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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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User Data:	Date:8-Apr-2015	Time:22:09:16	File: xpert 6mm brx 68 gr.dat	
Cartridge / Caliber	6 mm BRX	Bullet	.243, 68, XPERT Bullet	
Maximum Average Pressure, allowed	58740 psi.	4050 bar (Piezo)	with flatbase	
Groove Caliber	0.242 in.	6.15 mm	Bullet Weight	68.0 gr. 4.41 gm
Case Capacity, overflow	43.0 gr. H2O	2.792 cm ³	Bullet Length	1.031 in. 26.19 mm
Case Length	1.575 in.	40.01 mm	Bullet Seating Depth	0.441 in. 11.2 mm
Cartridge O.A. Length	2.165 in.	54.99 mm	Barrel/Tube Length	24.0 in. 609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.04576 in. ² 0.2952 cm ²
Propellant type	Somchem S355			
Charge Weight	34.0 gr.	2.203 gm	Load Density	226.6 gr./in. ³ 0.896 gm/cm ³
Heat of Explosion, Potential	253.4 J/gr.	3910 J/gm	Energy Density of Charge	57404 J/in. ³ 3503 J/cm ³
Propellant Solid Density	404.63 gr./in. ³	1.6 gm/cm ³	Used Ratio of Specific Heats cp/cv	1.2291
Burning Rate Factor Ba	0.5 1/s		Weighting Factor	0.4
Burning Function Limit Z1	0.39		Prog.-/ Degressivity Factor a0	2.36
Factor b	1.774		Bulk Density	227.6 gr./in. ³ 0.900 gm/cm ³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.441 in.	11.2 mm	Capacity Displaced by Seated Bullet	0.0203 in. ³	0.333 cm ³
Useable Case Capacity	0.15 in. ³	2.459 cm ³	Bullet Travel at Muzzle Exit	22.87 in.	580.79 mm
Loading Ratio("Density") / Filling	99.5 %		Charge Fraction Burnt at Shot Start	1.37 %	

Predicted Data:

Maximum Chamber Pressure	41205 psi.	2841 bar	Bullet Travel at Pmax	2.01 in.	51.1 mm
at Muzzle Exit:					
Bullet Velocity	3194 fps.	973.6 m/s	Pressure at Muzzle	8324 psi.	574 bar
Bullet Energy	1541 ft.lbs.	2089 Joule	Bullet Barrel Time	1.124 ms	
Propellant Burnt	92.6 %		Ballistic Efficiency	24.2 %	

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.

