

## RUBY ORIFICE AND FILTERED INSERTS



As technology demands precision and smaller tolerances, engineers are turning to Bird Precision micro-drilled inserts. These inserts are excellent for directly inserting into manifolds, valve bodies or instrument fittings. Sapphire and ruby orifices are swaged in place by a proprietary method for strength and sealing. Sapphire and ruby orifices are laser drilled and wire lapped. As a result, they are extremely round, sharp-edged and burr free. Bird Precision synthetic sapphire or ruby orifices feature zero porosity, high temperature tolerance and wear resistance, and are almost chemically inert. These orifices exhibit highly repeatable flows from less than .5 cc/min and offer the industry paradigm for strength and dependability.

Please contact a knowledgeable Bird Sales Representative at (800) 454-7369 with any questions you might have or to inquire about having Bird Precision design a custom fitting to your specifications.



**Threaded orifice inserts** are available in a variety of precision threads, ranging from 2-80 through .25 NPT pipe fitting. Threads are available in brass and stainless steel. NPTs make excellent high-wear nozzle for hydraulics, high-pressure, and high-wear applications. Brass threaded orifices are finding use in many deep bore applications and cylinder mount orifice designs. Sizes are available from .00029" through .081" ID.

Part #	Description	
84032	6 - 32 x .190"	BRASS
83240	10 - 32 x .195"	BRASS
82513	10 - 32 x .195"	STAINLESS STEEL
82513	SP10 - 32 x .195"	TITANIUM
82431	M3 x .120"	BRASS
82373	12 - 24 x .250"	BRASS
82043	5/16 - 24 x .250"	BRASS
82649	1/16 - 27 x .260"	NPT 303
82754	1/8 - 27 x .290"	NPT 303
82608	1/8 - 27 x .290"	NPT BRASS
82129	1/4 - 18 x .450"	NPT BRASS



**Bird press-in and seal barb orifice inserts** are perfect for both inboard and outboard mounting into plastic molded components. They can be directly mounted into valves or manifolds. Sizes are available from .00029" through .081" ID.

Part #	(diameter) (length)
82062	.084 x .120"
82802	.100 x .145"
82563	.095 x .125"
31117	.118 x .125"
31145	.158 x .100"
31779	.192 x .190"
31649	.219 x .225"
31801	.223 x .192"



**Tapered plug brass orifice inserts** are ideal for inboard mounting directly into brass, stainless and aluminum components for valves, manifolds and system apparatus. Slightly tapered leads ease insertion and ensure insertion alignment. Sizes are available from .00029" through .081" ID.

Part #	(diameter) (length)
82520	.078 x .083"
82776	.094 x .120"
82284	.112 x .129"
83711	.125 x .109"
83842	.156 x .190"
82742	.204 x .150"

Ask a Bird technician for advice on proper hole sizing.

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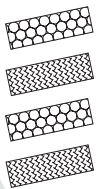


**Stainless steel tapered plug orifice inserts** are ideally suited for corrosive high-wear applications, currently finding use in the analytical, chemical and control industries. Sizes are available from .00029" through .081" ID.

Part #	(diameter) (length)
82571	.094 x .120"
31384	.112 x .120"
82015	.125 x .120"
82742	.204 x .150"
82073	.250 x .125"
82408	.393 x .125"

### Filtered Orifice Inserts and Fittings

- Part #**      **Description**
- RB-82264:** .090 diameter brass insert with ruby orifice is available with various micron filter sizes. This part is designed for direct press fit into brass and stainless housings, manifolds and fittings.
- RB-82284:** .112 diameter brass insert with ruby orifice is available with various micron filter sizes. This part is designed for direct press fit into brass and stainless housings, manifolds and fittings.
- RB-82229:** .204 diameter stainless press in plug orifice available in various stainless steel micron filter sizes with ruby and sapphire orifices. Designed for press fit into brass, stainless and plastic manifolds and fittings.
- RB-82745:** .097 diameter barbed brass insert with ruby orifice and various stainless steel micro screen filters. Designed for direct press fit into plastic manifolds and fittings.
- RB-82184:** Push-to-connect fitting. Designed for various tube sizes. Available also in various tube-to-threaded ports. Available with stainless steel micron screen and ruby orifice. This is a complete fitting.
- RB-82715:** In-line fitting for 1/8" flexible tube. Available with ruby orifice in various stainless steel micro screen filter sizes.
- RB-82464:** 10-32 threaded orifice and filter insert, with various stainless steel micron filter sizes available, and various ruby orifices available. Other thread sizes available as well. Please note this is a dual-filtered orifice filter assembly.
- RB-82118:** Dual-filtered orifice assembly with ruby orifice, various micron filter sizes available. Plastic fitting for 1/16" I.D. flexible tube to 10-32 thread. Other plastic tube fittings also available in dual filtered mounts.



### Filtered Inserts

Because many of Bird Precision's orifice products are in micron sizes, our customers have asked for filtration to protect against clogging and contamination. Bird Precision has introduced a number of cartridges, which include both the orifice and the filter. These cartridges are easily retrofitted into most of the standard fittings and inserts currently offered in our wide range of products.

Typically, the orifice is mounted on one end of the cartridge with the filter on the opposite end. The orifice assembly shown features a dual filter on either side of the orifice for maximum protection in an oxygen regulating situation.

The majority of our filters are micro screen filters using a stainless steel wire mesh. This type of product allows for the least amount of back pressure because of the open area, as opposed to other more restrictive types of filtration media.

Wire mesh filters are available in 5 micron, 10 micron, 25 micron, 43 micron, 73 micron, and 100 micron average sizes.

Other filter media currently utilized by Bird Precision are porous plastic, PVDF, sintered bronze, plated sintered bronze, and plastic mesh.

Please feel free to ask a Bird Precision customer service representative for more details on cartridges, fittings and offerings which include filtration.

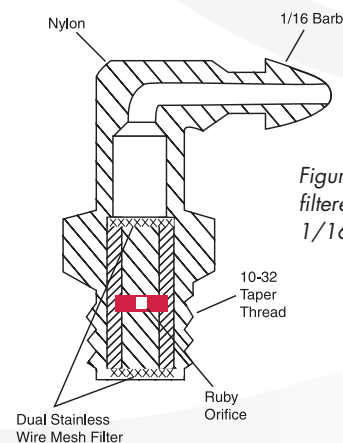


Figure depicts a typical dual filtered fitting packaged for 1/16 barb to 10-32 thread.