

### Hornady 150 SST

**WARNING:** Since we have no control over equipment or data which may be used with this program, no responsibility is implied or assumed for results obtained through its use. Input data and results may be incorrect or wrong. Therefore the use of this data for loading ammunition can cause serious injury to personnel and material. The computer-results had to be checked against data available in current loading manuals.

**LOT-TO-LOT VARIATIONS OF POWDERS, PRIMER SUBSTITUTION AND COMPONENT CHANGE OFTEN RAISE PRESSURES TO UNSAFE LEVELS. THE USER MUST ASSUME THE ENTIRE RISK OF USING THIS DATA FOR LOADING PURPOSES.**

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<b>User Data:</b>	<b>Date:</b> 4-mar-2019	<b>Time:</b> 23:48:52	<b>File:</b> *.dat
<b>Comment</b>	<b>Steyr Scout 19"</b>		
<b>Cartridge / Caliber</b>	<b>.308 Win. (CIP)</b>	<b>Bullet</b>	<b>.308, 150, Hornady SST Inter</b>
Maximum Average Pressure, allowed	60191 psi.	4150 bar (Piezo CIP)	with boattail
Groove Caliber	0,308 in.	7,82 mm	Bullet Weight 150,0 gr. 9,72 gm
Case Capacity, overflow	56,0 gr. H2O	3,636 cm³	Bullet Length 1,120 in. 28,45 mm
Case Length	2,008 in.	51,0 mm	Bullet Seating Depth 0,333 in. 8,45 mm
Cartridge O.A. Length	2,795 in.	71,0 mm	Barrel/Tube Length 19,0 in. 482,6 mm
Shot Start / Init Pressure	3626 psi.	250,0 bar	Cross Section Area of Bore 0,07364 in.² 0,4751 cm²
<b>Propellant type</b>	<b>ReloadSwiss RS 40</b>		
Charge Weight	38,0 gr.	2,462 gm	Load Density 190,9 gr./in.³ 0,755 gm/cm³
Heat of Explosion, Potential	258,5 J/gr.	3990 J/gm	Energy Density of Charge 49374 J/in.³ 3013 J/cm³
Propellant Solid Density	404,63 gr./in.³	1,6 gm/cm³	Used Ratio of Specific Heats cp/cv 1,2293
Burning Rate Factor Ba	0,643 1/s		Weighting Factor 0,5
Burning Function Limit Z1	0,419		Prog.-/ Degressivity Factor a0 0,782
Factor b	1,494		Bulk Density 237,2 gr./in.³ 0,938 gm/cm³

### Calculated and Estimated Data:

Bullet Shank Seating Depth	0,133 in.	3,37 mm	Capacity Displaced by Seated Bullet	0,0229 in.³	0,376 cm³
Useable Case Capacity	0,1989 in.³	3,26 cm³	Bullet Travel at Muzzle Exit	17,32 in.	440,05 mm
Loading Ratio("Density") / Filling	80.5 %		Charge Fraction Burnt at Shot Start	1,91 %	

### Predicted Data:

Maximum Chamber Pressure	37888 psi.	2612 bar	Bullet Travel at Pmax	1,55 in.	39,3 mm
<b>at Muzzle Exit:</b>					
Bullet Velocity	2374 fps.	723,7 m/s	Pressure at Muzzle	8445 psi.	582 bar
Bullet Energy	1878 ft.lbs.	2546 Joule	Bullet Barrel Time	1,163 ms	
Propellant Burnt	95,0 %		Ballistic Efficiency	25,9 %	

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 occurs after the 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 Gramm	Weight Grains	Muzzle Vel. m/s	fps	Muzzle Energy Joule	ft.lbs	Max. Pressure bar	psi	Muzzle Pressure bar	psi	Prop.Burnt %	B_Time L.R./Filling ms	%
-20,0	1,97	30,4	588	1930	1681	1240	1535	22262	441	6392	85,3	1,438	64
-18,0	2,02	31,2	602	1974	1760	1298	1622	23520	456	6611	86,5	1,407	66
-16,0	2,07	31,9	615	2018	1840	1357	1713	24851	471	6829	87,6	1,376	68
-14,0	2,12	32,7	629	2063	1922	1418	1809	26238	486	7045	88,7	1,347	69
-12,0	2,17	33,4	642	2108	2006	1479	1909	27681	500	7257	89,8	1,319	71
-10,0	2,22	34,2	656	2152	2092	1543	2012	29185	515	7466	90,8	1,292	72
-8,0	2,27	35,0	670	2197	2179	1607	2121	30756	529	7671	91,7	1,265	74
-6,0	2,31	35,7	683	2241	2268	1673	2234	32408	543	7872	92,6	1,238	76
-4,0	2,36	36,5	697	2286	2359	1740	2354	34144	556	8068	93,5	1,213	77
-2,0	2,41	37,2	710	2330	2452	1808	2480	35969	569	8259	94,3	1,188	79
<b>Nominal</b>	<b>2,46</b>	<b>38,0</b>	<b>724</b>	<b>2374</b>	<b>2546</b>	<b>1878</b>	<b>2612</b>	<b>37888</b>	<b>582</b>	<b>8445</b>	<b>95,1</b>	<b>1,163</b>	<b>81</b>
+2,0	2,51	38,8	737	2419	2642	1949	2751	39903	595	8624	95,8	1,134	82
+4,0	2,56	39,5	751	2463	2739	2020	2897	42022	606	8796	96,4	1,106	84
+6,0	2,61	40,3	764	2507	2838	2093	3051	44249	618	8962	97,0	1,079	85
+8,0	2,66	41,0	777	2551	2938	2167	3212	46590	629	9120	97,6	1,054	87
+10,0	2,71	41,8	791	2595	3040	2242	3382	49052	639	9270	98,1	1,029	89

### Results caused by ±10% powder lot-to-lot burning rate variation using nominal charge

Data for burning rate increased by 10% relative to nominal value :													
Nominal	2,46	38,0	761	2496	2813	2074	3070	44533	591	8570	99,1	1,079	81
Data for burning rate decreased by 10% relative to nominal value :													
Nominal	2,46	38,0	678	2223	2231	1646	2164	31383	549	7963	87,7	1,258	81