

Efficiency Sub™

Titan Division | Perforating

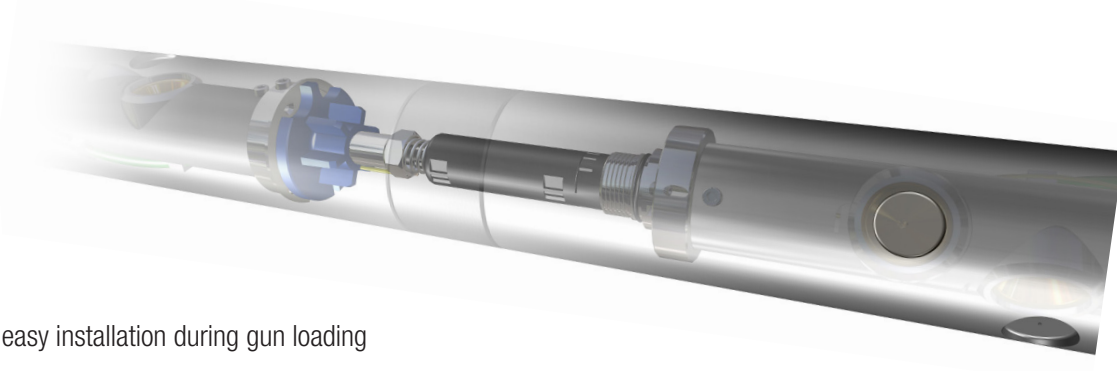


Hunting's Efficiency Sub™ assembly (ESUB) is the affordable plug and play solution for the conventional perforating gun.

The ESUB is easily installed into conventional guns, creating field ready plug-and-play perforating assemblies. ESUB utilizes Hunting's Shorty ControlFire® Cartridge which houses the switch, detonator, and pressure bulkhead in a convenient wireless package. ESUB allows simple, wire-free arming and perforating gun assembly at the wellsite.

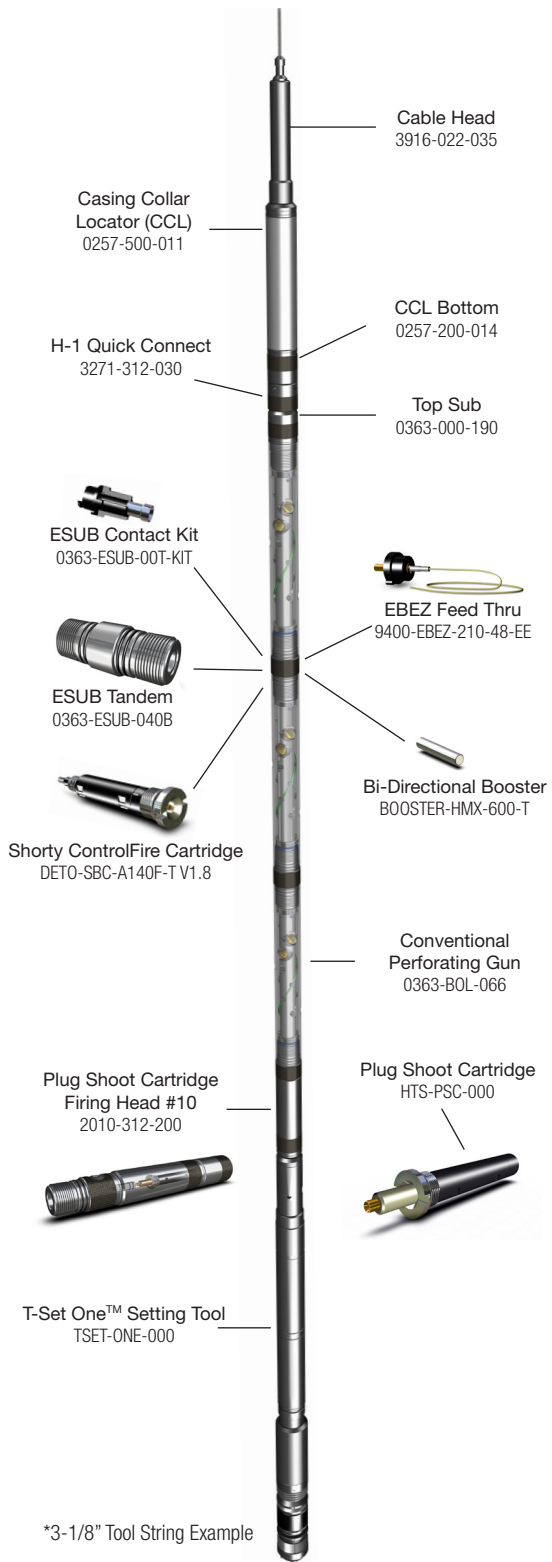
Features

- Utilizes Hunting's new Shorty ControlFire® Cartridge
- Utilizes Hunting's EBEZ® feed through connection between guns
- Designed for use with conventional perforating gun systems
- Disposable tandem assembly



Benefits

- Quick and easy installation during gun loading
- Eliminates wiring between perforating guns in the field
- Eliminates wiring during arming operations in the field
- Creates a cost effective, disposable, plug and play perforating system



*3-1/8" Tool String Example

PART NUMBER*		DESCRIPTION
0363-ESUB-040B		3-1/8" ESUB Tandem
0363-ESUB-060B		3-1/8" ESUB Tandem with Lock Collar
0363-ESUB-00T-KIT		3-1/8" Contact Kit (Compatible w/ Hunting Guns*)
0363-ESUB-00U-KIT		3-1/8" ESUB Contact Kit (Compatible w/ Non-Hunting Guns**)
BOOSTER-HMX-600-T		Bi-Directional Booster 0.6G Hmx
9400-EBEZ-210-48-EE		EBEZ Feed Thru Puck Assembly
DETO-SBC-A140F-T V1.8		Shorty Controlfire Cartridge
REF	0111-230-V95	O-Ring; Viton
CONTROLFIRE® COMPONENTS		
9002-013-810-1		ControlFire® Shooting Panel
9002-013-210		VeriFire Panel 9002-013-210
HTS-UCP-100		CFC Installation Tool

Note: Example part numbers listed are for 3-1/8" O.D. for simplicity. 2-3/4" and 3-3/8" O.D. are also available.

*Compatible with Hunting guns and other manufacturer's guns with same end fittings as Hunting guns

**Gun must have upper contact compatible with ESUB. Contact a local Hunting technical sales rep for details

MECHANICAL			
ESUB Part Number	0362-ESUB-040B	0363-ESUB-040B	0365-ESUB-040B
Diameter (in)[mm]	2-3/4" [70 mm]	3-1/8" [79 mm]	3-3/8" [86 mm]
Make-Up Length* (in)[mm]	1.13" [29 mm]	1.99" [51 mm]	1.99" [51 mm]
Weight (lb)[kg]	6.5 lbs [3 kg]	10.6 lbs [4.45 kg]	11 lbs [5]
Upper Head Connection	2-3/8"-6 Acme Pin	2-3/4"-6 Acme Pin	2-13/16"- 6 Acme
Lower Head Connection	2-3/8"-6 Acme Pin	2-3/4"-6 Acme Pin	2-13/16"- 6 Acme
Max. Tension (lbf) [kN]	75,000 lbs [334]	100,000 lbs [445]	100,000 lbs [445]

ELECTRICAL	
Operating Voltage Range	-5 to -550 VDC
Operating Current – Standby	>1 mA
Maximum Voltage Rating	Forward - 550V / 15 sec
Maximum Firing Current	Forward (Nominal) - 1A / 12 sec
Transient Voltage	Forward - 600V
Maximum Switches in a Gun	100+
Current – Communicating	10 mA at Surface • 30 mA Downhole
Communications	Bi-Directional

ENVIRONMENTAL	
Temperature Rating (°F)[°C]	350 [177]
Pressure Rating (psi)[MPa]	18,000 [138]

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Distribution
 Hunting's distribution centers are strategically placed globally. For more information, visit us at: www.hunting-intl.com/titan