

VIHTAVUORI SMOKELESS LOADS FOR COWBOY ACTION SHOOTING

These loads are developed to give the velocities required for the cowboy action shooting using revolvers with lead bullets. The maximum load is determined by the velocity limit about 300 m/s, or by the maximum pressure limit according to the CIP October 1, 1992 rules. The bold text in the tables indicate the maximum load according to CIP pressure level. The maximum loads must never be exceeded.

All the listed loads are intended to be used in modern fire-arms, which are according to the SAAMI requirements. Please use a competent gunsmith to evaluate that the condition of your gun is adequate to be used with the pressures indicated in the tables. The starting loads are the lowest charges which appeared to give clean burning, i.e. no unburned residues in the barrel or in the case, in our test shooting. This limit may, however vary according to the revolver used.

There are some special features, which must be considered, when using reduced loads like the ones presented in the tables below. The same facts are equally valid always when using any smokeless powder in such loads.

1) Double charges

Some of these loads are so small that throwing the load twice in the same case is possible because of the large case volume. Doubling the charge accidentally causes most probably truly lethal chamber pressures. Therefore, it is a must for everyone using this data to check visually every single load for the double charge before seating the bullet.

2) Free space in the case

When using charges which leave large amount of free space in the case, the shooting characteristics may vary largely depending on where the powder is located in the case. If the powder lies totally in the bottom of the case (i.e. in the end where primer is), the muzzle velocity and especially the maximum pressure become much higher. The maximum pressure may even be doubled when same powder charge is moved from the bullet end to the primer end of the case. This can simply

be demonstrated by shaking the revolver barrel upwards or barrel downwards just before turning it smoothly in horizontal position, aiming and shooting. Also the recoil may transfer the powder in either end of the case. This is sometimes seen as a velocity change between the first shot and the following shots.

The shot to shot deviations in velocity and pressure are normally increased when using load which leaves the cases half empty. For this reason such loads are not recommended for target loads. The data below is tested in a way that the powder is as much as possible in the primer side before firing, and therefore, the pressures and the velocities represent the maximum values which were obtained using our test equipment and cartridge components indicated in the table.

3) Risk for underload detonation

This risk is always present when using highly reduced loads of any smokeless powder. The large free space in the case may generate a pressure wave which can cause, in the worst case, powder to burn as a shock wave, i.e. to detonate, instead of normal fast burning process. The extremely sharp pressure peaks involved in detonation can destroy the weapon and may lead to serious injury.

All these loads given here are extensively pressure tested and no signs of underload detonation were found. We strongly recommend everyone to follow strictly these tables to minimize the risk for underload detonation.

Smokeless powder differs considerably in its burning characteristics from common "black powder". Black powder burns essentially at the same rate in the open (unconfined) as when in a gun. The burning rate of smokeless powder increases with increasing pressure. If burning smokeless powder is confined, gas pressure will rise and eventually can cause the container or chamber to burst. A slight increase in smokeless powder charge after maximum load causes sharp increase in maximum pressure in the chamber. **Never exceed the maximum loads.**

.38 Special		Test barrel:	5", 1 in 18" twist
		Primers:	Small Pistol
		Cases:	Remington, trim-to length 1.146"

Bullet				Powder	Starting load		Maximum load	
Weight [grs]	Mfg	Type/Name	C.O.L. [in.]	Type	Weight [grs]	Velocity [fps]	Weight [grs]	Velocity [fps]
145		LSWC	1.476	N32C	4.9	1007	5.7	1030
158		LSWC/HP	1.437	N320	3.3	755	3.8	840
				N330	3.6	787	4.1	883

.357 Magnum		Test barrel:	6", 1 in 18½" twist
		Primers:	Small Rifle
		Cases:	Remington, trim-to length 1.283"

Bullet				Powder	Starting load		Maximum load	
Weight [grs]	Mfg	Type/Name	C.O.L. [in.]	Type	Weight [grs]	Velocity [fps]	Weight [grs]	Velocity [fps]
158		LSWC/HP	1.575	N330	3.9	791	5.0	997
				N340	4.5	804	5.9	1050

.44 S&W Special		Test barrel:	6½", 1 in 18" twist
		Primers:	Large Pistol
		Cases:	Remington, trim-to length 1.153"

Bullet				Powder	Starting load		Maximum load	
Weight [grs]	Mfg	Type/Name	C.O.L. [in.]	Type	Weight [grs]	Velocity [fps]	Weight [grs]	Velocity [fps]
240		SWC/HP	1.539	N320	4.7	702	5.9	853
				N330	5.5	751	6.3	886
267		LFN	1.539	N320	3.8	633	5.3	794
				N330	4.9	709	5.9	833
				N340	6.6	856	7.3	925

.44 Remington Magnum		Test barrel:	7", 1 in 20" twist
		Primers:	Large Pistol
		Cases:	Remington, trim-to length 1.276"

Bullet				Powder	Starting load		Maximum load	
Weight [grs]	Mfg	Type/Name	C.O.L. [in.]	Type	Weight [grs]	Velocity [fps]	Weight [grs]	Velocity [fps]
267		LFN	1.575	N340	5.9	735	7.5	945
267		LSWC	1.681	N32C	7.7	889	9.3	988

.45 Colt		Test barrel:	6", 1 in 16" twist
		Primers:	Large Pistol
		Cases:	Remington, trim-to length 1.280"

Bullet				Powder	Starting load		Maximum load	
Weight [grs]	Mfg	Type/Name	C.O.L. [in.]	Type	Weight [grs]	Velocity [fps]	Weight [grs]	Velocity [fps]
200		LRN	1.594	N320	6.8	850	8.7	1043
				N330	8.0	876	8.6	978
250		LRN	1.594	N320	5.6	751	6.9	915
				N330	6.3	781	7.5	961