.338 Win Mag - Hornady SST 225gr - RS60

User Data:

Date:9-Mai-2016 **Time:15:12:08** **File: *.dat**

Comment **26" barrel - 84.84mm COL - 63.0gr start load - 816m/s - 3048bar**

Cartridge / Caliber	**.338 Win Mag.**		**Bullet**	**.338, 225, Hornady SST InterLock 3**	
Maximum Average Pressure, allowed	4300 bar	62366 psi. (Piezo CIP)		with boattail	
Groove Caliber	8.59 mm	0.338 in.	Bullet Weight	14.58 gm	225.0 gr.
Case Capacity, overflow	5.584 cm³	86.0 gr. H2O	Bullet Length	36.96 mm	1.455 in.
Case Length	63.5 mm	2.500 in.	Bullet Seating Depth	15.63 mm	0.615 in.
Cartridge O.A. Length	84.84 mm	3.340 in.	Barrel/Tube Length	660.4 mm	26.0 in.
Shot Start / Init Pressure	250.0 bar	3626 psi.	Cross Section Area of Bore	0.5695 cm²	0.08827 in.²
Propellant type	**ReloadSwiss RS 60**				
Charge Weight	4.082 gm	63.0 gr.	Load Density	0.866 gm/cm³	219.0 gr./in.³
Heat of Explosion, Potential	3990 J/gm	258.5 J/gr.	Energy Density of Charge	3457 J/cm³	56650 J/in.³
Propellant Solid Density	1.61 gm/cm³	407.15 gr./in.³	Used Ratio of Specific Heats cp/cv	1.2291	
Burning Rate Factor Ba	0.468 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.695		Prog.-/ Degressivity Factor a0	0.669	
Factor b	2.192		Bulk Density	0.965 gm/cm³	244.0 gr./in.³

Calculated and Estimated Data:

Bullet Shank Seating Depth	12.07 mm	0.475 in.	Capacity Displaced by Seated Bullet	0.872 cm³	0.0532 in.³
Useable Case Capacity	4.712 cm³	0.2876 in.³	Bullet Travel at Muzzle Exit	612.53 mm	24.12 in.
Loading Ratio("Density") / Filling	89.8 %		Charge Fraction Burnt at Shot Start	1.46 %	
Predicted Data:					
Maximum Chamber Pressure	3048 bar	44209 psi.	Bullet Travel at Pmax	48.9 mm	1.92 in.
at Muzzle Exit:					
Bullet Velocity	815.6 m/s	2676 fps.	Pressure at Muzzle	583 bar	8462 psi.
Bullet Energy	4851 Joule	3578 ft.lbs.	Bullet Barrel Time	1.392 ms	
Propellant Burnt	100.0 %		Ballistic Efficiency	29.8 %	

Check Loading Manuals for Safe Minimum Charge Weight to Avoid Hazardous Ignition Conditions like Secondary Explosion Effects !
Real maximum (peak) of pressure is reached while bullet moves within barrel.
End of combustion reached before bullet's base passes muzzle.

Table of incremented charges ranging from +10.0% to -20.0% of above specified charge

D A N G E R ! : Table data may exceed maximum average pressures ! Pressures exceeding SAAMI or CIP specs are printed underlined!

Diff.	Charge Weight		Muzzle Vel.		Muzzle Energy		Max. Pressure		Muzzle Pressure		Prop.Burnt	B_Time	L.R./Filling
%	Gramm	Grains	m/s	fps	Joule	ft.lbs	bar	psi	bar	psi	%	ms	%
-20.0	3.27	50.4	659	2161	3162	2332	1686	24459	482	6989	94.4	1.787	72
-18.0	3.35	51.7	675	2213	3317	2447	1789	25947	496	7201	95.5	1.744	74
-16.0	3.43	52.9	690	2265	3476	2564	1898	27526	510	7401	96.6	1.703	75
-14.0	3.51	54.2	706	2318	3639	2684	2013	29200	523	7588	97.4	1.663	77
-12.0	3.59	55.4	722	2370	3805	2806	2136	30976	535	7761	98.2	1.623	79
-10.0	3.67	56.7	738	2422	3973	2931	2266	32862	546	7919	98.8	1.585	81
-8.0	3.76	58.0	754	2474	4145	3057	2404	34864	556	8061	99.3	1.548	83
-6.0	3.84	59.2	770	2525	4318	3185	2550	36990	564	8187	99.7	1.511	84
-4.0	3.92	60.5	785	2576	4494	3315	2706	39248	572	8295	99.9	1.470	86
-2.0	4.00	61.7	800	2626	4672	3446	2872	41653	578	8385	100.0	1.430	88
Nominal	**4.08**	**63.0**	**816**	**2676**	**4851**	**3578**	**3048**	**44209**	**583**	**8462**	**100.0**	**1.392**	**90**
+2.0	4.16	64.3	831	2725	5031	3711	3236	46930	589	8537	100.0	1.354	92
+4.0	4.25	65.5	846	2774	5212	3844	3436	49829	594	8609	100.0	1.318	93
+6.0	4.33	66.8	860	2822	5395	3979	3649	52920	598	8679	100.0	1.283	95
+8.0	4.41	68.0	875	2870	5579	4115	3876	56218	603	8747	100.0	1.250	97
+10.0	4.49	69.3	889	2917	5765	4252	4119	59741	608	8813	100.0	1.218	99

Results caused by ±3% powder lot-to-lot burning rate variation using nominal charge

Data for burning rate increased by 3% relative to nominal value :													
Nominal	4.08	63.0	828	2715	4994	3683	3230	46851	575	8334	100.0	1.357	90
Data for burning rate decreased by 3% relative to nominal value :													
Nominal	4.08	63.0	802	2631	4689	3458	2873	41674	592	8589	99.9	1.429	90