



 **MAROTTA[®]**

SHAPE MEMORY ALLOY FIN LOCK | DATASHEET



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PRODUCT OVERVIEW

Marotta's patent-pending Shape Memory Alloy (SMA) Pin Puller is a non-pyrotechnic device for locking surfaces in place. The unit has the ability to be unlocked using a non-destructive low current 2 amp pulse for system acceptance testing. Once system level testing is completed the unit can be reset and ready to be fired with a higher current pulse (12 Amp) to achieve unlock times of 90ms max over its operating temperature range of -54°C to 70°C. Response time is a function of current applied.



TECHNICAL DATA

MECHANICAL PROPERTIES

Housing	17-4PH
Plunger	17-4PH
Main Spring	Elgiloy
Piston	Ryton
Locking Ball Bearings	440C
Environmental Seals	Fluorocarbon

PERFORMANCE PARAMETERS

Response Time	<90 ms
Unlock Max Side Load	250 lbs
Manual Unlock Pulse	2 amps
One Time Unlock Pulse	12 amps
Stroke	0.150"
Pull Force	70 lbs

ENVIRONMENTAL SPECIFICATIONS

Random Vibration	>18 Grms
Shock	>1200 G's
Operating Temperature	-65°F to 158°F (-54°C to 70°C)
Salt Fog (SO2 7 Days)	ASTM G85 Annex A4
Humidity	MIL-STD-810
Sand and Dust	MIL-STD-810

Note: The listed data does not represent the design limitations of the device

DESIGN ADVANTAGES

- ▶ Non-pyrotechnic
- ▶ Manually resettable
- ▶ Test mode capabilities
- ▶ TRL-6 proven device

SMA PIN PULLER

The SMA pin puller has the ability to be unlocked using a non destructive low current pulse which allows a system to be tested in the all up configuration. Once final testing is complete the SMA pin puller can be reset to the locked position.

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