PerfECTA®

The PerfECTA® family is Hunting's latest generation of shaped charges that have been engineered to provide superior performance in all types of formations.

The PerfECTA Super Deep Penetrating (SDP) series offers unbeatable penetration when compared to conventional shaped charges while maintaining excellent hole diameter. These large holes assure greater tunnel volume beyond the damaged zone allowing for enhanced flow and productivity.

PerfECTA Good Hole (GH) charges are unique in that they offer a perfect balance between larger hole diameter while retaining very good penetration. This kind of perforation is ideally suited for fracturing operations where hole size needs to be large enough for proppant flow, yet deep enough to go beyond the damaged zone to allow for lower break down pressures.

PerfECTA Big Hole (BH) charges produce the maximum hole diameter and area of flow while keeping an effective penetration, perfect for gravel pack or frac pack operations.

APPLICATIONS

- Natural flowing and stimulated wells
- Sand control and gravel-pack completions
- Production and injection wells
- Damaged formations
- All reservoir types
- All fluid types (oil, water, gas)

BENEFITS

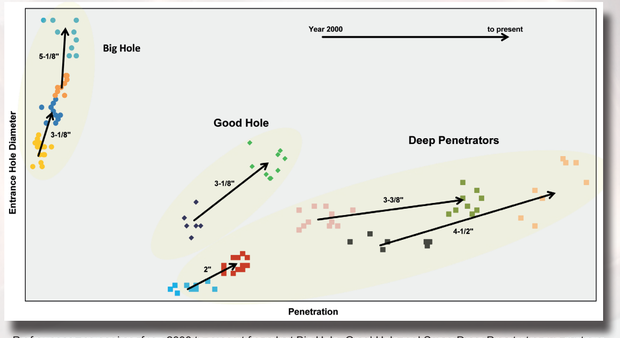
- Improves well performance
- Capable of lowering skin factors allowing improved production or injection
- Helps reduce fracture break down pressure
- Potential reduction in weak sand production
- No incremental cost required to upgrade existing hardware

FEATURES

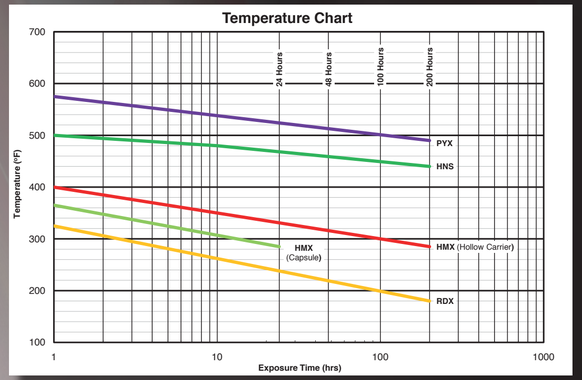
- Wide variety of charges to meet specific needs
- Super deep penetrating charges perforate beyond the damaged zone
- Greater formation contact created by bigger holes
- Big hole charges optimized for gravel packs
- Compatible and best used with all existing Hunting wireline and TCP perforating systems
- Can be deployed using all conveyance methods
- Available with RDX, HMX and HNS

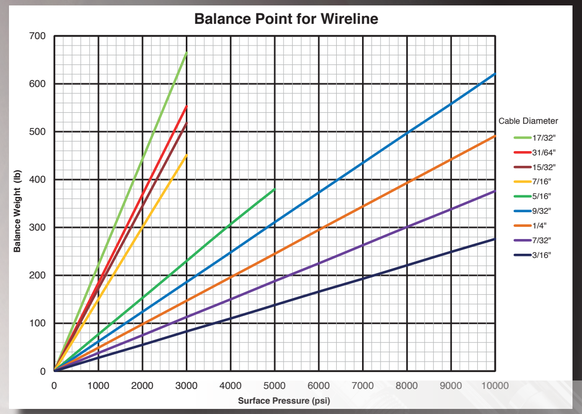
INNOVATION

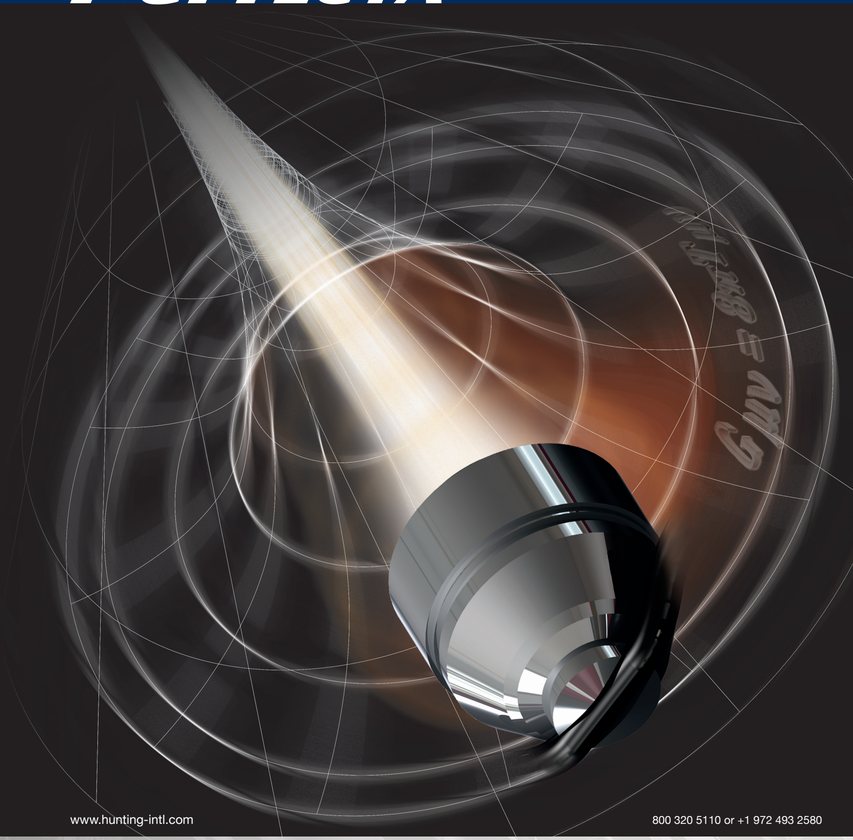
Through years of research, development and experience, Hunting has proven itself to be the industry leader in shaped charge design and manufacturing. Utilizing the latest technology and innovative design, the PerfECTA family of charges have increased in penetration performance up to 43% and entrance hole diameters by 39% compared to shaped charges designed a decade ago.



Performance comparison from 2000 to present for select Big Hole, Good Hole and Super Deep Penetrator gun systems







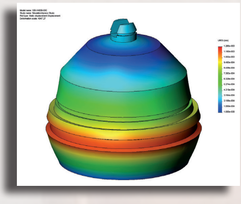
www.hunting-intl.com

800 320 5110 or +1 972 493 2580

HUNTING

PerfECTA®

DESIGN



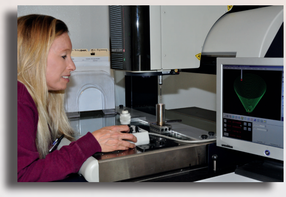
Utilizing knowledge and experience, PerfECTA's innovative charge designs translate to a new level of deeper penetration and larger hole size. All Hunting gun systems are designed to minimize debris and lower gun swell.

PerfECTA liner designs focus energy to portions of the jet that increase penetration, while minimizing wasted energy that is not helpful downhole. This results in cleaner, more effective perforations.

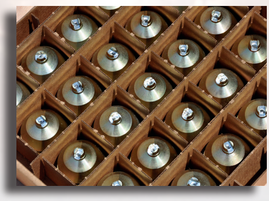
PerfECTA charges are designed and optimized in a combination of materials that correlate to soft, medium and hard rock. Tests are also performed under stressed conditions. All this equates to shaped charges designed to perform well in rock under downhole conditions.

As part of a stringent design process, all Hunting gun systems are tested to ensure superior charge performance while retaining gun survivability. Check with your local Hunting distributor or GunFacts® data sheets for test results.

MANUFACTURING



Hunting prides itself on strict and unique quality control applied to manufacturing of PerfECTA charges by utilizing the latest technology in equipment and processes. Hunting fully complies with all ISO9001:2008 standards for quality management.



Packaging is designed to withstand the tough oilfield handling, transportation and storage. This guarantees the outstanding performance expected by PerfECTA.

API RP-19B Performance

	Gun OD (in)[mm]	Charge Part Number†	Explosive Weight (g)	Shot Density (spf)[spm], Phasing	Entrance Hole (in)[mm]	Penetration (in)[cm]	Burr Height (in)[cm]	Casing Size (in)[mm]	Casing Weight (lb/ft)[kg/m]	Target Strength (psi)[MPa]	Recommended Min. I.D. (in)[mm]
CAPSULE STRIP GUNS											
	1-11/16 [43]	CAP-1708-421T	8.0	4 [13], 0°	0.24 [6]	20.41 [51.84]	0.05 [0.13]	4-1/2 [114]	11.6 [17.3]	7,170 [49.4]	1.78 [45]
	2-1/8 [54]	CAP-2115-420T	15.0	4 [13], 0°	0.28 [7]	34.84 [88.49]	0.05 [0.13]	5-1/2 [140]	17 [25.3]	7,125 [49.1]	2.25 [57]
SCALLOPED HOLLOW CARRIER GUNS											
SUPER DEEP PENETRATOR	1-9/16 [40]	RTG-1604-421T	3.5	6 [20], 0°	0.23 [6]	12.14 [30.84]	0.04 [0.10]	2-3/8 [60]	4.6 [6.9]	6,980 [48.1]	1.78 [45]
	1-9/16 [40]	RTG-1604-421T	3.5	6 [20], 60°	0.20 [5]	12.68 [32.21]	0.04 [0.10]	2-3/8 [60]	4.6 [6.9]	6,800 [46.9]	1.78 [45]
	2 [51]	RTG-2104-421T‡	4.0	6 [20], 0°	0.21 [5]	19.05 [48.39]	0.05 [0.13]	2-7/8 [73]	6.4 [9.5]	8,360 [57.6]	2.18 [55]
	2 [51]	RTG-2107-421T	7.0	6 [20], 60°	0.29 [7]	26.07 [66.22]	0.05 [0.13]	2-7/8 [73]	6.4 [9.5]	7,760 [53.5]	2.25 [57]
	2-1/2 [64]	RTG-2512-421T	12.0	6 [20], 60°	0.33 [8]	31.26 [79.40]	0.05 [0.13]	3-1/2 [89]	9.2 [13.7]	5,970 [41.2]	2.71 [69]
	2-3/4 [70]	RTG-2512-421T	12.0	6 [20], 60°	0.36 [9]	31.90 [81.03]	0.05 [0.13]	4-1/2 [114]	11.6 [17.3]	8,050 [55.5]	3.00 [76]
	2-3/4 [70]	EXP-2716-421T	16.0	6 [20], 60°	0.38 [10]	35.94 [91.29]	0.04 [0.10]	4-1/2 [114]	11.6 [17.3]	7,470 [51.5]	3.00 [76]
	2-3/4 [70]	EXP-2818-421T	18.0	6 [20], 60°	0.41 [10]	36.22 [92.00]	0.06 [0.15]	4-1/2 [114]	11.6 [17.3]	7,920 [54.6]	3.13 [80]
	2-7/8 [73]	EXP-2818-421T	18.0	6 [20], 60°	0.39 [10]	37.50 [95.25]	0.05 [0.13]	4-1/2 [114]	11.6 [17.3]	6,850 [47.2]	3.25 [83]
	3-1/8 [79]	EXP-3319-423T	19.0	6 [20], 60°	0.38 [10]	45.89 [116.56]	0.05 [0.13]	4-1/2 [114]	11.6 [17.3]	5,900 [40.7]	3.58 [91]
	3-1/8 [79]	EXP-3321-421T§	21.0	4 [13], 60°	0.43 [11]	42.13 [107.01]	0.05 [0.13]	4-1/2 [114]	11.6 [17.3]	6,320 [43.6]	3.58 [91]
	3-1/8 [79]	EXP-3321-421T	21.0	6 [20], 60°	0.42 [11]	44.19 [112.24]	0.05 [0.13]	4-1/2 [114]	11.6 [17.3]	5,900 [40.7]	3.58 [91]
	3-1/8 [79]	EXP-3323-423T	22.7	6 [20], 60°	0.46 [12]	41.17 [104.57]	0.06 [0.15]	4-1/2 [114]	11.6 [17.3]	6,770 [46.7]	3.58 [91]
	3-3/8 [86]	EXP-3323-423T	22.7	6 [20], 60°	0.45 [11]	42.21 [107.21]	0.06 [0.15]	4-1/2 [114]	11.6 [17.3]	7,270 [50.1]	3.80 [97]
	3-3/8 [86]	EXP-3326-421T	26.0	6 [20], 60°	0.41 [10]	50.05 [127.13]	0.06 [0.15]	4-1/2 [114]	11.6 [17.3]	7,835 [54.0]	3.80 [97]
	4 [102]	EXP-4039-423T	38.5	4 [13], 90°	0.44 [11]	62.81 [159.54]	0.07 [0.18]	5-1/2 [140]	17 [25.3]	6,460 [44.5]	4.60 [117]
	4-1/2 [114]	EXP-4521-423T	21.0	12 [39], 135/45°	0.37 [9]	35.97 [91.36]	0.05 [0.13]	7 [178]	32 [47.6]	8,470 [53.4]	4.92 [125]
	4-1/2 [114]	EXP-4539-425T	38.5	5 [16], 60°	0.46 [12]	55.70 [141.48]	0.08 [0.20]	7 [178]	32 [47.6]	6,320 [43.6]	4.92 [125]
	7 [178]	EXP-4039-423T	38.5	12 [39], 135/45°	0.40 [10]	49.60 [125.98]	0.09 [0.23]	9-5/8 [245]	47 [69.9]	6,175 [42.6]	7.50 [191]
GOOD HOLE	2-1/2 [64]	RTG-2512-431	12.0	6 [20], 60°	0.45 [11]	20.31 [51.59]	0.05 [0.13]	3-1/2 [89]	9.2 [13.7]	6,710 [46.3]	2.71 [69]
	3-1/8 [79]	EXP-3319-431	19.0	6 [20], 60°	0.55 [14]	29.18 [74.12]	0.06 [0.15]	4-1/2 [114]	11.6 [17.3]	6,375 [44.0]	3.58 [91]
	3-1/8 [79]	EXP-3321-431	21.0	6 [20], 60°	0.56 [14]	29.23 [74.24]	0.06 [0.15]	4-1/2 [114]	11.6 [17.3]	6,375 [44.0]	3.58 [91]
	3-3/8 [86]	EXP-3323-431	22.7	6 [20], 60°	0.59 [15]	29.42 [74.73]	0.06 [0.15]	4-1/2 [114]	11.6 [17.3]	5,350 [36.9]	3.80 [97]
	4-1/2 [114]	EXP-4521-431	21.0	12 [39], 135/45°	0.46 [12]	22.02 [55.93]	0.07 [0.18]	7 [178]	32 [47.6]	5,350 [36.9]	4.92 [125]
BIG HOLE	3-1/8 [79]	FLO-3112-411CFZ	12.0	12 [39], 140/20°	0.55 [14]	4.68 [11.89]	0.06 [0.15]	5 [127]	15 [22.3]	5,860 [40.4]	3.58 [91]
	3-1/8 [79]	FLO-3323-311CF	22.7	6 [20], 60°	0.68 [17]	7.10 [18.03]	0.07 [0.18]	4-1/2 [114]	11.6 [17.3]	6,710 [46.3]	3.58 [91]
	3-3/8 [86]	FLO-3112-411CFZ	12.0	12 [39], 140/20°	0.59 [15]	5.31 [13.49]	0.05 [0.13]	5 [127]	15 [22.3]	5,115 [35.3]	3.80 [97]
	4-1/2 [114]	FLO-4623-411CFZ	22.7	16 [52], 140/20°	0.79 [20]	7.06 [17.93]	0.05 [0.13]	7 [178]	32 [47.6]	6,125 [42.2]	4.92 [125]
	4-5/8 [117]	FLO-4623-411CFZ	22.7	16 [52], 140/20°	0.75 [19]	6.11 [15.52]	0.05 [0.13]	7 [178]	32 [47.6]	6,070 [41.9]	5.00 [127]
	5-1/8 [130]	FLO-5128-311CFZ	28.0	12 [39], 135/45°	0.79 [20]	9.11 [23.14]	0.04 [0.10]	7 [178]	32 [47.6]	5,210 [35.9]	5.68 [144]
	5-1/8 [130]	FLO-5130-311CF	30.0	12 [39], 135/45°	0.86 [22]	8.25 [20.96]	0.05 [0.13]	7 [178]	32 [47.6]	5,210 [35.9]	5.68 [144]
	7 [178]	FLO-7039-312CF	38.8	12 [39], 135/45°	1.10 [28]	10.37 [26.34]	0.15 [0.38]	9-5/8 [244]	47 [69.9]	8,633 [59.5]	7.50 [191]
	7 [178]	FLO-7039-312CF	38.8	18 [59], 140/20°	1.08 [27]	9.88 [25.10]	0.09 [0.23]	9-5/8 [244]	47 [69.9]	5,310 [36.6]	7.50 [191]
	7 [178]	FLO-7039-312CFZ	38.8	18 [59], 140/20°	1.06 [27]	9.73 [24.71]	0.10 [0.25]	9-5/8 [244]	47 [69.9]	5,310 [36.6]	7.50 [191]

04/13

Note: All charges available with RDX, HMX and HNS. Table displays charges that have been API RP-19B certified

† xxx-xxxx-3xxxx for RDX, xxx-xxxx-4xxx for HMX, xxx-xxxx-5xxx for HNS

‡ Low swell (LS) charge

§ Slick gun. No scallops

See *www.hunting-intl.com* for complete details and copies of API RP-19B registration and certification sheets. Or call your Hunting sales representative or Hunting Energetics at (800) 320-5110 or +1 972 493-2580 for outside USA.

Best Practice on deciding which detonating cord to use

For optimal performance of any shaped charge, the same explosive type must be used in detonating cords and shaped charges. Mixing different explosive types can cause a detrimental reduction in shaped charge performance, charge interference, low order detonation and in some cases a complete misfire. For example, PETN detonating cord cannot provide the necessary energy to high order detonate RDX and HMX shaped charges. The only exception to this rule is RDX and HMX can be interchanged without taking temperature limits in account.

Right Tools. Right Location. Right Time.

HUNTING