

## LAUNCH LOCK DEVICE

HIGH-PERFORMANCE SMART ACTUATOR  
FOR SPACE APPLICATIONS

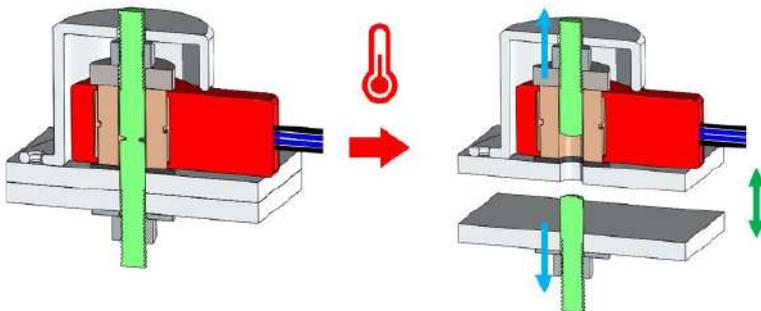
- ✔ High Temperature
- ✔ Miniaturization
- ✔ Light
- ✔ Robust
- ✔ Compact
- ✔ Itar Free
- ✔ Reliable



# MECHANICAL DATA



## ACTUATION SCHEME



## MECHANICAL

	TRHT02	TRHT03	TRHT04	TRHT05	TRHT06	TRHT08	TRHT10	TRHT12
Material	CN-250X							
Screw size	M2	M3	M4	M5	M6	M8	M10	M12
Max. axial preload (N)	1350	3376	5848	9572	13503	24786	39468	57551
Fracture load (N)	1874	4689	8122	13294	18754	34425	54817	79932
Nominal power (W)	6,5	12,0	21,8	36,1	33,4	61,9	101,5	150,7
Outer diameter (mm)	10,0	15,4	20,0	24,0	28,0	34,4	40,4	47,8
Elongation (mm)	0,82	0,90	1,13	1,39	1,71	2,20	2,74	3,32
Armed length (mm)	9,22	10,10	12,67	15,51	19,14	24,65	30,66	37,18
Fired length	10,04	11,00	13,80	16,90	20,85	26,85	33,40	40,50
Weight (g)	3,5	9	15	26	45	90	170	300

## OVERVIEW

- Compatible with HDRM (Hold Down Release Mechanisms)
- Triggering time: 30 to 300 sec
- Triggering temperature up to 230°C
- In Orbit operational temperature range: from -120°C to +120°C
- Preload up to 60 kN

## FEATURES

- SMA component (Shape Memory Alloy)
- Redundant heater
- 2 temperature sensors (COTS or ESCC)
- Customizable fastener

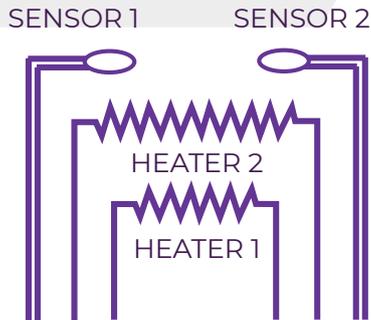
# ELECTRICAL DATA

## ELECTRICAL

	TRHT02 4V	TRHT02 8V	TRHT03 8V	TRHT03 16V	TRHT04 8V	TRHT04 16V	TRHT05 16V	TRHT05 28V
Nominal power (W)	6,5		12		21,8		36,1	
Voltage range (V)	3,5 - 4,2	7 - 8,4	7 - 8,4	14 - 16,8	7 - 8,4	14 - 16,8	14 - 16,8	22 - 37
Current range (A)	1,41 - 1,69	0,72 - 0,86	1,31 - 1,57	0,66 - 0,79	2,39 - 2,86	1,19 - 1,43	1,97 - 2,37	0,64 - 1,08

	TRHT06 28V	TRHT06 100V	TRHT08 28V	TRHT08 100V	TRHT10 28V	TRHT10 100V	TRHT12 28V	TRHT12 100V
Nominal power (W)	33,4		61,9		101,5		150,7	
Voltage range (V)	22 - 37	90 - 110	22 - 37	90 - 110	22 - 37	90 - 110	22 - 37	90 - 110
Current range (A)	0,94 - 1,58	0,43 - 0,53	1,74 - 2,92	0,80 - 0,98	2,85 - 4,79	1,32 - 1,61	4,23 - 7,11	1,99 - 2,43



	TRHT02-4v	TRHT02-8v	TRHT03-16v	TRHT05-28v	TRHT06-100v
	3,5 - 4,2V	7 - 8,4V	14 - 16,8V	22 - 37V	90 - 110V

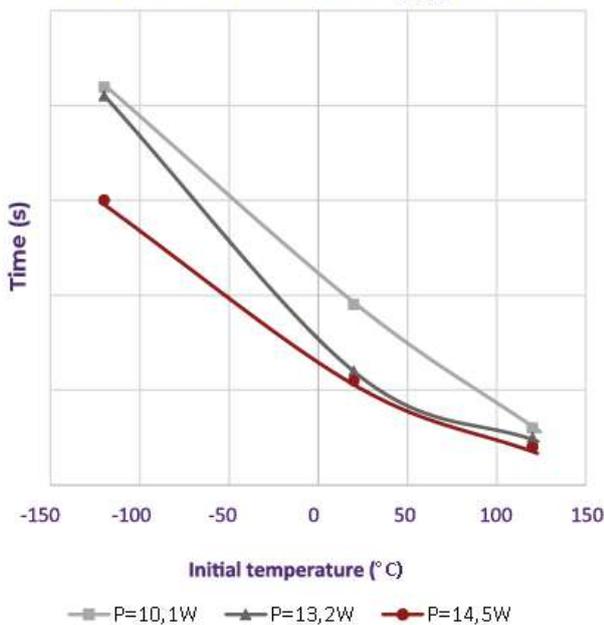
	TRHT04-8v	TRHT05-16v	TRHT08-28v	TRHT10-100v

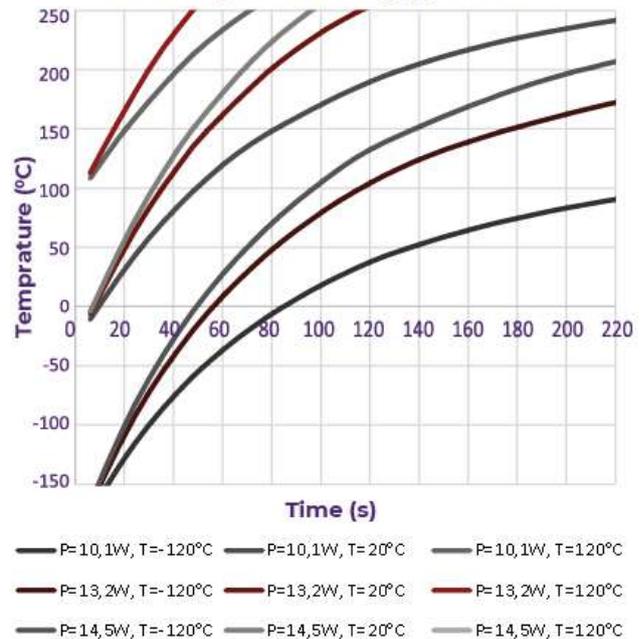
	TRHT12-28v	TRHT12-100v

## TRIGGERING

Actuation time of Triggy HT03



Heating of the Triggy HT03

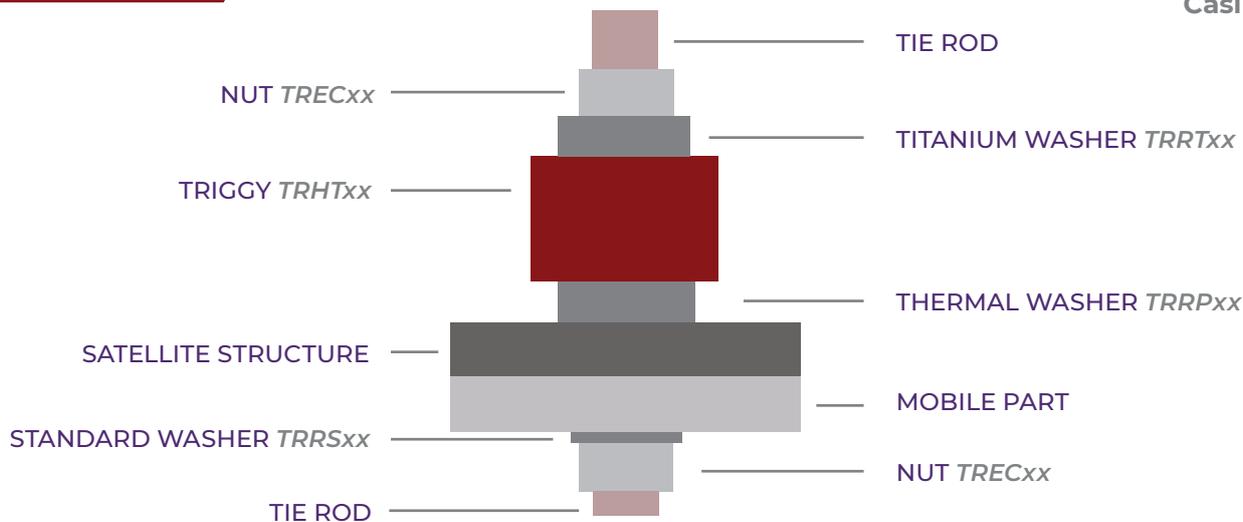


# TRIGGY ACCESSORIES



Casing example

## TYPICAL INTEGRATION

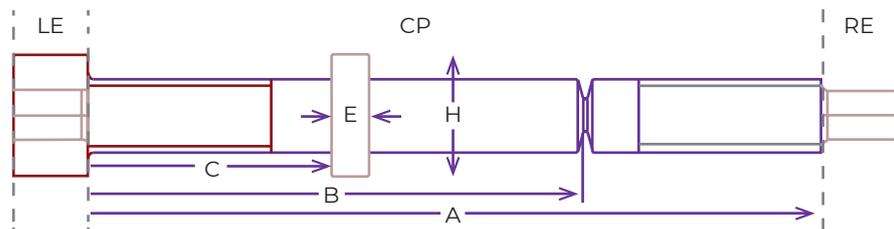


## FASTENER / TIE ROD

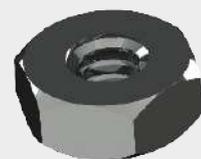
Configure your own fastener/tie rod

### Stainless Steel 15-5 PH

- High preload
- E: 196 GPa
- Re: 1300 Mpa
- CTE: 11



## NUT



REF	MATERIAL	THICKNESS (MM)	OD (MM)	ID (MM)	MASS (MM)	COMPATIBLE (MM)
TREC02	SS 15-5PH	M2	1,6	4	0,15	HT02
TREC03	SS 15-5PH	M3	2,4	5,5	0,40	HT03
TREC04	SS 15-5PH	M4	3,2	7	0,85	HT04
TREC05	SS 15-5PH	M5	4,7	8	1,39	HT05
TREC06	SS 15-5PH	M6	5,2	10	2,63	HT06
TREC08	SS 15-5PH	M8	6,8	13	5,80	HT08
TREC10	SS 15-5PH	M10	8,4	16	10,83	HT10
TREC12	SS 15-5PH	M3	10,8	18	15,85	HT12

Tolerance : -0/ +0,1 mm



## THERMAL WASHER

Ref	Material	Thickness (mm)	OD (mm)	ID (mm)	Mass (mm)	Compatible (mm)
TRRP02	Duratron® CU60PBI	1	6,4	2,2	0,04	HT02
TRRP03	Duratron® CU60PBI	1	9,7	3,2	0,09	HT03
TRRP04	Duratron® CU60PBI	1	12,8	4,3	0,15	HT04
TRRP05	Duratron® CU60PBI	1	16,3	5,3	0,24	HT05
TRRP06	Duratron® CU60PBI	1	19,1	6,4	0,33	HT06
TRRP08	Duratron® CU60PBI	1	25,5	8,4	0,59	HT08
TRRP10	Duratron® CU60PBI	1	32,8	10,5	0,99	HT10
TRRP12	Duratron® CU60PBI	1	39,8	13	1,44	HT12

Tolerance : -0/ +0,1 mm

## TITANIUM WASHER

REF	MATERIAL	THICKNESS (MM)	OD (MM)	ID (MM)	MASS (MM)	COMPATIBLE (MM)
TRRP02	Ta6V Grade 5	2	6,3	2,2	0,24	HT02
TRRP03	Ta6V Grade 5	2	9,6	3,2	0,57	HT03
TRRP04	Ta6V Grade 5	3	12,7	4,3	1,49	HT04
TRRP05	Ta6V Grade 5	4	16,3	5,3	3,30	HT05
TRRP06	Ta6V Grade 5	4	19,0	6,4	4,44	HT06
TRRP08	Ta6V Grade 5	5	22,0	8,4	5,74	HT08
TRRP10	Ta6V Grade 5	5	32,7	10,5	16,65	HT10
TRRP12	Ta6V Grade 5		39,7	13	24,42	HT12

Tolerance : -0/ +0,1 mm

## STANDARD WASHER

REF	MATERIAL	THICKNESS (MM)	OD (MM)	ID (MM)	MASS (MM)	COMPATIBLE (MM)
TRRS02	SS 15-5PH	0,5	7	2,2	0,08	HT02
TRRS03	SS 15-5PH	0,8	12	3,2	0,37	HT03
TRRS04	SS 15-5PH	0,8	14	4,3	0,49	HT04
TRRS05	SS 15-5PH	1	16	5,3	0,79	HT05
TRRS06	SS 15-5PH	1,2	18	6,4	1,18	HT06
TRRS08	SS 15-5PH	1,5	22	8,4	2,15	HT08
TRRS10	SS 15-5PH	2	27	10,5	4,30	HT10
TRRS12	SS 15-5PH	2,5	31,175	13	7,28	HT12

Tolerance : -0/ +0,1 mm

# TRIGGY TOOLS

## RESET TOOL

- Provide load to compress and arm Triggy products
- Transportable
- No electrical power
- 3 sizes for Triggy family



RTT050 / RTT100 tool



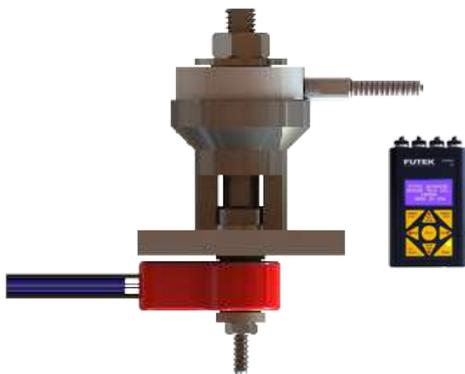
RTT005 tool

REF	MAXIMUM LOAD (KN)	LENGTH (M)	WIDTH (M)	HEIGHT (M)	MASS (KG)	COMPATIBLE WITH
RTT005	5	0,18	0,12	0,18	3	HT02/HT03/HT04
RTT050	25	0,55	0,35	0,25	10	HT02/HT03/HT04/HT05/HT06
RTT100	50	0,55	0,35	0,25	15	HT08/HT10/HT12

## TENSIONER TOOL

- Provide strength to preload fastener and Triggy
- Transportable
- Usable with battery or cable
- 4 sizes for Triggy family

REF	MAXIMUM LOAD (KN)	DIAMETER (M)	WIDTH (M)	HEIGHT (M)	COMPATIBLE WITH
PURE30	4,5	28	45	0,2	HT02/HT03
PURE35	22,6	40	55	0,25	HT04/HT05
PURE40	45,3	54	70	0,7	HT06/HT08
PURE45	90,7	80	90	1,5	HT10/HT12



PURE35 with Triggy TRHT03

