

Guide Rod Attachment Details

GRS Model	A	øB H7	C	D
GRS.30.J	20.00 0.787	-	ø34.0 1.339	4 x M8 SHCS
GRS.30.M		6.00		
GRS.30.K		-		
GRS.30.E		6.00		
GRS.30.HD__J	20.00 0.787	-	ø34.0 1.339	4 x M8 SHCS
GRS.30.HD__M		6.00		
GRS.30.HD__K		-		
GRS.30.HD__E		6.00		
GRS.36.J	23.00 0.906	-	ø41.0 1.614	4 x M10 SHCS
GRS.36.M		8.00		
GRS.36.K		-		
GRS.36.E		8.00		
GRS.36.HD.J	23.00 0.906	-	ø41.0 1.614	4 x M10 SHCS
GRS.36.HD.M		8.00		
GRS.36.HD__J		-		
GRS.36.HD__M		8.00		
GRS.36.HD__K	-			
GRS.36.HD__E	8.00			
GRS.45.HD__M1	31.75 1.250	12.70 0.500	ø50.0 1.970	4 x M10 SHCS
GRS.45.HD__J1				4 x 3/8"-16
GRS.45.HD__K1				
GRS.45.HD__E1				
GRS.50.J	34.00 1.339	-	ø54.0 2.126	4 x M12 SHCS
GRS.50.M		10.00		
GRS.50.K		-		
GRS.50.E		10.00		
GRS.50.HD.J	30.48	10.00	ø56.5	3 x M16 SHCS
GRS.50.HD.M	40.00	10.00	ø66.0	4 x M16 SHCS
GRS.65.HD.J	1.575	0.394	2.599	

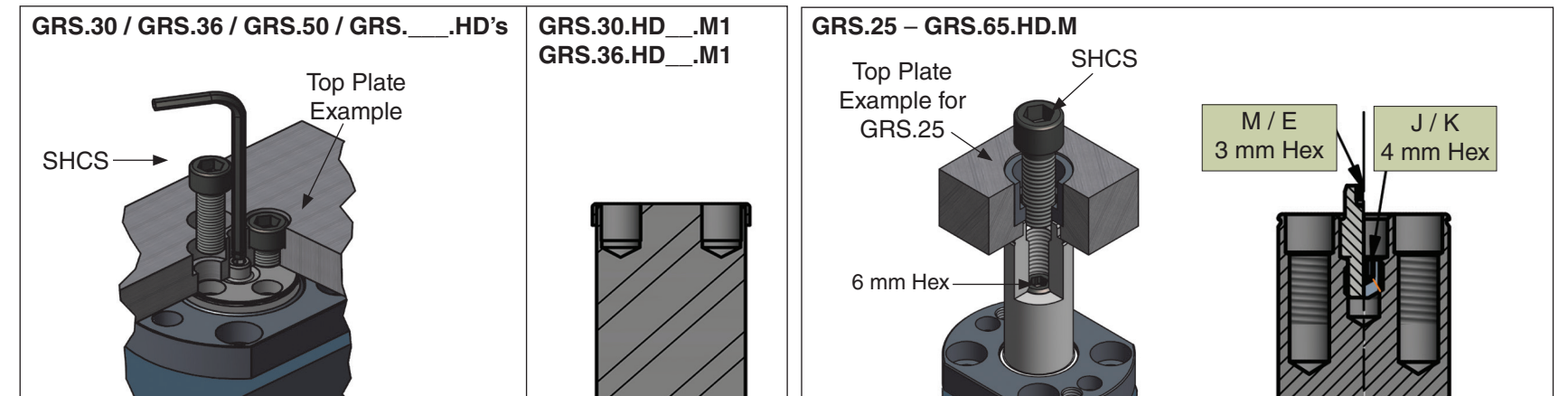
J = Metric without dowel, K = Imperial without dowel, M = Metric with dowel, E = Imperial with dowel, M1 = Metric, E1 = Imperial with dowel, J1 = Metric without dowel, K1 = Imperial without dowel

Rod Attachment Fastener Torques

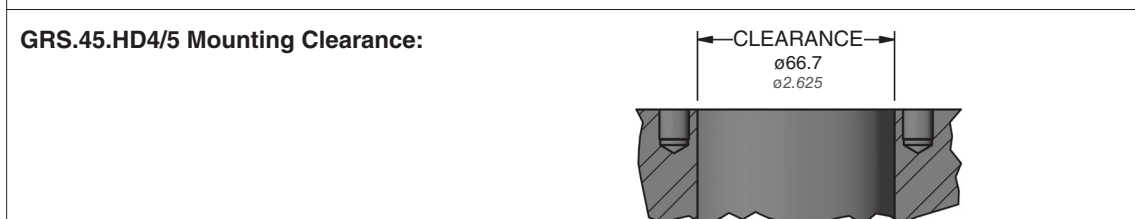
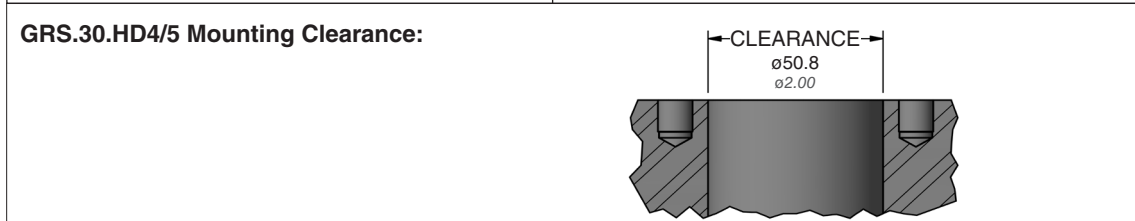
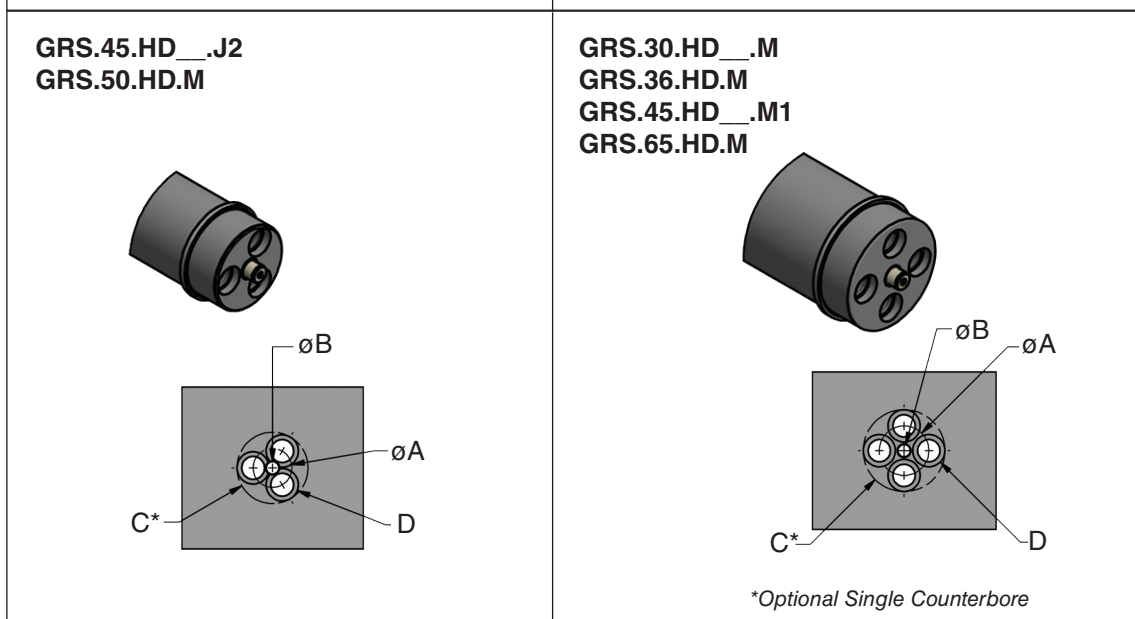
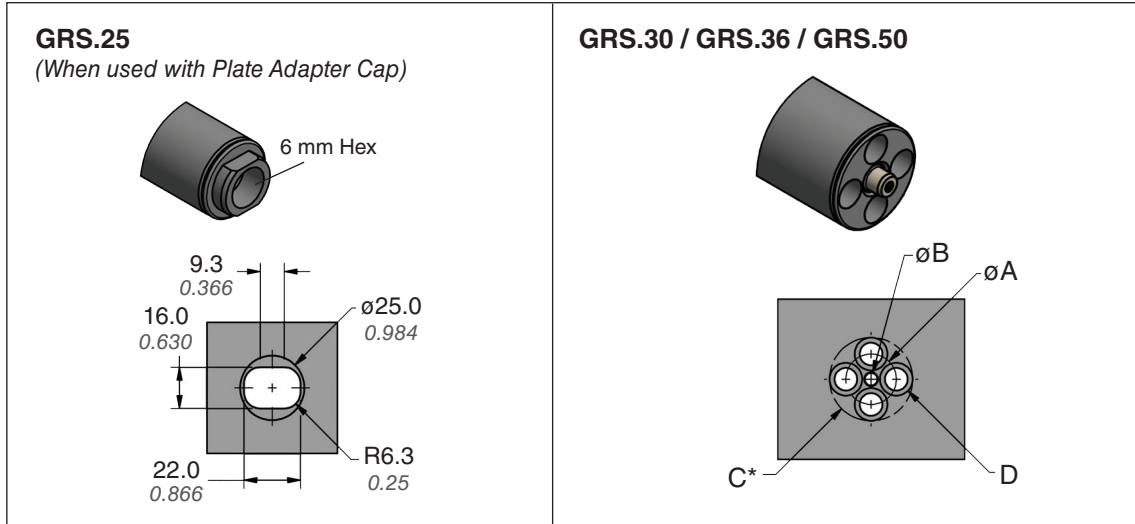
GRS Model	SHCS	Washer	Torque Grade 12.9	
			ft-lb.	Nm
GRS.25	M12	N/A	71	97
GRS.30/GRS.30.HD__	M8	UMR08	21	28
GRS.36/GRS.36.HD__	M10	UMR10	41	56
GRS.45/GRS.45.HD__	M10	UMR10	41	56
GRS.50	M12	UMR12	71	97
GRS.50.HD	M16	UMR16	177	240
GRS.65.HD				

Guide Rod Machining Details

The Hex is located in the dowel or in the center of the rod, depending on what size GRS / GRS.HD needed for your application. The Hex aids in lining up bolt holes.

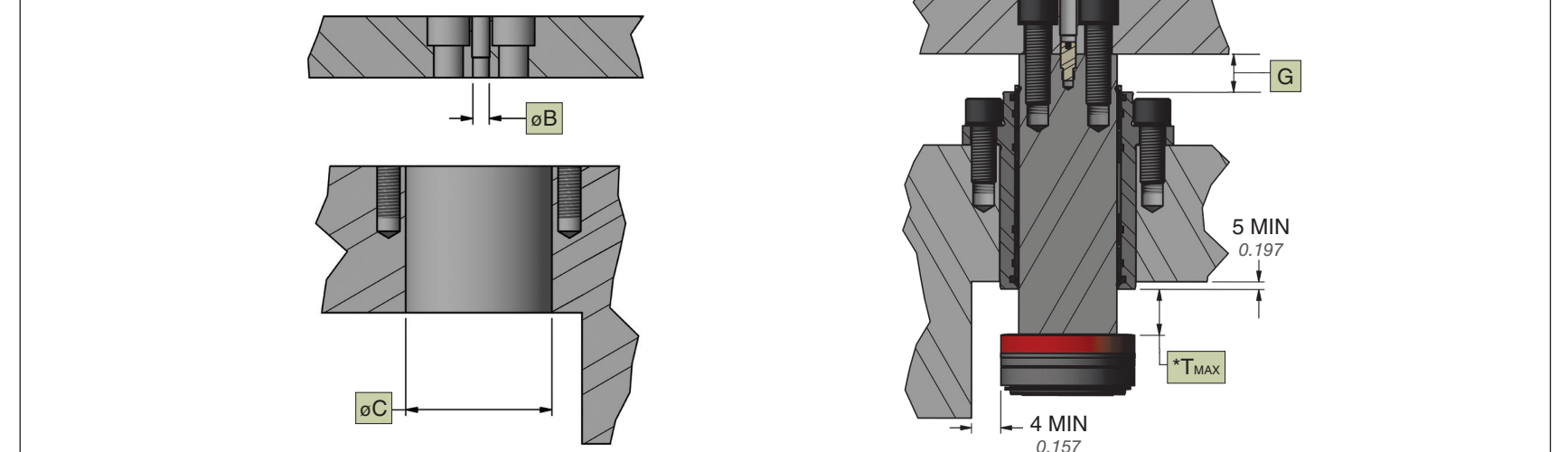


Model	øB H7	øC H8	øD1	øD2	F _{MAX}	G
GRS.25	-	38.00 1.496	25.030 - 25.065 0.9854 - 0.9868	25.00 0.984	10.00 0.394	≥3.00 mm 0.118
GRS.30	6.00 0.236	43.00 1.693	30.045 - 30.085 1.1829 - 1.1844	-	10.00 0.394	≥3.00 mm 0.118
GRS.30.HD__M/E/J/K	6.00 0.236	44.45 1.750	30.045 - 30.085 1.1829 - 1.1844	-	10.00 0.394	≥3.00 mm 0.118
GRS.30.HD1 / HD2.M1/E1	-	44.45 1.750	31.795 - 31.835 1.2518 - 1.2533	-	5.00 0.197	≥6.00 mm 0.236
GRS.30.HD4 / HD5.M1/E1	-	See facing page	31.795 - 31.835 1.2518 - 1.2533	-	5.00 0.197	≥6.00 mm 0.236
GRS.36	8.00 0.315	50.00 1.969	36.045 - 36.085 1.4191 - 1.4207	-	10.00 0.394	≥3.00 mm 0.118
GRS.36.HD__M/E/J/K	8.00 0.315	53.98 2.125	36.045 - 36.085 1.4191 - 1.4207	-	10.00 0.394	≥3.00 mm 0.118
GRS.36.HD	8.00 0.315	50.00 1.969	36.045 - 36.085 1.4191 - 1.4207	50.00 1.969	10.00 0.394	≥15.00 mm 0.591
GRS.36.HD1 / HD2.M1/E1	-	53.98 2.125	38.145 - 38.185 1.5018 - 1.5033	-	5.00 0.197	≥6.00 mm 0.236
GRS.45.HD1 / HD2.M1/E1/J1/K1	12.7 0.500	60.33 2.375	45.045 - 45.100 1.7734 - 1.7756	57.2 2.25	15.00 0.591	≥3.00 mm 0.118
GRS.45.HD1 / HD2.J2 / K2	-	60.33 2.375	44.495 - 44.550 1.7518 - 1.7539	50.80 2.000	6.35 0.250	≥10.00 mm 0.394
GRS.45.HD4 / HD5.M1/E1/J1/K1	12.7 0.500	See facing page	45.045 - 45.100 1.7734 - 1.7756	57.2 2.25	15.00 0.591	≥3.00 mm 0.118
GRS.45.HD4 / HD5.J2 / K2	-	See facing page	44.495 - 44.550 1.7518 - 1.7539	50.80 2.000	6.35 0.250	≥10.00 mm 0.394
GRS.50	10.00 0.394	68.00 2.677	50.045 - 50.100 1.9703 - 1.9724	-	15.00 0.591	≥3.00 mm 0.118
GRS.50.HD	10.00 0.394	70.00 2.756	50.045 - 50.100 1.9703 - 1.9724	58.00 2.283	20.00 0.787	≥25.00 mm 0.984
GRS.65.HD	10.00 0.394	90.00 3.543	65.045 - 65.100 2.5608 - 2.5630	90.00 3.543	20.00 0.787	≥25.00 mm 0.984



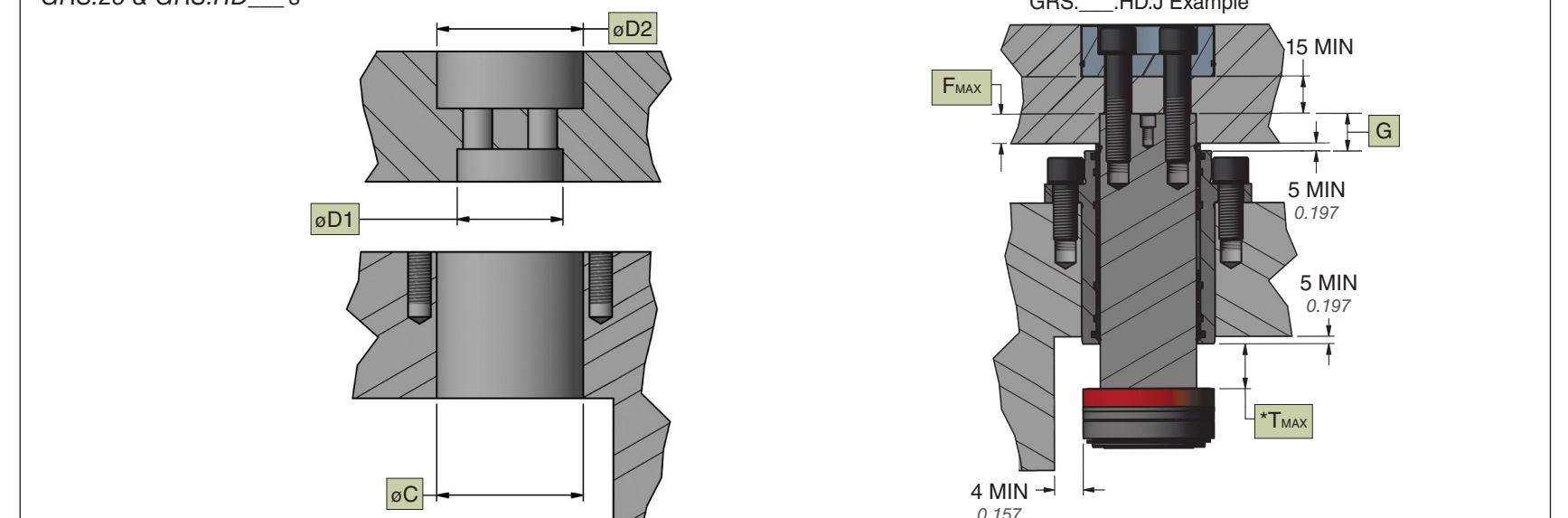
Pocket and Clearance Dimensions

GRS.30, GRS.36, & GRS.50



Pocket and Clearance Dimensions when using Optional Plate Adapter

GRS.25 & GRS.HD__'s



GRS/GRS.HD Installation & Operation Specifications

Guide Retainer Sets

The guidelines below show attachment limits per GRS based on press ram velocity. For increased capacity, install additional Guide Retainer Sets.

GRS.25

Velocity Estimate (m/sec)	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Per GRS max (lb.)	67	38	24	17	12	9	7	6
Per GRS max (kg)	31	17	11	8	6	4	3.4	2.8
Pad Mass (lb./kg)	GRS.25 Quantity							
5.5 / 2.5	2	2	2	2	2	2	2	2
11 / 5	2	2	2	2	2	3	3	3
22 / 10	2	2	2	3	3	4	4	5
44 / 20	2	3	3	4	5	6	7	
66 / 30	2	3	4	5	7	8		
99 / 45	3	4	6	7				

GRS.36

Velocity Estimate (m/sec)	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Per GRS max (lb.)	178	100	64	44	33	25	20	16
Per GRS max (kg)	81	45	29	20	15	11	9	7
Pad Mass (lb./kg)	GRS.36 Quantity							
22 / 10	2	2	2	2	2	2	3	3
55 / 25	2	2	2	3	3	4	4	5
110 / 50	2	3	3	4	5	6	7	8
165 / 75	2	3	4	5	7	8		
220 / 100	3	4	5	6	8			
276 / 125	3	4	6	8				

GRS.45.HD4/5

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	317	220	162	124	98	79	66	55
Per GRS max (kg)	144	100	73	56	44	36	30	25
Pad Mass (lb./kg)	GRS.45.HD4/5 Quantity							
150 / 68	2	2	2	3	3	3	4	4
200 / 91	2	2	3	3	4	4	5	5
250 / 113	2	3	3	4	4	5	5	6
300 / 136	2	3	3	4	5	5	6	7
350 / 159	3	3	4	4	5	6	7	8
400 / 181	3	3	4	5	6	7	8	
450 / 204	3	4	4	5	6	7	8	
500 / 227	3	4	5	6	7	8		
550 / 249	3	4	5	6	7	8		
600 / 272	3	4	5	6	8			
650 / 295	4	4	6	7	8			
700 / 318	4	5	6	7				

GRS.30

Velocity Estimate (m/sec)	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Per GRS max (lb.)	91	51	33	23	17	13	10	8
Per GRS max (kg)	41	23	15	10	8	6	5	4
Pad Mass (lb./kg)	GRS.30 Quantity							
11 / 5	2	2	2	2	2	2	3	3
22 / 10	2	2	2	2	3	3	4	4
44 / 20	2	2	3	3	4	5	6	7
77 / 35	2	3	4	5	6	8		
110 / 50	3	4	5	6	8			
143 / 65	3	4	6	8				

GRS.36.HD

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	265	184	135	103	82	66	55	46
Per GRS max (kg)	120	83	61	47	37	30	25	21
Pad Mass (lb./kg)	GRS.36.HD Quantity							
150 / 68	2	2	3	3	3	4	4	5
200 / 91	2	3	3	3	4	5	5	6
250 / 113	2	3	3	4	5	5	6	7
300 / 136	3	3	4	4	5	6	7	8
350 / 159	3	3	4	5	6	7	8	
400 / 181	3	4	4	5	6	8		
450 / 204	3	4	5	6	7	8		
500 / 227	3	4	5	6	8			
550 / 249	4	4	6	7	8			
600 / 272	4	5	6	7				

GRS.50

Velocity Estimate (m/sec)	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
Per GRS max (lb.)	269	152	97	67	49	38	30	24
Per GRS max (kg)	122	69	44	31	22	17	14	11
Pad Mass (lb./kg)	GRS.50 Quantity							
22 / 10	2	2	2	2	2	2	2	2
55 / 25	2	2	2	2	3	3	3	4
110 / 50	2	2	3	3	4	4	5	6
165 / 75	2	3	3	4	5	6	7	8
276 / 125	3	3	4	6	7			
386 / 175	3	4	5	7				

GRS.30.HD

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	141	98	72	55	44	35	29	24
Per GRS max (kg)	64	44	33	25	20	16	13	11
Pad Mass (lb./kg)	GRS.30.HD Quantity							
50 / 23	2	2	2	2	3	3	3	4
100 / 45	2	3	3	3	4	4	5	6
150 / 68	3	3	4	4	5	6	7	8
200 / 91	3	4	4	5	6	7	8	
250 / 113	3	4	5	6	7			
300 / 136	4	5	6	7	8			
350 / 159	4	5	6	8				
400 / 181	4	6	7					

GRS.36.HD1/2

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	185	129	94	72	57	46	38	32
Per GRS max (kg)	84	58	43	33	26	21	17	15
Pad Mass (lb./kg)	GRS.36.HD1/2 Quantity							
50 / 23	2	2	2	2	2	3	3	3
100 / 45	2	2	3	3	3	4	4	5
150 / 68	2	3	3	4	4	5	5	6
200 / 91	3	3	4	4	5	6	7	8
250 / 113	3	3	4	5	6	7	8	
300 / 136	3	4	5	6	7	8		
350 / 159	3	4	5	6	8			
400 / 181	4	5	6	7	8			
450 / 204	4	5	6	8				
500 / 227	4	5	7	8				

GRS.50.HD

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	1058	735	540	413	327	265	219	184
Per GRS max (kg)	480	333	245	188	148	120	99	83
Pad Mass (lb./kg)	GRS.50.HD Quantity							
250 / 113	2	2	2	2	2	2	3	3
500 / 227	2	2	2	3	3	3	4	4
750 / 340	2	3	3	3	4	4	5	6
1000 / 454	2	3	3	4	5	5	6	7
1250 / 567	3	3	4	5	5	6	7	8
1500 / 680	3	4	4	5	6	7	8	
1750 / 794	3	4	5	6	7	8		
2000 / 907	3	4	5	6	8			
2250 / 1021	4	5	6	7	8			
2500 / 1134	4	5	6	8				

GRS.30.HD4/5

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	141	98	72	55	44	35	29	24
Per GRS max (kg)	64	44	33	25	20	16	13	11
Pad Mass (lb./kg)	GRS.30.HD4/5 Quantity							
50 / 23	2	2	2	2	3	3	3	4
100 / 45	2	3	3	3	4	4	5	6
150 / 68	3	3	4	4	5	6	7	8
200 / 91	3	4	4	5	6	7	8	
250 / 113	3	4	5	6	7			
300 / 136	4	5	6	7	8			
350 / 159	4	5	6	8				
400 / 181	4	6	7					

GRS.45.HD1/2

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	317	220	162	124	98	79	66	55
Per GRS max (kg)	144	100	73	56	44	36	30	25
Pad Mass (lb./kg)	GRS.45.HD1/2 Quantity							
150 / 68	2	2	2	3	3	3	4	4
200 / 91	2	2	3	3	4	4	5	5
250 / 113	2	3	3	4	4	5	5	6
300 / 136	2	3	3	4	5	5	6	7
350 / 159	3	3	4	4	5	6	7	8
400 / 181	3	3	4	5	6	7	8	
450 / 204	3	4	4	5	6	7	8	
500 / 227	3	4	5	6	7	8		
550 / 249	3	4	5	6	7	8		
600 / 272	3	4	5	6	8			
650 / 295	4	4	6	7	8			
700 / 318	4	5	6	7				

GRS.65.HD

Velocity Estimate (m/sec)	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Per GRS max (lb.)	1411	980	720	551	435	353	292	245
Per GRS max (kg)	640	444	327	250	198	160	132	111
Pad Mass (lb./kg)	GRS.65.HD Quantity							
250 / 113	2	2	2	2	2	2	2	3
500 / 227	2	2	2	2	3	3	3	4
750 / 340	2	2	3	3	3	4	4	5
1000 / 454	2	3	3	3	4	4	5	6
1250 / 567	2	3	3	4	4	5	6	7
1500 / 680	3	3	4	4	5	6	7	8
1750 / 794	3	3	4	4	5	6	8	
2000 / 907	3	4	4	5	6	7	8	
2250 / 1021	3	4	5	6	7	8		
2500 / 1134	3	4	5	6	7			