

		Fastener Torque		created	JM
				checked	TN
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INTRODUCTION

Fasteners used in SunLock framing need to be tightened to the correct torque, using the correct equipment.

Fasteners which are under torqued will not provide a sufficient amount of clamping force and may loosen over time. On the other hand, fasteners which are over torqued can cause permanent damage to the associated framing, roof structure and panels.

GUIDE TO USE

The SunLock installation manual states ‘...make sure the cordless power tool used for driving has a hand-tight clutch setting and a fine (soft) impact drive to prevent damage to the fragile glass panels and threads on the SunLock framing’.

SunLock recommends using a tightening torque of 20 - 50 N·m. This is slightly above the “standard” torque recommended for M8 bolts (15 – 24 N·m, see references), but also well below the yield limit of the M8 threaded hole in aluminium.

OVER TORQUEING

As some impact drivers on the market are capable of providing torque rating of close to 200 N·m, special care needs to be given to ensure that permanent damage to the solar panel and framing doesn't occur.

Also ensure that special care is taken when using overlong Allen keys.



Deformation of mid-clamp caused by excessive torque

REFERENCES

Barrett (1990) Fastener Design Manual, NASA

Smith (1990) Carroll Smith's nuts, bolts, fasteners and plumbing handbook, Motorbooks International

Tomotsugu (2008) Bolted joint engineering: Fundamentals and Applications, Beuth

FURTHER INFORMATION

For further information contact Apollo Energy on 1300 855 484 or sunlock@apolloenergy.com.au.