




Rope Filter Lift Tool

Operating Instructions

Model UT-9



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John J. Flynn, Operations Manager Date

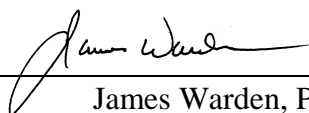
Approved By:  06/15/12
James Warden, President Date

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Drawing TN-1687 Rope Filter Lift Tool
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ROPE FILTER LIFT TOOL

(Model UT-9)

Operating Instructions

1.0 INTRODUCTION

One of the advantages of TRI NUCLEAR Underwater Filter/Vacuum Units is the ability to change-out depleted filter cartridges while the unit is still submerged on the bottom of the pool.

TRI NUCLEAR has designed a special “Rope Filter Lift Tool” Model UT-9, to change out filters underwater. A 50ft stainless steel chain, nylon line, (or equivalent) is attached to the Rope Filter Lift Tool to allow for fast and easy filter change outs.

2.0 DESCRIPTION

The Rope Filter Lift Tool is shown on Dwg. TN-1687. The left view shows one of the two openings in the side of the housing allowing the fingers to extend out to catch under the top cap of the filter cartridge for lifting. The center view describes the key parts of the tool. The right view is a picture of the tool suspended over a filter cartridge, ready to be lowered into the cartridge for remote transferal.



As the top pull rod is operated up or down in the tool housing, the hinged arms rotating on an internal cam will extend either in or out through the two open slots. The hinged arms will capture the filter for lifting, or release it for withdrawal of the tool.

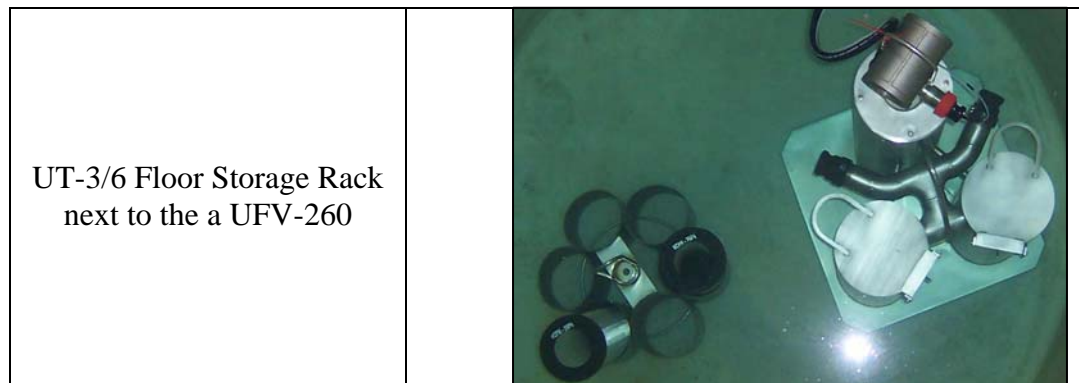
STAINLESS STEEL UTILITY CHAIN (UT-15)

The Stainless Steel Utility Chain (UT-15) is a 50ft lightweight stainless steel chain with a swivel clip on each end. It is designed to be used with the UT-9 Rope Filter Lift Tool, and the UT-5SP vac head.



3.0 OPERATION

- 3.1 To change-out an expended filter cartridge from an Underwater Filter/Vacuum Unit, first lower the Underwater Filter Storage Rack with new filter cartridges down to the bottom of the pool adjacent to the Underwater Filter/Vacuum Unit. Allow the filters to fill with water before lowering quickly into the pool.



- 3.2 Attach the UT-15, Stainless Steel Utility Chain, a nylon line, or equivalent rope to the top lifting eye of the Rope Filter Lift Tool, and lower it down until it lands on the top cover of the filter housing.
- 3.3 Rotate and move the tool until the bottom J-hook engages the lift handle on the filter housing top cover. Note that the hook locator tab welded on the top of the tool indicates from a top view the orientation of the open side of the hook

- 3.4 Raise the UT-15, Stainless Steel Utility Chain with tool to open and lay back the top cover and disengage the tool from the cover.



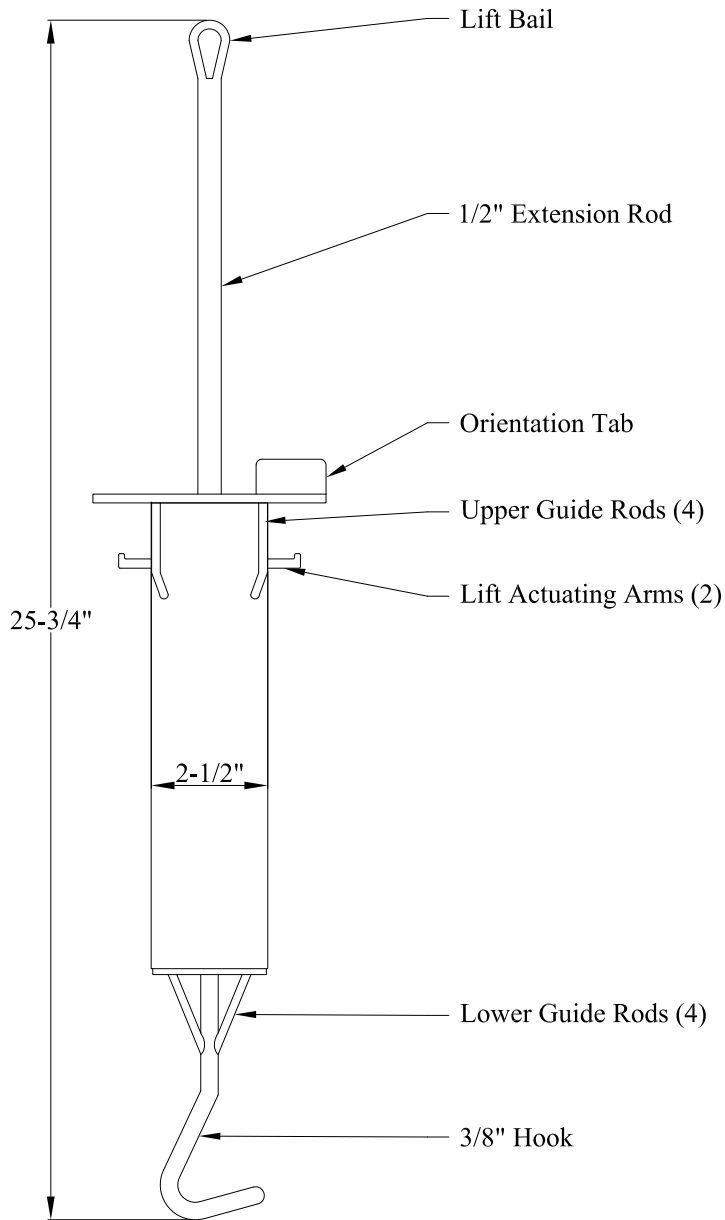
- 3.5 Next, lower the tool down into the open top of the expended filter cartridge until the top plate of the Rope Filter Lift Tool seats on the top of the filter cartridge. This is determined by a sudden decrease in the weight of the tool on the UT-15, Stainless Steel Utility Chain or nylon line.



- 3.6 Continue to partially lower the UT-15, Stainless Steel Utility Chain or nylon line ONLY another 4 or 5 inches. This will allow the side arms of the tool to extend out through the open slots on the side of the tool housing and engage the underside of the filter top cap.





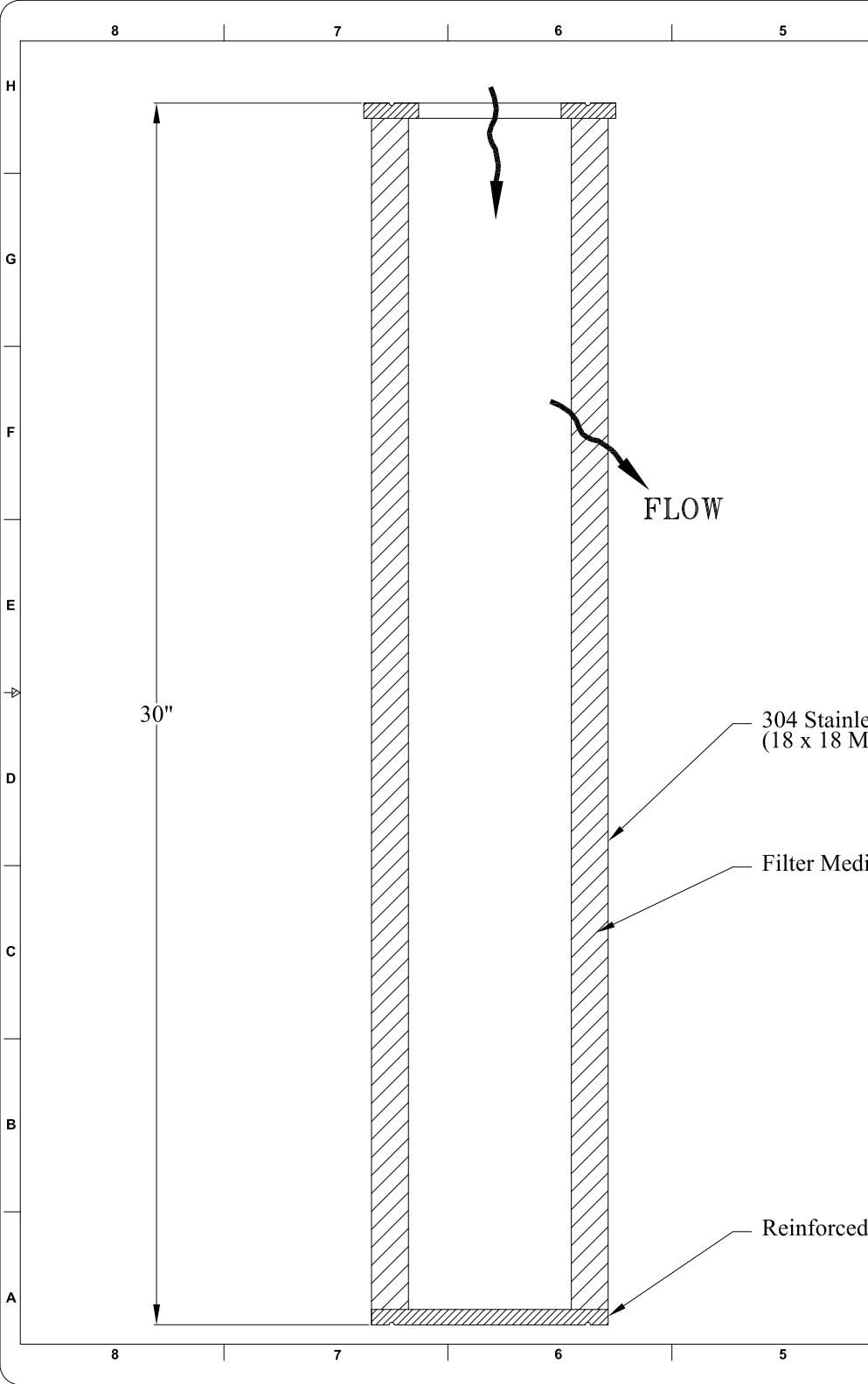
- 3.7 Pull up on the tool to raise the filter out of the filter housing, and lower it into one of the open tubes in the Underwater Filter Storage Rack.
- 3.8 Slack-off the UT-15, Stainless Steel Utility Chain or nylon line until the rope tool slide rod hits the bottom and all of the weight of the rope tool is transferred to the filter cartridge. This will rotate the internal cam fitting so the hinged arms will no longer extend out through the side slots in the tool housing.
- 3.9 Next, raise the UT-15, Stainless Steel Utility Chain or nylon line and lift the rope tool out of the filter cartridge.
- 3.10 Lower the rope tool down into a new filter cartridge, and repeat the steps to install a new filter into the housing.
- 3.11 Finally, re-engage the bottom J-hook of the rope tool onto the lift handle on the filter housing top cover, lift up to close the filter housing cover, and then disengage the hook. This will complete the filter change-out operation.



General Specifications:

- Designed for Grapple & Transport of Tri Nuclear Filter Cartridges Remotely Underwater or Out of Pool
- All Material - Stainless Steel
- Orientation Tab - To Show Open Side of Hook When Viewed from Above.
- Centering Rods - To Guide Tool into Filter Cartridge
- Hook - To Open Filter Cover
- Lift Bail - To Attach Rope or UT-15 Utility Chain
- Lift Arms - To Positively Latch onto Filter Cartridge
- Dimensions: 5" Dia. x 17-3/4" Fully Retracted
- Dimensions: 5" Dia. x 25-3/4" Fully Extended
- Weight: 6 Lbs.

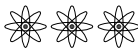

 Tri Nuclear Corp. P.O. Box 1130, Ballston Lake, NY 12019			
Rope Filter Lift Tool UT-9			
Model No. UT-9	Drawn Rick Russell Date 12/12/12	Brochure	
Dwg. TNC-015-07	Apv'd James L. Warden Date 12/12/12	Rev. -	Page 1 of 1



Filter Cartridge Data					
Part Number	Cartridge Size	Size Rating	Media Area	Media Type	Weight Each
VCPH-0.1G	0.1 μ (micron)	Nominal	52 Sq. Ft.	Micro Glass	4.5 Lbs.
VCPH-0.3PE	0.3 μ (micron)	Nominal	60 Sq. Ft.	Polyester	5.5 Lbs.
VCPH-1PE	1 μ (micron)	Nominal	62 Sq. Ft.	Polyester	4.5 Lbs.
VCPH-5PE	5 μ (micron)	Nominal	85 Sq. Ft.	Polyester	4.0 Lbs.
VCPH-10PE	10 μ (micron)	Nominal	64 Sq. Ft.	Polyester	4.0 Lbs.
VCPH-20PE	20 μ (micron)	Nominal	64 Sq. Ft.	Polyester	3.0 Lbs.

General Specifications:

- Size: 6" Diameter x 30" Long, Open Top, Solid Bottom
- Max Flow Rate per Filter: 150 GPM
- Max Operating Differential Pressure: 25 psid
- Max Operating Temperature: 140 °F
- Application: For all Tri Nuclear equipment used in PWR/BWR Plants.
- Designed for Inside to Outside Flow (Retains Crud)
- May be stored in Filter Storage Racks
- To be used with Tri Nuclear Rope Filter Lift Tool for remote grapple and transport.
- Packaged & Sold: Six Cartridges in a cardboard case.

 Tri Nuclear Corp. P.O. Box 1130, Ballston Lake, NY 12019			
Standard Tri Nuclear Filter Cartridge			
Model No. VCPH-*	Rev. Date Rick Russell 01/08/15	Brochure	
Dwg. TNC-019-02	Apv'd Date James L. Warden 01/08/15	Rev. B	Page 1 of 1