



Things what you MUST know before use mightyZAP

Here is essential information to use mightyZAP properly. To prevent product damage by unintended result, please peruse below before use.

1. Control load should be less than Rated Force & Beware of injury.

For example, rated force of L12-20PT-3 is 20N(approx. 2kg). That is, lifespan of L12-20PT-3 can be maximized when it is used under 20N. The less load, the longer lifespan. Also, always pay close attention to prevent unexpected injury while servo is operated.

2. Position command within mechanical limit

There might be mechanical limit which servo rod can move when user install servo motor in their application. Make sure that positional command should be made within user's mechanical limit. It might be a common knowledge to mention, but we have seen this mistake from time to time. If positional command is out of mechanical limit, servo will be overloaded at certain point of time and power will be cut off to protect the servo due to overload protection feature. (if overload protection is inactivated by user, motor will not be protected and burnt eventually.) Considering precise position control, make sure to re-check this matter when servo is applied.

3. Use under 50% of Duty Cycle

If DC motor operates continuously without any interval (rest), motor will be overloaded and overload protection feature will cut off the power of servo motor. Therefore, user should consider "Duty cycle" which means the percentage of motor operating time in whole cycle. In other words, 50% duty cycle means that motor should rest 50% of time when motor operate during 50% of time to manage motor lifespan more efficiently. Use under 50% of duty cycle for optimized lifespan. The less duty cycle, the longer lifespan.

4. Check out Z axis force and Self-lock force

Self-Lock Force is a holding force by mechanical friction even when motor power is off. Use "Self-lock" feature along with Force-Off function mentioned below(#5) to manage servo motor better. The Z axis force is a motor force when used in gravity direction. Please note Z axis force is little bit lower than rated force on X & Y axis. (Below chart shows self-lock force of 30mm stroke mightyZAP only. Refer to the separate specification for 41/56mm stroke version's Self lock force.)

Rated Force	Self-Lock Force	Z Axis Force
20N Lineup	7N	7N
40N Lineup	40N	30N
64N Lineup	64N	48N
100N Lineup	100N	75N

5. Utilize "Force Off" function properly.

When servo stops at certain position without movement, servo is still working to stick to its position. So, when servo stays at certain position, to relieve the motor, you can use "Force Off" function so that servo holds its position only with mechanical friction(Self-lock) under power-off status. Under force off condition, communication is still alive while motor power is off, so servo will move again when servo gets new position command without giving "Force ON" command. Refer to page 6 of mightyZAP user manual for more detailed information of Force Off function as well as Z axis / Self-lock force above.

6. Do NOT turn the Rod with excessive force.

Otherwise, it may bring serious product damage. Also, please make sure to use a long -nose or spanner to fix the metal nut when screw the Rod-end onto the Rod.

