

# Casing Make-Up Torque Chart

OD (in.)	Weight (lb/ft)	Grade	STC (ft-lbs)			LTC (ft-lbs)			OD (in.)	Weight (lb/ft)	Grade	STC (ft-lbs)			LTC (ft-lbs)			
			Opt.	Min.	Max.	Opt.	Min.	Max.				Opt.	Min.	Max.	Opt.	Min.	Max.	
4.500	9.50	H-40	770	580	960	NA			5.000	18.00	M-65	NA			3310	2480	4140	
		WC-50	930	700	1160						3930				2950	4910		
		J-55	1010	760	1260						4400				3300	5500		
		K-55	1120	840	1400						4000				3000	5000		
		M-65	1180	890	1480						4470				3350	5590		
4.500	10.50	WC-50	1220	920	1530	NA					C-90				4310	3230	5390	
		J-55	1320	990	1650						S-95				4620	3470	5780	
		K-55	1460	1100	1830						C-95				4550	3410	5690	
		M-65	1540	1160	1930						P-110				5310	3980	6640	
4.500	11.60	WC-50	1410	1060	1760	1490	1120	1860			Q-125				5930	4450	7410	
		J-55	1540	1160	1930	1620	1220	2030			LS-140				6630	4970	8290	
		K-55	1700	1280	2130	1800	1350	2250			V-150				7090	5320	8860	
		M-65	1790	1340	2240	1880	1410	2350			NA				L-80	4860	3650	6080
		WC-70	NA			2010	1510	2510							N-80	4950	3710	6190
		L-80				2230	1670	2790							C-90	5340	4010	6680
		HCL-80				2500	1880	3130	C-95	5620		4220	7030					
		N-80				2280	1710	2850	P-110	6580		4940	8230					
		HCN-80				2540	1910	3180	Q-125	7340		5510	9180					
		C-90				2450	1840	3060	NA	L-80		5350	4010	6690				
		S-95				2630	1970	3290		HCL-80		6000	4500	7500				
		C-95				2580	1940	3230		N-80		5450	4090	6810				
		P-110				3020	2270	3780		HCN-80		6100	4580	7630				
4.500	13.50	M-65				NA				2280	1710	2850	C-90	5880	4410	7350		
		L-80	2710	2030	3390					S-95	6300	4730	7880					
		HCL-80	3020	2270	3780					C-95	6200	4650	7750					
		N-80	2760	2070	3450				P-110	7250	5440	9060						
		HCN-80	3080	2310	3850				Q-125	8090	6070	10110						
		C-90	2970	2230	3710				NA	L-80	5610	4210	7010					
		S-95	3180	2390	3980					N-80	5720	4290	7150					
		C-95	3130	2350	3910					C-90	6170	4630	7710					
		P-110	3660	2750	4580					C-95	6500	4880	8130					
4.500	15.10	HCL-80	NA			3630	2720	4540		P-110	7600	5700	9500					
		S-95				3820	2870	4780		Q-125	8490	6370	10610					
		P-110				4400	3300	5500		V-150	10140	7610	12680					
		Q-125				4910	3680	6140	NA	WC-50	1580	1190	1980					
		LS-140				5480	4110	6850		J-55	1720	1290	2150					
		V-150				5860	4400	7330		K-55	1890	1420	2360					
5.000	11.500	J-55	1330	1000	1660	NA			M-65	2000	1500	2500						
		K-55	1470	1100	1840				WC-50	1850	1390	2310	1990	1490	2490			
		M-65	1550	1160	1940				J-55	2020	1520	2530	2170	1630	2710			
5.000	13.000	J-55	1690	1270	2110	1820	1370	2280	5.500	15.50	K-55	2220	1670	2780	2390	1790	2990	
		K-55	1860	1400	2330	2010	1510	2510			M-65	2350	1760	2940	2530	1900	3160	
		M-65	1960	1470	2450	2120	1590	2650			WC-50	2100	1580	2630	2270	1700	2840	
5.000	15.00	J-55	2070	1550	2590	2230	1670	2790	5.500	17.00	J-55	2290	1720	2860	2470	1850	3090	
		K-55	2280	1710	2850	2460	1850	3080			K-55	2520	1890	3150	2720	2040	3400	
		M-65	2400	1800	3000	2590	1940	3240			M-65	2670	2000	3340	2870	2150	3590	
		L-80	NA			3080	2310	3850			WC-70	NA			3070	2300	3840	
		HCL-80				3450	2590	4310			L-80				3410	2560	4260	
		N-80				3140	2360	3930			HCL-80				3830	2870	4790	
		HCN-80				3510	2630	4390			N-80				3480	2610	4350	
		C-90				3380	2540	4230			HCN-80				3890	2920	4860	
		S-95				3620	2720	4530			C-90				3750	2810	4690	
		C-95				3560	2670	4450			S-95				4020	3020	5030	
		P-110				4170	3130	5210			C-95				3960	2970	4950	
		V-150				5560	4170	6950			P-110				4620	3470	5780	

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			Opt.	Min.	Max.	Opt.	Min.	Max.				Opt.	Min.	Max.	Opt.	Min.	Max.			
5.500	17.00	Q-125	NA			5170	3880	6460	6.625	32.000	L-80	NA			6660	5000	8330			
		LS-140				5770	4330	7210			N-80				6770	5080	8460			
5.500	20.00	M-65	NA			3530	2650	4410	7.000	20.00	C-90	NA			7340	5510	9180			
		L-80				4200	3150	5250			C-95				7740	5810	9680			
		HCL-80				4720	3540	5900			P-110				9040	6780	11300			
		N-80				4280	3210	5350			Q-125				10110	7580	12640			
		HCN-80				4790	3590	5990			H-40				1760	1320	2200	NA		
		C-90				4620	3470	5780			WC-50				2140	1610	2680			
		S-95				4950	3710	6190			J-55				2340	1760	2930	2570	1930	3210
		C-95				4870	3650	6090			K-55				2540	1910	3180	2810	2110	3510
		P-110				5690	4270	7110			M-65				2720	2040	3400	3000	2250	3750
		Q-125				6360	4770	7950			WC-50				2610	1960	3260	2870	2150	3590
		LS-140				7110	5330	8890			J-55				2840	2130	3550	3130	2350	3910
V-150	7600	5700	9500	K-55	3090	2320	3860	3410	2560	4260										
5.500	23.00	L-80	NA			4930	3700	6160	7.000	23.00	M-65	NA			3640	2730	4550			
		HCL-80				5540	4160	6930			WC-70				NA			3900	2930	4880
		N-80				5020	3770	6280			L-80							4350	3260	5440
		HCN-80				5630	4220	7040			HCL-80				4910	3680	6140			
		C-90				5420	4070	6780			N-80				4420	3320	5530			
		S-95				5810	4360	7260			HCN-80				4980	3740	6230			
		C-95				5720	4290	7150			C-90				4790	3590	5990			
		P-110				6680	5010	8350			S-95				5120	3840	6400			
		Q-125				7460	5600	9330			C-95				5050	3790	6310			
		LS-140				8340	6260	10430			WC-50				3060	2300	3830	3370	2530	4210
		V-150				8920	6690	11150			J-55				3340	2510	4180	3670	2750	4590
5.500	26.000	C-90	NA			6310	4730	7890	7.000	26.00	K-55	NA			4010	3010	5010			
		C-95				6650	4990	8310			M-65				3890	2920	4860	4280	3210	5350
		P-110				7770	5830	9710			WC-70				NA			4580	3440	5730
		Q-125				8680	6510	10850			L-80							5110	3830	6390
		V-150				10380	7790	12980			HCL-80							5770	4330	7210
5.625	26.700	HCL-80	NA			5530	4150	6910	7.000	26.00	N-80	NA			5190	3890	6490			
		C-90				5710	4280	7140			HCN-80				5850	4390	7310			
		C-95				5710	4280	7140			C-90				5630	4220	7040			
		P-110				6670	5000	8340			S-95				6020	4520	7530			
6.625	20.00	H-40	1840	1380	2300	NA			7.000	29.00	C-95	NA			5930	4450	7410			
		J-55	2450	1840	3060	2660	2000	3330			P-110				6930	5200	8660			
		K-55	2670	2000	3340	2900	2180	3630			M-65				4920	3690	6150			
		M-65	2850	2140	3560	3090	2320	3860			L-80				5870	4400	7340			
6.625	24.00	J-55	3140	2360	3930	3400	2550	4250	7.000	29.00	HCL-80	NA			6630	4970	8290			
		K-55	3420	2570	4280	3720	2790	4650			N-80				5970	4480	7460			
		M-65	3660	2750	4580	3960	2970	4950			HCN-80				6730	5050	8410			
		L-80	NA			4730	3550	5910			C-90				6480	4860	8100			
		N-80				4810	3610	6010			S-95				6920	5190	8650			
		C-90				5210	3910	6510			C-95				6830	5120	8540			
		C-95				5490	4120	6860			P-110				7970	5980	9960			
		P-110				6410	4810	8010			Q-125				8920	6690	11150			
V-150	NA					NA			10670	8000	13340									
M-65									4830	3620	6040	L-80	6610	4960	8260					
6.625	28.00	L-80				NA			5760	4320	7200	7.000	32.00	HCL-80	NA			7470	5600	9340
		N-80	5860	4400	7330				N-80	6720	5040			8400						
		C-90	6350	4760	7940				HCN-80	7570	5680			9460						
		C-95	6690	5020	8360				C-90	7290	5470			9110						
		P-110	7810	5860	9760				S-95	7790	5840			9740						
		C-95	7680	5760	9600				P-110	8970	6730			11210						
		Q-125	10040	7530	12550				Q-125	11220	8420			14030						
		LS-140	11220	8420	14030				V-150	12010	9010			15010						

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			Opt.	Min.	Max.	Opt.	Min.	Max.				Opt.	Min.	Max.	Opt.	Min.	Max.			
7.000	35.00	L-80	NA			7340	5510	9180	7.625	33.70	L-80	NA			6640	4980	8300			
		HCL-80				8290	6220	10360			HCL-80				7510	5630	9390			
		N-80				7460	5600	9330			N-80				6740	5060	8430			
		HCN-80				8410	6310	10510			HCN-80				7620	5720	9530			
		C-90				8090	6070	10110			C-90				7330	5500	9160			
		S-95				8650	6490	10810			S-95				7830	5870	9790			
		C-95				8530	6400	10660			C-95				7720	5790	9650			
		P-110				9960	7470	12450			P-110				9010	6760	11260			
		Q-125				11150	8360	13940			Q-125				10090	7570	12610			
		LS-140				12460	9350	15580			LS-140				11280	8460	14100			
		V-150				13330	10000	16660			V-150				12070	9050	15090			
7.000	38.00	L-80	NA			8010	6010	10010	7.625	39.00	L-80	NA			7860	5900	9830			
		HCL-80				9040	6780	11300			HCL-80				8890	6670	11110			
		N-80				8140	6110	10180			N-80				7980	5990	9980			
		HCN-80				9180	6890	11480			HCN-80				9010	6760	11260			
		C-90				8830	6620	11040			C-90				8670	6500	10840			
		S-95				9440	7080	11800			S-95				9260	6950	11580			
		C-95				9310	6980	11640			C-95				9140	6860	11430			
		P-110				10870	8150	13590			P-110				10660	8000	13330			
		Q-125				12160	9120	15200			Q-125				11940	8960	14930			
		LS-140				13590	10190	16990			LS-140				13350	10010	16690			
		V-150				14540	10910	18180			V-150				14280	10710	17850			
7.000	41.000	C-90	NA			9700	7280	12130	7.625	42.800	L-80	NA			8910	6680	11140			
		C-95				10220	7670	12780			N-80				9050	6790	11310			
		P-110				11930	8950	14910			C-90				9830	7370	12290			
		Q-125				13360	10020	16700			C-95				10370	7780	12960			
		V-150				15970	11980	19960			P-110				12100	9080	15130			
7.625	24.00	H-40	2120	1590	2650	NA			7.625	42.800	Q-125	NA			13550	10160	16940			
7.625	26.40	WC-50	2890	2170	3610	3170	2380	3960	7.625	45.30	L-80	NA			9470	7100	11840			
		J-55	3150	2360	3940	3460	2600	4330			HCL-80				10710	8030	13390			
		K-55	3420	2570	4280	3770	2830	4710			N-80				9620	7220	12030			
		M-65	3680	2760	4600	4030	3020	5040			HCN-80				10860	8150	13580			
		WC-70	NA			4320	3240	5400			C-90				10450	7840	13060			
		L-80				4820	3620	6030			S-95				11160	8370	13950			
		HCL-80				5450	4090	6810			C-95				11010	8260	13760			
		N-80				4900	3680	6130			P-110				12850	9640	16060			
		HCN-80				5530	4150	6910			Q-125				14390	10790	17990			
		C-90				5320	3990	6650			V-150				17210	12910	21510			
		S-95				5680	4260	7100			7.625				47.100	L-80	NA			9970
C-95	5600	4200				7000	N-80	10130	7600	12660										
7.625	29.70	WC-50				3400	2550	4250	3730	2800		4660	C-90	11000		8250				13750
		M-65				NA			4740	3560		5930	C-95	11590		8690				14490
		L-80							5660	4250		7080	P-110	13530		10150				16910
		HCL-80	6410	4810	8010				Q-125	15150	11360	18940								
		N-80	5750	4310	7190				7.750	46.10	L-80	NA			8410	6310	10510			
		HCN-80	6500	4880	8130						HCL-80				9520	7140	11900			
		C-90	625	4690	7810						N-80				8550	6410	10690			
		S-95	6680	5010	8350						HCN-80				9650	7240	12060			
		C-95	6590	4940	8240						C-90				9280	6960	11600			
		P-110	7690	5770	9610				S-95	9920	7440	12400								
															C-95	9780	7340	12230		
													P-110	11420	8570	14280				
										Q-125	12790	9590	15990							
										LS-140	14290	10720	17860							
8.625	23.00	WC-50	2080	1560	2600	NA			8.625	23.00	WC-50	2080	1560	2600	NA					

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			Opt.	Min.	Max.	Opt.	Min.	Max.				Opt.	Min.	Max.	Opt.	Min.	Max.
8.625	24.00	WC-50	2240	1680	2800	NA			8.750	49.70	HCL-80	NA			9790	7340	12240
		J-55	2440	1830	3050						9920				7440	12400	
		K-55	2630	1970	3290						10170				7630	12710	
		HCK-55	3260	2450	4080												
		M-65	2850	2140	3560												
8.625	24.00	H-40	2330	1750	2910	NA			9.625	36.00	H-40	2540	1910	3180	NA		
		WC-50	2850	2140	3560	3190	2390	3990			H-40	2940	2210	3680	4150	3110	5190
		K-55	3350	2510	4190	3770	2830	4710			WC-50	3610	2710	4510	4530	3400	5660
		HCK-55	4140	3110	5180	4640	3480	5800			J-55	3940	2960	4930	4890	3670	6110
											K-55	4230	3170	5290	6050	4540	7560
8.625	24.00	H-40	2790	2090	3490	NA			9.625	40.00	M-65	4600	3450	5750	5290	3970	6610
		WC-50	3410	2560	4260	3830	2870	4790			WC-50	4140	3110	5180	4760	3570	5950
		J-55	3720	2790	4650	4170	3130	5210			J-55	4520	3390	5650	5200	3900	6500
		K-55	4020	3020	5030	4520	3390	5650			K-55	4860	3650	6080	5610	4210	7010
		HCK-55	4970	3730	6210	5560	4170	6950			HCK-55	6040	4530	7550	6940	5210	8680
8.625	36.00	M-65	4350	3260	5440	4870	3650	6090	9.625	43.50	M-65	5280	3960	6600	6070	4550	7590
		J-55	4340	3260	5430	4860	3650	6080			L-80	NA			7270	5450	9090
		K-55	4680	3510	5850	5260	3950	6580			HCL-80				8270	6200	10340
		HCK-55	5780	4340	7230	6480	4860	8100			N-80				7370	5530	9210
		M-65	5060	3800	6330	5670	4250	7090			HCL-80				8370	6280	10460
		L-80	NA			6780	5090	8480			C-90				8040	6030	10050
		HCL-80				7690	5770	9610			S-95				8580	6440	10730
		N-80				6880	5160	8600			C-95				8470	6350	10590
		HCL-80				7790	5840	9740			M-65				6790	5090	8490
		N-80				7490	5620	9360			L-80				8130	6100	10160
HCL-80	8000	6000				10000	HCL-80	9250	6940	11560							
S-95	7890	5920				9860	N-80	8250	6190	10310							
C-90	6490	4870				8110	HCL-80	9360	7020	11700							
L-80	7760	5820				9700	HCL-80	8990	6740	11240							
HCL-80	8810	6610				11010	S-95	9600	7200	12000							
N-80	7880	5910	9850	C-95	9480	7110	11850										
HCL-80	8920	6690	11150	P-110	11050	8290	13810										
HCL-80	8580	6440	10730	Q-125	12400	9300	15500										
N-80	9150	6860	11440	V-150	13860	10400	17330										
HCL-80	9040	6780	11300	L-80	8930	6700	11160										
P-110	10550	7910	13190	HCL-80	10150	7610	12690										
8.625	44.00	L-80	NA			8740	6560	10930	9.625	47.00	N-80	NA			9050	6790	11310
		HCL-80				9910	7430	12390			HCL-80				10270	7700	12840
		N-80				8870	6650	11090			C-90				9870	7400	12340
		HCL-80				10040	7530	12550			S-95				10530	7900	13160
		C-90				9650	7240	12060			C-95				10400	7800	13000
		S-95				10300	7730	12880			P-110				12130	9100	15160
		C-95				10170	7630	12710			Q-125				13600	10200	17000
		P-110				11860	8900	14830			LS-140				15200	11400	19000
		Q-125				13300	9980	16630			L-80				10470	7850	13090
		V-150				15910	11930	19890			HCL-80				11900	8930	14880
8.625	49.00	L-80	NA			9830	7370	12290	9.625	53.50	N-80	NA			10620	7970	13280
		HCL-80				11150	8360	13940			HCL-80				12050	9040	15060
		N-80				9970	7480	12460			C-90				11570	8680	14460
		HCL-80				11290	8470	14110			S-95				12350	9260	15440
		C-90				10850	8140	13560			C-95				1220	9150	15250
		S-95				11590	8690	14490			P-110				14220	10670	17780
		C-95				11440	8580	14300			Q-125				15950	11960	19940
		P-110				13350	10010	16690			LS-140				17830	13370	22290
		Q-125				14960	11220	18700			V-150				19080	14310	23850
		V-150				17890	13420	22360									

# Casing Make-Up Torque Chart

OD (in.)	Weight (lb/ft)	Grade	STC (ft-lbs)			LTC (ft-lbs)			OD (in.)	Weight (lb/ft)	Grade	STC (ft-lbs)			LTC (ft-lbs)							
			Opt.	Min.	Max.	Opt.	Min.	Max.				Opt.	Min.	Max.	Opt.	Min.	Max.					
9.625	58.40	L-80	NA			11510	8630	14390	10.750	55.50	HCK-55	8420	6320	10530	NA							
		N-80				11670	8750	14590			M-65	7360	550	9200								
		C-90				12720	9540	15900			L-80	8840	6630	11050								
		C-95				13410	10060	16760			HCL-80	10090	7570	12610								
		P-110				15630	11720	19540			N-80	8650	6710	11190								
		Q-125				17540	13160	21930			HCN-80	10210	7660	12760								
9.750	59.20	HCL-80	NA			11600	8700	14500			C-90	9790	340	12240				NA				
		HCN-80				11750	8810	14690			S-95	10430	7820	13040								
		C-90				11890	8920	14860			C-95	10320	7740	12900								
		S-95				12040	9030	15050			P-110	12020	9020	15030								
		C-95				11890	8920	14860			Q-125	13500	10130	16880								
		P-110				13860	10400	17330			LS-140	15090	11320	18860								
		Q-125				1550	11660	19440	NA			NA										
		LS-140				17380	13040	21730														
9.750	62.80	HCL-80	NA			10820	8120	13530	10.750	60.70	HCL-80	11230	8420	14040	NA							
		HCN-80				10960	8220	13700			HCN-80	11360	8520	14200								
		C-90				11090	8320	13860			C-90	10890	8170	13610								
		S-95				11230	8420	14040			S-95	11610	8710	14510								
		C-95				11090	8320	13860			C-95	11480	8610	14350								
		P-110				12930	9700	16160			P-110	13370	10030	16710								
		Q-125				14510	10880	18140			Q-125	15020	11270	18780								
		LS-140				16220	12170	20280			LS-140	16790	12590	20990								
10.750	32.75	H-40	2050	1540	2560	NA			10.750	60.70	HCL-80	12350	9260	15440	NA							
10.750	40.50	H-40	3140	2360	3930	NA					HCN-80	12490	9370	15610								
		WC-50	3850	2890	4810						C-90	11980	8990	14980								
		J-55	4200	3150	5250						S-95	12770	9580	15960								
		K-55	4500	3380	5630						C-95	12630	9470	15790								
		HCK-55	5620	4220	7030						P-110	14710	11030	18390								
		M-65	4910	3680	6140						Q-125	16520	12390	20650								
		N-80	5970	4480	7460						LS-140	18470	13850	23090								
		HCN-80	6810	5110	8510						V-150	19770	14830	24710								
10.750	45.50	WC-50	4510	3380	5640	NA					10.750	65.70	HCL-80	12350				9260	15440	NA		
		J-55	4930	3700	6160								HCN-80	12490				9370	15610			
		K-55	5280	3960	6600								C-90	11980				8990	14980			
		HCK-55	6590	4940	8240				S-95	12770			9580	15960								
		M-65	5760	4320	7200				C-95	12630			9470	15790								
		N-80	7010	5260	8760				P-110	14710			11030	18390								
		HCN-80	7990	5990	9990				Q-125	16520			12390	20650								
		S-95	8170	6130	10210				LS-140	18470			13850	23090								
10.750	51.00	J-55	5650	4240	7060	NA			10.750	71.10	HCL-80	13580	10190	16980	NA							
		K-55	6060	4550	7580						HCN-80	13730	10300	17160								
		HCK-55	7560	5670	9450						S-95	14030	10520	17540								
		M-65	6610	4960	8260						C-95	13880	10410	17350								
		L-80	7940	5960	9930						Q-125	18160	13620	22700								
		HCL-80	9060	6800	11330						LS-140	20300	15230	25380								
		N-80	8040	6030	10050						V-150	21730	16300	27160								
		HCN-80	9160	6870	11450						NA			NA								
		C-90	8790	6590	10990																	
		S-95	9370	7030	11710				11.750	42.00	H-40	3070	2300	3840	NA							
		C-95	9270	6950	11590				11.750	47.00	J-55	4770	3580	5960	NA							
		P-110	10790	8090	13490						K-55	5090	3820	6360								
		Q-125	12120	9090	15150						HCK-55	6380	4790	7980								
		LS-140	13550	10160	16940						M-65	5570	4180	6960								
10.750	54.00	J-55	5680	4260	7100	NA			11.750	54.00	J-55	5680	4260	7100	NA							
		K-55	6060	4550	7580						K-55	6060	4550	7580								
		HCK-55	7600	5700	9500						HCK-55	7600	5700	9500								
		M-65	6640	4980	8300						M-65	6640	4980	8300								

# Casing Make-Up Torque Chart

OD (in.)	Weight (lb/ft)	Grade	STC (ft-lbs)			LTC (ft-lbs)			OD (in.)	Weight (lb/ft)	Grade	STC (ft-lbs)			LTC (ft-lbs)		
			Opt.	Min.	Max.	Opt.	Min.	Max.				Opt.	Min.	Max.	Opt.	Min.	Max.
11.750	60.00	J-55	6490	4870	8110	NA	13.375	68.00	J-55	6750	5060	8440	NA				
		K-55	6930	5200	8660				K-55	7180	5390	8980					
		HCK-55	8690	6520	10860				HCK-55	9060	6800	11330					
		M-65	7590	5690	9490				M-65	7910	5930	9890					
		L-80	9130	6850	11410				L-80	9520	7140	11900					
		HCL-80	10440	7830	13050				HCL-80	10930	8200	13660					
		N-80	9240	6930	11550				N-80	9630	7220	12040					
		HCN-80	10550	7910	13190				HCN-80	9630	7220	12040					
		C-90	10110	7580	12640				C-90	10570	7930	13210					
		S-95	10770	8080	13460				C-95	11140	8360	13930					
		C-95	10660	8000	13330				P-110	12970	9730	16210					
		P-110	12420	9320	15530				HCK-55	9780	7340	12230					
		Q-125	13950	10460	17440				M-65	8540	6410	10680					
LS-140	15600	11700	19500	L-80	10290	7720	12860										
11.750	65.00	M-65	8370	6280	10460	NA	13.375	72.00	HCL-80	11810	8860	14760	NA				
		HCL-80	11520	8640	14400				N-80	10400	7800	13000					
		HCN-80	11640	8730	14550				HCN-80	11920	8940	14900					
		C-90	11770	8830	14710				C-90	11420	8570	14280					
		S-95	11890	8920	14860				S-95	12150	9110	15190					
		C-95	11770	8830	14710				C-95	12040	9030	15050					
		P-110	13710	10280	17140				P-110	14010	10510	17510					
		Q-125	15390	11540	19240				Q-125	15760	11820	19700					
		LS-140	17210	12910	21510				LS-140	17620	13220	22030					
														V-150	18860	14150	23580
11.750	71.00	HCL-80	12660	9500	15830	NA	13.375	80.70	HCK-55	11180	8390	13980	NA				
		HCN-80	12800	9600	16000				HCL-80	13500	10130	16880					
		C-90	12930	9700	16160				HCN-80	13630	10220	17040					
		S-95	13060	9800	16330				C-90	13760	10320	17200					
		C-95	12930	9700	16160				S-95	13890	10420	17360					
		P-110	15060	11300	18830				C-95	13760	10320	17200					
		Q-125	16920	12690	21150				P-110	16010	12010	20010					
		LS-140	18920	14190	23650				Q-125	18010	13510	22510					
11.750	71.80	HCL-80	11170	8380	13960	NA	13.375	86.00	HCL-80	14640	10980	18300	NA				
		HCN-80	11290	8470	14110				HCN-80	14780	11090	18480					
		C-90	11410	8560	14260				C-90	14920	11190	18650					
		S-95	11530	8650	14410				S-95	15070	11300	18840					
		C-95	11410	8560	14260				C-95	14920	11190	18650					
		P-110	13290	9970	16610				P-110	17370	13030	21710					
		Q-125	14930	11200	18660				Q-125	19530	14650	24410					
		LS-140	16700	12530	20880												
13.375	48.00	H-40	3220	2420	4030	NA											
13.375	54.50	WC-50	4700	3530	5880	NA	13.500	81.40	HCL-80	11900	8930	14880	NA				
		J-55	5140	3860	6430				HCN-80	12010	9010	15010					
		K-55	5470	4100	6840				C-90	12130	9100	15160					
		HCK-55	6890	5170	8610				S-95	12250	9190	15310					
		M-65	6020	4520	7530				C-95	12130	9100	15160					
									P-110	14120	10590	17650					
13.375	61.00	WC-50	5440	4080	6800	NA	13.625	88.20	Q-125	15880	11910	19850	NA				
		J-55	5950	4460	7440				HCL-80	11440	8580	14300					
		K-55	6330	4750	7910				HCN-80	11560	8670	14450					
		HCK-55	7980	5990	9980				C-90	11670	8750	14590					
		M-65	6970	5230	8710				S-95	11780	8840	14730					
		N-80	8490	6370	10610				C-95	11670	8750	14590					
		HCN-80	9720	7290	12150				P-110	13580	10190	16980					
				Q-125	15270	11450	19090										

# Casing Make-Up Torque Chart

OD (in.)	Weight (lb/ft)	Grade	STC (ft-lbs)			LTC (ft-lbs)		
			Opt.	Min.	Max.	Opt.	Min.	Max.
16.000	65.00	H-40	NA	4390	NA			
16.000	75.00	J-55	NA	7100	NA			
		K-55		7520				
		M-65		8320				
16.000	84.00	J-55	NA	8170	NA			
		K-55		8650				
		M-65		9570				
		N-80		11670				
		P-110		15750				
		Q-125		17730				
16.000	95.00	N-80	NA	13570	NA			
		P-110		18310				
		Q-125		20610				
16.000	97.00	N-80	NA	13810	NA			
		P-110		18630				
		Q-125		20970				
16.000	109.00	J-55	NA	11160	NA			
		K-55		11810				
16.125	95.60	N-80	NA	11900	NA			
		LS-110		16050				
		LS-125		18070				
18.625	87.50	H-40	NA	5590	NA			
		K-55		7940				
20.000	94.00	H-40	NA	5800	NA		NA	
		J-55		7830			9070	NA
		K-55		8230			9550	NA
20.000	106.50	J-55	NA	9130	NA		10570	
		K-55		9590			11130	NA
20.000	133.00	J-55	NA	11920	NA		1380	
		K-55		12520			14530	NA
20.000	169.00	J-55	NA	15510	NA			
		K-55		16310				

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