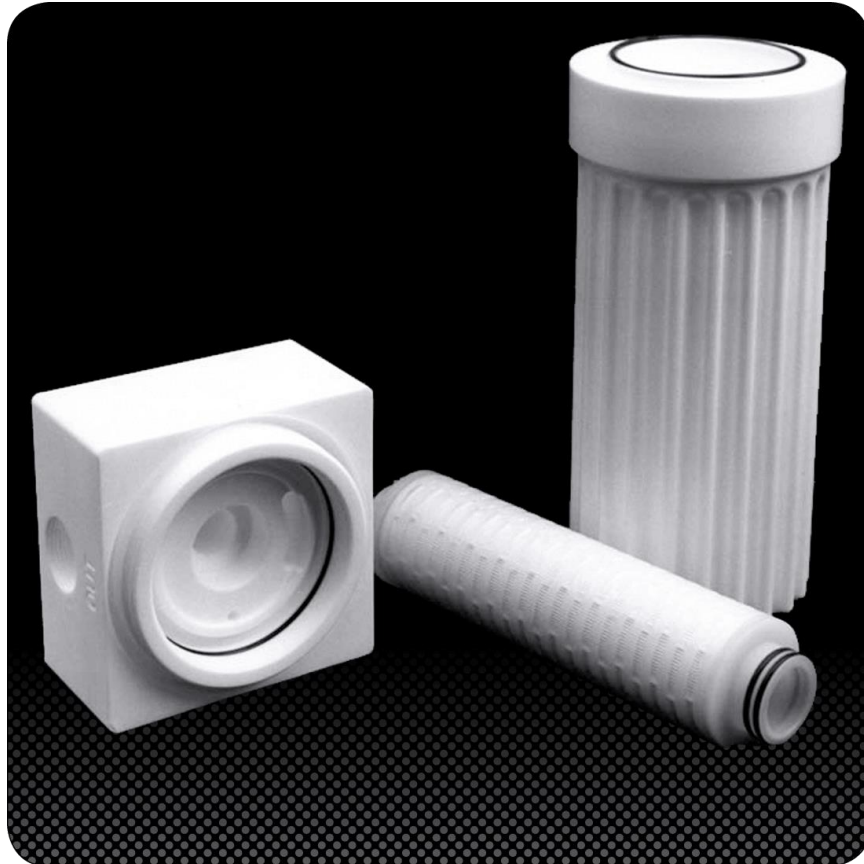


# *Gauntlet Filter Housings Owner's Manual*



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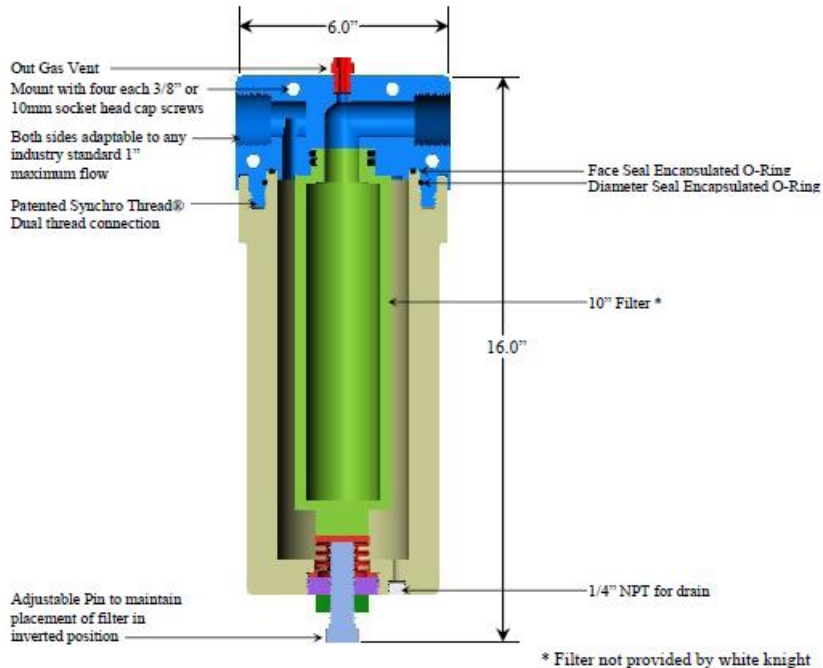
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## Overview



Wrench sold separately



# 1 Introduction

## Thank You for Purchasing White Knight Products

You have purchased a White Knight product that has been designed to our exacting specifications and built by a team of technicians with the highest commitment to quality!

White Knight is the world leader in zero-metal, ultra high-purity pumps and continues to drive the industry with new technology and products. Since the inception of White Knight in 1995, we have been awarded over 14 US patents for our designs and have multiple other patents pending! White Knight currently produces over 30 sizes/models of pumps in varying materials to meet our customers' stringent requirements in numerous applications including ultra-high temperature re-circulation; slurry and high pressure chemical delivery systems.

White Knight has been the recipient of multiple prestigious industry awards for its designs and continues to lead the industry in quality because White Knight manufactures products from raw material to finished goods in our own facility located in Kamas, UT. This allows us to rigorously manage our quality assurance process to ensure that our strict cleanliness procedures are always followed and that components are built using consistent methods and conditions to make our products reliable and consistent.

Our strict process controls include assembling and testing our products in a class 100, temperature and humidity-controlled cleanroom. White Knight products also pass functional tests and are then dried with CDA and double bagged in the cleanroom to ensure cleanliness and operational integrity.

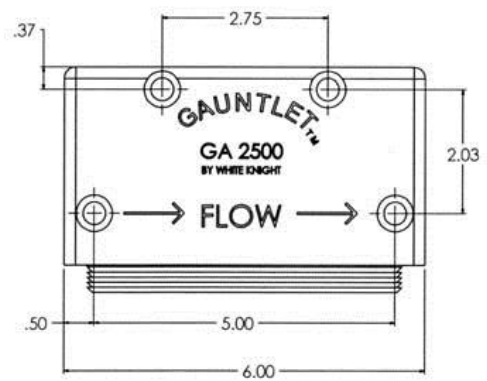
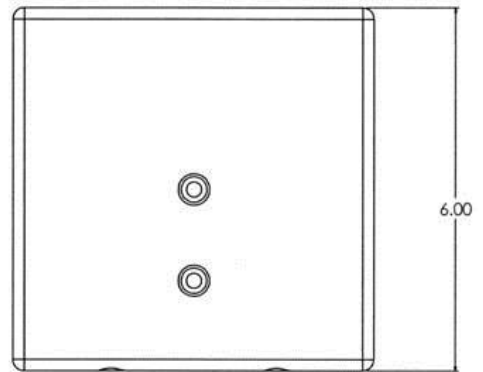
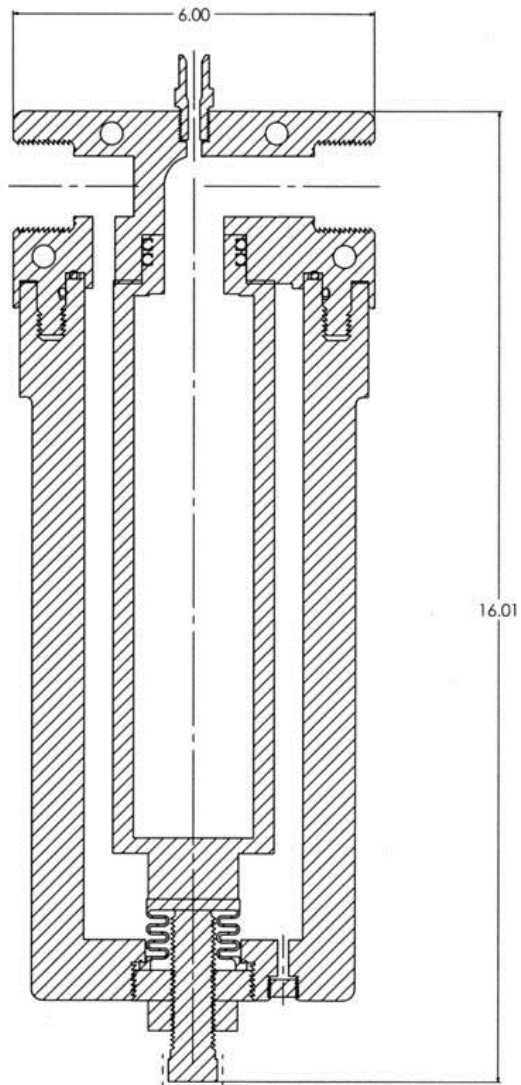
Before installing your White Knight product, please carefully review the product manual. There are many helpful hints and ways to optimize the set up and use of your White Knight product as well as instructions and requirements for installation. In addition, there are many accessories in this manual will enhance the functionality of your White Knight product.

Our team has gone to great lengths to provide you with the highest quality products at the best value and we back them up with excellent warranties and world class support! We hope you agree our products will serve your exacting needs and meet your stringent requirements every time you use a White Knight Product.

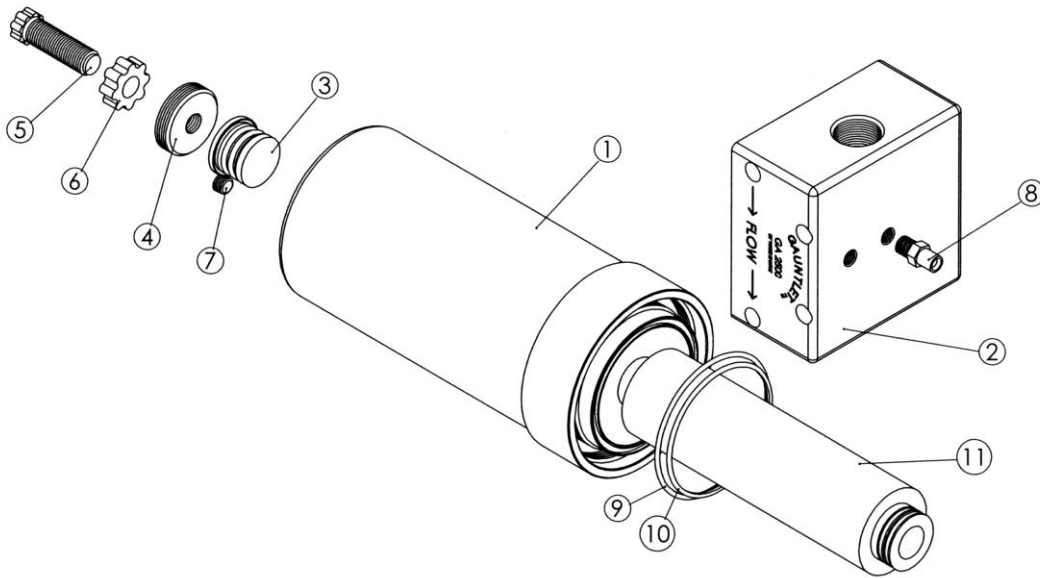
Sincerely,

John Simmons  
President  
White Knight Fluid Handling, Inc.

## 2 Dimensions



### 3 Exploded View and Bill of Materials



Item #	Description	Part #	Material
1	Bowl	FH-101	PTFE
2	Cap	FH-102	PTFE
3	Bellows	FH-106	PTFE
4	Bellows Cap	FH-105	PTFE
5	Jack Screw	FH-104	PTFE
6	Lock Nut	FH-103	PTFE
7	1/4" NPT Plug	FH-001	PTFE
8	Tubing Connector*	N/A	N/A
9	O-Ring	FH-107-2	PFA Encapsulated Viton®
10	O-Ring	FH-107-1	PFA Encapsulated Viton®
11	Filter*	N/A	N/A

\* Not Supplied By White Knight

## 4 Installation Instructions (GA2500)

1. Prepare the cabinet wall or other mounting panel by installing inserts for 3/8-UNC or 10mm socket head cap screws into the dimensions specified on the accompanying page. Recommended installation of the Gauntlet Filter Housing is with the writing from the cap in upright position, viewable from the front. Approximate weight of the assembly is 19 lbs (not including liquid or filter) so holes drilled and tapped in plastic are not sufficient, especially when consideration is made of forces exerted when tightening and loosening the filter housing bowl (long piece that looks like a column).
2. Install cap (2) (square part with writing) by using four 3/8-UNC (or 10mm) by 5 inch (13 cm) long stainless steel socket head cap (allen wrench type) screws. (end of screws will protrude ½ inch past the filter housing cap into the inserts)
3. Hook up inlet and outlet tubing as well as out gassing vent lines as desired. If inlet and outlet tubing connectors are not of the type desired, Do not attempt to modify or attempt to screw male NPT tubing connectors into the filter housing cap. Irreparable damage to the cap will occur! If a female NPT connection is desired, adapters are available from White Knight. Many other types of adapters are also available from White Knight. Please contact White Knight if a different type of connection is needed.
4. Loosen scalloped lock nut (6) on Jack Screw (5) and turn Jack Screw outward until bellows (3) can be completely compressed without seating on the Jack Screw.
5. Insert Filter (11) into Filter Housing Cap (2).
6. Check for proper placement of the diameter sealing encapsulated o-ring (9) in filter housing cap (2).
7. Place face sealing encapsulated o-ring (10) in o-ring groove located on the top of the filter housing bowl (1).
8. Turn filter housing bowl (1) into filter housing cap (2). Take great care to not cross thread the cap and bowl! Torque with filter housing wrench (supplied by White Knight, P/N GAT100) until o-rings are compressed. The assembly may begin to tighten up before the o-rings compress especially after thermal cycling. PTFE parts have a tendency to not maintain their shape (going out of round in this case) when thermal cycled. The design of Gauntlet Filter Housings accommodates this issue by the use of patented synchronized threads, which force everything back into shape during re-assembly, but one of the side effects is that the threads may be a little tight and/or difficult to start especially over time.
9. Install drain line connection (7) in bottom of housing bowl (1) as desired.
10. Turn in Jack Screw (5) until bellows seats against filter. This is what ensures that the filter does not fall out of the cap in the event of thermal expansion and contraction of the filter housing cap caused by thermal cycling. Do not ever extend the bellows. White Knight accommodates different lengths of different brands of filters by the use of different lengths of bellows. If filter type is not specified at the time of ordering a bellows for Pall filters is used. If for instance a bellows for Pall filters is used with Millipore filters and an attempt is made to over extend the bellows to accommodate the extra space, damage will occur to the bellows.
11. After seating the Jack Screw (5) twist the scalloped nut (6) upward and finger tighten against the bowl (1). This will stop the Jack screw from vibrating loose.
12. When changing out filters in the Gauntlet filter housing, the first step should always be to loosen the scalloped nut and Jack Screw (even the complete removal of the Jack Screw will not cause a leak as the bellows acts as a seal). Filters from the same filter manufacturer vary in length. This being the case, care must be taken to accommodate the longest filter manufactured by the particular filter manufacturer by the outward adjustment of the Jack Screw. This ensures that upon reinstallation of the bowl into the cap after a filter change, that the o-rings are compressed before the bellows contacts the filter. After installing and tightening the bowl into the cap, the Jack Screw must then be twisted inward until the bellows contacts the filter (length variation between filters of a different length by the same manufacturer are accommodated by flex in the bellows). The Scalloped Nut must then be twisted and tightened against the bowl to keep the Jack Screw from vibrating or working its way loose.



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KNIGHT™**

.....*simply driven™*