TRACKED CHASSIS

Below is a table with recommended payloads for each of the motor options. Please keep in mind that these payloads are a guide and are not stringent load ratings. Where and how you use the robot also plays a significant role in the payload and speed.

A big concern with tracked robots is the tracks derailing. On our smaller robots we use a simple track system that works well as long as the payload is kept to a minimum. Our LT2 and HD2 robots can handle much higher payloads. Still, on high friction surfaces, the tracks derailing can be an issue, especially when pivot turning. Keep this in mind when choosing a platform to support your payload.

We included two payloads for each robot: "Low Duty Cycle" and "High Duty Cycle". Low duty cycle payload can be higher because the motors have more time to cool down. High duty cycles do not allow the motors much of a break and limit the overall payload. You should replace any motor that overheats, as it will either suffer a significant loss of power or cease functioning. However, duty cycle is not the only factor that should be considered.

With Skid Steering 4WD and tracked robots, turning is much harder on the motors than driving straight. This is because the wheels/tracks must skid in order to turn. Pivot turning or turning in place is especially hard on the motors. If the robot will turn a lot, we recommend keeping the payload to a minimum. If you won't be turning much, you may be able to allow for a higher payload.

Rough terrain (hilly and/or bumpy environments) will place more stress on the motors. The same goes for high friction surfaces (such as rough concrete or carpet). On flat smooth surfaces (such as smooth concrete or tile) your robot will carry more of a load.

If you plan on a **high duty cycle**, in **rough terrain**, and will require the robot to do **a lot of pivot turns**, we strongly recommend that you **do not exceed the payloads** listed under High Duty Cycle. If your duty cycle will be low and on flat smooth surfaces, refer to the payloads listed under Low Duty Cycle.

We always recommend being conservative with payload estimates, planning for the worst-case scenario, and erring toward having too much power vs not enough.

SST2 - IG32 Motors (Qty 2)

MOTOR RPM	SPEED (feet /minute)	HIGH DUTY CYCLE PAYLOAD (lbs)	LOW DUTY CYCLE PAYLOAD (lbs)
53 RPM	40	1	2

MLT-JR - IG32P Motors (Qty 2)

MOTOR RPM	SPEED (feet/minute)	HIGH DUTY CYCLE PAYLOAD (lbs)	LOW DUTY CYCLE PAYLOAD (lbs)
75 RPM	71	10	15
190 RPM	179	6	10
265 RPM	250	3	5

MLT-42/F - IG42 Motors (Qty 2)

MOTOR RPM	SPEED (feet/minute)	HIGH DUTY CYCLE PAYLOAD (lbs)	LOW DUTY CYCLE PAYLOAD (lbs)
47 RPM*	52	8	20
78 RPM	86	8	20
122 RPM	134	8	15
240 RPM	264	5	10
340 RPM*	374	2	5

LT2/F - IG52 Motors 15:32 Reduction (Qty 2)

MOTOR RPM	SPEED (feet/minute)	HIGH DUTY CYCLE PAYLOAD (lbs)	LOW DUTY CYCLE PAYLOAD (lbs)
82 RPM	66	40	75
136 RPM	110	30	60
285 RPM	231	15	35

HD2 - IG52 Motors 1:3 Reduction (Qty 4)

MOTOR RPM	SPEED (feet/minute)	HIGH DUTY CYCLE PAYLOAD (lbs)	LOW DUTY CYCLE PAYLOAD (lbs)
44 RPM	34	100	200
82 RPM	64	80	160
136 RPM	106	65	130
285 RPM	221	40	80

RELEVANT ROBOTS Click to Visit


TP-240-001


TP-220-001


TP-230-042


TP-231-042

*Only available for TP-230-042 (MLT-42)


TP-210-002


TP-210-102


TP-200-001

CONVERSION CHART	
88 feet/min	1 mile/hr
54.7 feet/min	1 kilometer/hr
.305 feet/min	1 meter/min
2.2 pounds	1 kilogram