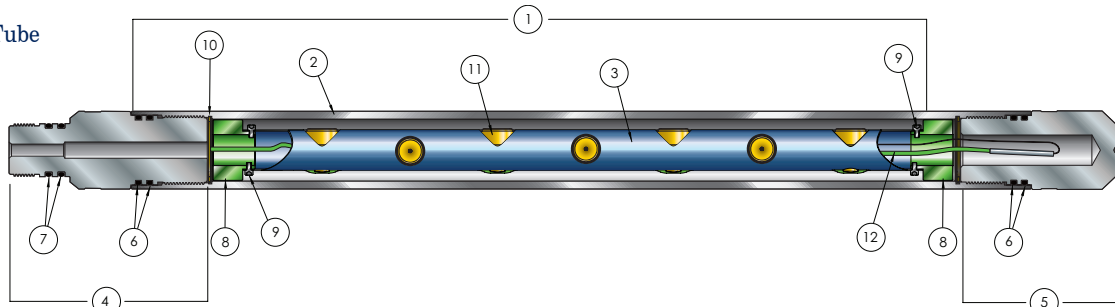


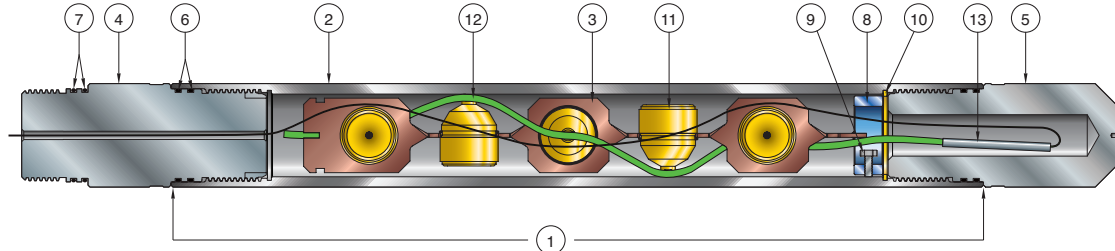
4 SPF (13 SPM) GUNFACTS®

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

W/ Round Steel Tube



W/ Twisted Strip



| Economical (EEG) Casing Gun Assembly and Components | | | | | |
|---|---------------|----------------------------------|-------------------------------------|-------------|-------|
| | ITEM | PART NO. | DESCRIPTION | Gun Assy. # | Phase |
| Common Parts | 1 | 0631-A**-046 | 3-1/8 in. (79 mm) EEG Assy. | 1 | 60° |
| | | 0631-A4**-046 | 3-1/8 in. (79 mm) EEG Twisted Assy. | 2 | 60° |
| | | 0631-A**-044 | 3-1/8 in. (79 mm) EEG Assy. | 1 | 90° |
| | | 0631-A4**-044 | 3-1/8 in. (79 mm) EEG Twisted Assy. | 2 | 90° |
| | 2 | 0631-1**-000 | 3-1/8 in. (79 mm) EEG Carrier Body | | |
| | 3 | 0363-17**-046 | Charge Tube | 1 | 60° |
| | | 0631-4**-046 | Twisted Strip | 2 | 60° |
| | | 0363-17**-044 | Charge Tube | 1 | 90° |
| | | 0631-4**-044 | Twisted Strip | 2 | 90° |
| | 4 | 0363-000-001 | Top Sub | | |
| | 5 | 0363-000-003 | Gun Bottom | | |
| | 6 | 0111-230-090 | O-Ring | | |
| | 7 | 0111-230-090 | O-Ring | | |
| 8 | 0363-1700-131 | Chg. Tube End Fitting (2 req) | 1 | | |
| | 0631-400-031 | Twisted Strip Lock Ring (1 req) | 2 | | |
| 9 | 0327-000-003 | End Fitting Screw (2 req) | 1 | | |
| | 0336-000-024 | Hex Head Cap Screw; 1/4-20 x 5/8 | 2 | | |
| 10 | 0402-200-037 | Snap Ring (2 req) | | | |
| 11 | | Shaped Charge | | | |
| 12 | | Detonating Cord | | | |
| 13 | | Blasting Cap | 2 | | |

** Gun length. Common Lengths are 2, 3, 4, 5, 7, 11, 15, & 21 foot.
Example: Use "02" for 2ft gun; etc. (0631-A02-046)

| Compatible Shaped Charges (Shaped Charge Summary - Page 89) | | | | |
|---|------|----------------------|-------------|----------------|
| Part Number | Type | Explosive Weight (g) | Application | Explosive Type |
| <u>EXP-3321-421T</u> | SDP | 21.0 | F | HMX |
| <i>EXP-3319-302</i> | DP | 19.0 | F | RDX |
| <i>EXP-3319-431</i> | GH | 19.0 | 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 - Economical (EEG) Casing Gun Assy. | 4 SPF (13 SPM); 60° | | 4 SPF (13 SPM); 90° | |
|--|----------------------|---------------|----------------------|---------------|
| | Charge Tube | Twisted Strip | Charge Tube | Twisted Strip |
| Nominal O.D. (in) [mm] | 3.13 [79] | | | |
| Nominal Thickness (in) [mm] | 0.30 [7.6] | | | |
| Gun Swell (in) [mm]: Ambient Fluid. | 3.48 [88] ≤ 21.0g | | 3.48 [88] ≤ 21.0g | |
| Gun Swell (in) [mm]: Ambient Gas. | NR | | NR | |
| Minimum Recommended Restriction (in) [mm] | 3.58 [91] | | | |
| Maximum Pressure (psi) [MPa] | 7,500 [52] | | | |
| Distance to Top Shot (in) [mm] | 7.50 [191] | 6.00 [152] | 7.50 [191] | 6.00 [152] |
| Approximate Weight - Loaded (lb/ft) [kg/m] | 13.0 [19.3] | | | |
| Max. Tension (lb) [kN] | 82,000 [365] | | | |

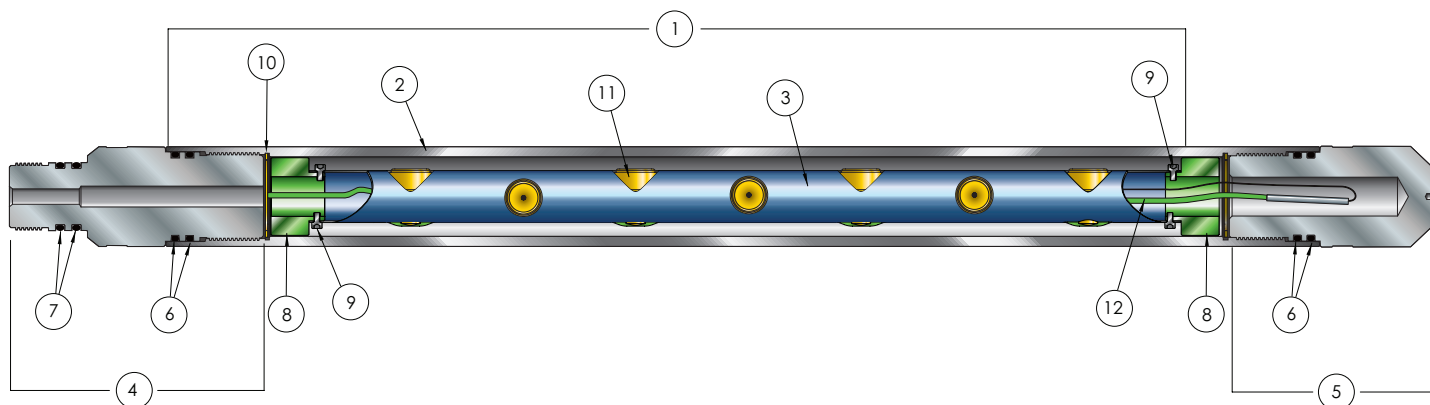
NR Not Recommended

3-1/8 in. (79 mm) Economical Casing Gun



6 SPF (20 SPM) GUNFACTS®

| | |
|-------------------------|---|
| Gun Body Material: | Steel tubing |
| Gun Body Configuration: | Threaded and unscaloped |
| 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 |
| Detonating Cord: | 80 grains/foot |
| O-Ring Material: | Nitrile - 90 Durometer (Viton - 95 Durometer for temperatures >325°F [163°C]) |



03 Economical Guns

| Economical (EEG) Casing Gun Assembly and Components | | | | |
|---|------|---------------|------------------------------------|-------|
| | ITEM | PART NO. | DESCRIPTION | Phase |
| | 1 | 0631-B**-066 | 3-1/8 in. (79 mm) EEG Assy. | 60° |
| | 2 | 0631-1**-000 | 3-1/8 in. (79 mm) EEG Carrier Body | |
| | 3 | 0362-7**-066 | Charge Tube | 60° |
| Common Parts | 4 | 0363-000-001 | Top Sub | |
| | 5 | 0363-000-003 | Gun Bottom | |
| | 6 | 0111-230-090 | O-Ring | |
| | 7 | 0111-230-090 | O-Ring | |
| | 8 | 0363-1700-131 | Chg. Tube End Fitting (2 req) | |
| | 9 | 0327-000-003 | End Fitting Screw (2 req) | |
| | 10 | 0402-200-037 | Snap Ring (2 req) | |
| | 11 | | Shaped Charge | |
| | 12 | | Detonating Cord | |

| Compatible Shaped Charges (Shaped Charge Summary - Page 89) | | | | |
|---|------|----------------------|-------------|----------------|
| Part Number | Type | Explosive Weight (g) | Application | Explosive Type |
| RTG-2512-421T | SDP | 12.0 | F | HMX |
| RTG-2512-431 | GH | 12.0 | F | HMX |
| <i>FLO-2511-310B</i> | BH | 11.0 | 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; etc. (0631-B02-066)

| Specifications - Economical (EEG) Casing Gun Assy. | 6 SPF (20 SPM) |
|--|----------------------|
| | 60° |
| Nominal O.D. (in) [mm] | 3.13 [79] |
| Nominal Thickness (in) [mm] | 0.30 [7.6] |
| Gun Swell (in) [mm]: Ambient Fluid. | 3.45 [88] ≤ 12.0g |
| Gun Swell (in) [mm]: Ambient Gas. | NR |
| Minimum Recommended Restriction (in) [mm] | 3.58 [91] |
| Maximum Pressure (psi) [MPa] | 7,500 [52] |
| Distance to Top Shot (in) [mm] | 7.00 [178] |
| Approximate Weight - Loaded (lb/ft) [kg/m] | 13.0 [19.3] |
| Max. Tension (lbf) [kN] | 82,000 [356] |

NR Not Recommended