October 30, 2019

"Inline Filter" Firearm Silencers

This information is provided to assist ATF personnel in identifying devices marketed as "inline filters" that are actually firearm silencers. This information is not intended to replace an official Firearms Technology Criminal Branch (FTCB) report of technical examination for classification purposes under the Gun Control Act (GCA) or National Firearms Act (NFA).

As background, the GCA defines the terms "**firearm silencer**" and "**firearm muffler**" to mean, "*...any device for silencing, muffling, or diminishing the report of a portable firearm, including any combination of parts, designed or redesigned, and intended for use in assembling or fabricating a firearm silencer or firearm muffler, and any part intended only for use in such assembly or fabrication.*" (See 18 U.S.C. § 921(a)(24).)

ATF Firearms & Ammunition Technology Division Technical Bulletin 17-02 addressed various types of filters used as "solvent traps" and "firearm silencers." Bulletin 17-02 determined that an unmodified "spin-on" automotive filter is suitable for use as a "solvent trap." With regard to an "inline fuel filter" (IFF), the bulletin acknowledged holes on each end but, relying on solid filter interior, stated "*Unmodified fuel filters, which have a solid interior, are recognized as having a legitimate purpose as "solvent traps" because, like oil filters, they have no hole that passes directly through and they can therefore collect solvent and debris. If modified by either drilling or shooting out the solid center material, the fuel filters could be classified as firearm silencers.*"

Recently, FTCB has observed an increased number of criminal cases involving firearm silencers manufactured from IFFs. This increase in the use of IFFs as silencers, as well as the need for more thorough analysis of these items, prompted FTCB personnel to clarify the classification of inline filters purportedly used as solvent traps.

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Solvent traps

Legitimate solvent traps are devices attached to the muzzle of a firearm barrel designed to catch or "trap" dirty cleaning solvent pushed through the barrel from the chamber end and out through the muzzle. Solvent traps are intended to prevent solvent from dripping, spraying, or spattering when pushed out the muzzle end of a firearm barrel. **The front end-cap of a solvent trap must be solid and have no hole that will allow a projectile to pass-through (including "pilot" holes that can be widened to allow a projectile to pass-through or marks indicating the location to drill such a hole). Devices that have a hole in or indexing mark for a hole in the front end-cap are classified as a "firearm silencer" under the NFA.**

Inline filters

In contrast to spin-on filters, IFFs have holes at both ends and are specifically designed to allow fluid to pass through; therefore, inline filters are not objectively suitable for use as solvent traps. Therefore, the only logical purpose for attaching an IFF to the muzzle of a firearm is for use as a firearm silencer.

As referenced in Bulletin 17-02, IFFs are designed to use filter elements or flow valves without center holes. This is a design characteristic IFFs share with some firearm silencers. For example, U.S. Patent 4,530,417 mentions creating a center hole through baffles or wipes installed in a firearm silencer using the first round fired through the device. FTCB personnel tested several commercially sourced IFFs and found that an *unmodified* IFF attached to the barrel of a firearm functions to reduce the report of a portable firearm utilizing this method and would therefore meet the definition of a "firearm silencer."

Fuel dispensing system hoses and nozzles typically utilize 3/4" or 1" National Pipe Tapered (NPT) threads, but threaded firearm barrels are not compatible. Adapters are therefore needed to attach IFFs to firearms (see chart below). FTCB research found no fuel fittings of the same size and pitch as those commonly found on firearm barrels. NOTE: Multiple adapters may be needed between the barrel and IFF.

Accordingly, FTCB has determined that an inline fuel filter possessed with a firearm modified to accept it, or with an adaptor(s) designed to affix the filter to the muzzle of a firearm (multiple adapters may be required), demonstrates intent to use the inline fuel filter to silence, muffle, or diminish the report of a portable firearm; therefore, it is a "**firearm silencer**" as defined. Further, as discussed below, an inline fuel filter with an end-cap having threads of the same size and pitch of those commonly found on threaded firearm barrels is a "**firearm silencer**" as defined.

YouTube contains a plethora of videos demonstrating IFFs (attached to firearm barrels) being used as silencers. Additionally, there are numerous websites on the Internet marketing various parts and kits intended for use in IFFs. A simple Google search for "NAPA 4003" will return

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multiple sites advertising items promoted as "fuel filters" that have no filtering capability. Similar parts and kits are also marketed as "solvent traps," "solvent trap accessories," or "dry storage containers."

Such deceptive advertisements sometimes include an "NFA Warning" or a legal disclaimer regarding the use or modification of these devices as, or in the fabrication of, firearm silencers. The inclusion of these disclaimers or statements, as well as customer comments and reviews, suggest the seller's knowledge of the intended end use of those items.

Some of the devices marketed as IFFs come assembled with end-caps threaded with the same sizes as found on firearm barrels, which negates the need for a thread adapter. These devices may contain the same threads in each end-cap, different sized threads in each end-cap, or even a threaded rear end-cap along with an unthreaded front end-cap.

EXAMPLES OF "FIREARM SILENCERS"

Threaded adapter and NAPA 4003 IFF

Threaded adapter for use with spin-on and inline filters. Multiple external thread pitches for use with different sized threads. Most common internal thread pitches are: 1/2-28 or 5/8-24 for compatibility with threaded firearm barrels. The adapter pictured is for use in attaching various sized automotive filters and is externally threaded with: 3/4-16, 13/16-16, and 3/4NPT (tapered pipe threads). NAPA/WIX IFFs are assembled with 3/4NPT internal threads in both end-caps.



Inline filter marketed as NAPA 4003

End-caps typically contain internal threads compatible with threaded firearm barrels. Most common sizes are 1/2x28 or 5/8x24. Filter element is too short for housing and will allow fluids to bypass without filtering. May have different size threads in each end cap or may have threads in only one end while other end has an unthreaded hole. End-cap may be marked inside or out with thread size.

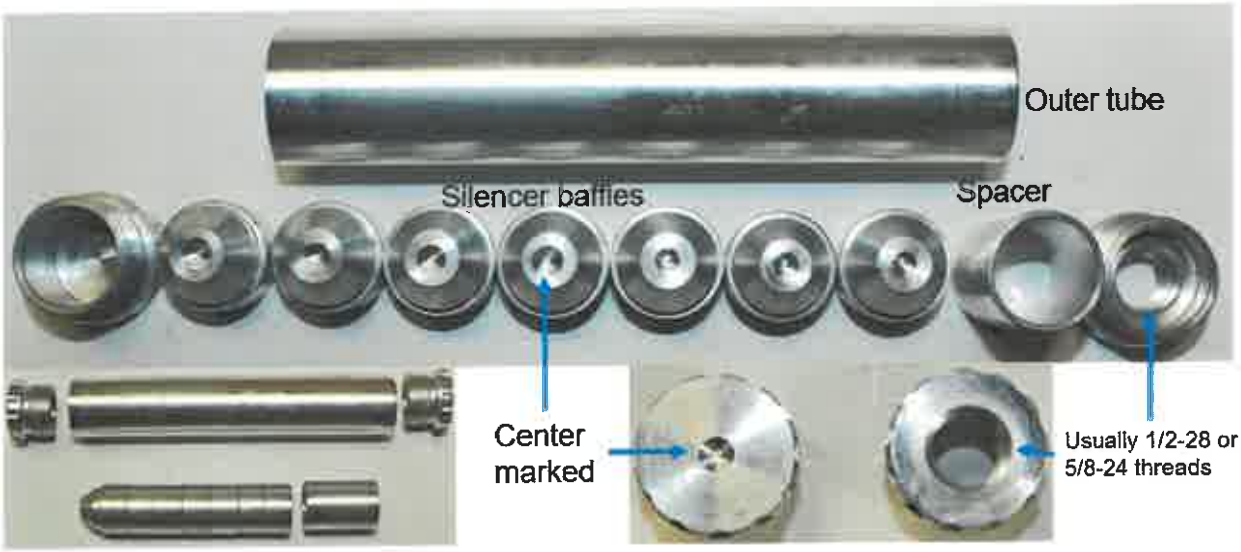




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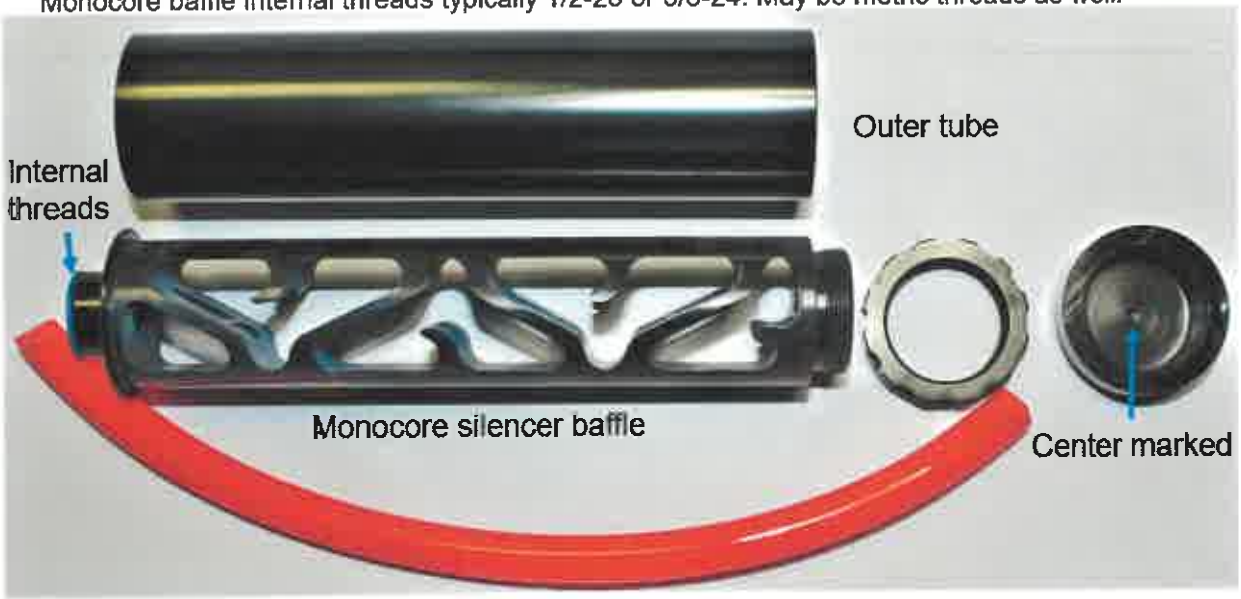
Marketed as NAPA 4003 filter

No filtering capability. Multiple silencer baffles and end-cap with center indicated. Includes a spacer to create a "blast chamber" at barrel end of device, a known silencer feature.



Marketed as NAPA 4003 filter

No filtering capability. Monocore silencer baffle with one end threaded for attachment to firearm barrel. Pictures on website may include mock-up of device, with hose attached, on a car or motorcycle engine. Includes an open nut to retain tube over monocore baffle and a closed end-cap with a mark indicating the center, and a length of hose. No fittings for included hose. Monocore baffle internal threads typically 1/2-28 or 5/8-24. May be metric threads as well.



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The following list of known firearm barrel thread sizes is not all-inclusive and intended only as a general reference.

AMERICAN STANDARD THREADS

THREAD	APPLICATION	CALIBER	TYPE
1/2-20 RH	Tec 22	.22 Caliber	Pistol
1/2-20 RH	CZ-452/455	.22 / 17 HMR	Rifle
1/2-28 RH	AR-15, M-16, AR-180	.223 / 5.56	Rifle
1/2-28 RH	Most Threaded .223 / 5:56		Rifle
1/2-28 RH	Most Threaded .22's		Rifle / Pistol
1/2-28 RH	Most Threaded 9mm		Pistol
1/2-28 RH	Ruger 10/22 Tactical	.22 Caliber	Rifle
1/2-28 RH	Newer Mini 14	.223 / 5.56	Rifle
1/2-28 RH	MPA57	5.7x28 MM	Submachine Pistol
1/2-28 RH	MPA "Mini"	9MM	Submachine Pistol
1/2-36 RH	AR-15, M-16, AR-180	9mm	Rifle
9/16-24 LH	FN FAL	.308 Caliber	Rifle
9/16-24 RH	Most Threaded .40		Pistol
9/16-24 RH	AR Grendel	6.50	Rifle
9/16-24 RH	Older Mini 14	.223 / 5.56	Rifle
9/16-24 RH	L1-A1	.308 Caliber	Rifle
9/16-24 RH	Glock 20	10 mm	Pistol
9/16-24 RH	H&K 94	9x19mm	Rifle
9/16-24 RH	MP5	9mm	Submachine Pistol
.578x28 RH	Most Threaded .45 Caliber		Pistol
.578x28 RH	Threaded 1911	.45 Caliber	Pistol
5/8 x 11 RH	M11/M12	.380 Caliber	Submachine Pistol
5/8-24 RH	Most Threaded .308		Rifle
5/8-24 RH	Many Threaded .30		Rifle
5/8-24 RH	UZI Carbine/ SMG	9mm	Rifle
5/8-24 RH	Ruger Mini 30	.30 Caliber	Rifle
5/8-24 RH	AR-10 / M14	.308 Caliber	Rifle
5/8-24 RH	300 Blackout	.300 Caliber	Rifle
5/8-24 RH	AR-15	7.62x39	Rifle
11/16x16 RH	MPA .45 Caliber Rifles		
11/16x24 RH	.450 Bushmaster		Rifle
11/16x24 RH	Alternative .308 Threading		Rifle
11/16x24 RH	Alternative bull barrel Threading		Rifle
3/4-10 RH	M10 / M11	9mm	Submachine Pistol
3/4-24 RH	Desert Arms Tactical Rifles		
7/8" x 9 RH	MPA10	.45 Caliber	Submachine Pistol
7/8" x 14 RH	All Barretts & EDM	.50 BMG	Rifle
1" x 14 RH	AR450	.50 BMG	Rifle
1" x 14 RH	McMillian TAC-50	.50 BGM	Rifle

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METRIC THREADS

THREAD	APPLICATION	CALIBER	TYPE
M8 x .75 RH	Walter p22	.22 Caliber	Pistol
M8 x .75 RH	M&P 22	.22 Caliber	Pistol
M8 x .75 RH	Colt/Umarex 1911 A1	.22 Caliber	Pistol
M8 x .75 RH	Colt Gold Trophy	.22 Caliber	Pistol
13mm x 1 LH	Steyr Aug	.223 /5.56	Rifle
13mm x 1 RH	Galil	.223 / 5.56	Rifle
13mm x 1 RH	Galil	.308 / 7.62	Rifle
13mm x 1 RH	Older Glock 26	9x19mm	Pistol
13.5mm x 1 LH	Sig P228/P229/P239	9mm	Pistol
14mm x 1 LH	AK-47	7.62x39	Rifle
14mm x 1 RH	VZ58	7.62x39	Rifle
14mm x 1 RH	Yugo SKS	7.62x39	Rifle
15mm x 1 RH	H&K 91 / G3	7.62x39	Rifle
15mm x 1 RH	H&K 93 / 33 / G-53	5.56	Rifle
16mm x 1 LH	Threaded H&K .45 Barrels		Pistol
16mm x 1 RH	H&K Mark 23 (Socom)	.45 Caliber	Pistol
17mm x 1 RH	MAS 1949-56	.308 Caliber	Rifle
18mm x 1 RH	Sako TRG	.338 Caliber	Rifle
18mm x 1.5 RH	Accuracy International	.338 Caliber	Rifle
22mm x.75 RH	Saiga 12 Gauge		Shotgun
		7.62x39, 7.62x54	
24mm x 1.5 RH	AK-74	5.45x39	Rifle
		5.56x45	
26mm x 1.5 LH	PAP M92 / M85	7.62x39	Pistol

COMMON FILTER THREADS

THREAD	APPLICATION
3/4-16 RH	Ford, Dodge, & Jeep Spin-on Oil Filters
13/16-16 RH	Chevy & GM Spin-on Oil Filters
3/4 NPT	Standard Pipe fittings
3/4 NPT	Napa 4003 Inline Fuel Filter
3/4 NPT	Wix 24003 Inline Fuel Filter

This information is intended to assist ATF and law enforcement personnel in identifying items marketed as "inline filters" that are "firearm silencers" as defined. If you have any questions, please contact the Firearms & Ammunition Technology Division at (304) 616-4310.

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