



GENERAL PRODUCT SHEET

Combination Tool (Combo Tool) – Cup Type Selective Inflation System

PRODUCT DESCRIPTION:

The Combination Tool (Combo Tool) is a cup type tool designed and developed to selectively perform Casing Annulus Packer (CAP) inflation and operate the TAM Port Collar all in one trip. The tool is a combination of a cup packer and a shifting tool that engages the shifting sleeve on a Port Collar, creating a pressure barrier to perform a cement job. Once the cement job is performed, no cement is left inside the casing. The tool can also be used for zonal treatment operations such as acidizing or low-rate fracturing.

The Combo Tool is positioned across the inflate ports of a CAP or across a Port Collar to perform the desired operation. It has locating dogs that latch into the profile of Locator Subs for positive indication of tool depth/position. The locating dogs are also used to locate and shift the sleeve in the Port Collar. The Combo Tool design incorporates an internal bypass, allowing fluid to pass underneath the cups without swabbing the well. The Premium Combo Tool is a special design with premium connections throughout the tool and two sets of shifting dogs for easier shifting operations on floaters. The internal bypass makes running of the TAM system easily compatible with all liner systems. The tool is designed with the highest tensile and torque capabilities so it can be balanced with premium work strings and still be NACE compatible.

The Heavy Duty Combo Tool is designed for higher pressure, tensile, and torque capabilities. It can be easily disassembled and reduced in length to 60 in. (152 cm) for shipping, and requires only wrenches and hand tools to assemble, while still retaining the high tensile and torque capabilities required for use with premium work strings.

PROVIDE SOLUTIONS FOR:

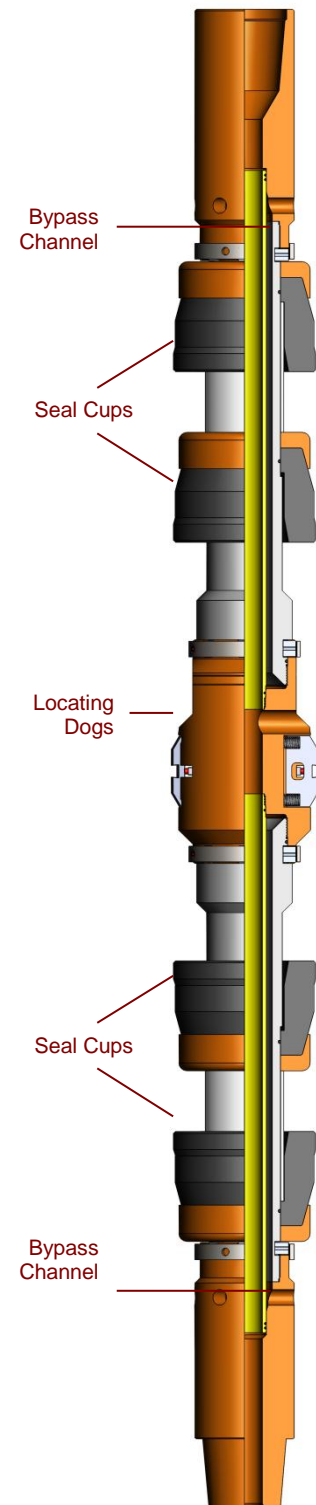
- Multi-stage cementing
- Inflation tool for Casing Annulus Packers
 - Selectively locate and inflate multiple Casing Annulus Packers with Locator Subs installed on the casing string
- Acidizing

FEATURES:

- Positive lock-in indication visible at surface
- Annular fluid bypass above and below the tool

BENEFITS:

- Inflates Casing Annulus Packer (CAP) and operates Port Collar in a single trip
- Performs multi-stage cement operations leaving no cement inside the casing
- Allows movement of the tool without swabbing the well
- Allows reverse circulation of drill string for cleanout after cementing operations





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TOOL SPECIFICATIONS:

Nominal Casing OD		Product ID		Connection*	OA Length	
(in.)	(mm)	(in.)	(mm)		(ft)	(m)
2-3/8	60.33	0.750	19.05	1.315 EU	2.87	0.87
2-7/8	73.03	0.375	9.53	1.660 EU	5.83	1.78
3-1/2	88.9	0.824	20.93	1-1/2 in. CS Hydril	12.24	3.73
4-1/2	114.3	1.250	31.75	2-3/8 in. CS Hydril	13.37	4.08
5	127	1.250	31.75	2.375 CS Hydril	13.33	4.06
5-1/2	139.7	1.700	43.18	2-7/8 in. Hydril 533	14.37	4.38
6-5/8	168.28	1.995	50.67	3-1/2 in. IF	14.29	4.36
					18.46	5.63
7	177.8	1.995	50.67	3-1/2 in. IF	14.29	4.36
					18.46	5.63
7-5/8	193.68	1.995	50.67	3-1/2 in. IF	14.29	4.36
					18.46	5.63
8-5/8	219.08	2.150	54.61	4-1/2 in. IF	8.12	2.47
9-5/8	244.48	2.250	57.15	4-1/2 in. IF	7.21	2.20
					11.21	3.42
					7.96	2.43
9-7/8	250.83	2.250	57.15	4-1/2 in. IF	6.21	1.89
10-3/4	273.05	2.250	57.15	4-1/2 in. IF	7.98	2.43
					7.96	2.43
11-3/4	298.45	2.250	57.15	4-1/2 in. IF	7.96	2.43
					7.95	2.42
					11.20	3.41
					14.33	4.37
13-3/8	399.73	2.250	57.15	4-1/2 in. IF	12.93	3.94
					7.89	2.40
18-5/8	473.08	2.760	70.10	4-1/2 in. IF	7.89	2.40
20	508	2.760	70.10	4-1/2 in. IF	7.89	2.40
24	609.6	2.760	70.10	4-1/2 in. IF	7.89	2.40
26	660.4	2.760	70.10	4-1/2 in. IF	7.89	2.40
30	762	2.760	70.10	4-1/2 in. IF	7.89	2.40

**Other thread options available upon request
OD is dependent on the casing weight and cup size*