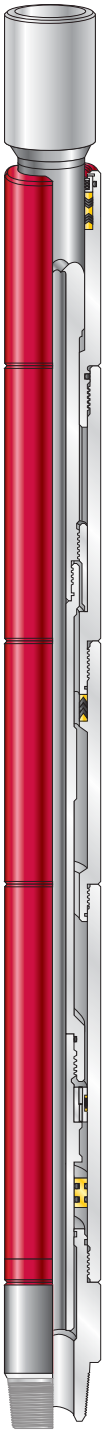
Dailey® HyPulse Jar Slinger® Fishing Tool



The Weatherford *Dailey HyPulse Jar Slinger* fishing tool is a rugged, dependable downhole tool designed specifically for running with the Dailey hydraulic fishing jar. The slinger uses a compressible synthetic fluid as a spring for storing energy, which is released when the tripping mechanism in the Dailey hydraulic fishing jar opens. This action allows the internal mandrel-hammer assembly of the fishing jar to accelerate unimpeded until it strikes the anvil, resulting in a sharp upward impact to the stuck point.

The fishing tool can be used in deep, deviated, high-temperature holes to ensure optimal performance of the hydraulic fishing jar. The slinger is the best solution for situations requiring a store of energy beyond that supplied by the stretch of the fishing string, such as shallow-depth operations in which larger drill collars or drillpipe are being used.

In deviated and horizontal holes, the slinger can counteract the drag induced by wall contact on the heavyweight pipe or drill collars used above the hydraulic fishing jar.

The fishing tool allows the operator to use fewer drill collars in the fishing string.

The fishing tool reduces the shock impact on the fishing string above its point of installation, thereby reducing shock on the surface equipment. This advantage is highly beneficial on rigs equipped with top drives.

Applications

- All fishing, coring, washover, and other applications that require delivery of an upward impact to a stuck point, tight spot, or breakage of a core before retrieval from the wellbore
- Fishing operations that require a store of energy beyond that supplied by the stretch of the stuck fishing string
- Fishing operations in deviated and horizontal holes

Features, Advantages and Benefits

- The tool is designed to reach total stroke at maximum overpull to provide a nearly constant amplification factor across a large range of overpulls with the maximum impact taking place at maximum overpull.
- The internal hammer bottoms out at maximum overpull to provide mechanical overpull protection and prevent accidental damage to the tool. The design means the operator can use fewer drilling collars in the fishing string.
- Rugged, durable construction provides reliability and longer tool life.
- The drilling tool reduces costs associated with shock to surface equipment.
- Single-piece involute spline provides maximum torque capacity with minimal backlash.
- Fluid-isolated high-pressure chamber protects against formation cuttings, sand, and other downhole debris.

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Specifications

OD (in./*mm*)	ID (in./*mm*)	Tool Joint Size (API)	Tensile Yield* (× 1,000 lbf) (× *1,000 N*)	Torsional Yield* (× 1,000 lbf-ft) (× *1,000 N•m*)	Length Closed (ft-in./*m*)	Weight (lb/*kg*)	Total Stroke (in./*mm*)	Max. BHT (°F/°C)	Pump Open Area (in.²/*cm²*)	Circulating Pressure (psi/*bar*)	Hydrostatic Pressure (psi/*bar*)
1-13/16 *46*	1/2 *13*	1-13/16 WFJ	75 *334*	1.60 *2.2*	7-0 *2.1*	50 *23*	5-1/2 *140*		1.1 *7.1*		
2-1/4 *57*	11/16 *18*	1-1/4 Reg.	110 *489*	2.50 *3.4*	8-9 *2.7*	100 *45*	6 *152*		0.8 *5.2*		
3-1/8 *79*	1-1/4 *32*	2-3/8 Reg.	250 *1,112*	5.00 *6.8*	9-10 *3.0*	198 *90*	6-1/8 *156*		2.4 *15.5*		
	1-1/2 *38*	2-7/8 Reg.	200 *890*			175 *79*	6 *152*		2.8 *18.1*		
3-3/4 *95*	1-3/4 *45*	2-7/8 IF	275 *1,223*	7.80 *10.6*	9-8 *2.9*	242 *110*	6-1/8 *156*		4.4 *28.4*		
	1-15/16 *49*	2-3/8 EUE	225 *1,001*	3.75 *5.1*	9-10 *3.0*	224 *102*			4.4 *28.4*		
4-1/4 *108*	1-15/16 *49*	2-7/8 IF	350 *1,557*	15.00 *20.3*	9-10. *3.0*	340 *154*	6-1/8 *156*	400° *204°*	4.9 *31.6*	5,000 *345*	None
	2-1/8 *54*		325 *1,446*		10-0 *3.0*	316 *143*	6-1/4 *159*		5.4 *34.8*		
4-3/4 *121*	2-1/4 *57*	3-1/2 IF	500 *2,224*	20.00 *27.1*	9-10 *3.0*	400 *181*	7 *178*		6.5 *41.9*		
6-1/4 *159*	2-1/4 *57*	4-1/2 IF	832 *3,701*	49.30 *66.8*	13- 6 *4.1*	1,000 *454*	8-1/4 *210*		7.7 *49.7*		
6-1/2 *165*	2-3/4 *70*	4-1/2 IF	1,000 *4,448*	56.20 *76.2*	15-0 *4.6*	1,200 *544*	8-1/2 *216*		11.0 *71.0*		
7-3/4 *197*	3 *76*	6-5/8 Reg.	1,600 *7,117*	100.00 *135.6*	15-7 *4.7*	2,000 *907*	9-3/4 *248*		14.2 *91.6*		
8 *203*	3 *76*	6-5/8 Reg.	1,600 *7,117*	105.00 *142.4*	15-6 *4.7*	1,800 *817*	9-3/4 *248*		14.2 *91.6*		

*Tensile and torsional values are calculated per API RP7G based on nominal dimensions and the published yield strength of the material. These values do not constitute a guarantee, actual or implied.

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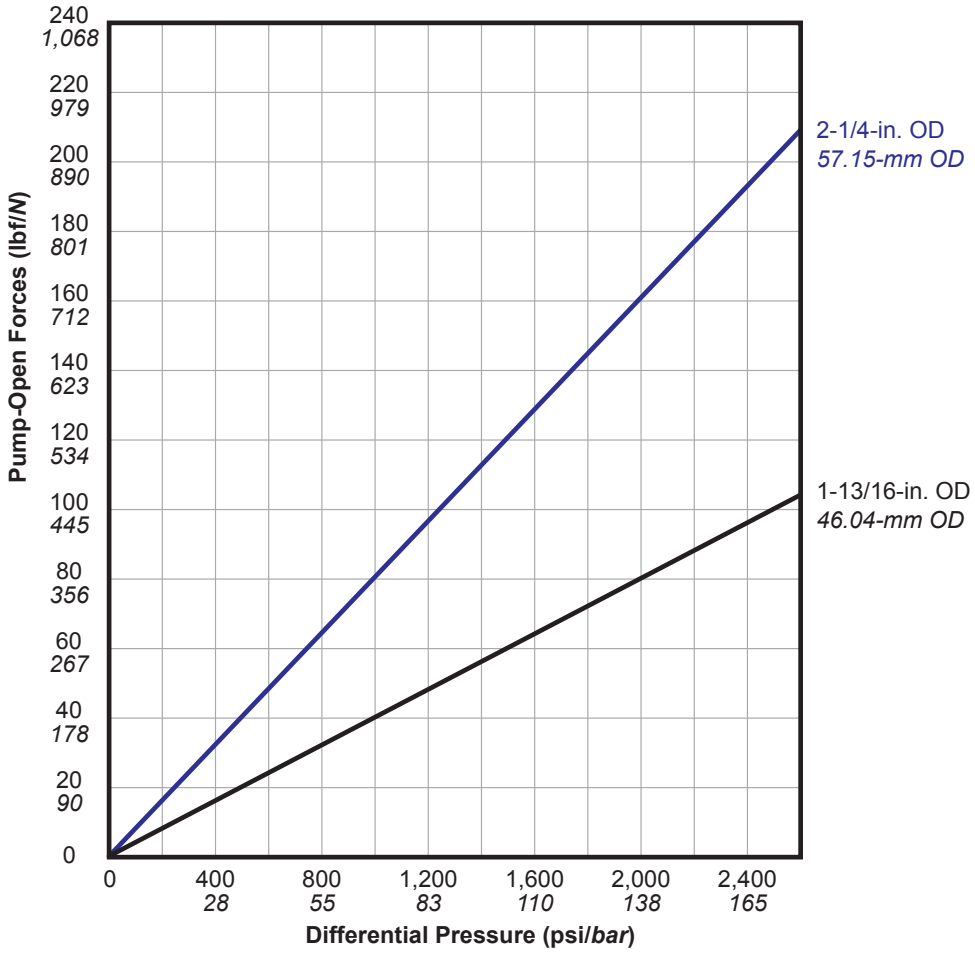
Pump-Open Force Chart: 1 13/16-in. and 2 1/4-in. OD



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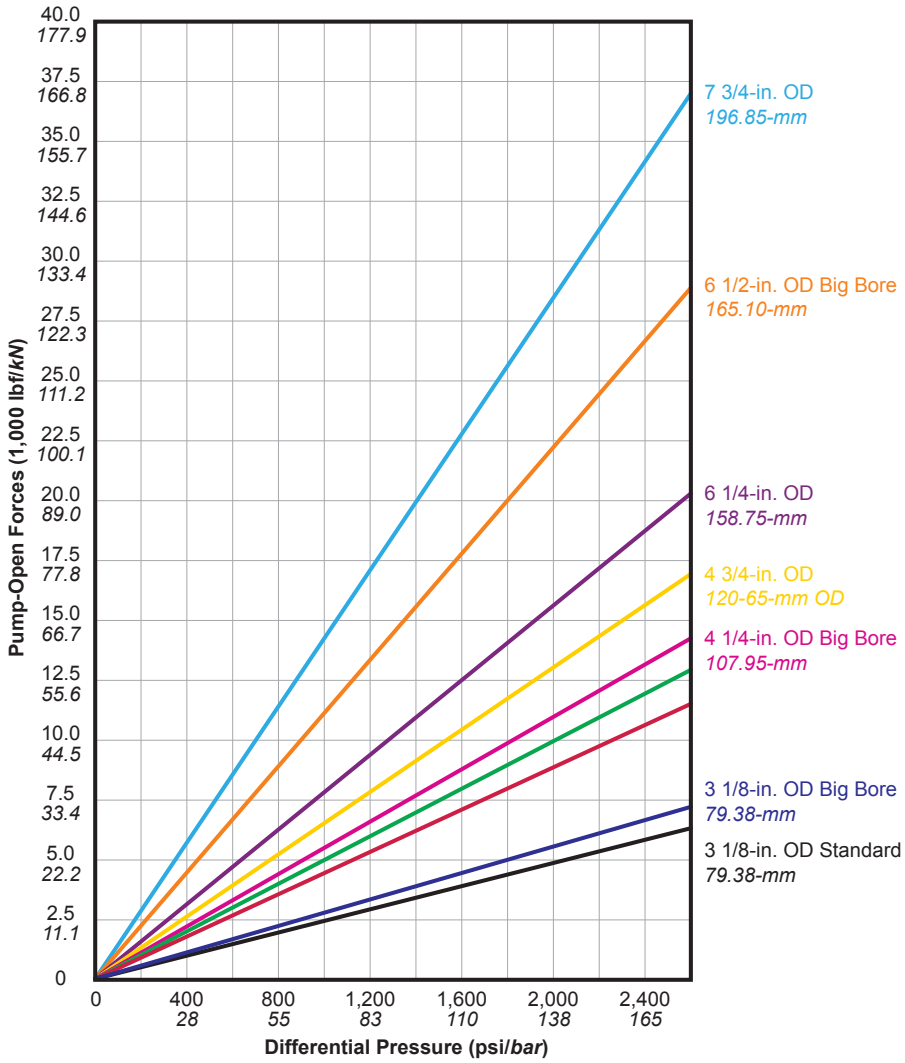
Pump-Open Force Chart: 3 1/8-in. OD and Larger



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Operation

Delivery to Location

Weatherford delivers the *Dailey HyPulse Jar Slinger* fishing tool to location with the mandrel in the *closed* position. The fully *closed* position leaves an approximate 1-in. (2.5-mm) gap between the bottom of the box end of the mandrel and the top of the upper housing. This design feature prevents debris in the wellbore fluid from being driven into the upper seals when the drilling tool is completely closed.

Note: Check for any visible indications of leakage.

Note: All service breaks on the drilling tool are pre-torqued at the Weatherford Service Center and do not require further tightening before the slinger is run in the hole.

Picking Up and Laying Down

Pick up and lay down the slinger as other jarring tools, except for the following special guidelines:

- Install two equally spaced slings around the body, ensuring that the slinger is balanced as it is being hoisted to or lowered from the rig floor.

  Note: Do not use the gap at the top of the drilling tool as a tie-on point when picking up or laying down the drilling tool. If necessary, use a tailing rope to control motion.

  Note: Do not break any connections when laying down the drilling tool. Use thread protectors while handling the slinger to prevent damage to the pin or box connections. Damage to the connections can lead to improper makeup torque on the connections, galling of the threads, or washout of the connections.

Positioning in the Fishing String

Position the slinger above the drill collars or heavyweight drillpipe (HWDP) that serves as the hammer for the *Dailey* hydraulic fishing jar. For optimal jarring results, a Weatherford representative can run the Weatherford *Dailey* jar placement program to determine the optimal number of drill collars or HWDP to include in the fishing string.

Installing in the Fishing String

Install the fishing tool in the string as any other bottomhole assembly (BHA) component with pin connection down and box connection up.

1. Tighten the box and pin connections that connect the jar to the other components of the BHA or fishing assembly.

   Note: All service breaks are pre-torqued to Weatherford's recommended value.

   Note: Always unlock the rotary and use two pairs of tongs when making up the drilling tool in the string or breaking it out of the string. Never use the rotary to break the torque on the connection or to back into the drilling tool when making it up in the string.

2. Install a drill collar safety clamp on the drilling tool, above the slips, if the tool is left unsupported in the rotary table. This step prevents the drilling tool from sliding through the slips.

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Operation (continued)

Note: When making up the fishing tool or breaking it out of the string, position it as low in the slips as possible, still leaving enough room to install the drill collar safety clamp and grasp the fishing tool with the tongs. Conventional makeup and breakout tongs exert lateral forces that can bend or break the tool. Use of power tongs eliminates this risk. However, if using conventional tongs, position the tool as low in the slips as possible, leaving enough room to install the drill collar safety clamp, and grasp the tool with the tongs.

Standback Procedure

Weatherford does not recommend racking back the *Dailey HyPulse Jar Slinger* fishing tool in the derrick while the string is out of the hole. In fishing applications, when the string is out of the hole and the tool will not remain suspended in the elevators, remove the tool from the string and lay it down.

Downhole Operation

Downhole activation of the tool requires only raising the string.

1. Take the slack out of the string and stretch the string to the desired overpull up to the published specifications. The tool will start to compress the internal fluid inside itself, building a store of energy within. This energy, along with the energy stored in the stretched fishing string, will be released automatically when the fishing jar trips and allows free travel of the mandrel.
2. Lower the string after jarring to reset the hydraulic fishing jar and the tool.

   Note: The performance of the tool is not affected by the rate at which the string is raised or lowered. After operating for a while, the tool may appear to bottom out—a natural occurrence resulting from the unique design of this tool. When this happens, simply reset the tool by slacking down slightly farther than usual, thus ensuring that all tools in the string are completely closed.

Routine Maintenance in the String

The *Dailey HyPulse Jar Slinger* fishing tool is a rugged, dependable downhole tool that requires very little on-the-job maintenance. For optimal performance, Weatherford recommends the following procedure every trip out of the hole:

1. Use a water hose to wash off the mandrel of the tool and the top of the upper housing where the mandrel goes through the upper seals.
2. Unscrew the tool from the string at the pin end and wash the inside diameter of the pin and the area around the compensating piston with water.