

2025 REV ION FRC Starter Bot - Bill of Materials

Updated - 1/17/2025

PACK QTY	PRODUCT QTY	SKU	PRODUCT NAME	NOTES / Cut Lengths
1	1	REV-25-3270	Drivetrain Kit - 3in MAXSwerve	Kit includes the MAXSwerve Modules with their needed motors and motor controllers
1	1	REV-11-1850	Power Distribution Hub	
1	1	REV-19-2487-PK2	MK Battery ES17-12	
2	2	REV-11-2159	SPARK Flex Motor Controller	
2	2	REV-21-1652	NEO Vortex Brushless Motor	Elevator Motor MUST be a NEO Vortex
3	3	REV-11-2158	SPARK MAX Brushless Motor Controller	Can be swapped for SPARK Flex Motor Controller (REV-11-2159)
3	3	REV-21-1650	NEO Brushless Motor	Can be swapped for NEO Vortex Brushless Motor (REV-21-1652)
2	2	REV-21-1135	1/2in Rounded Hex Shaft	1.75in (x2), 12.5in, 16.75in, 18in
1	4	REV-21-1912-PK4	2 Piece 1/2" Hex Plastic Shaft Collar	
7	25	REV-21-1916-PK4	1/2in Rounded Hex Bearing - Flanged - 1.125in OD	
1	1	REV-21-1921	20DP Gear - 1/2in Hex - 20T	
2	2	REV-21-1936	20DP Gear - 1/2in Hex - 50T	
1	9	REV-21-2003-PK10	1/2in Hex Shaft Spacer - 1/16in	
1	8	REV-21-2004-PK10	1/2in Hex Shaft Spacer - 1/8in	
2	16	REV-21-2005-PK10	1/2in Hex Shaft Spacer - 1/4in	
2	16	REV-21-2006-PK10	1/2in Hex Shaft Spacer - 1/2in	
7	7	REV-21-2016	#25 Hub Sprocket - 1/2in Hex - 16T	
2	8	REV-21-2030-PK4	2in Compliant Wheel - 1/2in Hex Bore - Medium (Gray)	
5	9	REV-21-2036-PK2	MAXHub - 1/2in Hex - Plastic	
1	1	REV-21-2037-PK2	MAXHub - 1/2in Hex - Aluminum	
2	18	REV-21-2056-PK10	#10-32 Shaft End Screw	
2	6	REV-21-2062-PK4	#10 Standoff - 0.75in	
2	8	REV-21-2063-PK4	#10 Standoff - 1.00in	
1	6	REV-21-2085-PK10	#10 Spacer - 1/8in - 10 Pack	
1	2	REV-21-2086-PK10	#10 Spacer - 1/4in - 10 Pack	
1	5	REV-21-2089-PK10	#10 Spacer - 3/4in - 10 Pack	
1	2	REV-21-2090-PK10	#10 Spacer - 1in - 10 Pack	
4	4	REV-21-2101	MAXPlanetary 3:1 Cartridge	
1	1	REV-21-2102	MAXPlanetary 4:1 Cartridge	
4	4	REV-21-2103	MAXPlanetary 5:1 Cartridge	
2	2	REV-21-2130	Vortex MAXPlanetary Input Kit	
3	3	REV-21-2161	MAXTube - 2x1 - Light - 47in	12.5in, 35.5in (x2)
1	1	REV-21-2165	MAXTube - 2x1 - MAX Pattern - 3-Pos (7in)	
6	6	REV-21-2169	MAXTube - 2x1 - MAX Pattern - 7-Pos (15in)	
2	2	REV-21-2173	MAXTube - 2x1 - MAX Pattern - 11-Pos (23in)	Replaces inner rails of MAXSwerve Drivetrain
5	5	REV-21-2205	RT25 Aluminum Pulley - 1/2in Hex - 1/2in Width - 16 Tooth	
4	4	REV-21-2350	MAXSpline Bracket - Stacked	
4	4	REV-21-2353	MAXSpline Bracket - MAX Pattern T	
2	3	REV-21-2376-PK2	MAXHub - Structural	
1	1	REV-21-2393-PK2	MAXSpline Shaft Endcap - 1/2in Hex - Plastic	
4	4	REV-21-2444	4in - MAXSpline - Hard - Grip Wheel	
3	3	REV-21-2456	3in - MAXSpline - Medium (Dark Gray) - Compliant Wheel	
2	2	REV-21-2520	MAXSpline Shaft - 47in Long	1.125in, 12.25in, 14.4375in, 17.75in
1	1	REV-21-2540-PK10	MAXSpline Spacer, 1/16in	
1	3	REV-21-2541-PK10	MAXSpline Spacer, 1/8in	
1	1	REV-21-2542-PK10	MAXSpline Spacer, 1/4in	
1	1	REV-21-2543-PK5	MAXSpline Spacer, 1/2in	
3	5	REV-21-2550	MAXSpline Bearing Blocks	
6	6	REV-21-2581	MAXSpline Shaft Collar - 2-Piece - Aluminum	
3	3	REV-21-2590	MAXTube - 2x1 with Grid Pattern	2in, 5.5in (x2), 12.5in, 17in, 35.5in (x2)
5	9	REV-21-2596-PK2	#10-32 Ball Joint Rod End - Right-hand Threaded	
3	3	REV-21-2617	#25 Chain Turnbuckle	
4	4	REV-21-2618	MAXLift End-mount Bearing Block	
14	14	REV-21-2710	MAXTube Endcap - 2x1	
4	4	REV-21-2711	MAXTube Endcap - 2x1 Light	
2	32	REV-21-2715-PK30	MAXTube Internal Spacer - 2x1	
1	14	REV-21-2716-PK30	MAXTube Internal Spacer - 2x1 Light	
2	2	REV-21-2750	MAXSpline Pillow Block	
6	6	REV-21-2811	1/2in Rounded Hex Shaft - 2.0in - Tapped	
2	2	REV-21-2812	1/2in Rounded Hex Shaft - 2.5in - Tapped	
2	2	REV-21-2825	1/2in Rounded Hex Shaft - 12.0in - Tapped	
1	1	REV-21-2860	MAX Pattern Plate - 1-Pos (2.48in)	
2	2	REV-21-2862	MAX Pattern Plate - 3-Pos (6.48in)	
1	1	REV-21-3024	60T - MAXSpline - 20DP Gear	
4	4	REV-21-3195	Ballast Block - 3in x 2in x 1in	
1	4	REV-21-3197-PK4	1/2in Rounded Hex Bearing - Flanged - 1in OD	
4	4	REV-21-3289	MAXTube - 1/2x1/2	4in, 9.5in, 26.5in (x2), 32.5in (x2)
1	1	REV-21-3374	#25 Billet Sprocket - 48T	
6	11	REV-21-3422-PK2	3/8in Nut Strip - 5pos	Can be substituted with any nut strip longer than 5 pos (ex: REV-21-3424-PK2)
2	2	REV-21-3535-PK2	MAXLift #25 Chain Attachment Plate	
1	1	REV-21-3902-PK8	Bushing - Plastic - 13.75mm ID - 1in OD	
1	2	REV-21-3903-PK8	Bushing - Plastic - 13.75mm ID - 1.125in OD	
1	1	REV-21-4048	RT25 Belt - 1/2in Width - 48 Tooth	
1	1	REV-21-4080	RT25 Belt - 1/2in Width - 80 Tooth	
1	1	REV-21-4088	RT25 Belt - 1/2in Width - 88 Tooth	
5	5	REV-25-2109	MAXPlanetary Base Kit	
1	1	REV-25-2224	RT25 Pulley - MAXSpline - 24T - Modular	
1	43	REV-29-1016-PK100	#10-32 Low Profile Nylon Lock Nut	
1	6	REV-29-2918-PK50	Socket Head Screw #10-32 x 3/4in	Socket and Button Head Screws may be substituted with each other
1	1	REV-29-2926-PK50	Socket Head Screw #10-32 x 1-1/2in	
1	1	REV-29-2932-PK25	Socket Head Screw #10-32 x 2-1/2in	
1	6	REV-29-2940-PK50	Button Head Hex Drive Screw #10-32 x 5/16in	
3	104	REV-29-2941-PK50	Button Head Hex Drive Screw #10-32 x 3/8in	
1	43	REV-29-2943-PK50	Button Head Hex Drive Screw #10-32 x 1/2in	
1	3	REV-29-2945-PK50	Button Head Hex Drive Screw #10-32 x 5/8in	
1	8	REV-29-2947-PK50	Button Head Hex Drive Screw #10-32 x 3/4in	
1	1	REV-29-2951-PK50	Button Head Hex Drive Screw #10-32 x 1in	
1	4	REV-29-2953-PK50	Button Head Hex Drive Screw #10-32 x 1-1/4in	
1	32	REV-29-2955-PK50	Button Head Hex Drive Screw #10-32 x 1-1/2in	
1	9	REV-29-2957-PK25	Button Head Hex Drive Screw #10-32 x 1-3/4in	
1	6	REV-29-2959-PK25	Button Head Hex Drive Screw #10-32 x 2in	
1	8	REV-29-2960-PK25	Button Head Hex Drive Screw #10-32 x 2-1/4in	
2	28	REV-29-2961-PK25	Button Head Hex Drive Screw #10-32 x 2-1/2in	
1	6	REV-29-2962-PK25	Button Head Hex Drive Screw #10-32 x 2-1/4in	
1	24	REV-29-2972-PK100	3/16in Rivet - 0.251-0.375in Grip Length	
1	1	REV-31-1462	REV Magnetic Limit Switch	
1	1	REV-11-2852-PK4	SPARK Flex Data Port Pigtail Cable - 4 Pack	Connects the Magnetic Limit Switch to the Elevator's NEO Vortex and SPARK Flex
1	10	REV-41-1124-PK100	M3 x 20mm Hex Cap Screw	
1	5	REV-41-1161-PK50	Zip Ties - Black - 160mm	
1	1	REV-41-1163	Surgical Tubing - 3mm	
1	10	REV-41-1361-PK100	M3 Nyloc Nut	
4	4	REV-41-1365	#25 Roller Chain - 10 ft	
1	4	REV-41-3049-PK5	Polycarbonate Sheet - 1mm - 400mm x 350mm - 5 Pack	
N/A	8	N/A	Type A flat washer #10 Stainless Steel	
N/A	1	N/A	Pegboard	Bellypan

MAXLift Single Stage - Bill of Materials

PACK QTY	PRODUCT QTY	SKU	PRODUCT NAME	NOTES / Cut Lengths
1	1	REV-21-1650	NEO Brushless Motor	Can be swapped for NEO Vortex Brushless Motor (REV-21-1652)
1	1	REV-21-1135	1/2in Rounded Hex Shaft	1.75in
2	5	REV-21-1916-PK4	1/2in Rounded Hex Bearing - Flanged - 1.125in OD	
1	1	REV-21-2003-PK10	1/2in Hex Shaft Spacer - 1/16in	
1	1	REV-21-2004-PK10	1/2in Hex Shaft Spacer - 1/8in	
1	4	REV-21-2005-PK10	1/2in Hex Shaft Spacer - 1/4in	
3	3	REV-21-2016	#25 Hub Sprocket - 1/2in Hex - 16T	
1	4	REV-21-2056-PK10	#10-32 Shaft End Screw	
2	8	REV-21-2063-PK4	#10 Standoff - 1.00in	
1	6	REV-21-2085-PK10	#10 Spacer - 1/8in - 10 Pack	
1	2	REV-21-2089-PK10	#10 Spacer - 3/4in - 10 Pack	
1	2	REV-21-2090-PK10	#10 Spacer - 1in - 10 Pack	
1	1	REV-21-2102	MAXPlanetary 4:1 Cartridge	
1	1	REV-21-2103	MAXPlanetary 5:1 Cartridge	
2	2	REV-21-2161	MAXTube - 2x1 - Light - 47in	12.5in, 35.5in (x2)
1	1	REV-21-2350	MAXSpline Bracket - Stacked	
3	5	REV-21-2550	MAXSpline Bearing Blocks	
3	3	REV-21-2590	MAXTube - 2x1 with Grid Pattern	5.5in (x2), 17in
4	7	REV-21-2596-PK2	#10-32 Ball Joint Rod End - Right-hand Threaded	
4	4	REV-21-2618	MAXLift End-mount Bearing Block	
14	14	REV-21-2710	MAXTube Endcap - 2x1	
4	4	REV-21-2711	MAXTube Endcap - 2x1 Light	
1	15	REV-21-2715-PK30	MAXTube Internal Spacer - 2x1	
1	14	REV-21-2716-PK30	MAXTube Internal Spacer - 2x1 Light	
2	2	REV-21-2811	1/2in Rounded Hex Shaft - 2.0in - Tapped	
1	1	REV-21-2860	MAX Pattern Plate - 1-Pos (2.48in)	
4	4	REV-21-3289	MAXTube - 1/2x1/2	26.5in (x2), 32.5in (x2)
5	10	REV-21-3422-PK2	3/8in Nut Strip - 5pos	Can be substituted with any nut strip longer than 5 pos (ex: REV-21-3424-PK2)
1	2	REV-21-3535-PK2	MAXLift #25 Chain Attachment Plate	
1	1	REV-25-2109	MAXPlanetary Base Kit	
1	14	REV-29-1016-PK100	#10-32 Low Profile Nylon Lock Nut	
1	6	REV-29-2940-PK50	Button Head Hex Drive Screw #10-32 x 5/16in	
2	92	REV-29-2941-PK50	Button Head Hex Drive Screw #10-32 x 3/8in	
1	40	REV-29-2943-PK50	Button Head Hex Drive Screw #10-32 x 1/2in	
1	6	REV-29-2947-PK50	Button Head Hex Drive Screw #10-32 x 3/4in	
1	16	REV-29-2955-PK50	Button Head Hex Drive Screw #10-32 x 1-1/2in	
1	2	REV-29-2957-PK25	Button Head Hex Drive Screw #10-32 x 1-3/4in	
1	8	REV-29-2960-PK25	Button Head Hex Drive Screw #10-32 x 2-1/4in	
1	20	REV-29-2961-PK25	Button Head Hex Drive Screw #10-32 x 2-1/2in	
1	2	REV-29-2962-PK25	Button Head Hex Drive Screw #10-32 x 2-1/4in	
1	2	REV-29-2972-PK100	3/16in Rivet - 0.251-0.375in Grip Length	
1	10	REV-41-1124-PK100	M3 x 20mm Hex Cap Screw	
1	10	REV-41-1361-PK100	M3 Nyloc Nut	

Intake Arm - Bill of Materials

PACK QTY	PRODUCT QTY	SKU	PRODUCT NAME	NOTES / Cut Lengths
1	1	REV-21-1650	NEO Brushless Motor	Can be swapped for NEO Vortex Brushless Motor (REV-21-1652)
2	1	REV-21-1135	1/2in Rounded Hex Shaft	12.5in
1	2	REV-21-1912-PK4	2 Piece 1/2" Hex Plastic Shaft Collar	
3	11	REV-21-1916-PK4	1/2in Rounded Hex Bearing - Flanged - 1.125in OD	
2	2	REV-21-1936	20DP Gear - 1/2in Hex - 50T	
1	2	REV-21-2003-PK10	1/2in Hex Shaft Spacer - 1/16in	
1	3	REV-21-2004-PK10	1/2in Hex Shaft Spacer - 1/8in	
1	9	REV-21-2005-PK10	1/2in Hex Shaft Spacer - 1/4in	
2	15	REV-21-2006-PK10	1/2in Hex Shaft Spacer - 1/2in	
2	8	REV-21-2030-PK4	2in Compliant Wheel - 1/2in Hex Bore - Medium (Gray)	
2	6	REV-21-2036-PK2	MAXHub - 1/2in Hex - Plastic	
1	5	REV-21-2056-PK10	#10-32 Shaft End Screw	
2	6	REV-21-2062-PK4	#10 Standoff - 0.75in	
1	2	REV-21-2089-PK10	#10 Spacer - 3/4in - 10 Pack	
1	1	REV-21-2101	MAXPlanetary 3:1 Cartridge	
1	1	REV-21-2165	MAXTube - 2x1 - MAX Pattern - 3-Pos (7in)	
2	2	REV-21-2169	MAXTube - 2x1 - MAX Pattern - 7-Pos (15in)	
4	4	REV-21-2205	RT25 Aluminum Pulley - 1/2in Hex - 1/2in Width - 16 Tooth	
4	4	REV-21-2353	MAXSpline Bracket - MAX Pattern T	
3	3	REV-21-2456	3in - MAXSpline - Medium (Dark Gray) - Compliant Wheel	
1	1	REV-21-2520	MAXSpline Shaft - 47in Long	12.25in
1	2	REV-21-2541-PK10	MAXSpline Spacer, 1/8in	
2	2	REV-21-2581	MAXSpline Shaft Collar - 2-Piece - Aluminum	
1	4	REV-21-2715-PK30	MAXTube Internal Spacer - 2x1	
2	2	REV-21-2811	1/2in Rounded Hex Shaft - 2.0in - Tapped	
2	2	REV-21-2825	1/2in Rounded Hex Shaft - 12.0in - Tapped	
2	2	REV-21-2862	MAX Pattern Plate - 3-Pos (6.48in)	
1	2	REV-21-3197-PK4	1/2in Rounded Hex Bearing - Flanged - 1in OD	
1	1	REV-21-3374	#25 Billet Sprocket - 48T	
1	1	REV-21-4048	RT25 Belt - 1/2in Width - 48 Tooth	
1	1	REV-21-4080	RT25 Belt - 1/2in Width - 80 Tooth	
1	1	REV-25-2109	MAXPlanetary Base Kit	
1	20	REV-29-1016-PK100	#10-32 Low Profile Nylon Lock Nut	
1	6	REV-29-2918-PK50	Socket Head Screw #10-32 x 3/4in	Socket and Button Head Screws may be substituted with each other
1	12	REV-29-2941-PK50	Button Head Hex Drive Screw #10-32 x 3/8in	
1	12	REV-29-2955-PK50	Button Head Hex Drive Screw #10-32 x 1-1/2in	
1	6	REV-29-2957-PK25	Button Head Hex Drive Screw #10-32 x 1-3/4in	
1	6	REV-29-2959-PK25	Button Head Hex Drive Screw #10-32 x 2in	
1	6	REV-29-2972-PK100	3/16in Rivet - 0.251-0.375in Grip Length	
1	4	REV-41-3049-PK5	Polycarbonate Sheet - 1mm - 400mm x 350mm - 5 Pack	
N/A	8	N/A	Type A flat washer #10 Stainless Steel	

Algae Intake - Bill of Materials

PACK QTY	PRODUCT QTY	SKU	PRODUCT NAME	NOTES / Cut Lengths
1	1	REV-11-2159	SPARK Flex Motor Controller	
1	1	REV-21-1652	NEO Vortex Brushless Motor	Elevator Motor MUST be a NEO Vortex
1	1	REV-21-1650	NEO Brushless Motor	Can be swapped for NEO Vortex Brushless Motor (REV-21-1652)
1	1	REV-21-1135	1/2in Rounded Hex Shaft	16.75in
1	4	REV-21-1916-PK4	1/2in Rounded Hex Bearing - Flanged - 1.125in OD	
1	1	REV-21-1921	20DP Gear - 1/2in Hex - 20T	
1	4	REV-21-2003-PK10	1/2in Hex Shaft Spacer - 1/16in	
1	3	REV-21-2004-PK10	1/2in Hex Shaft Spacer - 1/8in	
1	3	REV-21-2005-PK10	1/2in Hex Shaft Spacer - 1/4in	
2	3	REV-21-2036-PK2	MAXHub - 1/2in Hex - Plastic	
1	1	REV-21-2037-PK2	MAXHub - 1/2in Hex - Aluminum	
1	6	REV-21-2056-PK10	#10-32 Shaft End Screw	
1	2	REV-21-2086-PK10	#10 Spacer - 1/4in - 10 Pack	
1	1	REV-21-2089-PK10	#10 Spacer - 3/4in - 10 Pack	
3	3	REV-21-2101	MAXPlanetary 3:1 Cartridge	
1	1	REV-21-2103	MAXPlanetary 5:1 Cartridge	
1	1	REV-21-2130	Vortex MAXPlanetary Input Kit	
4	4	REV-21-2169	MAXTube - 2x1 - MAX Pattern - 7-Pos (15in)	
1	1	REV-21-2205	RT25 Aluminum Pulley - 1/2in Hex - 1/2in Width - 16 Tooth	
2	3	REV-21-2376-PK2	MAXHub - Structural	
1	1	REV-21-2393-PK2	MAXSpline Shaft Endcap - 1/2in Hex - Plastic	
4	4	REV-21-2444	4in - MAXSpline - Hard - Grip Wheel	
1	1	REV-21-2520	MAXSpline Shaft - 47in Long	17.75in
1	1	REV-21-2540-PK10	MAXSpline Spacer, 1/16in	
1	3	REV-21-2541-PK10	MAXSpline Spacer, 1/8in	
1	1	REV-21-2542-PK10	MAXSpline Spacer, 1/4in	
1	1	REV-21-2543-PK5	MAXSpline Spacer, 1/2in	
1	1	REV-21-2550	MAXSpline Bearing Blocks	
4	4	REV-21-2581	MAXSpline Shaft Collar - 2-Piece - Aluminum	
1	2	REV-21-2596-PK2	#10-32 Ball Joint Rod End - Right-hand Threaded	
1	3	REV-21-2715-PK30	MAXTube Internal Spacer - 2x1	
2	2	REV-21-2750	MAXSpline Pillow Block	
1	1	REV-21-2811	1/2in Rounded Hex Shaft - 2.0in - Tapped	
2	2	REV-21-2812	1/2in Rounded Hex Shaft - 2.5in - Tapped	
1	1	REV-21-3024	60T - MAXSpline - 20DP Gear	
1	2	REV-21-3197-PK4	1/2in Rounded Hex Bearing - Flanged - 1in OD	
2	2	REV-21-3289	MAXTube - 1/2x1/2	4in, 9.5in
1	1	REV-21-3422-PK2	3/8in Nut Strip - 5pos	Can be substituted with any nut strip longer than 5 pos (ex: REV-21-3424-PK2)
1	1	REV-21-3902-PK8	Bushing - Plastic - 13.75mm ID - 1in OD	
1	2	REV-21-3903-PK8	Bushing - Plastic - 13.75mm ID - 1.125in OD	
1	1	REV-21-4088	RT25 Belt - 1/2in Width - 88 Tooth	
2	2	REV-25-2109	MAXPlanetary Base Kit	
1	1	REV-25-2224	RT25 Pulley - MAXSpline - 24T - Modular	
1	9	REV-29-1016-PK100	#10-32 Low Profile Nylon Lock Nut	
1	1	REV-29-2926-PK50	Socket Head Screw #10-32 x 1-1/2in	
1	1	REV-29-2932-PK25	Socket Head Screw #10-32 x 2-1/2in	
1	3	REV-29-2943-PK50	Button Head Hex Drive Screw #10-32 x 1/2in	
1	3	REV-29-2945-PK50	Button Head Hex Drive Screw #10-32 x 5/8in	
1	2	REV-29-2947-PK50	Button Head Hex Drive Screw #10-32 x 3/4in	
1	1	REV-29-2951-PK50	Button Head Hex Drive Screw #10-32 x 1in	
1	2	REV-29-2955-PK50	Button Head Hex Drive Screw #10-32 x 1-1/2in	
1	1	REV-29-2957-PK25	Button Head Hex Drive Screw #10-32 x 1-3/4in	
1	8	REV-29-2961-PK25	Button Head Hex Drive Screw #10-32 x 2-1/2in	
1	1	REV-41-1161-PK50	Zip Ties - Black - 160mm	
1	1	REV-41-1163	Surgical Tubing - 3mm	

2025 REV ION FRC Starter Bot - Changelog

Date	Update Made
1/17/2025	-Added Alternative Options for Nut Strips -Added Individual Bill of Materials for the MAXLift Single Stage, Intake Arm, and Algae Intake
1/13/2025	- Added Purchase Link for MAXLift #25 Chain Attachment Plate - Added Changelog
1/10/2025	- Corrected QTY and Type of MAXPlanetary Cartridges - Corrected QTY of #25 Chain Turnbuckles