

# RTTS® Packer

## SIMPLE, VERSATILE MEANS FOR TESTING, TREATING AND SQUEEZE CEMENT OPERATIONS



### OVERVIEW

The RTTS® packer has been one of the most used and well known service packers in the industry for over 60 years. These Halliburton packers have been run successfully in over a hundred thousand jobs in just about every country oil and gas is produced. Reliability and durability is what makes operators ask for them by name - some are still in wellbores that have been working continuously for as long as 29 years.

### HOW IT WORKS

The RTTS packer is a full-opening, hookwall packer used for testing, treating, and squeeze cementing operations. In most cases, the tool runs with a circulating valve assembly. The packer body includes a J-slot mechanism, mechanical slips, packer elements, and hydraulic slips. Large, heavy-duty slips in the hydraulic holddown mechanism help prevent the tool from being pumped up the hole. Drag springs operate the J-slot mechanism on  $\leq 3 \frac{1}{2}$ -in. (88.9-mm) packer bodies, while larger packer sizes  $\geq 4$ -in. (101.6 mm) use drag blocks. Automatic J-slot sleeves are standard equipment on all Halliburton packer bodies.

The circulating valve, if used, is a locked-open/locked-closed type that serves as both a circulating valve and bypass. The valve automatically locks in the closed position when the packer sets. During testing or squeezing operations, the lock prevents the valve from being pumped open. A straight J-slot in the locked-open position matches with a straight J-slot (optional) in the packer body. This combination eliminates the need to turn the tubing to close the circulating valve or reset the packer after the tubing has been displaced with cement, thus saving valuable rig time.

### FEATURES & BENEFITS

- » Full opening design of the packer mandrel bore allows large volumes of fluid to pump through the tool
  - » Tubing-type guns and other wireline tools can be run through the packer
- » Packer can be set and relocated as many times as necessary
- » Tungsten carbide slips provide greater holding ability and improved wear resistance in high-strength casing
- » Optional integral circulating valve locks into open or closed position during squeezing or treating operations and opens easily to allow circulation above the packer

### OPERATION

The tool is run slightly below the desired setting position to set the packer and is then picked up and rotated several turns. If the tool is on the bottom, only a quarter-turn is actually required. However, in deep or deviated holes, several turns with the rotary may be necessary. To maintain position, the right-hand torque must be held until the mechanical slips on the tool are set and can start taking weight.

The pressure must be equalized across the packer to unset it. As the tubing is picked up, the circulating valve remains closed, establishing reverse circulation around the lower end of the packer. The circulating valve is opened so it can come out of the hole when the tubing is lowered, rotated to the right, and picked up.

## RTTS® Packers

Casing Size in.	Packer Main Body OD in. (cm)	Packer ID in. (cm)	Nominal Casing Weight lb/ft	Minimum Casing ID in. (mm)	Maximum Casing ID in. (mm)	Length in. (cm)	Tensile Rating* lb (kg)	Max working pressure psi (MPa)
2 3/8	1.81 (4.60)	0.60 (1.52)	4.6	1.930 (49.02)	2.029 (51.54)	35.45 (90.04)	28,700 (13,018)	10,000 (68.95)
2 7/8	2.22 (5.64)	0.75 (1.91)	6.5	2.372 (60.25)	2.493 (63.32)	28.44 (72.24)	38,300 (17,373)	10,000 (68.95)
	2.10 (5.33)	0.60 (1.52)	7.9 - 8.7	2.172 (55.17)	2.353 (59.77)	35.46 (90.07)	54,463 (24,704)	10,000 (68.95)
3 1/2	2.93 (7.44)	0.62 (1.57)	5.7	3.150 (80.01)	3.197 (81.20)	32.53 (82.63)	63,800 (28,940)	10,000 (68.95)
	2.70 (6.86)	0.62 (1.57)	9.2 - 10.2	2.842 (72.19)	3.037 (77.14)	32.53 (82.63)	63,800 (28,940)	10,000 (68.95)
	2.50 (6.35)	0.62 (1.57)	13.3	2.668 (67.77)	2.809 (71.35)	32.53 (82.63)	63,800 (28,940)	10,000 (68.95)
4	3.18 (8.08)	1.12 (2.84)	9.5 - 11.6	3.350 (85.09)	3.599 (91.41)	52.68 (133.81)	73,959 (33,584)	10,000 (68.95)
	3.06 (7.77)	0.875 (2.22)	12.5 - 15.7	3.144 (79.86)	3.441 (87.40)	50.30 (127.76)	63,200 (28,667)	10,000 (68.95)
4 1/2	3.89 (9.88)	1.80 (4.57)	9.5	3.941 (100.10)	4.154 (105.51)	51.85 (131.70)	77,077 (34,962)	10,000 (68.95)
	3.75 (9.53)	1.80 (4.57)	11.6 - 13.5	3.852 (97.85)	4.041 (102.64)	51.85 (131.70)	77,077 (34,962)	10,000 (68.95)
	3.55 (9.02)	1.50 (3.81)	15.1 - 17.1	3.657 (92.89)	3.903 (99.14)	49.27 (125.15)	107,059 (48,562)	10,000 (68.95)
5	4.25 (10.80)	1.80 (4.57)	11.5 - 13	4.430 (112.52)	4.560 (115.82)	48.10 (122.17)	84,649 (38,397)	10,000 (68.95)
	4.06 (10.31)	1.80 (4.57)	15 - 18	4.194 (106.53)	4.486 (113.94)	48.35 (122.81)	86,026 (39,021)	10,000 (68.95)
	3.89 (9.88)	1.80 (4.57)	21.4	4.031 (102.38)	4.219 (107.15)	51.85 (131.70)	77,077 (34,962)	10,000 (68.95)
	3.78 (9.53)	1.80 (4.57)	23.2	3.945 (100.20)	4.145 (105.28)	51.85 (131.70)	77,077 (34,962)	10,000 (68.95)
5 1/2	4.55 (11.56)	1.90 (4.83)	13 - 20	4.694 (119.23)	5.102 (129.59)	48.61 (123.47)	142,344 (64,567)	10,000 (68.95)
	4.40 (11.18)	1.80 (4.57)	20 - 23	4.577 (116.25)	4.867 (123.62)	48.10 (122.17)	84,649 (38,397)	10,000 (68.95)
	4.25 (10.79)	1.90 (4.83)	23 - 26	4.444 (112.87)	4.765 (121.02)	48.10 (122.17)	84,649 (38,397)	10,000 (68.95)
5 3/4	4.89 (12.42)	1.90 (4.83)	14 - 18	5.100 (129.54)	5.365 (136.27)	48.61 (123.47)	133,208 (60,423)	10,000 (68.95)
6	5.06 (12.85)	1.90 (4.83)	15 - 23	5.151 (130.84)	5.599 (142.21)	48.61 (123.47)	142,344 (64,567)	10,000 (68.95)
	4.89 (12.42)	1.90 (4.83)	20 - 26	5.034 (127.85)	5.388 (136.86)	48.61 (123.47)	133,200 (60,419)	10,000 (68.95)
6 5/8	5.65 (14.35)	2.38 (6.03)	17 - 20	5.799 (147.29)	6.551 (166.40)	54.22 (137.72)	160,810 (72,943)	10,000 (68.95)
	5.43 (13.79)	1.90 (4.83)	24 - 32	5.567 (141.40)	5.980 (151.89)	48.62 (123.49)	133,208 (60,423)	10,000 (68.95)

These ratings are guidelines only. \* High-Expansion Packer

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7	5.65 (14.35)	2.38 (6.03)	17 - 38	5.799 (147.29)	6.551 (166.40)	54.22 (137.72)	160,810 (72,943)	10,000 (68.95)
	5.25 (13.34)	2.00 (5.08)	49.5	5.384 (136.76)	5.701 (144.81)	48.61 (123.47)	133,208 (60,423)	10,000 (68.95)
7 5/8	6.35 (16.13)	2.38 (6.03)	24 - 39	6.509 (165.32)	7.129 (181.08)	54.22 (137.72)	160,810 (72,943)	10,000 (68.95)
	6.16 (15.64)	2.38 (6.03)	29.7 - 45.3	6.430 (163.32)	6.901 (175.29)	54.22 (137.72)	158,238 (71,777)	10,000 (68.95)
7 3/4	6.16 (15.64)	2.38 (6.03)	33.2 - 50	6.430 (163.32)	6.901 (175.29)	54.22 (137.72)	158,238 (71,777)	10,000 (68.95)
8 5/8	7.31 (18.57)	3.00 (7.62)	24 - 49	7.381 (187.48)	8.207 (208.46)	89.29 (226.80)	237,218 (107,602)	7,500 (51.71)
9 5/8	8.25 (20.96)	3.75 (9.53)	36 - 53.5	8.403 (213.43)	9.049 (229.85)	94.12 (239.06)	379,267 (172,036)	7,500 (51.71)
	7.80 (19.81)	3.00 (7.62)	58.4 - 71.8	7.958 (202.13)	8.587 (218.11)	90.79 (230.61)	237,200 (107,592)	7,500 (51.71)
10 3/4	9.40 (23.88)	3.75 (9.53)	40.5 - 55.5	9.631 (244.63)	10.189 (258.88)	90.83 (230.71)	444,600 (201,667)	5,000 (34.48)
	8.85 (22.48)	3.75 (9.53)	60.7 - 85.3	8.976 (228.00)	9.818 (249.37)	94.58 (240.23)	444,600 (201,667)	5,000 (34.48)
11 3/4	10.60 (26.92)	3.75 (9.53)	47 - 54	10.756 (273.20)	11.223 (285.06)	92.27 (234.37)	444,600 (201,667)	5,000 (34.48)
	10.10 (25.65)	3.75 (9.53)	60 - 71	10.438 (265.13)	10.934 (277.72)	96.27 (244.53)	444,600 (201,667)	5,000 (34.48)
12 3/4	11.10 (28.19)	3.75 (9.53)	57 - 81	11.500 (292.10)	11.884 (301.85)	92.27 (234.37)	444,600 (201,667)	3,000 (20.69)
13 3/8	11.94 (30.33)	3.75 (9.53)	54.5 - 72	12.203 (309.96)	12.783 (324.69)	132.29 (336.02)	651,300 (295,425)	5,000 (34.48)
	11.50 (29.21)	3.75 (9.53)	72 - 98	11.760 (298.70)	12.403 (315.04)	101.36 (257.45)	651,300 (295,425)	5,000 (34.48)
14	12.25 (31.12)	3.75 (9.53)	82.5 - 98	12.449 (316.20)	13.067 (331.90)	103.36 (262.53)	651,300 (295,425)	5,000 (34.48)
16	14.43 (36.65)	3.75 (9.53)	55 - 65	15.115 (383.92)	15.564 (395.33)	113.93 (289.38)	651,300 (295,425)	2,500 (17.24)
	14.18 (36.02)	3.75 (9.53)	84 - 109	14.509 (368.53)	15.215 (386.46)	113.93 (289.38)	651,300 (295,425)	2,500 (17.24)
	13.62 (34.59)	3.75 (9.53)	109 - 146	13.968 (354.79)	14.688 (373.07)	113.93 (289.38)	651,300 (295,425)	2,500 (17.24)

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Table continued on next page

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Casing Size in.	Packer Main Body OD in. (cm)	Packer ID in. (cm)	Nominal Casing Weight lb/ft	Minimum Casing ID in. (mm)	Maximum Casing ID in. (mm)	Length in. (cm)	Tensile Rating* lb (kg)	Max working pressure psi (MPa)
18 5/8	16.87 (42.85)	3.75 (9.53)	78 - 118	17.257 (438.33)	17.980 (456.69)	122.71 (311.68)	651,300 (295,425)	2,500 (17.24)
20	17.87 (45.39)	3.75 (9.53)	94 - 133	18.535 (470.79)	19.213 (488.01)	114.71 (291.36)	1,000,000 (453,592)	2,500 (17.24)
	17.25* (43.82)	4.14 (10.25)	133 - 187	17.257 (438.33)	17.980 (456.69)	209.72 (532.69)	1,000,000 (453,592)	2,500 (17.24)
	17.25 (43.82)	3.75 (9.53)	169 - 204	17.951 (455.96)	18.650 (473.71)	122.71 (311.68)	1,000,000 (453,592)	2,500 (17.24)

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