



BreachPop[®]

Tamped Charge Containers



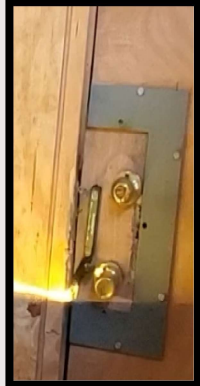


BreachPop®

Tamped Charge Containers Quad



Strip Charges



(Training) N.E.W.:
0.013 lbs TNT/3.5g



N.E.W.:
0.031 lbs TNT / 13g



N.E.W.:
0.092 lbs TNT / 23g



N.E.W.:
0.194 lbs TNT / 53g

Linear Charges

BreachPop	Common Load	Target Recommendation
5" BP#1 (Link for 10")	9" 50gr Det Cord	Hollow Wood / Training Charge
	½" x 5" or 10" C2	Heavy Wood, Light Metal
8" BP#1	12" 50gr Det Cord	Hollow Wood / Training Charge
	½" x 8" C2	Heavy Wood, Light Metal
8" BP#3	30" 50gr Det Cord (3-wrap strip)	Heavy Wood, Light Metal
	¾" x 8" C2	Heavy Wood, Heavy Metal
12" BP#3	42" 50gr Det Cord (3-wrap strip)	Heavy Wood, Light Metal
	¾" x 12" C2	Heavy Wood, Heavy Metal
BP#1 Linear Tri- & Bi-Folds	66" or 84" 50gr (Tri- or Bi-Fold)	Heavy Wood, Light Metal
	½"x 54" or 72" C2 (Tri- or Bi-Fold)	Heavy Metal
BP#3 Linear Tri- & Bi-Folds	176" or 224" 50gr (Tri- or Bi-Fold)	Heavy Wood, Heavy Metal
	¾"x48 or 72" C2 (TriFold or BiFold)	Heavy Metal

BreachPop Overview Information

Overview: Tamped charge container designed to hold sheet explosive or det cord in a shaped channel to increase the explosives target effect and reduce blast over pressure. Simple, durable design reduces N.E.W. by 40-50% and blast overpressure (B.O.P.) by up to 60% compared to conventional charges. Low N.E.W. training options complement the operational variants.

Specific Traits: BreachPop Strips are designed to fit into standard magazine pouches with minimal added weight to the charge. The shaped channel directs blast pressure into the target and tamping provides the same target effect with less net explosive weight (N.E.W.) than conventional charges. BreachPop Linears allow for equivalent target effects with 50% or less of the conventional N.E.W. and drastically lower B.O.P. (up to 60%).

Operational Need: Blast overpressure from breaching results in cumulative sub-concussive overpressure injuries which have only recently been identified and studied. By using a water-based tamp the BreachPop reduces necessary N.E.W. and absorbs blast overpressure, further decreasing the overpressure exposure of war fighters.

BreachPop Technical Information

Variant	Standard Dim / Weight		Metric Dim / Weight	
BreachPop #1 8" P/N: BP1-8	8"x0.71"x0.87"	2.5oz	20cm x 1.8cm x 2.2cm	73g
BreachPop #3 8" P/N: BP3-8	8"x0.71"x0.87"	2.2oz	20cm x 1.8cm x 2.2cm	63g
BreachPop #1 15" P/N: BP1-15	15"x0.71"x0.87"	4.8oz	38cm x 1.8cm x 2.2cm	137g
BreachPop #1 36" P/N: BP1-36	36"x0.71"x0.87"	11.8oz	91.5cm x 1.8cm x 2.2cm	335g
BreachPop #3 16" P/N: BP3-16	16"x0.71"x0.87"	4.5oz	40cm x 1.8cm x 2.2cm	128g
BreachPop #3 36" P/N: BP3-36	36"x0.71"x0.87"	10.1oz	91.5cm x 1.8cm x 2.2cm	288g



BreachPop®

Tamped Charge Containers

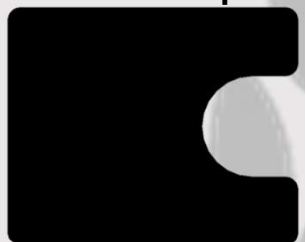


Channel Geometry & Charge Construction System

Profile*

Loading Options

BreachPop #1



- 1 Strand 50gr / 100gr Det Cord cut to length (10g / 20g Det Cord)
- 2 Strand Combos: 50gr+25gr, 25gr+18gr, 18gr+18gr
- ½ Wide C2 Sheet Explosive primed with 1-strand 50gr

C2:



Det
Cord:



BreachPop #2



- 2 Strands 50gr or 100gr Det Cord cut to length (10g / 20g Det Cord)

BreachPop #3



- 3 Strands 50gr / 100gr Det Cord cut to length (10g / 20g Det Cord)
- 3 Strand Combos: Combine 15-100gr det cord lengths to vary N.E.W.
- ¾" Wide C2/C3/C4/C6 Sheet Explosive primed with 1-strand of 50gr

C2:



C6:



Det
Cord:



*BreachPop profiles are not to scale; For reference only in understanding charge construction & explosive geometry



BreachPop[®]

Tamped Charge Containers Overview



P3D Solutions, Inc developed a line of tamped charge containers that benefit the operator in a number of ways. Most important is the reduction in N.E.W. that is possible by shaping and tamping the explosive material loaded into the BreachPop. Blast overpressure (BOP) injuries are well documented. See the “Operator Syndrome” research paper published by Dr. B. Christopher Freuh. New research also indicates certain types of micro-scarring in the brain can *only be the result of blast overpressure injuries*. It is estimated 85% of these TBI are sustained in training. Cumulative TBI injuries, often from repeated exposures during explosive breaching, result in numerous problems that present later in life and, ultimately, shorten the operational life of an assaulter. Additionally, quality of life suffers due to hormone imbalances and loss of short-term memory, resulting in what we breachers off-handedly summarize as “Breacher Brain.” The BreachPops reduction in N.E.W. equals a reduction in BOP, while retaining the same target effects necessary operationally. Further, the water-based gel used as a tamping medium absorbs *more* of the BOP, as evidenced by tests comparing conventional charges to BreachPops loaded with the same N.E.W. Additionally, BreachPops were designed by Assaulters, for Assaulters.

The building of the charges is as simple as cutting a few pieces of det cord or sheet explosive (using the BreachPop as a template) and taping it into the BreachPop. The BreachPop Strip was designed from the ground up to fit three to four per M4 magazine pouch and one to two per pistol magazine pouch. For example, a standard three or four node slider will fit cleanly in an M4 mag pouch. Longer BreachPops can easily be stowed on the back of a plate carrier as strips, or built into Tri-Fold Linears. This is all summed up by our motto:

Easy to Build, Easy to Carry, Easy to Deploy...and Easier on the Brain



BreachPop® #1 Effectiveness Test



(Top) 8" BreachPop #1, 12" of 50 grain

Notes: Full penetration of the solid wood door along the length of the BreachPop.



(Bottom) Duct Tape Strip, 12" of 50 grain

Notes: Penetration through the solid wood door only where the two caps were attached to the det cord.

Standard: .019 lbs TNT N.E.W. (including two caps)

Metric: 30cm/10g det cord for 5.3g N.E.W. (including two caps)

BreachPop resulted in a better target effect with 25% less overpressure at 5' (1.5m).

Demo charges primed with a dual-initiated skin pack, so two caps were exposed, increasing the N.E.W. outside the BreachPop by 1g compared to a single primed system. Single primed charges show an overpressure reduction of >30% at this length.



Proprietary / Unclassified

BreachPop® Training Charge Test I



[Click for link to video](#)

Target: 2x6 Insert for Internal Door Charge Training

**Charge #1: BreachPop #1 loaded with 9" of 50gr Det Cord
N.E.W.: .013 lbs TNT / 3.5g**

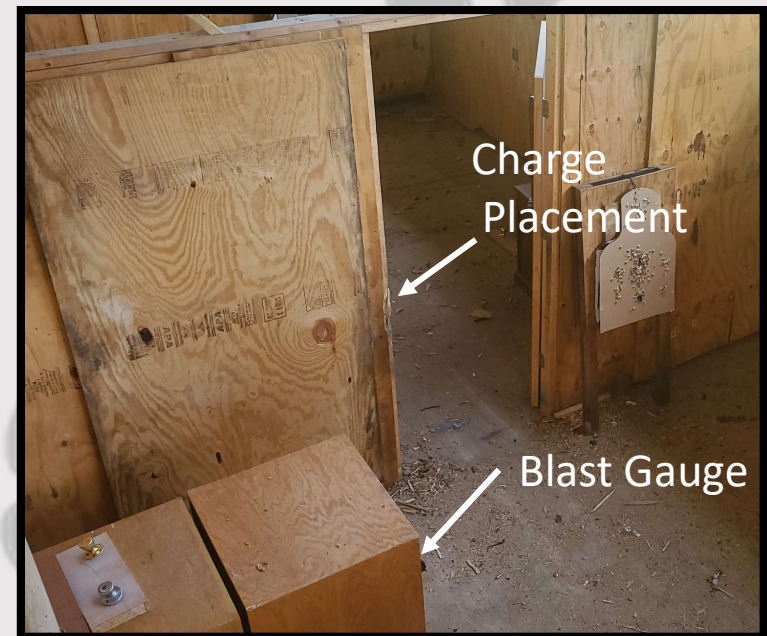
Blast Gauge Recording: AVG 3.3 PSI at 1m

Charge #2: 10" Single Strand Duct Tape Strip

N.E.W.: .014 lbs TNT / 3.6g

Blast Gauge Recordings: Average 5.3 PSI at 1m

*****BreachPop reduced blast pressure exposure by 40%*****





BreachPop® Training Charge Test II



The BP1-8 C2 charge was compared against a commonly utilized training charge of 8" 300gr ECT for blast overpressure, N.E.W., and target effects.

Below is a summary of the results and the testing protocol.

Charge	Peak OP (PSI)	Total Pos. Impulse	Charge	N.E.W.	N.E.W.	Average PSI (Peak)	Average PSI (Total Pos. Impulse)
BP1-8	1.00	2.8	8" 300gr ECT	0.072 lbs TNT	22.63 grams	1.24	2.97
BP1-8	0.9	2.8	BP1-8 C2 Sheet	0.049 lbs TNT	15.57 grams	0.95	2.08
BP1-8	0.8	1.5	BreachPop N.E.W. % Reduction	-32%	-31%		
BP1-8	Below instrument threshold of 0.5 PSI		BreachPop PSI % Reduction			-23%	-30%
BP1-8	Below instrument threshold of 0.5 PSI						
BP1-8	1.3	2.2	Protocol: An observer wearing the latest generation of Black Box Biometric's Blast Gauge® experienced a series of five explosive breaches, repeated four times. The first two five-breach iterations utilized the BreachPop #1 8" (BP1-8) Tamped Charge Container loaded with C2 sheet explosive. The second two iterations of five breaches used a standard 8" long piece of 300gr ECT for comparison. Each five-breach series' was identical in location, target, and sequence. The observer stood in the same position on the catwalk relative to each breach during the series to reduce error related to reflective pressures inside the structure from iteration to iteration. Target effects were indistinguishable, despite the 32% reduction in Net Explosive Weight (N.E.W.) pounds TNT equivalent afforded by the BreachPop.				
BP1-8	0.8	2.8					
BP1-8	0.9	0.4					
BP1-8	Below instrument threshold of 0.5 PSI						
BP1-8	Below instrument threshold of 0.5 PSI						
300gr ECT	1.3	3.8					
300gr ECT	1.3	2					
300gr ECT	1.5	2.6					
300gr ECT	1.3	2.9					
300gr ECT	1	2.6					
300gr ECT	1.5	2.5	Note: Ten total BreachPop Charges were fired. The instruments threshold for reading overpressure is 0.5 PSI. Four BreachPop charges were fired, but not calculated into the average for Peak Overpressure or Total Positive Impulse as they were below 0.5 PSI and did not register on the gauges. If those charges barely failed the threshold by generating 0.45 PSI, the Average PSI (Peak Overpressure) would be reduced to 0.75 PSI, resulting in a 40% reduction in overpressure. It is possible they were even lower.				
300gr ECT	1.3	3.5					
300gr ECT	1.3	4.4					
300gr ECT	1.2	4.2					
300gr ECT	0.7	1.2					



Proprietary / Unclassified

BreachPop® #1 C2 Comparison Test



Target: Solid Wood Door

(Top) BreachPop #1 7" Strip loaded with .5"x7" C2 direct primed

N.E.W.: .022 lbs TNT Single Primed

MSD: 5'

Metric: 1.3cm x 18cm C2 for 8g N.E.W. single primed

This charge can be built using an 8" BreachPop #1 loaded with .5"x8" C2 and an 8" det cord tail.

N.E.W. is .033 lbs single primed with a 5.7' MSD.



(Bottom) 300gr per foot Det Cord Strip 6" 6-wrap

N.E.W.: .046 lbs TNT Single Primed

MSD: 6.4'

Metric: 45cm/20g det cord for 10.5g N.E.W. single primed

Notes: Increased target effect using only 48% of the N.E.W. of the conventional charge.



Proprietary / Unclassified

8" BreachPop® #1 C2 Comparison Test



Target: Solid Wood Door

**(Top) 12" BreachPop #1 loaded 12"x0.5" C2 Sheet
Explosive + 6" 54gr Det Cord tail
N.E.W.: .041 lbs TNT Single Primed
MSD: 6.2' / 1.9m**

Metric: 1.3cm x 30cm C2 for 14.66g N.E.W. single primed



**(Bottom) C4 Duct Tape Strip Charge
(12"x0.5" C4 Sheet Explosive)
N.E.W.: .066 lbs TNT Single Primed
MSD: 7.2'**

Metric: 1.3cm x 30cm C4 for 25g N.E.W. single primed

**Notes: Greater target effect with 62% of the N.E.W.
of the conventional charge.**



Proprietary / Unclassified

BreachPop® #1 Comparison Test



Target: Metal Push Door

(Top) BreachPop #1 loaded with 8"x0.5" C2 Sheet Explosive + 6" 54gr Det Cord Tail
N.E.W.: .031 lbs TNT Dual Primed
MSD: 5.7' / 1.7m

Metric: 1.3cm x 20cm C2 with 15cm 10g det cord tail for 10.66g NEW



(Bottom) 300gr Hockey Puck (6' 50gr Det Cord)
N.E.W.: .083 lbs TNT Dual Primed
MSD: 7.8'

Metric: 185cm/10g det cord for 20.35g N.E.W. single primed

Notes: Equivalent target effect with 37% of the N.E.W. in an easier to transport package.



Proprietary / Unclassified

BreachPop® #1 Linear Comparison Test



Target: Solid Wood Door (Hinge Side)

**(Top) BreachPop #1 Bi-Fold Linear
(1-Strand 50gr)**

**N.E.W.: 0.092 lbs TNT Dual Primed
MSD: 8.0'**

Metric: 205cm/10g det cord for 23g N.E.W. dual primed



**(Bottom) 100gr per foot Bi-Fold Linear
(2-wrap 50gr)**

**N.E.W.: 0.179 lbs TNT Dual Primed
MSD: 10.1'**

Metric: 430cm/10g det cord for 47.5g N.E.W. dual primed

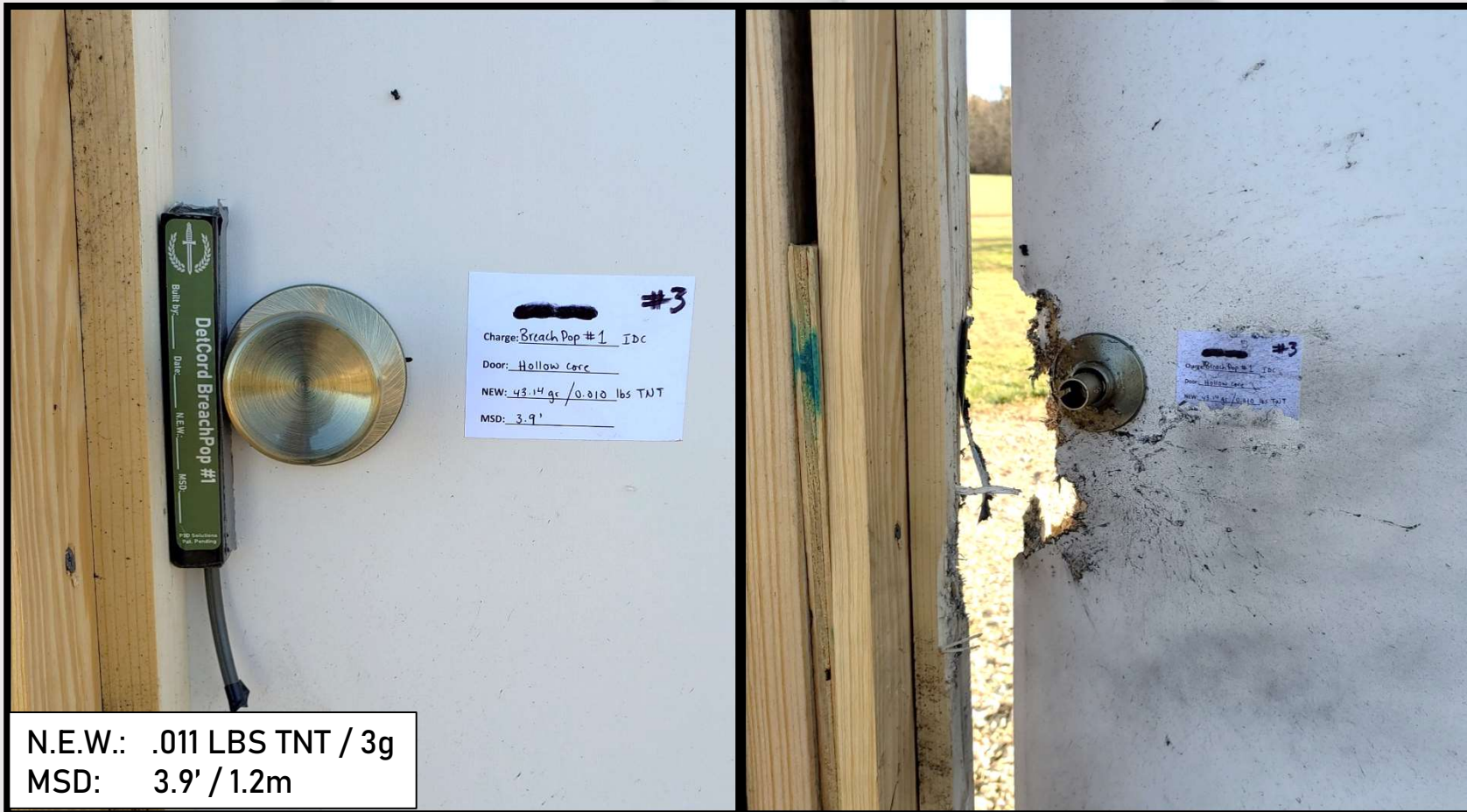
Notes: Equivalent target effect.

***Conventional charge used 200% N.E.W. of BP Linear*
Conventional linear produced 266% the blast
over pressure of the BreachPop bi-fold linear**



Light Wood Door

BreachPop® #1 IDC / Training Charge



N.E.W.: .011 LBS TNT / 3g
MSD: 3.9' / 1.2m

Results: Positive Breach on a Light Wood Push Door with 7" of 50gr Det Cord; Single Primed w/ 3.8s delay cap
No part of the charge casing penetrated a cardboard witness panel placed 90 degrees from the charge at MSD.

Comments: This charge will also split a 2x6 wooden training insert used in many training facilities, making it the perfect low N.E.W., reduced overpressure charge to use during tactical training while maintaining the same movement patterns as when using a full power operational charge



Proprietary / Unclassified

Heavy Wood and Light Metal Door

BreachPop® #1 C2 Strip Charges



Heavy Wood

Light Metal



N.E.W.: .041 LBS TNT / 14.66g
MSD: 6.2' / 1.9m



N.E.W.: .031 LBS TNT / 10.66g
MSD: 5.6' / 1.7m

Results: (L) Positive Breach on a Heavy Wood with .5" x 12" C2 Sheet + 6" 54gr Det Cord; Single Primed
(R) Positive Breach on a Light Metal Push Door with .5" x 8" C2 Sheet + 6" 54gr Det Cord; Dual Primed



Proprietary / Unclassified

Heavy Wood and Light Metal Door

BreachPop® #3 Sliding Hinge Charge



N.E.W.: .121 LBS TNT / 33g
MSD: 8.8' / 2.7m



Results: Positive Breach on a Heavy Wood and Light Metal Pull Door with 110" total of 50gr DetCord; Single Primed
The door was separated from the frame at each hinge and deposited through the frame.



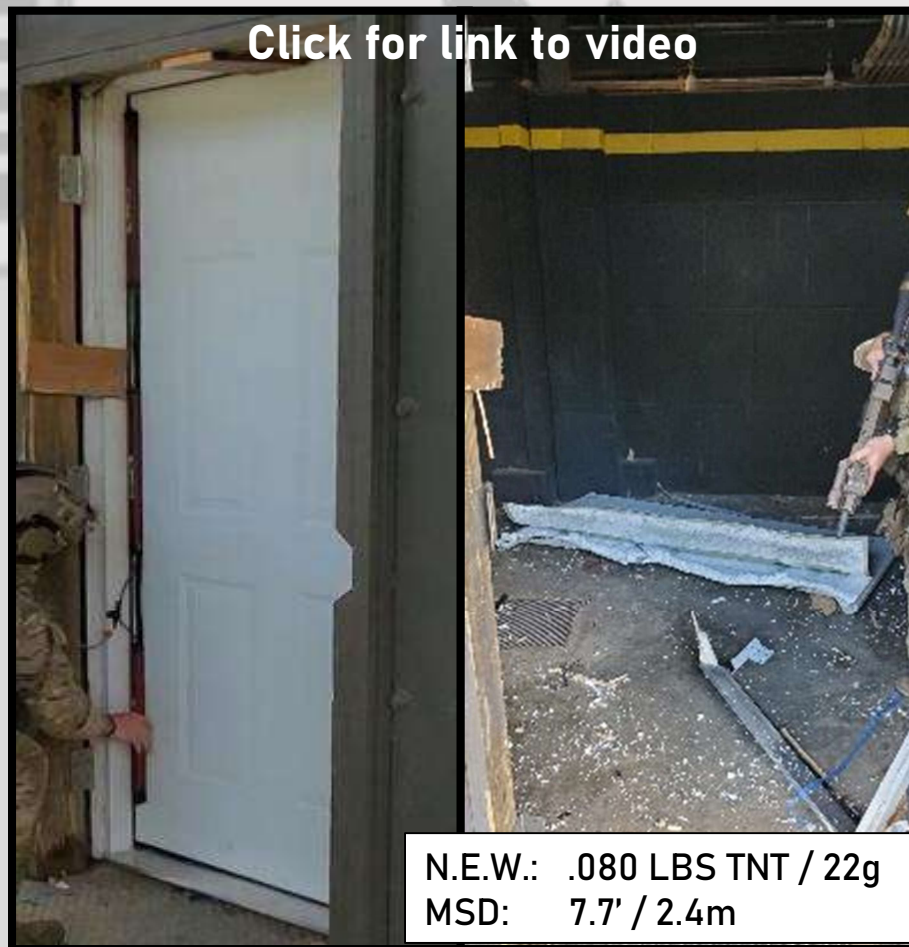
Proprietary / Unclassified

Heavy Wood and Light Metal Door

Bi-Fold and Tri-Fold Linear (Det Cord)



N.E.W.: .091 LBS TNT / 25g
MSD: 8.0' / 2.5m



[Click for link to video](#)

N.E.W.: .080 LBS TNT / 22g
MSD: 7.7' / 2.4m

**Results: Positive Breach on a Heavy Wood (L) and Light Metal (R) using one strand of 50gr det cord.
Tri-fold shown at 72"; demonstrated at 66" at ISOF 2022 with same target effect.**

****1-wrap duct tape linear charge produced 240% the overpressure of a BreachPop 1-wrap Linear****

The BreachPop tamping gel reduces the overpressure compared to a conventional construction linear charges



Proprietary / Unclassified

Heavy Metal Door

8" BreachPop® #3 C2



N.E.W.: .035 LBS TNT / 13g
MSD: 5.8' / 1.8m

Results: Positive Breach on a Heavy Metal Door with 0.75" x 8" of C2 & Rubber Pushing Medium (Direct Primed)
Only the deadbolt was targeted directly and it was twisted out of the locking mechanism. The blast broke the door handle latch but the deadbolt and door handle remained attached to the door, reducing potential frag injuries.

Comments: Charge was direct primed, but may be built with a det cord tail as per slide 3 and the build instructions.



Proprietary / Unclassified

Heavy Metal Door

BreachPop® #3 Tri-Fold Linear/Slider (L)
BreachPop #3 Bi-Fold Linear (R)



N.E.W.: .194 LBS TNT / 53g
MSD: 10.3' / 3.2m

Results: Positive Breach on a Class II Metal Push Door with 176" total of 50gr DetCord; Dual Primed

Rubber pushing medium used on the face of each BreachPop to achieve a pushing effect.



N.E.W.: .232 LBS TNT / 63g
MSD: 10.9' / 3.4m

Results: Positive Breach on a Class II Metal Push Door with 222" total of 50gr DetCord; Dual Primed

Rubber pushing medium used on the face of each BreachPop to achieve a pushing effect.



Gated Doors

**Grilled Security Door & Storm Door over Light Metal
BreachPop #1 Bi-Fold Linear C2**



N.E.W.: .207LBS TNT / 75g
MSD: 10.5' / 3.2m



N.E.W.: .207LBS TNT / 75g
MSD: 10.5' / 3.2m

Charge: BreachPop #1 Bi-Fold Linear loaded with 0.50"x36" C2 each BreachPop linked with 12" 50gr det cord
Results: Positive Breach on a Class I Metal Push Door behind Grilled Door (L) and Storm Door (R)

(L): Grilled Security Door had hinges opposite light metal door hinges; interior door removed from hinges and storm door disrupted so it could be opened by hand.

(R): Storm Door hinges on same side as light metal door hinges: both doors removed from structure.



Specialty Tools

J&N Tactical Mk-7 Breaching Pole



Target: Class I Metal Push – Hinge Side
Charge: BP#1 Tri-Fold Linear 66" 50gr
N.E.W.: .077 lbs TNT / 21g
MSD: 7.6' / 2.3m

Results: Positive Breach. Door displaced from hinges.

Target: Class I Metal Push
Deadbolt/Doorknob
Charge: BP#1 C2 Mini-Nunchuk
N.E.W.: .038 lbs TNT / 13.25g
MSD: 6' / 1.9m

Results: Positive breach. Door pushed completely open (pulled closed for results photo). Deadbolt and doorknob completely disrupted and frame significantly damaged.





Proprietary / Unclassified

BreachPop[®]

Tamped Charge Containers



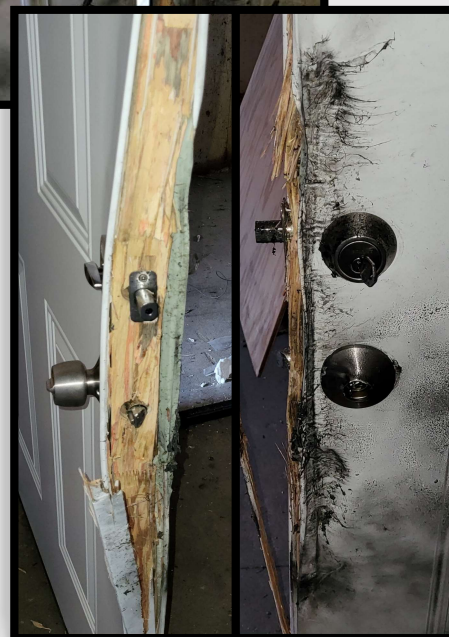
0.5" x 15" C2 Strip



16" BP#3 Tri-Fold
Slider does it on a
Class II metal door!



3-wrap Tri-Fold
that folds into an
18" long package
for carriage and
transport



Single Strand Det Cord
15" Training Strip!



Bi-Fold Linear with a single
strand of 50gr Det Cord on
a light metal door! BOOM!

U.S. Patent No.'s 11,719,517 & 11,255,646



BreachPop[®]

Test & Evaluation Packs



"The Team" T&E Pack

\$1999.00

"The Team" Test and Evaluation Pack comes with enough BreachPops to test the common configurations as shown in this presentation. Charges range from Low-N.E.W. training charges up to those capable of defeating a heavy metal door. Lengths range from 8" to 12" strip charges, full length sliding hinge charges and linear charges. The building of the charges is outlined in the BreachPop Common Loadings and Build Instructions Manual provided with each order.

- (10) 8" BreachPop #1** to make five 8" 1-wrap training det cord strips and five C2 0.5"x8" strips
- (10) 8" BreachPop #3** make two 8" 3-wrap det cord strips, two C2 0.75"x8" strips and two sliding hinge charges
- (10) 12" BreachPop #1** to make five 12" 1-wrap training det cord strips and five C2 0.5"x12" strips
- (10) 12" BreachPop #3** to make five 12" 3-wrap det cord strips and five C2 0.75"x12" strips
- (2) BP#1 Bi-Fold Linears** to build 1-wrap det cord linear charges for a wood and light metal door
- (2) BP#1 Tri-Fold Linears** to build a 1-wrap det cord tri-fold for a light metal door and a C2 tri-fold for a heavy metal door
- (2) BP#3 Tri-Fold Linears** to build a 3-wrap det cord tri-fold for a heavy metal door and C2 tri-fold for a heavy metal door

"The Battalion" T&E Pack

\$9999.00

"The Battalion" Test & Evaluation Pack comes with enough BreachPops to be split amongst several breachers. This provides the opportunity to test and evaluate the various offerings as the breacher's see fit, including incorporating them into training scenarios with their team, squad, platoon or company.

- | | |
|---|---|
| (40) 8" Breachpop #1 | (40) 8" BreachPop #3 |
| (40) 12" Breachpop #1 | (40) 12" BreachPop #3 |
| (10) BreachPop #1 Bi-Fold Linears | (10) BreachPop #3 Tri-Fold Linears |
| (10) BreachPop #1 Tri-Fold Linears | (10) BreachPop #3 Bi-Fold Linears |



BreachPop®

Sales Packs



BreachPop® Training Pack

\$4499.00

The BreachPop Training Pack is comprised of low-N.E.W. training charges that replicate the carrying, feel and application of full power charges while delivering significantly less overpressure during breaching training using det cord. By using C2 sheet explosive, you can build operational strength charges with the same BreachPops #1 you use for training.

These are in the form of the standard 8" BreachPop #1, 12" BreachPop #1, 18" BreachPop #1 and the BreachPop #1 Bi-Fold

(30) 8" BreachPop #1 to build Training Interior Charges (Use C2 for operational strength)

(30) 12" BreachPop #1 to build Training Strip Charges (Use C2 for operational charge strength)

(30) 18" BreachPop #1 to build (10) Tri-Fold Linears (C2 on commercial doors)

(10) BreachPop #1 Bi-Fold Linears to build (10) Fully Tamped Linear Charges (Use C2 for commercial doors)

*****Substitute BreachPop #3 one-for-one at no additional cost*****

Volume Purchases

Depending on the explosives most commonly used by your unit, you will need different BreachPops for operational charges. Upon completion of a Test & Evaluation Program, you will have a better understanding of which BreachPops are right for you. By purchasing in volumes of 50, 200 or 500, you are able to earn a significant discount and ensure you always have what you need on hand!

Take a look at the BreachPop Price List and Order Sheet at the end of the presentation for bulk-ordering options. Refer to the BreachPop Common Loads and Build Instructions Manual for information about which BreachPops were designed to hold what N.E.W. and type of explosives.

Custom BreachPop T&E and Sales Packs are available upon request.



Proprietary / Unclassified

BreachPop[®]

Tamped Charge Containers



Manufacturer Part Number			Description	Unit Price
BP1-8	BP2-8	BP3-8	8" BreachPop	\$35.00
BP1-12	BP2-12	BP3-12	12" BreachPops	\$40.00
BP1-15	BP1-18	BP3-16	15", 16", 18" BreachPop	\$40.00
BP1-36	BP3-36		36" BreachPop	\$110.00/pair

Accessories and Merchandise

Breacher App License Key - \$9.99 per device

1" x 100' Custom Cut Roll of Hydrogel - \$80.00

1"x50' BT-30 Breacher Tape - \$60.00

1" x 75' 3M 8069 Double Sided Tape - \$60.00

BreachPop[®] T-Shirts (Next Level Athletic Fit) - \$20.00

BreachPop[®] Hats - \$25.00

BreachPop, LLC

Veteran Owned Small Business

DUNS Number: 102360175

CAGE Code: 8JXK4

For more information please contact us at info@breachpop.com

De Oppresso Liber

Grundighet gir Trygghet

Terms of Use, Warning and Disclaimer

When loaded with explosives, the BreachPop is a fundamentally dangerous product. Improper application may result in serious injury or death. P3D Solutions, Inc and BreachPop, LLC assume no liability, express or implied, from the use or misuse of this breaching apparatus. While shot data has been gathered in the development of this product, there is no warranty, express or implied, resulting from the use of said data.

Proprietary / Unclassified

U.S. Patent No.'s 11,719,517 & 11,255,646

