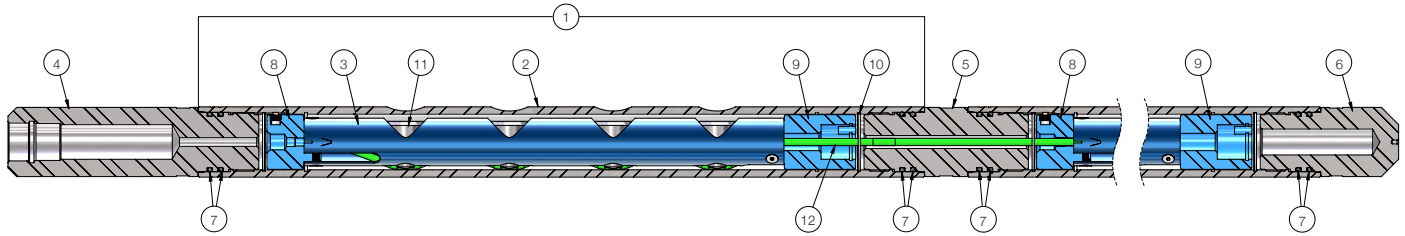


4 SPF (13 SPM) GUNFACTS®

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: 40 grains/foot, FLAT RIBBON
 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	0227-A**-041	1-3/8 in. (35 mm) Gun Assy.	0°
		0227-A**-046	1-3/8 in. (35 mm) Gun Assy.	60°
		0227-A**-044	1-3/8 in. (35 mm) Gun Assy.	90°
		0227-A**-043	1-3/8 in. (35 mm) Gun Assy.	120°
		0227-A**-042	1-3/8 in. (35 mm) Gun Assy.	180°
	2	0227-1**-041	1-3/8 in. (35 mm) Carrier Body	0°
		0227-1**-046	1-3/8 in. (35 mm) Carrier Body	60°
		0227-1**-044	1-3/8 in. (35 mm) Carrier Body	90°
		0227-1**-043	1-3/8 in. (35 mm) Carrier Body	120°
		0227-1**-042	1-3/8 in. (35 mm) Carrier Body	180°
	3	0327-5**-041	Charge Tube	0°
		0327-5**-046	Charge Tube	60°
0327-5**-044		Charge Tube	90°	
0327-5**-043		Charge Tube	120°	
Common Parts	4	0227-000-001	Top Sub	
	5	0227-000-002	Tandem Sub	
	6	0227-000-003	Gun Bottom	
	7	0111-120-V95	O-Ring	
	8	0227-500-121	Chg. Tube End Fitting - Aligning	
	9	0227-500-131	Chg. Tube End Fitting	
	10	0227-200-037	Snap Ring	
11		Shaped Charge		
12		Detonating Cord		

Compatible Shaped Charges (Shaped Charge Summary - Page 86 & Page 90)				
Part Number	Type	Explosive Weight (g)	Application	Explosive Type
RTG-1302-400	DP	1.8	F, G	HMX
CIR-1302-4T251	KO	1.8	F, G	HMX
CIR-1302-4T381	KO	1.8	F, G	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
 KO indicates KnockOut circulating shaped charges
 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; etc. (0227-A02-046)

Specifications - EXP Scalloped Hollow Carrier Assy.	4 SPF (13 SPM)				
	0°	60°	90°	120°	180°
Nominal O.D. (in) [mm]	1.38 [35]				
Nominal Thickness (in) [mm]	0.16 [4.1]				
Gun Swell (in) [mm]: Ambient Fluid.	1.45 [37] @ 1.8g	1.45 [37] @ 1.8g	1.45 [37] @ 1.8g	1.46 [37] @ 1.8g	1.46 [37] @ 1.8g
Gun Swell (in) [mm]: Ambient Gas.	1.48 [38] @ 1.8g	1.47 [37] @ 1.8g	1.47 [37] @ 1.8g	1.48 [38] @ 1.8g	1.47 [37] @ 1.8g
Minimum Recommended Restriction (in) [mm]	1.59 [40]				
Maximum Pressure (psi) [MPa]	21,000 [145]		22,000 [152]		
Distance to First Scallop (in) [mm]	6.00 [152]				
Approximate Weight - Loaded (lb/ft) [kg/m]	3.00 [4.46]				
Max. Tension (lbf) [kN]	59,000 [262]				

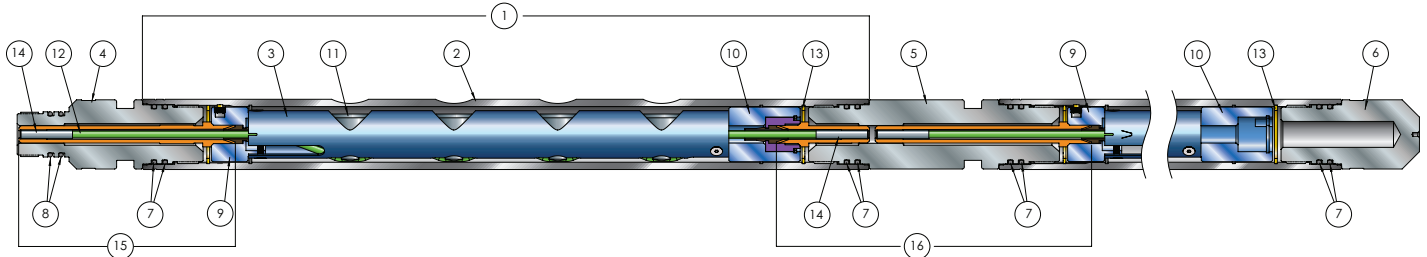
NR Not Recommended

1-3/8 in. (35 mm) Scalloped Hollow Carrier Gun - TCP



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: TCP: Hydraulic, Ball Drop, Safety Impact or Direct Impact
 Initiation Point: Top or bottom fired options available for TCP
 Detonating Cord: 40 grains/foot, FLAT RIBBON
 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	0527-A**-041	1-3/8 in. (35 mm) TCP Gun Assy.	0°
		0527-A**-042	1-3/8 in. (35 mm) TCP Gun Assy.	180°
	2	0227-1**-041	1-3/8 in. (35 mm) Carrier Body	0°
		0227-1**-042	1-3/8 in. (35 mm) Carrier Body	180°
	3	0327-5**-041	Charge Tube	0°
		0327-5**-042	Charge Tube	180°
Common Parts	4	0527-000-001	TCP Grooved Top Sub	
	5	0527-000-035	TCP Grooved Tandem Sub	
	6	0227-000-003	Gun Bottom	
	7	0111-120-090	O-Ring	
	8	0111-120-090	O-Ring	
	9	0527-500-121	Chg. Tube End Fitting - Aligning	
	10	0527-500-131	Chg. Tube End Fitting	
	11		Shaped Charge	
	12		Detonating Cord	
	13	0227-200-037	Snap Ring	
	14	BOOSTER-HMX-600-T	Bi-Directional Booster	
15	0527-500-150	Top TCP Booster Transfer Kit		
16	0527-500-160	Tandem TCP Booster Transfer Kit		

Compatible Shaped Charges (Shaped Charge Summary - Page 86 & Page 90)				
Part Number	Type	Explosive Weight (g)	Application	Explosive Type
<i>RTG-1302-400</i>	DP	1.8	F, G	HMX
<i>CIR-1302-4T251</i>	KO	1.8	F, G	HMX
<i>CIR-1302-4T381</i>	KO	1.8	F, G	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
 KO indicates KnockOut circulating shaped charges
 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

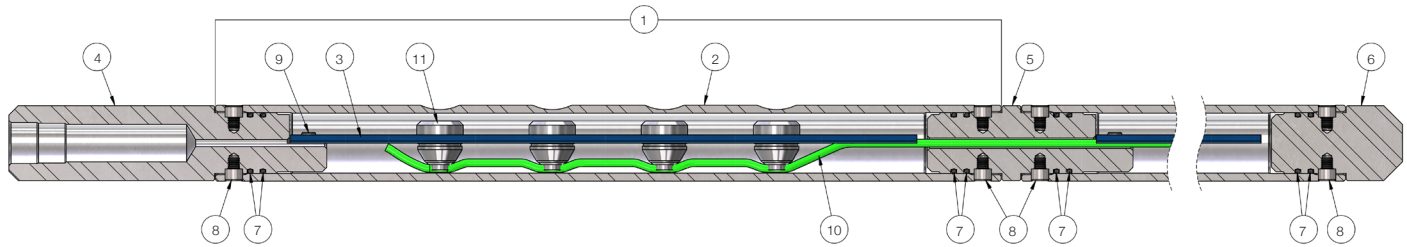
** Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.
 Example: Use "02" for 2ft gun; etc. (0527-A02-041)

Specifications - EXP Scalloped Hollow Carrier Assy.	4 SPF (13 SPM)				
	0°	60°	90°	120°	180°
Nominal O.D. (in) [mm]	1.38 [35]				
Nominal Thickness (in) [mm]	0.16 [4.1]				
Gun Swell (in) [mm]: Ambient Fluid.	1.45 [37] @ 1.8g	1.45 [37] @ 1.8g	1.45 [37] @ 1.8g	1.46 [37] @ 1.8g	1.46 [37] @ 1.8g
Gun Swell (in) [mm]: Ambient Gas.	1.48 [38] @ 1.8g	1.47 [37] @ 1.8g	1.47 [37] @ 1.8g	1.48 [38] @ 1.8g	1.47 [37] @ 1.8g
Minimum Recommended Restriction (in) [mm]	1.59 [40]				
Maximum Pressure (psi) [MPa]	21,000 [145]	22,000 [152]			
Distance to First Scallop (in) [mm]	6.00 [152]				
Approximate Weight - Loaded (lb/ft) [kg/m]	3.00 [4.46]				
Max. Tension (lb) [kN]	59,000 [262]				

N/R Not Recommended

4 SPF (13 SPM) GUNFACTS®

Gun Body Material: Heat treated, seamless steel tubing
 Gun Body Configuration: Bolted and scalloped
 Charge Tube Type: Round steel tube or flat strip option (for 0° and 180°)
 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: 40 grains/foot, FLAT RIBBON
 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	0327-A**-041	1-3/8 in. (35 mm) Gun Assy.	0°
		0327-A**-046	1-3/8 in. (35 mm) Gun Assy.	60°
		0327-A**-044	1-3/8 in. (35 mm) Gun Assy.	90°
		0327-A**-043	1-3/8 in. (35 mm) Gun Assy.	120°
		0327-A**-042	1-3/8 in. (35 mm) Gun Assy.	180°
	2	0227-***-041	1-3/8 in. (35 mm) Carrier Body	0°
		0227-***-046	1-3/8 in. (35 mm) Carrier Body	60°
		0227-***-044	1-3/8 in. (35 mm) Carrier Body	90°
		0227-***-043	1-3/8 in. (35 mm) Carrier Body	120°
		0227-***-042	1-3/8 in. (35 mm) Carrier Body	180°
	3	0327-800-†††	Charge Strip	0°
0327-5**-046		Charge Tube	60°	
0327-5**-044		Charge Tube	90°	
0327-800-†††		Charge Strip	120°	
Common Parts	4	0327-000-001	Top Sub	
	5	0327-000-002	Tandem Sub	
	6	0327-000-004	Gun Bottom	
	7	0111-214-V95	O-Ring	
	8	0327-000-019	Cap Screw	
	9	0327-000-003	Cap Screw	
	11		Shaped Charge	

Compatible Shaped Charges (Shaped Charge Summary - Page 86 & Page 90)				
Part Number	Type	Explosive Weight (g)	Application	Explosive Type
RTG-1302-400	DP	1.8	F, G	HMX
CIR-1302-4T251	KO	1.8	F, G	HMX
CIR-1302-4T381	KO	1.8	F, G	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
 KO indicates KnockOut circulating shaped charges
 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 assembly length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.
 Example: Use "02" for 2ft gun; etc. (0327-A02-046)
 *** Carrier body length. Example: Use "021" for a 21" in carrier
 ††† Number of shots on the charge strip. Example: Use "080" for 80 shots.

Specifications - EXP Scalloped Hollow Carrier Assy.	4 SPF (13 SPM)				
	0°	60°	90°	120°	180°
Nominal O.D. (in) [mm]	1.38 [35]				
Nominal Thickness (in) [mm]	0.16 [4.1]				
Gun Swell (in) [mm]: Ambient Fluid.	1.45 [37] @ 1.8g	1.45 [37] @ 1.8g	1.45 [37] @ 1.8g	1.46 [37] @ 1.8g	1.46 [37] @ 1.8g
Gun Swell (in) [mm]: Ambient Gas.	1.48 [38] @ 1.8g	1.47 [37] @ 1.8g	1.47 [37] @ 1.8g	1.48 [38] @ 1.8g	1.47 [37] @ 1.8g
Minimum Recommended Restriction (in) [mm]	1.59 [40]				
Maximum Pressure (psi) [MPa]	21,000 [145]	22,000 [152]			
Distance to First Scallop (in) [mm]	6.00 [152]				
Approximate Weight - Loaded (lb/ft) [kg/m]	3.00 [4.46]				
Max. Tension (lbf) [kN]	24,000 [107]				

NR Not Recommended