

GRADUP LOAD ANGLE CHART

SUMMARY METRIC

β max : 60°
L : Load

max. load in t

4:1

DSR



DSS



MEGA-DSS



SEB



Lifting Type											
Number of rings		1	2	1	2	2	2	Asymmetric	3 → 4	3 → 4	Asymmetric
Lifting angle β		0°	0°	90°	90°	0° → 45°	46° → 60°	Asymmetric	0° → 45°	46° → 60°	Asymmetric
Size	Torque (Nm)										
M 5	3	0,30	0,60	0,10	0,20	0,14	0,10	0,10	0,21	0,10	0,10
M 6	4	0,40	0,80	0,20	0,40	0,28	0,20	0,20	0,42	0,20	0,20
M 8	6	1,00	2,00	0,50	1,00	0,70	0,50	0,50	1,05	0,50	0,50
M 10	10	1,50	3,00	0,90	1,80	1,26	0,90	0,90	1,89	0,90	0,90
M 12	15	1,50	3,00	1,30	2,60	1,82	1,30	1,30	2,73	1,30	1,30
M 14	30	2,60	5,20	1,80	3,60	2,52	1,80	1,80	3,78	1,80	1,80
M 16	50	2,80	5,60	2,30	4,60	3,22	2,30	2,30	4,83	2,30	2,30
M 18	70	2,50	5,00	2,30	4,60	3,22	2,30	2,30	4,83	2,30	2,30
M 20 2t5	100	2,80	5,60	2,50	5,00	3,50	2,50	2,50	5,25	2,50	2,50
M 20 3t2	100	3,20	6,40	3,20	6,40	4,48	3,20	3,20	6,72	3,20	3,20
M 22	120	6,00	12,00	4,50	9,00	6,30	4,50	4,50	9,45	4,50	4,50
M 24	160	6,50	13,00	5,50	11,00	7,70	5,50	5,50	11,55	5,50	5,50
M 27	200	6,50	13,00	6,00	12,00	8,40	6,00	6,00	12,60	6,00	6,00
M 30 6t3	250	6,50	13,00	6,30	12,60	8,82	6,30	6,30	13,23	6,30	6,30
M 30 8t	250	9,00	18,00	8,00	16,00	11,20	8,00	8,00	16,80	8,00	8,00
M 36	320	10,00	20,00	8,50	17,00	11,90	8,50	8,50	17,85	8,50	8,50
M 42	400	10,00	20,00	9,00	18,00	12,60	9,00	9,00	18,90	9,00	9,00
M 24	160	9,00	18,00	5,50	11,00	7,70	5,50	5,50	11,55	5,50	5,50
M 30	250	14,00	28,00	8,50	17,00	11,90	8,50	8,50	17,85	8,50	8,50
M 33	250	14,50	29,00	10,50	21,00	14,70	10,50	10,50	22,05	10,50	10,50
M 36	320	15,00	30,00	12,00	24,00	16,80	12,00	12,00	25,20	12,00	12,00
M 36x3	320	15,00	30,00	12,00	24,00	16,80	12,00	12,00	25,20	12,00	12,00
M 39	320	17,00	34,00	14,00	28,00	19,60	14,00	14,00	29,40	14,00	14,00
M 42	400	15,50	31,00	15,00	30,00	21,00	15,00	15,00	31,50	15,00	15,00
M 42x3	400	15,50	31,00	15,00	30,00	21,00	15,00	15,00	31,50	15,00	15,00
M 45	400	15,00	30,00	16,00	32,00	22,40	16,00	16,00	33,60	16,00	16,00
M 48	600	22,00	44,00	20,00	40,00	28,00	20,00	20,00	42,00	20,00	20,00
M 48x3	600	22,00	44,00	20,00	40,00	28,00	20,00	20,00	42,00	20,00	20,00
M 48x4	600	22,00	44,00	20,00	40,00	28,00	20,00	20,00	42,00	20,00	20,00
M 52	600	23,00	46,00	20,00	40,00	28,00	20,00	20,00	42,00	20,00	20,00
M 56	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00
M 56x4	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00
M 64	600	32,10	64,20	32,10	64,20	44,94	32,10	32,10	67,41	32,10	32,10
M 64x4	600	32,10	64,20	32,10	64,20	44,94	32,10	32,10	67,41	32,10	32,10
M 72	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00
M 72x4	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00
M 80	600	32,10	64,20	32,10	64,20	44,94	32,10	32,10	67,41	32,10	32,10
M 90	600	32,10	64,20	32,10	64,20	44,94	32,10	32,10	67,41	32,10	32,10
M 100	600	32,10	64,20	32,10	64,20	44,94	32,10	32,10	67,41	32,10	32,10
M 64	600	33,00	66,00	33,00	66,00	46,20	33,00	33,00	69,30	33,00	33,00
M 72	700	35,00	70,00	35,00	70,00	49,00	35,00	35,00	73,50	35,00	35,00
M 72x4	700	35,00	70,00	35,00	70,00	49,00	35,00	35,00	73,50	35,00	35,00
M 80	800	40,00	80,00	40,00	80,00	56,00	40,00	40,00	84,00	40,00	40,00
M 90	900	45,00	90,00	45,00	90,00	63,00	45,00	45,00	94,50	45,00	45,00
M 100	1000	60,00	120,00	60,00	120,00	84,00	60,00	60,00	126,00	60,00	60,00
M 8	6	0,80	1,60	0,50	1,00	0,70	0,50	0,50	1,05	0,50	0,50
M 10	10	1,60	3,20	0,70	1,40	0,98	0,70	0,70	1,47	0,70	0,70
M 12	15	1,90	3,80	0,90	1,80	1,26	0,90	0,90	1,89	0,90	0,90
M 16	50	3,20	6,40	1,80	3,60	2,52	1,80	1,80	3,78	1,80	1,80
M 20	100	6,50	13,00	2,70	5,40	3,78	2,70	2,70	5,67	2,70	2,70
M 24 3t8	160	8,00	16,00	3,80	7,60	5,32	3,80	3,80	7,98	3,80	3,80
M 24 4t2	160	7,00	14,00	4,20	8,40	5,88	4,20	4,20	8,82	4,20	4,20
M 30	250	10,00	20,00	6,30	12,60	8,82	6,30	6,30	13,23	6,30	6,30
M 36	320	12,00	24,00	11,00	22,00	15,40	11,00	11,00	23,10	11,00	11,00
M 42	400	15,00	30,00	15,00	30,00	21,00	15,00	15,00	31,50	15,00	15,00
M 48	600	18,00	36,00	16,00	32,00	22,40	16,00	16,00	33,60	16,00	16,00

GRADUP LOAD ANGLE CHART

SUMMARY UNC

$\beta_{\max} : 60^\circ$
L : Load

4:1

max. load in lbs

	Lifting Type	Number of rings	Lifting angle β	Size	Torque (ft-lb)										
						1	2	1	2	2		Asymmetric	3 → 4		
						0°	0°	90°	90°	0° → 45°	46° → 60°	Asymmetric	0° → 45°	46° → 60°	Asymmetric
DSR		1/4"	3	900	1,800	450	900	630	450	450	945	450	450	1,200	1,200
		5/16"	5	2,200	4,400	1,200	2,400	1,680	1,200	1,200	2,520	1,200	1,200	1,600	1,600
		3/8"	8	3,200	6,400	1,600	3,200	2,240	1,600	1,600	3,360	1,600	1,600	2,800	2,800
		1/2"	12	3,400	6,800	2,800	5,600	3,920	2,800	2,800	5,880	2,800	2,800	4,900	4,900
		5/8"	40	5,900	11,800	4,900	9,800	6,860	4,900	4,900	10,290	4,900	4,900	5,250	5,250
		3/4"	80	6,200	12,400	5,250	10,500	7,350	5,250	5,250	11,025	5,250	5,250	9,800	9,800
		7/8"	90	13,500	27,000	9,800	19,600	13,720	9,800	9,800	20,580	9,800	9,800	12,500	12,500
		1"	125	13,500	27,000	12,500	25,000	17,500	12,500	12,500	26,250	12,500	12,500	13,000	13,000
		1" 1/8	160	13,500	27,000	13,000	26,000	18,200	13,000	13,000	27,300	13,000	13,000	19,000	19,000
		1" 1/4	200	13,500	27,000	13,500	27,000	18,900	13,500	13,500	28,350	13,500	13,500	20,000	20,000
DSS		1"	125	19,000	38,000	13,000	26,000	18,200	13,000	13,000	27,300	13,000	13,000	19,000	19,000
		1" 1/4	200	30,000	60,000	19,000	38,000	26,600	19,000	19,000	39,900	19,000	19,000	22,000	22,000
		1" 3/8	240	32,000	64,000	22,000	44,000	30,800	22,000	22,000	46,200	22,000	22,000	27,000	27,000
		1" 1/2	240	33,000	66,000	27,000	54,000	37,800	27,000	27,000	56,700	27,000	27,000	33,000	33,000
		1" 3/4	300	33,000	66,000	33,000	66,000	46,200	33,000	33,000	69,300	33,000	33,000	50,000	50,000
		2"	450	50,000	100,000	50,000	100,000	70,000	50,000	50,000	105,000	50,000	50,000	75,000	75,000
MEGA.DSS		2" 1/2	450	55,000	110,000	55,000	110,000	77,000	55,000	55,000	115,500	55,000	55,000	80,000	80,000
		2" 3/4	520	75,000	150,000	75,000	150,000	105,000	75,000	75,000	157,500	75,000	75,000	100,000	100,000
		3"	520	80,000	160,000	80,000	160,000	112,000	80,000	80,000	168,000	80,000	80,000	110,000	110,000
		3" 1/4	590	90,000	180,000	90,000	180,000	126,000	90,000	90,000	189,000	90,000	90,000	120,000	120,000
		3" 1/2	665	95,000	190,000	95,000	190,000	133,000	95,000	95,000	199,500	95,000	95,000	130,000	130,000
		3" 3/4	740	100,000	200,000	100,000	200,000	140,000	100,000	100,000	210,000	100,000	100,000	140,000	140,000
SEB		4"	740	110,000	220,000	110,000	220,000	154,000	110,000	110,000	231,000	110,000	110,000	160,000	160,000
		3/8"	8	3,500	7,000	1,500	3,000	2,100	1,500	1,500	3,150	1,500	1,500	1,950	1,950
		1/2"	12	4,200	8,400	1,950	3,900	2,730	1,950	1,950	4,095	1,950	1,950	2,400	2,400
		5/8"	40	7,000	14,000	4,000	8,000	5,600	4,000	4,000	8,400	4,000	4,000	5,900	5,900
		3/4"	80	15,000	30,000	5,900	11,800	8,260	5,900	5,900	12,390	5,900	5,900	9,300	9,300
		1"	125	15,000	30,000	9,300	18,600	13,020	9,300	9,300	19,530	9,300	9,300	13,800	13,800
		1" 1/4	200	22,000	44,000	13,800	27,600	19,320	13,800	13,800	28,980	13,800	13,800	20,000	20,000
		1" 1/2	240	25,000	50,000	25,000	50,000	35,000	25,000	25,000	52,500	25,000	25,000	25,000	25,000

GRADUP LOAD ANGLE CHART

SUMMARY METRIC

β max : 60°
L : Load

5:1

max. load in t

	Lifting Type	Number of rings	Lifting angle β	Torque (Nm)										
					1	2	1	2	2	2	Asymmetric	3 → 4	3 → 4	Asymmetric
					0°	0°	90°	90°	0° → 45°	46° → 60°	Asymmetric	0° → 45°	46° → 60°	Asymmetric
					0°	0°	90°	90°	0° → 45°	46° → 60°	Asymmetric	0° → 45°	46° → 60°	Asymmetric
DSR	Size	Torque (Nm)												
	M 5	3	0,20	0,40	0,07	0,14	0,10	0,07	0,07	0,15	0,07	0,07	0,15	0,07
	M 6	4	0,30	0,60	0,15	0,30	0,21	0,15	0,15	0,32	0,15	0,15	0,32	0,15
	M 8	6	0,80	1,60	0,40	0,80	0,56	0,40	0,40	0,84	0,40	0,40	0,84	0,40
	M 10	10	1,30	2,60	0,70	1,40	0,98	0,70	0,70	1,47	0,70	0,70	1,47	0,70
	M 12	15	1,50	3,00	1,05	2,10	1,47	1,05	1,05	2,21	1,05	1,05	2,21	1,05
	M 14	30	2,50	5,00	1,40	2,80	1,96	1,40	1,40	2,94	1,40	1,40	2,94	1,40
	M 16	50	2,70	5,40	2,00	4,00	2,80	2,00	2,00	4,20	2,00	2,00	4,20	2,00
	M 18	70	2,50	5,00	2,30	4,60	3,22	2,30	2,30	4,83	2,30	2,30	4,83	2,30
	M 20 2t5	100	2,80	5,60	2,50	5,00	3,50	2,50	2,50	5,25	2,50	2,50	5,25	2,50
	M 20 3t2	100	3,20	6,40	2,90	5,80	4,06	2,90	2,90	6,09	2,90	2,90	6,09	2,90
	M 22	120	5,50	11,00	3,50	7,00	4,90	3,50	3,50	7,35	3,50	3,50	7,35	3,50
	M 24	160	6,00	12,00	4,40	8,80	6,16	4,40	4,40	9,24	4,40	4,40	9,24	4,40
	M 27	200	6,00	12,00	5,70	11,40	7,98	5,70	5,70	11,97	5,70	5,70	11,97	5,70
	M 30 6t3	250	6,30	12,60	6,00	12,00	8,40	6,00	6,00	12,60	6,00	6,00	12,60	6,00
	M 30 8t	250	9,00	18,00	6,70	13,40	9,38	6,70	6,70	14,07	6,70	6,70	14,07	6,70
	M 36	320	9,00	18,00	8,00	16,00	11,20	8,00	8,00	16,80	8,00	8,00	16,80	8,00
DSS	M 42	400	9,50	19,00	8,50	17,00	11,90	8,50	8,50	17,85	8,50	8,50	17,85	8,50
	M 24	160	9,00	18,00	4,50	9,00	6,30	4,50	4,50	9,45	4,50	4,50	9,45	4,50
	M 30	250	14,00	28,00	7,70	15,40	10,78	7,70	7,70	16,17	7,70	7,70	16,17	7,70
	M 33	250	14,50	29,00	8,50	17,00	11,90	8,50	8,50	17,85	8,50	8,50	17,85	8,50
	M 36	320	15,00	30,00	11,00	22,00	15,40	11,00	11,00	23,10	11,00	11,00	23,10	11,00
	M 36x3	320	15,00	30,00	11,00	22,00	15,40	11,00	11,00	23,10	11,00	11,00	23,10	11,00
	M 39	320	15,00	30,00	12,00	24,00	16,80	12,00	12,00	25,20	12,00	12,00	25,20	12,00
	M 42	400	15,00	30,00	13,00	26,00	18,20	13,00	13,00	27,30	13,00	13,00	27,30	13,00
	M 42x3	400	15,00	30,00	13,00	26,00	18,20	13,00	13,00	27,30	13,00	13,00	27,30	13,00
	M 45	400	15,00	30,00	14,50	29,00	20,30	14,50	14,50	30,45	14,50	14,50	30,45	14,50
	M 48	600	22,00	44,00	17,00	34,00	23,80	17,00	17,00	35,70	17,00	17,00	35,70	17,00
	M 48x3	600	22,00	44,00	17,00	34,00	23,80	17,00	17,00	35,70	17,00	17,00	35,70	17,00
	M 48x4	600	22,00	44,00	17,00	34,00	23,80	17,00	17,00	35,70	17,00	17,00	35,70	17,00
	M 52	600	23,00	46,00	19,00	38,00	26,60	19,00	19,00	39,90	19,00	19,00	39,90	19,00
	M 56	600	25,00	50,00	22,00	44,00	30,80	22,00	22,00	46,20	22,00	22,00	46,20	22,00
	M 56x4	600	25,00	50,00	22,00	44,00	30,80	22,00	22,00	46,20	22,00	22,00	46,20	22,00
MEGA/ GIGA.DSS	M 64	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00	52,50	25,00
	M 64x4	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00	52,50	25,00
	M 72	600	25,00	50,00	22,00	44,00	30,80	22,00	22,00	46,20	22,00	22,00	46,20	22,00
	M 72x4	600	25,00	50,00	22,00	44,00	30,80	22,00	22,00	46,20	22,00	22,00	46,20	22,00
	M 80	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00	52,50	25,00
	M 90	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00	52,50	25,00
	M 100	600	25,00	50,00	25,00	50,00	35,00	25,00	25,00	52,50	25,00	25,00	52,50	25,00
	M 64	600	26,00	52,00	26,00	52,00	36,40	26,00	26,00	54,60	26,00	26,00	54,60	26,00
	M 72	700	28,00	56,00	28,00	56,00	39,20	28,00	28,00	58,80	28,00	28,00	58,80	28,00
	M 72x4	700	28,00	56,00	28,00	56,00	39,20	28,00	28,00	58,80	28,00	28,00	58,80	28,00
SEB	M 80	800	32,00	64,00	32,00	64,00	44,80	32,00	32,00	67,20	32,00	32,00	67,20	32,00
	M 90	900	36,00	72,00	36,00	72,00	50,40	36,00	36,00	75,60	36,00	36,00	75,60	36,00
	M 100	1000	48,00	96,00	48,00	96,00	67,20	48,00	48,00	100,80	48,00	48,00	100,80	48,00
	M 150	2000	125,00	250,00	125,00	250,00	175,00	125,00	125,00	262,50	125,00	125,00	262,50	125,00
	M 8	6	0,70	1,40	0,40	0,80	0,56	0,40	0,40	0,84	0,40	0,40	0,84	0,40
	M 10	10	1,20	2,40	0,50	1,00	0,70	0,50	0,50	1,05	0,50	0,50	1,05	0,50
	M 12	15	1,70	3,40	0,80	1,60	1,12	0,80	0,80	1,68	0,80	0,80	1,68	0,80
	M 16	50	3,20	6,40	1,40	2,80	1,96	1,40	1,40	2,94	1,40	1,40	2,94	1,40
	M 20	100	5,00	10,00	2,00	4,00	2,80	2,00	2,00	4,20	2,00	2,00	4,20	2,00
	M 24 3t8	160	6,30	12,60	3,20	6,40	4,48	3,20	3,20	6,72	3,20	3,20	6,72	3,20
	M 24 4t2	160	7,00	14,00	3,40	6,80	4,76	3,40	3,40	7,14	3,40	3,40	7,14	3,40
	M 30	250	8,50	17,00	5,50	11,00	7,70	5,50	5,50	11,55	5,50	5,50	11,55	5,50
	M 36	320	12,00	24,00	9,00	18,00	12,60	9,00	9,00	18,90	9,00	9,00	18,90	9,00
	M 42	400	12,00	24,00	12,00	24,00	16,80	12,00	12,00	25,20	12,00	12,00	25,20	12,00
	M 48	600	15,00	30,00	15,00	30,00	21,00	15,00	15,00	31,50	15,00	15,00	31,50	15,00

GRADUP LOAD ANGLE CHART

SUMMARY UNC

β max : 60°
L : Load

5:1

max. load in lbs

			Size	Torque (ft-lb)										
DSR			1/4"	3	650	1,300	330	660	462	330	330	693	330	330
			5/16"	5	1,800	3,600	1,000	2,000	1,400	1,000	1,000	2,100	1,000	1,000
			3/8"	8	2,500	5,000	1,300	2,600	1,820	1,300	1,300	2,730	1,300	1,300
			1/2"	12	3,000	6,000	2,400	4,800	3,360	2,400	2,400	5,040	2,400	2,400
			5/8"	40	5,900	11,800	3,900	7,800	5,460	3,900	3,900	8,190	3,900	3,900
			3/4"	80	5,900	11,800	5,250	10,500	7,350	5,250	5,250	11,025	5,250	5,250
			7/8"	90	13,500	27,000	7,900	15,800	11,060	7,900	7,900	16,590	7,900	7,900
			1"	125	13,500	27,000	11,200	22,400	15,680	11,200	11,200	23,520	11,200	11,200
			1" 1/8	160	13,500	27,000	11,500	23,000	16,100	11,500	11,500	24,150	11,500	11,500
			1" 1/4	200	13,500	27,000	13,500	27,000	18,900	13,500	13,500	28,350	13,500	13,500
DSS			1"	125	19,000	38,000	10,000	20,000	14,000	10,000	10,000	21,000	10,000	10,000
			1" 1/4	200	30,000	60,000	15,000	30,000	21,000	15,000	15,000	31,500	15,000	15,000
			1" 3/8	240	31,000	62,000	21,000	42,000	29,400	21,000	21,000	44,100	21,000	21,000
			1" 1/2	240	31,000	62,000	22,000	44,000	30,800	22,000	22,000	46,200	22,000	22,000
			1" 3/4	300	33,000	66,000	27,000	54,000	37,800	27,000	27,000	56,700	27,000	27,000
			2"	450	50,000	100,000	38,000	76,000	53,200	38,000	38,000	79,800	38,000	38,000
			2" 1/2	450	55,000	110,000	48,500	97,000	67,900	48,500	48,500	101,850	48,500	48,500
MEGA.DSS			2" 3/4	520	60,000	120,000	60,000	120,000	84,000	60,000	60,000	126,000	60,000	60,000
			3"	520	64,000	128,000	64,000	128,000	89,600	64,000	64,000	134,400	64,000	64,000
			3" 1/4	590	72,000	144,000	72,000	144,000	100,800	72,000	72,000	151,200	72,000	72,000
			3" 1/2	665	76,000	152,000	76,000	152,000	106,400	76,000	76,000	159,600	76,000	76,000
			3" 3/4	740	80,000	160,000	80,000	160,000	112,000	80,000	80,000	168,000	80,000	80,000
SEB			4"	740	88,000	176,000	88,500	176,000	123,200	88,000	88,000	184,800	88,000	88,000
			3/8"	8	2,800	5,600	1,200	2,400	1,680	1,200	1,200	2,520	1,200	1,200
			1/2"	12	3,800	7,600	1,800	3,600	2,520	1,800	1,800	3,780	1,800	1,800
			5/8"	40	7,000	14,000	3,200	6,400	4,480	3,200	3,200	6,720	3,200	3,200
			3/4"	80	12,000	24,000	4,750	9,500	6,650	4,750	4,750	9,975	4,750	4,750
			1"	125	15,000	30,000	7,500	15,000	10,500	7,500	7,500	15,750	7,500	7,500
			1" 1/4	200	19,000	38,000	12,200	24,400	17,080	12,200	12,200	25,620	12,200	12,200
			1" 1/2	240	25,000	50,000	20,000	40,000	28,000	20,000	20,000	42,000	20,000	20,000