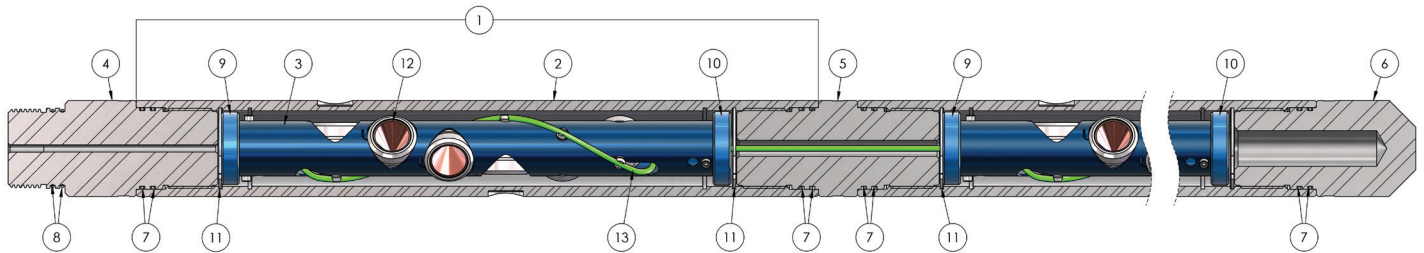


## 4 SPF (13 SPM) GUNFACTS®

Gun Body Material: Heat treated, seamless steel tubing  
 Gun Body Configuration: Threaded and scalloped  
 Charge Tube Type: Round steel tube  
 Mode of Fire: Simultaneous or selective firing systems such as EBFire® and ControlFire®  
 Initiation Point: Top or bottom fired options available for wireline and TCP  
 Detonating Cord: 80 grains/foot  
 O-Ring Material: Nitrile - 90 Durometer (Viton - 95 Durometer for temperatures >325°F [163°C])



Expendable (EXP) Scalloped Hollow Carrier Assembly and Components					
	ITEM	PART NO.	DESCRIPTION	Gun Assy. #	Phase
Gun Assy.	1	0445-1A**-044	4-1/2 in. (114 mm) Gun Assy.	1	90°
		0445-A**-044	4-1/2 in. (114 mm) Gun Assy.	2	90°
	2	0445-1**-04	4-1/2 in. (114 mm) Carrier Body		90°
3		0445-3A**-044	Charge Tube	1	90°
		0400-5**-044	Charge Tube	2	90°
Common Parts	4	0445-000-001	Top Sub		
	5	0445-000-002	Tandem Sub		
	5A	0445-000-389A	Alternate Window Tandem Sub		
	6	0445-000-003	Gun Bottom		
	7	0111-342-V95	O-Ring		
	8	0111-230-V95	O-Ring		
	9	0445-500-031	Chg. Tube End Fitting - Aligning	1	
		0445-600-031	Chg. Tube End Fitting - Aligning	2	
	10	0445-500-031	Chg. Tube End Fitting	1	
		0445-600-031	Chg. Tube End Fitting	2	
	11	0414-200-037	Snap Ring		
	12		Shaped Charge		
	13		Detonating Cord		
<b>TCP Conversion Kits (Not Pictured)</b>					
		0514-500-150	Top TCP Booster Kit		
		0514-500-160	Tandem TCP Booster Kit		
			Associated Hardware (Page 72)		

\*\* Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.  
 Example: Use "02" for 2ft gun assembly; etc. (0445-1A02-044)

Compatible Shaped Charges (Shaped Charge Summary - Page 87)					
Part Number	Gun Assy. #	Type	Explosive Weight (g)	Application	Explosive Type
<u>EXP-4539-425T</u>	1	SDP	38.5	F, G	HMX
FLO-4039-311CF	2	BH	38.5	F, G	RDX
EXP-4045-421T	2	SDP	45.0	F	HMX

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

**Bold indicates API-19B certification**

*Italics indicate API RP-43 certification*

Underlined Part Number indicates link to API Data Sheet available

Application: "F" indicates that system is able to be fired in fluid

"G" indicates that system is able to be fired in gas

Phasing Compatibility: Refer to listed phasing(s) in Specifications table below

Specifications - EXP Scalloped Hollow Carrier Assy.	4 SPF (13 SPM)
	90°
Nominal O.D. (in) [mm]	4.50 [114]
Nominal Thickness (in) [mm]	0.38 [9.7]
Gun Swell (in) [mm]: Ambient Fluid.	4.71 [120] ≤ 38.5g
Gun Swell (in) [mm]: Ambient Gas.	4.73 [120] ≤ 38.5g
Minimum Recommended Restriction (in) [mm]	4.92 [125]
Maximum Pressure (psi) [MPa]	17,500 [121]
Distance to First Scallop (in) [mm]	7.50 [191]
Approximate Weight - Loaded (lb/ft) [kg/m]	22.0 [32.7]
Max. Tension (lbf) [kN]	453,000 [2,015]

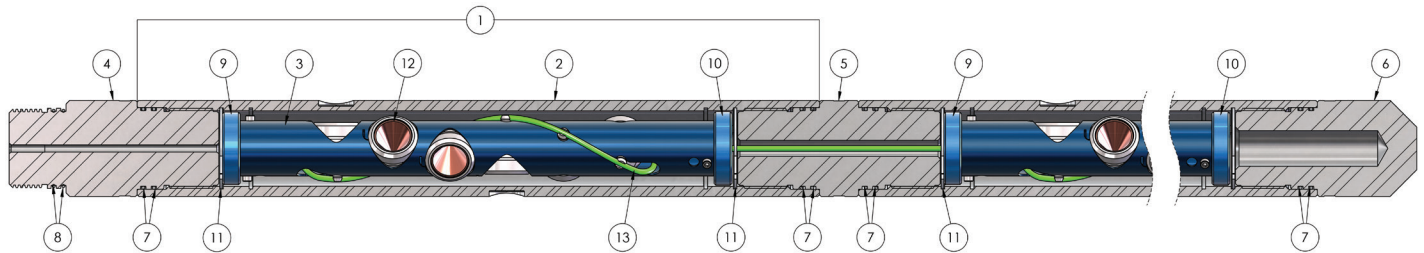
NR Not Recommended

# 4-1/2 in. (114 mm) EXP Scalloped Hollow Carrier Gun



## 5 SPF (16 SPM) GUNFACTS®

Gun Body Material: Heat treated, seamless steel tubing  
 Gun Body Configuration: Threaded and scalloped  
 Charge Tube Type: Round steel tube  
 Mode of Fire: Simultaneous or selective firing systems such as EBFire® and ControlFire®  
 Initiation Point: Top or bottom fired options available for wireline and TCP  
 Detonating Cord: 80 grains/foot  
 O-Ring Material: Nitrile - 90 Durometer (Viton - 95 Durometer for temperatures >325°F [163°C])



02 Scalloped Guns

Expendable (EXP) Scalloped Hollow Carrier Assembly and Components						
	ITEM	PART NO.	DESCRIPTION	Gun Assy. #	Phase	
Gun Assy.	1	0445-1A**-056	4-1/2 in. (114 mm) Gun Assy.	1	60°	
		0445-A**-056	4-1/2 in. (114 mm) Gun Assy.	2	60°	
	2	0445-1**-056	4-1/2 in. (114 mm) Carrier Body		60°	
3		0445-3A**-056	Charge Tube	1	60°	
		0400-5**-056	Charge Tube	2	60°	
Common Parts	4	0445-000-001	Top Sub			
	5	0445-000-002	Tandem Sub			
	5A	0445-000-389A	Alternate Window Tandem Sub			
	6	0445-000-003	Gun Bottom			
	7	0111-342-V95	O-Ring			
	8	0111-230-V95	O-Ring			
	9		0445-500-031	Chg. Tube End Fitting - Aligning	1	
			0445-600-031	Chg. Tube End Fitting - Aligning	2	
	10		0445-500-031	Chg. Tube End Fitting	1	
			0445-600-031	Chg. Tube End Fitting	2	
	11	0414-200-037	Snap Ring			
	12		Shaped Charge			
	13		Detonating Cord			
<b>TCP Conversion Kits (Not Pictured)</b>						
		0514-500-150	Top TCP Booster Kit			
		0514-500-160	Tandem TCP Booster Kit			
			Associated Hardware (Page 72)			

Compatible Shaped Charges (Shaped Charge Summary - Page 87)					
Part Number	Gun Assy. #	Type	Explosive Weight (g)	Application	Explosive Type
<u>EXP-4539-425T</u>	1	SDP	38.5	F, G	HMX
FLO-4039-311CF	2	BH	38.5	F, G	RDX
EXP-4045-421T	2	SDP	45.0	F	HMX

xxx-xxxx-3xxx for RDX, xxx-xxxx-4xxx for HMX, xxx-xxxx-5xxx for HNS  
**Bold indicates API-19B certification**  
*Italics indicate API RP-43 certification*  
 Underlined Part Number indicates link to API Data Sheet available  
 Application: "F" indicates that system is able to be fired in fluid  
 "G" indicates that system is able to be fired in gas  
 Phasing Compatibility: Refer to listed phasing(s) in Specifications table below

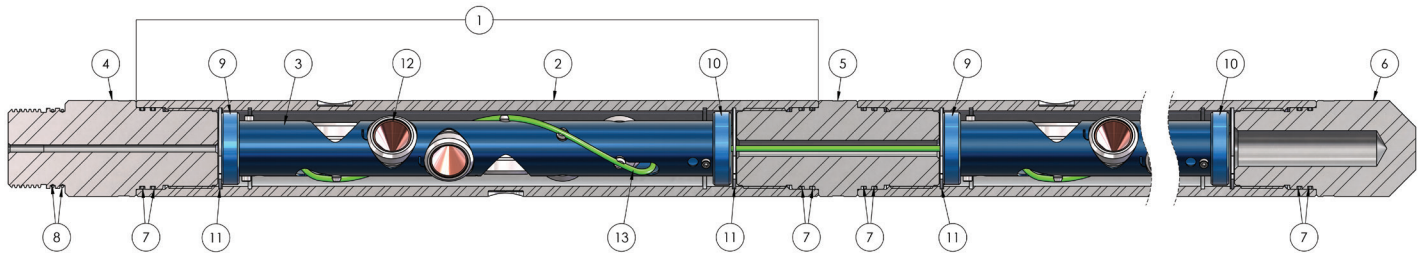
\*\* Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.  
 Example: Use "02" for 2ft gun assembly; etc. (0445-1A02-056)

Specifications - EXP Scalloped Hollow Carrier Assy.	5 SPF (16 SPM)
	60°
Nominal O.D. (in) [mm]	4.50 [114]
Nominal Thickness (in) [mm]	0.38 [9.7]
Gun Swell (in) [mm]: Ambient Fluid.	4.73 [120] ≤ 38.5g
Gun Swell (in) [mm]: Ambient Gas.	4.86 [123] ≤ 38.5g
Minimum Recommended Restriction (in) [mm]	4.92 [125]
Maximum Pressure (psi) [MPa]	17,500 [121]
Distance to First Scallop (in) [mm]	7.20 [183]
Approximate Weight - Loaded (lb/ft) [kg/m]	23.0 [34.2]
Max. Tension (lbf) [kN]	453,000 [2,015]

N/R Not Recommended

## 6 SPF (20 SPM) GUNFACTS®

Gun Body Material: Heat treated, seamless steel tubing  
 Gun Body Configuration: Threaded and scalloped  
 Charge Tube Type: Round steel tube  
 Mode of Fire: Simultaneous or selective firing systems such as EBFire® and ControlFire®  
 Initiation Point: Top or bottom fired options available for wireline and TCP  
 Detonating Cord: 80 grains/foot  
 O-Ring Material: Nitrile - 90 Durometer (Viton - 95 Durometer for temperatures >325°F [163°C])



Expendable (EXP) Scalloped Hollow Carrier Assembly and Components				
	ITEM	PART NO.	DESCRIPTION	Phase
Gun Assy.	1	0445-B**-066	4-1/2 in. (114 mm) Gun Assy.	60°
	2	0445-1**-066	4-1/2 in. (114 mm) Carrier Body	60°
	3	0400-7**-066	Charge Tube	60°
Common Parts	4	0445-000-001	Top Sub	
	5	0445-000-002	Tandem Sub	
	5A	0445-000-389A	Alternate Window Tandem Sub	
	6	0445-000-003	Gun Bottom	
	7	0111-342-V95	O-Ring	
	8	0111-230-V95	O-Ring	
	9	0445-700-031	Chg. Tube End Fitting - Aligning	
	10	0445-700-031	Chg. Tube End Fitting	
	11	0414-200-037	Snap Ring	
	12		Shaped Charge	
13		Detonating Cord		
<b>TCP Conversion Kits (Not Pictured)</b>				
		0514-500-150	Top TCP Booster Kit	
		0514-500-160	Tandem TCP Booster Kit	
			Associated Hardware (Page 72)	

\*\* Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.  
 Example: Use "02" for 2ft gun assembly; etc. (0445-B02-066)

Compatible Shaped Charges (Shaped Charge Summary - Page 87)				
Part Number	Type	Explosive Weight (g)	Application	Explosive Type
EXP-3326-421T	SDP	26.0	F, G	HMX
EXP-3325-331	GH	25.0	F, G	RDX

xxx-xxxx-3xxx for RDX, xxx-xxxx-4xxx for HMX, xxx-xxxx-5xxx for HNS  
**Bold indicates API-19B certification**  
*Italics indicate API RP-43 certification*  
 Underlined Part Number indicates link to API Data Sheet available  
 Application: "F" indicates that system is able to be fired in fluid  
 "G" indicates that system is able to be fired in gas  
 Phasing Compatibility: Refer to listed phasing(s) in Specifications table below

Specifications - EXP Scalloped Hollow Carrier Assy.	6 SPF (20 SPM)
	60°
Nominal O.D. (in) [mm]	4.50 [114]
Nominal Thickness (in) [mm]	0.38 [9.7]
Gun Swell (in) [mm]: Ambient Fluid.	4.70 [119] ≤ 26.0g
Gun Swell (in) [mm]: Ambient Gas.	4.73 [120] ≤ 26.0g
Minimum Recommended Restriction (in) [mm]	4.92 [125]
Maximum Pressure (psi) [MPa]	17,500 [121]
Distance to First Scallop (in) [mm]	7.00 [178]
Approximate Weight - Loaded (lb/ft) [kg/m]	21.0 [31.2]
Max. Tension (lbf) [kN]	453,000 [2,015]

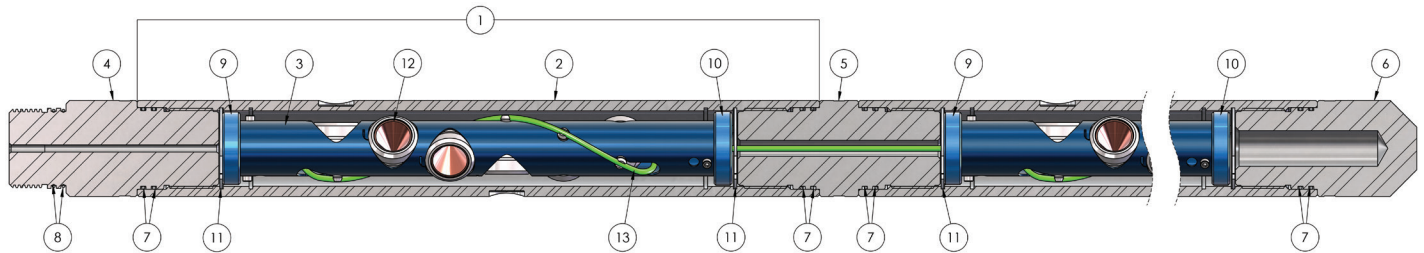
NR Not Recommended

# 4-1/2 in. (114 mm) EXP Scalloped Hollow Carrier Gun



## 8 SPF (26 SPM) GUNFACTS®

Gun Body Material: Heat treated, seamless steel tubing  
 Gun Body Configuration: Threaded and scalloped  
 Charge Tube Type: Round steel tube  
 Mode of Fire: Simultaneous or selective firing systems such as EBFire® and ControlFire®  
 Initiation Point: Top or bottom fired options available for wireline and TCP  
 Detonating Cord: 80 grains/foot  
 O-Ring Material: Nitrile - 90 Durometer (Viton - 95 Durometer for temperatures >325°F [163°C])



02 Scalloped Guns

Expendable (EXP) Scalloped Hollow Carrier Assembly and Components				
	ITEM	PART NO.	DESCRIPTION	Phase
Gun Assy.	1	0445-1D**-08D	4-1/2 in. (114 mm) Gun Assy.	135/45°
	2	0445-1**-08D	4-1/2 in. (114 mm) Carrier Body	135/45°
	3	0400-18**-08D	Charge Tube	135/45°
Common Parts	4	0445-000-001	Top Sub	
	5	0445-000-002	Tandem Sub	
	5A	0445-000-389A	Alternate Window Tandem Sub	
	6	0445-000-003	Gun Bottom	
	7	0111-342-V95	O-Ring	
	8	0111-230-V95	O-Ring	
	9	0445-1800-031	Chg. Tube End Fitting - Aligning	
	10	0445-1800-031	Chg. Tube End Fitting	
	11	0414-200-037	Snap Ring	
	12		Shaped Charge	
13		Detonating Cord		
<b>TCP Conversion Kits (Not Pictured)</b>				
		0514-500-150	Top TCP Booster Kit	
		0514-500-160	Tandem TCP Booster Kit	
			Associated Hardware (Page 72)	

Compatible Shaped Charges (Shaped Charge Summary - Page 87)				
Part Number	Type	Explosive Weight (g)	Application	Explosive Type
<b>EXP-4521-423T</b>	SDP	21.0	F	HMX
<i>EXP-4521-431</i>	GH	21.0	F	HMX
<i>FLO-4521-310B</i>	BH	21.0	F	RDX

xxx-xxxx-3xxx for RDX, xxx-xxxx-4xxx for HMX, xxx-xxxx-5xxx for HNS  
**Bold indicates API-19B certification**  
*Italics indicate API RP-43 certification*  
 Underlined Part Number indicates link to API Data Sheet available  
 Application: "F" indicates that system is able to be fired in fluid  
 "G" indicates that system is able to be fired in gas  
 Phasing Compatibility: Refer to listed phasing(s) in Specifications table below

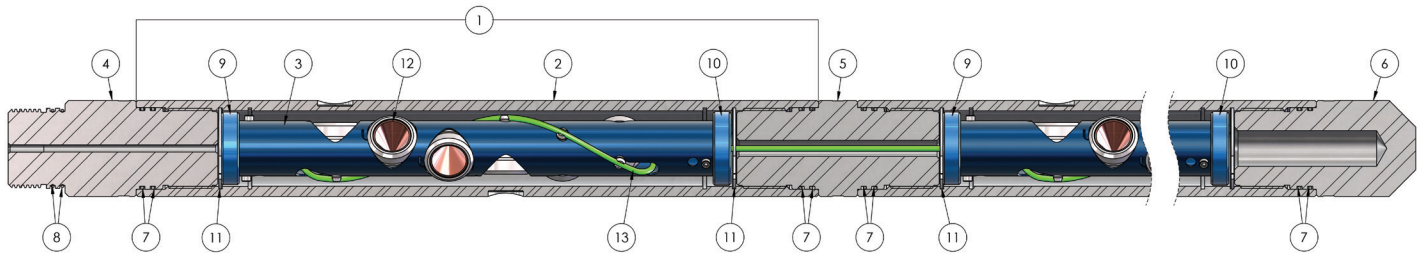
\*\* Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.  
 Example: Use "02" for 2ft gun assembly; etc. (0445-1D02-08D)

Specifications - EXP Scalloped Hollow Carrier Assy.	8 SPF (26 SPM)
	135/45°
Nominal O.D. (in) [mm]	4.50 [114]
Nominal Thickness (in) [mm]	0.38 [9.7]
Gun Swell (in) [mm]: Ambient Fluid.	4.61 [117] ≤ 21.0g
Gun Swell (in) [mm]: Ambient Gas.	NR
Minimum Recommended Restriction (in) [mm]	4.92 [125]
Maximum Pressure (psi) [MPa]	17,500 [121]
Distance to First Scallop (in) [mm]	6.75 [171]
Approximate Weight - Loaded (lb/ft) [kg/m]	21.0 [31.2]
Max. Tension (lbf) [kN]	453,000 [2,015]

NR Not Recommended

## 12 SPF (39 SPM) GUNFACTS®

Gun Body Material: Heat treated, seamless steel tubing  
 Gun Body Configuration: Threaded and scalloped  
 Charge Tube Type: Round steel tube  
 Mode of Fire: Simultaneous or selective firing systems such as EBFire® and ControlFire®  
 Initiation Point: Top or bottom fired options available for wireline and TCP  
 Detonating Cord: 80 grains/foot  
 O-Ring Material: Nitrile - 90 Durometer (Viton - 95 Durometer for temperatures >325°F [163°C])



Expendable (EXP) Scalloped Hollow Carrier Assembly and Components					
	ITEM	PART NO.	DESCRIPTION	Gun Assy. #	Phase
Gun Assy.	1	0445-1K**-12D	4-1/2 in. (114 mm) Gun Assy.	1	135/45°
		0445-C**-12D	4-1/2 in. (114 mm) Gun Assy.	2	135/45°
	2	0445-1**-12D	4-1/2 in. (114 mm) Carrier Body		135/45°
Common Parts	3	0445-16**-12D	Charge Tube	1	135/45°
		0446-3**-12D	Charge Tube	2	135/45°
	4	0445-000-001	Top Sub		
	5	0445-000-002	Tandem Sub		
	5A	0445-000-389A	Alternate Window Tandem Sub		
	6	0445-000-003	Gun Bottom		
	7	0111-342-V95	O-Ring		
	8	0111-230-V95	O-Ring		
	9	0445-500-031	Chg. Tube End Fitting - Aligning	1	
		0446-500-031	Chg. Tube End Fitting - Aligning	2	
	10	0445-500-031	Chg. Tube End Fitting	1	
		0446-500-041	Chg. Tube End Fitting	2	
	11	0414-200-037	Snap Ring		
12		Shaped Charge			
13		Detonating Cord			
TCP Conversion Kits (Not Pictured)					
		0514-500-150	Top TCP Booster Kit		
		0514-500-160	Tandem TCP Booster Kit		
			Associated Hardware (Page 72)		

\*\* Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.  
 Example: Use "02" for 2ft gun assembly; etc. (0445-1K02-12D)

Compatible Shaped Charges (Shaped Charge Summary - Page 87)					
Part Number	Gun Assy. #	Type	Explosive Weight (g)	Application	Explosive Type
<u>EXP-4521-423T</u>	1	SDP	21.0	F	HMX
<u>EXP-4521-431</u>	1	GH	21.0	F	HMX
<u>FLO-4623-411CFZ</u>	2	BH CFLD	22.7	F	HMX
<u>FLO-4521-310B</u>	1	BH	21.0	F	RDX

xxx-xxxx-3xxx for RDX, xxx-xxxx-4xxx for HMX, xxx-xxxx-5xxx for HNS  
 Bold indicates API-19B certification  
 Italics indicate API RP-43 certification  
 Underlined Part Number indicates link to API Data Sheet available  
 Application: "F" indicates that system is able to be fired in fluid  
 "G" indicates that system is able to be fired in gas  
 Phasing Compatibility: Refer to listed phasing(s) in Specifications table below

Specifications - EXP Scalloped Hollow Carrier Assy.	12 SPF (39 SPM)
	135/45°
Nominal O.D. (in) [mm]	4.50 [114]
Nominal Thickness (in) [mm]	0.38 [9.7]
Gun Swell (in) [mm]: Ambient Fluid.	4.62 [117] ≤ 22.7g
Gun Swell (in) [mm]: Ambient Gas.	NR
Minimum Recommended Restriction (in) [mm]	4.92 [125]
Maximum Pressure (psi) [MPa]	16,000 [110]
Distance to First Scallop (in) [mm]	6.50 [165]
Approximate Weight - Loaded (lb/ft) [kg/m]	24.0 [35.7]
Max. Tension (lb/ft) [kN]	453,000 [2,015]

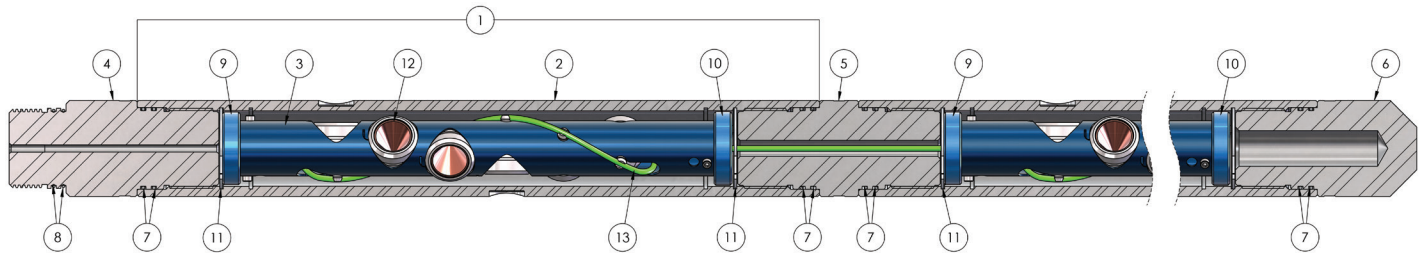
NR Not Recommended

# 4-1/2 in. (114 mm) EXP Scalloped Hollow Carrier Gun



## 16 SPF (52 SPM) GUNFACTS®

Gun Body Material: Heat treated, seamless steel tubing  
 Gun Body Configuration: Threaded and scalloped  
 Charge Tube Type: Round steel tube  
 Mode of Fire: Simultaneous or selective firing systems such as EBFire® and ControlFire®  
 Initiation Point: Top or bottom fired options available for wireline and TCP  
 Detonating Cord: 80 grains/foot  
 O-Ring Material: Nitrile - 90 Durometer (Viton - 95 Durometer for temperatures >325°F [163°C])



02 Scalloped Guns

Expendable (EXP) Scalloped Hollow Carrier Assembly and Components				
	ITEM	PART NO.	DESCRIPTION	Phase
Gun Assy.	1	0445-C**-16G	4-1/2 in. (114 mm) Gun Assy.	140/20°
	2	0445-1**-16G	4-1/2 in. (114 mm) Carrier Body	140/20°
	3	0446-3**-16G	Charge Tube	140/20°
Common Parts	4	0445-000-001	Top Sub	
	5	0445-000-002	Tandem Sub	
	5A	0445-000-389A	Alternate Window Tandem Sub	
	6	0445-000-003	Gun Bottom	
	7	0111-342-V95	O-Ring	
	8	0111-230-V95	O-Ring	
	9	0446-500-031	Chg. Tube End Fitting - Aligning	
	10	0446-500-041	Chg. Tube End Fitting	
	11	0414-200-037	Snap Ring	
	12		Shaped Charge	
13		Detonating Cord		
<b>TCP Conversion Kits (Not Pictured)</b>				
		0514-500-150	Top TCP Booster Kit	
		0514-500-160	Tandem TCP Booster Kit	
			Associated Hardware (Page 72)	

Compatible Shaped Charges (Shaped Charge Summary - Page 87)					
Part Number	Gun Assy. #	Type	Explosive Weight (g)	Application	Explosive Type
<u>FLO-4623-411CFZ</u>	1	BH CFLD	22.7	F	HMX

xxx-xxxx-3xxx for RDX, xxx-xxxx-4xxx for HMX, xxx-xxxx-5xxx for HNS  
**Bold indicates API-19B certification**  
*Italics indicate API RP-43 certification*  
Underlined Part Number indicates link to API Data Sheet available  
 Application: "F" indicates that system is able to be fired in fluid  
 "G" indicates that system is able to be fired in gas  
 Phasing Compatibility: Refer to listed phasing(s) in Specifications table below

\*\* Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.  
 Example: Use "02" for 2ft gun assembly; etc. (0445-C02-16G)

Specifications - EXP Scalloped Hollow Carrier Assy.	16 SPF (52 SPM)
	140/20°
Nominal O.D. (in) [mm]	4.50 [114]
Nominal Thickness (in) [mm]	0.38 [9.7]
Gun Swell (in) [mm]: Ambient Fluid.	4.67 [119] ≤ 22.7g
Gun Swell (in) [mm]: Ambient Gas.	NR
Minimum Recommended Restriction (in) [mm]	4.92 [125]
Maximum Pressure (psi) [MPa]	16,000 [110]
Distance to First Scallop (in) [mm]	6.38 [162]
Approximate Weight - Loaded (lb/ft) [kg/m]	21.0 [31.2]
Max. Tension (lbf) [kN]	453,000 [2,015]

NR Not Recommended