is lamed. Spring stop is overturned.	Mount new spring stop.
Bearing of sprinkler is leaking.	Groove ring is worn out	Renew Groove ring as mentioned in point 7.2.1

8.2 Breakdowns at the adapted valve

Problem	Reasons	Elimination
Valve opens/closes only with hand opening, however not on electrical signal	Core is jammed in coil	Dismantle coil and clean core.
	None or to small supply voltage	Produce supply voltage of 24 VAC
	Coil damaged	Examine coil resistance (reference approx. 30 Ohm) possibly change coil
	Screw for <manual switch> is in position '0'	Put screw for < manual switch > to position 'A'
Valve does not open also with manual switch	Control water or release drilling is blocked.	Unscrew valve cower and clean drilling
	None or to low pressure on the supply line	Produce pressure supply
Valve does not close	Coil seat dirty	Clean coil seat
	Dirt between valve seat and sealing disk	Unscrew and flush valve cover
	Diaphragm defect	Unscrew valve cover and change diaphragm
Output pressure to low	Stone and dirt prevent the untroubled water flow	Unscrew valve cover, clean and flush valve

Subject to change without prior notice.



EC-declaration of conformity

According to machinery directive (98/37/EG), appendix II A

According to low voltage directive (73/23/EWG)

According to electromagnetic compatibility directive (89/336/EWG)

Manufacturer : Regnerbau Calw GmbH
Industriestrasse 19-29
75382 Althengstett – Germany
Tel. +49-(0)7051-162-0

Explains hereby that the following product:

Product description: Large area pop-up sprinkler VP2
Year of manufacture: from 2005

Corresponds to the regulations of the guidelines designated above.

Following harmonizing standards were used:

DIN EN 292-1 EN 12100	Security of machines; fundamental terms, common guidelines; part 1: basic guidelines and specifications
DIN EN 1050	Security of machines; guidelines for assessments of risk
DIN EN 60204-1	Security of machines; Electrical equipment of machines; part 1: generals' requirements (IEC 204-1:1992, modified)

The manual belonging to the machine as well as the technical documentation is present in original version.

This declaration of conformity loses its validity, if changes are made at the machine, which were not coordinated with us before and approved in writing by us.

Althengstett,

04.02.05 Flick, Leiter Techn. Büro Gw. Fließ

Date

Signatory and data to the signatory

Signature