RELOADERS' GUIDE

When You Are Looking For Consistency, Reliability & Performance... Look No Further Than Alliant Powder

Centerfold Powder Guide Pullout Inside

2005 Edition

Technical Assistance: 800-276-9337

www.alliantpowder.com

ALLIANT POWDER®
Technically Superior by Design

Our Mission: PREMIUM PERFORMANCE, CONSISTENT QUALITY.

Every container of Alliant smokeless powder is backed by a century of manufacturing experience, and the most exacting quality control procedures in the industry. We check and control chemical composition, the shape and size of powder grains, even the propellants' density and porosity. We send samples of every batch to our ballistics lab, testing, among other things, for burning speed. Then, after blending batches together for exactly the right ballistic characteristics, we use our advanced computerized equipment to test again.

The result: a line of products known and respected for consistent quality and performance– not only in the lab, but especially on the firing line. One of the reasons you're a reloader, after all, is so you'll know exactly what to expect every time you pull the trigger. With Alliant powders you will. Not only shell after shell, but also year after year.

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CAUTION

Millions of men and women reload ammunition as a hobby, or because the cost savings allow them to enjoy shooting more often. You should always reload so that the safest and most accurate loads on the shooting line will be yours, and always remember that to become or to continue to be a safe reloader, **you must be careful at all times.** As a reloader, you are dealing with and manufacturing explosive materials; handling powders and primers that can, if misused, explode or burn, causing property damage, serious personal injury--even death! Later, when you shoot the ammunition you've produced and checked, you will be the person closest to the gun, the one most likely to be injured if improperly loaded ammunition causes your gun to malfunction.

Protect yourself by studying books that describe safe reloading techniques in detail. When using smokeless powders, use only the exact type and quantity described herein. Always store and use your smokeless powders in accordance with the guidelines listed in this booklet.

POWDER WARNINGS

- **NEVER** substitute smokeless powder for black powder, or for black powder substitutes.
- **NEVER** mix together any two powders, regardless of type, brand, style, or source.
- **NEVER** use the data in this Reloaders' Guide for any other powders, even if advertised "similar to Bullseye" or "burns the same as Red Dot," etc.

Violation of any of the above could result in severe personal injury (including death) or gun damage.

WARNING – BE SURE TO:

- **The powder charge weights listed in our data tables are maximum.** For rifle and pistol loads, the maximum powder charge should be reduced by 10% to establish a minimum or starting powder charge.
- All loads have been tested in our ballistics lab with SAAMI approved, un-vented test barrels. Keep in mind that such test equipment often yields higher velocities than are usually obtained with sporting arms.
- If ever you are unsure of your load data, or if you detect any signs of high pressure while using load data from this Guide, stop loading or testing at once. Contact our technical service personnel at 800-276-9337 before proceeding.

BALLISTICS

The ballistic data shown in this booklet were obtained in the laboratory under strictly controlled conditions. **You must load only the exact combinations that are listed.** Even then, different reloading techniques, plus industrial tolerances of each component, likely will cause your ammunition, or ammunition loaded by other competent laboratories, to yield slightly different ballistic data. Therefore, **powder charge recommendations in this booklet must never be exceeded.** Safe shooters and hunters know that accuracy, not maximum power, is their key to success.

FOR TECHNICAL ASSISTANCE

For Technical Assistance or for any information not included in this Reloaders' Guide, please call 1-800-276-9337.

For our interactive Reloaders' Guide on the Web, click onto www.alliantpowder.com.
Our e-mail address is: alliant_reloading@atk.com

DISCLAIMER

Alliant disclaims any warranties with respect to this product, the safety or suitability thereof, or the results obtained, whether express or implied, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose and/or any other warranty. Buyers and users assume all risk, responsibility, and liability whatsoever for any and all injuries (including death), losses, or damages to persons or property arising from the use of this product, whether or not occasioned by seller's negligence or based on strict product liability or principles of indemnity or contribution.
Alliant neither assumes nor authorizes any person to assume for it any liability in connection with the use of this product.

ALLIANT POWDER®
Technically Superior by Design

ALLIANT SHOTSHELL PO
ALL-TIME FAVORITES RED DOT, GREEN DOT, AN

Red Dot®. NOW CLEANER BURNING! America's #1 choice for clay target loads, now 50% cleaner. Since 1932, more 100 straights than any other powder. **Available in 8-lb., 4-lb., and 1-lb. canisters.**

e³®. The first of a new generation of high performance powders.

Green Dot®. NOW CLEANER BURNING! It delivers precise burn rates for uniformly tight patterns, and you'll appreciate the lower felt recoil. Versatile for target and field. **Available in 8-lb., 4-lb., and 1-lb. canisters.**

PROMO. America's #1 economy-priced 12 ga. target powder. Promo has the same burn speed as Red Dot, but is more dense, thus requiring a smaller bushing to obtain the same charge weight. **Available in 8-lb. canister only.**

Blue Dot®. The powder of choice for magnum lead shotshell loads. 10, 12, 16, and 20 gauge. Consistent and accurate. Doubles as magnum handgun powder. **Available in 5-lb., and 1-lb. canisters.**

LL POWDERS ARE #1!
OT, AND UNIQUE ARE 50% CLEANER BURNING.

American Select®. Our "ultra clean" burning premium powder makes a versatile target load and superior 1-oz. load for improved clay target scores. Great for Cowboy Action handgun loading too! **Available in 8-lb., 4-lb., and 1-lb. canisters.**

410®. Cleanest .410 bore powder on the market.

Steel®. Designed for waterfowl shotshell. Gives steel shot high velocity within safe pressure limits for 10 and 12 gauge loads. **Available in 4-lb. and 1-lb. canisters.**

Herco®. Since 1920, a proven powder for heavy shotshell loads, including 10, 12, 16, 20 and 28 gauge target loads. The ultimate in 12 gauge, 1-1/4 oz. upland game loads. **Available in 8-lb., 4-lb., and 1-lb. canisters.**

Unique®. NOW CLEANER BURNING! Most versatile shotgun/handgun powder made. Great for 12, 16, 20 and 28 gauge loads. Use with most hulls, primers and wads. **Available in 8-lb., 4-lb., and 1-lb. canisters.**

SHOTSHELL RELOADING DATA

10-Gauge, 3 1/2 inch Fed. Plastic with Paper Wad Base

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	Spacers (card wad directly under shot)
1 1/4	1,265	CCI 209M	Rem. SP10					29.5	8.3							(6) .135
		Win. 209	Rem. SP10					29.0	8.8							(6) .135
1 5/8	1,285	CCI 209M	Rem. SP10									36.0	10.3	45.0	8.0	(4) .135
		Win. 209	Rem. SP10											45.5	8.3	(4) .135
1 7/8	1,270	CCI 209M	Rem. SP10											45.5	9.9	(3) .135
		Win. 209	Rem. SP10											45.5	10.2	(3) .135
2	1,210	CCI 209M	Rem. SP10											43.5	9.2	(2) .135
		Win. 209	Rem. SP10											44.0	9.4	(2) .135
2 1/4	1,165	CCI 209M	Rem. SP10											42.0	9.8	(1) .135
		Win. 209	Rem. SP10											42.5	10.2	(1) .135

10-Gauge, 3 1/2 inch Rem. SP Shell

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	Spacers (card wad directly under shot)
1 1/4	1,265	CCI 209M	Rem. SP10					28.5	8.8	31.0	7.5					(6) .135
		Win. 209	Rem. SP10					29.0	8.8	31.0	7.6					(6) .135
1 5/8	1,285	CCI 209M	Rem. SP10											43.5	8.5	(4) .135
		Win. 209	Rem. SP10											44.0	8.5	(4) .135
1 7/8	1,270	CCI 209M	Rem. SP10											44.0	9.8	(3) .135
		Win. 209	Rem. SP10											44.5	9.1	(3) .135
2	1,210	CCI 209M	Rem. SP10											42.0	10.4	(2) .135
		Win. 209	Rem. SP10											42.5	10.1	(2) .135
2 1/4	1,165	CCI 209M	Rem. SP10											40.5	10.4	none
		Win. 209	Rem. SP10											41.0	10.5	none

10-Gauge, 3 1/2 inch Win. Polyformed with Plastic Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	Spacers (card wad directly under shot)
1 1/4	1,265	CCI 209M	Rem. SP10					28.0	8.5							(5) .135
		Win. 209	Rem. SP10					28.5	8.6							(5) .135
1 5/8	1,285	CCI 209M	Rem. SP10									35.5	10.4	44.5	8.7	(3) .135
		Win. 209	Rem. SP10											45.0	8.8	(3) .135
1 7/8	1,270	CCI 209M	Rem. SP10											45.0	9.8	(2) .135
		Win. 209	Rem. SP10											45.5	10.2	(2) .135
2	1,210	CCI 209M	Rem. SP10											43.0	9.4	(1) .135
		Win. 209	Rem. SP10											43.5	9.5	(1) .135
2 1/4	1,165	CCI 209M	Rem. SP10											41.5	10.5	none
		Win. 209	Rem. SP10											42.0	10.5	none

12-Gauge, 2 3/4 inch Cheddite Plastic Hull

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1	1,200	Cheddite	Fed. 12SO	19.0	7.8	20.0	6.2	21.5	6.9								
1	1,255	Cheddite	Fed. 12SO	20.0	8.7	21.5	7.0	23.0	7.8								
1	1,290	Cheddite	Fed. 12SO	21.0	9.3			24.0	8.3								
1	1,300	Cheddite	Fed. 12SO			22.5	7.6										
1 1/8	1,145	Cheddite	Fed. 12S3	18.0	9.0	19.0	7.6	20.0	7.5								
			Rem. RXP12	18.0	8.5	19.5	7.2	20.5	7.1								
1 1/8	1,200	Cheddite	Fed. 12S3	19.5	9.6	20.5	8.8	21.5	8.3								
			Rem. RXP12	19.5	8.8	20.5	7.6	22.0	7.8								

12-Gauge, 2 3/4 inch Fed. Gold Medal Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,200	Fed. 209A	Purple PC	17.0	6.4												

12-Gauge, 2 3/4 inch Fed. Gold Medal Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,200 • Shot Wt. - 7/8																	
			Rem. TGT 12	17.5	7.1												
			Win. WAA12SL	17.0	7.3												
7/8	1,250	Fed. 209A	Fed. 12SO	19.0	7.9												
			Purple PC	18.5	7.3												
			Rem. TGT 12	18.5	7.8												
			Win. WAA12SL	18.0	8.0												
7/8	1,300	Fed. 209A	Claybuster 1109-12			21.5	6.9										
			Fed. 12SO	19.5	8.4	21.0	7.5	22.0	7.5								
			Purple PC	19.5	7.9	21.5	6.9	22.5	7.0								
			Rem. TGT 12	19.5	8.5	21.0	7.4	22.0	7.2								
			Win. WAA12SL	19.0	8.4			21.5	7.6								
1	1,200	Fed. 209A	Claybuster 1109-12			20.0	7.5										
			Fed. 12SO	18.0	8.3	19.5	7.1	20.5	7.6								
			Purple PC	18.0	7.4			20.5	7.3								
			Rem. TGT 12	18.0	7.9	19.5	7.5	20.0	7.0								
			Win. WAA12SL	18.0	8.7	19.5	7.2	20.0	7.8								
1	1,255	Fed. 209A	Claybuster 1109-12			21.0	7.6										
			Fed. 12SO	19.5	9.3	21.0	7.7	21.5	8.6								
			Purple PC	19.5	8.7			21.5	8.0								
			Rem. TGT 12	19.0	8.7	20.5	8.1	21.5	7.9								
			Win. WAA12SL	18.5	9.1	21.0	8.4	21.5	8.5								
1	1,290	Fed. 209A	Claybuster 1109-12			21.5	8.0										
			Fed. 12SO	20.5	10.3	22.0	8.5	22.5	8.7								
			Purple PC	20.5	9.3			22.5	8.3								
			Rem. TGT 12	20.0	9.1	21.5	8.8	22.5	8.5								
			Win. WAA12SL	20.0	10.3	21.5	8.8	22.5	9.0								
1 1/8	1,000	Fed. 209A	Fed. 12S3	14.0	7.5	15.0	6.3										
1 1/8	1,090	CCI 209M	Fed. 12S3	17.0	8.3												
		Fed. 209A	Claybuster 3118-12			17.5	7.1										
			Fed. 12S3	17.0	8.4	17.5	7.1	18.5	7.8								
			Fiocchi FTW1	16.5	8.5			18.0	7.8								
			Hornady Versalite	17.0	8.6	17.0	8.1	18.0	7.2								
			Rem. Fig. 8	17.0	7.7	17.5	8.0	18.0	7.0								
			Win. WAA12 (White)	16.5	8.5	17.5	7.4	18.0	7.7								
			Win. WAA12SL	17.0	8.1			18.0	7.6								
			Win. WT12 (Orange)			18.0	7.7										
			Windjammer	17.5	7.6			18.5	6.6								
		Fio. 616	Fed. 12S3	17.5	8.2												
		Win. 209	Fed. 12S3	17.0	8.4												
1 1/8	1,145	CCI 209	Fed. 12S3	18.0	8.2			19.0	7.8								
		CCI 209M	Fed. 12S3	18.0	8.6			19.5	7.5								
		CCI 209SC	Fed. 12S3	19.0	9.8	18.5	8.5	20.5	8.6								
			Rem. Fig. 8	19.5	9.5			21.0	8.3								
			Win. WAA12 (White)	18.5	10.2			20.5	9.0								
		Fed. 209A	Claybuster 3118-12			19.0	8.2										
			Fed. 12S3	18.0	8.8	19.0	7.6	19.5	8.1								
			Fiocchi FTW1	18.0	9.6			19.5	8.6								
			Hornady Versalite	18.0	9.4	18.5	9.6	19.0	8.0								
			Rem. Fig. 8	18.0	8.8	19.0	9.0	19.0	7.7								
			Rem. RXP12	18.0	9.4			19.0	8.0								
			Win. WAA12 (White)	17.5	9.4	19.0	9.6	19.0	8.2								
			Win. WAA12SL	18.0	9.2			19.0	8.2								
			Win. WT12 (Orange)	18.5	9.3	19.0	9.3	20.0	8.4								
			Windjammer	18.5	8.2	19.0	8.7	19.5	7.7								
		Rem. 209P	Fed. 12S3	18.5	8.2	19.5	7.8	20.5	6.8								
		Win. 209	Fed. 12S3	17.5	9.6	19.5	8.1	19.5	8.0								
1 1/8	1,200	CCI 209	Fed. 12S3	20.0	9.8			22.0	9.2	24.0	8.3						
		CCI 209M	Fed. 12S3	19.0	8.9			21.0	8.6	23.5	8.0						
		CCI 209SC	Fed. 12S3	20.5	10.7	20.5	10.0	22.5	8.9								
			Rem. Fig. 8	21.0	9.8			23.0	9.2								
			Win. WAA12 (White)	20.0	10.5			22.0	10.2								
		Fed. 209A	Claybuster 3118-12			20.5	9.6										
			Fed. 12S3	19.5	10.0	20.5	9.2	20.0	9.0	22.5	7.3						
			Fiocchi FTW1	19.0	10.5			20.5	9.3	22.5	8.1						
			Hornady Versalite	19.0	10.1	20.0	10.9	20.5	9.4	22.0	8.0						
			Rem. Fig. 8	19.0	9.5	20.0	10.3	20.0	8.6	22.5	7.3						
			Rem. RXP12	19.0	9.9			20.0	8.8	22.5	7.8						
			Win. WAA12 (White)	19.0	10.4	20.5	9.4	20.0	9.2	22.5	8.1						
			Win. WAA12SL	19.0	10.0			20.0	8.8								
			Win. WT12 (Orange)	20.0	10.4	20.5	10.4	21.5	8.8	23.5	8.3						
			Windjammer	19.5	9.6	20.5	9.8	21.0	8.2	22.5	6.9						
		Rem. 209P	Fed. 12S3	19.5	9.3	21.5	9.0	21.5	7.9	24.0	6.9						
		Win. 209	Fed. 12S3	19.0	10.5	20.5	9.9	20.5	9.0	23.0	8.6						

12-Gauge, 2 3/4 inch Fed. Gold Medal Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,250 • Shot Wt. - 1 1/8																	
1 1/8	1,250	CCI 209M	Fed. 12S3					22.5	9.8	24.0	9.1						
		Fed. 209A	Claybuster 3118-12			22.0	10.6										
			Fed. 12S3			22.0	10.1	21.5	9.5	23.5	8.1	26.0	8.0				
			Hornady Versalite	20.0	10.7	21.0	10.9	21.5	9.0	24.0	8.3	26.0	8.2				
			Rem. Fig. 8	20.0	9.5			22.0	9.2	23.5	7.8	26.0	7.7				
			Rem. RXP12	20.0	10.1			21.5	9.7	23.5	8.4	26.0	8.0				
			Win. WAA12 (White)					21.5	9.4	23.0	8.4	26.0	8.3				
			Windjammer	20.5	9.5	21.5	10.7	22.5	8.4	24.0	7.7	26.0	7.4				
		Rem. 209P	Fed. 12S3					23.0	8.8	25.0	7.6						
		Win. 209	Fed. 12S3					22.5	10.5	24.0	9.8						
1 1/8	1,310	Fed. 209A	Hornady Versalite							25.0	10.0						
			Rem. RXP12					24.0	10.4	26.0	10.3						
			Win. WAA12 (White)					23.0	10.4	25.0	9.2						
			Windjammer					24.0	8.8	25.0	9.7						
1 1/8	1,400	Fed. 209A	Win. WAA12F114									30.0	10.5				
1 1/8	1,440	Fed. 209A	Red PC									32.0	10.5				
1 1/4	1,205	CCI 209M	Rem. RP12											34.0	9.4		
		Fed. 209A	Rem. RP12											34.0	9.7		
		Rem. 209P	Rem. RP12											35.5	8.1		
		Win. 209	Rem. RP12											34.5	9.9		
1 1/4	1,220	CCI 209M	Fed. 12S4							24.5	9.5	25.5	8.7				
		Fed. 209A	Fed. 12S4							24.0	10.5	25.0	10.2				
			Rem. SP12							24.0	10.4	26.0	9.7				
			Win. WAA12F114							24.0	10.6	25.0	10.1				
		Rem. 209P	Fed. 12S4							25.0	9.8	25.5	8.1				
		Win. 209	Fed. 12S4							24.0	9.5	25.5	9.4				
1 1/4	1,275	CCI 209M	Fed. 12S4											35.0	9.1		
		Fed. 209A	Fed. 12S4											34.0	8.9		
			Rem. SP12									27.0	10.1				
			Win. WAA12F114									27.0	10.5				
		Rem. 209P	Fed. 12S4									27.5	9.2				
		Win. 209	Fed. 12S4											35.0	8.7		
1 1/4	1,300	Fed. 209A	Win. WAA12F114									28.0	10.8				
1 1/4	1,310	Fed. 209A	Red PC									29.0	10.0				
1 1/4	1,330	CCI 209M	Rem. SP12											37.5	8.3		
		Fed. 209A	Rem. SP12											35.0	10.5		
		Win. 209	Rem. SP12											37.0	9.0		
1 1/4	1,440	Fed. 209A	Rem. RP12											40.5	10.7		
1 3/8	1,260	CCI 209M	Rem. RP12											35.0	8.6		
		Fed. 209A	Rem. RP12											34.0	9.9		
		Rem. 209P	Rem. RP12											36.0	7.8		
		Win. 209	Rem. RP12											34.5	8.6		
1 3/8	1,295	CCI 209M	Rem. RP12											36.5	9.0		
		Fed. 209A	Rem. RP12											35.5	10.7		
		Rem. 209P	Rem. RP12											39.0	8.6		
		Win. 209	Rem. RP12											36.0	9.2		
1 1/2	1,150	Fed. 209A	Rem. RP12									25.5	10.1	33.5	8.3		

12-Gauge, 2 3/4 inch Fed. Hi Power Plastic Shells with Rolled Paper Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1	1,290	Fed. 209A	Fed. 12S3	21.0	9.4			23.0	7.5								
			Rem. R12L	20.5	8.5			22.5	7.4								
1 1/8	1,145	CCI 209M	Fed. 12S3	18.5	8.6			20.0	7.6								
		Fed. 209A	Fed. 12S3	18.5	7.3			20.0	7.2								
			Hornady Versalite	18.5	8.3			19.5	7.1								
			Rem. RXP12	18.5	8.7			19.0	8.7								
			Win. WAA12 (White)	18.5	9.6			18.5	9.1								
		Rem. 209P	Fed. 12S3	18.5	8.4			21.0	6.7								
		Win. 209	Fed. 12S3	18.5	9.1			20.0	8.2								
1 1/8	1,200	CCI 209M	Fed. 12S3	20.0	9.3			21.5	8.6	24.0	7.7						
		Fed. 209A	Fed. 12CI					20.5	9.4								
			Fed. 12S3	19.0	9.3			21.0	8.0	23.0	7.7						
			Hornady Versalite	19.5	9.0			20.0	8.8	22.5	8.0						
			Rem. RXP12	19.5	9.3			20.5	9.1	22.0	8.1						
			Win. WAA12 (White)	19.0	9.8			20.0	9.3	21.0	7.7						
		Rem. 209P	Fed. 12S3	20.0	9.2			22.0	7.6								
		Win. 209	Fed. 12S3	19.5	9.5			21.5	8.9	23.5	8.1						
1 1/8	1,255	CCI 209M	Fed. 12S3	21.5	10.1			22.0	9.6	25.5	8.4						

12-Gauge, 2 3/4 inch Fed. Hi Power Plastic Shells with Rolled Paper Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,255 • Shot Wt. - 1 1/8																	
		Fed. 209A	Fed. 12C1	21.0	10.2			22.0	10.1								
			Fed. 12S3	21.5	10.1			22.0	9.0	24.0	8.1						
			Hornady Versalite	20.5	9.7			23.5	8.6	23.5	8.2						
			Rem. RXP12	21.0	9.8			22.5	10.0	23.0	8.1						
			Win. WAA12 (White)					22.0	10.3	23.0	8.6						
		Rem. 209P	Fed. 12S3	22.0	10.3			23.0	8.5								
		Win. 209	Fed. 12S3	21.5	10.7			23.0	9.4	25.0	9.1						
1 1/4	1,220	CCI 209M	Fed. 12S4							25.0	10.0						
		Fed. 209A	Fed. 12C1							23.0	9.0						
			Fed. 12S4					23.0	9.8	23.0	9.5						
			Hornady Versalite					23.0	9.7	23.5	8.8						
			Rem. R12FT					22.0	10.5								
			Rem. RXP12					22.0	9.6	23.0	8.3						
			Win. WAA12 (White)					21.5	9.5	23.0	9.6						
			Win. WAA12F114					23.0	9.9	23.0	9.4						
		Rem. 209P	Fed. 12S4							25.5	9.0						
		Win. 209	Fed. 12S4							25.0	9.5						
1 1/4	1,330	CCI 209M	Fed. 12S4									30.0	9.5	38.0	9.8		
		Fed. 209A	Fed. 12C1							25.5	10.2	28.5	9.8				
			Fed. 12S4									29.0	10.2				
			Rem. SP12							25.5	10.2	28.5	9.9				
			Win. WAA12 (White)									29.0	10.5				
			Win. WAA12F114									29.5	9.4				
		Win. 209	Fed. 12S4									30.0	10.2	38.0	8.6		
1 3/8	1,295	CCI 209M	Rem. RP12											39.0	8.5		
		Fed. 209A	Rem. RP12											38.5	8.6		
			Rem. SP12											38.0	9.0		
			Win. WAA12 (White)											37.5	8.5		
		Rem. 209P	Rem. RP12											39.0	8.4		
		Win. 209	Rem. RP12											39.0	9.4		
1 3/8	1,350	CCI 209M	Rem. RP12											38.5	9.6		
		Fed. 209A	Rem. RP12											39.5	9.7		
		Win. 209	Rem. RP12											40.0	9.6		
1 1/2	1,150	Fed. 209A	Rem. RP12											35.5	8.4		
			Rem. SP12									26.5	8.9				
1 1/2	1,205	CCI 209M	Rem. RP12											35.0	8.7		
		Fed. 209A	Rem. RP12											34.5	8.5		
		Win. 209	Rem. RP12											34.5	8.6		
1 1/2	1,260	CCI 209M	Rem. RP12											37.0	9.5		
		Fed. 209A	Rem. RP12											36.0	9.5		
			Rem. SP12											37.0	9.6		
		Win. 209	Rem. RP12											37.0	9.9		

12-Gauge, 2 3/4 inch Fed. One-Piece Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1 1/4	1,220	CCI 209M	Fed. 12S4							25.5	9.2	26.0	8.9				
		Fed. 209A	Fed. 12S4							25.0	9.1	26.0	8.4				
			Rem. SP12							25.5	8.7	26.5	7.8				
			Win. WAA12F114							25.0	8.7	26.0	8.0				
		Win. 209	Fed. 12S4							25.0	9.2	26.0	8.5				
1 1/4	1,275	CCI 209M	Fed. 12S4									27.5	9.5				
		Fed. 209A	Fed. 12S4									28.0	9.5				
			Rem. SP12									27.5	8.2				
			Win. WAA12F114									27.5	8.7				
		Win. 209	Fed. 12S4									27.5	9.0				
1 1/4	1,350	CCI 209M	Fed. 12S4											37.5	9.0		
		Fed. 209A	Fed. 12S4											38.5	8.5		
			Win. WAA12F114											39.0	7.7		
		Win. 209	Fed. 12S4											39.0	8.4		
1 3/8	1,240	CCI 209M	Rem. SP12											37.5	8.3		
		Fed. 209A	Rem. SP12											37.0	8.1		
		Win. 209	Rem. SP12											37.5	7.7		
1 3/8	1,295	CCI 209M	Rem. RP12											38.0	9.2		
		Fed. 209A	Rem. RP12											38.5	8.7		
		Win. 209	Rem. RP12											38.5	9.3		
1 1/2	1,150	CCI 209M	Fed. 12S4									26.5	10.0				
		Fed. 209A	Fed. 12S4									27.0	9.2				
			Rem. SP12									27.0	8.6				

12-Gauge, 2 3/4 inch Fed. One-Piece Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,150 • Shot Wt. - 1 1/2																	
		Fio. 616	Fed. 12S4									26.0	10.1				
		Rem. 209P	Fed. 12S4									26.5	9.9				
		Win. 209	Fed. 12S4									26.5	10.1				
1 1/2	1,205	CCI 209M	Rem. RP12											36.0	8.5		
		Fed. 209A	Rem. RP12											36.0	8.8		
			Rem. RP12											38.0	9.9		
		Win. 209	Rem. RP12											37.0	8.5		
1 1/2	1,260	CCI 209M	Rem. RP12											38.0	10.0		
		Win. 209	Rem. RP12											38.0	9.1		
1 5/8	1,115	CCI 209M	Rem. SP12									26.5	10.0				
		Fed. 209A	Rem. SP12									26.5	10.0				
		Fio. 616	Rem. SP12									26.0	10.3				
		Rem. 209P	Rem. SP12									26.5	9.5				
		Win. 209	Rem. SP12									26.5	9.8				

12-Gauge, 2 3/4 inch Fed. Paper Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1	1,290	CCI 209M	Fed. 12S3	21.0	8.7			23.0	7.8								
		Fed. 209A	Fed. 12S3	20.5	9.0			23.5	9.4								
			Fed. 12SO	20.5	10.4			22.5	9.2								
			Rem. R12L	20.0	9.3			21.5	8.8								
1 1/8	1,145	CCI 209M	Fed. 12C1	18.5	7.9			20.0	7.4								
		CCI 209SC	Fed. 12S3			19.0	8.6										
		Fed. 209A	Fed. 12C1	18.0	8.5			19.0	8.2								
			Fed. 12S3	18.0	8.7	19.0	8.2	19.5	7.4								
			Fiocchi FTW1	18.5	9.0			20.0	7.9								
			Hornady Versalite	18.0	8.8	19.0	7.9	19.5	6.9								
			Lage Unlwad	18.0	8.5			19.0	8.4								
			Red PC	18.0	8.3			20.0	7.6								
			Rem. Fig. 8			19.0	7.6										
			Rem. R12L	18.5	9.3			19.0	8.0								
			Rem. RXP12	18.0	8.9			18.5	8.1								
			Win. WAA12 (White)	18.0	8.6	19.0	8.4	18.5	8.0								
			Win. WT12 (Orange)			19.0	8.1										
			Windjammer	18.5	8.2	19.5	7.1	20.5	6.6								
		Rem. 209P	Fed. 12C1	18.5	8.3			20.0	7.0								
			Fed. 12S3			19.0	8.5										
		Win. 209	Fed. 12C1	18.5	8.6			19.5	7.5								
			Fed. 12S3			19.0	8.9										
1 1/8	1,200	CCI 209M	Fed. 12C1	20.0	8.7			21.5	7.7	24.0	7.2						
		CCI 209SC	Fed. 12S3			20.5	9.8										
		Fed. 209A	Fed. 12C1	19.0	9.3			20.0	8.6	22.0	8.2						
			Fed. 12S3	19.0	9.8	20.5	10.4	21.0	7.8	22.0	7.2						
			Fiocchi FTW1	19.5	9.5			21.0	8.2								
			Hornady Versalite	19.0	8.9	20.0	10.1	21.0	8.3	22.0	7.9						
			Lage Unlwad	18.5	9.4			20.0	8.8	22.0	8.0						
			Red PC	19.0	10.3			21.0	8.8	22.5	8.4						
			Rem. Fig. 8			20.0	9.8										
			Rem. R12H	19.0	9.2			19.5	6.8								
			Rem. R12L	19.5	9.5			20.0	8.6	22.0	7.8						
			Rem. RXP12	19.0	9.9			20.0	8.6	21.0	8.0						
			Win. WAA12 (White)	19.0	10.5	20.5	10.4	19.5	9.0	21.0	8.6						
			Win. WT12 (Orange)			20.5	10.2										
			Windjammer	19.0	8.7	20.0	9.1	22.0	7.7	23.5	7.6						
		Rem. 209P	Fed. 12C1	20.0	9.2			22.0	7.8	24.0	7.0						
			Fed. 12S3			21.0	9.7										
		Win. 209	Fed. 12C1	19.5	9.8			21.0	8.1	23.0	7.6						
			Fed. 12S3			20.5	9.7										
1 1/8	1,255	CCI 209M	Fed. 12C1	21.0	10.5			22.5	8.5	24.5	8.4						
		Fed. 209A	Fed. 12C1	21.0	10.2			21.5	7.9	22.5	8.9						
			Fed. 12S3	21.0	9.4			23.0	9.1	23.0	8.3						
			Hornady Versalite	20.5	9.9			22.5	8.5	23.0	8.7						
			Red PC	20.5	10.7			22.5	9.6	24.5	8.5						
			Rem. R12H					21.5	9.9	22.5	9.0						
			Rem. RXP12	21.0	10.0			21.5	9.3	22.0	8.5						
			Win. WAA12 (White)					21.5	10.5	22.0	9.5						
		Rem. 209P	Fed. 12C1	21.5	10.7			23.5	7.5	26.0	7.5						
		Win. 209	Fed. 12C1	21.0	10.3			22.5	9.0	24.5	8.3						

12-Gauge, 2 3/4 inch Fed. Paper Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,255 • Shot Wt. - 1 1/8																	
1 1/8	1,310	CCI 209M	Fed. 12CI							26.5	9.4						
		Fed. 209A	Fed. 12CI					24.5	9.9	26.5	9.0						
			Fed. 12S3							26.5	9.7						
			Rem. RXP12					24.5	9.8	26.5	8.6						
			Win. WAA12 (White)					24.5	9.7	26.5	9.1						
		Rem. 209P	Fed. 12CI					25.5	9.3	27.5	8.3						
		Win. 209	Fed. 12CI							26.5	9.2						
1 1/8	1,400	Fed. 209A	Win. WAA12P114									30.0	10.7				
1 1/4	1,220	CCI 209M	Fed. 12S4					23.0	10.5	25.5	9.7						
		Fed. 209A	Fed. 12CI					21.0	10.6	22.5	9.5						
			Fed. 12S4					23.0	10.5	24.0	9.8						
			Hornady Versalite					23.0	9.6	23.0	8.8						
			Rem. SP12					21.0	9.6	22.0	9.6						
			Win. WAA12 (White)					21.0	10.5	22.0	10.0						
			Win. WAA12F114					23.0	9.9	23.5	9.5						
		Rem. 209P	Fed. 12S4					23.0	9.9	25.5	9.1						
		Win. 209	Fed. 12S4							24.5	10.6						
1 1/4	1,330	CCI 209M	Fed. 12S4							28.0	10.7	29.5	9.9	37.0	9.0		
		Fed. 209A	Fed. 12S4											37.0	10.3		
			Rem. RP12									29.0	9.4				
			Rem. SP12									29.5	9.3				
			Win. WAA12F114									29.5	9.2				
		Win. 209	Fed. 12S4											37.5	10.3		
1 1/4	1,400	Fed. 209A	Rem. RP12											39.0	10.5		
1 3/8	1,240	CCI 209M	Rem. SP12											34.5	9.5		
		Fed. 209A	Rem. SP12											34.0	9.9		
		Rem. 209P	Rem. SP12											36.0	8.3		
		Win. 209	Rem. SP12											34.5	9.5		
1 3/8	1,295	CCI 209M	Rem. SP12											37.0	10.6		
		Fed. 209A	Rem. SP12											35.5	10.3		
		Rem. 209P	Rem. SP12											38.0	8.6		
		Win. 209	Rem. SP12											36.5	10.2		
1 3/8	1,350	Fed. 209A	Rem. RP12											37.5	10.7		
1 1/2	1,150	Fed. 209A	Rem. RP12											32.5	8.8		
			Rem. SP12									25.0	10.2				
1 1/2	1,205	CCI 209M	Rem. RP12											35.0	9.4		
		Fed. 209A	Rem. RP12											34.0	9.3		
		Rem. 209P	Rem. RP12											34.5	10.3		
		Win. 209	Rem. RP12											35.0	9.6		

12-Gauge, 2 3/4 inch Fiocchi Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,200	Fio. 616	Fed. 12SO	17.5	6.7												
			Purple PC	17.5	6.4												
			Rem. TGT 12	17.0	6.9												
			Win. WAA12SL	17.0	6.7												
7/8	1,250	Fio. 616	Fed. 12SO	19.0	6.9												
			Purple PC	19.0	6.7												
			Rem. TGT 12	18.5	7.0												
			Win. WAA12SL	18.5	6.8												
7/8	1,300	Fio. 616	Fed. 12SO	19.5	8.8												
			Purple PC	20.0	8.6			22.5	7.7								
			Rem. TGT 12	20.0	7.9			22.0	7.6								
			Win. WAA12SL	20.0	8.1			22.0	7.9								
1	1,200	Fio. 616	Fed. 12SO	18.0	9.1			20.0	8.1								
			Purple PC	18.0	8.1			20.0	7.2								
			Rem. TGT 12	18.0	8.5			20.0	7.4								
			Win. WAA12SL	18.0	8.5			20.0	7.9								
1	1,255	Fio. 616	Purple PC	19.0	9.5			21.0	8.2								
			Rem. TGT 12	19.0	9.3			21.0	8.4								
			Win. WAA12SL	19.0	9.5			21.0	8.1								
1	1,290	Fio. 616	Purple PC	21.0	9.8			23.0	8.4								
			Rem. TGT 12	20.5	10.1			22.5	8.6								
			Win. WAA12SL	20.5	10.3			22.5	9.4								
1 1/8	1,090	Fio. 616	Claybuster 3118-12AR			18.0	7.1										
			Fed. 12CI					18.5	6.8								
			Fed. 12S3	16.0	8.4	17.5	7.4	18.5	7.2								
			Fiocchi FTW1	16.5	8.1			18.5	6.8								

12-Gauge, 2 3/4 inch Fiocchi Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	3400 Grains	3400 psi x1000
Cont. from Prev. Page: Velocity - 1,090 • Shot Wt. - 1 1/8																	
			Fiocchi TL1			18.0	7.4										
			Hornady Versalite	16.5	8.1			18.5	7.1								
			Rem. Fig. 8	16.0	8.0			18.5	6.5								
			Rem. RXP12	16.5	8.7			18.5	6.7								
			Win. WAA12 (White)	17.0	7.6			18.5	7.0								
			Win. WAA12SL	17.0	7.3												
1 1/8	1,145	Fio. 616	Claybuster 3118-12AR			19.5	8.0										
			Fed. 12C1	18.0	8.8			19.5	7.5								
			Fed. 12S3	18.0	9.2	19.0	8.7	20.0	7.5								
			Fiocchi FTW1	17.5	8.8			20.0	7.3								
			Fiocchi TL1			19.5	8.5										
			Hornady Versalite	17.5	9.0			19.5	7.5								
			Rem. Fig. 8	18.0	8.4			20.0	7.1								
			Rem. RXP12	18.0	8.7			20.0	7.2								
			Win. WAA12 (White)	18.0	9.0			20.0	7.6								
			Win. WAA12SL	18.0	8.3												
			Windjammer	18.5	7.4			19.5	7.2								
1 1/8	1,200	Fio. 616	Claybuster 3118-12AR			21.0	9.0										
			Fed. 12C1	19.0	9.5			21.0	8.4	23.5	6.9						
			Fed. 12S3	19.0	9.7	20.5	9.4										
			Fiocchi FTW1	19.0	9.3			21.0	7.8	23.5	7.4						
			Fiocchi TL1			20.5	9.2										
			Hornady Versalite	18.5	9.5			21.0	8.2	24.0	7.1						
			Rem. Fig. 8	19.5	9.6			21.5	8.5	23.5	7.0						
			Rem. RXP12	19.5	9.7			21.5	7.9	22.5	7.2						
			Win. WAA12 (White)	19.5	9.4			21.5	8.1	23.5	6.8						
			Windjammer	20.0	8.6			21.0	7.7	24.0	6.4						
1 1/8	1,250	Fio. 616	Claybuster 3118-12AR			22.5	10.7										
			Fed. 12C1	20.5	10.7			22.5	9.3	24.5	8.0	26.0	7.5				
			Fed. 12S3			22.0	10.3										
			Fiocchi FTW1	21.0	10.5			23.0	9.2	24.5	8.2	26.0	8.3				
			Fiocchi TL1			22.0	10.3										
			Hornady Versalite					22.5	9.3	25.0	7.8	25.5	7.7				
			Rem. Fig. 8	20.5	10.2			23.0	8.8	24.5	7.6	26.0	7.3				
			Rem. RXP12					23.0	9.2	23.5	8.2	26.0	7.5				
			Win. WAA12 (White)					23.0	8.9	25.0	7.8	26.0	7.9				
			Windjammer	21.0	9.4			22.5	9.0	25.5	6.9	26.5	7.7				
1 1/8	1,310	CCI 209M	Rem. RXP12					24.0	10.0	26.5	8.4						
		Fio. 616	Fed. 12S3					25.0	9.6	27.0	8.6						
		Win. 209	Win. WAA12 (White)					25.0	8.7	26.5	8.3						
1 1/4	1,220	CCI 209M	Rem. R12H					24.5	8.0								
		Fio. 616	Fed. 12S4					23.0	9.7	25.0	8.8						
		Win. 209	Win. WAA12F114					23.0	10.0	25.0	8.7						
1 1/4	1,275	CCI 209M	Rem. SP12									28.0	8.3				
		Fio. 616	Fed. 12S4							27.0	10.3	28.0	9.5				
		Win. 209	Win. WAA12F114							27.0	10.0	28.0	8.4				
1 1/4	1,300	CCI 209M	Rem. SP12									30.0	9.2	41.0	7.6		
		Fio. 616	Fed. 12S4									30.0	9.5	40.0	8.3		
			Rem. SP12									30.5	8.6	41.0	7.7		
			Win. WAA12F114									30.0	9.2	39.5	7.5		
		Win. 209	Win. WAA12F114									30.0	10.1	38.5	8.3		
1 3/8	1,295	CCI 209M	Rem. RP12											37.0	9.6		
		Fio. 616	Rem. RP12											38.0	9.1		
		Win. 209	Rem. RP12											38.0	9.5		
1 3/8	1,350	CCI 209M	Rem. RP12											40.0	10.1		
		Win. 209	Rem. RP12											40.0	9.9		
1 1/2	1,150	Fio. 616	Rem. RP12											32.5	8.7		
1 1/2	1,205	CCI 209M	Rem. RP12											33.0	9.5		
		Fio. 616	Rem. RP12											36.5	9.0		
		Win. 209	Rem. RP12											35.5	8.6		
1 1/2	1,260	CCI 209M	Rem. RP12											36.5	10.6		
		Fio. 616	Rem. RP12											37.5	9.6		
		Win. 209	Rem. RP12											36.5	10.3		

12-Gauge, 2 3/4 inch Rem. Premier, STS Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1,000
7/8	1,200	Rem. 209P	Claybuster 4100-12 B	17.5	7.1	18.9	5.2										
			Fed. 12SO	17.0	7.2												
			Purple PC	17.5	6.8												
			Rem. TGT 12	17.0	6.8												
			Win. WAA12L (Gray)	16.5	8.0	18.0	5.8										
			Win. WAA12SL	17.0	7.0												
7/8	1,250	Rem. 209P	Claybuster 4100-12 B	18.0	7.4	19.6	5.9										
			Fed. 12SO	18.0	7.8												
			Purple PC	18.5	6.9												
			Rem. TGT 12	18.5	7.1												
			Win. WAA12L (Gray)	17.5	8.7	19.0	6.8										
			Win. WAA12SL	18.5	7.8												
7/8	1,300	Rem. 209P	Claybuster 1100-12			20.5	6.9										
			Claybuster 4100-12 B	19.0	8.1	20.5	6.7										
			Fed. 12SO	20.0	8.1	20.5	7.7	22.0	8.0								
			Purple PC	20.0	7.5												
			Rem. TGT 12	20.5	8.2	20.5	7.0	22.0	7.1								
			Win. WAA12L (Gray)	18.5	9.1	20.0	7.2										
			Win. WAA12SL	20.5	8.0	20.5	7.9	21.5	7.9								
7/8	1,400	Rem. 209P	Win. WAA12L (Gray)			22.0	10.3										
1	1,150	Rem. 209P	Claybuster 1100-12	16.5	7.4			18.5	7.0								
			Rem. TGT 12	17.0	8.3	17.0	6.9	18.0	6.6								
			Win. WAA12L (Gray)	16.5	8.1	17.0	7.5	18.0	6.3								
1	1,200	Rem. 209P	Claybuster 1100-12	17.8	8.0	19.5	7.5	19.2	7.5								
			Duster - Green	17.5	10.0	19.0	7.7	19.5	7.5								
			Fed. 12SO	18.0	9.0	19.5	7.9	19.5	8.6								
			Purple PC	18.5	8.3			20.5	7.0								
			Rem. TGT 12	18.0	8.7	19.0	7.0	20.0	8.2								
			Win. WAA12SL	18.0	9.6	19.0	7.6	19.5	8.6								
1	1,255	Rem. 209P	Claybuster 1100-12	19.7	8.8	20.5	8.0	21.0	8.3								
			Duster - Green	18.5	10.9	20.0	8.4	22.0	8.8								
			Fed. 12SO	19.5	10.6	20.5	8.6	21.5	9.3								
			Purple PC	19.5	8.9			21.5	8.5								
			Rem. TGT 12	19.0	9.5	20.5	8.0	21.0	8.5								
			Win. WAA12SL	19.5	10.1	20.5	8.7	21.5	8.9								
1	1,290	CCI 209M	Rem. R12L	20.0	10.3			22.0	9.1								
		Rem. 209P	Claybuster 1100-12	19.7	9.4	22.5	8.5	22.0	8.5								
			Fed. 12SO	20.0	10.5	21.5	9.9	22.0	8.7								
			Purple PC	20.5	9.1			22.5	8.2								
			Rem. Fig. 8	21.5	9.1			22.0	8.1								
			Rem. R12L	20.5	9.9												
			Rem. TGT 12	21.0	10.7	22.5	8.7	22.5	8.4								
			Win. WAA12F1	20.5	9.1			23.0	7.2								
			Win. WAA12SL	20.5	10.4	21.5	9.2	22.5	9.0								
		Win. 209	Rem. R12L	20.0	10.1			22.0	8.7								
1 1/8	1,000	Rem. 209P	Rem. Fig. 8	14.5	7.2	15.0	6.5										
1 1/8	1,090	CCI 209M	Fed. 12S3	16.0	10.1			17.5	8.5								
			Fiocchi FTW1	16.5	9.7			17.5	8.5								
			Red PC	16.5	9.2			18.0	7.4								
			Rem. Fig. 8	16.5	9.1			18.0	8.4								
			Rem. RXP12	16.0	9.3			17.5	8.6								
			Win. WAA12 (White)	16.0	9.8			17.0	8.7								
			Windjammer	16.5	8.3			18.0	7.6								
		Fio. 616	Rem. Fig. 8	16.5	9.0												
		Rem. 209P	Claybuster 3118-12	16.2	8.6	17.5	6.9	17.5	7.8								
			Duster-Blue	16.0	9.7	17.0	8.0	17.5	8.2								
			Fed. 12S3	16.0	10.3	17.5	8.2										
			Fiocchi FTW1	16.5	8.8												
			Red PC	16.5	8.7	17.5	7.0										
			Rem. Fig. 8	16.5	8.9	17.5	7.1	18.5	8.5								
			Rem. RXP12	16.0	8.7	17.0	7.5	18.0	8.7								
			Win. WAA12 (White)	16.0	9.4	17.0	8.1	18.0	8.5								
			Win. WT12 (Orange)	15.5	9.0	17.0	7.5	18.0	8.1								
			Windjammer	16.5	7.9	18.0	6.9	18.0	7.3								
		Win. 209	Rem. Fig. 8	16.5	8.9												
1 1/8	1,145	CCI 209	Rem. Fig. 8	17.5	8.6			19.5	7.1								

12-Gauge, 2 3/4 inch Rem. Premier, STS Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,145 • Shot Wt. - 1 1/8																	
		CCI 209M	Fed. 12S3	17.5	10.6			19.0	8.9								
			Fiocchi FTW1	17.0	9.9			19.5	9.3								
			Hornady Versalite	17.0	9.1			19.0	8.0								
			Red PC	17.0	9.4			19.0	7.7								
			Rem. Fig. 8	17.5	9.3			19.0	8.8								
			Rem. RXP12	17.0	9.6			19.0	9.1								
			Win. WAA12 (White)	16.5	10.2			19.0	9.4								
			Windjammer	17.0	9.0			19.5	7.9								
		CCI 209SC	Fed. 12S3	18.5	10.4			19.5	9.5								
			Rem. Fig. 8	18.0	10.4	18.5	8.9	20.5	9.9								
			Win. WAA12 (White)					20.0	10.6								
			Windjammer	18.5	9.8												
		Fed. 209A	Fed. S3	16.5	10.1			19.0	9.9								
			Red PC	17.0	10.7			19.5	10.0								
			Rem. Fig. 8	16.5	10.3	18.5	9.2	19.5	10.1								
			Rem. RXP12	16.0	10.6			19.5	10.5								
			Windjammer	17.5	10.5			20.0	9.6								
		Fio. 616	Rem. Fig. 8	17.5	8.9			19.0	7.8								
		Rem. 209P	Claybuster 3118-12	17.0	8.8	19.0	8.4	19.0	8.7								
			Duster-Blue	17.0	9.8	18.0	8.9	18.5	9.0								
			Fed. 12S3	18.0	10.1	18.5	9.1	19.0	8.8								
			Fiocchi FTW1	17.5	9.7			19.5	8.8								
			Hornady Versalite	17.5	9.0			19.0	8.0								
			Lage Uniwad	17.5	9.9			19.0	8.0								
			Red PC	17.5	9.0	19.0	8.2	19.0	7.6								
			Rem. Fig. 8	18.0	9.2	19.0	7.6	19.0	7.3								
			Rem. RXP12	17.5	8.9	18.5	8.3	19.0	7.7								
			Win. WAA12 (White)	17.0	10.1	18.0	9.0	19.0	8.7								
			Win. WT12 (Orange)	18.5	8.8	18.5	8.9	19.5	8.3								
			Windjammer	17.5	8.9	19.0	7.9	19.5	7.8								
		Win. 209	Rem. Fig. 8	18.0	9.5	18.5	9.0	19.0	8.1								
1 1/8	1,200	CCI 209	Rem. Fig. 8	19.5	9.9			21.0	8.7	22.5	8.5						
		CCI 209M	Fed. 12S3					20.5	10.2	22.0	9.7						
			Fiocchi FTW1	18.5	10.6			20.5	9.7								
			Hornady Versalite	19.0	10.4			20.0	9.2	22.0	8.8						
			Red PC	19.0	10.4			20.5	9.0	22.5	8.7						
			Rem. Fig. 8	18.5	10.4			20.0	9.3	22.5	9.5						
			Rem. RXP12	18.5	10.5			20.5	9.2	22.5	9.5						
			Win. WAA12 (White)					21.0	9.6	22.0	9.3						
			Windjammer	18.5	9.7			20.5	8.7	23.5	8.2						
		CCI 209SC	Fed. 12S3					20.0	10.6								
			Rem. Fig. 8			20.0	10.3	21.0	10.6								
			Windjammer					22.0	10.4								
		Fed. 209A	Rem. Fig. 8	17.0	10.4	20.0	10.7	20.5	10.5	23.0	9.2						
			Rem. RXP12	17.0	10.1			21.0	10.4	22.0	9.1						
		Fio. 616	Rem. Fig. 8	19.5	10.6			20.0	8.7	23.0	8.5						
		Rem. 209P	Claybuster 3118-12	18.5	9.8	20.0	9.5	20.3	9.7	22.2	7.3						
			Duster-Blue	18.5	10.3	20.0	10.2	20.0	9.8	22.7	7.8						
			Fed. 12S3			20.0	10.6	20.5	9.7	22.0	9.1						
			Fiocchi FTW1	18.5	10.7			20.5	9.9								
			Hornady Versalite					20.0	8.7	22.0	7.9						
			Red PC	19.5	10.1	20.5	9.7	21.0	8.5	22.5	7.8						
			Rem. Fig. 8	19.0	10.1	20.5	9.1	21.0	8.8	22.5	8.2						
			Rem. RXP12	19.0	10.0	20.5	10.2	20.5	8.7	22.5	8.3						
			Win. WAA12 (White)	18.3	10.3	19.2	11.0	21.0	8.9	22.0	8.9						
			Win. WT12 (Orange)	19.5	10.7	20.0	10.6	21.5	8.7	23.5	8.3						
			Windjammer	18.5	9.4	20.5	9.1	20.5	8.2	23.5	7.0						
		Win. 209	Rem. Fig. 8	19.0	10.4	20.0	10.2	20.0	8.6	22.5	8.4						
1 1/8	1,250	CCI 209M	Fed. 12S3					21.5	10.6	23.5	10.2	24.5	9.9				
			Hornady Versalite					21.5	10.2	23.5	9.9	24.5	9.9				
			Red PC					22.0	9.6	24.0	9.4	25.0	9.5				
			Rem. RXP12					22.0	9.6	24.0	10.4	24.5	9.8				
			Win. WAA12 (White)					22.5	10.7	24.0	10.3	24.5	10.4				
			Windjammer					22.0	9.4	25.0	9.3	25.0	9.4				
		Fio. 616	Rem. RXP12					22.0	9.1	23.5	9.1						
		Rem. 209P	Claybuster 3118-12			21.5	10.6	21.0	9.8								
			Duster-Blue					21.5	10.3								
			Rem. Fig. 8			21.5	9.9	21.5	10.7								
			Rem. RXP12			21.0	10.5	21.1	10.0								
			Win. WT12 (Orange)					22.0	10.6								
		Win. 209	Rem. RXP12					22.0	9.4	24.5	8.8						
1 1/8	1,310	CCI 209M	Rem. RXP12							25.0	10.0	26.5	9.7				

12-Gauge, 2 3/4 inch Rem. Premier, STS Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	2400 Grains	psi x1000
Cont. from Prev. Page: Velocity - 1,310 • Shot Wt. - 1 1/8																	
		Fio. 616	Rem. RXP12							26.0	9.9	27.5	9.3				
		Rem. 209P	Hornady Versalite							25.5	9.9	27.0	8.8				
			Rem. RXP12							24.5	9.7	27.5	8.4				
			Win. WAA12 (White)							25.0	10.5	27.0	8.8				
			Windjammer							26.5	8.6	28.5	8.6				
		Win. 209	Rem. RXP12							26.0	9.8	27.0	9.5				
1 1/4	1,220	CCI 209M	Rem. SP12							23.5	10.3	24.5	10.0				
		Fio. 616	Rem. SP12							23.0	9.6	24.5	9.3				
		Rem. 209P	Fed. 1254							23.0	10.7	25.0	10.4				
			Hornady Versalite							23.5	9.4	25.0	8.4				
			Rem. SP12							23.5	9.3	25.0	9.6				
			Win. WAA12F114							24.0	10.1	24.5	9.3				
		Win. 209	Rem. SP12							23.5	10.0	24.5	9.6				
1 1/4	1,275	CCI 209M	Rem. SP12											34.5	9.8		
		Fio. 616	Rem. SP12											35.5	9.3		
		Rem. 209P	Fed. 1254											34.0	10.1		
			Rem. SP12									27.0	10.7	34.5	8.6		
			Win. WAA12F114									26.5	10.5				
		Win. 209	Rem. SP12									26.0	10.6	35.5	9.1		
1 1/4	1,330	CCI 209M	Rem. SP12											35.5	10.3		
		Fio. 616	Rem. SP12											35.5	9.9		
		Rem. 209P	Claybuster 1138-12											37.5	10.2		
			Rem. SP12											37.5	9.7		
		Win. 209	Rem. SP12											36.5	9.9		
1 3/8	1,240	CCI 209M	Rem. SP12											34.0	9.4		
		Fio. 616	Rem. SP12											34.0	9.1		
		Rem. 209P	Claybuster 1138-12											34.0	9.9		
			Rem. SP12											35.0	9.3		
		Win. 209	Rem. SP12											35.0	9.1		
1 3/8	1,295	CCI 209M	Rem. RP12											35.5	10.4		
		Fio. 616	Rem. RP12											35.5	10.0		
		Rem. 209P	Rem. RP12											36.5	9.9		
			Rem. SP12											37.5	10.3		
		Win. 209	Rem. RP12											35.5	10.5		
1 1/2	1,150	CCI 209M	Rem. RP12											31.0	9.9		
		Fio. 616	Rem. RP12											31.0	9.8		
		Rem. 209P	Claybuster 1138-12											32.0	10.6		
			Rem. RP12											31.0	9.9		
		Win. 209	Rem. RP12											31.5	10.1		
1 1/2	1,205	CCI 209M	Rem. RP12											33.0	10.1		
		Fio. 616	Rem. RP12											33.0	10.1		
		Rem. 209P	Rem. RP12											33.0	10.2		
		Win. 209	Rem. RP12											33.0	10.2		

12-Gauge, 2 3/4 inch Rem.-Peters Unibody SP Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	2400 Grains	psi x1000
1	1,290	CCI 209	Rem. R12L	21.0	9.7			23.5	8.1								
		CCI 209M	Rem. R12L	20.0	10.6			22.5	8.1								
		Rem. 209	Rem. R12L					22.0	9.2								
			Rem. RXP12					21.5	9.9								
			Win. WAA12F1					21.0	9.9								
		Win. 209	Rem. R12L	20.0	10.7			21.5	8.8								
1 1/8	1,145	CCI 209	Rem. RXP12	18.0	10.1			18.5	9.2								
		CCI 209M	Rem. RXP12	17.0	10.2			18.5	9.1								
		Rem. 209	Fed. 1253	17.0	10.1			19.0	9.2								
			Hornady Versalite	17.0	8.8			18.0	8.5								
			Rem. R12H	17.5	9.3			19.0	8.5								
			Rem. RXP12					19.0	8.8								
			Win. WAA12 (White)	17.0	10.2			17.5	10.0								
		Win. 209	Rem. RXP12	17.0	10.5			18.5	8.8								
1 1/8	1,200	CCI 209	Rem. RXP12					21.0	8.8	23.0	8.3						
		CCI 209M	Rem. RXP12					20.0	10.0	22.0	8.8						
		Rem. 209	Fed. 1253							21.5	8.8						
			Hornady Versalite	18.0	10.0			19.0	9.9	21.0	8.2						
			Rem. R12H	18.0	10.0			19.5	9.4	21.5	8.3						
			Rem. RXP12	18.0	10.5			20.0	9.8	22.0	9.1						
			Win. WAA12 (White)					19.5	10.0	21.5	8.4						
			Windjammer	18.5	9.6			20.5	8.3	22.0	7.7						

12-Gauge, 2 3/4 inch Rem.-Peters Unibody SP Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	3400 Grains	3400 psi x1000
Cont. from Prev. Page: Velocity - 1,200 • Shot Wt. - 1 1/8																	
		Win. 209	Rem. RXP12					20.5	9.8	22.0	8.9						
1 1/8	1,255	CCI 209	Rem. RXP12					22.5	10.5	23.0	8.8						
		CCI 209M	Rem. RXP12					21.0	10.1	23.0	9.7						
		Rem. 209	Fed. 12SS							22.5	9.8						
			Rem. R12H					21.0	10.4	22.5	8.3						
			Rem. RXP12					20.5	10.3	22.5	9.2						
			Win. WAA12 (White)							22.5	9.2						
		Win. 209	Rem. RXP12					21.5	10.7	23.5	9.8						
1 1/8	1,310	CCI 209	Rem. R12H							25.5	9.6	27.0	9.3				
		CCI 209M	Rem. R12H							25.0	10.7	26.5	10.3				
		Rem. 209	Rem. R12H							24.5	10.1	25.5	10.1				
			Rem. RXP12							24.0	10.0	25.5	10.2				
			Win. WAA12 (White)							24.0	10.3	24.5	10.2				
		Win. 209	Rem. R12H							25.0	10.7	26.5	10.7				
1 1/4	1,220	CCI 209	Rem. SP12							24.5	9.6	25.5	9.1				
		CCI 209M	Rem. SP12							23.0	10.1			32.0	8.5		
		Rem. 209	Rem. SP12							22.5	9.7	25.5	9.4				
			Win. WAA12F114									23.0	10.1	30.0	10.3		
		Win. 209	Rem. SP12							23.0	10.6	24.5	10.5	33.0	9.0		
1 1/4	1,275	CCI 209	Rem. SP12											35.5	8.9		
		CCI 209M	Rem. SP12											33.5	9.8		
		Rem. 209	Rem. SP12											32.0	10.2		
			Win. WAA12F114											32.0	10.0		
		Win. 209	Rem. SP12											35.0	10.3		
1 1/4	1,330	CCI 209	Rem. RP12											37.5	9.7		
		CCI 209M	Rem. RP12											35.5	10.4		
1 3/8	1,240	CCI 209	Rem. RP12											36.0	10.1		
		CCI 209M	Rem. RP12											32.5	10.5		
1 1/2	1,150	CCI 209M	Rem. RP12											32.0	8.4		
		Fio. 616	Rem. RP12											31.5	9.2		
		Rem. 209P	Activ T42											31.5	9.6		
			Rem. RP12											32.5	8.0		
		Win. 209	Rem. RP12											32.0	8.3		
1 5/8	1,115	CCI 209M	Activ T42											29.5	10.3		
		Fed. 209A	Activ T42											29.0	10.4		
		Fio. 616	Activ T42											29.5	10.4		
		Rem. 209P	Activ T42											29.5	10.5		
		Win. 209	Activ T42											29.5	10.4		

12-Gauge, 2 3/4 inch Win. Plastic AA Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	3400 Grains	3400 psi x1000
7/8	1,200	Win. 209	Claybuster 4100-12 B	17.5	6.9	18.5	5.6										
			Fed. 12SO	16.0	8.0												
			Purple PC	17.0	7.5												
			Rem. TGT 12	16.5	7.3												
			Win. WAA12L (Gray)	16.5	7.9	17.6	6.2										
			Win. WAA12SL	16.5	7.3												
7/8	1,250	Win. 209	Clasbuster 4100-12 B	18.0	7.6	19.5	6.1										
			Fed. 12SO	17.5	9.0												
			Purple PC	18.0	8.4												
			Rem. TGT 12	18.0	8.4												
			Win. WAA12SL	18.0	9.3												
			Win. WAA12L (Gray)	17.5	8.6	18.5	7.2										
7/8	1,300	Win. 209	Claybuster 1100-12			21.0	7.2										
			Claybuster 4100-12 B	18.5	7.9	20.5	6.9										
			Fed. 12SO	19.0	9.6	21.0	8.3	21.0	8.9								
			Purple PC	19.5	9.0	20.5	7.2	21.5	7.9								
			Rem. TGT 12	19.0	9.3	20.5	7.6	21.0	8.4								
			Win. WAA12SL	19.0	10.3	20.5	8.4	20.5	8.8								
			Win. WAA12L (Gray)	18.5	9.3	19.5	8.0	20.0	8.3								
7/8	1,400	Win. 209	Win. WAA12L (Gray)			22.0	10.2										
1	1,150	Win. 209	Claybuster 1100-12	17.0	7.9	18.0	6.7	18.5	7.1								
			Win. WAA12L (Gray)	16.5	8.0	18.0	6.7	18.5	7.6								
			Win. WAA12SL	16.5	7.9	17.5	7.6	18.0	8.0								
1	1,200	Win. 209	Claybuster 1100-12	18.0	8.6	18.5	6.9	19.5	7.7								
			Duster - Green			19.0	8.1	19.5	8.3								
			Fed. 12SO	18.0	9.6	19.0	8.7	19.5	8.4								
			Purple PC	18.0	8.9			19.5	7.0								

12-Gauge, 2 3/4 inch Win. Plastic AA Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,200 • Shot Wt. - 1																	
			Rem. TGT 12	18.0	9.2	19.0	8.0	19.5	7.9								
			Win. WAA12SL	18.0	10.2	19.0	8.2	19.5	8.5								
			Win. WT12 (Orange)	17.5	10.6	19.0	8.4	19.5	8.1								
1	1,255	Win. 209	Claybuster 1109-12	19.0	9.3	20.5	8.8	21.0	8.2								
			Duster - Green			20.0	8.9	20.5	9.2								
			Fed. 12SO			20.0	10.0										
			Purple PC	19.0	9.7			21.5	8.7								
			Rem. TGT 12	19.5	9.8	20.0	9.1	21.0	8.8								
			Win. WAA12SL	19.0	10.5	20.0	9.5	21.0	9.2								
1	1,290	CCI 209M	Win. WAA12 (White)	18.5	10.4			21.5	9.9								
		Win. 209	Claybuster 1109-12	19.5	8.9	21.5	9.2	22.0	9.1								
			Duster - Green			21.5	9.7	22.0	9.5								
			Fed. 12C1	20.0	10.2			21.0	8.8								
			Fed. 12S3	20.0	9.9			22.5	9.7								
			Fed. 12SO			20.5	10.2										
			Purple PC	20.0	10.4			22.0	9.0								
			Rem. RXP12	20.0	10.1			21.0	8.8								
			Rem. TGT 12			21.0	9.5	22.0	9.7								
			Win. WAA12 (White)	19.0	10.5			20.0	8.7								
			Win. WAA12SL	19.5	11.2	21.5	10.3	21.5	9.5								
1 1/8	1,090	CCI 209M	Win. WAA12 (White)	17.0	9.8												
		CCI 209SC	Win. WAA12 (White)			17.0	7.9										
		Fed. 209A	Win. WAA12 (White)			17.0	8.7										
		Fio. 616	Win. WAA12 (White)	16.0	8.9												
		Rem. 209P	Win. WAA12 (White)	17.0	8.1	17.0	8.0										
		Win. 209	Claybuster 1109-12	16.0	8.0	17.0	7.6	17.5	7.8								
			Duster-Blue	15.5	10.3	17.0	8.3	17.5	8.3								
			Fed. 12S3	17.0	10.4			18.0	9.7								
			Hornady Versalite	16.5	9.0			17.5	7.8								
			Red PC	16.0	9.1	17.0	7.3	18.0	7.3								
			Rem. Fig. 8	16.0	8.3	17.5	8.1	18.0	7.4								
			Rem. RXP12	16.5	9.0	17.0	9.1	17.5	7.6								
			Win. WAA12 (White)	16.0	9.5	17.0	9.0	17.5	8.1								
			Win. WAA12SL	16.0	9.3	16.8	8.4	18.0	8.0								
			Win. WT12 (Orange)					16.5	9.0								
1 1/8	1,145	CCI 209M	Win. WAA12 (White)	17.5	10.4			18.5	10.1								
		CCI 209SC	Rem. Fig. 8	18.0	10.5			20.5	9.7								
			Win. WAA12 (White)	17.5	10.6	18.5	9.6	19.5	10.3								
			Windjammer	18.0	9.9			20.5	9.5								
		Fed. 209A	Claybuster 3118-12	17.0	9.6			18.5	8.4								
			Hornady Versalite	17.0	10.3			18.5	9.3								
			Red PC	17.0	10.1			18.5	8.7								
			Rem. Fig. 8	17.0	9.8			18.5	8.6								
			Win. WAA12 (White)	17.0	10.6	18.5	9.8	18.0	9.3								
			Windjammer	17.0	9.0			18.5	8.2								
		Fio. 616	Win. WAA12 (White)	17.0	10.2			18.5	9.4								
		Rem. 209P	Win. WAA12 (White)	17.5	8.7	19.0	8.7										
		Win. 209	Claybuster 3118-12	16.8	9.1	18.5	9.0	19.1	9.3								
			Duster-Blue	16.5	10.6	18.0	9.0	19.0	9.3								
			Fed. 12C1	17.5	9.4			18.5	8.1								
			Hornady Versalite	18.0	9.5			19.5	8.0								
			Red PC	17.5	9.5	18.5	8.6	19.0	8.3								
			Rem. Fig. 8	17.5	9.9	19.0	9.4	19.0	8.6								
			Rem. RXP12	17.0	8.4	19.0	9.4	18.0	8.1								
			Win. WAA12 (White)	17.0	10.0	18.0	9.4	18.0	8.5								
			Win. WT12 (Orange)	16.5	10.7	18.5	9.6	18.0	9.4								
			Windjammer	17.5	9.3	18.5	8.1	18.0	8.4								
1 1/8	1,200	CCI 209M	Win. WAA12 (White)	18.5	10.5			20.0	10.4	21.5	10.3						
		CCI 209SC	Rem. Fig. 8	18.5	10.4			22.0	10.4								
			Win. WAA12 (White)			19.5	10.1	20.5	10.7								
			Windjammer					22.0	10.2								
		Fed. 209A	Claybuster 3118-12	18.5	10.5			19.5	9.3								
			Hornady Versalite	18.0	10.7			19.5	10.4								
			Red PC	18.0	10.0			19.5	10.5								
			Rem. Fig. 8	18.5	10.2			19.5	9.4								
			Win. WAA12 (White)			19.5	10.8	19.0	10.2								
			Windjammer	18.0	10.0			20.0	9.2								
		Fio. 616	Win. WAA12 (White)	18.0	10.5			20.0	9.5	21.5	9.1						
		Rem. 209P	Win. WAA12 (White)	19.0	9.5	21.0	9.6	20.0	9.8	23.0	7.5						
		Win. 209	Claybuster 3118-12	18.5	10.5	19.5	10.2	20.0	9.8	22.5	8.8						
			Duster-Blue	19.0	10.8	19.5	10.0	20.0	9.4	22.0	8.3						
			Fed. 12C1	18.5	9.7			19.5	9.0	22.0	8.9						
			Hornady Versalite	19.0	9.7			21.0	9.0	21.0	8.2						

12-Gauge, 2 3/4 inch Win. Plastic AA Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,200 • Shot Wt. - 1 1/8																	
			Red PC	18.5	10.5	20.0	10.1	20.5	9.8	23.5	9.5						
			Rem. Fig. 8	18.5	10.7	20.0	9.8	20.5	9.5	22.5	8.3						
			Rem. RXP12	18.5	9.8	20.5	10.7	19.5	8.9	22.0	8.7						
			Win. WAA12 (White)	18.0	10.4	19.5	10.5	19.5	9.3	21.0	9.1						
			Win. WT12 (Orange)	17.0	10.7	19.5	10.7	20.0	9.2	21.5	9.0						
			Windjammer	18.5	9.9	20.5	9.2	21.0	9.0	22.5	8.2						
1 1/8	1,250	Fio. 616	Win. WAA12 (White)	22.0	10.5			23.5	10.1								
		Rem. 209P	Rem. Fig. 8			22.5	9.4										
			Win. WAA12 (White)							24.0	9.3						
		Win. 209	Claybuster 8118-12			20.5	10.7										
			Fed. 12C1					21.0	10.2	23.0	9.5	25.0	9.4				
			Hornady Versalite					22.0	9.9	24.0	9.4	24.5	9.2				
			Red PC			21.5	10.8	22.0	10.3	24.5	10.0	25.0	9.1				
			Rem. Fig. 8					22.0	10.3	24.0	9.0	25.0	9.1				
			Rem. RXP12			21.0	10.8	21.0	9.5	23.0	9.2	25.0	9.2				
			Win. WAA12 (White)					21.5	10.5	23.5	9.4	25.0	9.5				
			Win. WT12 (Orange)					21.5	9.8	22.5	9.5	25.5	9.4				
1 1/8	1,310	CCI 209M	Win. WAA12 (White)							25.5	9.7						
		Rem. 209P	Win. WAA12 (White)							26.0	9.7	27.0	8.1				
		Win. 209	Hornady Versalite							25.0	10.3	26.5	9.9				
			Red PC					23.0	10.2	25.0	9.1						
			Rem. RXP12							24.0	9.8	26.5	9.1				
			Win. WAA12 (White)							25.5	10.0	26.5	9.3				
1 1/4	1,220	CCI 209M	Win. WAA12F114							23.5	9.9	26.0	9.1				
		Fio. 616	Win. WAA12F114							23.0	10.3	25.0	9.8				
		Rem. 209P	Win. WAA12F114							24.0	10.0	25.5	8.3				
		Win. 209	Claybuster 1138-12									25.0	9.6				
			Hornady Versalite							24.0	9.8	25.5	8.5				
			Rem. RP12							22.5	9.5						
			Win. WAA12F114							23.5	9.9	25.0	8.4				
1 1/4	1,275	Rem. 209P	Win. WAA12F114									27.0	9.4				
		Win. 209	Rem. SP12											35.0	8.2		
1 1/4	1,330	Win. 209	Rem. RP12											38.0	10.2		
			Rem. SP12											37.0	10.3		
			Win WAA12R											37.5	10.2		
1 1/4	1,375	Win. 209	Claybuster 1138-12											37.5	10.6		
1 3/8	1,200	Win. 209	Rem. RP12											33.0	10.4		
1 3/8	1,240	Win. 209	Rem. SP12											34.5	10.3		
1 1/2	1,150	Win. 209	Rem. RP12											30.5	10.8		
			Win WAA12R											31.0	10.4		
1 1/2	1,205	Win. 209	Claybuster 1138-12											33.7	10.1		

12-Gauge, 2 3/4 inch Win. Polyformed with Plastic Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1	1,290	CCI 209M	Win. WAA12F1	21.0	8.6			23.0	7.5								
		Fed. 209	Win. WAA12F1	21.0	8.2												
		Fio. 616	Win. WAA12F1	21.5	7.9			23.0	7.4								
		Rem. 209P	Win. WAA12F1	21.5	7.8												
		Win. 209	Fed. 12SO	21.0	9.6												
			Purple PC	21.5	7.9			24.0	6.8								
			Rem. Fig. 8	21.5	8.5			23.0	7.8								
			Win. WAA12F1	22.0	7.6			23.5	7.0								
1 1/8	1,090	CCI 209M	Win. WAA12 (White)	17.0	8.0			18.5	7.0								
		Fio. 616	Win. WAA12 (White)	17.0	7.6			18.5	7.1								
		Rem. 209P	Win. WAA12 (White)	16.5	6.7												
		Win. 209	Fed. 12S3	17.5	7.8												
			Hornady Versalite	16.5	7.9			18.5	6.7								
			Red PC	17.0	7.5												
			Rem. Fig. 8	17.0	6.9			18.5	6.7								
			Win. WAA12 (White)	16.5	7.8												
1 1/8	1,145	CCI 209M	Win. WAA12 (White)	18.0	9.0			20.0	7.4								
		Fio. 616	Win. WAA12 (White)	18.5	8.3			20.0	6.8								
		Rem. 209P	Win. WAA12 (White)	18.5	8.1												
		Win. 209	Fed. 12S3	18.0	8.9												
			Hornady Versalite	18.0	8.6			20.0	7.2								
			Red PC	18.5	7.8			20.5	6.8								
			Rem. Fig. 8	18.0	8.0			19.5	7.0								
			Win. WAA12 (White)	18.0	8.5			20.5	7.3								

12-Gauge, 2 3/4 inch Win. Polyformed with Plastic Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
Cont. from Prev. Page: Velocity - 1,145 • Shot Wt. - 1 1/8																	
1 1/8	1,200	Fio. 616	Win. WAA12 (White)	19.5	9.3			21.5	7.6	23.5	7.2						
		Rem. 209P	Win. WAA12 (White)	19.5	9.0					23.5	7.9						
		Win. 209	Fed. 1253	19.0	9.6			21.5	8.3	23.5	8.3						
			Hornady Versalite	19.0	9.4			21.5	7.7	23.0	7.7						
			Red PC	19.5	8.4			22.0	7.6	23.5	7.6						
			Rem. Fig. 8	19.0	8.7			21.5	8.2	23.0	7.4						
			Win. WAA12 (White)	19.5	8.9			22.0	8.7	23.0	7.6						
1 1/8	1,255	CCI 209M	Win. WAA12 (White)	21.5	10.0			23.0	8.8	25.0	8.5						
		Fio. 616	Win. WAA12 (White)	21.5	10.1			23.0	8.6	25.0	8.6						
		Rem. 209P	Win. WAA12 (White)	21.5	9.5					25.5	7.7						
		Win. 209	Fed. 1253					23.5	8.6	25.0	8.4						
			Hornady Versalite	21.5	9.7			24.0	8.3	25.0	8.0						
			Red PC	21.0	9.9			23.5	8.0	25.0	7.9						
			Win. WAA12 (White)	21.0	9.4			23.5	8.8	25.0	8.5						
1 1/8	1,310	CCI 209M	Win. WAA12 (White)	22.0	9.4			25.0	9.0	26.0	8.5						
		Fio. 616	Win. WAA12 (White)	22.5	10.6			24.5	8.9	27.5	9.2						
		Rem. 209P	Win. WAA12 (White)	22.5	10.2			25.0	8.8	27.0	9.0						
		Win. 209	Fed. 1253					24.5	9.9	26.0	9.4						
			Hornady Versalite	22.5	10.3			25.0	8.9	26.5	9.0						
			Red PC	22.5	10.2			25.5	8.7	26.5	8.6						
			Win. WAA12 (White)					25.5	8.9	26.5	8.6						

12-Gauge, 3 inch Fed. Hi Power Plastic Shells with Rolled Paper Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1 3/8	1,295	Fed. 209A	Fed. 1253									30.5	10.0				
			Rem. RXP12									30.5	9.3	38.0	9.0		
			Win. WAA12 (White)									30.5	9.7	38.0	8.8		
1 3/8	1,350	Fed. 209A	Fed. 1254											40.0	9.4		
			Rem. SP12											40.0	8.9		
1 1/2	1,315	Fed. 209A	Fed. 1253											38.0	9.7		
			Rem. RXP12											38.5	9.6		
			Win. WAA12 (White)											37.5	9.8		
1 5/8	1,280	Fed. 209A	Rem. SP12											39.0	10.4		
1 3/4	1,245	Fed. 209A	Rem. RP12											39.0	10.5		
1 7/8	1,155	Fed. 209A	Rem. RP12											34.0	10.5		
			Rem. SP12											36.0	10.3		

12-Gauge, 3 inch Fed. One-Piece Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1 3/8	1,295	Fed. 209A	Fed. 1253									31.0	10.5	40.5	7.9		
			Rem. RXP12									32.0	10.1				
			Win. WAA12 (White)											38.0	9.8		
1 3/8	1,350	Fed. 209A	Rem. RXP12											42.0	8.0		
			Win. WAA12 (White)											44.0	9.9		
1 1/2	1,315	Fed. 209A	Fed. 1254											40.0	9.7		
			Rem. SP12											40.0	9.0		
1 5/8	1,280	Fed. 209A	Fed. 1254											40.0	10.1		
			Rem. SP12											40.0	9.4		
1 3/4	1,245	Fed. 209A	Rem. RP12											39.0	10.5		
1 7/8	1,195	Fed. 209A	Rem. SP12											36.5	9.9		

12-Gauge, 3 inch Federal High Power Plastic with 7/16 Fiber Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1 7/8	1,175	Fed. 209A	Win WAA12R											32.5	11.2		
2	1,150	Win. 209	Rem. SP12											33.0	11.4		

12-Gauge, 3 inch Fiocchi Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1,000
1 3/8	1,295	CCI 209M	Fed. 12S3									30.0	10.0	37.0	9.0		
		Fio. 616	Fed. 12S3									31.5	9.1				
			Fiocchi FTW1									31.0	9.2				
			Rem. RXP12									32.5	8.6				
			Win. WAA12 (White)									31.5	8.9				
		Win. 209	Fed. 12S3									29.5	10.6	37.5	8.8		
1 3/8	1,350	CCI 209M	Fed. 12S4											38.0	10.4		
		Fio. 616	Fed. 12S4									32.0	10.7				
			Rem. SP12									32.5	10.1				
		Win. 209	Fed. 12S4											38.5	10.1		
1 1/2	1,315	CCI 209M	Fed. 12S4											38.0	10.4		
		Fio. 616	Fed. 12S4											39.0	10.3		
			Rem. SP12											39.0	9.7		
		Win. 209	Fed. 12S4											39.0	10.6		
1 5/8	1,280	Fio. 616	Fed. 12S4											39.0	10.7		
			Rem. SP12											39.5	9.7		
1 7/8	1,155	Fio. 616	Rem. RP12											34.5	10.7		

12-Gauge, 3 inch Rem.-Peters SP Plastic Shells with Separate Plastic Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1,000
1 3/8	1,295	CCI 209M	Fed. 12S3									29.5	10.0				
			Rem. RXP12									30.0	9.2				
			Win. WAA12 (White)									30.0	10.0				
1 3/8	1,350	CCI 209M	Fed. 12S3											42.0	8.4		
			Rem. RXP12											42.5	8.0		
			Win. WAA12 (White)											42.0	8.5		
1 1/2	1,315	CCI 209M	Fed. 12S4											38.5	9.8		
			Rem. SP12											40.0	9.4		
1 5/8	1,280	CCI 209M	Fed. 12S4											38.5	10.2		
			Rem. SP12											39.0	9.8		
			Win. WAA12F114											38.5	10.5		
1 3/4	1,245	CCI 209M	Rem. RP12											38.5	10.7		
1 7/8	1,155	CCI 209M	Rem. RP12											34.0	10.3		

12-Gauge, 3 1/2 inch Fed. Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1,000
1 7/8	1,200	CCI 209M	Fed. 12SO											41.0	9.1		
			Rem. R12L											40.5	9.6		
			Win. WAA12SL											41.0	8.9		
		Win. 209	Fed. 12SO											40.0	9.0		
1 7/8	1,255	CCI 209M	Fed. 12SO											43.0	9.8		
			Rem. R12L											42.5	10.1		
			Win. WAA12SL											43.0	9.5		
		Win. 209	Fed. 12SO											42.5	10.1		
2	1,220	CCI 209M	Fed. 12SO											42.5	10.0		
			Rem. R12L											42.0	10.0		
			Win. WAA12SL											42.5	9.8		
		Win. 209	Fed. 12SO											41.0	9.9		
2 1/4	1,150	CCI 209M	Fed. 12S4											38.5	11.1		
			Rem. SP12											39.5	11.2		
			Win. WAA12F114											38.5	11.1		
		Win. 209	Fed. 12S4											38.0	10.9		

12-Gauge, 3 1/2 inch Rem. Plastic SP

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	3600 Grains	psi x1,000
1 7/8	1,200	CCI 209M	Fed. 12SO											38.0	10.1		
			Rem. R12L											38.0	10.3		
			Win. WAA12SL											38.0	10.0		
		Win. 209	Rem. R12L											37.5	10.5		
1 7/8	1,255	CCI 209M	Fed. 12SO											39.0	10.6		
			Rem. R12L											39.0	10.9		
			Win. WAA12SL											39.0	10.4		
		Win. 209	Rem. R12L											38.5	11.0		
2	1,220	CCI 209M	Fed. 12SO											39.5	10.8		
			Rem. R12L											39.5	11.1		
			Win. WAA12SL											39.0	10.7		
		Win. 209	Rem. R12L											39.0	11.2		
2 1/4	1,150	CCI 209M	Fed. 12S4											37.0	11.1		
			Rem. SP12											38.0	11.1		
		Win. 209	Rem. SP12											38.0	11.5		

12-Gauge, 3 1/2 inch Win. Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	3600 Grains	psi x1,000
1 7/8	1,200	CCI 209M	Win. WAA12SL											38.0	10.1		
		Win. 209	Fed. 12SO											38.5	10.6		
			Rem. R12L											38.5	10.3		
			Win. WAA12SL											38.5	10.0		
1 7/8	1,295	CCI 209M	Win. WAA12SL											39.5	10.5		
		Win. 209	Fed. 12SO											40.5	10.7		
			Rem. R12L											40.0	10.7		
			Win. WAA12SL											40.0	10.8		
2	1,220	CCI 209M	Win. WAA12SL											39.0	11.2		
		Win. 209	Fed. 12SO											40.5	11.0		
			Rem. R12L											39.0	10.6		
			Win. WAA12SL											40.0	11.2		
2 1/4	1,150	Win. 209	Rem. SP12											37.0	11.2		

16-Gauge, 2 3/4 inch Fed. Plastic Hi Power Shells with Paper Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	3600 Grains	psi x1,000
1	1,220	Fed. 209A	Win. WAA16					19.0	9.8	21.0	8.4	21.5	8.1				
1	1,275	Fed. 209A	Win. WAA16							23.0	8.8	23.5	8.7				
1 1/8	1,185	Fed. 209A	Rem. SP16					19.0	10.6	21.5	8.9	22.0	9.1				
			Win. WAA16					18.5	10.2	21.0	8.7	22.0	9.1				
1 1/8	1,240	Fed. 209A	Rem. SP16							22.5	9.6	23.5	10.1				
			Win. WAA16							22.0	10.2	24.0	10.2				
1 1/8	1,295	Fed. 209A	Rem. SP16									24.5	10.3	32.0	8.6		
1 1/4	1,260	Fed. 209A	Rem. SP16											30.5	10.2		

16-Gauge, 2 3/4 inch Fiocchi Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	3600 Grains	psi x1,000
1	1,165	Fio. 616	Win. WAA16	15.5	10.4			17.5	9.4	19.0	8.1						
1	1,220	Fio. 616	Win. WAA16					18.0	10.5	20.5	8.8	21.0	8.9				
1	1,275	Fio. 616	Win. WAA16							21.0	9.9	22.0	9.6				
1 1/8	1,185	Fio. 616	Rem. SP16							20.5	9.9	21.0	10.2				
			Win. WAA16							19.5	10.6						
1 1/8	1,240	Fio. 616	Rem. SP16									23.5	10.7	31.0	8.9		
1 1/8	1,295	Fio. 616	Rem. SP16											32.5	9.2		

16-Gauge, 2 3/4 inch Rem.-Peters SP Plastic Shells with Plastic BaseWad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1	1,165	Rem. 209P	Win. WAA16					16.5	10.2	19.0	8.6						
1	1,220	Rem. 209P	Win. WAA16							20.0	9.4	21.0	9.7				
1	1,275	Rem. 209P	Win. WAA16							21.0	10.2	22.0	9.6				
1 1/8	1,185	Rem. 209P	Win. WAA16							20.0	10.3	21.0	10.6				
1 1/8	1,240	Rem. 209P	Rem. SP16											27.0	9.9		

16-Gauge, 2 3/4 inch Win. AA-Type Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1	1,165	Win. 209	Win. WAA16							19.0	9.2						
1	1,220	Win. 209	Win. WAA16							19.5	10.5	20.0	10.2				
1	1,275	Win. 209	Rem. SP16											29.0	9.3		
1 1/8	1,185	Win. 209	Rem. SP16											27.0	10.0		

20-Gauge, 2 3/4 inch Fed. Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,155	CCI 109	Fed. 2051					14.5	8.4								
			Lage Uniwad					15.5	8.7	17.0	8.3						
			Rem. RXP20							16.0	8.6						
			Win. WAA20					14.5	8.0								
		CCI 209M	Fed. 2051					14.5	9.1	16.0	8.7						
		Fed. 209	Hornady Versalite					15.5	10.0								
			Lage Uniwad					16.0	10.1								
			Win. WAA20					14.5	9.7								
			Windjammer					15.0	10.0	16.5	8.6						
7/8	1,200	CCI 109	Fed. 2051					15.5	9.4	17.0	8.5	17.0	9.5				
			Lage Uniwad					16.0	10.0	18.0	8.8						
			Rem. RXP20					16.0	9.6	17.0	9.2	18.0	8.8				
			Win. WAA20					15.5	9.1	17.0	8.5	17.0	9.1				
		CCI 209M	Fed. 2051					16.5	9.3	17.0	9.1	17.5	7.6				
		Fed. 209	Fed. 2051					16.5	10.6								
			Hornady Versalite					16.0	10.5								
			Lage Uniwad					16.5	11.0								
			Windjammer					16.0	10.9	17.0	10.6	18.5	10.2				
		Fed. 209A	PC 20					16.0	11.2	18.0	9.8	18.0	9.2				
1	1,165	Fed. 209	Rem. RXP20									17.0	11.3				
			SP20							16.0	10.8	17.0	9.6				
			Win. WAA20F1							15.5	11.9	16.5	11.1				
1	1,220	CCI 209M	Fed. 2051									18.5	9.8				
		Fed. 209	Rem. SP20											24.0	10.2		
			Win. WAA20F1											24.0	10.1		
1 1/8	1,175	Fed. 209	Rem. SP20											23.0	10.9		

20-Gauge, 2 3/4 inch Fiocchi Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,155	CCI 209M	Fed. 2051					14.5	10.5	16.0	9.2						
		Fed. 209	Fed. 2051					14.5	11.1	15.5	10.0						
		Fio. 616	Fed. 2051					15.0	9.1	17.0	9.1						
			Hornady Versalite					15.5	9.7	18.0	8.3						

20-Gauge, 2 3/4 inch Fiocchi Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	2400 Grains	psi x1000
Cont. from Prev. Page: Velocity - 1,155 • Shot Wt. - 7/8																	
			Lage Univsd					15.5	9.5	17.5	8.6						
		Rem. 209	Fed. 2061					14.5	10.0	16.0	9.4						
		Win. 209	Fed. 2061					14.5	10.6	16.5	9.0						
7/8	1,200	CCI 209M	Fed. 2061					15.5	10.7	17.0	10.0	17.0	9.9				
		Fed. 209	Fed. 2061					15.5	11.1	17.0	10.8	17.5	10.2				
		Fio. 615	Fed. 2061					16.0	10.9	18.0	9.7	18.0	9.2				
			Hornady Versalite					16.0	10.0			19.0	8.3				
			Lage Univsd					17.5	8.2	19.0	8.0						
			Rem. RXP20					16.5	10.3			19.0	8.5				
			Win. WAA20					16.0	10.8	17.5	9.6	18.5	8.7				
		Fio. 616	Fed. 2061					15.5	10.6	17.5	10.0	18.0	9.2				
		Rem. 209	Fed. 2061					15.5	10.8			16.5	9.9				
		Win. 209	Fed. 2061					16.0	10.4	16.0	10.1	18.0	9.9				
1	1,220	CCI 209M	Rem. SP20											24.0	10.7		
		Fed. 209	Rem. SP20											23.0	10.3		
		Fio. 615	Rem. SP20											27.5	9.2		
		Fio. 616	Rem. SP20											24.5	10.3		
		Rem. 209	Rem. SP20											22.5	10.6		
1	1,275	Fed. 209	Rem. SP20											25.0	10.3		
		Fio. 616	Rem. SP20											26.0	10.8		
		Win. 209	Rem. SP20											26.0	10.6		
1 1/8	1,175	Fed. 209	Rem. SP20											23.5	10.7		
		Fio. 616	Rem. SP20											23.5	10.0		
		Win. 209	Rem. SP20											23.5	11.4		

20-Gauge, 2 3/4 inch Rem. Premier Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	psi x1000	American Select Grains	psi x1000	Green Dot Grains	psi x1000	Unique Grains	psi x1000	Herco Grains	psi x1000	Blue Dot Grains	psi x1000	2400 Grains	psi x1000
7/8	1,155	CCI 209M	Rem. RXP20							15.5	11.0	16.5	10.5				
		Fio. 616	Rem. RXP20							16.0	10.7	16.5	10.1				
		Rem. 209P	Rem. RXP20							15.5	10.0						
			Claybuster 1078-20							15.5	9.5	16.0	9.8				
			Duster - Orange							16.5	7.7						
			Fed. 2061							15.5	10.0	16.0	10.0				
			Win. WAA20F1									16.0	9.5				
		Win. 209	Rem. RXP20							15.5	10.3	16.5	10.2				
7/8	1,200	CCI 209	Rem. RXP20							16.5	9.9	17.5	9.4				
		CCI 209M	Rem. RXP20							16.0	11.3	17.0	10.8				
		Fio. 616	Rem. RXP20							16.5	11.2	17.0	10.7				
		Rem. 209P	Claybuster 1078-20							16.5	10.6	17.5	9.8				
			Duster - Orange							17.5	8.1						
			Fed. 2061							16.5	10.8	17.0	10.5				
			Hornady Versalite							16.5	10.2	17.5	10.4				
			Lage Univsd							16.5	10.4	17.5	10.3				
			Rem. RXP20							16.5	10.7	17.0	10.6				
			Win. WAA20F1							16.0	11.0	17.5	10.4				
			Win. WAA20							16.5	10.9	17.0	10.7				
			Windjammer							16.0	10.4	17.0	10.1				
		Win. 209	Rem. RXP20							16.5	11.3	17.0	10.6				
1	1,075	Rem. 209P	Win. WAA20F1									14.5	11.0				
1	1,155	CCI 209	Rem. SP20											22.0	9.5		
		CCI 209M	Rem. SP20											21.5	10.5		
		Fio. 616	Rem. SP20											22.5	9.8		
		Rem. 209P	Rem. SP20											21.5	9.0		
			Win. WAA20F1									17.5	11.5	21.5	9.0		
		Win. 209	Rem. SP20											21.5	10.6		
1	1,220	CCI 209	Rem. SP20											23.0	10.3		
		CCI 209M	Rem. SP20											22.5	10.9		
		Fio. 616	Rem. SP20											23.5	11.0		
		Rem. 209P	Rem. SP20											24.0	11.1		
			Win. WAA20F1											23.5	10.9		
		Win. 209	Rem. SP20											22.0	11.1		

20-Gauge, 2 3/4 inch Rem. SP with Plastic Base Wad

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,200	Rem. 209	Rem. RXP20							16.5	9.1						
			Win. WAA20							16.5	9.8						
1	1,165	Rem. 209	Rem. SP20									17.5	11.3				
			Win. WAA20F1									17.5	10.7				
1	1,330	Rem. 209	Rem. SP20											23.0	10.3		
			Win. WAA20F1											24.0	10.1		

20-Gauge, 2 3/4 inch Rem.-Peters Unibody Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,200	CCI 209M	Rem. RXP20							16.5	10.9	17.5	11.3				
		Fed. 209	Rem. RXP20							16.0	11.5	16.5	10.7				
		Rem. 209	Hornady Versalite									16.5	10.9				
			Rem. RXP20							16.5	10.8	16.5	10.2				
			Win. WAA20							16.5	11.2						
		Win. 209	Rem. RXP20									17.5	10.9				
1	1,165	CCI 209M	Rem. SP20											22.0	10.5		
		Fed. 209	Rem. SP20											21.5	10.5		
		Rem. 209	Rem. SP20											21.0	11.5		
			Win. WAA20F1											21.5	11.1		
		Win. 209	Rem. SP20											22.0	11.3		

20-Gauge, 2 3/4 inch Win.-Western Plastic AA-type Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,050	Win. 209	Win. WAA20					11.2	11.0								
7/8	1,100	Win. 209	Claybuster 1078-20					13.0	11.2								
			Win. WAA20							13.8	11.2						
			Win. WAA20F1					12.5	11.3								
7/8	1,155	CCI 209M	Win. WAA20							15.0	10.2						
		Win. 209	Claybuster 1078-20							15.0	10.2	16.0	10.5				
			PC20					13.5	11.2								
			Rem. RXP20							15.0	8.7						
			Win. WAA20F1							15.0	11.0	16.0	11.0				
7/8	1,200	Win. 209	Claybuster 1078-20							16.0	11.2	16.5	11.0				
			PC20							16.0	11.2	16.5	11.3				
			Rem. RXP20							16.0	9.0	16.5	9.0				
			Win. WAA20F1							15.5	11.2						
1	1,165	Win. 209	Rem. RXP20									16.5	9.6				
			Rem. SP20									16.5	10.0				
1	1,220	Win. 209	Rem. RXP20											23.0	11.3		
			Rem. SP20											23.5	11.4		
			Win. WAA20F1											23.0	11.5		

20-Gauge, 2 3/4 inch Win.-Western Plastic Xpert Ranger Shells (Polyformed Shell)

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
7/8	1,155	Win. 209	Fed. 20S1							14.5	9.7						
			Win. WAA20							14.5	9.8						
7/8	1,200	Win. 209	Fed. 20S1							15.5	10.8						
			Rem. RXP20							15.5	9.7						
			Win. WAA20							15.5	10.7						
1	1,165	Win. 209	Rem. RXP20							16.0	11.1						

20-Gauge, 3 inch Fed. Plastic Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1	1,255	Fed. 209	Rem. RXP20											27.0	9.2		
			Win. WAA20											26.5	9.4		
1	1,310	Fed. 209	Fed. 20S1											28.0	10.3		
			Rem. RXP20											28.0	10.2		
			Win. WAA20											28.5	10.6		
1 1/8	1,230	Fed. 209	Rem. SP20											26.5	10.3		
			Win. WAA20F1											26.0	10.1		
1 1/4	1,185	Fed. 209	Rem. SP20											25.5	10.6		
			Win. WAA20F1											25.5	10.4		

28-Gauge, 2 3/4 inch Fed. Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
3/4	1,200	CCI 109	Rem. SP28					13.0	10.0	13.5	9.4	14.5	10.0	18.5	9.8		
			Win. WAA28							14.0	10.4	15.0	10.5				
		Fed. 209	Fed. 28S1A							13.5	11.6	14.0	11.7	17.5	9.6		
			Rem. SP28					12.5	11.8	13.0	11.2	13.0	10.1	18.0	9.9		
			Win. WAA28							13.5	10.5	14.0	10.9	17.5	8.7		
3/4	1,295	Fed. 209	Rem. SP28											20.0	10.9		

28-Gauge, 2 3/4 inch Rem.-Peters Plastic Target Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
3/4	1,200	CCI 109	Fed. 28S1A					13.0	11.8	14.0	10.9	14.5	10.7	18.5	10.1		
			Rem. SP28					12.0	10.2	13.0	9.1	14.0	8.9	18.0	7.5		
			Win. WAA28					12.0	10.4	13.0	9.1	14.0	8.3	18.0	7.3		
		Rem. 209P	Fed. 28S1A							13.5	11.3	14.5	11.2	18.0	9.2		
			Rem. SP28					12.0	10.5	13.0	9.1	14.0	8.7	18.0	7.6		
			Win. WAA28					12.0	10.3	13.0	8.9	14.0	8.8	18.0	7.7		
3/4	1,295	Rem. 209P	Rem. SP28							15.0	10.6	16.5	10.3	21.0	9.7		

28-Gauge, 2 3/4 inch Remington Premier STS

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
3/4	1,200	Rem. 209P	Duster Red							14.0	9.6	14.8	9.6				
			PC Blue							14.0	11.2	14.5	10.8	18.5	9.6		

28-Gauge, 2 3/4 inch Win.-Western Plastic AA-Type Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
3/4	1,200	CCI 109	Win. WAA28							13.0	8.4	14.0	7.9				
		Win. 209	Win. WAA28					12.5	11.9	13.0	9.4	14.0	8.4				

28-Gauge, 2 3/4 inch Win.-Western Plastic AA-Type "HS" Shells

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
3/4	1,200	Win 209	Win. WAA28HS							13.1	11.3						
		Win. 209	Win. WAA28HS									14.0	10.9				

410 Bore, 2 1/2 inch Fed. Plastic Shell

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1/2	1,200	Fed. 209	Fed. 410SC													13.5	11.9
			Rem. SP410													13.0	11.5
			Win. WAA41													13.0	11.3
		Fed. 410	Fed. 410SC													13.5	12.0

410 Bore, 2 1/2 inch Rem.-Peters Plastic Shell

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1/2	1,200	CCI 209	Fed. 410SC													14.0	10.6
			Rem. SP410													14.5	10.5
			Win. WAA41													14.5	10.3
		CCI 209M	Rem. SP410													13.5	11.0
		Rem. 97*	Fed. 410SC													13.5	11.4
			Rem. SP410													13.0	11.5
			Win. WAA41													14.0	11.5

410 Bore, 2 1/2 inch Win.-Western Plastic AA-Type Shell

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000
1/2	1,200	CCI 209	Fed. 410SC													13.0	12.1
			Rem. SP410													13.5	12.0
		Win. 209	Win. WAA41													13.0	11.7

410 Bore, 3 inch Rem.-Peters Plastic Shell

Shot Wt. (ounces)	Velocity	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000	Unique Grains	Unique psi x1000	Herco Grains	Herco psi x1000	Blue Dot Grains	Blue Dot psi x1000	2400 Grains	2400 psi x1000 vv
2/3	1,135	CCI 209M	Rem. SP410													14.5	12.2
		Fed. 410	Rem. SP410													14.0	12.7
		Rem. 97*	Fed. 410SC													14.5	12.6
			Rem. SP410													14.5	13.0
			Win. WAA41													14.5	12.5

410™ RELOADING DATA NEW!

Alliant Powder's new 410 is the only flake powder that is specifically designed for the exacting needs of .410 skeet and field loads. It's the cleanest burning .410 powder available. New 410 is more efficient, with lower powder charge weights, giving it optimum loading characteristics. The superior ballistic performance of 410 creates perfect patterns. Consistent performance in any weather, shot after shot, lot after lot, makes the new 410 your reloading powder of choice.

Shell Type	Shot Weight (ounces)	Velocity (fps)	Primer	Wad	Powder	Charge Wt. (GRS)	Pressure PSI	
410 Bore, 2 1/2 inch Remington Premier Shell	1/2 oz	1,200	Rem 209STS	SP 410	410	12	9,500	
	1/2 oz	1,200	CCI 209M	SP 410	410	12.2	9,800	
	1/2 oz	1,200	Rem 209STS	Fed. 410 SC	410	12.2	10,700	
	1/2 oz	1,200	Rem 209STS	WAA41	410	12.3	8,800	
	1/2 oz	1,200	Rem 209STS	CB 1050-41	410	12.3	8,700	
	1/2 oz	1,230	Rem 209STS	Duster 4150	410	12.8	9,900	
	1/2 oz	1,230	Rem 209STS	SP 410	410	12.7	9,700	
410 Bore, 2 1/2 inch Win. Western Plastic AA Type Shell	1/2 oz	1,200	CCI 209M	WAA41	410	11.5	11,100	
	1/2 oz	1,200	Win 209	CB1050-41	410	11.5	10,100	
	1/2 oz	1,200	Win 209	Duster 4150	410	11.4	11,100	
	1/2 oz	1,200	Win 209	Fed. 410SC	410	11	11,800	
	1/2 oz	1,200	Win 209	Rem. SP 410	410	11.5	10,800	
	1/2 oz	1,230	CCI 209M	WAA41	410	11.9	11,800	
	1/2 oz	1,230	Win 209	CB1050-41	410	11.9	10,900	
410 Bore, 2 1/2 inch Federal Plastic Shell	1/2 oz	1,200	CCI 209M	Fed. 410SC	410	11.5	10,600	
	1/2 oz	1,200	Fed 209A	WAA41	410	11.5	10,500	1/16 in. spacer req.
	1/2 oz	1,200	Fed 209A	SP410	410	11.5	10,700	1/16 in. spacer req.
	1/2 oz	1,200	Fed 209A	Duster 4150	410	11.5	10,000	
	1/2 oz	1,200	Fed 209A	CB 1050-41	410	11.5	10,500	1/16 in. spacer req.
	1/2 oz	1,200	Fed 209A	Fed. 410SC	410	11.5	10,500	
	1/2 oz	1,230	Fed 209A	Duster 4150	410	11.9	11,800	
	1/2 oz	1,230	Fed 209A	Fed. 410SC	410	11.9	12,000	
	1/2 oz	1,230	Fed209A	Rem. SP410	410	11.8	11,800	1/16 in. spacer req.
	1/2 oz	1,230	Fed 209A	WAA41	410	11.8	11,500	1/16 in. spacer req.
	1/2 oz	1,230	Fed 209A	CB 1050-41	410	11.8	11,400	

PROMO™ RELOADING DATA

PROMO™ is Alliant's budget priced 12 gauge target shotshell powder. Available in 8 pound containers only, it provides economical loads that are reliable and consistent, shot after shot.

Note - To determine the proper bushing size for PROMO™ shotshell powder, be sure to use the following procedure:

- **Select a bushing 2 sizes smaller than the one recommended for the same number of grains of Red Dot® from the manufacturers' bushing chart, then...**
- **Place this bushing in your reloading machine and weigh several charges on your powder scales, then...**
- **Compare the weighed charge to the recommended charge weight.**
- **Adjust the bushing size if necessary to obtain the desired charge weight.**
- **Confirm your bushing size with each new powder lot.**
- **We recommend this same procedure for confirming the correct bushing size for each new lot of PROMO.™**
- **With all powders, you should routinely verify your powder charge using an accurate powder scale.**

All data are for 12 gauge, 2 3/4 inch shells

Shot Weight	Shell	Velocity (FPS)	Primer	Wad	Promo Grains
1	Federal Gold Medal	1,200	Fed. 209A	Fed12S0	18
1	Federal Gold Medal	1,200	Fed. 209A	WAA12 SL	18
1	Federal Gold Medal	1,200	Fed. 209A	Claybuster 1100-12	18
1	Federal Gold Medal	1,255	Fed. 209A	Fed12S0	19
1	Federal Gold Medal	1,255	Fed. 209A	WAA12 SL	18.5
1	Federal Gold Medal	1,255	Fed. 209A	Claybuster 1100-12	18.5
1	Remington STS, Nitro 27 & Premier	1,200	Rem. 209P	Rem. TGT12	18
1	Remington STS, Nitro 27 & Premier	1,200	Rem. 209P	Claybuster 1100-12	18
1	Remington STS, Nitro 27 & Premier	1,200	Rem. 209P	Purple PC	18.5
1	Remington STS, Nitro 27 & Premier	1,255	Rem. 209P	Rem. TGT12	19
1	Remington STS, Nitro 27 & Premier	1,255	Rem. 209P	Claybuster 1100-12	19.5
1	Remington STS, Nitro 27 & Premier	1,255	Rem. 209P	Purple PC	19.5
1	Winchester AA	1,200	Win. 209	WAA12 SL	18
1	Winchester AA	1,200	Win. 209	Claybuster 1100-12	18
1	Winchester AA	1,200	Win. 209	Purple PC	18
1	Winchester AA	1,255	Win. 209	WAA12 SL	19
1	Winchester AA	1,255	Win. 209	WAA12 SL	19
1	Winchester AA	1,255	Win. 209	Claybuster 1100-12	19
1	Winchester AA	1,255	Win. 209	Purple PC	19
1 1/8	Federal Gold Medal	1,145	Fed. 209A	Fed. 12S3	18
1 1/8	Federal Gold Medal	1,145	Fed. 209A	WAA12 (white)	17.5
1 1/8	Federal Gold Medal	1,145	Fed. 209A	Claybuster 3118-12	18
1 1/8	Federal Gold Medal	1,200	Fed. 209A	Fed. 12S3	19.5
1 1/8	Federal Gold Medal	1,200	Fed. 209A	WAA12 (white)	19
1 1/8	Federal Gold Medal	1,200	Fed. 209A	Claybuster 3118-12	19
1 1/8	Remington STS, Nitro 27 & Premier	1,145	Rem. 209P	Figure 8	18
1 1/8	Remington STS, Nitro 27 & Premier	1,145	Rem. 209P	Windjammer	17.5
1 1/8	Remington STS, Nitro 27 & Premier	1,145	Rem. 209P	Claybuster 3118-12	17.5
1 1/8	Remington STS, Nitro 27 & Premier	1,145	Rem. 209P	Red PC	17.5
1 1/8	Remington STS, Nitro 27 & Premier	1,200	Rem. 209P	Figure 8	19
1 1/8	Remington STS, Nitro 27 & Premier	1,200	Rem. 209P	Windjammer	18.5
1 1/8	Remington STS, Nitro 27 & Premier	1,200	Rem. 209P	Claybuster 3118-12	19
1 1/8	Winchester AA	1,145	Win. 209	WAA12 (white)	17
1 1/8	Winchester AA	1,145	Win. 209	Figure 8	17.5
1 1/8	Winchester AA	1,145	Win. 209	Windjammer	17.5
1 1/8	Winchester AA	1,145	Win. 209	Claybuster 3118-12	17
1 1/8	Winchester AA	1,145	Win. 209	Red PC	17.5
1 1/8	Winchester AA	1,200	Win. 209	WAA12 (white)	18
1 1/8	Winchester AA	1,200	Win. 209	Figure 8	18.5
1 1/8	Winchester AA	1,200	Win. 209	Windjammer	18.5
1 1/8	Winchester AA	1,200	Win. 209	Claybuster 3118-12	18
1 1/8	Winchester AA	1,200	Win. 209	Red PC	18.5

e³ RELOADING DATA NEW!

Great patterns, superior consistency, low charge weight efficiency. To top it off, e³ is the cleanest double-base powder available, and far less affected by temperature changes than single-base powders. That means better performance from your reloads and more broken targets. Give it a shot and you'll see the difference. Energy, Efficiency, Excellence...that's e³.

All data are for 12-gauge, 2 3/4 inch shells

Shell Type	Shot Weight (ounces)	Velocity (fps)	Primer	Wad	Powder	Charge Wt. (GRS)	Pressure PSI
Fed. Gold Medal Plastic Target Shell	7/8 oz	1,200	Fed 209A	Fed. 12SO	e³	16.5	6,905
	7/8 oz	1,250	Fed 209A	Rem. TGT 12	e³	17.0	7,095
	7/8 oz	1,250	Fed 209A	Fed. 12SO	e³	17.5	8,095
	7/8 oz	1,300	Fed 209A	Rem. TGT 12	e³	18.0	7,925
	7/8 oz	1,300	Fed 209A	Fed. 12SO	e³	18.5	8,855
	1 oz	1,200	Fed 209A	Duster - Green	e³	16.5	8,310
	1 oz	1,200	Fed 209A	Rem. TGT 12	e³	17.0	8,000
	1 oz	1,200	Fed 209A	Fed. 12SO	e³	17.5	9,040
	1 oz	1,255	Fed 209A	Rem. TGT 12	e³	18.0	8,840
	1 oz	1,255	Fed 209A	Duster - Green	e³	18.0	9,710
	1 oz	1,255	Fed 209A	Fed. 12SO	e³	18.5	9,340
	1 oz	1,290	Fed 209A	Duster - Green	e³	18.5	10,035
	1 oz	1,290	Fed 209A	Rem. TGT 12	e³	19.0	9,660
	1 oz	1,300	Fed 209A	Fed. 12SO	e³	19.5	10,070
	1 1/8 oz	1,090	Fed 209A	Claybuster 3118-12AR	e³	15.5	8,210
	1 1/8 oz	1,090	Fed 209A	Claybuster 4118	e³	15.5	7,860
	1 1/8 oz	1,090	Fed 209A	Rem. Fig. 8	e³	15.5	7,930
	1 1/8 oz	1,090	Fed 209A	Win. WAA12 (white)	e³	15.5	8,290
	1 1/8 oz	1,090	Fed 209A	Win. WAA12SL	e³	15.5	8,485
	1 1/8 oz	1,090	Fed 209A	Fed. 12S3	e³	15.5	8,580
	1 1/8 oz	1,090	Fed 209A	Duster - Blue	e³	15.5	8,655
	1 1/8 oz	1,145	Fed 209A	Claybuster 4118	e³	16.5	8,365
	1 1/8 oz	1,145	Fed209A	Claybuster 3118-12AR	e³	16.5	8,960
	1 1/8 oz	1,145	Fed 209A	Win. WAA12 (white)	e³	16.5	8,980
	1 1/8 oz	1,145	Fed 209A	Win. WAA12SL	e³	16.5	9,215
	1 1/8 oz	1,145	Fed 209A	Duster - Blue	e³	16.5	9,520
	1 1/8 oz	1,145	Fed 209A	Rem. Fig. 8	e³	17.0	8,875
	1 1/8 oz	1,145	Fed 209A	Fed. 12S3	e³	17.0	9,260
	1 1/8 oz	1,200	Fed 209A	Claybuster 3118-12AR	e³	17.8	9,990
	1 1/8 oz	1,200	Fed 209A	Claybuster 4118	e³	18.0	9,525
	1 1/8 oz	1,200	Fed 209A	Rem. Fig. 8	e³	18.0	9,900
	1 1/8 oz	1,200	Fed 209A	Win. WAA12 (white)	e³	18.0	10,470
	1 1/8 oz	1,200	Fed 209A	Duster - Blue	e³	18.0	10,550
	1 1/8 oz	1,200	Fed 209A	Fed. 12S3	e³	18.0	10,660
	1 1/8 oz	1,200	Fed209A	Win. WAA12SL	e³	18.0	10,755
Fed. Paper Target Shell	7/8 oz	1,300	Fed 209A	Claybuster 4100-12B	e³	16.5	6,280
	7/8 oz	1,200	Fed 209A	Win. WAA12L (Gray)	e³	16.5	6,960
	7/8 oz	1,250	Fed 209A	Claybuster 4100-12B	e³	17.5	7,075
	7/8 oz	1,250	Fed 209A	Win. WAA12L (Gray)	e³	17.5	7,345
	7/8 oz	1,300	Fed 209A	Claybuster 4100-12B	e³	18.5	7,400
	7/8 oz	1,300	Fed 209A	Win. WAA12L (Gray)	e³	18.5	8,280
	1 oz	1,300	Fed 209A	Fed. 12SO	e³	17.5	8,535
	1 oz	1,250	Fed 209A	Fed. 12C1	e³	18.0	9,375
	1 oz	1,255	Fed 209A	Fed. 12SO	e³	18.5	10,065
	1 oz	1,290	Fed 209A	Fed. 12SO	e³	19.5	10,630
	1 1/8 oz	1,090	Fed. 209A	Claybuster 4118	e³	15.5	7,985
	1 1/8 oz	1,145	Fed 209A	Claybuster 3118-12AR	e³	16.5	9,375
	1 1/8 oz	1,145	Fed 209A	Rem. Fig. 8	e³	17.0	8,785
	1 1/8 oz	1,145	Fed 209A	Rem. RXP12	e³	17.0	9,280
	1 1/8 oz	1,145	Fed 209A	Fed. 12C1	e³	17.0	9,380
	1 1/8 oz	1,145	Fed 209A	Claybuster 4118	e³	17.0	9,385
	1 1/8 oz	1,145	Fed. 209A	Fed. 12S3	e³	17.0	9,640
	1 1/8 oz	1,145	Fed 209A	Win. WAA12 (White)	e³	17.0	9,815
	1 1/8 oz	1,200	Fed 209A	Rem. Fig. 8	e³	18.0	9,640
	1 1/8 oz	1,300	Fed 209A	Rem. RXP12	e³	18.0	10,320

All data are for 12-gauge, 2 3/4 inch shells (e³ continued)

Shell Type	Shot Weight (ounces)	Velocity (fps)	Primer	Wad	Powder	Charge Wt. (GRS)	Pressure PSI
Fed. Paper Target Shell (continued)	1 1/8 oz	1,200	Fed 209A	Claybuster 5118-12AR	e³	18.0	10,430
	1 1/8 oz	1,200	Fed 209A	Win. WAA12 (White)	e³	18.0	10,780
	1 1/8 oz	1,200	Fed 209A	Claybuster 4118	e³	18.5	9,860
	1 1/8 oz	1,200	Fed 209A	Fed. 12S3	e³	18.5	10,955
Rem. Premier, STS Plastic Target Shell	7/8 oz	1,100	Rem 209P	Fed. 12SO	e³	15.5	8,015
	7/8 oz	1,200	Rem 209P	Win. WAA12L (Gray)	e³	16.0	7,265
	7/8 oz	1,200	Rem 209P	Claybuster 4100-12 B	e³	16.2	6,195
	7/8 oz	1,250	Rem 209P	Fed. 12SO	e³	17.0	7,575
	7/8 oz	1,250	Rem 209P	Win. WAA12L (Gray)	e³	17.0	7,655
	7/8 oz	1,250	Rem 209P	Rem. TGT 12	e³	17.0	7,820
	7/8 oz	1,250	Rem 209P	Claybuster 4100-12 B	e³	17.2	7,045
	7/8 oz	1,300	Rem 209P	Rem. TGT 12	e³	17.8	8,585
	7/8 oz	1,300	Rem 209P	Fed. 12SO	e³	17.8	10,245
	7/8 oz	1,300	Rem 209P	Win. WAA12L (Gray)	e³	18.0	8,525
	7/8 oz	1,300	Rem 209P	Claybuster 4100-12 B	e³	18.2	7,580
	1 oz	1,150	Rem 209P	Win. WAA12L (Gray)	e³	15.5	8,950
	1 oz	1,150	Rem 209P	Claybuster 1100-12	e³	16.0	7,730
	1 oz	1,150	Rem. 209P	Rem. TGT 12	e³	16.0	7,970
	1 oz	1,200	Rem 209P	Win. WAA12SL	e³	16.5	10,015
	1 oz	1,200	Rem 209P	Rem. TGT 12	e³	16.9	8,550
	1 oz	1,200	Rem 209P	Claybuster 1100-12	e³	17.0	8,730
	1 oz	1,200	Rem 209P	Duster - Green	e³	17.0	9,455
	1 oz	1,200	Rem 209P	Fed. 12SO	e³	17.2	9,585
	1 oz	1,250	Rem 209P	Rem. TGT 12	e³	18.0	9,710
	1 oz	1,255	Rem 209P	Win. WAA12SL	e³	17.5	10,530
	1 oz	1,255	Rem 209P	Duster - Green	e³	17.5	10,970
	1 oz	1,255	Rem 209P	Claybuster 1100-12	e³	18.0	9,540
	1 oz	1,255	Rem 209P	Fed. 12SO	e³	18.3	10,330
	1 oz	1,290	Rem 209P	Claybuster 1100-12	e³	19.0	10,040
	1 oz	1,290	Rem 209P	Rem. TGT 12	e³	19.0	10,850
	1 1/8 oz	1,090	Rem. 209P	Rem. RXP12	e³	15.0	8,655
	1 1/8 oz	1,090	Rem. 209P	Rem. Fig. 8	e³	15.0	8,760
	1 1/8 oz	1,090	Rem. 209P	Win. WAA12 (White)	e³	15.0	9,175
	1 1/8 oz	1,090	Rem 209P	Fed. 12S3	e³	15.2	8,595
	1 1/8 oz	1,090	Rem 209P	Claybuster 0118	e³	15.4	8,075
	1 1/8 oz	1,090	Rem 209P	Claybuster 4118	e³	15.5	7,950
	1 1/8 oz	1,145	Rem 209P	Win. WAA12 (White)	e³	16.0	10,170
	1 1/8 oz	1,145	Rem 209P	Claybuster 0118	e³	16.2	8,640
	1 1/8 oz	1,145	Rem 209P	Rem. RXP12	e³	16.3	9,465
	1 1/8 oz	1,145	Rem 209P	Claybuster 4118	e³	16.5	9,390
	1 1/8 oz	1,145	Rem 209P	Rem. Fig. 8	e³	16.5	9,930
	1 1/8 oz	1,145	Rem 209P	Fed. 12S3	e³	16.7	10,425
	1 1/8 oz	1,200	Rem 209P	Win. WAA12 (White)	e³	17.2	10,960
	1 1/8 oz	1,200	Rem 209P	Rem. Fig. 8	e³	17.5	10,775
	1 1/8 oz	1,200	Rem 209P	Claybuster 0118	e³	17.7	10,575
	1 1/8 oz	1,200	Rem 209P	Rem. RXP12	e³	17.9	10,660
	1 1/8 oz	1,200	Rem 209P	Claybuster 4118	e³	18.0	10,710
Win. Plastic AA Shell	7/8 oz	1,200	Win 209	Rem. TGT 12	e³	15.7	7,380
	7/8 oz	1,200	Win 209	Claybuster 4100-12 B	e³	16.0	6,870
	7/8 oz	1,200	Win 209	Win. WAA12L (Gray)	e³	16.0	7,425
	7/8 oz	1,250	Win 209	Rem. TGT 12	e³	16.5	8,200
	7/8 oz	1,250	Win 209	Claybuster 4100-12 B	e³	17.0	7,475
	7/8 oz	1,250	Win 209	Win. WAA12L (Gray)	e³	17.0	8,210
	7/8 oz	1,300	Win 209	Win. WAA12L (Gray)	e³	18.0	8,385
	7/8 oz	1,300	Win 209	Rem. TGT 12	e³	18.3	8,730
	1 oz	1,150	Win 209	Win. WAA12L (Gray)	e³	15.0	8,635
	1 oz	1,150	Win 209	Win. WAA12SL	e³	15.5	8,085
	1 oz	1,150	Win 209	Rem. TGT 12	e³	15.5	8,530
	1 oz	1,150	Win 209	Claybuster 1100-12	e³	16.0	8,285
	1 oz	1,150	Win 209	Duster - Green	e³	16.0	8,730
	1 oz	1,200	Win 209	Win. WAA12SL	e³	16.5	9,240
	1 oz	1,200	Win 209	Rem. TGT 12	e³	16.5	9,305
	1 oz	1,200	Win 209	Win. WAA12L (Gray)	e³	16.5	9,410
	1 oz	1,200	Win 209	Claybuster 1100-12	e³	17.0	8,805
	1 oz	1,200	Win 209	Duster - Green	e³	17.0	9,525
	1 oz	1,255	Win 209	Win. WAA12L (Gray)	e³	17.5	9,740
	1 oz	1,255	Win 209	Rem. TGT 12	e³	17.5	10,070
	1 oz	1,255	Win 209	Claybuster 1100-12	e³	18.0	9,265
	1 oz	1,255	Win 209	Win. WAA12SL	e³	18.0	10,045

All data are for 12-gauge, 2 3/4 inch shells (e³ continued)

Shell Type	Shot Weight (ounces)	Velocity (fps)	Primer	Wad	Powder	Charge Wt. (GRS)	Pressure PSI
2 3/4 inch Win. Plastic AA Shell (continued)	1 oz	1,255	Win 209	Duster - Green	e³	18.0	10,580
	1 oz	1,290	Win 209	Win. WAA12SL	e³	18.5	10,080
	1 oz	1,290	Win 209	Win. WAA12L (Gray)	e³	18.5	10,870
	1 oz	1,290	Win 209	Rem. TGT 12	e³	18.5	11,815
	1 oz	1,250	Win 209	Claybuster 1100-12	e³	19.0	10,135
	1 1/8 oz	1,090	Win 209	Rem. Fig. 8	e³	15.0	8,520
	1 1/8 oz	1,090	Win 209	Claybuster 4118	e³	15.0	8,555
	1 1/8 oz	1,090	Win 209	Win. WAA12SL	e³	15.0	8,645
	1 1/8 oz	1,090	Win 209	Rem. RXP12	e³	15.0	8,700
	1 1/8 oz	1,090	Win 209	Claybuster 0118	e³	15.0	8,955
	1 1/8 oz	1,090	Win 209	Duster - Blue	e³	15.0	9,015
	1 1/8 oz	1,090	Win 209	Win. WAA12 (White)	e³	15.0	9,090
	1 1/8 oz	1,145	Win 209	Claybuster 0118	e³	16.0	9,080
	1 1/8 oz	1,145	Win 209	Rem. Fig. 8	e³	16.0	9,525
	1 1/8 oz	1,145	Win 209	Win. WAA12SL	e³	16.0	9,625
	1 1/8 oz	1,145	Win 209	Win. WAA12 (White)	e³	16.0	9,900
	1 1/8 oz	1,145	Win 209	Duster - Blue	e³	16.0	10,265
	1 1/8 oz	1,145	Win 209	Rem. RXP12	e³	16.5	9,835
	1 1/8 oz	1,145	Win 209	Claybuster 4118	e³	16.5	9,835
	1 1/8 oz	1,200	Win 209	Claybuster 0118	e³	17.0	9,970
	1 1/8 oz	1,200	Win 209	Win. WAA12 (White)	e³	17.0	10,450
	1 1/8 oz	1,200	Win 209	Duster - Blue	e³	17.0	10,505
	1 1/8 oz	1,200	Win 209	Claybuster 4118	e³	17.5	10,855
	1 1/8 oz	1,200	Win 209	Rem. Fig. 8	e³	17.5	10,930

INTERNATIONAL LOADS

24-Gram International Target Loads with 12-Gauge, 2 3/4 inch Fed. Gold Medal Plastic Target Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Fed. 209A	Claybuster 1100-12	20.0	8.7	21.0	8.0		
			Fed. 12SO	20.0	8.9	20.5	7.9		
			Purple PC	19.5	8.7				
			Rem. TGT 12	20.5	8.9	21.0	8.1		
			Win. WAA12L (Gray)	20.0	9.0	21.5	8.1		

24-Gram International Target Loads with 12-Gauge, 2 3/4 inch Fiocchi Plastic Target Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Fio. 616	Fed. 12SO	20.5	8.7	22.0	7.8		
			Purple PC			22.5	6.9		
			Rem. TGT 12	20.5	8.2	22.0	7.6		
			Win. WAA12L (Gray)	21.0	8.5	22.0	7.5		

24-Gram International Target Loads with 12-Gauge, 2 3/4 inch Rem. Premier,STS Plastic Target Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Rem. 209P	Claybuster 1100-12	20.5	8.6	20.5	8.7		
			Fed. 12SO	20.0	9.8	20.5	9.6		
			Purple PC	20.5	8.3	21.0	8.1		
			Rem. TGT 12	20.5	9.2	20.5	8.5		
			Win. WAA12L (Gray)	20.5	9.8	20.5	8.7		

24-Gram International Target Loads with 12-Gauge, 2 3/4 inch Win. AA Plastic Target Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Win. 209	Claybuster 1100-12	20.0	9.6	20.5	8.7		
			Fed. 12SO	20.0	10.1	20.5	9.1		
			Purple PC	20.0	9.0	21.0	8.1		
			Rem. TGT 12	20.0	9.6	20.5	8.6		
			Win. WAA12L (Gray)	20.0	10.2	20.5	9.7		

28-Gram International Target Loads with 12-Gauge, 2 3/4 inch Fed. Gold Medal Plastic Target Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Fed. 209A	Fed. 12SO	23.0	9.9			24.5	9.1
			Purple PC	23.0	8.8			25.0	8.2
			Rem. Fig. 8	22.5	9.5			25.0	8.4
			Win. WAA12SL	22.5	9.6			24.5	8.4

28-Gram International Target Loads with 12-Gauge, 2 3/4 inch Fiocchi Plastic Target Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Fio. 616	Fed. 12S3	22.0	9.6			24.0	8.8
			Purple PC	22.5	9.5			24.0	8.8
			Rem. Fig. 8	21.5	9.7			24.0	8.8
			Win. WAA12SL	21.5	10.4			24.0	8.8

28-Gram International Target Loads with 12-Gauge, 2 3/4 inch Rem. Premier Plastic Target Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Rem. 209P	Fed. 12S3					23.0	10.3
			Purple PC	21.5	10.6			24.0	9.9
			Rem. Fig. 8	21.5	10.6			23.0	9.7
			Win. WAA12SL					23.0	10.1

28-Gram International Target Loads with 12-Gauge, 2 3/4 inch Win.-Western Plastic AA-Type Shells

Dram Equiv.	Velocity (fps)	Primer	Wad	Red Dot Grains	Red Dot psi x1000	American Select Grains	American Select psi x1000	Green Dot Grains	Green Dot psi x1000
3 1/2	1,345	Win. 209	Fed. 12S3						
			Purple PC					23.0	9.5
			Rem. Fig. 8					22.5	10.6
			Win. WAA12SL						

NON-TOXIC SHOTSHELL RELOADING DATA

WARNING: Reloading steel shotshells requires strict adherence to Alliant published reloading specifications. The reloading specifications provided in this publication were derived through the use of controlled laboratory conditions. While reloading steel shotshells, the reloader must adhere precisely to all the components, without exception, set forth in the load data and specifications. Alliant recommends that both powder charge and shot charge be individually weighed to insure compliance to the load data. Steel shotshells should only be used in well maintained firearms that are designed to shoot steel shot loads. Alliant recommends that commercially available shotshell sealant be applied to both the primer and crimp areas to prevent moisture penetration.

Regarding the use of fillers/spacers:

Spacer or filler wads serve the purpose of raising the shot column to a level that will allow for the forming of a good crimp. If a filler is required for a particular load, the thickness and location of that filler will be indicated in the "spacer" column. As an example, it might be described in the following manner: 1/8 U, 1/8 O, which means that two 1/8 inch thick spacers are required; one should be placed in the bottom of the wad cup directly under the shot, and a second one over the shot. Spacers can be stacked if necessary, and the number needed may vary depending on the size shot being used. If your crimp dishes in a bit, or bulges, you can add to or reduce the number of spacers to improve the crimp. Only slight adjustments, if any, will be necessary for this reason. We do not recommend the use of shot buffer in any of our loads.

Steel Shot Only
10-Gauge, 3 1/2-inch Shells

Shell Type	Wad	Primer	Powder	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Remington (yellow plastic base wad)	Precision Reloading TUPRW105	Fed. 209A	Steel	1 1/4	1,590	50.0	9.8	1/2 U
Remington (yellow plastic base wad)	Ballistic Products #3221000	Fed. 209A	Steel	1 5/8	1,310	37.0	10.1	none
Remington Plastic SP	Precision Reloading TUPRW105	Fed. 209A	Steel	1 3/8	1,475	43.5	10.0	3/8 U
Remington Plastic SP	Ballistic Products #3221000	Fed. 209A	Steel	1 3/8	1,535	46.0	10.1	3/8 U
Remington Plastic SP	Rel. Specialties "SAM 1" 10 ga 3 1/2"	Fed. 209A	Steel	1 3/8	1,555	48.0	10.3	1/4 U
Remington Plastic SP	Precision Reloading TUPRW105	Fed. 209A	Steel	1 1/2	1,345	37.5	10.3	1/4 U
Remington Plastic SP	Ballistic Products #3221000	Fed. 209A	Steel	1 1/2	1,385	39.0	10.1	1/4 U
Remington Plastic SP	Rel. Specialties "SAM 1" 10 ga 3 1/2"	Fed. 209A	Steel	1 1/2	1,470	45.0	10.1	1/8 U
Winchester Polyformed	Rel. Specialties "SAM 1" 10 ga 3 1/2"	Fed. 209A	Steel	1 3/8	1,538	45.5	10.2	1/4 U
Winchester Polyformed	Rel. Specialties "SAM 1" 10 ga 3 1/2"	Fed. 209A	Steel	1 1/2	1,415	41.0	9.9	1/8 U

Steel Shot Only
12-Gauge, 2 3/4-inch Shells

Shell Type	Wad	Primer	Powder	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Federal Gold Medal	Rel. Specialties "SAM 1" 12 ga 2 3/4	Fed. 209A	Steel	7/8	1,700	42.0	7.8	1/8 U
Federal Gold Medal	Ballistic Products #3221275	Fed. 209A	Steel	7/8	1,765	45.0	9.0	none
Federal Gold Medal	Ballistic Products #3221275	Fed. 209A	Steel	1	1,480	33.0	9.5	1/8 U
Federal Gold Medal	Precision Reloading TUPRW12	Fed. 209A	Steel	1	1,500	37.0	8.0	1/8 U
Federal Gold Medal	Rel. Specialties "SAM 1" 12 ga 2 3/4	Fed. 209A	Steel	1	1,520	36.0	9.2	none
Federal Gold Medal	Rel. Specialties "SAM 1" 12 ga 2 3/4	Fed. 209A	Steel	1 1/8	1,380	32.0	9.0	none
Federal Gold Medal	Precision Rel. TUPRW12	Fed. 209A	Steel	1 1/8	1,425	32.0	9.6	none
Remington Nitro Mag	Precision Rel. TUPRW12	Fed. 209A	Steel	1	1,520	35.5	10.8	none
Remington Nitro Mag	Rel. Specialties "SAM 1 12 ga 2 3/4	Fed. 209A	Steel	1	1,546	35.5	10.3	none
Remington Nitro Mag	Precision Rel. TUPRW12	Fed. 209A	Steel	1 1/8	1,361	29.5	10.4	none
Remington Nitro Mag	Rel. Specialties "SAM 1" 12 ga 2 3/4	Fed. 209A	Steel	1 1/8	1,428	32.5	10.4	none

Steel Shot Only
12-Gauge, 3 inch Shells

Shell Type	Wad	Primer	Powder	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Federal 0.090 Integral Base Wad	Precision Reloading TUPRW123	Fed. 209A	Steel	1	1,660	44.0	9.4	1/4 U
Federal 0.090 Integral Base Wad	Ballistic Products #3221230	Fed. 209A	Steel	1	1,690	45.0	10.5	3/8 U
Federal 0.090 Integral Base Wad	Rel. Specialties 12 ga 3"	Fed. 209A	Steel	1	1,720	47.0	8.9	3/8 U
Federal 0.090 Integral Base Wad	Ballistic Products #3221230	Fed. 209A	Steel	1 1/8	1,510	37.0	10.4	1/4 U
Federal 0.090 Integral Base Wad	Precision Reloading TUPRW123	Fed. 209A	Steel	1 1/8	1,515	38.0	10.9	1/4 U
Federal 0.090 Integral Base Wad	Rel. Specialties 12 ga 3"	Fed. 209A	Steel	1 1/8	1,580	40.5	10.7	1/8 U
Federal 0.090 Integral Base Wad	Precision Reloading TUPRW123	Fed. 209A	Steel	1 1/4	1,355	33.0	10.5	1/8 U
Federal 0.090 Integral Base Wad	Ballistic Products #3221230	Fed. 209A	Steel	1 1/4	1,370	33.0	10.5	1/8 U
Federal 0.090 Integral Base Wad	Rel. Specialties 12 ga 3"	Fed. 209A	Steel	1 1/4	1,455	37.0	10.8	1/8 U
Federal Hi-Power 7/16 Base Wad	Ballistic Products #3221230	Fed. 209A	Steel	1	1,665	45.0	8.9	1/4 U
Federal Hi-Power 7/16 Base Wad	Rel. Specialties 12 ga 3"	Fed. 209A	Steel	1	1,700	48.0	8.2	1/4 U
Federal Hi-Power 7/16 Base Wad	Ballistic Products #3221230	Fed. 209A	Steel	1 1/8	1,550	39.5	10.6	1/4 U
Federal Hi-Power 7/16 Base Wad	Rel. Specialties 12 ga 3"	Fed. 209A	Steel	1 1/8	1,560	40.5	10.5	1/8 U
Federal Hi-Power 7/16 Base Wad	Ballistic Products #3221230	Fed. 209A	Steel	1 1/4	1,390	33.0	10.9	1/4 U
Federal Hi-Power 7/16 Base Wad	Rel. Specialties 12 ga 3"	Fed. 209A	Steel	1 1/4	1,430	36.0	10.5	none
Remington Nitro Steel	Ballistic Products #3221230	Fed. 209A	Steel	1 1/8	1,440	33.5	10.8	1/4 U
Remington Nitro Steel	Precision Reloading TUPRW123	Fed. 209A	Steel	1 1/8	1,457	35.0	10.7	1/4 U
Remington Nitro Steel	Rel. Specialties 12 ga 3"	Fed. 209A	Steel	1 1/8	1,479	33.0	10.6	1/4 U
Remington Nitro Steel	Precision Reloading TUPRW123	Fed. 209A	Steel	1 1/4	1,392	32.0	10.7	1/8 U

Steel Shot Only
12-Gauge, 3 1/2-inch Shells

Shell Type	Wad	Primer	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Federal Integral Base Wad	Reloading Specialties "SAM 1"	Fed. 209A	1 1/4	1,510	45.0	10.4	5/8 U
Federal Integral Base Wad	Ballistic Products rnm12312	Fed. 209A	1 1/4	1,560	45.0	10.9	1/8 U
Federal Integral Base Wad	Precision Reloading TUPRW1235	Fed. 209A	1 1/4	1,565	45.0	10.7	1/2 U
Federal Integral Base Wad	Precision Reloading TUPRW1235	Fed. 209A	1 3/8	1,470	40.0	12.5	5/8 U
Federal Integral Base Wad	Ballistic Products rnm12312	Fed. 209A	1 3/8	1,485	41.5	12.6	5/8 U
Federal Integral Base Wad	Precision Reloading TUPRW1235	Fed. 209A	1 1/2	1,360	36.0	12.6	5/8 U
Federal Integral Base Wad	Ballistic Products rnm12312	Fed. 209A	1 1/2	1,385	37.0	12.8	1/4 U
Federal Integral Base Wad	Reloading Specialties "SAM 1"	Fed. 209A	1 1/2	1,390	39.0	13.3	1/4 U
Remington Plastic SP	Reloading Specialties "SAM 1"	Fed. 209A	1 1/4	1,595	45.0	13.1	5/8 U
Remington Plastic SP	Ballistic Products rnm12312	Fed. 209A	1 1/4	1,615	45.0	13.3	5/8 U
Remington Plastic SP	Ballistic Products rnm12312	Fed. 209A	1 3/8	1,430	37.0	12.8	1/4 U
Remington Plastic SP	Reloading Specialties "SAM 1"	Fed. 209A	1 3/8	1,430	38.5	12.8	5/8 U
Remington Plastic SP	Ballistic Products rnm12312	Fed. 209A	1 1/2	1,305	33.0	13.0	1/4 U
Remington Plastic SP	Reloading Specialties "SAM 1"	Fed. 209A	1 1/2	1,330	35.0	13.0	1/4 U

Bismuth Shot Only
12-Gauge, 2 3/4-inch Shells

Shell Type	Wad	Primer	Powder	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Federal 7/16 Paper Base Wad	Rem. RP12	Fed. 209A	Herco	1 1/8	1,300	27.0	9.5	1/8, 0
Remington premier STS	Rem. RP12	Fed. 209A	Herco	1 1/8	1,292	26.0	10.4	1/8, 0
Remington premier STS	Claybuster 1138-12	Fed. 209A	Blue Dot	1 1/4	1,421	39.5	10.1	None

Bismuth Shot Only
12-Gauge, 3-inch Shells

Shell Type	Wad	Primer	Powder	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Federal .090 Integral Base Wad	Rem. SP12	Fed. 209A	Blue Dot	1 3/8	1,507	46.0	10.7	1/8, O
Federal .090 Integral Base Wad	Fed. 1254	Fed. 209A	Blue Dot	1 1/2	1,310	38.0	10.1	None
Federal .090 Integral Base Wad	Rem. RP12	Fed. 209A	Blue Dot	1 1/2	1,359	40.0	10.8	1/4, O
Federal 7/16 Paper Base Wad	Rem. SP12	Fed. 209A	Blue Dot	1 3/8	1,464	45.5	10.7	1/4, O
Federal 7/16 Paper Base Wad	Rem. RP12	Fed. 209A	Blue Dot	1 1/2	1,347	39.0	10.4	1/8, O
Remington SPELV plastic Base Wad	Rem. RP12	Fed. 209A	Blue Dot	1 3/8	1,473	44.0	10.7	1/8, O
Remington SPELV plastic Base Wad	Rem. SP12	Fed. 209A	Blue Dot	1 3/8	1,564	50.0	10.7	None
Remington SPELV plastic Base Wad	Rem. RP12	Fed. 209A	Blue Dot	1 1/2	1,441	45.0	10.7	None

Hevi Shot Only
12-Gauge, 2 3/4-inch Shells

Shell Type	Wad	Primer	Powder	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Federal 7/16 Paper Base Wad	Precision Reloading TUPRWIZ (White)	Fed. 209A	STEEL	1 3/8	1,320	33.5	10.6	1/8 O, 1/4 U
Remington SPELV plastic	Precision Reloading TUPRWIZ (White)	Fed. 209A	STEEL	1 1/4	1,367	32.2	10.9	1/4 O, 1/4 U
Remington SPELV plastic	Precision Reloading TUPRWIZ (White)	Fed. 209A	STEEL	1 3/8	1,291	31.3	10.4	1/8 O, 1/4 U

Hevi Shot Only
12-Gauge, 3-inch Shells

Shell Type	Wad	Primer	Powder	Shot Weight (ounces)	Velocity (fps)	Grains	psi (x1000)	Spacers
Federal .090 Integral Base Wad	Precision Reloading TUPR23 (Orange)	Fed. 209A	STEEL	1 3/8	1,372	40.0	10.3	3/8 U
Federal .090 Integral Base Wad	Precision Reloading TUPR23 (Orange)	Fed. 209A	STEEL	1 1/2	1,294	34.0	10.9	3/8 U
Federal 7/16 Paper Base Wad	Precision Reloading TUPR23 (Orange)	Fed. 209A	STEEL	1 3/8	1,371	36.5	10.6	3/8 U
Federal 7/16 Paper Base Wad	Precision Reloading TUPR23 (Orange)	Fed. 209A	STEEL	1 1/2	1,274	33.0	10.5	1/4 U
Remington SPELV plastic	Precision Reloading TUPR23 (Orange)	Fed. 209A	STEEL	1 1/4	1,462	40.0	10.3	3/8 U
Remington SPELV plastic	Precision Reloading TUPR23 (Orange)	Fed. 209A	STEEL	1 3/8	1,385	37.5	10.9	3/8 U
Remington SPELV plastic	Precision Reloading TUPR23 (Orange)	Fed. 209A	STEEL	1 1/2	1,259	33.0	10.9	1/4 U

BUCKSHOT RELOADING

10-Gauge, 3 1/2 inch Fed. Plastic Shell Buckshot Loads

Primer	Shell	No. and Size Buckshot	Velocity (fps)	Wad	Unique Grains	Unique psi (x1000)	Herco Grains	Herco psi (x1000)	Blue Dot Grains	Blue Dot psi (x1000)	2400 Grains	2400 psi (x1000)
Fed. 209	Fed. Plastic Shell	40-6's	1,275	SP10+.270 in. 20 ga. Card					45.0	10.1		
		17-0's	1,300	SP10+.135 in. 20 ga. Card					46.0	10.0		
Rem. 57*	Rem. Plastic Shell	40-6's	1,275	SP10+.270 in. 20 ga. Card					46.0	10.1		
		17-0's	1,300	SP10+.135 in. 20 ga. Card					48.5	9.8		
Win. 209	Win.-Western Plastic Shell	40-6's	1,275	SP10+.270 in. 20 ga. Card					47.5	10.0		
		17-0's	1,300	SP10					51.0	9.5		

12-Gauge, 3 inch Fed. Buckshot Loads

Primer	Shell	No. and Size Buckshot	Velocity (fps)	Wad	Unique Grains	Unique psi (x1000)	Herco Grains	Herco psi (x1000)	Blue Dot Grains	Blue Dot psi (x1000)	2400 Grains	2400 psi (x1000)
Fed. 209	Hi Power Shell	18-1's	1,225	Bal. Prod. GS&SC					36.0	9.7		
		33-4's	1,250	Bal. Prod. GS&SC					37.0	10.5	50.0	8.1
		12-0's	1,275	RP12+.200 in. 20 ga. Card			31.5	9.8				
Rem. 97*	Unibody Shell	18-1's	1,225	Bal. Prod. GS&SC					35.5	9.8		
		33-4's	1,250	Bal. Prod. GS&SC							46.0	9.4
		12-0's	1,275	RP12+.200 in. 20 ga. Card			29.5	10.0				

20-Gauge, 2 3/4 inch Fed. Hi Power Plastic Buckshot Loads

Primer	Shell	No. and Size Buckshot	Velocity (fps)	Wad	Unique Grains	Unique psi (x1000)	Herco Grains	Herco psi (x1000)	Blue Dot Grains	Blue Dot psi (x1000)	2400 Grains	2400 psi (x1000)
Fed. 209	Fed. Hi Power Plastic Shell	24-3's	1,200	Rem. SP20 Petals Removed					24.0	11.2		
		18-4's	1,275	Rem. SP20			19.0	11.0	25.0	9.3		
		12-1's	1,275	Rem. SP20 Petals Removed					25.5	10.1		
Win. 209	Win.-Western AA-Type Shell	18-4's	1,275	Rem. SP20					24.0	9.6		
		12-1's	1,275	Rem. SP20 Petals Removed					25.5	10.4		

20-Gauge, 3 inch Fed. Buckshot Loads

Primer	Shell	No. and Size Buckshot	Velocity (fps)	Wad	Unique Grains	Unique psi (x1000)	Herco Grains	Herco psi (x1000)	Blue Dot Grains	Blue Dot psi (x1000)	2400 Grains	2400 psi (x1000)
Fed. 209	Hi Power Plastic Shell	18-3's	1,220	Rem. RXP20			19.5	8.4				
		21-3's	1,220	Rem. SP20					26.0	7.8		
Win. 209	AA-Type Shell	21-3's	1,200	Rem. RP20					25.0	9.4		
		18-3's	1,220	Win. WAA20F1			19.0	9.5				

RIFLED SLUG LOADS

12-Gauge, 2 3/4 inch Federal Gold Medal

Slug Wt.	Primer	Velocity (fps)	Wad	Hornady Grains	Hornady psi (x1000)	Blue Dot Grains	Blue Dot psi (x1000)
1 oz., Lee	Fed. 209A	1,538	Win. WAA12 (White)	34.0	10.4		
1 oz., Lee	Fed. 209A	1,690	Win. WAA12 (White)			49.0	10.2

12-Gauge, 2 3/4 inch Remington Premier, STS

Slug Wt.	Primer	Velocity (fps)	Wad	Hornady Grains	Hornady psi (x1000)	Blue Dot Grains	Blue Dot psi (x1000)
1 oz., Lee	Win. 209	1,522	Win. WAA12 (White)	34.0	10.4		
1 oz., Lee	Win. 209	1,673	Win. WAA12 (White)			49.0	10.2

12-Gauge, 2 3/4 inch Winchester AA

Slug Wt.	Primer	Velocity (fps)	Wad	Hornady Grains	Hornady psi (x1000)	Blue Dot Grains	Blue Dot psi (x1000)
1 oz., Lee	Win. 209	1,587	Win. WAA12 (White)	36.0	10.6		

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PISTOL/REVOLVER RELOADING DATA

Pistol and Revolver Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Bbl Length	Bullseye Chg Wt	Bullseye fps	Bullseye psi x1000	Red Dot Chg Wt	Red Dot fps	Red Dot psi x1000	American Select Chg Wt	American Select fps	American Select psi x1000	Green Dot Chg Wt	Green Dot fps	Green Dot psi x1000	Unique Chg Wt	Unique fps	Unique psi x1000	Power Pistol Chg Wt	Power Pistol fps	Power Pistol psi x1000	Herco Chg Wt	Herco fps	Herco psi x1000	Blue Dot Chg Wt	Blue Dot fps	Blue Dot psi x1000	2400 Chg Wt	2400 fps	2400 psi x1000
.25 Auto																														
50 FMC	Rem. SP 1.5	0.875	2	1.3	760	15.0	1.1	740	15.5				1.6	785	15.4	1.7	760	14.8				1.7	735	15.6						
.32 Auto																														
71 FMC	Rem. SP 1.5	0.984	4	2.2	835	12.5	2.1	805	12.9				2.5	810	11.9	2.5	820	11.2				3.2	880	13.5						
.32 H&R Mag.																														
85 JHP	Fed. 100	1.32	5	3.4	1,020	18.7	3.4	1,030	19.2				3.5	1,035	19.5	4.1	1,050	18.7				4.6	1,060	18.9	6.6	1,100	19.0			
90 LWC	Fed. 100	1.18	5	3.3	1,060	19.6	3.1	1,020	20.0				3.3	1,050	20.4	3.7	1,110	20.3				4.0	1,070	20.4	5.1	1,150	20.3	5.2	1,150	20.4
90 LWC (target)	Fed. 100	1.1	5	2.2	800	9.5	2.1	800	9.4				2.2	805	9.6	2.5	800	8.4				2.8	805	8.5	3.7	805	7.8			
98 LRN	Fed. 100	1.32	5	3.4	1,020	19.5	3.1	980	19.7				3.5	1,010	19.6	4.0	1,000	19.0												
9mm Luger																														
95 FMJ	Win. WSP	1.055	4	5.5	1,295	31.4	5.3	1,285	32.1	6.0	1,280	32.2	5.5	1,240	25.5	6.5	1,308	31.6	7.8	1,445	32.9	6.8	1,225	24.6	8.3	1,180	22.0			
115 FMJ	Win. WSP	1.12	4	5.0	1,180	31.0	4.5	1,150	32.6				4.7	1,150	30.0	5.5	1,168	33.2	6.7	1,280	33.5	6.3	1,180	28.7	8.0	1,190	29.2			
115 JHP	Win. WSP	1.14	4							5.2	1,135	32.8																		
125 FMJ	Win. WSP	1.15	4	4.9	1,155	32.0	4.6	1,145	33.0	4.7	1,050	33.1	5.2	1,150	32.1	4.9	1,077	31.7	6.6	1,235	34.0	6.5	1,180	32.7	8.2	1,170	29.9			
125 L	Win. WSP	1.15	4	4.9	1,165	32.1	4.5	1,145	32.0				5.2	1,165	32.1	5.5	1,139	31.7				6.2	1,165	28.5	8.2	1,190	29.7			
147 XTP	Win. WSP	1.14	4	4.2	1,010	32.9	3.6	895	32.4	3.7	890	32.7	3.7	930	32.2	3.9	912	31.9	5.7	1,095	34.0	4.9	1,010	30.5	6.2	1,080	30.2			
9X18mm Makarov																														
95 JHP	Win. WSP	0.965	4	3.6	970	21.2													4.7	1,010	21.6									
100 FPJ	Win. WSP	0.965	4	3.6	980	21.1	3.1	905	21.3				3.5	925	21.3				4.7	995	21.4									
100 LRN	Win. WSP	0.965	4	3.2	920	21.0	2.7	865	21.3				3.2	910	21.6	4.3	985	20.9	4.2	950	21.6									
.357 Mag.																														
110 JHP	Fed. 200	1.56	5.6	9.0	1,690	31.7	7.7	1,560	34.0	7.8	1,520	32.7	10.0	1,660	31.3	10.0	1,735	34.1	9.7	1,690	34.0	13.0	1,885	33.3	16.0	2,060	33.8			
125 JSP	Fed. 200	1.57	5.6	8.4	1,550	32.8	7.0	1,410	34.0	7.4	1,400	33.2	7.3	1,415	33.6	9.6	1,585	33.8	9.2	1,553	33.3	9.8	1,590	33.6	14.5	1,795	34.0	17.0	1,730	32.7
148 LWC	Fed. 200	1.35	5.6	5.7	1,475	34.0	4.6	1,300	35.6				5.1	1,310	34.0	6.4	1,465	33.8				6.7	1,510	33.9						
148 LWC (target)	Fed. 200	1.33	5.6	2.8	780	10.0	2.7	775	12.4	2.9	825	11.3	2.8	780	14.1	3.3	775	10.0												
158 JSP	Fed. 200	1.575	5.6	6.8	1,250	33.1	6.0	1,160	33.4	5.7	1,130	32.9	7.0	1,215	34.0	7.8	1,280	33.2	8.0	1,305	33.8	8.2	1,305	34.0	10.7	1,420	33.3	14.0	1,295	32.5
158 LSWC	Fed. 200	1.58	5.6	6.5	1,320	33.9	5.5	1,215	34.0	6.0	1,210	32.8	6.0	1,260	34.0	6.8	1,295	33.9				7.9	1,365	33.9						
170 FMJ	Fed. 200	1.585	5.6	6.2	1,175	33.9	5.4	1,025	33.6	5.2	960	30.7	6.1	1,090	33.7	6.8	1,175	33.6	8.0	1,195	33.3	7.0	1,175	33.5	9.7	1,310	33.8	12.1	1,365	33.6
180 JFP	Fed. 200	1.58	5.6	6.3	1,135	34.0	5.3	930	33.2	4.9	850	32.7	6.0	1,010	34.0	7.0	1,125	33.8	7.0	1,145	33.8	7.2	1,110	34.0	9.7	1,260	33.3	12.5	1,300	32.7
200 LRN	Fed. 200	1.575	5.6	5.3	1,085	33.9	4.6	990	33.6				5.0	1,015	34.0	6.0	1,105	33.9				6.1	1,105	33.9	8.2	1,225	33.9	10.0	1,245	32.8
.38 Special																														
110 JHP	Fed. 100	1.43	5.6	4.5	1,085	14.9	4.0	1,000	15.8	4.4	1,015	15.5	4.6	1,050	16.0	5.6	1,090	15.4				5.6	1,090	15.8	7.8	1,170	15.7			
125 JSP	Fed. 100	1.44	5.6	4.4	1,000	15.3	3.9	950	15.6	4.3	920	15.9	4.3	985	15.9	5.3	1,015	16.0				5.5	1,040	16.0	7.3	1,035	15.6			
148 LWC	Fed. 100	1.18	5.6	2.8	815	15.9	2.5	750	15.5				2.9	800	15.9	3.3	815	15.3				3.5	820	16.0	5.3	810	13.6			
148 LWC (target)	Fed. 100	1.18	5.6	2.7	785	14.6	2.3	750	14.8	3.0	805	13.6	2.7	765	14.6	3.2	775	14.1												
158 LSWC	Fed. 100	1.42	5.6	3.6	910	15.5	3.1	835	15.8				3.5	870	15.6	4.3	920	16.0				4.5	930	15.8	6.1	955	15.6			
158 LSWC	Rem. SP 1.5	1.42	5.6							4.3	950	16.9																		
160 JSP	Fed. 100	1.435	5.6	3.5	865	15.6	3.2	715	15.7				3.4	750	15.8	4.2	800	15.6				4.4	805	16.0	6.2	845	15.8			
200 LRN	Fed. 100	1.54	5.6	3.0	760	15.1	2.8	725	15.1				3.1	750	15.5	3.6	780	15.7				3.8	785	15.5	5.3	850	16.0			
.38 Special +P																														
90 JHP	Fed. 100	1.41	5.6	5.5	1,340	17.0	4.5	1,245	17.0				5.1	1,260	16.9	6.3	1,300	16.8				6.5	1,310	17.1	9.1	1,345	16.9			
110 JHP	Fed. 100	1.43	5.6	5.0	1,175	17.4	4.2	1,040	17.5				4.8	1,100	17.4	5.9	1,160	17.5	6.5	1,200	17.1	5.9	1,150	17.5	8.2	1,205	16.8			
125 JSP	Fed. 100	1.445	5.6	4.8	1,090	17.5	4.1	965	17.0				4.6	1,015	17.5	5.6	1,070	17.5	6.3	1,165	17.2	5.8	1,050	16.9	7.5	1,065	16.9			
158 LSWC	Fed. 100	1.42	5.6	3.8	945	17.2	3.2	855	16.8	4.3	950	16.9	3.7	910	17.2	4.5	950	17.1				4.7	965	17.3	6.3	995	17.0			
160 JSP	Fed. 100	1.435	5.6	3.7	870	17.1	3.3	750	17.4				3.6	770	17.3	4.4	885	17.1	4.9	880	17.3	4.6	835	17.2	6.3	905	17.4			
200 LRN	Fed. 100	1.54	5.6	3.3	795	17.1	2.9	750	17.0				3.2	775	17.1	3.7	800	17.1				4.0	825	17.0				7.1	890	17.5

Pistol and Revolver Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Bbl Length	Bullseye Chg Wt	Bullseye fps	Bullseye psi x1000	Red Dot Chg Wt	Red Dot fps	Red Dot psi x1000	American Select Chg Wt	American Select fps	American Select psi x1000	Green Dot Chg Wt	Green Dot fps	Green Dot psi x1000	Unique Chg Wt	Unique fps	Unique psi x1000	Power Pistol Chg Wt	Power Pistol fps	Power Pistol psi x1000	Herco Chg Wt	Herco fps	Herco psi x1000	Blue Dot Chg Wt	Blue Dot fps	Blue Dot psi x1000	2400 Chg Wt	2400 fps	2400 psi x1000
.38 Super Auto +P																														
115 JHP	Rem. SP 1.5	1.255	5	5.5	1,240	33.9	4.7	1,155	33.5				5.7	1,225	33.8	6.6	1,265	33.8	7.3	1,345	34.4	6.8	1,260	34.0	10.2	1,360	33.0			
130 FMJ	Rem. SP 1.5	1.26	5	5.1	1,170	33.6	4.5	1,095	33.9				5.2	1,135	33.6	6.2	1,200	34.0	6.8	1,255	34.6	6.3	1,180	33.5	9.1	1,265	32.5			
147 XTP	Rem. SP 1.5	1.275	5	5.0	1,095	34.0	4.5	1,035	34.0				4.7	1,045	33.5	5.8	1,105	34.0	6.2	1,155	34.9	6.4	1,135	33.8	8.6	1,220	33.9	10.9	1,215	33.6
158 L	Rem. SP 1.5	1.275	5	4.6	1,030	33.6	4.0	985	34.0				4.9	1,025	33.9	5.9	1,085	33.8				6.0	1,080	33.1	8.3	1,190	33.9			
.357 Sig.																														
90 JHP	Fed. 100	1.09	4	7.5	1,564	37.9	7.1	1,495	35.4	8.5	1,506	37.1	7.8	1,545	36.5	9.2	1,615	37.1	11.4	1,715	37.0	10.1	1,625	34.6	12.8	1,690	35.3			
115 JHP	Fed. 100	1.14	4	6.5	1,337	37.6	6.4	1,285	37.1	7.1	1,288	37.4	6.9	1,305	37.0	8.0	1,377	38.0	10.0	1,505	36.2	8.7	1,400	36.6	11.3	1,495	37.4			
124 TMJ	Fed. 100	1.12	4	7.0	1,325	37.0	6.0	1,215	37.2	7.0	1,219	37.1	6.5	1,255	36.8							8.3	1,345	37.6	10.6	1,405	36.9			
125 JHP	Fed. 100	1.14	4	6.1	1,244	37.0										7.5	1,300	36.2	8.6	1,357	36.9				10.5	1,375	36.7			
147 XTP	Fed. 100	1.138	4	5.1	1,078	35.3				5.2	985	35.9	4.8	1,010	37.1	5.8	1,110	37.2	7.8	1,245	37.0	6.4	1,140	37.6	8.2	1,205	35.8			
.380 Auto																														
88 JHP	Win. WSP	0.96	3.7	3.2	980	14.3	3.1	965	14.6	3.7	987	19.7	3.6	960	14.6	4.0	920	13.6				4.1	995	14.9	6.0	1,000	14.7			
90 JHP	Win. WSP	0.96	3.7	3.0	940	12.9	3.1	940	14.3				3.2	890	12.8	4.0	940	14.0				4.0	960	14.8	6.0	980	14.8			
90 XTP	Win. WSP	0.96	3.7																4.8	1,105	21.5									
95 FMJ	Win. WSP	0.975	3.7	3.2	900	14.7	3.1	885	14.9				3.5	890	14.7	4.2	910	14.6	4.7	1,065	21.0	4.4	910	14.6	6.5	910	14.2			
100 FMJ-RN	Win. WSP	0.975	3.7	3.3	985	20.1	2.8	920	19.9				3.1	955	20.0	4.3	1,065	19.5	4.6	1,035	20.6									
.38/40 Win.																														
150 gr. Sierra JHP	Rem. 2.5	1.585	5.6	6.5	960	12.6	6.2	910	12.8				6.8	950	12.7	8.2	990	13.2				9.2	995	13.1	11.8	1,020	13.1	14.1	970	13.1
180 gr. Sierra JHP	Rem. 2.5	1.585	5.6	5.6	820	12.2	5.1	740	12.5				5.6	765	12.7	6.9	815	13.2				7.3	795	13.1	10.3	875	13.2	13.0	875	13.4
200 gr. Hornady FMJ/FP	Rem. 2.5	1.585	5.6	5.3	750	12.4	4.8	685	12.4				5.5	790	12.5	6.7	765	13.1				7.3	785	13.3	9.9	840	13.5	12.7	830	13.5
.40 S&W Auto																														
135 JHP	Win. WSP	1.105	4	7.6	1,350	33.6	6.7	1,280	33.2				7.5	1,330	33.1	8.5	1,290	26.6	9.3	1,340	34.0									
150 JHP	Win. WSP	1.105	4	6.7	1,225	34.0	5.9	1,155	34.0	6.0	1,140	33.0	6.2	1,175	33.8	8.0	1,245	34.0	8.2	1,215	33.3	8.2	1,215	33.9	11.5	1,285	34.0			
Laser Cast 155 Lead	Win. WSP	1.125	4	4.9	1,051	33.1				5.7	1,061	32.6				6.5	1,064	32.2	7.0	1,115	32.3									
170 XTP	Win. WSP	1.124	4	5.5	1,015	33.5	5.1	985	34.0	5.4	1,020	33.1	5.6	1,045	33.7	6.7	1,075	33.8	7.3	1,105	33.3	7.4	1,125	34.0	9.8	1,170	33.9	12.1	1,110	33.6
180 JHP	Win. WSP	1.125	4	5.5	1,015	33.9	5.0	980	34.0	4.7	990	32.4	5.5	1,010	33.6	6.4	1,065	33.8	6.9	1,050	33.7	7.0	1,045	34.0	8.8	1,065	34.0	10.9	1,025	33.9
Laser Cast 180 Lead	Win. WSP	1.125	4	4.5	911	33.0				5.0	912	33.2				5.5	973	32.7	6.9	977	32.7									
180 JHP	Win. WSP	1.13	4	5.4	955	34.0	4.9	895	33.6	4.7	895	32.0	5.1	955	33.6	6.1	1,010	34.0	6.9	1,020	33.1	6.7	1,000	33.8	8.7	1,040	33.8	10.6	975	33.6
200 FMJ	Win. WSP	1.13	4	4.6	945	33.6	4.1	890	33.5	4.2	845	32.6	4.3	890	33.6	5.3	955	33.9	6.3	980	33.7	5.8	955	34.0	7.9	960	33.8	8.5	925	33.6
10mm Auto																														
135 JHP	Fed. 150	1.25	5.5																10.6	1,530	35.6									
150 JHP	Fed. 150	1.25	5.5																9.7	1,415	35.6									
155 HP	Fed. 150	1.25	5.5	6.7	1,190	34.0										7.5	1,200	33.8				8.2	1,230	33.8	11.5	1,360	34.1	13.6	1,270	33.6
155 L	Fed. 150	1.25	5.5																9.5	1,320	33.0									
170 HP	Fed. 150	1.25	5.5	6.2	1,135	34.0										6.9	1,135	34.1				7.5	1,145	33.6	10.1	1,180	33.5	12.6	1,190	33.8
180 JHP	Fed. 150	1.25	5.5	6.4	1,125	35.9										7.0	1,125	35.7	8.7	1,240	34.9	7.5	1,140	33.8	10.4	1,220	35.8	12.9	1,210	36.0
180 L	Fed. 150	1.25	5.5																8.7	1,235	34.7									
190 JFP	Fed. 150	1.25	5.5	6.3	1,050	35.5										6.7	1,025	35.5	8.2	1,200	35.9	7.2	1,050	33.8	10.0	1,185	36.0	12.5	1,195	35.8
200 FMJ	Fed. 150	1.26	5.5	5.3	940	33.6										5.8	940	33.7	7.7	1,145	35.6	6.5	965	33.5	8.9	1,110	33.8	11.2	1,115	34.1
.41 Rem. Mag.																														
200 HP	Rem. 2.5	1.58	5.8	8.0	1,235	35.7	7.5	1,200	35.4				8.5	1,170	35.0	10.0	1,280	35.7				10.1	1,320	35.9	14.0	1,470	36.0	17.5	1,420	34.7
210 JSP	Rem. 2.5	1.575	5.8	8.3	1,245	34.3	8.2	1,225	34.3				8.7	1,165	35.8	10.1	1,265	35.4				10.3	1,320	34.8	13.5	1,425	35.8	17.5	1,425	33.9
220 JHP	Rem. 2.5	1.575	5.8	7.5	1,150	35.8	7.4	1,125	35.9				7.9	1,160	35.8	9.3	1,215	35.3				9.3	1,220	35.8	12.5	1,365	35.8	16.4	1,365	34.3
.44/40 Win.						***			***			***			***			***			***			***			***			***
200 JSP	Rem. 2.5	1.59	24	6.6	1,070	12.3	5.9	920	12.4				6.6	990	12.2	8.0	1,090	12.4				8.5	1,100	12.5	12.0	1,225	12.5	14.5	1,230	12.5
240 L	Rem. 2.5	1.58	24	5.0	850	12.2	4.7	800	12.3				5.5	850	12.2	6.7	950	12.5				7.1	955	12.4	9.9	1,125	12.5	12.0	1,150	12.5
.44 Rem. Mag.																														
180 JHC	Fed. 150	1.585	5.7	11.5	1,520	33.4	10.0	1,410	34.6	11.2	1,435	33.9	11.3	1,470	34.6	13.0	1,550	35.0	14.9	1,663	34.0	13.6	1,560	34.9	19.0	1,725	34.0	23.3	1,760	33.7
200 JHP	Fed. 150	1.575	5.7	11.0	1,420	34.0	9.7	1,320	34.8	10.6	1,320	34.1	10.7	1,370	34.5	13.0	1,475	34.4				13.0	1,455	34.5	17.0	1,565	33.4	23.2	1,665	34.3
225 JHP	Fed. 150	1.575	5.7	9.5	1,270	34.6	8.2	1,185	34.6	9.1	1,165	33.4	9.2	1,220	34.7	10.7	1,290	34.8				11.0	1,285	34.7	15.2	1,465	34.9	20.5	1,510	34.4
240 JSP	Fed. 150	1.585	5.7	8.9	1,215	34.7	7.7	1,090	35.0	8.6	1,100	34.2	8.7	1,190	35.0	10.3	1,250	34.9	13.5	1,400	31.9	10.5	1,245	34.7	14.4	1,380	34.8	18.7	1,440	34.8

Pistol and Revolver Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Bbl Length	Bullseye Chg Wt	Bullseye fps	Bullseye psi x1000	Red Dot Chg Wt	Red Dot fps	Red Dot psi x1000	American Select Chg Wt	American Select fps	American Select psi x1000	Green Dot Chg Wt	Green Dot fps	Green Dot psi x1000	Unique Chg Wt	Unique fps	Unique psi x1000	Power Pistol Chg Wt	Power Pistol fps	Power Pistol psi x1000	Herco Chg Wt	Herco fps	Herco psi x1000	Blue Dot Chg Wt	Blue Dot fps	Blue Dot psi x1000	2400 Chg Wt	2400 fps	2400 psi x1000
.44 Rem. Mag. (continued)																														
240 L (GC)	Fed. 150	1.6	5.7	9.8	1,175	34.4	8.8	1,175	34.9	9.2	1,180	33.8	9.5	1,170	34.8	11.8	1,255	35.0				12.5	1,330	33.8	16.6	1,475	34.7	20.6	1,510	34.7
Swift 240 HP	Win WLP	1.62	5.7																								21.5	1,473	33.6
265 JFP	Fed. 150	1.62	5.7	8.3	1,110	34.8	7.1	1,000	34.8	8.3	1,025	34.2	7.8	1,045	35.0	9.3	1,125	34.6				9.5	1,125	34.7	12.7	1,250	34.6	17.0	1,300	34.6
Swift 280 HP	Win WLP	1.68	5.7																								18.6	1,270	32.1
300 HP/XTP	Fed. 150	1.6	5.7	7.5	955	34.8	6.7	855	35.0	6.8	850	33.8	6.9	863	35.0	8.3	955	34.8	9.1	1,015	34.5	9.4	1,015	35.0	11.7	1,105	34.2	15.9	1,190	35.0
Swift 300 HP	Win WLP	1.69	5.7																								17.3	1,199	33.7
310 LSWC	Fed. 150	1.6	5.7	6.8	975	35.0	5.8	885	34.9				6.2	895	34.6	7.2	965	34.8				8.0	1,005	35.0	10.7	1,110	34.9	13.5	1,150	34.6
.44 S&W Special						***			***			***			***			***			***			***			***			***
180 JHC	Win WLP	1.6	5.6	6.5	910	12.0	6.4	885	12.1	5.4	890	13.3	6.7	925	12.4	9.0	985	12.5				9.8	1,000	12.6	13.5	1,020	11.9	16.0	950	11.4
240 LSWC	Win WLP	1.59	5.6							4.7	800	13.1																		
246 LRN	Win WLP	1.59	5.6	4.5	765	11.7	4.3	740	11.9				5.0	785	11.9	6.0	800	11.7				7.7	805	12.1	9.2	845	12.3	11.3	805	11.5
.45 ACP																														
155 Cast Lead	Fed. 150	1.27	5	6.9	1,175	19.4	5.8	1,155	18.8	6.0	1,125	19.3	6.6	1,165	19.3	7.8	1,190	19.2				8.5	1,185	19.1						
180 LWC	Fed. 150	1.19	5	5.4	985	15.8	4.8	900	14.1				5.3	910	14.5	6.0	875	13.4				6.7	950	15.8	9.0	920	15.6			
185 JHP	Fed. 150	1.23	5	6.7	995	19.4	5.9	940	19.5	5.9	975	19.8	6.8	990	19.3	8.2	1,030	18.9	8.6	1,025	18.8	8.2	990	18.5						
185 LWC	Fed. 150	1.19	5							5.1	960	19.3																		
200 JHP	Fed. 150	1.23	5	6.0	960	19.4	5.2	890	19.2	5.4	900	19.9	5.9	915	18.9	7.1	975	19.5	7.4	955	19.9	7.7	935	19.3	10.6	1,000	19.5			
200 Lead SWC	Fed. 150	1.25	5							5.4	950	19.8																		
200 LSW (target)	Fed. 150	1.19	5	4.0	790	9.8	4.0	805	9.4	4.0	780	11.2	4.3	805	9.9	5.1	810	9.6												
230 FMC	Fed. 150	1.19	5	5.0	905	16.2	5.0	910	16.2				5.4	920	15.8	6.0	895	16.0	7.2	895	20.0	6.2	890	16.2	8.5	900	16.2			
230 JHP	Fed. 150	1.23	5	5.4	865	19.2	5.0	820	19.5	4.9	780	19.6	5.4	845	19.5	6.4	880	19.4				7.0	875	19.5	9.8	915	19.3			
230 L (target)	Fed. 150	1.19	5	4.0	810	13.9	4.0	810	12.8	4.5	825	16.9	4.3	805	13.2	5.0	790	11.8				5.2	815	13.6						
240 JHC	Fed. 150	1.19	5																6.3	835	19.9									
240 JHP	Fed. 150	1.21	5	5.0	810	18.9	4.5	770	19.2	4.7	775	19.5	5.0	790	19.3	5.9	820	19.2				6.5	820	19.2	8.3	865	19.3			
260 JHP	Fed. 150	1.21	5	4.5	725	19.4										5.4	760	19.4				5.9	750	18.6	8.3	780	19.0			
.45 ACP+P																														
185 JHP	Fed. 150	1.23	5																9.1	1,075	21.7									
200 JHP	Fed. 150	1.23	5																8.2	1,030	22.2									
230 FMC	Fed. 150	1.19	5																7.5	930	22.0									
240 JHC	Fed. 150	1.19	5																7.1	890	22.2									
.45 Colt						***			***			***			***			***			***			***			***			***
200 JMHP	Win WLP	1.55	7.3	6.0	870	11.8	7.0	915	12.6				8.0	940	12.5	9.0	895	11.6				9.5	895	11.4	13.0	925	11.8			
230 LRN	Win WLP	1.55	7.3							5.8	810	12.8																		
250L	Win WLP	1.55	7.3	5.4	805	11.8	6.0	850	12.0	5.5	795	13.0	6.8	855	12.3	8.0	850	11.8				9.0	910	12.6	11.5	890	12.2			
300 HP/XTP	Win WLP	1.58	7.3	5.0	905	12.4	4.8	550	12.2				5.7	645	12.5	6.8	690	12.6				7.2	670	12.5	10.0	750	12.3	12.5	735	12.2
.454 Casull																														
Hornady 300 gr XTP	Fed. 205M	1.75	7.5																									28.0	1,700	58.1
Swift 300 HP	Fed. 205M	1.8	7.5																									28.9	1,720	60.0

NOTES and KEY pertain to Pistol and Revolver tables.

1. Do not intermix cases of different manufacture, nor bullets, nor primers.
2. Be sure that each case is crackfree and completely empty.
3. Unless specifically recommended, use standard primers. Magnum primers are neither needed nor recommended for most calibers.
4. Do not exceed the powder weight shown, and guard against accidental multiple charges of powder.
5. Start with 10% less powder than shown. Work up gradually, watching for signs of high pressure.
6. Be sure that every completed cartridge is not shorter than the length listed.
7. Watch for signs of case head separation.

KEY

BR = Bench Rest
FMC = Full Metal Case
FMJ = Full Metal Jacket
FN = Flat Nose
FP = Flat Point
FS = Full Side
GC = Gas Check
HB = Hollow Base
HC = Hollow Cavity
HP = Hollow Point
HC = Hollow Cavity
HP = Hollow Point
J = Jacketed
L = lead
M = Match
psi = Chamber pressure piezo system
PSP = Pointed Soft Point
RN = Round Nose
SB = Solid Base
SJ = Semi Jacketed
SP = Soft Point
Sp. Pt. = Spire Point
WC = Wad Cutter
Wt = Weight
Bbl = Barrel
in. = Inches
gr. = Grains
Vel. = Velocity
fps = feet per second
cwc = powder charge weight
c.u.p. = chamber pressure, in copper units
Min. = minimum overall
OAL = length, measured from base to tip of bullet

COWBOY ACTION

Cowboy Action Load Data

Caliber	Barrel Length	Bullet	Min. OAL (inches)	Powder	Min. Weight (grs)	Velocity (fps)	Max. Weight (grs)	Velocity (fps)
.38 Spec.	6.5	125 gr Laser Cast TC	1.45	Bullseye	2.8	690	4.8	1,024
				American Select	3.2	675	4.7	989
		125 gr Meister RNFP	1.45	Red Dot	3.0	700	4.6	1,025
				Unique	4.5	700	6.0	1,075
		140 gr Hornady lead FP	1.45	Bullseye	3.0	727	4.5	945
				Red Dot	3.0	710	4.5	960
				American Select	3.5	765	4.5	988
				Unique	4.0	754	5.5	985
.357 Mag.	6.5	125 gr Laser Cast TC	1.58	American Select	3.3	764	3.9	856
		140 gr Hornady lead FP	1.57	American Select	3.3	750	3.6	825
				Unique	3.5	725	4.0	820
		158 RN	1.585	American Select	3.5	746	4.0	840
				Unique	3.8	741	4.5	859
.44 Spec.	5.5	205 gr National RNFP lead	1.445	Bullseye	4.5	793	5.0	843
				Red Dot	4.5	793	5.5	910
				American Select	5.5	877	6.0	935
				Unique	6.0	835	7.0	953
		240 SWC	1.48	Red Dot	4.2	616	5.1	737
				American Select	4.2	650	4.9	739
				Green Dot	4.6	632	5.5	747
				Unique	5.1	613	6.0	697
44/40	5.5	205 gr National RNFP lead	1.592	Red Dot	5.8	792	6.3	879
				American Select	6.2	810	6.5	852
				Green Dot	6.3	797	6.7	867
				Unique	8.0	930	8.5	990
.44 Mag.	5.5	205 gr National RNFP lead	1.58	Red Dot	4.9	767	5.5	839
				American Select	5.0	762	5.7	842
				Green Dot	5.2	755	6.0	863
				Unique	6.0	743	6.8	839
		240gr Laser Cast RNFP	1.595	Red Dot	4.8	723	5.6	814
				American Select	5.1	742	6.0	832
				Unique	6.0	750	7.0	860
.45 Colt	5.5	160gr Meister RNFP	1.490	Red Dot	6.7	840	7.8	959
				American Select	7.1	851	7.7	942
	5.5	180gr Meister RNFP	1.518	Red Dot	5.9	743	7.6	917
				American Select	6.0	750	7.2	876
	5.5	200 RNFP	1.585	Red Dot	6.0	785	7.0	897
				American Select	6.5	823	7.0	883
				Unique	7.5	786	9.0	927
		225 RNFP lead	1.6	Red Dot	5.5	721	6.5	824
				American Select	6.0	743	6.5	797
				Unique	7.8	801	8.5	862
		250 gr RNFP lead	1.58	Red Dot	5.0	680	6.0	757
				American Select	5.0	650	6.5	767
				Unique	6.0	650	7.5	750
30-30	24	165 FP	2.512	Unique	7.0	1,236		
				Reloder 7	15.8	1,534		
32-20	24	118 FP	1.585	Bullseye			3.0	1,009
				Red Dot			2.6	923
45/70	24	300 FP	2.397	Unique	10.0	1,074	15.0	1,424
				Reloder 7	28.8	1,388		
		405 Laser Cast	2.550	Unique	11	1,000		

Important Note:

Alliant Powder does not recommend the use of smokeless powder in any firearm designed for black powder.

SILHOUETTE DATA

Silhouette Loads

Cartridge/Bullet	Primer	Min OAL (inches)	Blue Dot			2400			Reloder 7		
			Charge Weight (grains)	Velocity (fps)	Chamber Pressure (copper units)	Charge Weight (grains)	Velocity (fps)	Chamber Pressure (copper units)	Charge Weight (grains)	Velocity (fps)	Chamber Pressure (copper units)
.222 Rem.											
(Rem. Case)											
50 gr. Sierra Spitzer	Fed. 205M	2.09				12.9	2,425	43.8	19.3	2,700	43.8
53 inch gr. Sierra BRHP	Fed. 205M	2.104				12.4	2,345	43.8	18.2	2,575	43.5
55 gr. Sierra Spitzer	Fed. 205M	2.125				12.0	2,250	43.1	17.6	2,495	43.4
60 gr. Hornady Spire Pt.	Fed. 205M	2.125				12.0	2,180	43.8	17.0	2,400	43.8
68 gr. Hornady BTHP	Fed. 205M	2.125				11.3	1,990	43.8	16.5	2,230	43.2
.223 Rem.											
(Rem. Case)											
55 gr. Sierra Spitzer	Fed. 205M	2.25				15.9	2,430	48.5	22.1	2,670	48.9
60 gr. Hornady Spire Pt.	Fed. 205M	2.25				15.4	2,320	48.5	21.4	2,550	49.5
7mm BR Rem.											
(Rem. Case)											
120 gr. Sierra Spitzer	Rem. 7.5 BR	2.3				20.2	2,160	47.1	27.8	2,425	47.4
145 gr. Speer Spitzer	Rem. 7.5 BR	2.3				17.7	1,800	47.2	24.8	2,130	47.8
7mm/08											
(Rem. Case)											
120 gr. Sierra Spitzer	Fed. 210 BR	2.75				27.5	2,310	48.1	37.2	2,560	48.9
145 gr. Speer Spitzer	Fed. 210 BR	2.75				23.5	1,970	48.3	33.0	2,250	48.3
.30-30 Win.											
(Fed. Case)											
152 gr. Cast Lead	Fed. LR #210	2.5	13.0	1,525	29.0	16.0	1,650	33.3	25.0	1,950	34.9
170 gr. Rem. SPCL	Fed. LR #210	2.5				16.0	1,500	34.7	23.5	1,800	34.9
.35 Rem.											
(Rem. Case)											
158 gr. Hornady L	Fed. LR #210	2.4	15.5	1,574	25.2	21.0	1,715	25.3	28.5	1,875	26.6
170 gr. Sierra FMJ	Fed. LR #210	2.4	13.0	1,300	22.4	17.0	1,450	23.4			
200 gr. Rem. SPCL	Fed. LR #210	2.51				22.0	1,650	31.7	30.0	1,825	31.7
.357 Mag.											
(Win. Case)											
158 gr. Rem. SP	Fed. 200	1.58	12.0	1,600	42.9	14.6	1,640	42.5			
170 gr. Sierra FMJ	Fed. 200	1.58	10.7	1,445	41.7	13.2	1,450	43.0			
180 gr. Sierra FPJ	Fed. 200	1.58	9.2	1,250	42.4	12.1	1,350	41.7			
180 gr. Speer FMJ	Fed. 200	1.58	9.6	1,265	42.5	11.8	1,320	42.9			
.357 Maximum											
(Rem. Case)											
125 gr. Speer JHP	Rem. 7.5 BR	1.9	15.0	1,660	38.2	20.5	2,045	38.2			
158 gr. Hornady HP	Rem. 7.5 BR	1.975				18.0	1,790	40.4	26.0	1,845	33.6
160 gr. Speer SP	Rem. 7.5 BR	1.975	15.3	1,760	40.7	17.4	1,775	41.2	26.0	1,830	32.7
170 gr. Sierra FMJ	Rem. 7.5 BR	1.975	14.5	1,675	41.5	16.5	1,670	40.5	25.5	1,840	40.1
180 gr. Sierra FPJ	Rem. 7.5 BR	1.975	14.9	1,610	39.4	16.8	1,590	39.0	25.0	1,760	39.7
200 gr. Speer FMJ	Rem. 7.5 BR	1.975	11.6	1,275	41.3	14.1	1,340	41.3	22.3	1,650	41.4
.44 Rem. Mag.											
(Rem. Case)											
180 gr. Sierra HC	Fed. 150	1.59	18.8	1,575	37.9	23.0	1,910	37.8			
240 gr. Speer FMJ	Fed. 150	1.59	15.5	1,550	37.6	18.8	1,560	36.8			
250 gr. Sierra FPJ	Fed. 150	1.59	15.0	1,525	36.8	19.0	1,600	37.8			
265 gr. Hornady FP	Fed. 150	1.59	14.1	1,420	36.5	17.4	1,460	37.4			

NOTE: Test barrels were 14 inches long, except 357 Maximum, which was 12 1/2 inches.

CENTERFIRE RIFLE RELOADING DATA

Centerfire Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Case	Rel Length	2400 Chg Wt	2400 fps	2400 psi x1000	Reloder 7 Chg Wt	Reloder 7 fps	Reloder 7 psi x1000	Reloder 10X Chg Wt	Reloder 10X fps	Reloder 10X psi x1000	Reloder 15 Chg Wt	Reloder 15 fps	Reloder 15 psi x1000	Reloder 19 Chg Wt	Reloder 19 fps	Reloder 19 psi x1000	Reloder 22 Chg Wt	Reloder 22 fps	Reloder 22 psi x1000	Reloder 25 Chg Wt	Reloder 25 fps	Reloder 25 psi x1000
.17 Rem. *chamber pressure in copper units*																									
Hornady 25HP	Rem. 7.5	2.14	Rem.	24										22.8	3,915	50.2									
.22 Hornet *chamber pressure in copper units*																									
Speer 40SP	Win. 6.5-116	1.71	Win.	24	7.5	2,250	41.0	11.0	2,265	19.8															
Speer 45 Spitz	Win. 6.5-116	1.71	Win.	24	7.1	2,065	41.3	10.6	2,170	20.3															
Hornady 50SPSX	Win. 6.5-116	1.71	Win.	24	7.0	1,945	41.7	10.5	2,115	21.5															
.220 Swift *chamber pressure in copper units*																									
Speer 45 Spitz	CCI 200	2.645	Horn.	24										39.0	4,010	50.3									
Hornady 50SPSX	CCI 200	2.66	Horn.	24										38.6	3,850	49.8	44.0	3,650	50.4						
Hornady 55MJBT	CCI 200	2.63	Horn.	24										38.0	3,775	50.5	43.9	3,610	50.5						
Hornady 60 Sp. Pt.	CCI 200	2.68	Horn.	24										35.8	3,540	50.4	43.0	3,575	50.4	43.0	3,565	49.9			
.221 Rem. Fireball *chamber pressure in copper units*																									
Speer 40SP	Rem. 7.5	1.8	Rem.	10.5	15.5	2,700	46.5																		
Sierra 50 Spitz	Rem. 7.5	1.825	Rem.	10.5	13.8	2,410	43.5																		
Sierra 53BRHP	Rem. 7.5	1.825	Rem.	10.5	13.5	2,320	43.6																		
Nosler 60 Spitz	Rem. 7.5	1.825	Rem.	10.5	13.3	2,200	46.3	18.1	2,250	34.0															
.222 Rem.																									
Speer 40 SP	Rem. 6.5	2.04	Rem.	24							25.0	3,346	47.5												
Speer 45 SP	Rem. 6.5	2.07	Rem.	24							22.0	3,163	46.4												
Speer 45 Spitz	Rem. 7.5 BR	2.09	Rem.	24				19.8	3,225	47.5															
Nosler 50 Ballistic Tip	Rem. 6.5	2.110	Rem.	24							21.0	3,023	47.0												
Sierra 50SMP	Rem. 7.5 BR	2.13	Rem.	24				20.0	3,115	47.4															
Sierra 55FMJBT	Rem. 7.5 BR	2.13	Rem.	24										24.3	3,120	47.9									
Hornady 60SPPT	Rem. 7.5 BR	2.13	Rem.	24										22.5	2,915	47.5									
.222 Rem. Mag. *chamber pressure in copper units*																									
Speer 45 Spitz	Rem. 7.5	2.28	Rem.	24				23.0	3,400	46.5															
Sierra 50 Spitz	Rem. 7.5	2.28	Rem.	24				22.5	3,250	45.4															
Sierra 53BRHP	Rem. 7.5	2.28	Rem.	24				22.0	3,120	44.5															
Sierra 55 Spitz	Rem. 7.5	2.28	Rem.	24				22.0	3,100	46.0															
.223 Rem.																									
Nosler 40 Ballistic Tip	Win.WSR	2.2	Win.	24							25.3	3,680	51.4												
Speer 45 SP	Rem. 6.5	2.2	Win.	24							24.5	3,502	51.8												
Speer 45 Spitz	Fed. 205M	2.21	Fed.	24	14.9	3,030	49.6	21.8	3,375	53.2				28.5	3,635	53.5									
Hornady 50 V-Max Moly	Fed. 205M	2.25	Rem	24										28.0	3,356	49.0									
Hornady 52SP	Win. WSR	2.2	Win.	24	14.5	2,795	48.5				23.6	3,195	53.0												
Nosler 50 Ballistic Tip	Win. WSR	2.2	Win.	24							24.2	3,389	53.0	28.0	3,356	49.0									
Sierra 52 HPBT	Rem. 6.5	2.25	Win.	24							23.3	3,165	53.3	28.3	3,440	53.1									
Sierra 55 SP	Fed. 205M	2.26	Win.	24										27.3	3,259	51.4									
Sierra 55 Spitz	Win WSR	2.26	Win.	24							22.0	2,974	52.3												
Hornady 60SP	Win. WSR	2.25	Fed.	24										28.0	3,356	49.0									
Sierra 69 HPBT	Fed. 205M	2.26	Win.	24										25.5	2,956	51.7									
Hornady 75BTHP	Fed. 205M	2.26	Rem.	24										24.9	2,895	53.4									
Sierra 77 HPBT	Fed. 205M	2.26	Win.	24										24.1	2,793	51.2									
.22/250 Rem.																									
Nosler 40 Ballistic Tip	Rem. 9.5	2.38	Rem.	24							34.5	4,092	60.9												

Centerfire Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Case	Bbl Length	2400 Chg Wt	2400 fps	2400 psi x1000	Reloder 7 Chg Wt	Reloder 7 fps	Reloder 7 psi x1000	Reloder 10X Chg Wt	Reloder 10X fps	Reloder 10X psi x1000	Reloder 15 Chg Wt	Reloder 15 fps	Reloder 15 psi x1000	Reloder 19 Chg Wt	Reloder 19 fps	Reloder 19 psi x1000	Reloder 22 Chg Wt	Reloder 22 fps	Reloder 22 psi x1000	Reloder 25 Chg Wt	Reloder 25 fps	Reloder 25 psi x1000
.22/250 Rem. (continued)																									
Speer 45 SP	Rem. 9.5	2.305	Rem.	24							33.5	3,876	60.3												
Hornady 50 SP	Rem. 9.5	2.35	Rem.	24							32.0	3,679	60.4												
Hornady 50 V-Max Moly	Win. WLR	2.35	Rem.	24										38.1	3,916	60.3									
Sierra 50 SP	Rem. 9.5	2.35	Rem.	24							32.0	3,693	60.8												
Hornady 55 V-Max Moly	Win. WLR	2.35	Rem.	24										37.5	3,775	61.4	43.0	3,540	51.7						
Hornady 55SPSX	Win. WLR	2.35	Win.	24										35.3	3,625	59.4									
Hornady 60SP	Win. WLR	2.35	Win.	24										34.7	3,485	59.4	41.0	3,310	57.8						
.243 Win.																									
Sierra 60HP	Win. WLR	2.55	Win.	24				30.2	3,320	54.8															
Speer 80 Spitz	Win. WLR	2.685	Win.	24										36.5	3,145	57.5	44.5	3,270	57.5						
Sierra 100 Spitz BT	Win. WLR	2.7	Win.	24													41.0	2,925	57.1	41.7	2,950	57.5			
6mm BR																									
Sierra 60HP	Rem. 7.5	2.075	Rem.	24							30.0	3,369	45.3												
Hornady 70 SP	Rem. 7.5	2.145	Rem.	24							29.5	3,206	45.9												
Sierra 75 HP	Rem. 7.5	2.125	Rem.	24							28.5	3,100	46.4												
Speer 80 SP	Rem. 7.5	2.160	Rem.	24							28.5	3,023	45.3												
6mm Rem.																									
Sierra 60HP	Rem. 9.5	2.76	Rem.	24										43.6	3,820	62.7									
Speer 75HP	Rem. 9.5	2.79	Rem.	24										40.6	3,410	62.3									
Speer 80 Spitz	Rem. 9.5	2.79	Rem.	24										40.5	3,340	63.0	49.5	3,435	61.7	51.5	3,450	60.9			
Sierra 100 Spitz BT	Rem. 9.5	2.8	Rem.	24													46.0	3,145	62.5	48.0	3,205	62.5			
.250 Savage *chamber pressure in copper units*																									
Sierra 75HP	Rem. 9.5	2.4	Rem.	24										38.3	3,350	43.7									
Speer 87 Spitz	Rem. 9.5	2.45	Rem.	24										36.0	3,135	43.8	41.0	2,940	42.8						
Speer 100 Spitz	Rem. 9.5	2.5	Rem.	24													40.0	2,855	43.4						
Sierra 120HPBT	Rem. 9.5	2.51	Rem.	24																40.0	2,680	43.6			
.25-06 Rem.																									
Speer 87 Spitz	Fed. 210	3.09	Fed.	24										47.2	3,425	61.0	57.3	3,525	59.8						
Speer 100 Spitz	Fed. 210	3.2	Fed.	24										44.9	3,190	61.0	54.3	3,320	61.0	55.9	3,355	61.1			
Sierra 120HPBT	Fed. 210	3.225	Fed.	24													50.5	3,025	60.4	52.5	3,080	60.4			
.25/20 Win. *chamber pressure in copper units*																									
Rem. 86SP	CCI 400	1.59	Rem.	24	8.0	1,340	18.3	11.5	1,460	15.0															
.257 Roberts *chamber pressure in copper units*																									
Sierra 75HP	Win. WLR	2.775	Win.	24										41.8	3,340	42.7									
Speer 87 Spitz	Win. WLR	2.775	Win.	24										41.0	3,165	43.2									
Speer 100 Spitz	Win. WLR	2.775	Win.	24													44.7	2,930	43.1						
Sierra 120HPBT	Win. WLR	2.775	Win.	24																44.0	2,785	43.0			
.257 Roberts +P *chamber pressure in copper units*																									
Sierra 75HP	Win. WLR	2.775	Win.	24										43.4	3,510	48.0									
Speer 87 Spitz	Win. WLR	2.775	Win.	24										43.5	3,310	48.0									
Speer 100 Spitz	Win. WLR	2.775	Win.	24													47.2	3,110	47.9						
Sierra 120 HPBT	Win. WLR	2.775	Win.	24																46.5	2,945	48.0			
.257 Wby. Mag																									
Sierra 75HP	Fed. 215	3.075	Wby.	26													73.3	3,895	52.9	77.0	3,900	53.0			
Speer 87 Spitz	Fed. 215	3.15	Wby.	26													68.4	3,650	53.0	73.0	3,675	52.7			
Speer 100 Spitz	Fed. 215	3.17	Wby.	26													64.5	3,420	52.7	69.0	3,460	52.4			
Barnes 115 Spitz	Fed. 215	3.17	Wby.	26													61.3	3,175	53.0	64.5	3,290	52.7			

Centerfire Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Case	Bbl Length	2400 Chg Wt	2400 fps	2400 psi x1000	Reloder 7 Chg Wt	Reloder 7 fps	Reloder 7 psi x1000	Reloder 10X Chg Wt	Reloder 10X fps	Reloder 10X psi x1000	Reloder 15 Chg Wt	Reloder 15 fps	Reloder 15 psi x1000	Reloder 19 Chg Wt	Reloder 19 fps	Reloder 19 psi x1000	Reloder 22 Chg Wt	Reloder 22 fps	Reloder 22 psi x1000	Reloder 25 Chg Wt	Reloder 25 fps	Reloder 25 psi x1000
.257 Wby. Mag (continued)																									
Nosler 120 SP	Fed. 215	3.17	Wby.	26													59.7	3,100	53.0	62.7	3,140	52.9			
.260 Rem.																									
Sierra 85 HP	Rem. 9.5	2.71	Rem	22										44.5	3,285	59.6	49.2	3,200	60.2						
Sierra 100 HP	Rem. 9.5	2.71	Rem	22										43.0	3,168	58.8	49.0	3,180	58.7						
Hornady 129 SP	Rem. 9.5	2.75	Rem	22										39.0	2,740	61.1	46.0	2,890	61.5						
Sierra 140 SBT	Rem. 9.5	2.75	Rem	22										38.0	2,610	60.8	44.8	2,690	60.7						
.264 Win. Mag. *chamber pressure in copper units*																									
Hornady 129 Sp. Pt.	Win. WLR	3.27	Win.	24													57.0	3,070	51.8						
Speer 140 Spitz	Win. WLR	3.34	Win.	24													56.0	2,945	51.8	57.0	2,960	51.3			
Hornady 160RN	Win. WLR	3.315	Win.	24																57.0	2,780	51.8			
6.5X55 Swedish Mauser *chamber pressure in copper units*																									
Hornady 129SP	CCI 200	2.935	Norma	24				25.8	2,130	43.6				38.8	2,620	44.4	48.0	2,815	44.5						
Speer 140 Spitz	CCI 200	3	Norma	24										36.6	2,480	44.2	46.0	2,650	44.0	48.1	2,700	44.4			
Hornady 160RN	CCI 200	2.975	Norma	24				25.0	1,940	44.0				35.6	2,325	44.0	45.0	2,500	44.3	47.0	2,535	44.0			
.270 Wby. Mag. *chamber pressure in copper units*																									
Speer 100 Spitz	Fed. 215	3.16	Wby.	26													76.8	3,755	53.4	79.0	3,775	53.0			
Speer 130 Spitz	Fed. 215	3.26	Wby.	26													70.5	3,540	53.5	73.8	3,600	53.5			
Sierra 140 SBT	Fed. 215	3.275	Wby.	26													68.1	3,240	53.5	71.0	3,280	53.5			
Nosler 150 Spitz	Fed. 215	3.285	Wby.	26													64.8	3,090	53.2	69.7	3,160	53.5			
Sierra 150 SBT	Fed. 215	3.285	Wby.	26													64.4	3,075	53.5	68.8	3,145	53.5			
.270 Win.																									
Speer 100 Spitz	Win. WLR	3.15	Win.	24										53.8	3,465	62.0	64.0	3,510	61.8						
Speer 130 Spitz	Win. WLR	3.25	Win.	24										47.3	2,840	61.6	57.5	3,110	61.6	60.0	3,160	61.5			
Sierra 140GBT	Win. WLR	3.28	Win.	24										47.0	2,770	61.6	57.0	2,910	61.5	60.0	2,930	59.4			
Nosler 150 Spitz	Win. WLR	3.325	Win.	24													56.5	2,810	61.8	59.5	2,845	60.3			
Sierra 150 Spitz BT	Win. WLR	3.32	Win.	24													55.5	2,945	61.4	58.5	3,010	61.8			
.280 Rem.																									
Hornady 120SP	Rem. 9.5	3.31	Rem.	24										48.0	3,065	57.2	58.0	3,115	57.6						
Hornady 139 Sp. Pt.	Rem. 9.5	3.32	Rem.	24										46.5	2,860	57.7	57.0	2,970	58.0	59.5	3,000	57.5			
Speer 145 Spitz	Rem. 9.5	3.32	Rem.	24										43.0	2,650	57.1	53.0	2,815	57.8	56.0	2,865	58.0			
Sierra 160 Spitz BT	Rem. 9.5	3.325	Rem.	24													53.4	2,750	58.1	55.7	2,795	58.0			
.284 Win.																									
Hornady 120 SP	Win. WLR	2.8	Win.	24										51.5	3,235	54.3	60.5	3,265	53.6						
Hornady 139SP	Win. WLR	2.795	Win.	24										48.0	2,975	54.7	57.0	3,075	53.5	58.5	3,030	49.0			
Speer 145 Spitz	Win. WLR	2.795	Win.	24										46.7	2,855	55.1	55.0	2,960	52.4	55.0	2,900	49.2			
Nosler 150 Part.	Win. WLR	2.79	Win.	24													55.0	2,940	53.5	55.0	2,840	46.3			
Sierra 160 Spitz BT	Win. WLR	2.8	Win.	24													54.0	2,885	54.6	52.0	2,680	42.7			
7-30 Waters *chamber pressure in copper units*																									
Hornady 120 Sp. Pt.	Fed. 210	2.64	Fed.	24				27.3	2,470	38.6				36.3	2,725	39.0									
Hornady 139 F.P.	Fed. 210	2.65	Fed.	24										34.7	2,540	38.8									
7mm Rem. Mag.																									
Hornady 120 Sp. Pt.	Rem. 9.5	3.275	Fed.	24										55.0	3,200	58.3	69.0	3,465	58.6	73.0	3,490	58.6			
Hornady 139 Sp. Pt.	Rem. 9.5	3.275	Fed.	24										55.6	3,070	59.0	67.5	3,260	58.1	70.0	3,295	58.0			
Speer 145 Spitz	Rem. 9.5	3.28	Fed.	24										47.5	2,780	58.7	61.7	3,090	58.4	64.5	3,150	58.6			
Nosler 160 Partition	Fed. 215	3.285	Rem	24																			68.0	3,028	58.0
Sierra 160 Spitz BT	Rem. 9.5	3.285	Fed.	24													62.0	3,020	58.5	65.0	3,075	58.6			
Swift 160gr A Frame	Fed. 215	3.29	Rem	24																			70.0	3,049	59.1
Nosler 175 Partition	Fed. 215	3.285	Rem	24																			65.8	2,873	58.1

Centerfire Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Case	Bbl Length	2400 Chg Wt	2400 fps	2400 psi x1000	Reloder 7 Chg Wt	Reloder 7 fps	Reloder 7 psi x1000	Reloder 10X Chg Wt	Reloder 10X fps	Reloder 10X psi x1000	Reloder 15 Chg Wt	Reloder 15 fps	Reloder 15 psi x1000	Reloder 19 Chg Wt	Reloder 19 fps	Reloder 19 psi x1000	Reloder 22 Chg Wt	Reloder 22 fps	Reloder 22 psi x1000	Reloder 25 Chg Wt	Reloder 25 fps	Reloder 25 psi x1000
7mm Rem. Mag. (continued)																									
Sierra 175 Spitz BT	Fed. 215	3.285	Rem.	24																61.3	2,900	58.4	68.4	2,934	58.0
Swift 175 A Frame	Fed. 215	3.255	Rem	24																			65.6	2,837	56.8
7mm STW																									
Sierra 150 SBT	Fed. 215	3.59	Rem	26																80.0	3,300	59.0			
Nosler 160 Partition	Fed. 215	3.6	Rem	26																			79.0	3,300	62.3
Swift 160gr A Frame	Fed. 215	3.55	Rem	26																			80.0	3,300	62.2
Nosler 175 Partition	Fed. 215	3.6	Remington	26																			78.0	3,131	63.7
Swift 175 A Frame	Fed. 215	3.555	Remington	26																			78.0	3,119	63.0
7mm Wby. Mag. *chamber pressure in copper units*																									
Hornady 120 Sp. Pt.	Fed. 215	3.2	Wby.	26										61.3	3,370	52.5	74.0	3,305	52.1						
Hornady 139 Sp. Pt.	Fed. 215	3.28	Wby.	26													70.9	3,315	52.5	74.8	3,355	52.3			
Speer 145 Spitz	Fed. 215	3.24	Wby.	26													68.0	3,165	52.2	72.4	3,245	52.5			
Nosler 150 Spitz	Fed. 215	3.25	Wby.	26													67.3	3,145	52.5	72.0	3,220	52.4			
Sierra 160 Spitz	Fed. 215	3.24	Wby.	26													64.8	3,045	52.3	70.7	3,110	52.5			
Sierra 175 Spitz	Fed. 215	3.245	Wby.	26													60.5	2,850	52.2	67.4	2,965	52.5			
7mm-08 Rem.																									
Hornady 120 Sp. Pt.	Rem. 9.5	2.75	Rem.	24				35.5	2,775	57.2				45.5	3,070	58.7									
Hornady 139 Sp. Pt.	Rem. 9.5	2.8	Rem.	24				34.0	2,535	57.3				43.0	2,830	59.0	52.0	2,850	57.9						
Speer 145 Spitz	Rem. 9.5	2.8	Rem.	24				31.8	2,405	57.5				41.0	2,700	59.0	49.3	2,785	58.9						
Sierra 150 HPBT	Rem. 9.5	2.8	Rem.	24				32.3	2,410	57.3				40.9	2,685	58.6	49.0	2,760	58.7						
Sierra 160 Spitz BT	Rem. 9.5	2.8	Rem.	24										40.5	2,620	59.0	48.5	2,675	56.4						
7X57 Mauser																									
Hornady 120 Sp. Pt.	Fed. 210	2.965	Fed.	24										45.0	2,995	48.9	54.0	3,030	48.0						
Hornady 139 Sp. Pt.	Fed. 210	3.015	Fed.	24										41.5	2,700	48.4	51.8	2,835	49.0	53.0	2,790	45.6			
Speer 145 Spitz	Fed. 210	3.04	Fed.	24										38.5	2,550	48.5	47.3	2,680	48.8	48.8	2,720	49.0			
Sierra 160 Spitz BT	Fed. 210	3.04	Fed.	24													49.0	2,665	45.5	50.0	2,690	48.3			
.30 Carbine *chamber pressure in copper units*																									
Hornady 100SJ	CCI 400	1.625	Fed.	20	12.3	1,815	34.5																		
Cast (GC) 112L	CCI 400	1.625	Fed.	20	10.3	1,590	35.7																		
.300 H&H Mag. *chamber pressure in copper units*																									
Hornady 150 Sp. Pt.	Fed. 210	3.57	Fed.	24										63.8	3,270	52.5	75.0	3,275	52.5						
Speer 165 Spitz	Fed. 210	3.555	Fed.	24										60.9	3,065	52.5	72.7	3,150	52.5						
Nosler 180 Part.	Fed. 210	3.535	Fed.	24										58.0	2,910	52.3	70.3	3,040	52.5	71.0	3,040	52.1			
Speer 180 Spitz	Fed. 210	3.575	Fed.	24										56.7	2,850	52.4	69.8	3,055	52.5	71.5	3,070	52.0			
Sierra 200 Spitz BT	Fed. 210	3.59	Fed.	24										55.0	2,725	52.1	67.0	2,910	52.1	69.0	2,935	52.2			
.300 Rem Ultra Mag																									
Sierra 150 Spitz	Fed. 215	3.57	Rem	26																94.0	3,440	63.7			
Nosler 165 Part.	Fed. 215	3.5	Rem	26																93.5	3,320	61.5			
Swift 165 A Frame	Fed. 215	3.59	Rem	26																			98.0	3,400	63.5
Barnes 180 gr X	Fed. 215	3.6	Rem	26																			87.9	3,110	61.5
Nosler 180 Part.	Fed. 215	3.6	Rem	26																90.0	3,165	60.8			
Swift 180 A Frame	Fed. 215	3.53	Rem	26																			96.0	3,250	63.7
Barnes 200 X	Fed. 215	3.6	Rem	26																			81.0	2,900	62.0
Swift 200 A Frame	Fed. 215	3.55	Rem	26																			91.5	3,020	60.8
.300 Wby. Mag. *chamber pressure in copper units*																									
Hornady 150 Sp. Pt.	Fed. 215	3.34	Wby.	26										69.5	3,255	52.8	82.5	3,375	52.5	88.0	3,480	53.3			
Barnes 165X	Fed. 215	3.51	Rem.	26																			87.0	3,176	60.3
Nosler 165 Part.	Fed. 215	3.51	Rem.	26																			90.0	3,245	58.5
Speer 165 Spitz	Fed. 215	3.51	Wby.	26										65.0	3,060	52.8	80.5	3,250	53.2	85.0	3,305	53.4			

Centerfire Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Case	Bbl Length	2400 Chg Wt	2400 fps	2400 psi x1000	Reloder 7 Chg Wt	Reloder 7 fps	Reloder 7 psi x1000	Reloder 10X Chg Wt	Reloder 10X fps	Reloder 10X psi x1000	Reloder 15 Chg Wt	Reloder 15 fps	Reloder 15 psi x1000	Reloder 19 Chg Wt	Reloder 19 fps	Reloder 19 psi x1000	Reloder 22 Chg Wt	Reloder 22 fps	Reloder 22 psi x1000	Reloder 25 Chg Wt	Reloder 25 fps	Reloder 25 psi x1000
.300 Wby. Mag. (continued)																									
Nosler 180 Part.	Fed. 215	3.53	Wby.	26													76.5	3,070	53.4	80.0	3,115	53.3			
Sierra 180 SBPT	Fed. 215	3.56	Rem.	26																			88.5	3,172	60.8
Speer 180 Spitz	Fed. 215	3.515	Wby.	26													78.0	3,120	53.0	82.5	3,195	53.4			
Nosler 200 Partition	Fed. 215	3.56	Rem	26																			83.2	2,940	59.7
Sierra 200 Spitz	Fed. 215	3.55	Wby.	26													74.0	2,955	53.3	78.0	2,970	53.0			
Hornady 220 RN	Fed. 215	3.535	Rem	26																			81.6	2,809	60.8
.300 Win. Mag.																									
Hornady 150 Sp. Pt.	Win. WLR	3.34	Win.	24										65.3	3,180	61.0	76.7	3,225	61.0	81.5	3,275	60.4			
Nosler 165 Part.	Fed. 215	3.34	Rem.	24																			84.5	3,231	60.7
Speer 165 Spitz	Win. WLR	3.34	Win.	24										62.6	2,980	60.1	74.6	3,070	60.4	79.4	3,135	60.8			
Sierra 180 SBPT	Fed. 215	3.34	Rem.	24																			82.3	3,112	60.6
Speer 180 Spitz	Win. WLR	3.34	Win.	24													72.3	2,990	61.0	76.9	3,030	60.3			
Win. 180 F.S.	Win. WLR	3.34	Win.	24													72.3	2,850	55.7	76.0	2,870	54.5			
Barnes 200 X	Fed. 215	3.35	Rem	24																			75.2	2,837	61.1
Sierra 200 Spitz BT	Win. WLR	3.34	Win.	24													68.0	2,810	60.3	73.4	2,875	60.3			
Swift 200 SP	Fed. 215	3.308	Rem.	24																			78.0	2,828	58.5
Hornady 220 RN	Fed. 215	3.326	Rem	24																			77.7	2,768	60.3
.300 WSM																									
Hornady 150 Sp. Pt.	Win. WLR	2.76	Win	26													72.3	3,226	60.2						
Barnes 165X	Win. WLR	2.76	Win	26													69.5	3,100	61.5						
Swift 165 A Frame	Win. WLR	2.76	Win	26													70.0	3,100	60.0						
Nosler 180 Part.	Win. WLR	2.76	Win	26													68.0	2,978	60.5						
.303 British *chamber pressure in copper units*																									
Hornady 123SP	Win. WLR	2.86	Win.	24				38.6	2,750	43.2				49.8	3,015	43.2									
Speer 150 Spitz	Win. WLR	2.935	Win.	24				31.0	2,400	41.2				46.2	2,795	43.2									
Speer 180 RN	Win. WLR	2.94	Win.	24				30.0	2,050	39.6				43.7	2,515	43.2	50.0	2,415	39.8						
.30-06 Springfield																									
Sierra 110JHP	Fed. 210	3.1	Fed.	24	30.9	2,715	55.9	45.0	3,145	56.4				58.6	3,465	58.1									
Sierra 125 Spitz	Fed. 210	3.12	Fed.	24	30.0	2,575	55.1	42.0	2,915	56.6				56.8	3,275	58.5	65.5	2,995	47.3						
Barnes X 150	Fed. 210	3.22	Fed.	24										50.6	2,910	58.5	63.0	2,950	56.4	62.0	2,845	50.6			
Hornady 150 Sp. Pt.	Fed. 210	3.21	Fed.	24	29.4	2,330	56.0	43.8	2,780	57.0				53.6	3,005	58.5	63.5	2,895	50.9	63.0	2,815	46.0			
Nosler 165 Part.	Fed. 210	3.22	Fed.	24										49.8	2,815	58.5	62.1	2,890	58.5	60.0	2,755	51.3			
Speer 165 Spitz	Fed. 210	3.25	Fed.	24	29.2	2,295	55.4	40.5	2,610	56.8				50.5	2,835	58.5	62.0	2,880	56.1	62.0	2,824	52.5			
Nosler 180 Part.	Fed. 210	3.25	Fed.	24										48.3	2,660	58.5	60.0	2,750	57.1	60.0	2,675	51.5			
Speer 180 Spitz	Fed. 210	3.25	Fed.	24	28.2	2,210	55.4	39.8	2,505	56.9				48.5	2,720	58.2	60.0	2,800	57.0	60.0	2,710	51.0			
Win. 180 F.S.	Win. WLR	3.2	Win.	24										47.0	2,600	56.5	57.2	2,685	53.3	59.0	2,670	52.0			
Sierra 190 MKing	Fed. 210	3.3	Fed.	24	26.0	2,075	55.6	37.4	2,340	57.4				47.3	2,600	58.5	58.0	2,720	58.1	60.0	2,755	56.6			
Sierra 200 Spitz BT	Fed. 210	3.3	Fed.	24										46.0	2,505	58.5	55.8	2,630	58.5	58.4	2,680	58.4			
.30-30 Win. *chamber pressure in copper units*																									
Sierra 125JFP	Win. WLR	2.47	Win.	24				30.0	2,630	34.1															
Sierra 150JFP	Win. WLR	2.525	Win.	24				27.5	2,190	33.8				36.0	2,450	40.6									
Hornady 170JFP	Win. WLR	2.545	Win.	24				24.0	1,910	34.5				34.1	2,330	40.5									
.308 Win. *chamber pressure in copper units*																									
Sierra 110JHP	Fed. 210	2.6	Fed.	24				42.5	3,130	47.2															
Speer 110 JRN	Win. WLR	2.49	Win.	24							47.3	3,292	59.3												
Sierra 125 JSP	Win. WLR	2.7	Win.	24							46.0	3,109	58.0												
Speer 130 HP	Win. WLR	2.651	Win.	24							44.0	2,966	57.2	46.3	2,880	57.3									
Sierra 125 Spitz	Fed. 210	2.7	Fed.	24				40.0	2,920	47.1															
Sierra 150 Spitz	Win. WLR	2.6	Fed.	24							41.0	2,752	58.1												
Barnes 150X	Fed. 210	2.75	Fed.	24										45.0	2,815	56.8									
Sierra 150 Spitz	Fed. 210	2.6	Fed.	24	25.0	2,215	36.7	37.0	2,750	46.9				46.3	2,880	57.3									

Centerfire Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Case	Rbl Length	2400 Chg Wt	2400 fps	2400 psi x1000	Reloder 7 Chg Wt	Reloder 7 fps	Reloder 7 psi x1000	Reloder 10X Chg Wt	Reloder 10X fps	Reloder 10X psi x1000	Reloder 15 Chg Wt	Reloder 15 fps	Reloder 15 psi x1000	Reloder 19 Chg Wt	Reloder 19 fps	Reloder 19 psi x1000	Reloder 22 Chg Wt	Reloder 22 fps	Reloder 22 psi x1000	Reloder 25 Chg Wt	Reloder 25 fps	Reloder 25 psi x1000
.308 Win. (continued)																									
Barnes 165X	Fed. 210	2.75	Fed.	24										43.5	2,675	57.0									
Sierra 165 Spitz	Fed. 210	2.7	Fed.	24							39.2	2,614	58.8												
Sierra 165 Spitz	Win. WLR	2.6	Fed.	24										43.5	2,750	57.0									
Sierra 168HPBT	Fed. 210M	2.7	Fed.	24										42.8	2,665	56.6									
Speer 180 Spitz	Fed. 210	2.75	Fed.	24										44.0	2,645	57.5									
Win. 180 F.S.	Win. WLR	2.75	Win.	24										41.5	2,500	57.0									
7.62X39 *chamber pressure in copper units*																									
Speer 100 Plinker	CCI 200	1.83	Fed.	20	16.5	2,240	44.9																		
Sierra 110HP	CCI 200	2.055	Fed.	20	16.0	2,115	44.8	26.5	2,330	38.3															
Hornady 123SP	CCI 200	2.155	Fed.	20	15.3	1,915	44.9	25.5	2,330	45.0															
Sierra 150JP	CCI 200	2	Fed.	20	14.8	1,800	45.0	24.8	2,145	44.6															
8mm Mauser *chamber pressure in copper units*																									
Hornady 125SP	Win. WLR	2.82	Win.	24										46.8	2,760	56.0									
Speer 150 Spitz	Win. WLR	2.975	Win.	24										44.0	2,560	56.0									
Speer 170 Spitz	Win. WLR	3.015	Win.	24										41.4	2,400	56.0									
8mm Rem. Mag.																									
Speer 170S Spitz	Rem. 9.5M	3.5	Rem.	24													82.8	3,315	61.7	87.2	3,350	61.7			
Speer 200 Spitz	Rem. 9.5M	3.525	Rem.	24													77.7	3,050	61.6	81.0	3,090	61.6			
Speer 200 Spitz	Fed. 215	3.525	Rem.	24																			88.0	3,151	60.4
Swift 200 A Frame SP	Fed. 215	3.6	Rem	24																			88.0	3,175	61.1
Hornady 220 Sp. Pt.	Rem. 9.5M	3.6	Rem	24													75.0	2,885	61.6	77.0	2,910	61.3			
Hornady 220 Sp. Pt.	Fed. 215	3.6	Rem	24																			86.0	3,026	61.7
Swift 220 A Frame SP	Fed. 215	3.6	Rem	24																			85.0	3,006	61.2
.338 Win. Mag. *chamber pressure in copper units*																									
Hornady 200 Sp. Pt.	Win. WLR	3.34	Win.	24										65.0	2,935	51.3	78.0	3,020	52.4	78.0	2,875	43.2			
Nosler 210 Spitz	Win. WLR	3.33	Win.	24													74.0	2,910	52.0	76.0	2,840	46.2			
Barnes 225X	Win. WLR	3.335	Win.	24										56.5	2,590	51.6	72.0	2,765	50.9	73.0	2,705	46.9			
Hornady 225 Sp. Pt.	Win. WLR	3.325	Win.	24										61.8	2,705	51.6	75.3	2,865	52.1	77.0	2,790	46.2			
Win. 230 F.S.	Win. WLR	3.335	Win.	24													72.0	2,790	60.5	73.0	2,760	56.4			
Hornady 250RN	Win. WLR	3.33	Win.	24													73.0	2,735	52.3	73.0	2,620	45.3			
.340 Wby. Mag. *chamber pressure in copper units*																									
Hornady 200 Sp. Pt.	Fed. 215	3.66	Wby.	26										71.8	2,990	53.1	85.0	3,095	53.5	91.0	3,170	53.2			
Nosler 210 Spitz	Fed. 215	3.595	Wby.	26										70.8	2,930	53.5	84.3	3,075	53.5	89.2	3,135	53.5			
Hornady 225 Sp. Pt.	Fed. 215	3.645	Wby.	26													81.7	2,995	53.5	88.0	3,035	53.4			
Hornady 250RN	Fed. 215	3.665	Wby.	26													80.7	2,865	53.5	84.7	2,890	53.3			
.35 Rem. *chamber pressure in copper units*																									
Rem. 150SPCL	Win. WLR	2.485	Win.	24				32.0	2,290	30.7															
Cast (GC) 158L	Win. WLR	2.485	Win.	24				28.0	2,200	29.8															
Rem. 200SPCL	Win. WLR	2.485	Win.	24				31.0	2,115	30.7															
.35 Whelen *chamber pressure in copper units*																									
Hornady 200SP	Rem. 9.5M	3.125	Rem.	24				51.5	2,630	50.3				60.0	2,675	44.8									
Hornady 250RN	Rem. 9.5M	3.225	Rem.	24				47.6	2,330	50.4				59.5	2,550	48.4									
.350 Rem. Mag. *chamber pressure in copper units*																									
Rem. 150SPCL	Rem. 9.5M	2.8	Rem.	20				55.0	3,075	47.5															
Rem. 200SPCL	Rem. 9.5M	2.8	Rem.	20				48.0	2,550	48.5															
Rem. 250PSP	Rem. 9.5M	2.8	Rem.	20				43.0	2,230	49.3															
.358 Win. *chamber pressure in copper units*																									
Rem. 200PSP	Win. WLR	2.78	Win.	24				38.0	2,420	46.1															

Centerfire Loads

Cartridge/Bullet	Primer	Min. OAL (inches)	Case	Bbl Length	2400 Chg Wt	2400 fps	2400 psi x1000	Reloder 7 Chg Wt	Reloder 7 fps	Reloder 7 psi x1000	Reloder 10X Chg Wt	Reloder 10X fps	Reloder 10X psi x1000	Reloder 15 Chg Wt	Reloder 15 fps	Reloder 15 psi x1000	Reloder 19 Chg Wt	Reloder 19 fps	Reloder 19 psi x1000	Reloder 22 Chg Wt	Reloder 22 fps	Reloder 22 psi x1000	Reloder 25 Chg Wt	Reloder 25 fps	Reloder 25 psi x1000
.358 Win. (continued)																									
Win. 250ST	Win. WLR	2.78	Win.	24				34.5	2,075	44.7															
.375 H&H Mag. *chamber pressure in copper units*																									
Hornady 270SP	Rem. 9.5M	3.545	Rem.	24										73.4	2,685	49.5									
Hornady 300MC	Rem. 9.5M	3.55	Rem.	24										66.5	2,455	49.6	79.0	2,340	49.6						
.375 Win. *chamber pressure in copper units*																									
Hornady 220FP	Win. WLR	2.555	Win.	24	23.5	1,900	44.0	36.0	2,260	45.5															
.38/55 Win. *chamber pressure in copper units*																									
IVI 255SP	CCI 200	2.53	IVI	24	18.0	1,410	23.5	26.5	1,725	26.0															
.378 Wby. Mag. *chamber pressure in copper units*																									
Hornady 270SP	Fed. 215	3.62	Wby.	26										90.5	2,940	53.3	110.8	3,110	53.1	115.0	3,050	47.2			
Barnes 300 Solid	Fed. 215	3.625	Wby.	26													108.6	2,960	53.3	114.0	2,965	51.6			
.38/40 Win. *chamber pressure in copper units*																									
150 Sierra JHP	Rem. 2.5	1.585	Rem.	24	14.1	1,425	13.1																		
180 Sierra JHP	Rem. 2.5	1.585	Rem.	24	13.0	1,305	13.4	25.8	1,745	13.5															
200 Hornady FMJ/FP	Rem. 2.5	1.585	Rem.	24	12.7	1,225	13.5	24.0	1,610	13.4															
.416 Rem. Mag. *chamber pressure in copper units*																									
Barnes 300X	Rem. 9.5M	3.6	Rem.	24										90.5	2,890	52.4									
Barnes 350X	Rem. 9.5M	3.6	Rem.	24										85.0	2,610	52.6									
A Square 400 Solid	Rem. 9.5M	3.6	Rem.	24										81.0	2,455	50.9	82.0	2,130	33.6						
Hornady 400RN	Rem. 9.5M	3.565	Rem.	24										82.0	2,445	51.7	83.0	2,140	33.6						
.416 Rigby *chamber pressure in copper units*																									
Barnes 300X	Fed. 215	3.65	Fed.	24																103.0	2,590	46.0			
Barnes 350X	Fed. 215	3.675	Fed.	24																101.0	2,455	46.3			
A Square 400 Solid	Fed. 215	3.725	Fed.	24																96.0	2,360	46.3			
Hornady 400RN	Fed. 215	3.725	Fed.	24																96.0	2,355	39.8			
.416 Wby. Mag. *chamber pressure in copper units*																									
Barnes 325X	Fed. 215	3.65	Wby.	26																117.0	2,880	51.0			
Barnes 350X	Fed. 215	3.65	Wby.	26																116.9	2,830	51.0			
A Square 400 Solid	Fed. 215	3.68	Wby.	26																117.0	2,705	50.5			
Hornady 400SP	Fed. 215	3.615	Wby.	26																117.5	2,720	51.0			
44/40 Win. *chamber pressure in copper units*																									
Rem. 200SP	Rem. 2.5	1.59	Rem.	24	14.5	1,230	12.5																		
Cast 240L	Rem. 2.5	1.58	Rem.	24	12.0	1,130	12.5	23.5	1,290	12.1															
.444 Marlin *chamber pressure in copper units*																									
Cast (GC) 240L	Rem. 9.5	2.5	Rem.	24	22.0	1,725	27.9	42.5	2,080	28.9															
Speer 240SP	Rem. 9.5	2.5	Rem.	24	25.0	1,730	21.9	51.0	2,400	38.1															
Hornady 265FP	Rem. 9.5	2.5	Rem.	24	25.0	1,715	22.1	47.0	2,215	35.8															
45/70 Govt. *chamber pressure in copper units*																									
Hornady 300HP	Rem. 9.5	2.475	Rem.	24	30.0	1,650	23.0	50.0	2,075	24.7															
Cast (GC) 385L	Rem. 9.5	2.575	Rem.	24	25.0	1,340	21.3	45.0	1,810	25.1															
Speer 400FN	Rem. 9.5	2.7	Rem.	24	25.0	1,260	24.0	40.0	1,580	24.9															
458 Win Mag *chamber pressure in copper units*																									
Hornady 300HP	Win. WLR	2.95	Win	24	35.0	1,590	13.5	70.0	2,555	41.4															
Cast 385 (GC) lead	Win. WLR	3	Win	24	30.0	1,290	14.2	65.0	2,285	42.1															
Hornady 500 FMJ	Win. WLR	3.28	Win	24	35.0	1,415	32.6	64.0	2,000	0.0															

HAVE YOU BEEN MISSING SOMETHING?

Reloder 15® is Alliant's premium, fast burning rifle powder, specially blended for the demands of varmint shooting. It combines 3,000+ fps velocity with the flat trajectory you need for excellent accuracy. Works great with varmint-weight .243 bullets, or heavier weight .223 and .22-250 bullets.

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HANDLOADING PRECAUTIONS & TECHNICAL DATA

Pistol and Revolver Cartridges Special Reloading Precautions

Most pistols and revolvers function best when loaded with a quick-burning powder such as Bullseye. **Since peak pressure is reached very quickly, the SEATING DEPTH of the bullet is very important: the deeper the bullet, the higher the pressure. If the bullet is seated too deeply, dangerous pressures will be generated, which could burst the gun and cause severe personal injury (including death).**

Equally critical is the powder charge. Guard AGAINST multiple charges when reloading. Certain cartridges (notably .38 Special) have been reloaded accidentally with double and even triple charges, with catastrophic results when fired in the gun.

A. Prevent deeply seated bullets.

1. Your assembled cartridges must be as long as, or longer than, the minimum length listed for the combination you are reloading.
2. Set your bullet station accordingly and lock tool securely.
3. Keep bullet station clean of accumulating lead and grease.
4. Inspect all loaded rounds for overall length.
5. Be sure every bullet is held tightly by shell mouth, especially pistol loads (recoil drives magazine against bullet noses of contained cartridges).

B. Prevent multiple charges.

1. **Handloading:** Keep track of every powder charge, then look inside all shells and compare powder levels.
2. **Progressive reloading:** Be sure every shell is truly empty; don't back up the turret; don't jiggle the handle; don't use a shell to clean out the powder train (use a paper cup or equivalent).

C. Inspection.

1. Discard cases with split mouths.
2. Discard cases with enlarged primer pockets.
3. Do not use cases that are designed for primer-propelled practice cartridges; such cases may not be designed for full power loads.

Physical Effect of Gun Recoil (Kick)

The rearward motion of every gun, its recoil, increases when heavier shot or heavier bullets are fired, and when higher velocity loads are fired. This motion must be opposed by the shoulder, or the pistol hand, of the shooter. Whenever the recoil is perceptibly annoying to the shooter, accuracy on succeeding firings undoubtedly diminishes.

When the shooting condition demands heavy loads and high velocity, recoil kick can be reduced by using a heavier gun, and by spreading the force over a larger area of the anatomy, such as by using a wider stock, larger grip, plus shoulder pad or softer grip.

Excellent publications available to the reloader, plus his or her own growing sophistication, have generated a wholesome trend away from maximum loads and toward accuracy of loads no more powerful than needed for the intended purpose. Reducing recoil increases accuracy.

Contributing to increased accuracy as well as the pleasantness of shooting is in two main areas:

1. This ***Reloaders' Guide*** includes many reduced loads.
2. Our research indicates that the burning rate of powders has a modest effect on recoil. For example, whenever two or more powders are listed for the same load, the slower one usually is chosen by the expert shooter as giving milder felt recoil. An intriguing aspect of reloading at home is the freedom to assemble, for example, trap loads with Red Dot or Green Dot powder, then to shoot them alternately to decide which seems more comfortable.

Handloading Precautions

1. **Understand what you are doing and why.** Read handbooks and manuals on reloading. Talk to experienced reloaders. Write or call suppliers of components if you have questions or are in doubt.
2. Stay ***alert*** when reloading. **Do not reload when distracted.**
3. Establish a loading procedure and follow it. **Do not vary your sequence of operations.**
4. **Examine empty cases** (shotshell or metallic) to be sure they are in good condition before reloading. Never force live cartridges into or out of the chamber of a gun.
5. **Do not use cases that are designed for primer-propelled practice cartridges;** such cases may not be designed for full power loads.
6. **Do not *ream* out or *enlarge* flash holes of metallic cartridge cases.** This may change the ignition rate and result in dangerous pressures.
7. **Do not punch out live primers.** Fire the empty primed shells in a gun.
8. **Do not mix primers.** Primers differ in brisance of ignition, which affects pressure and velocity. Use only the primer listed.
9. **The shotshell loading data in the *Reloaders' Guide* are for *LEAD SHOT only.*** *Use steel shot only as specified in the steel shot data section (pgs. 6-7).*
10. One-piece plastic wads for shotshells vary in compressibility and gas-sealing effectiveness. Use only the wad listed.
11. If you "throw," or measure powder charges by volume, check-weigh the charge frequently. **Do not mix powders.**
12. **Do not use powders near a flame, spark-producing machinery, or heating device.** Do not expose powders to temperatures above 100°F.
13. Keep out of reach of children.
14. **Do not smoke while reloading.**

HANDLOADING PRECAUTIONS & TECHNICAL DATA (continued)

Smokeless Powders for Reloading

We currently offer 15 powders for use in reloading. These are listed in the order of decreasing burning rates. Each powder listed is "slower" than those preceding it and "faster" than those following it. Among these Alliant smokeless powders, for example, Red Dot® burns more slowly than Bullseye®, but faster than Green Dot®.

Powder	Principal Use[1]	Can Also be Used In[1]
Bullseye®	Handgun Loads	12-Gauge Light Target Loads
Red Dot®	Light and Standard Shotshell Loads, 12-Gauge	Handgun Loads
American Select®	12-Gauge Target Loads	Handgun Loads
Green Dot®	Standard and Medium Shotshell Loads, 12- and 16-Gauge	Handgun Loads
Unique®	All-Around Shotshell Powder, 12-, 16-, 20-, and 28-Gauge	Handgun Loads
Power Pistol®	High performance pistol loads such as the 9mm, .40 S&W, and 10mm	Moderate pressure pistol cartridges like the .38 Special, .380 Auto, and .45 ACP
Herco®	Heavy Shotshell Loads, 10-, 12-, 16-, 20-, and 28-Gauge	Heavy Handgun Loads
Blue Dot®	Magnum Shotshell Loads, 10-, 12-, 16-, 20-, and 28-Gauge	Magnum Handgun Loads
Steel®	Steel Shotshell, 10- and 12-Gauge	Magnum, Shotshell and Turkey Loads
2400®	Magnum Handgun Loads	Some Rifle and Shotshell Loads
Reloder® 7	Light Rifle Loads	Silhouette Loads
Reloder® 10X	Light Varmint/Light Bullet Loads	Bench rest calibers; Light Bullet 308
Reloder® 15	Medium Rifle Loads	Silhouette Loads
Reloder® 19	Magnum Rifle Loads	Target and hunting rifle loads
Reloder® 22	Magnum Rifle Loads	Maximum hunting loads
Reloder® 25	Magnum Rifle Loads	Maximum hunting loads

[1] *Use only in the loads printed in this Guide.*

Packaging

Powder	1-lb Canister	4-lb Canister	5-lb Canister	8-lb Keg
Bullseye, Red Dot, American Select, Green Dot, Unique, Herco, 2400	x	x		x
Power Pistol	x	x		
Blue Dot	x		x	
Reloder Series	x		x	
Steel	x	x		

All 15 powders are always in stock at distributors' magazines throughout the U.S.A., and in most countries where reloading is legally permitted and popular. Any reloader unable to purchase any of the 15 powders at retail stores that handle powders should write to the address on the back cover. We cannot ship directly, but we will endeavor to correct supply shortages in your area.

Powder Information

Smokeless sporting propellants are of two basic types – single-base and double-base. Single-base propellants derive their energy from nitrocellulose and double-base from a combination of nitrocellulose and nitroglycerin. Alliant propellants range from the "near" single-base American Select (2% nitroglycerin) to the high nitroglycerin (40%) double-base Bullseye. In addition, our propellants contain stabilizers for long storage life and various other ballistic modifiers which reduce flash, improve combustion efficiency, and promote clean burning.

Some of our propellants also have a chemical coating on the surface to control the burning rate. This creates a progressive burn for achieving higher velocities at lower pressures. All of our propellants have a graphite glaze, which ensures smooth, consistent metering of charges through volumetric reloaders.

Alliant propellants are extruded and cut into circular flakes or cylinders by precision dies and cutting equipment. Granule size tolerances are very tight and uniform to prevent separation of different size granules and to ensure consistent ballistic performance, load after load.

By utilizing a precise combination of chemical formulation, granule size, and chemical coatings, we are able to tailor the burning characteristics of our propellants to achieve the best overall performance in a wide range of loads.

Because each of our propellants is specifically engineered to have different burn rates and performance characteristics, **NEVER BLEND OR MIX DIFFERENT POWDERS, AND USE ONLY THE GRADE AND QUANTITY RECOMMENDED IN THIS RELOADER'S GUIDE.**

All powders burn with great precision and rapidity inside the gun chamber, generating the hot, high-pressure gas that accelerates the bullet (or shot) and drives it toward the target. **It is critically important for safety that the powder used is matched to the bullet (or shot) weight and other factors; otherwise, the gun parts may be deformed or may even burst and cause serious personal injury (including death).** Shot-to-shot accuracy can also be degraded by deviations from recommended loads. Even after 80 years of producing and testing powders, ballisticians are unable to calculate and predict **exact** ballistic results; we must test-fire our powders with each set of components and record the results. Therefore, **the ballistic values and recommended combinations listed in this booklet must be followed without deviation.**

Working up charges. For shotgun loads, use the charge weight shown. However, for all rifle and pistol loads, first load and fire a few cartridges at 10% less charge than is shown, watching for any sign of excessive pressure (difficult extraction, flattened or blown primers, unusual recoil).

Handgun loads. Many pistol and revolver loads require only small amounts of fast-burning powders; therefore: (1) guard against accidental double charges, and even multiple charges, whether loading with handtools or with progressive loading devices; (2) be sure that each bullet is positioned in the case so that the minimum overall length is not violated.

Dram Equivalent

Prior to the commercialization of smokeless powder, shotgun shells were loaded with black powder. The weight measurement system used for black powder was "drams." Compared with black powder, **smokeless powder is more dense and MUCH more energetic, so it cannot safely be measured and used like black powder.** Indeed, a different weight system was selected for smokeless powder: "grains," wherein 7,000 grains equal one pound.

Since many shooters still wanted to be able to compare their smokeless powder loads with the original black powder loads, the term "dram equivalent" evolved. Simply stated, the dram equivalent is an indicator of the velocity of a particular shot load. **But note that the charge and weight of smokeless powder must not be calculated from the dram equivalent.**

Notice

We have inserted information on the properties and storage of smokeless powder for your understanding, so that you can avoid unnecessary risks when using it. This information, on pages 51 and 52, was published initially by the Sporting Arms and Ammunition Manufacturers' Institute, Inc., several years ago in the interest of safety. You must read these pages carefully and comply with the precautions listed. If you have questions, please call or write to us at the address on the back cover.

Important Safety and Health Precautions

To perform in a gun, powders must ignite easily and burn rapidly. These characteristics require use of common sense to avoid accidents. **YOU MUST OBSERVE THESE PRECAUTIONS:**

1. **DO NOT smoke when reloading.**
2. **DO NOT use spark-producing tools.**
3. **DO NOT mix powders of different kinds.**
4. **DO NOT leave powder where children can get it.**
5. **DO NOT try to load when distracted.**
6. **Avoid an open fire or working near spark-producing machinery.**
7. **Pour out only the amount of powder needed for immediate work.**
8. **Check the powder measure each time it is used. Make sure the settings have not been accidentally changed. Check-weigh "thrown charges" frequently.**
9. **Clean up any spilled powders. Use a brush and dustpan; do not use a vacuum cleaner. Dispose of spilled powder as described in the SAAMI pages of this Guide.**
10. **Store powder only in its original container, which was carefully designed for this usage. DO NOT REPACKAGE. Do not purchase or accept any Alliant powder not in its original, FACTORY-SEALED container.**
11. **Be sure the powder container is completely empty before discarding. Do not use the container to store other powders or materials, or for any other purpose.**
12. **Always keep in mind that smokeless powder is an explosive material and highly flammable. It should always be stored and handled in such a way as to avoid impact, friction, heat, sparks, or flame.**
13. **Wear safety glasses when reloading.**
14. **This material contains nitroglycerin. Inhalation, skin contact, or ingestion may cause severe headache, nausea, and lowering of blood pressure. THEREFORE, THE FOLLOWING PRECAUTIONS *MUST* BE OBSERVED WHEN HANDLING POWDERS:**
    - **A. Do not take internally. In case of ingestion, cause vomiting. Call a physician.**
    - **B. Avoid contamination of food, beverages, or smoking materials.**
    - **C. Avoid breathing dust. Ensure adequate ventilation during handling.**
    - **D. Wash thoroughly after handling and before eating, drinking, or smoking.**
    - **E. Do not carry powder in clothing.**

You must also always remember:

1. **Establish a routine for reloading.** It will result in more uniform loads and less chance of error.
2. Some primers are more powerful than others (they produce more gas at a higher temperature). **Use only the primers specified herein.**
3. Shotshell wads differ in their sealing ability. **Use only the load combinations specified herein.**
4. If you use cast bullets, their diameter, hardness, lubrication, and crimp will affect the ballistics.
5. The shotshell loads in this booklet are for use with LEAD SHOT ONLY! **For steel shot see special steel section, pages 30-31.**
6. **Use only the brands of powder and components shown in our tables. Do not substitute other types.**
7. Discharging firearms in poorly ventilated areas, cleaning firearms, or handling ammunition may result in exposure to lead, a substance known to cause birth defects, reproductive harm, and other serious physical injury. **Have adequate ventilation at all times. Wash hands and face thoroughly after handling and before coming in contact with food, chewing materials, and smoking material.**

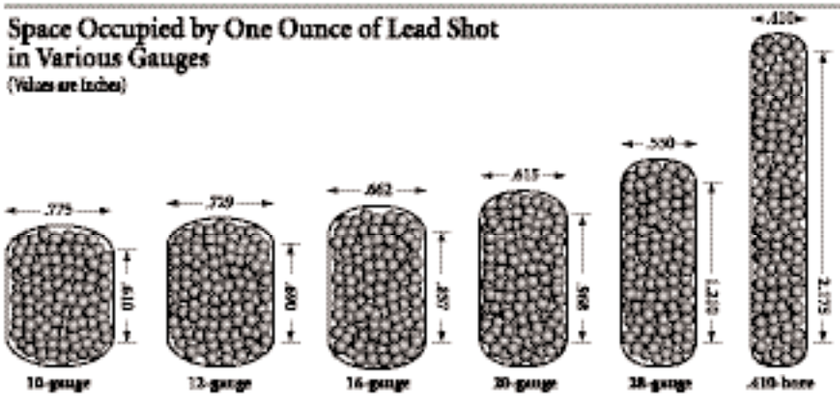
Reference Tables

Approximate Number of Pellets in Specific Weights of Lead Shot (Sizes 2 Through 9)

Weight, oz	No. 2	No. 4	No. 5	No. 6	No. 7	No. 8	No. 8	No. 9
	45	67	85	112	175	205	242	292
¼	67	101	127	168	262	308	363	439
⅜	79	118	149	197	306	359	425	512
½	90	135	170	225	350	410	485	585
⅝	101	152	191	253	393	461	545	658
¾	112	169	213	281	437	513	605	731
⅞	124	186	234	309	481	564	665	804
1	135	202	255	337	525	615	730	877

Space Occupied by One Ounce of Lead Shot in Various Gauges

(Values are inches)



Internal Diameter of the Barrel in Several Shotgun Gauges

10-Gauge—0.775-Inch
12-Gauge—0.729-Inch
16-Gauge—0.662-Inch
20-Gauge—0.615-Inch
28-Gauge—0.550-Inch
.410-Bore—0.410-Inch

Reference Tables (continued)

Number of Shells That Can Be Loaded with One Pound of Powder at Various Grains Per Load

(The term grain is a measure of weight: 7,000 grains equal one pound)

Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound	Grains/ Load	Loads/ Pound
12	583	23	304	34	205	45	156	56	125	67	104
13	538	24	291	35	200	46	152	57	123	68	103
14	500	25	280	36	194	47	149	58	121	69	101
15	466	26	269	37	189	48	146	59	119	70	100
16	437	27	259	38	184	49	143	60	117	71	99
17	411	28	250	39	179	50	140	61	115	72	97
18	388	29	241	40	175	51	137	62	113	73	96
19	368	30	233	41	170	52	135	63	111	74	95
20	350	31	225	42	166	53	132	64	109	75	93
21	333	32	218	43	162	54	130	65	108	76	92
22	318	33	212	44	159	55	127	66	106	77	91

Typical Percentage of Pellets in a 30-Inch Circle at 40 Yards (Pattern) for Various Choke Sizes

(Choke is a Constriction at the Muzzle of a Shotgun Barrel)

Full Choke—70%

Improved Modified Choke—65 to 70%

Modified Choke—55%

Improved Cylinder—50%

True Cylinder—40%

Ballistic Data

The velocity and pressure obtained with the specific combinations of shell, wad, primer, bullet or shot weight, powder, and powder weight provided in this booklet were obtained in a laboratory, where considerable effort is made to control the load and test conditions. Velocity was measured with a chronograph (electric stopwatch). Pressure was measured either by compressing copper cylinders (C.U.P.), or electronically, by use of a piezoelectric transducer (P.S.I.).

Guns are designed to take a considerable amount of internal pressure, but if this is exceeded, they burst violently. Be alert to signs of excess pressure, such as heavy recoil, flattened primers, or blown primers. Don't make changes in the suggested loads.

Tone variations (shaded areas) used in the reloading tables are for ease of reading and do not represent preferred loads.

The quantity of powder to use is listed in GRAINS, which are a measure of weight, under each powder column.

Every reloader needs a good-quality scale for weighing each powder charge, or for checking the weight of powder thrown by volumetric loaders.

Special Notes Regarding Components Other Than Powder

A. **Shotgun Shells.** Manufacturers may sell ammunition under different brand names that are identical for reloading purposes. Following are popular variations. When in doubt, consult the ammunition producer.

- **Federal Hi Power Plastic** same as **Duck and Pheasant, Field, Game,** and **Dove and Squirrel** or **Top Gun.**
- **Federal Premium** (Integral Base Wad)
- **Remington-Peters.** Same as Mohawk brand shells.
- **Remington-STS Type.** Same as **Premier, Nitro 27, GunClub,** and **Game Loads**
- **Winchester AA-Type .** Old and new style hulls are interchangeable.
- **Winchester Polyformed Type (Reifenhauser Tube)** same as **Duck and Pheasant, Dove and Squirrel.**

B. **Primers**

- **CCI 109** and **CCI 209** are ballistically identical and can be interchanged.
- **CCI 209M** (Magnum) is "hotter" and cannot be substituted for CCI 109 or 209. Use 209M only as listed.
- **Rem. 209** is "hotter" and cannot be substituted for Rem. 97★ or Rem. 209P primer.
- **Rem. 209P** is interchangeable with Rem. 97★ primer.
- **Federal 209A** is "hotter" and cannot be substituted for Federal 209.

C. **Wads.** Card wads and fiber wads are used for certain slug and buckshot loads and a few light shotshell loads. **Do not interchange wads.**

D. **Shot. Use only clean lead shot.** DO NOT USE STEEL SHOT IN SHOTSHELL LOADS EXCEPT AS LISTED IN STEEL™ SECTION.

E. **Shot Buffers. Do not add any buffers or fillers of any kind to shotshell loads listed in this Guide.**

F. **Cards and Fillers. For revolver, pistol, and rifle cartridge reloading, do not add any cards, kapok, or fillers of any kind to loads listed in this Guide.**

Black Powder

Black powder is entirely different from smokeless powder. NEVER substitute one for the other. Smokeless powders have much more energy than black powder. **NEVER attempt to use smokeless powder in black powder guns or saluting cannon; they may blow up and cause serious personal injury (including death).**

Powder Bushing Charts

A reloading scale is ***required*** to check the nominal weight of a powder charge.

Powder bushings can vary in the charge weight they drop and could vary as much as several grains under certain conditions.

Powder density, moisture content, and loading technique can cause a variation from the bushing weights listed on the charts. Also, the loading machine vibration affects charge weights. A complete loading cycle should be completed to ***assure*** an average powder charge weight.

The information in these tables has been supplied by the reloading machine manufacturers and ***is not a reloading recommendation*** or a result of Alliant's testing.

Lee Load-All Capacity Bushing Chart (Units shown in grains)

Bushing #	.095	.100	.105	.110	.116	.122	.128	.134	.141	.148	.155	.163	.171	.180	.189	.198
Red Dot	11.0	11.6	12.2	12.8	13.5	14.2	14.8	15.5	16.4	17.2	18.0	18.9	19.8	20.9	21.9	23.0
Amer-Select	11.6	12.2	12.8	13.4	14.2	14.9	15.6	16.4	17.2	18.1	18.9	19.9	20.9	22.0	23.1	24.2
Green Dot	12.3	13.0	13.6	14.3	15.1	15.8	16.6	17.4	18.3	19.2	20.1	21.2	22.2	23.4	24.5	25.7
Blue Dot	18.0	19.0	19.9	20.8	22.0	23.1	24.3	25.4	26.7	28.0	29.4	30.9	32.4	34.1	35.8	37.5
Unique	14.3	15.0	15.8	16.5	17.4	18.3	19.2	20.1	21.2	22.3	23.3	24.5	25.7	27.0	28.4	29.7
Herco	13.9	14.6	15.3	16.1	16.9	17.8	18.7	19.6	20.6	21.6	22.6	23.8	25.0	26.3	27.6	28.9
2400	21.0	22.1	23.2	24.3	25.6	27.0	28.3	29.6	31.2	32.7	34.3	36.0	37.8	39.8	41.8	43.8

**NOTE: Only available with Lee Load-All.*

Hornady Powder Bushing Chart for 366 Auto and Apex 91 (Units shown in grains)

Grains	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
Red Dot			384	393	405	423	438	457	468	480	489	498	510	519																					
American Select							417	423	432	447	456	468	477	485																					
Green Dot			365	378	390	405	420	435	447	456	468	480	492	501	513	522	534	—	549	558															
Unique				342	354	369	381	393	405	414	423	435	444	453	465	474	483	492	501	—	510														
Herco				357	369	381	393	405	414	426	438	450	462	471	477	489	498	—	513	522	531	—	549	558	564	573	—	588	594							
Blue Dot									366	372	381	390	396	408	414	423	435	441	447	459	468	471	483	489	495	501	510	516	522	531	534	543	549	555	561
2400		256	266	—	291	300	312	324	330	339																									

Ponsness/Warren Powder Bushing Chart (Units shown in grains)

Bushing #	1A	2A	3A	A	B	C	Cl	D	Dl	E	El	E2	F	Fl	F2	G	Gl	H	I	J	Jl	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA
Bullseye										16.2	16.8	17.7	18.7	19.4																								
Red Dot											11.6	12.2	12.9	13.4	13.7	14.5	14.7	15.7	16.5	16.8	17.3	17.6	18.5	19.4	20.7	20.9	21.3	21.9	22.9									
American Select																	16.4	17.5	18.2	18.8	19.4	19.9	20.6	22.0													
Green Dot											11.7	12.3	13.1	13.6	13.8	14.7	14.9	15.9	16.7	17.0	17.5	17.9	18.8	19.6	21.1	21.5	21.8	22.3	23.2	23.6	25.3	26.5					
Unique									12.6	14.2	14.8	15.6	16.5	17.2	17.5	18.7	19.0	20.2	21.2	21.7	22.3	22.7	24.0	25.3	26.8	27.1	27.6										
Herco									12.3	13.8	14.4	15.1	16.0	16.6	16.9	18.0	18.3	19.5	20.3	20.9	21.5	21.9	23.0	24.0	25.7	26.0	26.5	27.1	28.1	28.8	30.7	32.1	35.1	34.9	35.4	37.1	
Blue Dot									16.4	18.4	19.2	20.1	21.3	22.2	22.6	23.9	24.3	25.9	27.2	27.7	28.3	29.1	30.6	31.9	34.2	34.5	35.2	36.0	37.5	38.1	40.7	42.3	43.8	46.5	47.2	49.6	50.7
2400		12.3	13.2	15.2	16.1	16.8	17.6	18.3	19.0	21.3	22.2	23.3	24.7	25.7	26.1	27.7	28.2	30.0	31.5	32.3	33.1	33.7	35.5	37.1	39.8	40.2	41.1	42.0	43.8	44.5	47.5	49.8					

MEC Powder Bushing Chart (Units shown in grains)

Bushing #	9	10	11	12	12A	13	13A	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Bullseye		8.6	9.1	9.6	10.1	10.6	11.2	11.7	12.3	12.9	13.5	14.1	14.8	15.4	16.1	16.8	17.5	18.2	18.9	19.6	20.4	21.2	21.9	22.8	23.7
Red Dot		6.3	6.7	7.1	7.5	7.9	8.3	8.7	9.2	9.6	10.1	10.6	11.1	11.6	12.1	12.6	13.1	13.7	14.2	14.9	15.7	16.4	17.1	17.8	18.5
8°		6.6	7.0	7.2	7.5	8.0	8.3	8.9	9.2	9.9	10.5	11.0	11.7	12.3	12.8	13.4	13.8	14.2	14.8	15.3	15.9	16.4	16.9	17.4	17.9
American Select		6.9	7.3	7.7	8.2	8.6	9.1	9.6	10.1	10.6	11.1	11.7	12.2	12.8	13.3	13.9	14.5	15.1	15.7	16.4	17.0	17.7	18.3	19.0	19.7
Green Dot		6.7	7.2	7.6	8.0	8.4	8.9	9.3	9.8	10.3	10.8	11.3	11.8	12.4	12.9	13.5	14.0	14.6	15.2	15.8	16.4	17.0	17.7	18.3	19.0
Unique		7.5	7.9	8.4	8.9	9.4	9.9	10.4	10.9	11.4	12.0	12.6	13.1	13.7	14.3	15.1	15.8	16.4	17.1	17.7	18.4	19.1	19.8	20.5	21.1
Herco		7.9	8.3	8.8	9.3	9.8	10.4	10.9	11.4	12.0	12.6	13.2	13.8	14.4	15.0	15.7	16.3	17.0	17.7	18.4	19.1	19.8	20.6	21.3	22.1
Blue Dot		10.8	11.3	11.9	12.5	13.1	13.7	14.4	15.0	15.7	16.3	17.0	17.7	18.4	19.2	20.1	21.0	21.9	22.8	23.7	24.6	25.5	26.4	27.3	28.2
2400		11.8	12.5	13.5	14.0	14.8	15.6	16.4	17.2	18.1	18.9	19.8	20.7	21.7	22.6	23.6	24.6	25.6	26.6	27.7	28.8	29.9	31.0	32.1	33.5
410	11.1	11.7	12.1	13.0	13.6	14.5	15.1	15.7	16.6	17.4	18.4	19.2	20.2	21.1	22.1	23.1	24.4	25.6	26.1	26.9	28.0	29.5	30.3	31.4	32.4

MEC Powder Bushing Chart continued (Units shown in grains)

Bushing #	32	33	34	35	36	37	38	38A	39	39A	40	40A	41	41A	42	42A	43	43A	44	44A	45	45A	46
Bullseye	24.6	25.5	26.4	27.3	28.3	29.1	30.1	31.0	31.9	32.8	33.7	34.7	35.7	36.9	38.1	39.4	40.7	42.0	43.3	44.6	46.0	47.4	48.8
Red Dot	19.2	19.9	20.6	21.3	21.9	22.7	23.5	24.1	24.7	25.2	25.9	26.6	27.3	27.9	28.4	29.3	29.9	30.8	31.5	32.1	32.7	33.4	34.1
8°	18.5	19.5	20.5	21.0	21.8	22.5	22.8	23.2	23.8	24.5	25.4	26.0	26.6	27.0	27.5	28.8	30.0	31.1	32.2	33.1	33.9	34.8	35.9
American Select	20.4	21.1	21.8	22.6	23.3	24.1	24.9	25.7	26.5	27.3	28.1	28.9	29.8	30.7	31.5	32.4	33.3	34.2	35.2	36.4	37.0	38.0	39.0
Green Dot	19.6	20.3	21.0	21.7	22.4	23.2	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.4	30.3	31.1	32.0	32.8	33.7	34.6	35.5	36.4	37.4
Unique	21.7	22.5	23.2	24.0	24.8	25.6	26.5	27.3	28.2	29.0	29.9	30.8	31.7	32.6	33.5	34.5	35.4	36.4	37.4	38.4	39.6	40.6	41.6
Herco	22.9	23.7	24.5	25.3	26.2	27.0	27.9	28.8	29.7	30.6	31.5	32.4	33.4	34.3	35.3	36.3	37.3	38.3	39.3	40.4	41.4	42.5	43.6
Blue Dot	29.1	30.5	31.6	32.7	33.8	35.0	36.1	37.3	38.5	39.7	40.9	42.2	43.4	44.7	46.0	47.4	48.7	50.1	51.5	52.9	54.3	55.7	57.2
2400	34.5	35.7	36.9	38.1	39.4	40.7	42.0	43.3	44.6	46.0	47.4	48.8	50.2	51.6	53.1	54.6	56.1	57.6	59.2	60.7	62.3	63.9	65.6
410	33.6	34.7	35.9	37.0	38.1	39.3	40.6	42.0	43.3	45.0	46.7	48.0	49.2	50.4	51.7	53.0	54.8	56.3	57.4	58.9	59.2	60.4	62.0

S A A M I
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Properties and Storage of Smokeless Powder

Ammunition handloading has become increasingly popular in recent years. This information discusses properties of smokeless powder and offers recommendations for its storage.

This information is intended to increase the knowledge of all concerned individuals and groups regarding smokeless powder. The statements and recommendations made are not intended to supersede local, state, or Federal regulations. Proper authorities should be consulted on regulations for storage and use of smokeless powder in each specific community. A leaflet entitled *"Sporting Ammunition Primers: Properties, Handling, & Storage for Hand Loading"* supplements this information on smokeless powder.

Properties of Smokeless Powder

Smokeless powders, or propellants, are essentially mixtures of chemicals designed to burn under controlled conditions at the proper rate to propel a projectile from a gun.

Smokeless powders are made in three forms:

1. Thin, circular flakes or wafers
2. Small cylinders
3. Small spheres

Single-base smokeless powders derive their main source of energy from nitrocellulose.

The energy released from double-base smokeless powders is derived from both nitrocellulose and nitroglycerin.

All smokeless powders are extremely flammable; by design, they are intended to burn rapidly and vigorously when ignited.

Oxygen from the air is not necessary for the combustion of smokeless powders since they contain sufficient built-in oxygen to burn completely, even in an enclosed space such as the chamber of a firearm.

In effect, ignition occurs when the powder granules are heated above their ignition temperature. This can occur by exposing powder to:

1. A flame such as a match or primer flash.
2. An electrical spark or the sparks from welding, grinding, etc.
3. Heat from an electric hot plate or a fire directed against or near a closed container even if the powder itself is not exposed to the flame.

When smokeless powder burns, a great deal of gas at high temperature is formed. If the powder is confined, this gas will create pressure in the surrounding structure. The rate of gas generation is such, however, that the pressure can be kept at a low level if sufficient space is available or if the gas can escape.

In this respect smokeless powder differs from blasting agents or high explosives such as dynamite or blasting gelatin, although smokeless powder may contain chemical ingredients common to some of these products.

High explosives such as dynamite are made to detonate, that is, to change from solid state to gaseous state with evolution of intense heat at such a rapid rate that shock waves are propagated through any medium in contact with them. Such shock waves exert pressure on anything they contact, and, as a matter of practical consideration, it is almost impossible to satisfactorily vent away from the effects of a detonation involving any appreciable quantity of dynamite.

Smokeless powder differs considerably in its burning characteristics from common "black powder."

Black powder burns essentially at the same rate out in the open (unconfined) as when in a gun.

When ignited in an unconfined state, smokeless powder burns inefficiently with an orange-colored flame. It produces a considerable amount of light brown noxious smelling smoke. It leaves a residue of ash and partially burned powder. The flame is hot enough to cause severe burns.

The opposite is true when it burns under pressure as in a cartridge fired in a gun. Then it produces very little smoke, a small glow, and leaves very little or no residue. The burning rate of smokeless powder increases with increased pressure.

If burning smokeless powder is confined, gas pressure will rise and eventually can cause the container to burst. Under such circumstances, the bursting of a strong container creates effects similar to an explosion.

For this reason, the Department of Transportation (formerly Interstate Commerce Commission) sets specifications for shipping containers for propellants and requires tests of loaded containers — under actual fire conditions — before approving them for use.

When smokeless powder in D.O.T. approved containers is ignited during such tests, container seams split open or lids pop off — to release gases and powder from confinement at low pressure.

How to Check Smokeless Powder for Deterioration

Although modern smokeless powders are basically free from deterioration under proper storage conditions, safe practices require a recognition of the signs of deterioration and its possible effects.

Powder deterioration can be checked by opening the cap on the container and smelling the contents. Powder undergoing deterioration has an irritating acidic odor. (Don't confuse this with common solvent odors such as alcohol, ether and acetone.)

Check to make certain that powder is not exposed to extreme heat as this may cause deterioration. Such exposure produces an acidity which accelerates further reaction and has been known, because of the heat generated by the reaction, to cause spontaneous combustion.

Never salvage powder from old cartridges and do not attempt to blend salvaged powder with new powder. Don't accumulate old powder stocks.

The best way to dispose of deteriorated smokeless powder is to burn it out in the open at an isolated location in small shallow piles (not over 1" deep). The quantity burned in any one pile should never exceed one pound. Use an ignition train of slow burning combustible material so that the person may retreat to a safe distance before powder is ignited.

Considerations for Storage of Smokeless Powder

Smokeless powder is intended to function by burning, so it must be protected against accidental exposure to flame, sparks or high temperatures.

For these reasons, it is desirable that storage enclosures be made of insulating materials to protect the powder from external heat sources.

Once smokeless powder begins to burn, it will normally continue to burn (and generate gas pressure) until it is consumed.

D.O.T. approved containers are constructed to open up at low internal pressures to avoid the effects normally produced by the rupture or bursting of a strong container.

Storage enclosures for smokeless powder should be constructed in a similar manner:

1. Of fire-resistant and heat-insulating materials to protect contents from external heat.
2. Sufficiently large to satisfactorily vent the gaseous products of combustion, which would result if the quantity of smokeless powder within the enclosure accidentally ignited.

If a small, tightly enclosed storage enclosure is loaded to capacity with containers of smokeless powder, the walls of the enclosure will expand or move outwards to release the gas pressure — if the powder in storage is accidentally ignited.

Under such conditions, the effects of the release of gas pressure are similar or identical to the effects produced by an explosion.

Hence only the smallest practical quantities of smokeless powder should be kept in storage, and then in strict compliance with all applicable regulations and recommendations of the National Fire Protection Association (reprinted at end of leaflet).

Recommendations for Storage of Smokeless Powder

STORE IN A COOL, DRY PLACE. Be sure the storage area selected is free from any possible sources of excess heat and is isolated from open flame, furnaces, hot water heaters, etc. Do not store smokeless powder where it will be exposed to the sun's rays. Avoid storage in areas where mechanical or electrical equipment is in operation. Restrict from the storage areas heat or sparks which may result from improper, defective or overloaded electrical circuits.

DO NOT STORE SMOKELESS POWDER IN THE SAME AREA WITH SOLVENTS, FLAMMABLE GASES, OR HIGHLY COMBUSTIBLE MATERIALS.

STORE ONLY IN DEPARTMENT OF TRANSPORTATION APPROVED CONTAINERS.

Do not transfer the powder from an approved container into one which is not approved.

DO NOT SMOKE IN AREAS WHERE POWDER IS STORED OR USED. PLACE APPROPRIATE "NO SMOKING" SIGNS IN THESE AREAS.

DO NOT SUBJECT THE STORAGE CABINETS TO CLOSE CONFINEMENT.

STORAGE CABINETS SHOULD BE CONSTRUCTED OF INSULATING MATERIALS AND WITH A WEAK WALL, SEAMS OR JOINTS TO PROVIDE AN EASY MEANS OF SELF-VENTING.

DO NOT KEEP OLD OR SALVAGED POWDERS. Check old powders for deterioration regularly. Destroy deteriorated powders immediately.

OBEY ALL REGULATIONS REGARDING QUANTITY AND METHODS OF STORING. Do not store all your powders in one place. If you can, maintain separate storage locations. Many small containers are safer than one or more large containers.

KEEP YOUR STORAGE AND USE AREA CLEAN. Clean up spilled powder promptly. Make sure the surrounding area is free of trash or other readily combustible materials.

10-3 Smokeless Propellants.

10-3.1 Quantities of smokeless propellants not exceeding 25 lb (11.3 kg) in shipping containers approved by the U.S. Department of Transportation, may be transported in a private vehicle.

10-3.2 Quantities of smokeless propellants exceeding 25 lb (11.3 kg) but not exceeding 50 lb (22.7 kg), transported in a private vehicle, shall be transported in a portable magazine having wood walls of at least 1-in. (25.4-mm) nominal thickness.

10-3.3 Transportation of more than 50 lb (22.7 kg) of smokeless propellants in a private vehicle is prohibited.

10-3.4 Commercial shipments of smokeless propellants in quantities not exceeding 100 lb (45.4 kg) are classified for transportation purposes as flammable solids when packaged according to U.S. Department of Transportation Hazardous Materials Regulations (Title 49, Code of Federal Regulations, Part 173.197a), and shall be transported accordingly.

10-3.5 Commercial shipments of smokeless propellants exceeding 100 lb (45.4 kg) or not packaged in accordance with the regulations cited in 10-3.4 shall be transported according to U.S. Department of Transportation regulations for Class B propellant explosives.

10-3.6 Smokeless propellants shall be stored in shipping containers specified by U.S. Department of Transportation Hazardous Materials Regulations.

10-3.7 Smokeless propellants intended for personal use in quantities not exceeding 20 lb (9.1 kg) may be stored in original containers in residences. Quantities exceeding 20 lb (9.1 kg), but not exceeding 50 lb (22.7 kg), may be stored in residences if kept in a wooden box or cabinet having walls of at least 1-in. (25.4-mm) nominal thickness.

10-3.8 Not more than 20 lb (9.1 kg) of smokeless propellants, in containers of 1-lb (0.45-kg) maximum capacity, shall be displayed in commercial establishments.

10-3.9 Commercial stocks of smokeless propellants shall be stored as follows:

(a) Quantities exceeding 20 lb (9.1 kg), but not exceeding 100 lb (45.4 kg), shall be stored in portable wooden boxes having walls of at least 1-in. (25.4 mm) thickness.

(b) Quantities exceeding 100 lb (45.4 kg), but not exceeding 800 lb (363 kg), shall be stored in nonportable storage cabinets having walls of at least 1-in. (25.4-mm) thickness. Not more than 400 lb (181 kg) may be stored in any one cabinet and cabinets shall be separated by a distance of at least 25 ft. (7.63 m) or by a fire partition having a fire resistance of at least 1 hour.

(c) Quantities exceeding 800 lb (363 kg), but not exceeding 5,000 lb (2268 kg), may be stored in a building if the following requirements are met:

1. The warehouse or storage room shall not be accessible to unauthorized personnel.
2. Smokeless propellant shall be stored in nonportable storage cabinets having wood walls at least 1 in. (25.4-mm) thick and having shelves with no more than 3 ft (0.92 m) separation between shelves.
3. No more than 400 lb (181 kg) shall be stored in any one cabinet.
4. Cabinets shall be located against walls of the storage room or warehouse with at least 40 ft (12.2 m) between cabinets.
5. Separation between cabinets may be reduced to 20 ft. (6.1 m) if barricades twice the height of the cabinets are attached to the wall, midway between each cabinet. The barricades shall extend at least 10 ft (3 m) outward, shall be firmly attached to the wall, and shall be constructed of 1/4-in. (6.4-mm) boiler plate, 2-in. (51-mm) thick wood, brick, or concrete block.
6. Smokeless propellant shall be separated from materials classified by the U.S. Department of Transportation as flammable liquids, flammable solids, and oxidizing materials by a distance of 25 ft (7.63 m) or by a fire partition having a fire resistance of at least 1 hour.
7. The building shall be protected by an automatic sprinkler system installed according to NFPA 13, Standard for the Installation of Sprinkler Systems.

(d) Smokeless propellants not stored according to (a), (b) and (c) above shall be stored in a Type 4 magazine constructed and located according to Chapter 6.

Some Publications on Reloading

These booklets, pertinent to reloading, are available from these and other sources.

Title	Publisher
Basic Rules for Reloading Safety	*National Reloading Manufacturers Association* *4905 S.W. Griffith Drive* *Beaverton, OR 97005*
NRA Guide to Reloading	*NRA Bookservice* *11250 Waples Mill Road* *Fairfax, VA 22030*
Speer Reloading Manual	*ATK Ammunition & Related Products* *Box 856* *Lewiston, ID 83501*
RCBS Reloading Guide	*RCBS* *Box 1919* *Oroville, CA 95965*
Hornady Handbook of Cartridge Reloading *Hornady Reloading Tools and Accessories*	*Hornady Mfg. Co.* *Box 1848* *Grand Island, NE 68801*
Sierra Bullets Reloading Manual	*Sierra* *10532 Painter Avenue* *Santa Fe Springs, CA 90670*
Lyman Cast Bullet Handbook *Lyman Shotshell Handbook* *Lyman Pistol and Revolver Handbook*	*Lyman Products* *Middlefield, CT 06455*
Nosler Reloading Manual	*Nosler Bullets, Inc.* *P.O. Box 671* *Bend, OR 97709*
How to Reload Shotshells and Why	*MEC* *715 South Street* *Mayville, WI 53050*
Ponsness-Warren Catalog	*Ponsness-Warren* *Box 8* *Rathdrum, ID 83858*
Handloaders' Digest *ABC's of Reloading*	*DBI Books* *540 Frontage Road* *Northfield, IL 60093*
Modern Reloading	*Lee Precision, Inc.* *27 Highway "U"* *Hartford, WI 53027*

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The leader in rimfire ammunition, **CCI**® is the choice of hunters and plinkers across the globe. It provides shooters with a wide variety of top performing rimfire products that include some of the fastest cartridges on the market. CCI also manufactures world famous primers for reloaders.

The leader in innovative bullet technology, **Speer**® concentrates its development efforts on providing the most advanced bullets for handloaders and factory ammunition. The company also loads outstanding handgun hunting and pistol cartridges that serve sportsmen and law enforcement agencies worldwide.

RCBS® produces high-quality reloading equipment and has for nearly 60 years. The company manufactures presses, dies, scales, bullet moulds and other reloading accessories to meet the most avid reloader's needs. It prides itself on outstanding customer service features the award winning Grand shotshell press—2002 NRA Shooting Illustrated Accessory of the Year.

Outers® is a leading manufacturer of gun-care chemicals solvents, and cleaning kits. Long a mainstay of gun cleaning tables everywhere, Outers is bringing innovative new products to gun cleaning and expanding its product line to include a variety of must-have cleaning products. It's how good, clean shots are made.

Estate Cartridge® manufactures high-quality shotgun ammunition at an affordable price. From target loads to buckshot and high velocity steel, Estate carries it all.

Champion® target company provides the avid trap, skeet or sporting clays shooter with a wide variety of clay targets, target throwers, and paper and mechanical targets. For the shooter looking to hone their skills, Champion target is a one-stop destination.

The first of its kind, the **Invisible Gun**™ scent-removing cleaning kit is providing big game hunters with a final line of defense. It's the last step in camouflage for the trophy hunter who knows the importance of masking human scent.

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