

TorkRunner™ Mechanical Casing Running Tool

Provides safer, more efficient casing installation and drilling operations

Applications

- Drilling operations
- Cementing operations

Features and Benefits

- The mechanical casing running tool (CRT) is designed to make up and break out casing connections, and reciprocate, rotate, fill-up/circulate and cement casing strings
- The CRT is controlled by the driller, reducing the need for dedicated personnel and auxiliary equipment on the rig floor
- Tool operation only requires top drive rotation and minimal sit-down force to activate/deactivate slips
- Slip-set technology reduces the sit-down force required to initially grip the pipe with the slips
- Rig-up and rig-down can be completed within minutes, increasing overall efficiency
- Visual indicators provide a clear signal of the status of the tool at all times, including the slips and latching mechanisms
- Compact size of the tool allows it to be used on smaller land rings where spacing is critical

Tool Description

The Weatherford TorkRunner mechanical CRT provides a casing running and drilling solution for loads up to 360 tons and torque up to 68,000 ft-lbf. The compact design is critical to facilitate easy transport, rig-up, rig-down, and overall handling. The slip-set technology allows easy and reliable grip of pipes without high sit-down forces. Visual indicators around the tool always provide a clear signal of the gripped or ungripped status eliminating dropped strings.



The compact design of the TorkRunner mechanical CRT allows for easy rig-up, rig-down, and handling.



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Specifications

Pipe size range	6-5/8 to 20 in. (168.4 to 508 mm)
Load rating	360 tons (720,000 lbf)
Torque rating	Slim Cage: 35,000 ft-lbf Medium Cage: 50,000 ft-lbf HD Cage: 68,000 ft-lbf
Push down force	100 tons (200,000 lbf)
Connection	6-5/8 in. API REG (others by request)
Design standard	API 8C PSL2
Maximum rotating speed	Unlimited
Maximum flow	660 gal/min (2.5 m ³ /min)
Maximum circulating pressure (limited by casing packer rating)	5,000 psi (344 bar)
Maximum mud temperature	194°F (90°C)
Base tool weight (without slips or accessories)	915 lb (415 kg)
Base tool length	54.2 in. (1,377 mm)
Base tool diameter	16.5 in. (420 mm)
Diametrical stroke	0.61 in. (15.5 mm)
Mandrel ID	1.50 in. (38.1 mm)
Turns for maximum stroke	0.8
Minimum design temperature	-4°F (-20°C)
Storage temperature range	-40 to 122°F (-40 to 50°C)
Operational temperature range	-4 to 122°F (-20 to 50°C)



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Die Chart

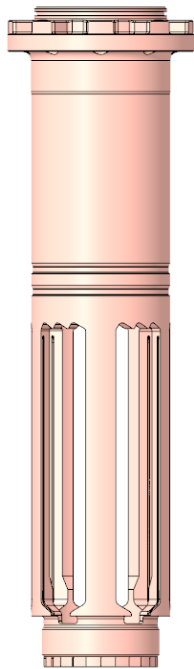
Slip Cage Design	Max Torque (ft-lbf)	Nominal Pipe Size (in.)	Min Pipe ID (in.)	Min Pipe Weight (ppf)	Max Pipe ID (in.)	Max Pipe Weight (ppf)
Slim	35,000	6.625	5.780	24	5.908	28
Medium	50,000	6.625	6.034	20	6.034	20
Slim	35,000	7.000	5.747	38	5.898	42.7
Medium	50,000	7.000	5.992	17	6.530	35
HD	68,000	7.000	6.356	17	6.530	23
Medium	50,000	7.625	6.120	24	7.011	55.3
HD	68,000	7.625	6.365	24	7.011	47.1
HD	68,000	7.750	6.543	46.1	6.543	46.1
HD	68,000	8.625	7.995	24	8.088	28
HD	68,000	8.625	7.900	24	8.088	32
HD	68,000	8.625	7.805	28	7.995	36
HD	68,000	9.625	8.898	32.3	8.975	36
HD	68,000	9.625	8.813	36	8.898	40
HD	68,000	9.625	8.739	40	8.813	43.5
HD	68,000	9.625	8.663	43.5	8.739	47
HD	68,000	9.625	8.522	53.5	8.522	53.5
HD	68,000	9.625	8.145	70.3	8.145	70.3
HD	68,000	10.750	10.020	32.8	10.163	40.5
HD	68,000	10.750	9.927	40.5	10.020	45.5
HD	68,000	10.750	9.822	45.5	9.927	51
HD	68,000	10.750	9.636	55.5	9.736	60.7
HD	68,000	10.750	9.538	60.7	9.636	65.7
HD	68,000	11.750	10.976	42	11.061	47
HD	68,000	11.750	10.856	47	10.976	54
HD	68,000	11.750	10.752	54	10.856	60
HD	68,000	12.750	11.963	47.1	12.039	52
HD	68,000	12.750	11.862	50	11.994	58.4
HD	68,000	13.375	12.686	48	12.686	48
HD	68,000	13.375	12.590	48	12.686	54.5
HD	68,000	13.375	12.493	61	12.493	61
HD	68,000	13.375	12.327	68	12.387	72



HD	68,000	15.000	13.798	92.5	13.798	92.5
HD	68,000	16.000	15.221	65	15.221	65
HD	68,000	16.000	15.098	75	15.098	75
HD	68,000	16.000	14.986	84	14.986	84
HD	68,000	16.000	14.670	109	14.670	109
HD	68,000	16.770	15.936	69.4	15.977	72.9
HD	68,000	16.770	15.888	77	15.888	77
HD	68,000	18.625	17.724	87.5	17.724	87.5
HD	68,000	18.625	17.616	97.7	17.616	97.7
HD	68,000	18.625	17.528	106	17.528	106
HD	68,000	18.625	17.474	111	17.474	111
HD	68,000	18.625	17.432	115	17.432	115
HD	68,000	20.000	19.100	94	19.100	94
HD	68,000	20.000	18.933	111	18.933	111

Slip Cages

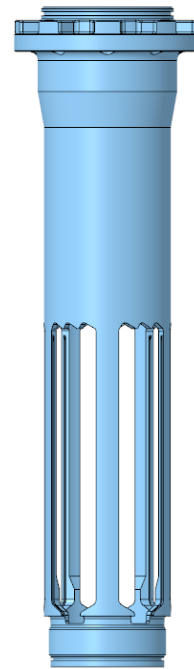
The Weatherford TorkRunner mechanical CRT can be used with 3 slip cages depending on the pipe size and torque requirements.



HD Cage
68,000 ft-lbf



Medium Cage
50,000 ft-lbf



Slim Cage
35,000 ft-lbf

