Casing Jacks

Weatherford's casing jacks provide pulling capacity up to 500 tons for a wide range of rigless plug-and-abandonment (P&A), workover, and casing running applications. The remotely operated systems enhance safety by removing personnel from the work area, while variable-speed capability provides quick adjustments in jacking speed for greater efficiency.

Applications

- In **rigless P&A applications**, the casing jacks enable multistring casings to be cut below the mud line and jacked free. Once free, the casings are jacked upward as they are simultaneously cut and bored into sections appropriate to the lifting capability of the rig's crane.
- In **slot-recovery/openhole sidetracking applications** in which the casing is cut below the casing shoe and cannot be pulled with the rig, Weatherford casing jacks are used to provide the required extra pulling capacity, thus eliminating the need to make multiple "cut and pull" runs.
- The casing jacks are often used on **workover jobs** in which a small workover rig does not have the capacity to pull the casing or tubing hanger off the slips, or in which a releasable downhole packer is stuck. The casing jacks can be nippled up directly onto the wellhead or annular blowout preventer, quickly resolving pulling-strength limitations.
- Casing jacks are also used to **run casing in straight holes** when the casing weight exceeds rig capacity. This application can cut costs by reducing rig-size requirements.

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Casing Jacks

Features, Advantages and Benefits

- Availability of three casing jack sizes, in 282-, 385-, and 500-ton configurations, provides a solution for almost every application.
- Pulling capacity up to 500 tons means one casing jack on location covers any scenario, which reduces the onsite equipment inventory requirement.
- Several features of the casing jacks promote safer operations:
  - Remote operation removes personnel from the work zone.
  - A full complement of guards and safety devices reduces risk to personnel.
  - Dedicated work baskets for each size of casing jack enable personnel to work at height in a safe and secure manner.
- Several features maximize operational efficiency:
  - Four- and two-cylinder operation provides a variable jacking speed for faster operations.
  - Split bowls are available to provide flexibility during the operation and allow changes in the OD of the tubulars being recovered.
  - In addition to enhancing safety, the dedicated work baskets for each size of casing jack enable personnel to work more efficiently.

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Casing Jacks

Specifications

282-Ton Casing Jack (10 3/4-in. Casing Maximum)

Maximum lift capacity, 4-cylinder jack, at 5,000 psi *(34.5 MPa)*	565,488 lb *256,501 kg*			
Maximum lift capacity, 2-cylinder jack, at 5,000 psi *(34.5 MPa)*	282,745 lb *128,251 kg*			
Number of cylinder(s)	4 or 2			
Maximum stroke	60 in. *1,524 mm*			
Total area of cylinders, 4-cylinder jack	113.10 in.^{2} *729.7 cm^2*			
Total area of cylinders, 2-cylinder jack	56.55 in.^{2} *364.8 cm^2*			
Maximum casing size	10-3/4 in. *273.1 mm*			
Bowl size	8-5/8 in. and smaller *219.1 mm and smaller*			
Wellhead adapter flange bolt circle diameters (four separate diameters)	22-1/4 in. *565.2 mm*	19 in. *482.6 mm*	18-1/2 in. *469.9 mm*	26-5/8 in. *676.3 mm*
Wellhead adapter flange circle diameter	1 3/4-in. 8UN	1 7/8-in. 8UN	1 3/8-in. 8UN	1 3/4-in. 8UN
Number of holes (applicable to size)	2	2	2	2
API flange equivalent	11 in. × 10M	11 in. × 5M	11 in. × 3M	16-3/4 in × 5M
Total cylinder extended volume	29.3 gal *110.9 L*			
Total cylinder retracted volume	16.3 gal *61.7 L*			
Total volume	45.6 gal *172.6 L*			
Piston size (bore)	6 in. *152.4 mm*			
Piston rod size	4 in. *101.6 mm*			
Jacking rate at 50 gal/min (189 L/min)	329 to 658 ft/hr (excluding handling) *100 to 201 m/hr (excluding handling)*			
Weight	7,342 lb *3,330 kg*			
Height, extended	12.9 ft 3.9 *m*			
Height, retracted	7.9 ft 2.4 *m*			
Base plate diameter	36-1/2 in. *927.1 mm*			

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Casing Jacks

Specifications *(continued)*

385-Ton Casing Jack (10 3/4-in. Casing Maximum)

Maximum lift capacity, 4-cylinder jack, at 5,000 psi *(34.5 MPa)*	769,692 lb *349,126 kg*		
Maximum lift capacity, 2-cylinder jack, at 5,000 psi *(34.5 MPa)*	384,846 lb *174,563 kg*		
Number of cylinder(s)	4 or 2		
Maximum stroke	60 in. *1,524* mm		
Total area of cylinders, 4-cylinder jack	153.94 in.^{2} *993.16 cm^2*		
Total area of cylinders, 2-cylinder jack	76.97 in.^{2} *496.58 cm^2*		
Maximum casing size	10-3/4 in. *273.1* mm		
Bowl size	8-5/8 in. and smaller *219.1 mm and smaller*		
Wellhead adapter flange bolt circle diameters (three separate diameters)	22-1/4 in. *565.2* mm	19 in. *482.6* mm	18-1/2 in. *469.9* mm
Wellhead adapter flange circle diameter	1 3/4-in.-8UN	1 7/8-in.-8UN	1 3/8-in.-8UN
Number of holes (applicable to size)	2	2	2
API flange equivalent	11-in. × 10M	11-in. × 5M	11-in. × 3M
Total cylinder extended volume	39.9 gal 151.0 *L*		
Total cylinder retract volume	19.6 gal *74.2 L*		
Total volume	59.5 gal *225.2 L*		
Piston size (bore)	7 in. *177.8* mm		
Piston rod size	5 in. *127.0 mm*		
Jacking rate at 50 gal/min (*189 L/min*)	252 to 504 ft/hr (excluding handling) *76.8 to 153.6 m/hr (excluding handling)*		
Weight	10,482 lb *4,755 kg*		
Height	8.2 ft *2.5 m*		
Height (extended)	13.2 ft *4.0 m*		
Base plate diameter	43 in. *1,092.2 mm*		

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Casing Jacks

Specifications (continued)

385-Ton Casing Jack (16-in. Casing Maximum)

Maximum lift capacity, 4-cylinder jack, at 5,000 psi *(34.5 MPa)*	769,692 lb *349,126 kg*			
Maximum lift capacity, 2-cylinder jack, at 5,000 psi *(34.5 MPa)*	384,846 lb *174,563 kg*			
Number of cylinder(s)	4 or 2			
Maximum stroke	60 in. *1,524 mm*			
Total area of cylinders, 4-cylinder jack	153.94 in.^{2} *993.16 cm^2*			
Total area of cylinders, 2-cylinder jack	76.97 in.^{2} *496.58 cm^2*			
Maximum casing size	16 in. *406.4 mm*			
Bowl size	1st bowl	2nd bowl	3rd bowl	4th bowl
	8-5/8 in. and smaller *219.1 mm and smaller*	10-3/4 to 8-5/8 in. *273.1 to 219.1 mm*	13-3/8 to 10-3/4 in. *339.7 to 273.1 mm*	16 to 13-3/8 in. *406.4 to 339.7 mm*
Wellhead adapter flange bolt circle diameters (three separate diameters)	26-5/8 in. *676.3 mm*	29-1/2 in. *749.3 mm*	28-1/2 in. *723.9 mm*	
Wellhead adapter flange circle diameter	1 7/8-in.-8UN	2-in.-8UN	1 5/8-in.-8UN	
Number of holes (applicable to size)	2	2	2	
API flange equivalent	16 3/4-in. × 5M	20 3/4-in. × 3M	21 1/4-in. × 2M	
Total cylinder extended volume	39.9 gal 151.0 *L*			
Total cylinder retract volume	19.6 gal *74.2 L*			
Total volume	59.5 gal *225.2 L*			
Piston size (bore)	7 in. *177.8* mm			
Piston rod size	5 in. *127.0 mm*			
Jacking rate at 50 gal/min (*189 L/min*)	252 to 504 ft/hr (excluding handling) *76.8 to 153.6 m/hr (excluding handling)*			
Weight	10,482 lb *4,755 kg*			
Height	8.2 ft *2.5 m*			
Height (extended)	13.2 ft *4.0 m*			
Base plate diameter	43 in. *1,092 mm*			

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Casing Jacks

Specifications (continued)

500-Ton Casing Jack (30-in. Casing Maximum)

Maximum lift capacity, 4-cylinder jack, at 5,000 psi *(34.5 MPa)*	1,005,312 lb *456,002 kg*
Maximum lift capacity, 2-cylinder jack, at 5,000 psi *(34.5 MPa)*	502,650 lb *227,998 kg*
Number of cylinder(s)	4 or 2
Maximum stroke	60 in. *1,524 mm*
Total area of cylinders, 4-cylinder jack	153.94 in.^{2} *1,297.16 cm^2*
Total area of cylinders, 2-cylinder jack	100.53 in.^{2} *648.58 cm^2*
Maximum casing size	30 in. *762.0 mm*
Bowl size	
1st bowl	8-5/8 in. and smaller *219.1 mm and smaller*
2nd bowl	10-3/4 to 8-5/8 in. *273.1 to 219.1 mm*
3rd bowl	13-3/8 to 10-3/4 in. *339.7 to 273.1 mm*
4th bowl	16 to 13-3/8 in. *406.4 to 339.7 mm*
5th bowl	20 to 16 in. *508.0 to 406.4 mm*
6th bowl	24 to 20 in. *609.6 to 508.0 mm*
7th bowl	30 to 24 in. *762.0 to 609.6 mm*
Loose bowl	30 to 26 in.* *762.0 to 660.4 mm*
Total cylinder extended volume	52.22 gal *197.7 L*
Total cylinder retract volume	27.54 gal *104.3 L*
Total volume	79.76 gal *301.9 L*
Piston size (bore)	8 in. *203.2 mm*
Piston rod size	5.5 in. *139.7 mm*
Jacking rate at 50 gal/min (*189 L/min*)	188 to 376 ft/hr (excluding handling) *57.3 to 114.6 m/hr (excluding handling)*

*30-in. to 26-in. bowl insert is used for 26-in. casing only.

Weight	20,550 lb *9,321 kg*
Height	8.7 ft *2.6 m*
Height (extended)	13.7 ft *4.2 mm*
Base plate diameter	63 in. *1,600 mm*

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