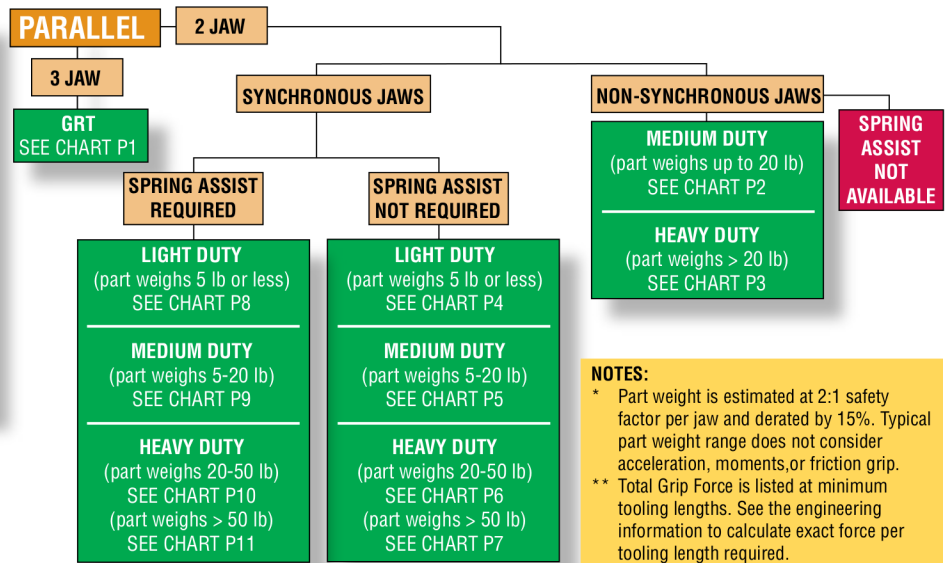


PARALLEL GRIPPER SELECTION/COMPARISON GUIDE

The intent of this guide is to provide a quick visual comparison of grippers that are categorized by application criteria.

It is recommended that you use PHD's online sizing software or the sizing catalog for exact gripper sizing. Consult PHD Application Engineering for assistance.



NOTES:

- * Part weight is estimated at 2:1 safety factor per jaw and derated by 15%. Typical part weight range does not consider acceleration, moments, or friction grip.
- ** Total Grip Force is listed at minimum tooling lengths. See the engineering information to calculate exact force per tooling length required.

P1: Parallel/3 Jaws

GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											TOTAL DIAMETRAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS					
	5 [2.3]	10 [4.5]	15 [7]	20 [9]	50 [23]	75 [34]	100 [45]	150 [68]	200 [91]	250 [113]	Internal Proximity Switch Ready							Spring Assist		Part Ejector	Seals		
																		Heavy Force Closed	Heavy Force Open		Buna-N (Standard)	Fluoro- Elastomer	
GRTx11	5 [2.3]											0.236 6	1.5 40	44 196	●	●	●	●	●	●			
GRTx12	13 [5.8]											0.315 8	1.97 50	112 499	●	●	●	●	●	●			
GRTx13	19 [8.6]											0.472 12	2.56 65	168 747	●	●	●	●	●	●			
GRTx14		25 [11.2]										0.630 16	2.95 75	218 971	●	●	●	●	●	●			
GRTx15			43 [19.4]									0.787 20	3.94 100	378 1683	●	●	●	●	●	●			
GRTx16				64 [29.3]								1.024 26	4.92 125	569 2531	●	●	●	●	●	●			
GRTx17						100 [45.2]						1.260 32	5.91 150	880 3912	●	●	●	●	●	●			
GRTx18							164 [74.6]					1.575 40	7.87 200	1452 6459	●	●	●	●	●	●			

P2: Parallel/2 Jaws/Non-Synchronous Jaws/Medium Duty

		*TYPICAL PART WEIGHT RANGE lb [kg]											TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS		
		2 [0.9]	4 [1.8]	6 [2.7]	8 [3.6]	10 [4.6]	12 [5.4]	15 [7]	20 [9]	25 [11]	30 [14]	Proximity Switches							Half Switch Ready	Manifold	
	GRL 14x7	4.8 [2.2]											0.28	7	3	75	28	124	●	●	●
	GRL 14x13	5.1 [2.3]											0.51	13	3	75	30	132	●	●	●
	GRL 16x20		7 [3.2]										0.79	20	4	100	41	182	●	●	●
	GRL 16x25		7 [3.2]										1.02	26	5	125	41	182	●	●	●
	GRW03-x-16	6.1 [2.8]											0.79	20	4.5	114	36	160	●	●	●
	GRW03-x-25						15.3 [6.9]						2.09	53	8	200	90	400	●	●	●

P3: Parallel/2 Jaws/Non-Synchronous Jaws/Heavy Duty

GRIPPER MODEL #		*TYPICAL PART WEIGHT RANGE lb [kg]										TOTAL JAW TRAVEL		TOOLING LENGTH MAXIMUM		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar]		OPTIONS							
		10 [4.5]	20 [9]	30 [14]	40 [18]	50 [23]	75 [34]	100 [45]	125 [57]	150 [68]	200 [91]							Sensors/Switches	Manifold	Rodlok	Jaw Travel Limitation	NPT Ports	Corrosion Resistant	Fluoro-Elastomer Seals	
	GRW03-x-32	29 [13.1]										2.56	65	14	350	170	756	●	●				●	●	
	GRW03-x-40	35 [16.0]										3.58	91	15	381	207	921	●	●				●	●	
	GRW03-x-50				73 [33.1]							4.61	117	18.5	470	429	1908	●	●				●	●	
	GRR22-x-63x150					120 [54.3]						5.91	150	20	500	704	3130	●		●	●	●	●	●	●
	GRR22-x-63x200					120 [54.3]						7.87	200	20	500	704	3130	●		●	●	●	●	●	●
	GRR22-x-63x250					120 [54.3]						9.84	250	20	500	704	3130	●		●	●	●	●	●	●
	GRR22-x-63x350					120 [54.3]						13.80	350	20	500	704	3130	●		●	●	●	●	●	●



PARALLEL GRIPPER SELECTION/COMPARISON GUIDE

P4: Parallel/2 Jaws/Synchronous Jaws/Springs Not Required/Light Duty (up to 5 lb part weight)

GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]												TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS					
	0.25 [.1]	0.5 [.2]	1 [.4]	1.5 [.7]	2 [.9]	3 [1.4]	4 [1.8]	5 [2.3]	6 [2.7]	7 [3.2]	Spring Assist								Seals					
											Close	Open							Buna-N (Standard)	Fluoro- Elastomer				
 19x6x (Short Travel)	0.9 [0.4]											.157 4	2.5 63	5.3 24	●	●	●		●	●				
19x7x (Short Travel)			1.8 [0.8]									.276 7	3.8 96	10.6 47	●	●	●		●	●				
19x8x (Short Travel)					3.7 [1.7]							.394 10	4 102	21.8 97	●	●	●	●	●	●				
 19x6x (Long Travel)	0.5 [0.2]											.315 8	2.5 63	3.2 14	●	●	●		●	●				
19x7x (Long Travel)		1.4 [0.6]										.433 11	3.8 96	8.1 36	●	●	●	●	●	●				
19x8x (Long Travel)				2.2 [1.0]								.630 16	4 102	13.1 58	●	●	●	●	●	●				
19x9x (Long Travel)						4 [1.8]						.866 22	4 102	23.5 105	●	●	●	●	●	●				
 GRL12-x-14x7						4.8 [2.2]						.280 7	3 76.2	28 124		●			●					

P5: Parallel/2 Jaws/Synchronous Jaws/Springs Not Required/Medium Duty (5-20 lb part weight)

GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											TOTAL JAW TRAVEL		TOOLING LENGTH MAXIMUM		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar]		OPTIONS							
	2.5 [1.1]	5 [2.3]	7.5 [3.4]	10 [4.5]	12.5 [5.7]	15 [7]	17.5 [8]	20 [9]	25 [11]	30 [14]	Proximity Switch Ready							Spring Assist		Shurgrip Part Retention	Corrosion Resistant	Manifold Ports	Fluoro- Elastomer Seals		
																		Close	Open						
 GRS33-x-27x4.5			11.6 [5.2]									.177 4.5	2.2 35.9	68 302	●	●	●			●					
GRS33-x-27x7		8.2 [3.7]										.276 7	2.2 55.9	48 213	●	●	●			●					
 GRS33-x-28x6				13.1 [5.9]								.250 6.35	3.2 81.3	77 341	●	●	●			●					
GRS33-x-28x10		8.2 [3.7]										.394 10	3.2 81.3	48 213	●	●	●			●					
GRS33-x-32x8				18.5 [8.4]								.315 8	3.2 81.3	109 485	●	●	●			●					
GRS33-x-32x13			11.9 [5.4]									.512 13	3.2 81.3	70 310	●	●	●			●					
 GRDx31	5.6 [2.5]											.147 3.75	3 76.2	33 147	●	●	●				●				
GRDx41	6.8 [3.1]											.294 7.5	3 76.2	40 178	●	●	●				●				
GRDx51				14.8 [6.7]								.275 7.0	4 102	87 387	●	●	●				●				
GRDx52		9.2 [4.2]										.462 11.7	4 102	54 240	●	●	●				●				
GRDx62					15.5 [7.0]							.659 16.75	5 127	91 406	●	●	●				●				
 GRW13-x-16x20	6.1 [2.8]											.790 20	5 127	36 168	●				●	●					
 GRW13-x-25x53					15.3 [6.7]							2.09 53	8 203.2	90 400	●				●	●					
GRL12-x-14x13	5.1 [2.7]											.51 13	3 76.2	30 130	●					●					
GRL12-x-16x20	7 [3.2]											.79 20	4 102	41 182	●					●					
GRL12-x-16x26	7 [3.2]											1.02 26	5 127	41 182	●					●					
 GRF31-x-19x4.5	5.1 [2.3]											.177 4.5	1.4 35.6	30 135	●										
GRF34-x-25x6.5	6 [2.7]											.256 6.5	2 50.8	35 156	●										
GRF33-x-28x6				13.1 [5.9]								.25 6	2.8 71.1	77 341	●										
GRF33-x-28x10		8.2 [3.7]										.394 10	2.8 71.1	48 13	●										
GRF33-x-32x8						19.7 [8.9]						.315 8	4 100	116 516	●										
GRF33-x-32x13				14.5 [6.6]								.512 13	2.8 71.1	85 378	●										
 GRCx31 & GRCx33				14.1 [6.4]								.940 24	5 127	83 369	●	●	●	●			●				
GRCx32 & GRCx34					16.3 [7.4]							.940 24	5 127	96 427	●	●	●	●	●		●				
19x9x (Short Travel)	7.2 [3.3]											.512 13	4 102	42.6 190	●	●	●								

P6: Parallel/2 Jaws/Synchronous Jaws/Springs Not Required/Heavy Duty (20-50 lb part weight)

GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]												TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi[6 bar] lb N		OPTIONS							
	10 [4.5]	15 [6.8]	20 [9]	25 [11.3]	30 [13.6]	35 [16]	40 [18]	50 [23]	60 [27]	70 [32]	Proximity Switch Ready	Spring Assist							Corrosion Resistant	Manifold Ports	Sturgrip Part Retention	Fluoro- Elastomer Seals				
												Close											Open			
 GRS33-x-50x19						40	[18.1]					.750	19	4.2	106	235	1045	●	●	●		●				
GRS33-x-50x28			26.7	[12.1]								1.102	28	4.2	106	157	697	●	●	●		●				
GRDx61		23.1	[10.5]									.383	9.75	5	127	136	604	●	●	●				●		
GRW13-x-32x65			28.9	[13.1]								2.56	65	14	350	170	756	●				●	●			
GRW13-x-40x91				35.2	[16]							3.58	91	15	381	207	921	●				●	●			
GRCx41 & GRCx43					35.5	[16.1]						1.475	37.5	5	127	209	930	●	●	●		●	●	●		
GRCx42 & GRCx44				30.3	[13.7]							1.475	37.5	5	127	178	792	●	●	●		●	●	●		
1536x		21.8	[9.9]									.62	15.8	6	152	128	570	●	●	●				●		
1537x						44.4	[20.1]					1.00	254	8	203	261	1164	●	●	●				●		



PARALLEL GRIPPER SELECTION/COMPARISON GUIDE

P7: Parallel/2 Jaws/Synchronous Jaws/Springs Not Required/Heavy Duty (over 50 lb part weight)

GRIPPER MODEL #		*TYPICAL PART WEIGHT RANGE lb [kg]										TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS								
		45 [20]	50 [23]	60 [27]	70 [32]	80 [36]	100 [45]	125 [57]	150 [68]	200 [91]	250 [113]							Proximity Switches	Spring Assist		Corrosion Resistant	Fluoro- Elastomer Seals	Rodlok	Shurgrip Part Retention	Manifold Ports	NPT Ports
																			Close	Open						
	GRS33-x-63x32	67.7 [30.7]										1.260 32	6.5 152	398 1770	●	●	●					●	●			
	GRS33-x-63x44	49.1 [22.3]										1.732 44	6.5 152	289 1287	●	●	●					●	●			
	GRW13-x-50x117		72.9 [33.1]									4.61 117	18 450	429 1908	●			●				●	●			
	GRCx5x	65.1 [29.5]										1.945 49.5	6 152	383 1704	●	●	●						●			
	GRCx5x (Shurgrip)	54.1 [24.5]										1.945 49.5	6 152	318 1414	●	●	●	●			●		●			
	GRCx6x					147.9 [67.1]						3.010 76.5	10 254	870 3870	●	●	●	●	●				●			
	GRCx6x (Shurgrip)				103.5 [47.0]							3.010 76.5	10 254	609 2709	●	●	●	●	●		●		●			
	1538x			82.9 [37.6]								1.31 33.3	10 254	488 2172	●	●	●		●				●			
	1539x						166.6 [75.6]					1.80 45.8	10 254	980 4356	●	●	●						●			
	GRR12-x-63x150				120 [54.3]							5.91 150	20 500	704 3131	●			●	●	●			●			
	GRR12-x-63x200				120 [54.3]							7.87 200	20 500	704 3131	●			●	●	●			●			
	GRR12-x-63x250				120 [54.3]							9.84 250	20 500	704 3131	●			●	●	●			●			
	GRR12-x-63x300				120 [54.3]							13.8 350	20 500	704 3131	●			●	●	●			●			

P8: Parallel/2 Jaws/Synchronous Jaws/Spring Assist (Close)/Light Duty (up to 5 lb part weight)

GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS					
	0.5 [2.3]	1 [4]	1.5 [7]	2 [9]	3 [1.4]	4 [1.8]	5 [2.3]	6 [2.7]	7 [3.2]	8 [3.6]	Half Sensor							Proximity Switch Ready	Spring Assist		Seals		
																			Close	Open	Buna-N (Standard)	Fluoro- Elastomer	
 19x7x (Short Travel)			2.2	[1.0]								.276	7	3.8	96	12.8	57	●	●	●	●	●	●
19x8x (Short Travel)					4.4	[2.0]						.394	10	4	102	26	116	●	●	●	●	●	●
19x7x (Long Travel)		1.7	[0.8]									.433	11	3.8	96	9.8	44	●	●	●	●	●	●
19x8x (Long Travel)			2.7	[1.2]								.630	16	4	102	15.7	70	●	●	●	●	●	●
19x9x (Long Travel)						4.8	[2.2]					.866	22	4	102	28	124	●	●	●	●	●	●

P9: Parallel/2 Jaws/Synchronous Jaws/Spring Assist (Close)/Medium Duty (5-20 lb part weight)

GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS				
	Proximity Switches	Spring Assist		Manifold Ports	Fluoro- Elastomer Seals																	
		Close	Open																			
 GRS33-x-27x4.5				15.3	[6.9]						.177	4.5	2.2	35.9	90	400	●	●	●	●		
GRS33-x-27x7		10.7	[4.9]								.276	7	2.2	35.9	63	280	●	●	●	●		
GRS33-x-28x6				17	[7.7]						.250	6.35	2.2	35.9	100	445	●	●	●	●		
GRS33-x-28x10		10.5	[4.8]								.394	10	3.2	81.3	62	276	●	●	●	●		
GRS33-x-32x13				15.1	[6.9]						.512	132	3.2	81.3	89	396	●	●	●	●		
 GRDx31	8.2	[3.7]									.147	3.75	3	76.2	48	213	●	●	●		●	
GRDx41		10.2	[4.6]								.294	7.5	3	76.2	60	267	●	●	●		●	
GRDx52			13.6	[6.2]							.462	11.7	4	102	80	356	●	●	●		●	
 19x9x (Short Travel)	8.7	[4.0]									.512	13	4	102	51	227	●	●	●		●	

NOTES:

* Part weight is estimated at 2:1 safety factor per jaw and derated by 15%. Typical part weight range does not consider acceleration, moments, or friction grip.

** Total Grip Force is listed at minimum tooling lengths. See the engineering information to calculate exact force per tooling length required.



PARALLEL GRIPPER SELECTION/COMPARISON GUIDE

P10: Parallel/2 Jaws/Synchronous Jaws/Spring Assist (Close)/Heavy Duty (20-50 lb part weight)

GRIPPER MODEL #		*TYPICAL PART WEIGHT RANGE lb [kg]										TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS						
		10 [5]	15 [7]	20 [9]	25 [11]	30 [14]	35 [16]	40 [18]	50 [23]	60 [27]	70 [32]							Proximity Switches	Spring Assist		Manifold Ports	Corrosion Resistant	Shurgrip Part Retention	Fluoro- Elastomer Seals
																			Close	Open				
	GRS33-x-32x8	23.5	[10.6]									.315	8	3.2	81	138	614	●	●	●	●			
	GRS33-x-50x28				35	[15.9]						1.102	28	4.2	106	206	916	●	●	●	●			
	GRDx51	21.9	[9.9]									.275	7	4	102	129	574	●	●	●				●
	GRDx61			34.3	[15.6]							.383	9.75	5	127	202	898	●	●	●				●
	GRDx62	23	[10.4]									.659	16.75	5	127	135	600	●	●	●				●
	GRCx3x		25	[11.3]								.940	24	5	127	147	654	●	●	●				●
	GRCx3x (Shurgrip)	21.6	[9.8]									.940	24	5	127	127	565	●	●	●		●	●	●
	GRCx4x (Shurgrip)					46	[20.9]					1.475	37.5	5	127	271	1205	●	●	●		●	●	●
	1536x		28.3	[12.8]								.620	15.8	6	152	166	741	●	●	●				●

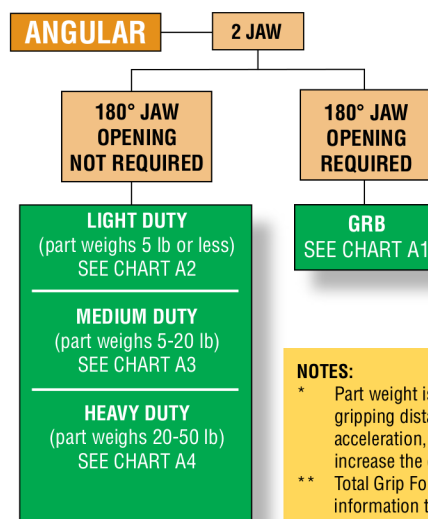
P11: Parallel/2 Jaws/Synchronous Jaws/Spring Assist (Close)/Heavy Duty (over 50 lb part weight)

GRIPPER MODEL #		*TYPICAL PART WEIGHT RANGE lb [kg]										TOTAL JAW TRAVEL in mm		TOOLING LENGTH MAXIMUM in mm		**TOTAL CLOSE GRIP FORCE AT 87 psi [6 bar] lb N		OPTIONS						
																		Proximity Switches	Spring Assist		Manifold Ports	Corrosion Resistant	Shurgrip Part Retention	Fluoro- Elastomer Seals
		Close	Open																					
	GRS33-x-50x19	45 [20]	50 [23]	60 [27]	75 [34]	100 [45]	150 [68]	200 [91]	250 [113]	300 [136]	350 [159]	7.50	19	4.2	106	309	1374	●	●	●	●			
	GRS33-x-63x32			81 [36.8]								1.260	32	6.5	152	477	2122	●	●	●	●			
	GRS33-x-63x44		59 [26.8]										1.732	44	6.5	152	347	1543	●	●	●	●		
	GRCx4x	54 [24.6]										1.475	37.5	5	127	319	1419	●	●	●				●
	GRCx5x			100 [45.3]								1.945	49.5	6	152	587	2611	●	●	●				●
	GRCx6x					227 [102.9]						3.010	76.5	10	254	1335	5938	●	●	●				●
	GRCx5x (Shurgrip)		83 [37.6]									1.945	49.5	6	152	488	2171	●	●	●		●	●	●
	GRCx6x (Shurgrip)				158 [71.6]							3.010	76.5	10	254	929	432	●	●	●		●	●	●
	1537x		59 [27]									1.00	25.4	8	203	346	1539	●	●	●				●
	1538x			108 [79]								1.31	33.3	10	254	633	2816	●	●	●				●
	1539x					225 [102]						1.80	45.8	10	254	1323	5885	●	●	●				●

ANGULAR GRIPPER SELECTION/COMPARISON GUIDE

The intent of this guide is to provide a quick visual comparison of grippers that are categorized by application criteria.

It is recommended that you use PHD's online sizing software or the sizing catalog for exact gripper sizing. Consult PHD Application Engineering for assistance.



NOTES:

- * Part weight is estimated at 2:1 safety factor per jaw at the typical gripping distance listed. Typical part weight range does not consider acceleration, moments, or friction grip. Optional spring assist can increase the gripping force or provide single acting service.
- ** Total Grip Force is listed minimum tooling length, see the engineering information to calculate exact force per tooling length required.



ANGULAR GRIPPER SELECTION/COMPARISON GUIDE

A1: Angular/2 Jaws/180° Jaw Opening Required



GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											**TOTAL CLOSE GRIP FORCE AT		TYPICAL GRIPPING DISTANCE		DISPLACEMENT		OPTIONS		
	2	5	10	15	20	30	45	60	75	90		87 psi	[6 bar]	in	mm	in ³	cm ³	Magnet for Switches	Proximity Switch Ready	Port Location
GRB11-x-12	1.4 [0.64]											13	57	.83	21.0	0.09	1.4	●	●	●
GRB11-x-16	2.9 [1.32]											28	124	1.08	27.5	0.21	3.5	●	●	●
GRB11-x-20	9.6 [4.4]											79	353	1.10	38.0	0.38	6.2	●	●	●
GRB11-x-32				21.5 [9.76]								179	797	1.53	39.0	1.33	22	●	●	●
GRB11-x-40					33.6 [15.2]							265	1180	1.91	48.5	2.84	47	●	●	●
GRB11-x-50						70.7 [32.1]						549	2443	2.95	75.0	7.00	115	●	●	●

A2: Angular/2 Jaws/Light Duty (up to 5 lb part weight)



GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											**TOTAL CLOSE GRIP FORCE AT		TYPICAL GRIPPING DISTANCE		DISPLACEMENT		OPTIONS			
	.5	1	1.5	2	2.5	3	3.5	4	4.5	5		87 psi	[6 bar]	in	mm	in ³		Hall Sensor	Sensor Ready	Proximity Switch Ready	Fluoro-Elastomer Seals
8400	1.4 [0.64]											11.7	52	.33	8.4	.007		●	●		●
8410				2.6 [1.19]								19.7	88	.45	11.4	.018		●	●	●	●

A3: Angular/2 Jaws/Medium Duty (5-20 lb part weight)



GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											**TOTAL CLOSE GRIP FORCE AT		TYPICAL GRIPPING DISTANCE		DISPLACEMENT		OPTIONS			
	2	3	4	5	6	7	8	10	12.5	15		87 psi	[6 bar]	in	mm	in ³		Hall Sensor	Sensor Ready	Proximity Switch Ready	Fluoro-Elastomer Seals
8420				6.7 [3.0]								55	244	.66	16.8	.055		●	●	●	●
8430						11.5 [5.2]						81	359	.87	22.1	.150		●	●	●	●

A4: Angular/2 Jaws/Heavy Duty (over 20 lb part weight)



GRIPPER MODEL #	*TYPICAL PART WEIGHT RANGE lb [kg]											**TOTAL CLOSE GRIP FORCE AT		TYPICAL GRIPPING DISTANCE		DISPLACEMENT		OPTIONS					
	20	40	80	100	150	200	500	1000	2000			87 psi	[6 bar]	in	mm	in ³	cm ³	Hall Sensor	Sensor Ready	Proximity Switch Ready	Spring Assist Close	Open	Fluoro-Elastomer Seals
1532x	23.8 [10.8]											201	894	1.37	34.8	.59	9.6	●	●	●	●	●	●
1533x	50.7 [23]											499	2220	1.91	48.5	1.78	29.3	●	●	●	●	●	●
1534x			95.7 [43.4]									1025	4559	2.57	65.3	4.29	70.3	●	●	●	●	●	●
1535x				222.7 [101]								2167	9639	3.27	83.1	12.66	207.3	●	●	●	●	●	●

NOTES:

- * Part weight is estimated at 2:1 safety factor per jaw at the typical gripping distance listed. Typical part weight range does not consider acceleration, moments, or friction grip. Optional spring assist can increase the gripping force or provide single acting service.
- ** Total Grip Force is listed minimum tooling length, see the engineering information to calculate exact force per tooling length required.

