

APPLICATIONS

- TCP perforating
- Underbalance and overbalance perforating
- Straight wells with deviation less than 55°

FEATURES

- Designed to API RP-67 (Oilfield Explosive Safety) guidelines
- Impression pad can confirm drop bar impact
- High pressure version available
- Firing head extensions offered upon request
- Roller drop bars available for high deviation wells
- Redress kits
- Simple, reliable and rugged design

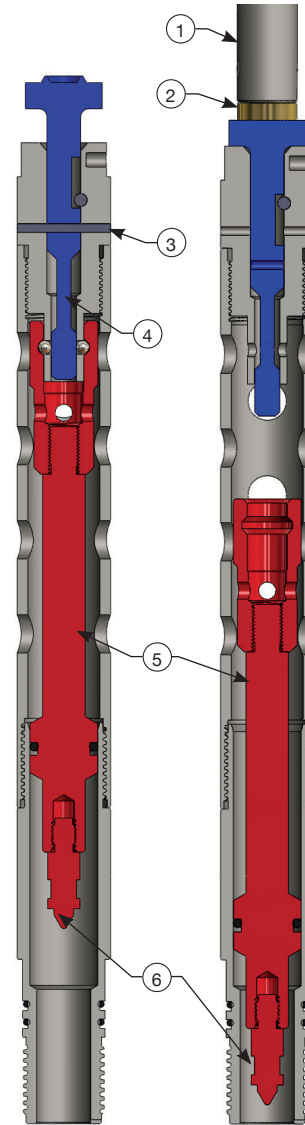
BENEFITS

- Enhanced safety as cannot be detonated at surface or by electrical sources
- Can be operated at low hydrostatic pressure conditions, providing a high underbalanced environment when guns are fired
- Compatible with all Titan TCP firing systems
- Extensions can reduce risk of debris settling on firing head
- Cost effective solution for TCP perforating
- Redress kits allow for quick turnarounds

The drop bar impacts a release rod and shears the retaining pin holding it in place which causes the rod to move down. This movement of the rod releases the firing piston. Hydrostatic pressure drives the firing piston down towards the percussion initiator. The firing pin located at the end of the firing piston strikes the percussion initiator which in turn detonates the gun assembly. As a safety feature, a minimum hydrostatic pressure is required on the firing piston when the drop bar impacts in order to operate.

The drop bar has a brass impression pad on the base of it which can be used to confirm impact with the release rod by identifying a familiar pattern on the impression. The upper end of the drop bar incorporates a standard slickline fishing neck.

There is also an option to utilize a direct impact firing head which does not require any hydrostatic pressure (no firing piston) to fire the gun assembly.



1. Drop Bar
2. Brass Impression Pad
3. Retaining Pin
CTSP-0125-1375-MDP
4. Release Rod
5. Firing Piston
6. Firing Pin

DROP BAR FIRING HEAD HARDWARE SPECIFICATIONS

Assembly Part Number	FHBD-1375-000** (Low Pressure)	FHBD-1375-100** (High Pressure)	FHBD-1375-500** (Direct Impact)
O.D. (in)[mm]	1-3/8 [35]	1-3/8 [35]	1-3/8 [35]
Makeup Length (ft)[m]	1.08 [0.33]	1.08 [0.33]	0.21 [0.06]
Max. 100 Hour Temperature Rating (°F)[°C]†	400 [204]	400 [204]	400 [204]
Min. Required Hydrostatic (psi)[MPa]	200 [1.4]	2,000 [13.8]	N/A
Max. Operating Pressure (psi)[MPa]‡	8,500 [59]	20,000 [138]	20,000 [138]
Redress Kit Part Number	FHBD-1375-000**-KIT	FHBD-1375-100**-KIT	FHBD-1375-500**-KIT

** Use "HT" for high temperature operations (above 325°F (163°C))

† Hardware only. Viton O-rings need to be used above 325°F (163°C)

‡ Backup O-rings required above 13,000psi (90MPa). Kit FHBD-1375-x00-BUKIT needs to be ordered separately

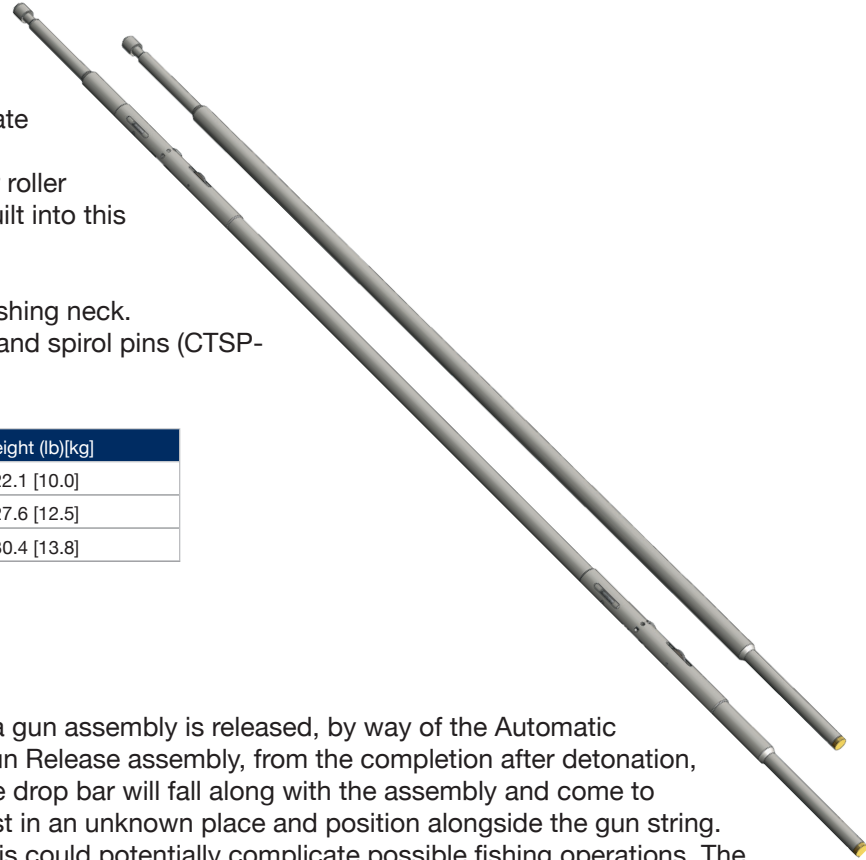
Drop Bar Hydrostatic Firing Heads

ACCESSORIES

The 1-1/4" (32mm) one piece drop bar is used to initiate the firing head by dropping it through the tubing from surface. For deviations greater than 45°, the drop bar roller assembly can be utilized. 1-3/4" (44mm) rollers are built into this drop bar to assist in reducing friction.

All drop bars include a 1" (25mm) standard slickline fishing neck. Replacement brass impression pads (0487-000-021) and spiro pins (CTSP-0187-0875-HBK) can be ordered separately.

Length (ft)[m]	Assembly Part Number	Weight (lb)[kg]
6 [1.83]	0487-000-122A	22.1 [10.0]
7.13 [2.17] w/ rollers	0487-1375-000	27.6 [12.5]
8 [2.44]	0487-000-130A	30.4 [13.8]



If a gun assembly is released, by way of the Automatic Gun Release assembly, from the completion after detonation, the drop bar will fall along with the assembly and come to rest in an unknown place and position alongside the gun string. This could potentially complicate possible fishing operations. The 6ft (1.83m) bar retention tube is attached to the top of the firing head providing a place where the drop bar can remain in a known position and place allowing simple fishing operations to be executed.

Tubing Size (in)[mm]	Part Number
2-3/8 [60]	AGNR-3063-006
2-7/8 [68]	AGNR-3670-006
3-1/2 [89]	AGNR-4500-006

No-Go sleeves serve two purposes. The first is to ensure that any object greater than a certain diameter will not unintentionally impact the firing head. Secondly, it acts as a guide such that the drop bar smoothly lines up with the firing head upon impact.

Tubing Size (in)[mm]	Slip Over No-Go Sleeve 1-3/8" (35mm) I.D.	Drop In No-Go Sleeve 1-1/2" (38mm) I.D.	Set Screw for Slip Over No-Go
2-3/8 [60]	FHNG-1375-238*	FHNG-2375-150	BHCS-0025-28-0050
2-7/8 [70]	FHNG-1375-288*	FHNG-2875-150	BHCS-0025-28-0075
3-1/2 [89]	FHNG-1375-350*	FHNG-3500-150	BHCS-0025-28-0100

* Use "T" for sleeve with threads for bar retention tube

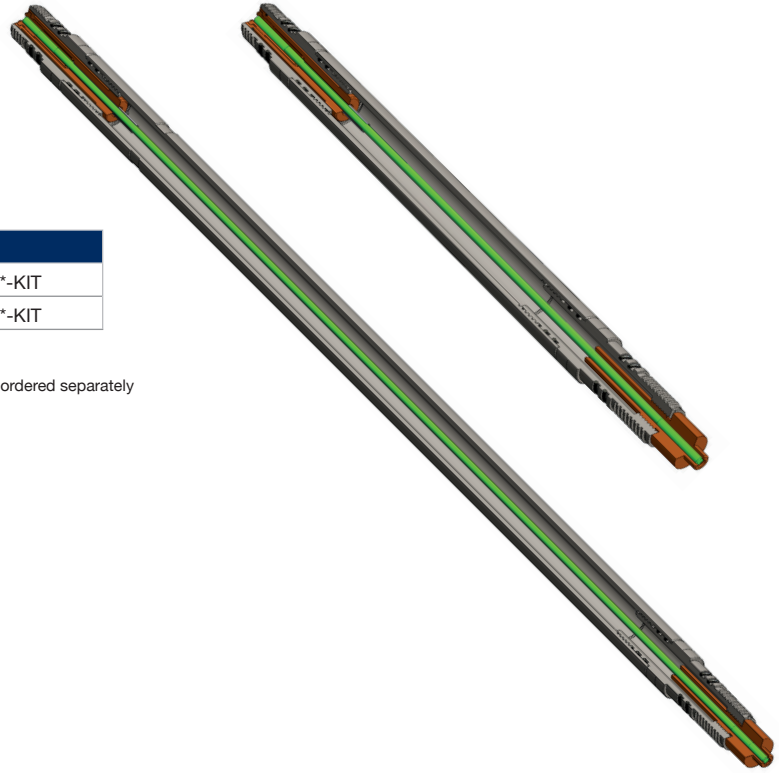


If debris build up in the well is suspected, 1-3/8" (35mm) diameter extensions can be placed on the bottom of the firing head. This will avoid any debris overcoming the release rod ensuring a safe and successful gun detonation. Explosive components (in green) are sold separately.

Length (in)[mm]	Assembly†	Redress Kit
18 [457]	FHBD-1375-000EX**	FHBD-1375-000EXT**-KIT
32 [813]	FHBD-1375-000EXT**	FHBD-1375-000EXT**-KIT

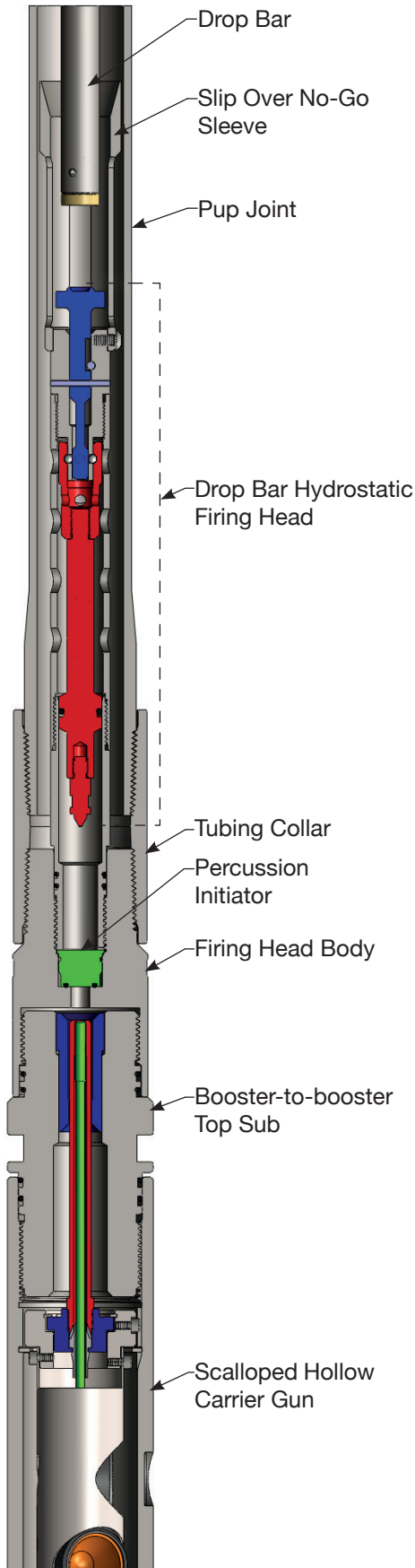
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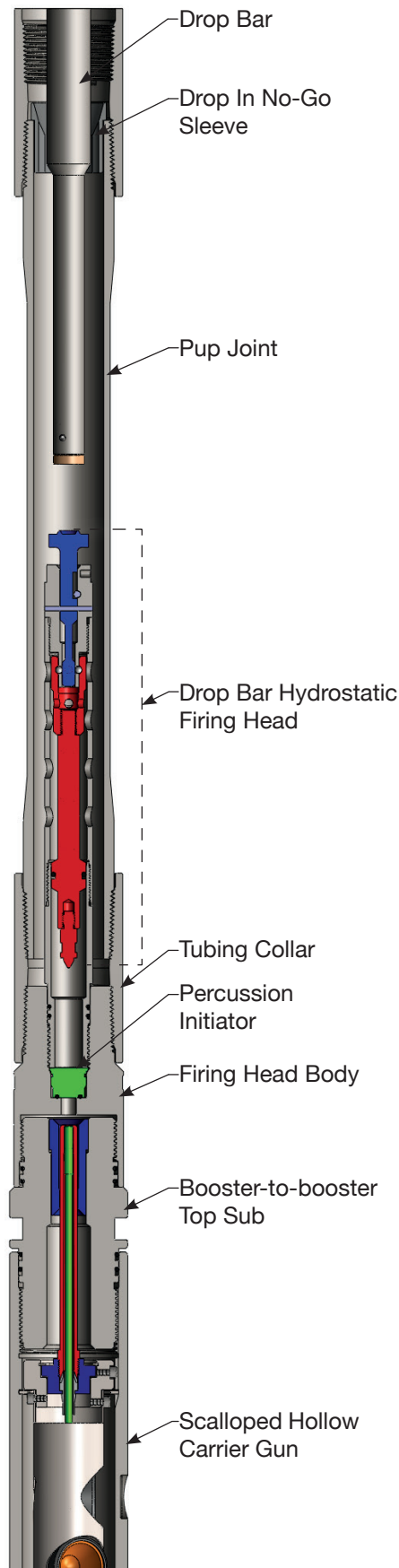


Drop Bar Hydrostatic Firing Heads

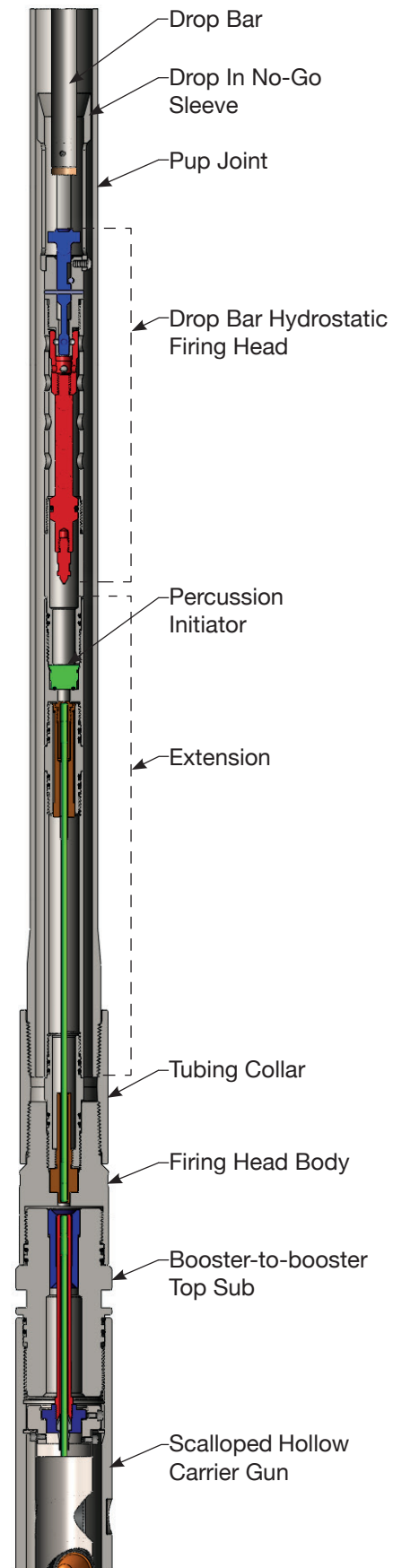
DROP BAR WITH SLIP OVER NO-GO



DROP BAR WITH DROP IN NO-GO



DROP BAR WITH EXTENSION



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