



## EPIC™ Flex 3-1/8”

The EPIC™ Flex advanced perforating system features a versatile, addressable switch ready, portless solution that provides high levels of precision and reliability. The open architecture design allows engineering teams to plan and complete multistage plug-and-perf operations more safely, precisely, and cost-effectively.

Flex can be used with most addressable switches on the market. The system's gun-to-sub and gun-to-gun connections are wireless with zero-tension connectors and are designed with a redundant, integrated grounding system.

Flex can accommodate a variety of market-leading charge designs, including GEODynamics charges. Flex delivers true entry hole performance with the highest levels of precision. GEODynamics can provide Flex fully loaded, or ready to load, and with or without an addressable switch.

### FEATURES

- Disposable and portless gun system
- Zero tension connections at each sub feed-through pin
- Integrated redundant grounding and charge tube retention
- Compliant with multiple electro-mechanical systems
- Carriers available as a turn-key system or individual component

### BENEFITS

- Shorter gun strings
- Flexible utilization
- Faster loading process for service providers
- Easy troubleshooting
- Spiral shot configurations with multiple phasing options offer one (1) to 19 shots per carrier, compatible with FracIQ®, Basix™, Basix™ Frac, Razor®, Connex®, Refrax™, and other charge manufacturer technologies

### APPLICATIONS

- Limited entry perforating design
- Unconventional reservoirs
- Conveyable on wireline, slickline, and tubing

## Industry-leading shaped charge performance equals

### BETTER WELL PERFORMANCE

This performance is achieved by combining cutting edge designs, state of the art production processes, and rigorous quality control.

#### 3-1/8" SPIRAL CHARGES

##### BIG HOLE

Carrier O.D.	Shaped Charge	Part Number	Perforating Condition	Explosive	Shot Density / Phasing	^Casing O.D.	Performance in Concrete		Performance in Stressed Berea	
							Application	EHD (in)[cm]	TTP (in)[cm]	EHD^ (in)[cm]
3-1/8" 23g	3323 Basix BH	EC2-33A2331	Fluid	22.7g, RDX	6 spf / 60°	4-1/2" L-80	0.78 [1.98]	7.60 [19.30]		
		EC2-33A2332		22.7g, HMX			0.79 [2.01]	7.80 [19.81]		

#### CONSTANT ENTRY HOLE AND PENETRATION

Carrier O.D.	Shaped Charge	Part Number	Perforating Condition	Explosive	Shot Density / Phasing	API 19B Targeted Pipe*	Performance in Stressed Berea (API RP19B Sec. 2)		
							EHD^ (in)[cm]	EHD Variation Decentralized	TTP (in)[cm]
3-1/8" 12g-13g	FracIQ 20	EC2-33A1271	Fluid	12.0g, RDX	6 spf / 60°	4.5"-5.5" OD, P110	0.22 [0.56]	5.5%	5.0 [12.70]
	Basix Frac 25	EC2-33A1271-BF		12.0g, RDX			0.26 [0.66]	2.4%	4.0 [10.16]
	FracIQ 25	EC2-33A1371		13.0g, RDX			0.26 [0.66]	4.1%	5.0 [12.70]
3-1/8" 13g-16g	FracIQ Connex 30	EC2-33A1471-FRX	Fluid	14.0g, RDX	6 spf / 60°	4.5"-5.5" OD, P110	0.31 [0.79]	6.0%	5.0 [12.70]
	Basix Frac 30	EC2-33A1471-BF		14.0g, RDX			0.31 [0.79]	4.0%	4.0 [10.16]
	FracIQ 30	EC2-33A1671		16.0g, RDX			0.31 [0.79]	3.1%	5.0 [12.70]
	FracIQ 30	EC2-33A1672		16.0g, HMX			0.34 [0.86]	3.8%	
3-1/8" 16g-20g	FracIQ Connex 35	EC2-33A1671-FRX	Fluid	16.0g, RDX	6 spf / 60°	4.5"-5.5" OD, P110	0.36 [0.91]	5.0%	5.0 [12.70]
	Basix Frac 35	EC2-33A1871-BF		18.0g, RDX			0.36 [0.91]	3.4%	4.0 [10.16]
	FracIQ 35	EC2-33A2071		20.0g, RDX			0.36 [0.91]	2.5%	5.0 [12.70]
	FracIQ 35	EC2-33A2072		20.0g, HMX			0.37 [0.94]	3.0%	
3-1/8" 19g-23g	FracIQ Connex 40	EC2-33A1971-FRX	Fluid	19.0g, RDX	6 spf / 60°	4.5"-5.5" OD, P110	0.41 [1.04]	6.5%	5.0 [12.70]
	FracIQ 40	EC2-33A2371		23.0g, RDX			0.40 [1.02]	3.3%	
	FracIQ 40	EC2-33A2372		23.0g, HMX			0.41 [1.04]	3.8%	4.0 [10.16]
	Basix Frac 40	EC2-33A2371-BF		23.0g, RDX			0.40 [1.02]	6.6%	
3-1/8" 20g-23g	FracIQ 45	EC2-33A2071-FRX	Fluid	20.0g, RDX	6 spf / 60°	4.5"-5.5" OD, P110	0.45 [1.14]	5.6%	5.0 [12.70]
	FracIQ Connex 45	EC2-33A2371-FRX		21.0g, RDX			0.45 [1.14]	3.2%	
	Basix Frac 45	EC2-33A2371-BF45		23.0g, RDX			0.45 [1.14]	5.9%	4.0 [10.16]
3-1/8" 23g	FracIQ 50	EC2-33A2371-50	Fluid	23.0g, RDX	6 spf / 60°	4.5"-5.5" OD, P110	0.50 [1.27]	1.5%	5.0 [12.70]
	FracIQ 50	† EC2-33A2371-50G		23.0g, HMX		5.5" OD, P110	0.50 [1.27]	4.6%	
	Basix Frac 50	EC2-33A2371-BF50		23.0g, RDX		4.5"-5.5" OD, P110	0.50 [1.27]	4.8%	4.0 [10.16]
	FracIQ 55	EC2-33A2371-55		23.0g, RDX		4.5" OD, P110	0.55 [1.40]	3.8%	5.0 [12.70]

\*3-1/8" FracIQ charge performance is compatible in 4.5" 11.6-15.1# and 5.5" 17-23# P-110 casing. FRX designates FracIQ® Connex® reactive technology.

†EC2-33A2371-50G has a custom, externally-grooved case (special application).

Performance in concrete represents API RP43 or API RP19B Section 1 testing results with the shot density/phasing, casing OD, and casing grade specified.

^EHD performance in stressed berea represents API RP19B Section 2 testing results with casing flat metal plate equivalent to 0.500" 120KSI yield and penetration (TTP) in stressed berea rock.

FLUID: Qualified for shooting in FLUID only with perforating systems qualified by GEOdynamics.

IN FLUID or DRY: Qualified for shooting in FLUID or DRY GAS with perforating systems qualified by GEOdynamics.

## 3-1/8" SPIRAL CHARGES, CONT.

### DEEP PENETRATING/EXTREME DEEP PENETRATING

Carrier O.D.	Shaped Charge	Part Number	Perforating Condition	Explosive	Shot Density / Phasing	^Casing O.D.	Performance in Concrete		Performance in Stressed Berea	
							Application	EHD (in)[cm]	TTP (in)[cm]	EHD^A (in)[cm]
3-1/8" 19g	3319 Connex RX	EC2-33A1991-RX	‡ Fluid or Dry	19.0g, RDX	5 spf / 60° (Dry) 6 spf / 60° (Fluid)	4-1/2" L-80			0.32 [0.81]	11.30 [28.70]
		EC2-33A1992-RX		19.0g, HMX					0.32 [0.81]	11.60 [29.46]
	3319 Razor XDP	EC2-33A1921	‡ Fluid or Dry	19.0g, RDX			0.51 [1.30]	42.07 [106.86]		
		EC2-33A1922		19.0g, HMX			0.49 [1.24]	41.10 [104.39]	0.43 [1.09]	14.60 [37.08]
	3319 Basix XDP	EC2-33A1921-E	‡ Fluid or Dry	19.0g, RDX			0.43 [1.09]	35.80 [90.93]		
EC2-33A1922-E	19.0g, HMX									
3319 Basix XDP	EC2-33A1921-EG	Fluid	19.0g, RDX	0.43 [1.09]	35.70 [90.68]					
3319 Basix DP	EC2-33A1951	‡ Fluid or Dry	19.0g, RDX	0.54 [1.37]	29.20 [74.17]					
						EC2-33A1952	19.0g, HMX			
3-1/8" 23g	3323 Connex SDP	EC2-33A2321-RC	Fluid	22.7g, RDX	6 spf / 60°	4-1/2" L-80			0.40 [1.02]	15.60 [39.62]
		EC2-33A2322-RC		22.7g, HMX					0.46 [1.17]	15.31 [38.89]
		EC2-33A2323-RC		22.7g, HNS					0.36 [0.91]	11.85 [30.10]
	EC2-33A2321	22.7g, RDX						0.41 [1.04]	16.40 [41.66]	
	3323 Razor XDP	EC2-33A2322		22.7g, HMX			0.42 [1.07]	39.02 [99.11]	0.44 [1.12]	15.68 [39.83]
		EC2-33A2323		22.7g, HNS			0.35 [0.89]	26.05 [66.17]	0.37 [0.94]	12.12 [30.78]
	3323 Basix XDP	EC2-33A2321-E		22.7g, RDX			0.42 [1.07]	46.01 [116.87]	0.39 [0.99]	12.30 [31.24]
		EC2-33A2322-E		22.7g, HMX			0.43 [1.09]	46.37 [117.78]		
	3323 Basix GH	EC2-33A2321-EG		22.7g, RDX					0.41 [1.04]	11.90 [30.23]
		EC2-33A2322-EG		22.7g, HMX			0.43 [1.09]	45.70 [116.08]	0.40 [1.02]	11.90 [30.23]

‡ For 3-1/8" 19g in dry gas, maximum shot density is 5 spf or limited to one- (1) and two- (2) shot short guns only.

### DUAL CASING

Carrier O.D.	Shaped Charge	Part Number	Perforating Condition	Explosive	Shot Density / Phasing	Inner Casing		Outer Casing	
						O.D./Material	EHD (in)[cm]	O.D./Material	EHD (in)[cm]
3-1/8" 14g-23g	3314 Refrax	EC2-33A1471-D	Fluid	14.0g, RDX	6 spf / 60°	Expanded 4.0" P110	0.33-0.33 [0.84-0.84]	5.5" P110	0.30-0.30 [0.76-0.76]
	3316 Refrax	EC2-33A1671-D		16.0g, RDX			0.37-0.38 [0.94-0.95]		0.35-0.35 [0.89-0.89]
	3320 Refrax	EC2-33A2071-D		20.0g, RDX	0.41-0.42 [1.04-1.07]	0.40-0.40 [1.02-1.02]			
	3316 Refrax	EC2-33A1671-D		16.0g, RDX	4.5" P110	0.30-0.32 [0.76-0.81]	0.39-0.41 [0.99-1.04]		
3323 Refrax	EC2-33A2371-D	23.0g, RDX	0.41-0.42 [1.04-1.07]	0.35-0.35 [0.89-0.89]					

### GOOD HOLE

Carrier O.D.	Shaped Charge	Part Number	Perforating Condition	Explosive	Shot Density / Phasing	^Casing O.D.	Performance in Concrete		Performance in Stressed Berea	
							Application	EHD (in)[cm]	TTP (in)[cm]	EHD^A (in)[cm]
3-1/8" 19g	3319 Connex XEH	EC2-33A1941-RC	‡ Fluid or Dry	19.0g, RDX	5 spf / 60° (Dry) 6 spf / 60° (Fluid)	4-1/2" L-80			0.41 [1.04]	14.20 [36.07]
		EC2-33A1942-RC		19.0g, HMX					0.42 [1.07]	14.37 [36.50]
	EC2-33A1941	19.0g, RDX		0.60 [1.52]			28.55 [72.52]			
	3319 Basix GH	EC2-33A1942	19.0g, HMX							
3-1/8" 23g	3323 Connex XEH	EC2-33A2341-RC	Fluid	22.7g, RDX	6 spf / 60°	4-1/2"			0.43 [1.09]	15.60 [39.62]
		EC2-33A2342-RC		22.7g, HMX					0.43 [1.09]	15.89 [40.36]
	EC2-33A2341-E	22.7g, RDX		0.48 [1.22]		31.40 [79.76]				
	3323 Basix GH	EC2-33A2342-E	22.7g, HMX			4-1/2"				

‡ For 3-1/8" 19g in dry gas, maximum shot density is 5 spf or limited to one- (1) and two- (2) shot short guns only.

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