



## Safety Joint

### Drill String Disengagement Tool

## The ULTIMATE in Drill String Disengagement

Designed to provide easy release whenever disengagement becomes necessary, the Safety Joint will transmit torque in the right-hand direction but will back-off and disengage when required to release from stuck downhole string assemblies.

### General Description

The Safety Joint is a simple design composed of an upper pin section (1) and a lower box section (2). The upper and lower sections are threaded together by a coarse acme thread profile (3) which is sealed on either end by sets of o-ring seals (4). These seals allow the Safety Joint to easily withstand external and internal pressures and are also used to prevent debris from contaminating the acme threads.

### Operation

#### Disengaging the Safety Joint Downhole

- A** To break the Safety Joint connection, rotate the drill string to the left at 40% of the Safety Joint's right-hand make up torque; one turn in straight or shallow holes, two to three turns in deep or crooked holes.
- B** Pick up the drill string until at least 1000 lbs (445 daN) of weight, but not more than 2000 lbs (890 daN) remains on the Safety Joint. If more than 2000 lbs (890 daN) is applied, the Safety Joint will release but there exists a large possibility of causing damage to the threads when the Safety Joint releases.
- C** Pick the string up slowly while rotating to the left to unscrew the Safety Joint. As the course threads unscrew, they will lift the pipe approximately 1/2 inch (12.7 mm) per revolution.
- D** Carefully apply 1000 lbs of weight and rotate slowly to the right. An increase in torque will indicate that the Safety Joint has re-engaged.

#### Re-engaging the Safety Joint Downhole

- A** Lower the string into the hole until the Pin Section contacts the Box Section.
- B** Carefully apply 1000 lbs of weight and rotate slowly to the right. An increase in torque will indicate that the Safety Joint has re-engaged.

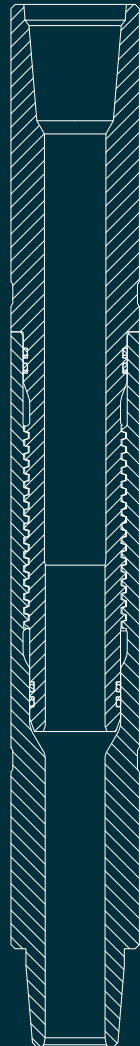
# Safety Joint

## Drill String Disengagement Tool

### Technical Specifications

	4-1/2"	4-3/4"	5"	5-1/8"
Size (O.D.)	4-1/2"	4-3/4"	5"	5-1/8"
Threaded Connection	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	4" Full Hole (NC 40)
Bore (I.D.)	2.688" (68.3 mm)	2.500" (63.5 mm) 2.688" (68.3 mm)	2.375" (60.3 mm)	2.375" (60.3 mm)
Shoulder-To-Shoulder Length	38.50" (978 mm)	38.50" (978 mm)	37.50" (953 mm)	37.50" (953 mm)

	5-1/2"	6-1/2"	6-3/4"	8"
Size (O.D.)	5-1/2"	6-1/2"	6-3/4"	8"
Threaded Connection	4" Full Hole (NC 40)	4" API IF (4-1/2" FH, NC 46) 4-1/2" API IF (NC 50)	4-1/2" API IF (NC 50)	6-5/8" API REG
Bore (I.D.)	2.500" (63.5 mm)	3.000" (76.2 mm)	2.500" (63.5 mm)	3.000" (76.2 mm)
Shoulder-To-Shoulder Length	37.50" (953 mm)	40.50" (1,029 mm)	41.50" (1,054 mm)	50.75" (1,289 mm)



### Customization

The Safety Joint can be designed to fit a full range of sizes, threaded connections, lengths, etc. Arrival Oil Tools will work with the customer to meet their exact requirements.



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