

# FracIQ<sup>®</sup> IS DIFFERENT

SHAPED CHARGES. TECHNOLOGY. PERFORMANCE.

GEOdynamics<sup>®</sup>

PRECISE HOLES  
SIMPLE PHASING  
SIMPLE FRAC GROWTH

# FracIQ® PRO

## Limited Entry Perforating System

GEODynamics delivers a Limited Entry Perforating System for unconventional reservoirs. The FracIQ® PRO Perforating System provides constant casing hole sizes, regardless of decentralized position, casing size, weight and grade, for optimal pressure drop during frac. With a constant entry hole and penetration, each cluster can be treated more efficiently. Subsequent stages and wells can then be further optimized for limited entry fracture stimulation.

## FEATURES

### SHAPED CHARGE TECHNOLOGY

- Best-in-class standard deviation of entry hole diameter (EHD)
- Improves perf cluster efficiency
- Shaped charge technology engineered for current unconventional casing sizes, weights, and grades
- Customized entry hole selection on request

## BENEFITS

- Constant entry hole size regardless of gun position or casing size and weight
- Provides more control of perf friction and near wellbore tortuosity
- Allows the operator to accurately determine the number of open perforations
- Allows for efficient treatment of all perf clusters within the stage
- Creates predictable and repeatable pressure diversion across 100% of the perforations

### CARRIER TECHNOLOGY

- Integrated redundant grounding and charge tube retention
- Zero tension connections at each sub feed-through pin
- Shorter gun strings
- Faster loading process for service providers
- Easy troubleshooting

## APPLICATIONS

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

Carrier O.D.	Product Name	Part Number	Perforating Condition	Explosive	Shot Density and Phasing	API 19B Targeted Pipe*	Entrance Hole (in)[cm]	EHD Variation Decentralized	Rock Penetration API 19B-Sec. 2 (in)[cm]
2-3/4"	FracIQ 30	EC2-27A1171	Fluid	11.0g, RDX	6 spf / 60°	4.5" OD P110	0.30 [0.76]	2.7 %	5.0 [12.70]
	FracIQ 35	EC2-27A1271		12.0g, RDX			0.35 [0.89]	5.9 %	
	FracIQ 40	EC2-27A1571		15.0g, RDX			0.40 [1.02]	6.3 %	
2-7/8"	FracIQ 35	EC2-28A1171	Fluid	11.0g, RDX	6 spf / 60°	4.5" OD P110	0.36 [0.91]	3.3 %	5.0 [12.70]
		EC2-28A1172		11.0g, HMX			0.36 [0.91]	2.1 %	
	FracIQ 40	EC2-28A1671		16.0g, RDX			0.40 [1.02]	2.7 %	
3-1/8"	FracIQ 20	EC2-33A1271	Fluid	12.0g, RDX	6 spf / 60°	4.5"-5.5" OD	0.40 [1.02]	2.7 %	5.0 [12.70]
		EC2-33A1371		13.0g, RDX			0.22 [0.56]	5.5 %	
	FracIQ 30	EC2-33A1671		16.0g, RDX			0.26 [0.66]	4.1 %	
		EC2-33A1672		16.0g, HMX			0.31 [0.79]	3.1 %	
	FracIQ 35	EC2-33A2071		16.0g, HMX			0.34 [0.86]	3.8 %	
		EC2-33A2071		20.0g, RDX			0.36 [0.91]	2.5 %	
	FracIQ 40	EC2-33A2072		20.0g, HMX			0.37 [0.94]	3.0 %	
		EC2-33A2371		23.0g, RDX			0.40 [1.02]	3.3 %	
	FracIQ 45	EC2-33A2372		23.0g, HMX			0.41 [1.04]	3.8 %	
		EC2-33A2071-45		20.0g, RDX		4.5"-5.5" OD	0.45 [1.14]	5.6 %	
	FracIQ 50	EC2-33A2371-50		23.0g, RDX		4.5"-5.5" OD	0.50 [1.27]	1.5 %	
		EC2-33A2372-RX		23.0g, HMX		5.5" OD	0.50 [1.27]	4.6 %	
3-1/8"	FracIQ 55	EC2-33A2371-55	Fluid	23.0g, RDX		4.5" OD	0.55 [1.40]	3.8 %	5.0 [12.70]
	FracIQ 30 LD	EC2-33A1371-LD		13.0g, RDX	6 spf / 60°	4.5"-5.5" OD	0.31 [0.79]	3.1 %	
	FracIQ 35 LD	EC2-33A1671-LD		16.0g, RDX			0.36 [0.91]	2.5 %	
3-1/8"	FracIQ 40 LD	EC2-33A2071-LD	Fluid	20.0g, RDX		4.5"-5.5" OD	0.40 [1.02]	3.3 %	5.0 [12.70]
	FracIQ Connex 30	EC2-33A1471-FRX		14.0g, RDX			0.31 [0.79]	6.0 %	
	FracIQ Connex 35	EC2-33A1671-FRX		16.0g, RDX			0.36 [0.91]	5.0 %	
	FracIQ Connex 40	EC2-33A1971-FRX		19.0g, RDX			0.41 [1.04]	6.5 %	
3-3/8"	FracIQ Connex 45	EC2-33A2371-FRX	Fluid	21.0g, RDX	6 spf / 60°	4.5"-5.5" OD	0.45 [1.14]	3.2 %	5.0 [12.70]
	FracIQ 20	EC2-33A1271		12.0g, RDX			0.22 [0.56]	5.5 %	
	FracIQ 25	EC2-33A1371	Fluid	13.0g, RDX		6.0" OD P110	0.26 [0.66]	2.3 %	

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

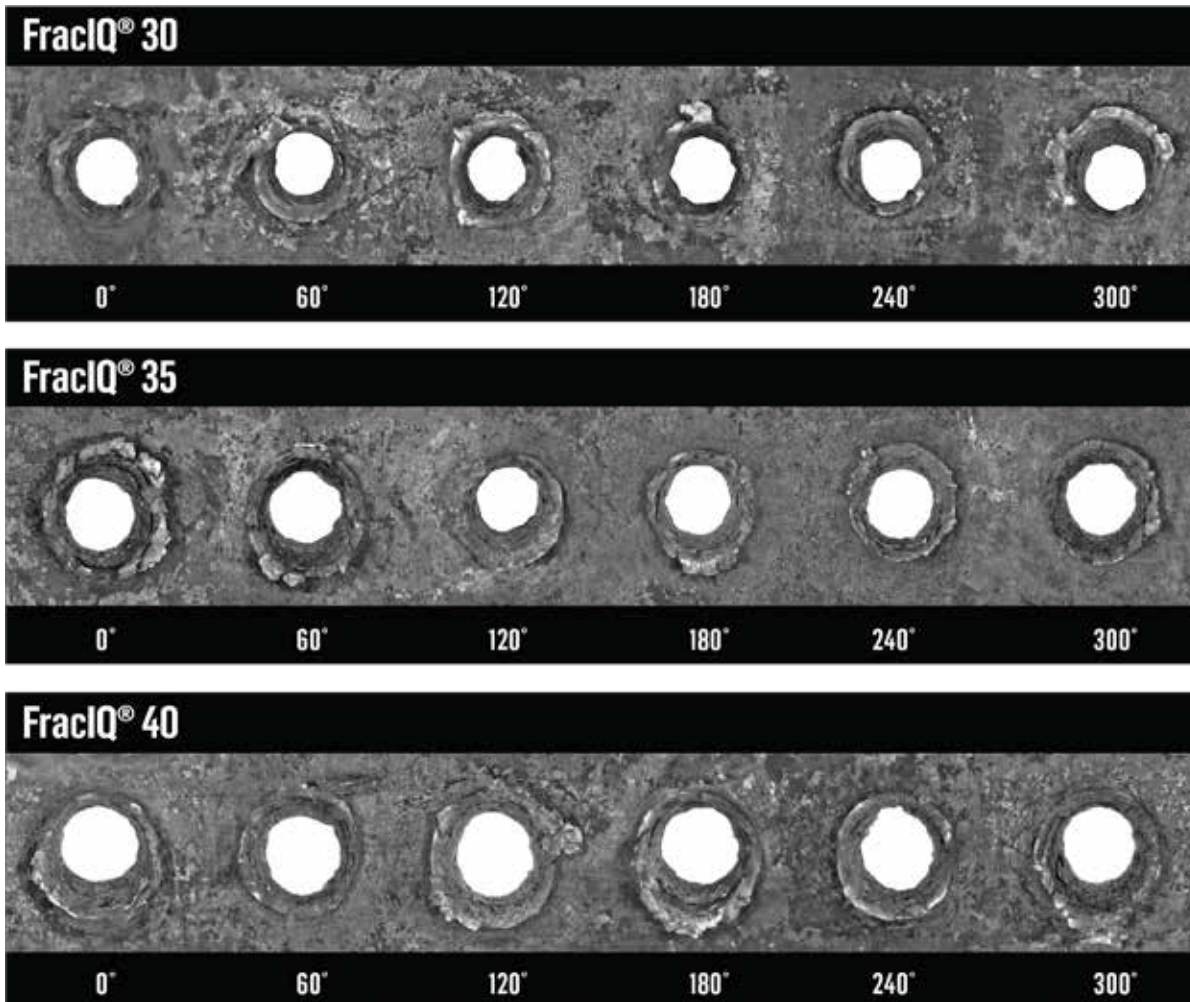
LD designates low debris charges. FRX designates FracIQ® Connex® reactive technology.

GEODynamics charges are available in RDX, HMX, and HNS. Please contact your sales representative for more information.

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.

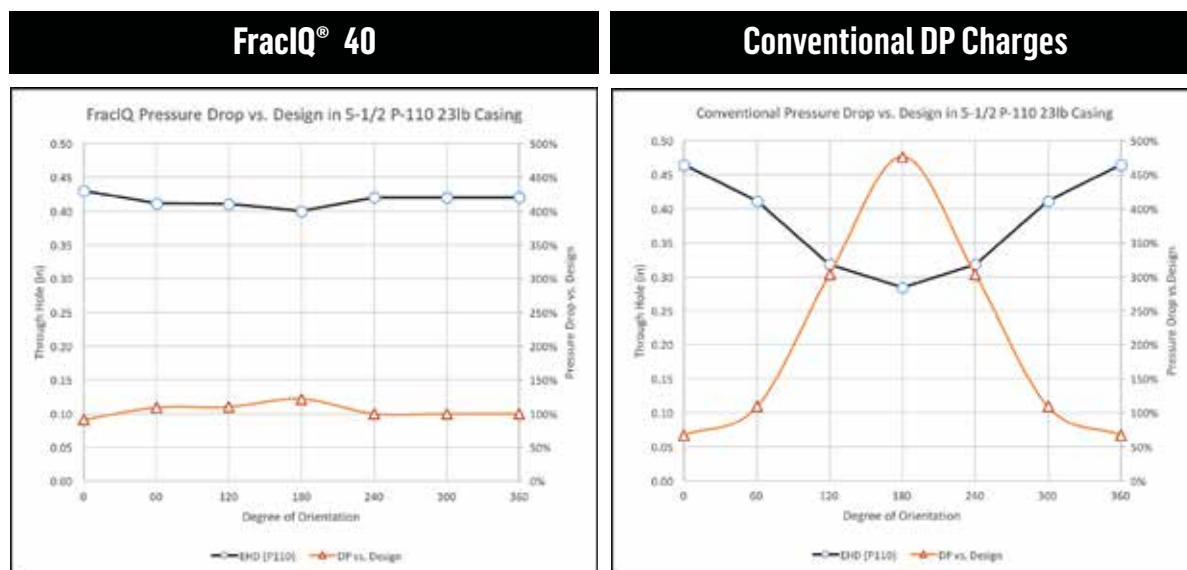




FracIQ® PRO 40 EHD is 0.40 inches, at all shot phasings.

Conventional 0.42" Perforating System, the EHD varies at all phasing from 0.42 to 0.30 inches.

FracIQ® PRO perforating system will provide superior perforation efficiency during fracture stimulation when compared to conventional perforators which traditionally exhibit a higher entry hole diameter variance across the shot phasings.



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