



SOR/2020-96

**20mm Bore Diameter
Restriction Makes
12-Gauge Shotguns
Prohibited Firearms**

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Via Email: abernardo343@rogers.com

Canadian Shooting Sports Association

1143-204 Wentworth Street West

Oshawa, ON, L1J 8P7

Attention: Mr. Tony Bernardo, all board members

RE: SOR/2020-96

I have examined the new regulation SOR/2020-96 section 95 with particular attention to the categorization of any firearm with a bore diameter of 20 mm or more (excluding one designed exclusively for the purpose of neutralizing explosive devices).

In this I refer to the definition of firearm in the Criminal Code Section 2; a barrelled weapon from which any shot, bullet or other projectile can be discharged and that is capable of causing serious bodily harm or death to a person.

The definition of a barrel is the tube thorough which a projectile travels. The bore of a firearm barrel is the largest internal diameter of the barrel tube through which a projectile travels. This

definition excludes the *chamber* of a barrel. Not all barrels have *chambers* (muzzle loaders, revolvers are two examples).

From the chamber which is designed to hold a cartridge made up of the hull container and inside that propellant and the projectile, the projectile is propelled down the barrel tube. Depending on the cartridge this can begin with a *free bore* between the chamber and the rifling in a rifle or handgun barrel or if it is a shotgun a *forcing cone*. These *free bores* and *forcing cones* are part of the barrel and are significant to the travel of the projectile.

To concentrate on the shotgun, as the projectile (either shot or slug) exits the cartridge in the chamber and travels first through the forcing cone which transitions the chamber to the main tube, then down the main tube to the muzzle area.

Historically the muzzle and the main body of the barrel's tube were of the same diameter. As time progressed "*chokes*" were introduced to become part of a shotgun barrel tube feature. The purpose of "*choke*" was to decrease the tube diameter at the muzzle in a tapered manner to squeeze the "*shot*" together and reduce the tendency of the shot to spread open after it exited the muzzle.

Turning to the 12ga shotgun, it was so named because twelve, round pure lead balls of that diameter were equal to one pound. That equated to a bore diameter of .729 inches (18.516mm).

There are a series of chokes used and specified in shotgun barrels. From the least constrictive to the most constrictive they are described as cylinder, improved cylinder, modified, improved

modified and full. The restriction to the bore diameter range from no restriction to .040 inches restriction. The full choke restricts the shot column the most and thusly, the shot column remains close together over a distance out of the barrel than a lesser muzzle restriction.

Most recently, about 60 years ago further innovations came about. *Variable chokes* were attached to the muzzle of shotgun barrels to allow the gunner to vary the restriction by turning rings controlling barrel muzzle diameter. This popular innovation allowed the same shotgun to be used for different hunting and target sports.

A further innovation which is very much the overwhelming standard of production for the last 50 years is the removable screw in choke. This "*choke tube*" has an external thread that screws into the shotgun barrel at the muzzle.

For instance a shotgun barrel for a 12ga may have external diameter of .840 inches and the muzzle has a threaded area for the final one to three inches the shot travels through the barrel. This threaded area made by reaming the basic bore diameter away to a diameter typically of .814 inches (20.657 mm) and then using a tap to create threads of a typical specification of .814-32 pitch. The 32 refers to the number of threads per inch. This is the specification for the *Winchoke* used by Winchester, Mossberg and many other shotgun manufactures.

This threading changes the bore diameter at the muzzle of the 12ga shotgun barrel to .814 inches being 20.675 mm.

A shotgun can be fired and shot or a slug can travel along the tube and out the muzzle of a barrel even without the "*choke tube*" being threaded in.

There is little to no danger in shooting a 12ga cartridge out of a tube choke barrel without a tube choke installed.

There may be damage to the fine 32 TPI threads so that a *choke tube* cannot be threaded in, however the 12ga shotgun can be used. Some people do this to provide for a more rapid opening spread of the shot column.

The **Forensic Standard** to measure a shotgun barrel in Canada is to measure the length of the barrel without the *choke tube* installed. This is because most *choke tubes* extend beyond the end of the muzzle of the barrel and being removable and also variable in the length past the muzzle (called the extension) give a non-reliable variable measurement. Reliability requires that the bare barrel without the *choke tube* installed be used to determine the forensically correct specification of a shotgun barrel.

In the examination of the modern 12ga shotgun barrel as produced by all manufactures for the post 50 years that means the *choke tube* is removed.

This then brings the focus to this opinion. The "*Bore*" is the largest diameter of the tube of the barrel though which the projectile travels.

In the examination of 12ga shotgun barrels with screw in *choke tubes* the chokes are removed and the bore at the muzzle typically equals or exceeds 20 mm. Winchester, Mossbergs and all using the “*Winchoke*” system have a bore diameter at the final 2 to 3 inches of the barrel of 20.675 mm (.814 inches).

Beretta Optima choke 12ga barrels have a bore diameter at the final 3 inches of the barrel of 20.00 mm (actually .788 inches).

Browning Invector choke 12ga shotgun barrels have a bore diameter at the final 2 to 3 inches of the barrel of 20.83 mm (.820 inches).

These internal bore diameters have been ascertained by actual measurement by skilled experts and by reference to published manufacture’s specifications.

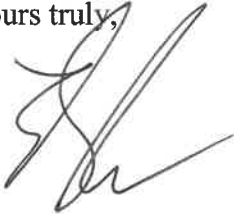
In my opinion 12 gauge shotgun with the screw in systems for use of “*Winchoke*”, “*Browning Invector*” and “*Beretta Optima and Optima Plus*” are prohibited under the definition in section 95 of SOR/2020-96.

These noted barrel systems are presently prohibited firearms as defined in SOR/2020-96.

Further examination of the screw in choke systems of other 12ga barrels and 10 gauge barrels have to be measured.

I also note that some shotgun actions can be updated or upgraded by simply attaching the 12ga barrel systems mentioned herein. Those have to be carefully examined for compatibility with these and other screw in *choke tube* barrels to determine if those firearms that may not presently be equipped with the 12ga screw in *choke tube system* can be readily adapted by hand.

Yours truly,

A handwritten signature in black ink, appearing to read 'ELB', with a long, sweeping horizontal stroke extending to the right.

EDWARD L. BURLEW, LL.B.

ELB/bkh