

雨鸟高尔夫喷头

操作与维护手册





THANK YOU FOR CHOOSING RAIN BIRD

We are aware that you have a choice, and we are happy you chose Rain Bird.

Rain Bird Golf Rotors offer a wide range of features plus easy maintenance.

This manual shows how to perform common installation and maintenance procedures. If you have any comments or questions please call your local Rain Bird distributor.

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得知您选择雨鸟我们非常高兴。

雨鸟高尔夫喷头功能全面,且维护便捷。

本手册展示常规安装和维护程序。如果有任何意见和问题请与当地雨鸟销售商联系。

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IMPORTANT INSTALLATION & MAINTENANCE TIPS

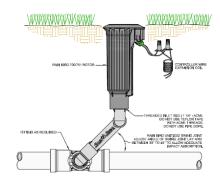
- To avoid debris problems, flush the system before installing the ROTOR on the swing joints (or pipe riser). If debris gets in the line, flush the line.
- For NPT and BSP thread configurations: "Handbook of Design Guidelines and Precautions" (Biesner 1987) recommends using sufficient wraps (2 – 5 depending on tape thickness) to insure that threads do not "lock up" on make up. DO NOT use pipe dope.
- For ACME thread configuration, you must use an ACME thread swing joint assembly. DO NOT use Teflon tape or pipe dope. No need to tighten completly against swing joint fitting. (Turn the rotor back counter-clockwise one-quarter (1/4) of a turn from tightened position.)
- Thread the rotor onto the thread connection and securely hand tighten, making sure the top of the rotor is level.
- Rain Bird does not recommend using metal fittings with Rain Bird Rotors. If metal fittings must be used, hand tighten only.
- Rain Bird Rotors may be installed at ground level in all soil types.
- For SAM/hydraulic rotors used in hydraulic configurations;
 before you connect the hydraulic tubing, make sure you bleed
 the air from the tube of the hydraulic control module.
- On electric models, be careful to prevent any debris from entering the Pressure Regulating System when working on the valve or replacing the selector stem.
- For part-circle applications, locate the fixed left edge by rotating the nozzle turret counterclockwise.

重要安装与维护提示

- 为避免杂质残留,在千秋架(立杆)上安装喷头之前冲洗系统。如果杂质进入管道,请冲洗管道。
- 针对 NPT 和 BSP 螺纹结构特点: "设计指南与注意事项手册"
 (Biesner1987)建议使用足够的生胶带(2-5 取决于生胶带的厚度)以确保螺纹不会在安装中"锁死"。禁止使用管道粘接剂。
- 针对 ACME 螺纹结构特点,必须使用配套的 ACME 螺纹千秋架装置。禁止使用特氟纶带或管道粘接剂。不需要完全拧紧千秋架装置。(拧紧后再把喷头逆时针拧回 1/4 圈。)
- 把喷头安装到螺纹连接处,并且安全地手动拧紧,以确保喷头顶部水平。
- 选用雨鸟喷头时,雨鸟不建议使用金属配件。如果必须要使用金属配件,只能手动拧紧。
- 雨鸟喷头可以在任何土壤类型中平齐地面安装。
- 为了保证止溢型型喷头在水力结构中的使用:在连接水力管道装置前,确保要从水力控制组件中把空气排出。
- 在电动模式中,当操作阀门或者更换选择器手柄时小心防止任何 杂质进入压力调节系统中。
- 用于扇形旋转使用时,通过逆时针旋转喷嘴旋转柱确定左喷洒边线。

禁止使用管道粘接剂



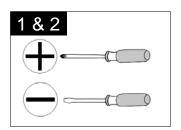


REQUIRED MAINTENANCE TOOLS

必要的维护工具

To perform maintenance on Rain Bird Series Rotors, you will need the following tools:

- Phillips-head screwdriver
- Flat-head screwdriver (#2 size preferred)



- 维护雨鸟系列喷头,需要以下工具:

平头螺丝刀(首选2号)

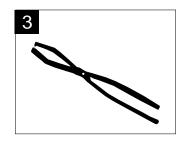
十字螺丝刀

 Snap-ring pliers — used to remove snap rings from inside the case of the Rotor.

Rain Bird Part Number:

For 900/950/951 — Part #D02203, Model: SRP

For 700/750/751, 500/550 — Part #D02236, Model: SR-700



扣环钳—用来取出喷头内部的扣环。

雨鸟零件编号:

对于900/950/951 — 零件编号D02203,型号: SRP

对于700/750/751, 500/550 —零件编号 D02236, 型号: SR-700

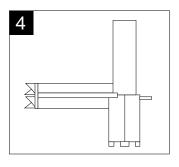
 Selector valve key — used to manually operate and service electric Rotors.

Rain Bird Part Number:

For 900/950/951, 700/750/751, 500/550 — Part #B41720, Model: EGL-SVK

7" Selector Valve Key — Part #D02215, Model: DR-SVK-7

18" Selector Valve Key — Part #D02221, Model: DR-SVK-18



选择器阀门钥匙—用来手动操作和维护电动喷头。

雨鸟零件编号:

对于900/950/951, 700/750/751, 500/550 — 零件编号B41720, 型号:EGL-SVK

7"选择器阀门钥匙— 零件编号D02215, 型号: DR-SVK-7

18"选择器阀门钥匙—零件编号 D02221, 型号: DR-SVK-18



 Valve insertion tool — used to insert the valve assembly to all models.

Rain Bird Part Number:

For 900/950/951 — Part #D41700 Model: VTDR

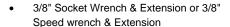
For 700/750/751, 500/550 — Part #D41710,

Model: VT-700

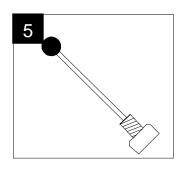
 Installation Socket for Top-Serviceable Rock Screen and Replaceable Valve Seat on all valve-in-head models.

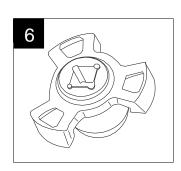
Rain Bird Part number:

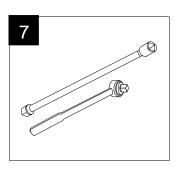
Part #D02237, Model: IS-TSRS



A 10" (25,4 cm) minimum extension is required for 700 & 500 series cases, and 12" (30,5 cm) minimum extension is required for 900 series cases.







• 底阀工具—用来把底阀插入所有型号喷头。

雨鸟零件编号:

对于900/950/951 —零件编号 D41700,

型号:VT-DR

对于700/750/751,500/550 —零件编号

D41710, 型号: VT-700

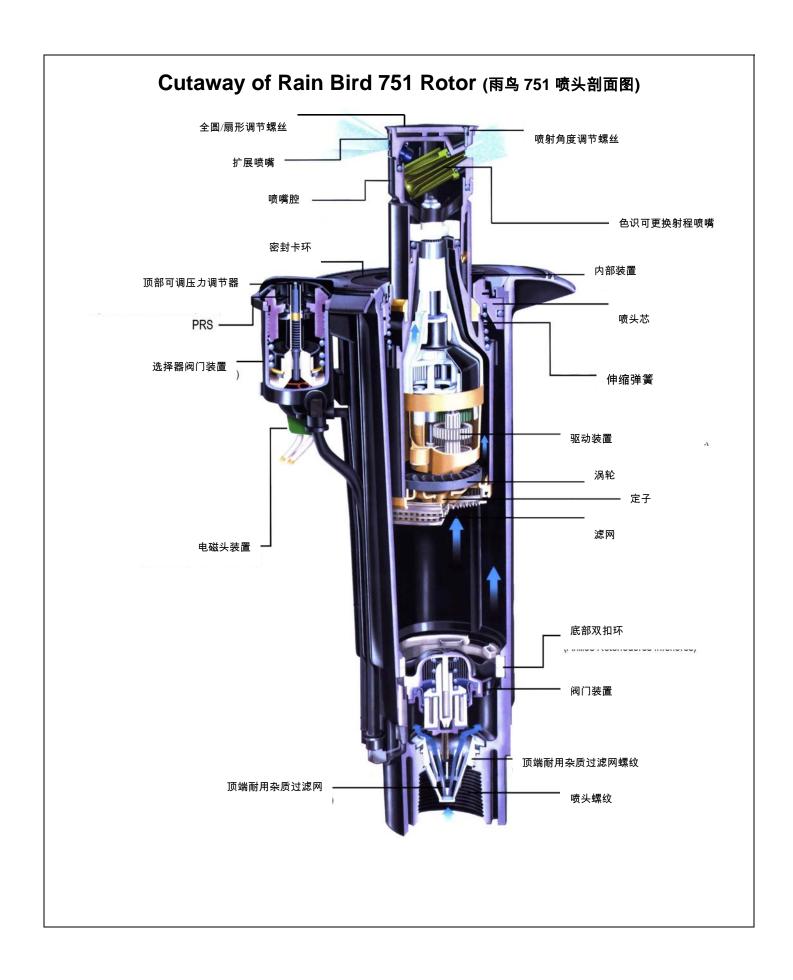
安装套管适用于所有可顶部维护耐用杂志滤网 和更换底阀的带电磁阀喷头。

雨鸟零件编号:

零件编号 D02237, 型号: IS-TSRS

 3/8"套管扳钳与伸缩钳或者 3/8 号加速钳与伸 缩钳

> 700 与 500 系列要求最小伸缩度为 10" (25.4cm);900 系列要求最小伸缩度为 12" (30.5cm)。





ARC ADJUSTMENT

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Required Tool: Flat-head screwdriver

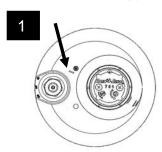
- On 550, 750/751, and 950/951 Series partcircle rotors, the LEFT leg of the sprinkler's arc is the fixed leg. When shipped from the factory, the left leg is aligned with the mark on the side of the case. Align the left leg where it is needed for your desired watering pattern while installing the rotor case on the swing joint.
- For 550, 750/751, and 950/951 Series rotors, the RIGHT leg of the arc is the adjustable leg.
 It is shipped from the factory at approximately 180 degrees from the fixed leg.
- For best results, turn the head ON to see where both legs "trip" (the trip point is the point where the rotor turns and begins rotating in the opposite direction). To manually advance the nozzle housing, SLOWLY move it in the same direction it is currently moving. After noting where the head trips, return the head to the left trip point.
- Using a flat-head screwdriver, turn the arc adjustment screw on top of the nozzle housing to reach your desired arc. Turn the screw counterclockwise to add arc, or clockwise to subtract arc. One complete turn of the adjustment screw equals approximately 20 degrees of arc.

NOTE: 950/951 Series rotors adjust in the direction opposite from other Rotors (clockwise to add arc and counterclockwise to subtract arc), and adjustable from 40° to 345°. Refer to the arrows on the top of the nozzle housing.

Turn on the rotor and let it run through the forward and backward trip points to verify the arc setting. Repeat steps 1 through 4 as needed. You may also pull the internal assembly out of the rotor and adjust the arc. Then reinstall the internal assembly and check for performance.

角度调节

必要工具:平头螺丝刀



- 在 550, 750/751 和 950/951 系列扇形喷头中,喷头角度的左喷洒起始点是固定的。出厂时,左喷洒起始点已校准并在一侧做出标记。根据需要的灌溉模式调整左喷洒起始点,同时在千秋架上安装喷头。
- 2
- 3
- 4

- 对于 550, 750/ 751 和 950/951 系列喷头,角度的右喷洒起始点是可调节的。出厂时喷头喷洒扇形角度设定为 180 度。
- 为达到最佳效果,把顶部打开可以看到两个喷 洒起始点的"行程"(行程点即喷头旋转并开 始向反方向旋转的点。)人工提升喷嘴腔,要 缓慢向相同方向转动。当注意到到达喷头行程 点时,把喷头转回至左喷洒起始点。
- 使用平头螺丝刀旋转喷嘴腔上方的角度调节螺 丝钉已达到理想的角度。逆时针旋转螺丝钉以 增加角度,或者顺时针旋转以减小角度。调节 螺丝钉旋转一整圈大约相当于 20 度。

注意:950/951 系列喷头与其他型号喷头调节方向相反(顺时针为增加角度,逆时针为减小角度),可在 40 度至 345 度之间调节。参见喷嘴腔上方的箭头。

打开喷头,使其通过向前转和向后转的喷洒起始点来检验角度设定。如果需要请重复操作步骤 1-4。你也可以把喷头内部的装置取出,并且调节角度。然后重新安装内部装置,并且检验其性能。

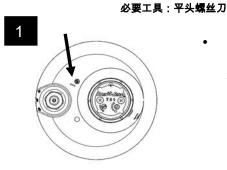
751 AND 951 FULL/PART-CIRCLE ADJUSTMENT

751 和 951 全圆/扇形旋转调节

千秋架处安装喷头。

Required Tool: Flat-head screwdriver

 On 751 and 951 Series full/part-circle rotors, the LEFT leg of the sprinkler's arc is the fixed leg. When shipped from the factory, the left leg is aligned with the mark on the side of the case. Align the left leg where it is needed for your desired watering pattern while installing the rotor case on the swing joint.

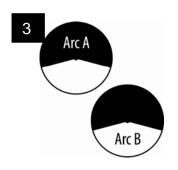


 在751和951系列全圆/扇形旋转喷头中,喷头 角度的左侧喷洒起始点是固定的。出厂时,左 侧喷洒起始点已校准并在一侧做出标记。根据 需要的灌溉模式调整左侧喷洒起始点,同时在

- For 751 and 951 Series rotors, the RIGHT leg of the arc is the adjustable leg. It is shipped from the factory at approximately 180 degrees from the fixed leg.
- 2
- 对于 751 和 951 系列喷头,角度的右侧喷洒起 始点是可调节的。当出厂时喷头的喷洒扇形角 度设定为 180 度。

 The 751 and 951 Series rotors can operate in one of two Part Circle arc settings. The primary arc (Arc A) and a secondary arc (Arc B)

Note: When internal is removed from the case, to ensure the rotor is in the Primary arc, put internal in Full Circle (see image 6), align arrows on riser assembly and nozzle base, then put the unit back into Part Circle mode. Install the internal in case.



注意:当内部装置被取出后,为保证喷头处于主要角度需要把内部装置调至全圆旋转(见图 6),校准升降器装置和喷嘴底座的箭头,然后调回到扇形旋转模

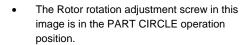
751 和 951 系列喷头能够在两个扇形旋转角度

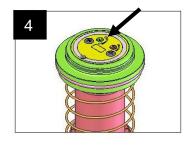
设定中的其中一个进行操作。主要角度(角度

A)和次要角度(角度B)。

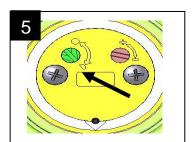
式。安装内部装置。

For 751 and 951 Series rotors, the FULL/PART-CIRCLE choice is made by turning the adjustment screw arrow to either the HALF CIRCLE (Part-Circle operation) or the SOLID CIRCLE (Full Circle operation). The FULL CIRCLE rotation direction is determined by the current operation of the rotor (if the rotor is operating clockwise, the rotor will continue to run full circle in the clockwise direction). When the white screw is returned to the PART CIRCLE position, the previous ARC adjustment is saved.





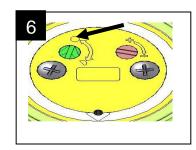
对于 751 和 951 系列喷头,全圆/扇形旋转选择 是通过旋转调节螺丝使箭头对准半圆(扇形旋 转运行)或者全圆(全圆旋转运行)。当前喷 头操作决定了全圆旋转旋转方向(如果喷头顺 时针运行,喷头将会继续以顺时针方向运行全 圆旋转)。当白色螺丝被旋转至扇形旋转位置 时,先前的角度调节就被保存下来。



本图中喷头旋转调节螺丝处于扇形旋转运行位置。



 The Rotor rotation adjustment screw in this image is in the FULL CIRCLE operation position.



本图中喷头旋转调节螺丝处于全圆旋转运行位置。

PRESSURE REGULATION ADJUSTMENT

NOTE: Electric model rotors only

Required Tool: Flat-head screwdriver

To adjust the pressure regulator, use a flat-head screwdriver to turn the adjustment screw in the center of the selector on top of the rotor head.

Turn the screw clockwise to increase pressure, and counterclockwise to decrease pressure. One full turn is approximately 10 psi (.7 Bars).

Factory pressure settings are indicated with a Blue dot for 70 psi (4,8 Bars), a White dot for 80 psi (5,5 Bars), and a Red dot for 100 psi (6,9 Bars).

压力控制调节

注意:仅为电磁头喷头

必要工具:平头螺丝刀



要调节压力调节器,使用平头螺丝刀旋转喷头顶端的选择器中心的调节螺丝。

顺时针旋转螺丝以增加压力,逆时针旋转减小压力。一整圈大约 10psi(0.7 巴)。

出厂压力设置为 70psi(48 巴),用一个蓝色圆点指示,白色圆点代表 80psi(55 巴),红色圆点代表 100psi(69 巴)。

MANUAL OPERATION

NOTE: Electric model rotors only

Required Tool: Selector valve key

To manually operate the rotor, use the selector valve key to turn the selector on top of the rotor to the desired position shown on the rotor case.

The selector has three settings:

COUNTERCLOCKWISE = manual ON

CLOCKWISE = AUTO

CENTER = OFF

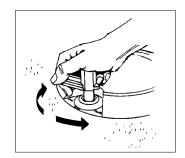
IMPORTANT NOTE: Locate main nozzle arrow on top of the rotor. Stand to the left of the arrow to avoid getting sprayed. During pop-up, a flushing action occurs. Stand at arms reach to reduce getting wet.

When you are finished operating the rotor, return the selector to the AUTO position.

手动操作

注意: 仅为电磁头喷头

必要工具:选择器阀门钥匙



手动操作喷头,用选择器阀门钥匙旋转喷头顶端的 选择器至喷头上显示的理想位置。

选择器有三种设置:

逆时针=手动操作 开

顺时针=自动操作

中心=关

重要提示:对喷头顶部主要喷嘴箭头进行定位。站在箭头左侧避免被水喷到。——在自动跳起时,喷洒出现。站在双臂伸展距离之外避免被淋湿。

当喷头操作完毕,请把选择器调回到自动位置。

REMOVING THE INTERNAL ASSEMBLY

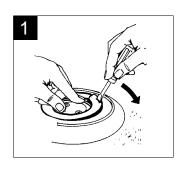
IMPORTANT NOTE: Make sure the sprinkler does not operate automatically while you are removing the internal assembly. On electric models, turn the selector to OFF, as shown in "Manual Operation" above. For SAM/hydraulic models, turn off the water.

CAUTION: Before removing the internal assembly, always tighten the nozzle housing screws securely. DO NOT remove the nozzle housing screws with the internal assembly removed from the case.

Required Tool: Flat-head screwdriver

 While pressing down on the center of the nozzle housing, insert a screwdriver into the slot on the snap ring and pry up the snap ring from the top of the rotor case.

NOTE: You MUST press down on the nozzle housing when removing the snap ring.



拆卸内部装置

重要提示:当拆卸内部装置时,确保喷头不会自动运行。在电磁头中,按照以上"手动操作"所示把选择器调至关闭状态。对于止溢型模式,关闭水源。

注意:在拆卸内部装置前要把喷嘴腔螺丝拧紧。在拆卸内部装置时不要拆卸喷嘴腔螺丝。

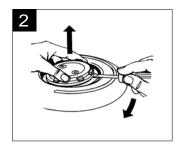
必要工具:平头螺丝刀

 当向下按压喷嘴腔中心时,把螺丝刀插入扣环 缝隙中,同时把扣环从喷头顶端撬起。

注意: 当拆卸扣环时务必向下按压喷嘴腔。



 Insert a flat-head screwdriver into the groove (or under the small tabs) on the outside edge of the bearing guide and use the screwdriver to gently pry up the internal assembly.

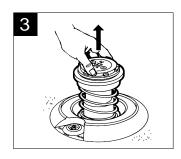


把平头螺丝刀插入旋转柱外边缘的凹槽中(或者位于小拉环下方),同时用螺丝刀轻轻撬起内部装置。

Lift the internal assembly up and out of the case.

For older 900 models only: a red or black u-cup seal may slip off into the case. Simply take it out.

NOTE: Check the bearing guide O-ring for swelling. If it is swelled (or stretched) allow it to dry out or replace it with a new one.



把内部装置提起并将其取出。

仅为老式900模式,一个红色或黑色U型容器封条可能滑入喷头中。请多加小心。

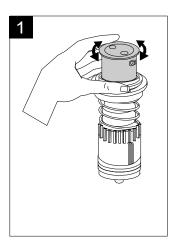
注意:检查架旋转柱 O型圈是否隆起。如果隆起(或拉长),请把它弄干或者更换。

•

INSTALLING THE INTERNAL ASSEMBLY

PART-CIRCLE ROTORS: To find the left-stop, turn the nozzle housing to the right until it reaches its "trip" point. Then turn the nozzle housing back to the left until it "trips" again. The location of the arrow on top of the nozzle housing indicates the direction of the nozzle.

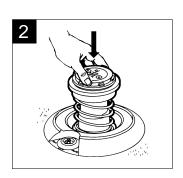
Align the arrow on the nozzle housing with the left edge of the grass line (left edge of your watering pattern). Then make your right arc adjustment, as shown on page 8.



安装内部装置

- 扇形旋转喷头:为找出左侧喷洒起始点,把喷嘴腔向右旋转直到到达其"起始点"。然后再把喷嘴腔向左旋转直到其"起始点"。喷嘴腔顶端箭头的位置指示喷嘴的方向。
- 在喷嘴腔上把箭头与草地分界线的左侧边缘(灌溉模式的左侧边缘)对准。然后校准合适的角度,如第六页所示。

 Lower the internal assembly back into the case and press down firmly until the internal assembly seats securely and evenly in the case.



把内部装置放回喷头,用力按压内部装置直至 其安全平稳地装入喷头。

雨鸟高尔夫喷头操作与维护手册

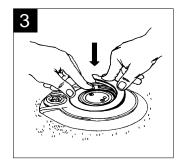
INSTALLING THE INTERNAL ASSEMBLY

 Position the snap ring in the groove on the top of the rotor case with the bottom of the snap ring facing down.

Press the end of the snap ring without the screwdriver slot into the groove. Press and twist the snap ring down in a circular motion until it is installed about two-thirds of the way.

Step on or pound the snap ring (with your hand or a screwdriver handle) to insert it the rest of the way. Make sure the snap ring fastens securely in place and is flush with the top of the rotor case.

FULL-CIRCLE MODELS: Installing the fullcircle internal assembly is the same as the part-circle, except that you do not need to adjust the arc.



安装内部装置

把扣环放入喷头顶端的凹槽内使扣环底部朝下。

把扣环的尾端直接按压进凹槽内,不要使用螺 丝刀。按压并把扣环绕成环状直到安装其 2/3。

- 按压或敲击扣环(用手或螺丝刀柄)以便把余 下的部分插入。确保扣环安全扣紧并且与喷头 顶端齐平。
- 全圆旋转模式:安装全圆旋转内部装置与扇形 旋转相同,但不需要调节角度。

REPLACING THE NOZZLE

IMPORTANT NOTE: Make sure the sprinkler does not operate automatically while you are changing the nozzle. On electric models, turn the selector to OFF as shown in "Manual Operation" on page 7. For SAM/hydraulic models, turn off the water.

NOTE: Make sure the snap ring is securely in place before removing the nozzle housing screws.

Required Tools: Phillips-head screwdriver; Flat-head screwdriver

 Use a Phillips-head screwdriver to loosen the nozzle housing screws.



更换喷嘴

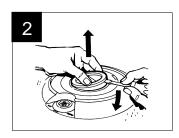
重要提示:当更换喷嘴时,确保喷头不会自动运行。在电磁头中,按照 "手动操作"第7页所示把选择器调至关闭状态。对于止溢型模式, 关闭水源。

注意:在拧喷嘴腔螺丝前,确保扣环安全就位。

必要工具:十字螺丝刀;平头螺丝刀

使用十字螺丝刀松开喷嘴腔螺丝。

 Use a flat-head screwdriver to pry the nozzle housing out of the case. Then press the old nozzle out of the nozzle housing.



使用平头螺丝刀撬起喷嘴腔并从喷头中取出。然后把旧喷嘴从喷嘴腔中取出。

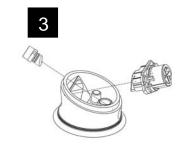


REPLACING THE NOZZLE

 Press the replacement nozzle assembly into the nozzle housing, making sure the nozzle front is flush with the outside of the housing. An O-ring seal is required on all nozzles.

CAUTION: If the nozzle is not flush and seated properly in the nozzle housing, the rotor may not perform properly.

NOTE: When changing nozzle to a different size, you may also need to change the stator to maintain consistent rotation.



更换喷嘴

把更换的喷嘴装置放入喷嘴腔中,确保喷嘴顶部与架的外部水平。所有喷嘴都要有〇型密封圈。

注意:如果喷嘴没有放平或者没有正确安装到 喷嘴腔中,喷头可能不能正常运行。

注意: 当把喷嘴换成不同型号时,同时也可能 需要更换定子以保证旋转一致。

REPLACING THE STATOR

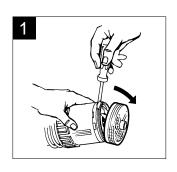
IMPORTANT NOTE: Make sure the sprinkler does not operate automatically while you are changing the stator. On electric models, turn the selector to OFF, as shown in "Manual Operation" on page 7. For SAM/hydraulic models, turn off the water.

Required Tool: Flat-head screwdriver

NOTE: Before replacing the stator, you must remove the internal assembly, as shown on page 11.

NOTE: The purpose of the stator is to control the speed of the rotor. When changing the stator, be sure to adjust to proper Stator and Poppet configuration

 For 500/550, 700/750/751 and 900/950/951
 Series Rotors, use a flat-head screwdriver to pry the stator and/or internal screen from the internal assembly.



更换定子

重要提示:当更换定子时,确保喷头不会自动运行。在电磁头中,按 照"手动操作"第7页所示把选择器调至关闭状态。对于止溢型模 式,关闭水源。

必要工具: 平头螺丝刀

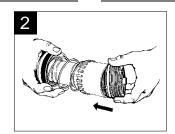
注意:在更换定子前,必须把内部装置拆除,如第9页所示。

注意:定子的用途是控制喷头的速度。当更换定子时,一定要使其适应原有的定子和提升阀结构。

 对于 500/550, 700/750/751 和 900/950/951 系 列喷头,使用平头螺丝刀从内部装置中撬起定 子和/或内部过滤网.

REPLACING THE STATOR

Replace with the appropriate stator assembly.
 Position the poppet (if required) as shown on the Rotor Stator Instruction Sheet. Snap the new stator/internal screen onto the rotor and place the internal assembly back in the case.
 See "Installing the Internal Assembly" on page 12.



更换定子

 用合适的定子装置进行更换。(如果需要)按 照喷头定子说明书所示安装提升阀。把新的定子/内部过滤网扣在喷头上并且把内部装置放回原位。参见"安装内部装置"第10页

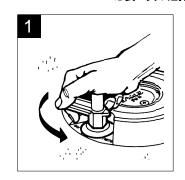
REPLACING THE SELECTOR STEM

IMPORTANT NOTE: Electric model rotors only

Turn off the water to the sprinkler before attempting to replace the selector stem. Make sure you relieve the pressure on the rotor by closing the isolation or main valve.

Required Tool: Selector valve key

 Insert the HEX end of the selector valve key into the selector cap on top of the rotor. Turn the tool counter-clockwise to loosen the selector cap.



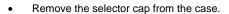
更换选择器手柄

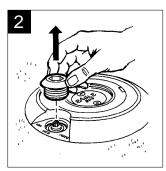
重要提示: 仅供电磁头喷头

试图更换选择器手柄前,关闭喷头水源。通过关闭独立阀门或主阀门 来确保减低喷头压力。

必要工具:选择器阀门钥匙

 把选择器阀门钥匙的六边形末端插入喷头顶部 的选择器帽上。顺时针旋转此工具松开选择器 帽。

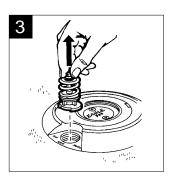




● 从喷头上取下选择器帽。.

- Remove the selector stem cartridge from the case. Before replacing the selector cartridge, make sure that the selector seal is flat and seated in the bottom of the selector housing.
 - Place the selector stem cartridge into the selector housing making sure the stem is pointed to the OFF position. Tighten the selector cap, using the HEX end of the selector valve key tool. Press down hard while tightening.

NOTE: If debris has entered the Pressure Regulating system, you may be able to flush the



- 取下选择器手柄芯。在更换选择器芯前,确保 选择器密封条平整并且放置在选择器架的底 端。
- 把选择器手柄芯放入选择器架内确保手柄指向 关闭位置。使用选择器阀门钥匙的六边形末端 拧紧选择器帽。在拧紧过程中用力按压。

注意:如果杂质进入压力调节系统,可以不必拆卸 而直接把杂质冲洗干净。如第一步所示稍微松开选



REPLACING THE SELECTOR STEM

debris out without disassembly. Slightly loosen the selector cap as shown in STEP 1 until water starts to flow from the cap.

WARNING: The rotor will likely turn on. After a few seconds, tighten the cap back on.

NOTE: If possible, keep the line pressure to a minimum (20-30 psi or 1,4 to 2,1 Bars) during this process.

REMOVING THE VALVE ASSEMBLY

IMPORTANT NOTE: Turn off the lateral mainline valve to the sprinkler before replacing the rotor valve.

Required Tools: Flat-head screwdriver; snap-ring pliers

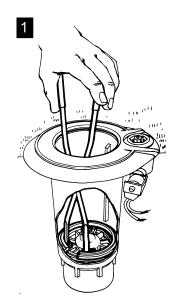
NOTE: Remove the internal assembly, as shown on page 11, and remove any water remaining in the case before removing the valve.

 Push down on top of the valve with the blunt end of a hammer or screwdriver to relieve any pressure on the valve.

Insert the snap-ring pliers into the case and grasp the top snap ring. Pull up to release the snap ring and remove it from the case.

Remove the second snap ring in the same way.

Lift out the valve with the snap-ring pliers.



更换选择器手柄

择器帽直到水开始从选择器帽中流出。

警告:喷头很有可能打开。几秒钟后务必拧紧选择 器帽。

注意:如果可能,在此过程中把管道压力保持在最小值(20-30 磅/平方英寸或 1.4-2.0 巴)

拆卸阀门装置

重要提示:在更换喷头阀门前关闭喷头的侧主管道阀门。

必要工具:平头螺丝刀,扣环钳

注意:如第 9 页所示,拆卸内部装置,同时在拆卸阀门前把喷头内部 所有剩余的水排放干净。

> 用锤子或者螺丝刀钝的一头在阀门顶端用力向 下推压以降低阀门压力。

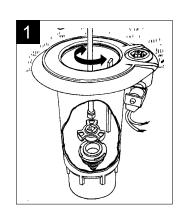
把扣环钳插入喷头同时夹住扣环顶端。向上拉 出扣环并从喷头取出。以同样的方式取出第二个扣 环。

用扣环钳取出阀门。

REMOVING / INSTALLING THE TOP SERVICEABLE ROCK SCREEN AND REPLACEABLE VALVE SEAT

Required Tools: Installation Socket (P/N: 211619-01) 3/8" Socket Drive or 3/8" Speed Wrench; Drive Extension

 Attach the installation socket to the socket drive/drive extension. Insert the installation socket and socket drive/drive extension assembly into the case. Align the installation socket to the slots on the top serviceable rock screen. Twist the Drive Extension counterclockwise to remove the rock screen and clockwise to install the rock screen.



拆卸/安装滤网和可更换的阀门底座

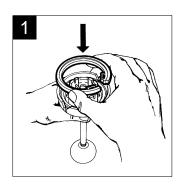
必要工具:安装套管 (P/N: 211619-01) 3/8" 套管驱动 或者快速扳手驱动件加长部分

把安装套管与套管驱动/驱动件加长部分进行连接。把安装套管与套管驱动/驱动件加长部分插入喷头。把安装套管与顶部维护过滤网的缝隙校准。逆时针旋转驱动件加长部分拆卸过滤网,顺时针旋转驱动件加长部分安装过滤网,

INSTALLING THE VALVE ASSEMBLY

Required Tool: Valve insertion tool

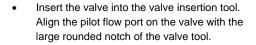
 To install the valve assembly, insert the two snap rings into the valve insertion tool, with their rounded edges facing down, and the slotted tabs on the snap rings 180 degrees apart.

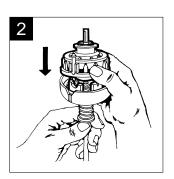


安装阀门装置

必要工具:阀门插入工具

为安装阀门装置,把两个扣环放入阀门插入工具中,圆形边缘朝下,扣环上的开槽调整片分开 180 度。



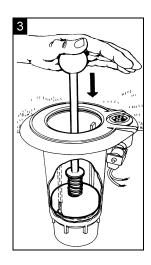


把阀门放入阀门插入工具。把阀门上的导流端口与阀门工具的大圆形槽口对准。



• Insert the valve tool into the rotor case, aligning the two ribs on the inside of the case with the notches on the side of the tool. Push the handle down until the head of the tool reaches the bottom of the case. Then push down firmly on the tool to seat the valve and the snap rings. Remove the valve tool, and check to make sure that both snap rings are securely in place.

Reinstall the internal assembly and upper snap ring. Turn on the water and test the valve by operating the sprinkler manually, as shown on page 7.



 把阀门工具插入喷头,把喷头内部的两个圆拱 与工具一侧的槽口对准。向下推压手柄直到工 具顶端接触喷头底部,然后用力向下推压工具 使阀门和扣环放置好。取出阀门工具,然后进 行检查以确保两个扣环都安全放入。

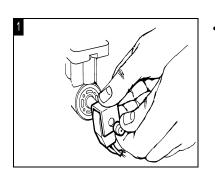
> 重新安装内部装置和上面的扣环。打开水源, 并通过手动操作喷头来测试阀门,如第七页所 示。

REPLACING THE SOLENOID ASSEMBLY

IMPORTANT NOTE: Turn off the water to the sprinkler, and make sure the plunger area of the selector assembly is kept clean and free of debris.

Required Tool: Selector Valve Key

 Twist the orange cap counterclockwise and remove it. Slide the U-frame and coil assembly off the solenoid tube (post).

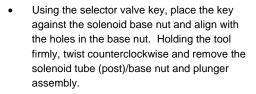


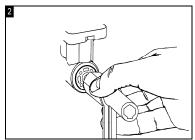
更换电磁头装置

重要提示:关闭喷头水源,并确保选择器装置的活塞部分保持干净没 有杂质。

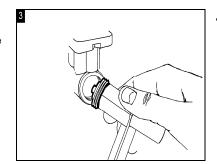
必要工具:选择器阀门钥匙

顺时针拧开橙色帽并将其取下。将U型框和线圈装置滑出电磁头筒(柱)。



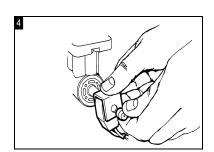


 用选择器阀门钥匙顶住电磁头底座螺母并且对 准底座螺母孔。握紧工具顺时针旋转,取下电 磁头筒(柱)/底座螺母和活塞装置。 Before re-installing the new solenoid assembly, be sure the O-ring is seated properly. Place the solenoid tube (post)/base nut and plunger assembly against the selector housing and hand tighten. Firmly tighten the base nut with the selector valve key.



 在重新安装新的电磁头装置前,务必把〇型环 正确放置。.把电磁头筒(柱)/底座螺母和活 塞装置对准选择器架然后用手拧紧。用选择器 阀门钥匙用力拧紧底座螺母。

• Slide the U-Frame and coil onto the solenoid tube (post) and re-install the orange cap.



将U型框和线圈滑入电磁头筒(柱)然后再重 新安上橙色帽。



RAIN BIRD PROFESSIONAL CUSTOMER SATISFACTION POLICY

Rain Bird will repair or replace at no charge any Rain Bird professional product that fails in normal use within the warranty period stated below. You must return the product to the dealer or distributor where it was purchased.

This commitment to repair or replace is our sole and total warranty.

Implied warranties of merchantability and fitness, if applicable, are limited to one year from the date of sale.

Rain Bird will not, under any circumstances, be liable for incidental or consequential damages, no matter how they occur.

Golf Products

Golf Rotors: (also including:TG-25, DR, DH, DS, ESR, EAGLE™ Series and EAGLE IC™ Series Golf rotors) - 3 years.

Additionally, any Golf Rotor (also including: TG-25, DR, DH, DS, EAGLE™ Series and EAGLE IC™ Series Golf Rotor sold and installed in conjunction with a Rain Bird Swing Joint) - 5 years. Proof of concurrent installation is required.

Swing Joints - 5 years

Brass And Plastic Valves: EFB and PE-B Remote Control Valves, and Brass

Quick Coupling Valves and Keys - 3 years

Filtration system controllers - 3 years

LINK™ Radios – 3 years

Lake Management Aerator: LM10, LM11, LM20, LM30 - 5 years

Lake Management Aerator: LMM - 2 years

Lake Management Aerator Lights - 1 year

Hose Reels - 2 years

All other golf products - 1 year

雨鸟专业客户满意政策

如果雨鸟公司的专业产品在下述保质期内正常使用中出现问题,雨鸟 将会无偿负责维护或更换。必须将产品退还给购买本产品的经销商或 批发商。

维护和更换产品的承诺 由我公司唯一全权担保。

适销性和合适度的内在保证,如果使用,从售出之日起一年有效。 在任何情况下,雨鸟公司不负责偶然或必然的损坏,无论损害如何产 生。.

高尔夫产品

高尔夫喷头 (也包括: TG-25, DR, DH, DS, ESR, Series EAGLE™ 系列 和 EAGLE IC™ 系列高尔夫喷头) — 3 年

此外,任何高尔夫喷头(也包括 与雨鸟公司的千秋架一同出售并安装的 TG-25, DR, DH, DS, Series EAGLE™ 系列和 EAGLE IC™ 系列高尔夫喷头) — 5 年。.要求提供同时安装的证明。

千秋架 — 5年

黄铜和塑料阀门: EFB和PE-B远程控制阀门和黄铜,

快速取水阀和钥匙 — 3 年.

过滤系统控制器 — 3 年.

无线电连接设备--3年

湖水曝气增氧机: LM10, LM11, LM20, LM30 - 5 年

湖水曝气增氧机: LMM - 2 年

湖水曝气增氧机照明-1年

软管卷轴 - 2 年

所有其他高尔夫产品—1年

Addendum

In freezing climates, you must properly prepare the installed system for winter shutdown to minimize the potential for freeze damage.

Rain Bird cannot and does not warranty against damage to equipment caused by lightning or power surges.

PRICE CHANGES: Prices are subject to change without notice.

DESIGN CHANGES: Rain Bird Sprinkler Corp. reserves the right to redesign, alter or modify its products without incurring any liability from anyone's inventory of such parts or products that may become obsolete.

附录

在寒冷的气候条件下,必须为冬季停止工作合理准备安装系统以便把 潜在的冰冻损坏降至最小程度。

雨鸟公司不能也不会担保由雷电或电压突然升高而导致的设备损坏。

价格变动:以变动的价格为准,不另行通知。

设计变化:雨鸟喷头公司保留重新设计、变化、或修改产品的权力。对任何人的可能废弃的零部件或者产品目录清单不承担任何责任。



Appendix 1 — Rotor Troubleshooting Guide

附录 1— 喷头故障发现和维护指南(英文)

Pr	oblem	Possible Cause	Correction
Cracked rotor case		High pressure	Minimize water/air hammer. Check the system's pressure regulating valve. Replace case if needed.
		Improper installation	Check installation for over tightening. Check case for chemical damage. Replace case if needed.
		Freeze damage	Make sure to winterize system properly. Blow out water line if susceptible to freezing temperatures. Replace case if needed.
2.	Failure to pop up and/or seal properly	Sand or rock particles may have wedged between the bearing guide and the riser	Pull the internal assembly and clean. Brush any rocks or debris away from the head of the rotor.
		Low pressure	See solutions for Problem #6 "Low Pressure."
		Jammed or clogged selector assembly	Clear or clean poppet, or replace selector assembly.
		Tube crimped or pinched, or blockage in tubes	Make sure tubes are not bent or pinched. Check tubes for blockage. Clear tubes, if needed.
		Solenoid coil not working	Check solenoid for proper operation. Replace if needed.
3.	Failure to turn on	No power to solenoid	Check for power to solenoid.
		Selector/PRS set to OFF	Check selector and PRS. Set to AUTO or ON, as desired.
		Jammed solenoid plunger	Clean out debris around plunger. Replace plunger assembly, if needed.
4.	Failure to turn off	Cracked selector housing	Check and replace housing.
		Selector/PRS set to MANUAL	Turn stem to AUTO or OFF, as desired.
		Diaphragm failure	Replace valve assembly.
		Valve housing cracked	Replace valve.
		Jammed solenoid plunger	Clean out debris around plunger. Replace plunger assembly, if needed.
		Plugged valve filter	Remove valve. Clean and reinstall filter screen.
		Debris under plunger and selector housing "volcano"	Clean out area around selector volcano and plunger.

Pr	oblem	Possible Cause	Correction
5.	Freeze damage (Hydraulic rotor will not open. Water continually drains at controller while attempting to open valve).	Failure to winterize	Make sure to winterize the system properly. Repair and replace damaged parts as needed.
6.	Low pressure	Incorrect valve assembly in the rotor	Check for proper valve assembly. Replace if needed.
		Plugged or damaged nozzle	Clean or replace nozzle.
		PRS out of adjustment	Adjust pressure by turning adjusting screw using a screwdriver.
		PRS not holding pressure setting	Replace PRS cartridge in selector.
		Broken valve filter screen	Replace screen and clean out valve assembly.
		Blockage in tubes or case probe	Locate and clear blockage.
		Tube crimped or pinched	Repair or replace tube.
		Debris obstructing internal assembly screen	Clean internal assembly screen.
		Inlet rock screen clogged	Remove case. Clean and reinstall rock screen.
		Debris in PRS assembly	Clean out any debris between poppet and lower stem.
7.	Mechanical failure to retract	Retract spring may be installed with an end coil doubled over, preventing internal retraction	Remove internal assembly and without disassembling, compress the spring down until you free up the end coil. Reseat the end coil and reinstall the internal assembly.
		Sand or rock particles may have wedged between the bearing guide and the riser	Pull the internal assembly and clean. Brush any rocks or debris away from the head of the rotor.
8.	Non-rotation/ Stalling / Tripping	Stator missing, or wrong stator installed	Remove internal assembly. Check for proper stator.
		Debris or algae clogging the internal assembly screen	Clean internal screen.
		Nozzle clogged	Clean nozzle.
		Inlet screen clogged	Clean inlet screen. This may be difficult if debris has fallen back down out of sight. Examine and clean thoroughly.
		Arc was misadjusted and left in neutral	Turn the nozzle housing through the next trip point.
		Arc setting too small	Reset arc to no less than 45 degrees.
9.	Sprinkler rotates too slowly	Insufficient water pressure	See solutions for Problem #6 "Low Pressure."



Problem	Possible Cause	Correction Check for proper stator configurations and nozzle/stator combinations. Clean as needed.		
	Improper nozzle/stator combination			
	Blinded filter screen	Clean as needed.		
10. Short radius	Improper sprinkler spacing	Review spacing requirements.		
	Blockage in tube	Locate and clear blockage.		
	Jammed poppet	Clear poppet or replace selector assembly.		
	PRS set too low	Reset PRS.		
	Solenoid plunger jammed	Clean out debris around plunger and free plunger.		
	Selector/PRS not set correctly	Set selector to AUTO or MANUAL.		
	Low pressure	See solutions for Problem #6, "Low Pressure."		
	Course design problems	Check capacity vs. nozzle size, number of heads, spacing, etc.		
	Wind	Raise water pressure, review watering schedule, re-nozzle.		
	Incorrect stator configuration	Verify proper stator/nozzle match.		
11. Weeping	Leakage between inlet seal and case seat	Check for debris lodged between seat and seal. Replace or repair damaged inlet seal on valve. If case seat is damaged, replace case.		
	Leakage between solenoid plunger and selector housing volcano	Clean rubber seal under plunger. Remove any debris between plunger and selector.		

附录 1— 喷头故障发现和维护指南(中文)

问题	可能存在的原因	维护方法
1.喷头壳体开裂	压力过高	使水流/气锤最小化。检查系统压力调节阀门。如果需要请及时更换。
	安装不当	检查安装是否过紧。检查喷头是否有化学制品损坏。如果需要请及时 更换。
	冰冻损坏	确保适当地对系统安装御寒设备。如受寒冷天气影响,水管就会破 裂。如果需要请及时更换。
2.不弹出和/或密封不当	沙子或石头颗粒可能进入旋转柱与升降器中间。	取出内部装置并进行清洗。用刷子把沙石或杂质从喷头顶端清洗干净。
	压力过低	参见问题 6"压力过低"的解决方法。
	选择器装置堵塞或结块。	清洁提升阀,或更换选择器装置。
	命令管道弯曲或挤压,或者管内阻塞	确保命令管到没有被弯曲或挤压。检查管道是否阻塞。如有需要,清 洁管道。
	电磁头不工作。	检查电磁头是否正确运行。如果需要请及时更换。
3.不能启动	电磁头没有通电	检查电磁头的通电情况。
	选择器/PRS 处于关闭状态	检查选择器和 PRS。如需要,调至自动或者打开状态,
	堵塞电磁头活塞	把活塞周围的杂质清除干净。如果需要,请更换活塞装置。
4.不能关闭	选择器腔破裂	检查并更换选择器腔。
	选择器/PRS 处于人工状态	如果需要把手柄调至自动或关闭状态。
	隔板故障	更换阀门装置
	阀门架破裂	更换阀门
	电磁头活塞堵塞	把活塞周围的杂质清除干净。如果需要,请更换活塞装置。
	阀门过滤器堵塞	取下阀门。清洗并重新安装过滤网。
	活塞下和选择器腔出口下有杂质。	把选择器出口和活塞周围的地方清洗干净。
5.冰冻损坏(水力喷头将不能打开。当试图打开阀门时,水会不断地从控制器排出。)	防冻措施有问题	确保适当地对系统安装御寒设备。按照需要维修或更换受损部件。



问题	可能存在的原因	维护方法		
6.压力过低	喷头内不正确的阀门装置	检查阀门装置是否安装正确。如果需要请更换。		
	喷嘴阻塞或损坏	清洗或更换喷嘴		
	压力调节 PRS 超出范围。	通过使用螺丝刀旋转调节螺丝来调节压力。		
	PRS 不能保持压力设置	更换选择器内 PRS 芯。		
	阀门过滤网破损	更换过滤网并清洗阀门装置。		
	管道或喷嘴探测器堵塞	找到并清除堵塞物。		
	命令管道弯曲或被挤压	修理或更换管道。		
	杂质堵塞内部装置滤网	清除内部装置滤网。		
	进口过滤网堵塞	取下喷头。清洗并重新安装杂质过滤网。		
	PRS 装置内有杂质	清除提升阀和下阀杆中的杂质。		
7.不能自动伸缩	收缩弹簧可能由于安装时盘线末端被叠 起,这样就妨碍了内部伸缩。	拆卸内部装置,不用拆开,向下按压弹簧直到弹出末端盘线。重新给 盘线末端安装底座,并且重修安装内部装置。		
	沙子或石头颗粒可能进入旋转柱与升降 器中间。	取出内部装置并且进行清洗。用刷子把沙石或杂质从喷头顶端清洗干净。		
3.不旋转/停转/松开	缺少定子,或者定子安装错误	拆卸内部装置。检查定子是否安装正确。		
	杂质或海藻堵塞内部装置滤网。	清洗内部滤网。		
	喷嘴堵塞	清洗喷嘴		
	进口滤网堵塞	清洗进口滤网。如果杂质滑到内部不能看见,清洗可能非常困难。彻 底检查并清洗。		
	角度调节错误并放置空档状态	把喷嘴腔旋转至下一喷洒起始点。		
	角度设置太小	重新设置角度不小于 45 度。		
9.喷嘴旋转太慢	水压不足	参见问题 6 中"压力过低"的解决办法。		
	喷嘴/定子组合不当	检查定子装置是否合适,并且检查喷嘴/定子组合是否正确。按照需要 清洗。		
	过滤网堵塞	按照需要清洗。		

雨鸟高尔夫喷头操作与维护手册

问题	可能存在的原因	维护方法
	管道堵塞	找到并清洗堵塞物。
	提升阀堵塞	清洗提升阀或者更换选择器装置。
	PRS 设置压力太低	重新设置 PRS。
	电磁头活塞堵塞	清除活塞周围的杂质,并使活塞畅通。
	选择器/PRS 设置不正确	选择器设置到自动或人工状态。
	压力过低	参见问题 6 中"压力过低"的解决办法。
	球场设计问题	检查容量与喷嘴型号、喷头数量、间距等是否匹配。
	风力	加强水压,查看灌溉进度表,更换喷嘴。
	定子装置不合适	检验定子/喷嘴是否匹配。
11.滴水	在进口封条于喷头底座中间漏水。	检查底座与封条间堵塞的杂质。更换和维护阀门上损坏的进口封条。 如果底座损坏,请更换喷头

在电磁头活塞与选择器出口中间漏水。 清洗活塞下的橡胶封条。取出活塞和选择器中间的所有杂质。



Appendix 3 – Nozzle/Stator Settings 附录 3 — 喷嘴/定子设置

Rain Bird Golf Rotor Stator Configurations

雨点高尔夫暗斗完子装置

Model	大顺头正		Pressure Settings压力设置 psi (bars)				All SAM/Hyd and Block
(型号)	Nozzle (喷嘴)		60 (4,1) 70 (4,8) 80 (5,5) 100 (6,9)			100 (6,9)	所有止溢型
500/550	Beige 米色	#52	S4	S4	S4	S4	S4
	Gray灰色	#53	S4	S4	S4	S4	S4
	Red 红色	#54	S8	S8	S8	S8	S8
700	White白色	#28	SPC	SPC	SPC	SPC	SPC
	Blue蓝色	#32	SPO	SPO	SPO	SPO	SPO
	Yellow黄色	#36	SPO	SPO	SPO	SPO	SPO
	Orange橙色	#40	SNP	SNP	SNP	SNP	SNP
	Green绿色	#44	SNP	SNP	SNP	SNP	SNP
	Black黑色	#48	N/R	SNP	SPR	SPR	SNP
751	Gray灰色	#20	S4	S4	S4	S4	S4
	Red红色	#22	S8	S8	S8	S8	S8
750/751	White白色	#28	SPC	SPC	SPC	SPC	SPC
	Blue蓝色	#32	SPO	SPO	SPO	SPO	SPO
	Yellow黄色	#36	SPO	SPO	SPO	SPO	SPO
	Orange橙色	#40	SNP	SNP	SNP	SNP	SNP
	Green绿色	#44	SNP	SNP	SNP	SNP	SNP
	Black黑色	#48	SNP	SPR	SPR	SPR	SNP
900	Blue蓝色	#44	SPC	SPC	SPC	SPC	SPC
	Yellow 黄色	#48	SPC	SPC	SPC	SPC	SPC
	Orange橙色	#52	SPC	SPO	SPO	SPO	SPO
	Green绿色	#56	N/R	SNP	SNP	SNP	SNP
	Black 黑色	#60	N/R	SNP	SPR	SPR	SPR
	Brown棕色	#64	N/R	SPR	SPR	SPR	SPR
950/951	White白色	#18C	SPC	SPC	SPC	SPC	SPC
	Gray灰色	#20C	SPC	SPC	SPC	SPC	SPC
	Blue蓝色	#22C	SPC	SPC	SPC	SPC	SPC
	Yellow黄色	#24C	SPC	SPC	SPO	SPO	SPO
	Orange橙色	#26	SPO	SPO	SPO	SPO	SPO
	Green绿色	#28	N/R	SNP	SPR	SPR	SPR
	Black黑色	#30	N/R	SNP	SPR	SPR	SPR
	Brown棕色	#32	N/R	SNP	SPR	SPR	SPR

SPC = Stator Poppet Closed (定子提升阀关闭)

SPO = Stator Poppet Open (定子提升阀打开)

SNP = Stator No Poppet (定子无提升阀)

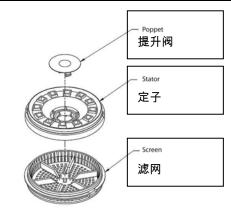
SPR = Spacer (隔离片)

SO = Screen Only (仅有滤网)

S4 = Stator w/4 holes (定子w/4孔)

S8 = Stator w/8 holes (定子w/8孔)

 $N/R=Not\ a$ recommended pressure and nozzle combination (不是建议压力和喷嘴组合)





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