

CAT/DIRTY_DAVE/MANUAL

DD

RATINGS AND RESTRICTIONS

Ratings and restrictions for a specific barrel length, caliber or deeming a product full-auto rated, is an incomplete truth. There are too many variables in the equation for us to tell you what a suppressor is properly rated for (or what it isn't rated for). Instead, C.A.T prefers to give the user the ability to Do-It-Yourself when ratings and restrictions come into play. Let us then, give you the tools to find out if your intended system will fall within our restrictions. Below, you will find the following descriptions of considerations for our Titanium and Inconel Dirty Dave suppressors:

1. Cartridge Designation
2. Barrel Length
3. Concentricity
4. Schedule of Fire – MATERIAL SPECIFIC FACTS
5. Wear
6. Sparking

1. CARTRIDGE DESIGNATION

C.A.T's Dirty Dave (DD) 7.62x51mm (.308Win) suppressors are designed specifically for the .308Win cartridge pushing a projectile in the range of 2600-2900fps. The DD is not designed for cartridges/loads pushing past 3200fps or with a projectile diameter greater than 7.82mm (.308in).

While **very few** users will have access to the equipment required to measure chamber pressure, it is a simple task to look up the maximum chamber pressure for the cartridge you are firing on the web. Any SAAMI approved cartridge will include this as part of the documentation. If the cartridge you are intending to use with the Dirty Dave falls below the velocity, pressure and diameter of a .308Win (as described above), you are cleared to move to Step 2: Barrel Length.

2. BARREL LENGTH

C.A.T recommends that the user find their own barrel length restriction via the following method. If both your muzzle velocity and max chamber pressure fall under that of the .308Win (listed above), then you should also ensure that the projectile (bullet) is stable after leaving your barrel. Many shortened barrels – especially if they were cut aftermarket – have a twist rate that is commiserate with that of a much longer barrel. If the specific round you are firing has too little or too much twist (or too little velocity in the case of very short barrels), **the projectile has a significant propensity to become unstable in flight**. Think of a tightly spiraling football (stable) versus a football lobbed end-over-end (unstable). If your projectile is yawing or tumbling, it is almost always evident on paper. We recommend you shoot 5-10 rounds at a paper target somewhere between 25-50yds and inspect the holes created by the projectiles. While not a perfectly scientific test, if the diameter of the hole closely matches that of the bullet, then your projectile is most likely stable. If the hole is not circular, noticeably bigger than the projectile or you observe the profile of the bullet on the paper (keyholing), then no suppressor -including a C.A.T suppressor - should be used with that particular system (firearm and ammo).

Note: For best results, we recommend not grouping these shots. You are looking for the individual holes punched by the bullet and not a grouping of multiple shots in one hole.

If your projectile is stable and the velocity, pressure and diameter of the round fall under that of the .308Win, you should then also verify concentricity.

3. CONCENTRICITY

In this instance, concentricity shall be defined as the parallelism of the line-of-bore of both the host firearm (barrel) and the suppressor. If the bore of your rifle is not perfectly centered and perpendicular to the shoulder of your threads, the suppressor may be far enough out of parallel that a round exiting the barrel would strike a portion of the silencer. There are alignment rods sold in various places that will aid in checking the alignment of a suppressor and barrel/bore.

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If you prefer to gamble there is a more “field expedient” method that can be used at your own risk. While C.A.T recommends the use of a caliber appropriate bore alignment rod, you can also conduct a more cursory visual inspection as well. With the firearm unloaded and suppressor properly mounted, remove the barrel or bolt assembly from the firearm so that you can look down the proximal end (from the chamber not the muzzle) of the barrel. Aligning the chamber and muzzle similar to a set of ghost ring sights, center the exit pupil inside the ring of the chamber. If the end cap of the silencer appears to be out of center, do not shoot. Purchase an alignment rod or take the firearm and silencer into a gunsmith to inspect further.

Note: See Steps 13&14 of the Installation section of this manual for more information

Once your cartridge, barrel and concentricity are established, you’re cleared hot to do some shooting. In the next section, we will describe how to properly record your actual rate of fire for any titanium suppressor.

SCHEDULE OF FIRE (WARNING - MATERIAL SPECIFIC FACTS)

i. TITANIUM Ti6Al4V

- a. Full Auto or High Rates of Fire (HRF) (greater than 30 rounds per minute) are expressly discouraged, unless in life threatening self-defense situations, as the **DD Titanium** is a super lightweight, high performance suppressor dedicated to Low Rates of Fire (LRF), and the user should not exceed a maximum service temperature of approximately **650°F (343°C)**. Once this temperature threshold is reached, the suppressor should be allowed to cool down. Titanium Ti6Al4V has inherent material properties which give the material a lower heat conductivity rating, and the suppressor is susceptible to particle erosion and melting past this temperature limit. This is a material limit that should not be exceeded for any titanium Ti6Al4V silencer. If the user notices discoloration on the exterior discontinue use and allow it to cool down. **Do not dip the suppressor in water in an attempt to cool it down.**
- b. C.A.T recommends DD Titanium users invest in an infrared thermometer and create their own platform specific firing schedule, based on ammunition and barrel length. It is recommended to create this firing schedule by shooting five round groups, with one second intervals between rounds, then testing the temperature of the suppressor up to 550°F (288°C). At this operating temperature, the user should record the amount of time until the suppressor returns to 150°F (65°C). This would become the baseline firing schedule based on the user’s platform and ammunition type. Please note that once a firing schedule is established, changes made to the ammunition and/or host firearm (specifically barrel length) will alter that schedule.

2. INCONEL 718

- a. This model is a “duty” focused suppressor, able to support Full Auto or High Rates of Fire (HRF) but the user should not exceed a maximum service temperature of approximately **1100°F (594°C)**. Once this temperature threshold is reached, the suppressor should be allowed to cool down. The inherent material properties of Inconel 718 include a high heat conductivity rating, with abrasive wear, oxidation wear and delamination wear occurring past 1100°F (594°C). If the user notices discoloration on the exterior discontinue use and allow it to cool down. **Do not dip the suppressor in water in an attempt to cool it down.**
- b. C.A.T recommends DD Inconel 718 users invest in an infrared thermometer and create their own platform specific firing schedule, based on ammunition and barrel length. It is recommended to create this firing schedule by shooting five round groups, with one second intervals between rounds, then testing the temperature of the suppressor up to 1000°F (538°C). At this operating temperature, the user should record the amount of time until the suppressor returns to 150°F (65°C). This would become the baseline firing schedule based on the user’s platform and ammunition type.

RATINGS AND RESTRICTIONS

4. WEAR

C.A.T's Dirty Dave (DD) has a dedicated "waffle" style erosion interface at the end of the blast chamber. This is a sacrificial erosion wall, and users should not be concerned if they are seeing wear, this is designed to support the erosion caused by unburnt particulates (especially in short barrel platforms) and is designed to protect other internal areas inside of the suppressor.

5. SPARKING (Titanium Models Only)

Excessive white sparking may be noticed upon first use of an titanium silencer. This is largely due to microscopic Titanium dust from the Additive Manufacturing process. Over the course of use this white sparking will subside but will never fully disappear, particularly on short barrel platforms. Titanium white sparking is separate from flash and cannot be controlled by a flash hider or other methods, as it is a byproduct of Titanium being classed as a reactive metal. If Titanium induced white sparking is an undesirable factor in the suppressor's application, C.A.T recommends the use of our Inconel 718 model offerings, as Inconel 718 doesn't spark.

CAT/DIRTY_DAVE/1.375x24 HUB



1.375x24 HUB

MODEL: CAT/DD/A1
CALIBER: 762NATO
WEIGHT TITANIUM: 8.6 OZ (CORE) *
WEIGHT INCONEL: 16 OZ (CORE) *
OVERALL LENGTH: 5.75"
DIAMETER: 1.60"
MIN BARREL LENGTH (TITANIUM): 16"
MIN BARREL LENGTH (INCONEL): 13"
OPTIMIZED VELOCITY: 2900FPS
OPTIMIZED PLATFORM: 13" SIG MCX-SPEAR
TECHNOLOGY: SURGE BYPASS
RECOMMENDATION: RECCE RIFLE
FINISH: DLC
MOUNTING: 5/8x24 DIRECT THREAD (INCLUDED)

INSTALLATION

STEP 1

Remove the magazine from the firearm, then visually and manually check and clear the action and chamber of the firearm. Ensure the host firearm is unloaded at all times.

STEP 2

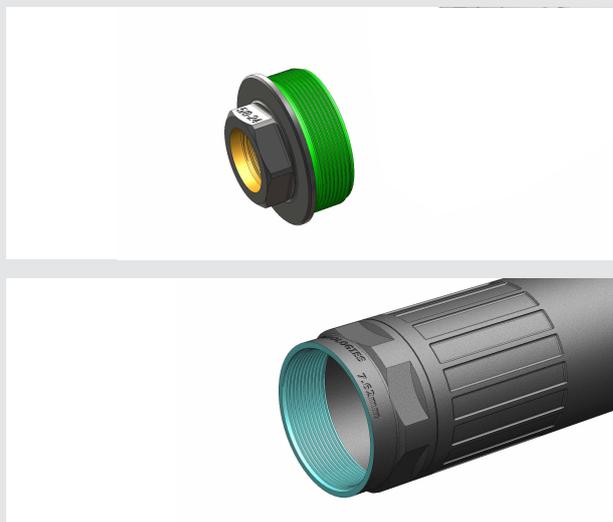
Always ensure the barrel thread and shoulders are clean and free of debris. To install the CAT 1x16LH QD muzzle device, clean and degrease barrel threads and make sure barrel shoulder is also clean (pink surfaces).



IF USING THE INCLUDED 5/8X24 DIRECT THREAD MOUNT:

STEPS 3,4 & 5

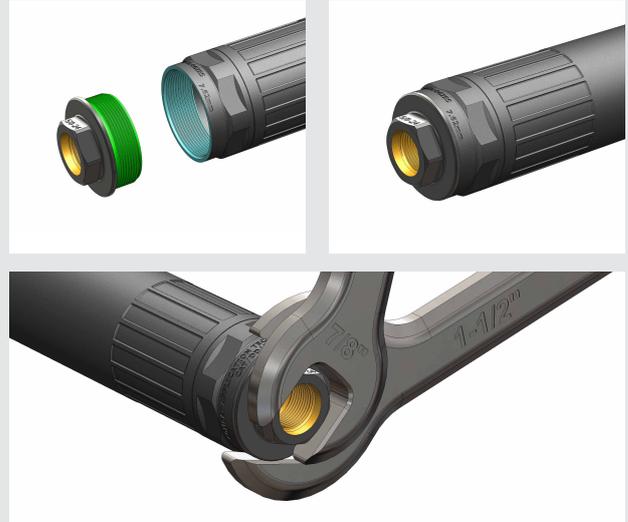
Prior to installing the 5/8x24 direct thread mount on the suppressor, inspect the mounting interface surfaces of the direct thread mount and ensure the threads and shoulders are clean and free of debris (gold and green surfaces). Ensure the CAT DD suppressor internal 1-3/8x24 (1.375x24) thread is clean and free of debris (blue).



INSTALLATION

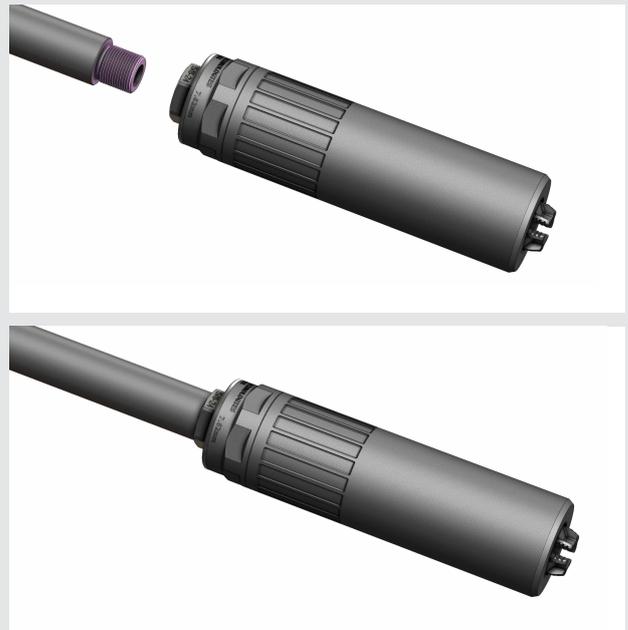
STEPS 6,7 & 8

Screw the direct thread mount into the back of the CAT DD suppressor and torque it down, with a 1-1/2" (1.500") wrench on the CAT DD wrench flats and a 7/8" (.875") wrench on the direct thread mount wrench flats, to 25-30ft/lb. If you choose to use a thread locker between the direct thread mount and the CAT DD, degrease the threads and allow the thread locker to fully cure before using the firearm.



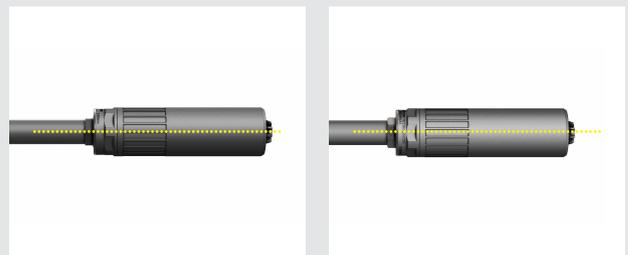
STEPS 9 & 10

To install the CAT DD with direct thread mount assembly onto the firearm, again ensure the firearm is completely unloaded and safe, then slide the assembly over the barrel and thread it on CLOCKWISE (right hand to tighten) torquing it down first by hand like you don't want it to come off, tightening the CAT DD direct thread mount assembly fully against the barrel shoulder. When installed by hand, you must check the suppressor repeatedly during use to ensure it doesn't come loose. To ensure the assembly won't come loose, torque the direct thread mount down to the barrel using a 7/8" (.875") wrench to 25-30ft/lb. If you choose to use a thread locker between the direct thread mount and the CAT DD, degrease the threads and allow the thread locker to fully cure before using the firearm.



STEPS 11 & 12

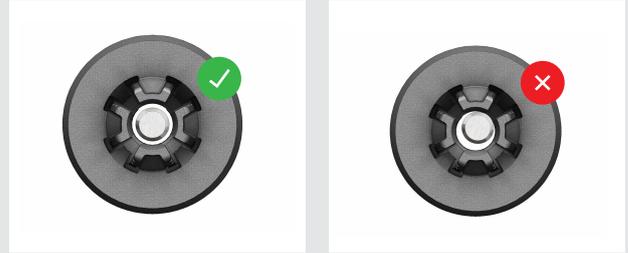
Visually inspect that the CAT DD with direct thread mount assembly is properly installed on the firearm barrel and that it's mounted straight to the centerline of the bore. Ensure the suppressor isn't canted in any way and that the CAT DD is fully shouldered against the barrel shoulder.



INSTALLATION

STEPS 13 & 14

Use a properly made, purpose built suppressor alignment rod to ensure the suppressor is properly mounted and concentric to the bore line.



***To remove the CAT DD with direct thread mount assembly from the host firearm barrel, wait for the suppressor to cool after use, ensure the firearm is completely unloaded and safe, then unscrew the suppressor COUNTER CLOCKWISE (left hand to loosen). If you experience the direct mount coming loose from the DD suppressor body, you may need to use additional torque between the two parts within spec, or you may use an optional thread locker. If you choose to use a thread locker between the direct thread mount and the CAT DD, degrease the threads and allow the thread locker to fully cure before using the firearm.**

IF USING THE CAT TSFX QD MOUNT (SOLD SEPARATELY):

STEPS 1 & 2

Prior to installing the CAT TSFX QD mount in the suppressor, inspect the mounting interface surfaces of the CAT TSFX QD mount and ensure the critical mounting surfaces are clean and free of debris (red/blue surfaces internal and green surfaces external - pay special attention to making sure the blue internal taper shoulder region is clean and free of debris). Ensure the CAT DD suppressor internal 1-3/8x24 (1.375x24) thread is clean and free of debris (blue).



STEPS 3,4 & 5

Screw the CAT TSFX QD mount into the back of the CAT DD suppressor and torque it down, with a 1-1/2" (1.500") wrench on the CAT DD wrench flats and a 1-3/16" (1.1875") wrench on the CAT TSFX QD mount wrench flats, to 25-30ft/lb. If you choose to use a thread locker between the CAT TSFX QD mount and the CAT DD, degrease the threads and allow the thread locker to fully cure before using the suppressor on a firearm.



INSTALLATION

STEP 6

Inspect the muzzle device and ensure the critical surfaces are clean and free of debris (green surfaces, especially the taper shoulder).



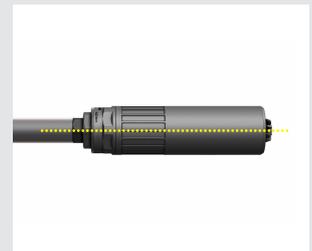
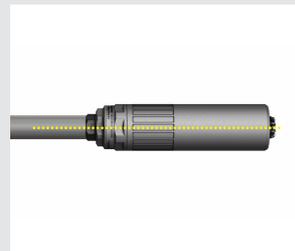
STEPS 7 & 8

To install the CAT DD with CAT TSFX QD mount assembly onto the firearm, again ensure the firearm is completely unloaded and safe, then slide the assembly over the CAT 1x16LH QD muzzle device (sold separately) and thread it on COUNTER-clockwise (left hand to tighten) and tighten the CAT DD strongly by hand to the muzzle device like you don't want it to come off, tightening the CAT DD fully against its taper shoulder interface. When NOAH is properly installed this taper shoulder interface will prevent loosening during use. If you choose to use a thread locker between the CAT TSFX QD mount and the CAT DD, degrease the threads and allow the thread locker to fully cure before using the firearm.



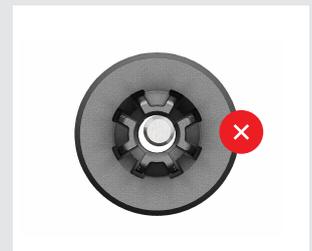
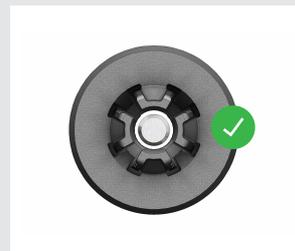
STEPS 9 & 10

Visually inspect that the CAT DD with CAT TSFX QD mount assembly is properly installed on the muzzle device and that it's mounted straight to the centerline of the bore. Ensure the suppressor isn't canted in any way and that the CAT DD is fully shouldered against the taper on the muzzle device.



STEPS 11 & 12

Use a properly made, purpose built suppressor alignment rod to ensure the suppressor is properly mounted and concentric to the bore line.



***To remove the CAT DD with CAT TSFX QD mount assembly from the muzzle device, wait for the suppressor to cool after use, ensure the firearm is completely unloaded and safe, then unscrew the suppressor **CLOCKWISE** (right hand to loosen). Left hand threads are used on the CAT 1x16LH QD muzzle devices so that when uninstalling the suppressor, the QD muzzle device will always stay on the host firearm rather than coming off and becoming stuck inside the suppressor. If you experience the TSFX mount coming loose from the DD suppressor body, you may need to use additional torque between the two parts within spec, or you may use an optional thread locker. If you choose to use a thread locker between the direct thread mount and the CAT DD, degrease the threads and allow the thread locker to fully cure before using the firearm.**



CAT/DIRTY_DAVE/1x16LH QD



1x16LH QD

MODEL: CAT/DD/A1
CALIBER: 762NATO
WEIGHT TITANIUM: 9.5 OZ (CORE) *
WEIGHT INCONEL: 17.7 OZ (CORE) *
OVERALL LENGTH: 6.1"
DIAMETER: 1.60"
MIN BARREL LENGTH (TITANIUM): 16"
MIN BARREL LENGTH (INCONEL): 13"
OPTIMIZED VELOCITY: 2900FPS
OPTIMIZED PLATFORM: 13" SIG MCX-SPEAR
TECHNOLOGY: SURGE BYPASS
RECOMMENDATION: RECCE RIFLE
FINISH: DLC
MOUNTING: SPOOKY 1 (INCLUDED)

INSTALLATION

STEP 1

Remove the magazine from the firearm, then visually and manually check and clear the action and chamber of the firearm. Ensure the host firearm is unloaded at all times.

STEP 2

Always ensure the barrel thread and shoulders are clean and free of debris. To install the CAT 1x16LH QD muzzle device, clean and degrease barrel threads and make sure barrel shoulder is also clean (pink surfaces).



STEP 3

Ensure the CAT 1x16LH QD muzzle device internal thread and shoulders are clean, degreased, and free of debris (gold surfaces). Coat the barrel threads with a high temperature thread locker, such as Rockset, according to that manufacturers instructions.



STEPS 4 & 5

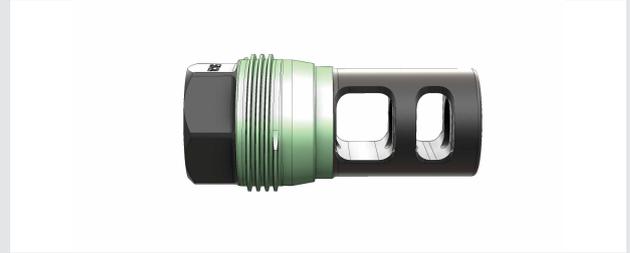
Screw the CAT 1x16LH QD muzzle device onto the barrel threads and torque it down with an 11/16" (.688") wrench to 25-30ft/lb. Allow the thread locker to fully cure before using the suppressor on a firearm.



INSTALLATION

STEP 6

Inspect the muzzle device and ensure the critical surfaces are clean and free of debris (green surfaces, especially the taper shoulder).



STEP 7

Prior to installing the CAT DD on the muzzle device, inspect the internal mounting surfaces of the CAT DD and ensure the critical mounting surfaces are clean and free of debris (red surfaces - pay special attention to making sure the blue taper shoulder region is clean and free of debris).



STEPS 8 & 9

To install the CAT DD, slide it over the muzzle device and thread COUNTER-clockwise (left hand to tighten) and tighten the CAT DD strongly by hand to fully engage the taper shoulder interfaces. When CAT DD is properly installed this taper shoulder interface will prevent loosening during use but it is highly recommended that users continue to check between cooling periods, as dirt and heat expansion can sometimes lead to interface separation.



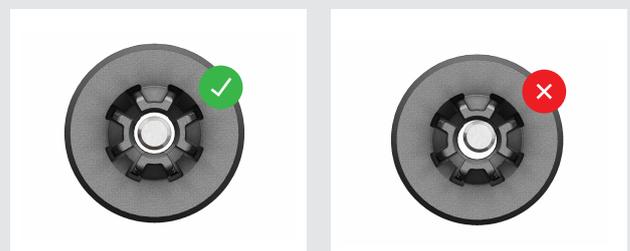
STEPS 10 & 11

Visually inspect that the CAT DD is properly installed on the muzzle device and that it's mounted straight to the centerline of the bore. Ensure the suppressor isn't canted in any way and that the CAT DD is fully shouldered against the taper on the muzzle device.



STEPS 12 & 13

Use a properly made, purpose built suppressor alignment rod to ensure the suppressor is properly mounted and concentric to the bore line.



***To remove the CAT DD from the muzzle device, wait for the suppressor to cool after use, ensure the firearm is completely unloaded and safe, then unscrew the suppressor CLOCKWISE (right hand to loosen). Left hand threads are used on the CAT 1x16LH QD muzzle devices so that when uninstalling the suppressor, the QD muzzle device will always stay on the host firearm rather than coming off and becoming stuck inside the suppressor.**

