

CHARGE PERFORMANCE DATA

FracAct™ Uniform Hole Charges

Part No.	Description	E.H. Avg. (in.)‡	E.H. St.Dev. (%)‡	Gun O.D. (in.)	Casing Type (OD lb/ft steel)	Pen. Avg. (in.)†
TG15FX1	TopGun FracAct; 15gm RDX ; 0.26in hole [Limited Entry]	0.26	3.7%	2.75	4.5" 11.6# L-80	27.0
TG15FX1-25	TopGun FracAct; 15gm RDX ; 0.25in hole [Limited Entry]	0.25	7.0%	2.75	5.5" 20# P-110	29.6
TG16FX1	TopGun FracAct; 16gm RDX ; 0.40in hole	0.40 0.38 0.37	9.7% 7.0% 4.0%	2.75 2.75 2.75	4.5" 11.6# L-80 4.5" 13.5# P-110 4.5" 15# P-110	17.5
TG16FX1-28	TopGun FracAct; 15gm RDX ; 0.28in hole [Limited Entry]	0.28	6.6%	2.75	5.5" 20# P-110	29.0
TG17FX1-30	TopGun FracAct; 17gm RDX ; 0.30in hole [Limited Entry]	0.29 0.29 0.30	4.7% 6.6% 5.5%	3.125 3.125 3.125	4.5" 13.5# P-110 5.5" 20# P-110 5.5" 23# P-110	28.7
TG21FX1-1	TopGun FracAct; 21gm RDX ; 0.32in hole	0.42 0.32 0.33 0.36 0.34 0.35 0.33 0.33	8.8% 6.2% 6.3% 5.9% 3.3% 4.0% 6.3% 3.3%	3.125 3.125 3.125 3.125 3.125 3.375 3.375 3.375	4.5" 11.6# L-80 4.5" 13.5# P-110 5.0" 18# P-110 5.5" 20# P-110 5.5" 23# P-110 5.0" 18# P-110 5.5" 20# P-110 5.5" 23# P-110	25.5
TG21FX1-2	TopGun FracAct; 21gm RDX ; 0.38in hole	0.46 0.41 0.39 0.38 0.38 0.41	7.2% 5.2% 3.4% 4.7% 3.2% 2.8%	3.125 3.125 3.125 3.125 3.375 3.375	4.5" 11.6# L-80 5.0" 18# P-110 5.5" 20# P-110 5.5" 23# P-110 5.0" 18# P-110 5.5" 20# P-110	19.3
TG21FX1-3	TopGun FracAct; 21gm RDX ; 0.42in hole	0.50 0.40 0.42 0.44 0.41 0.42 0.45 0.44	6.3% 4.6% 5.2% 6.9% 4.0% 2.7% 4.0% 3.1%	3.125 3.125 3.125 3.125 3.125 3.375 3.375 3.375	4.5" 11.6# L-80 4.5" 13.5# P-110 5.0" 18# P-110 5.5" 20# P-110 5.5" 23# P-110 5.0" 18# P-110 5.5" 20# P-110 5.5" 23# P-110	18.6
TG21FX2-1	TopGun FracAct; 21gm HMX ; 0.32in hole	Performance Equivalent to TG21FX1-1; SYSTEM TESTING PENDING				
TG21FX2-2	TopGun FracAct; 21gm HMX ; 0.38in hole	Performance Equivalent to TG21FX1-2; SYSTEM TESTING PENDING				
TG21FX2-3	TopGun FracAct; 21gm HMX ; 0.42in hole	Performance Equivalent to TG21FX1-3; SYSTEM TESTING PENDING				

‡ Entry hole data from eccentrically-oriented system testing † Single-shot testing; penetration measured in concrete

Deep Penetrator Charges

Part No.	Description	Pen. Avg. (in.)†	E.H. Avg. (in.)†	Gun O.D. (in.)	Casing Type (OD lb/ft steel)
TG19DP1	TopGun Deep Penetrator; 19gm RDX	31.1	0.46	3.375	5.5" 20# P-110
TG21DP1	TopGun Deep Penetrator; 21gm RDX	32.4	0.48	3.375	5.5" 20# P-110
TG23DP1	TopGun Deep Penetrator; 23gm RDX	32.8	0.49	3.375	5.5" 20# P-110
TG26DP1	TopGun Deep Penetrator; 26gm RDX	36.2	0.44	3.375	5.5" 20# P-110
TG15SP1	TopGun Super Penetrator; 15gm RDX	33.1	0.38	2.75	5.5" 20# P-110
TG18SP1	TopGun Super Penetrator; 18gm RDX	33.6	0.39	2.75	5.5" 20# P-110
TG23SP1	TopGun Super Penetrator; 23gm RDX	36.6 37.9 37.2	0.43 0.45 0.47	3.125 3.375 3.375	4.5" 11.6# L-80 4.5" 11.6# L-80 5.5" 20# P-110
TG15SP2	TopGun Super Penetrator; 15gm HMX	29.8	0.36	2.75	4.5" 11.6# L-80
TG21SP2	TopGun Super Penetrator; 21gm HMX	37.7	0.46	3.125	4.5" 11.6# L-80
TG23SP2	TopGun Super Penetrator; 23gm HMX	38.5	0.45	3.375	5.5" 20# P-110
TG19XP1	TopGun Xtra Penetrator; 19gm RDX	38.1	0.36	3.375	5.5" 20# P-110
TG21XP1	TopGun Xtra Penetrator; 21gm RDX	39.3	0.38	3.375	5.5" 20# P-110
TG23XP1	TopGun Xtra Penetrator; 23gm RDX	40.1	0.40	3.375	5.5" 20# P-110
TG21XP2	TopGun Xtra Penetrator; 21gm HMX	39.4	0.40	3.125	4.5" 11.6# L-80
TG23XP2	TopGun Xtra Penetrator; 23gm HMX	40.2	0.44	3.125	4.5" 11.6# L-80

† Single-shot testing; penetration measured in concrete

Good Hole / Big Hole Charges

Part No.	Description	Pen. Avg. (in.)†	E.H. Avg. (in.)†	Gun O.D. (in.)	Casing Type (OD lb/ft steel)
TG15GH1	TopGun Good Hole; 15gm RDX	27.7	0.44	2.75	4.5" 11.6# L-80
TG19GH1	TopGun Good Hole; 19gm RDX	30.5	0.54	3.125	4.5" 11.6# L-80
		30.5	0.54	3.375	4.5" 11.6# L-80
		28.0	0.40	3.125	5.5" 20# P-110
		25.1	0.42	3.375	5.5" 20# P-110
TG21GH1	TopGun Good Hole; 21gm RDX	29.2	0.55	3.375	4.5" 11.6# L-80
TG23GH1	TopGun Good Hole; 23gm RDX	31.8	0.55	3.125	4.5" 11.6# L-80
		31.8	0.55	3.375	4.5" 11.6# L-80

† Single-shot testing; penetration measured in concrete

Circulation / Puncher Charges

Part No.	Description	Wall Thickness (in.)	E.H. Avg. (in.)	Casing Pen. (in.)	Gun O.D. (in.)
TG20CS1	TopGun Good Circulation Small; 2.0gm RDX	0.190	0.39	<0.100	1.375
		0.250	0.20	<0.100	1.375
TG39CS2	TopGun Good Circulation Small; 4.0gm HMX	0.190	0.45	<0.100	1.5625
		0.375	0.31	<0.100	1.5625
TG39CM2	TopGun Good Circulation Medium; 4.0gm HMX	0.375	0.42	<0.100	1.5625
		0.500	0.23	<0.100	1.5625
TG39CL2	TopGun Good Circulation Large; 4.0gm HMX	0.500	0.21	<0.100	1.5625
		0.580	0.18	<0.100	1.5625

Most charge designs alternatively offered with HMX explosives; HNS charges also available upon request.