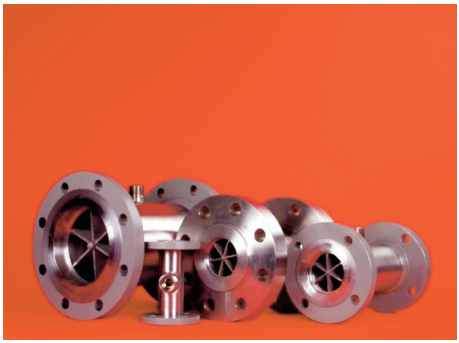
Threaded Turbine Flow Meter / Flanged Turbine Flow Meter Installation Manual



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Calibration

The Threaded and Flanged Turbine Flow Meters are precalibrated with water at the factory. The calibration factor tag is on the conduit hub of the meter and is in pulses per US Gallon. Any certified proving company can prove this meter.

Installation

The Threaded or Flanged Turbine Flow Meter can be installed vertically or horizontally. The flow direction must correspond with the directional flow arrow stamped on the meter body. Throttling valves must not be installed upstream of the turbine flow meter.

- Clean all upstream flow lines
- Do not purge the lines with gas or air, with the meter installed
- Do not slug the meter with fluid
- Do not exceed maximum flow rates
- Do not exceed maximum pressure
- Do not exceed maximum temperature
- Avoid sharp blows to the meter body.

Procedure

1. The Threaded or Flanged Turbine Flow Meter requires a straight section of pipe the same size as the end connections on either side of the meter. A **10-diameter length** of straight unrestricted pipe must be upstream and a **5-diameter length** of straight unrestricted pipe must be downstream of the flow meter.
   Example:
   Meter Size – 2"
   Pipe Size – 2"
   Meter Run - 10x2" = 20" Upstream
   Meter Run - 5x2" = 10" Downstream

2. Thread the magnetic pickup into the meter until it is hand tight, and then back it off ¼ turn. Tighten jam nut to prevent vibration.

Parts List

Rotor and Vane Kits

Simark Controls offers a broad line of turbine Flow Meter Rotor and Vane Kits designed for Simark Turbine Flow Meters. The Simark Rotor and Vane Kits are also compatible for use with many other popular manufactures' Turbine Flow Meters. Please contact Simark Controls to verify compatibility with your existing meters. The kits are available for flow ranges of .3 to1200 GPM. Simark kits fit meter sizes of .375" to 4".

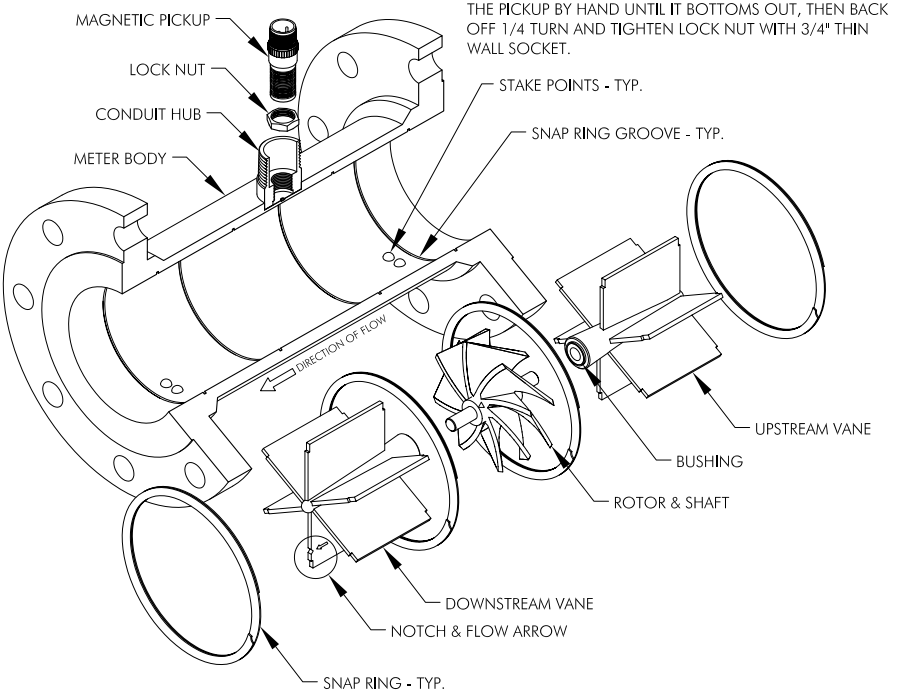
Simark Controls repair kits are manufactured to the highest quality standards. The repair kit support vanes are manufactured of 316SS, rotor is CD4MCU, sleeve bearings and shaft are tungsten carbide and the thrust ball is ceramic. The kits are calibrated in pulses per US gallon for each kit. The kits may be used in a wide range of applications including: oilfield water flood, production, well servicing, pipelines, mining, chemicals, food and beverage industry and most other liquid applications.

KIT REMOVAL

1. REMOVE MAGNETIC PICKUP BY LOOSENING LOCK NUT USING 3/4" THIN WALL SOCKET, THEN UNSCREW FROM METER BODY. THIS PROCEDURE WILL HELP TO PREVENT PICKUP DAMAGE DURING THE REPAIR PROCEDURE.
2. REMOVE SNAP RING FROM EACH END OF METER BODY, USING PICK OR SCREWDRIVER.
3. REMOVE UPSTREAM AND DOWNSTREAM VANES, TAPPING WITH SOFT ROD IF NECESSARY TO DRIVE OUT VANES.
4. REMOVE INNER SNAP RINGS AND ROTOR FROM BODY.
5. CLEAN THE METER BODY BORE AS REQUIRED BRINGING IT BACK TO A LIKE NEW CONDITION.
6. CLEAN SNAP RING GROOVES TO ALLOW THE RING TO PROPERLY SEAT.

KIT INSTALLATION

1. INSTALL DOWNSTREAM INNER SNAP RING.
2. INSTALL DOWNSTREAM VANE SO ARROW ON VANE CORRESPONDS WITH DIRECTIONAL ARROW ON THE METER BODY. THE VANE BLADE WITH THE NOTCH GOES BETWEEN THE WELD STAKE SPOTS.
3. INSTALL OUTER DOWNSTREAM SNAP RING.
4. INSTALL ROTOR BEING SURE THE ARROW IS PROPERLY ALIGNED, AND THE SHAFT SEATED IN THE VANE BUSHING.
5. INSTALL UPSTREAM INNER SNAP RING.
6. INSTALL UPSTREAM VANE, WITH NOTCHED VANE BLADE BETWEEN WELD STAKE SPOTS. SPIN THE ROTOR TO ALLOW SHAFT TO EASILY ENTER THE VANE BUSHING. *DO NOT USE FORCE TO PUSH THE VANE BEARING OVER THE ROTOR SHAFT.*
7. INSTALL UPSTREAM SNAP RING.
8. MAKE SURE THE ROTOR SPINS FREELY BEFORE INSTALLING THE METER.
9. ATTACH PLASTIC CALIBRATION TAG AROUND THE CONDUIT HUB AND CUT OFF EXCESS STRAP LENGTH FLUSH WITH TAG.
10. INSTALL MAGNETIC PICKUP AS FOLLOWS: CLEAN PICKUP HUB THREADS AND PICKUP THREADS AS NEEDED. SCREW IN THE PICKUP BY HAND UNTIL IT BOTTOMS OUT, THEN BACK OFF 1/4 TURN AND TIGHTEN LOCK NUT WITH 3/4" THIN WALL SOCKET.

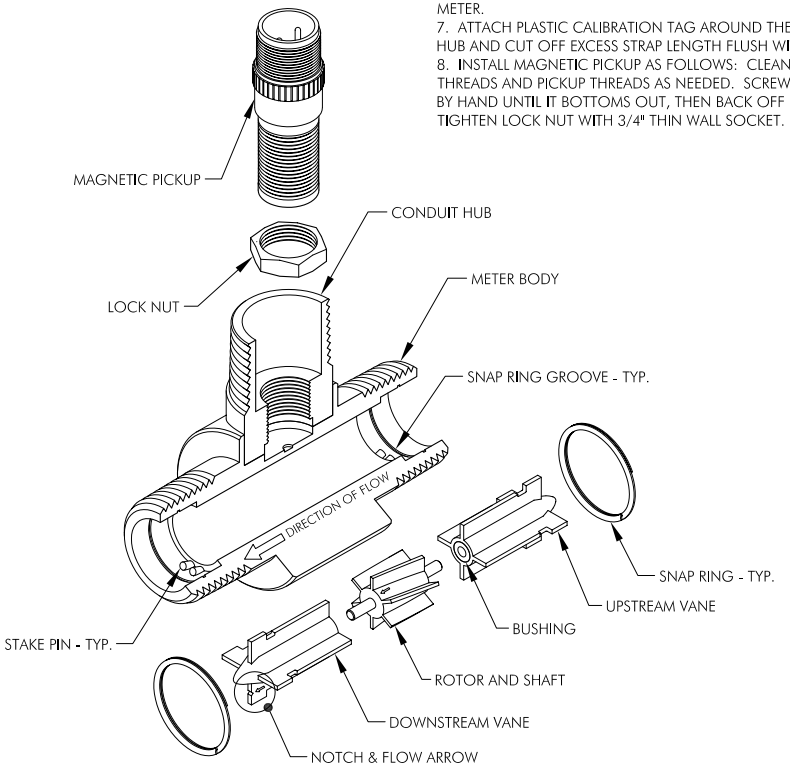


KIT REMOVAL

1. REMOVE MAGNETIC PICKUP BY LOOSENING LOCK NUT USING 3/4" THIN WALL SOCKET, THEN UNSCREW FROM METER BODY. THIS PROCEDURE WILL HELP TO PREVENT PICKUP DAMAGE DURING THE REPAIR PROCEDURE.
2. REMOVE SNAP RING FROM EACH END OF METER BODY, USING PICK OR SCREWDRIVER.
3. REMOVE UPSTREAM AND DOWNSTREAM VANES, TAPPING WITH SOFT ROD IF NECESSARY TO DRIVE OUT VANES.
4. REMOVE ROTOR FROM BODY.
5. CLEAN THE METER BODY BORE AS REQUIRED BRINGING IT BACK TO A LIKE NEW CONDITION.
6. CLEAN SNAP RING GROOVES TO ALLOW THE RING TO PROPERLY SEAT.

KIT INSTALLATION

1. INSTALL DOWNSTREAM VANE SO ARROW ON VANE CORRESPONDS WITH DIRECTIONAL ARROW ON THE METER BODY. THE VANE BLADE WITH THE NOTCH GOES BETWEEN THE WELD STAKE PINS.
2. INSTALL OUTER DOWNSTREAM SNAP RING.
3. INSTALL ROTOR BEING SURE THE ARROW IS PROPERLY ALIGNED, AND THE SHAFT SEATED IN THE VANE BUSHING.
4. INSTALL UPSTREAM VANE, WITH NOTCHED VANE BLADE BETWEEN WELD STAKE PINS. SPIN THE ROTOR TO ALLOW SHAFT TO EASILY ENTER THE VANE BUSHING. *DO NOT USE FORCE TO PUSH THE VANE BEARING OVER THE ROTOR SHAFT.*
5. INSTALL UPSTREAM OUTER SNAP RING.
6. MAKE SURE THE ROTOR SPINS FREELY BEFORE INSTALLING THE METER.
7. ATTACH PLASTIC CALIBRATION TAG AROUND THE CONDUIT HUB AND CUT OFF EXCESS STRAP LENGTH FLUSH WITH TAG.
8. INSTALL MAGNETIC PICKUP AS FOLLOWS: CLEAN PICKUP HUB THREADS AND PICKUP THREADS AS NEEDED. SCREW IN THE PICKUP BY HAND UNTIL IT BOTTOMS OUT, THEN BACK OFF 1/4 TURN AND TIGHTEN LOCK NUT WITH 3/4" THIN WALL SOCKET.



Replacement Rotor and Vane Kits

Part Number	Size
5.037	3/8"
5.050	1/2"
5.075	3/4"
5.087	7/8"
5.101	1"
5.150	1.5"
5.160	1.5" Heavy Duty
5.250	2"
5.260	2" Heavy Duty
5.350	3"
5.450	4"
5.650	6"
5.850	8"
5.105	10"

Magnetic Pickups

Part Number	Size
4.5051	For use with 3/8" x 2" Between Flange Meter only
4.5050	¾" and smaller
4.303	7/8" and larger
4.304	For RJ Meters only

Warranty

WARRANTY-LIMITATION OF LIABILITY: Seller warrants only title to the product, supplies, and materials and that, except to software, the same are free from defects in workmanship and materials for a period of one (1) year from the date of delivery. Seller does not warrant that software is free from error or that software will run in an uninterrupted fashion. Seller provides all software "as is". THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Seller's liability and Purchaser's exclusive remedy in any case of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any product, software, supplies, or materials on their return to Seller or, at Seller's option, to the allowance to the customer of credit for the cost of such items. In no event shall Seller be liable for special, incidental, indirect, punitive or consequential damages. Seller does not warrant in any way products, software, supplies, and materials not manufactured by Seller, and such will be sold only with the warranties that are given by the manufacturer thereof. Seller will pass only through to its purchaser of such items the warranty granted to it by the manufacturer.

Notes

Notes

Threaded Installation Manual
Effective: March 11, 2004

Revision 0
Supercedes: May 2003