



Technical Specifications

## B&T GL-06

Single Shot Launcher cal. 40 x 46 mm  
manufactured by B&T AG, Switzerland



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**TS-2889.17**

# Technical Specifications GL-06



## Table of Contents:

<b>1. General description</b>	<b>3</b>
<b>2. Nomenclature and technical data</b>	<b>4</b>
<b>3. Operating principle</b>	<b>5</b>
<b>4. Compatible ammunitions</b>	<b>7</b>
<b>5. Ballistic data</b>	<b>8</b>
<b>6. Exploded view and parts list</b>	<b>9</b>
<b>7. Accessories</b>	<b>11</b>
7.1 Tactical	11
7.2 Training	12
7.3 Maintenance	12
<b>8. Manufacturer's warranty information</b>	<b>13</b>

## Related documents

TM-2889 Operator Manual  
SM-2889 Armorer Manual  
TR-2889-1 Qualification Test Report  
PC-2889 Parts Catalogue

## Abbreviations:

HE: High Explosive. Warhead grenades, working at high pressure level.  
LL: Less lethal. Munitions working at pressure levels 4 to 5 times lower than HE grenades.

## **1. General description**

The GL-06 grenade launcher is intended to serve as a supplemental or squad weapon with less lethal munitions for all types of crowd management and law enforcement tasks.

The GL-06 is designed as a single shot break down weapon. Due to its design and strength of materials, the launcher works with all kind of 40 x 46 mm ammunitions. The trigger is of double-action-only style with non-exposed hammer for safe and simple operation.

There are different stock configurations, integrated NATO accessory rails and the possibility to install more rails and accessories to optimize the launcher specifically to each mission.

The ergonomics are state of the art: red dot sight for fast and accurate target acquisition, left and right side sling attachment points, large ambidextrous operating elements and a wide trigger guard for easy operation even with heavy protective gloves.

## 2. Nomenclature and technical data



Fig. 2.1

Designation:	GL-06	
Manufacturer:	B&T AG, Switzerland	
Product ID:	BT-31000 black without access safety BT-31000-1 black with access safety BT-31000-2 yellow (RAL 1021) without access safety BT-31000-3 yellow (RAL 1021) with access safety	
NATO Stock Number:	1010-38-000-9860	
Caliber:	40 x 46 mm	
System:	Break-down single shot, double action only	
Barrel length [mm]:	280	
Twist rate [mm per turn]:	1200	
Rifling:	12 grooves, right hand	
Overall length [mm]:	590 (stock unfolded)	385 (stock folded)
Overall width [mm]:	60 (stock unfolded)	95 (stock folded)
Overall height [mm]:	200	
Weight [kg]:	2.15	
Sights:	Red dot sight Aimpoint Micro T-1 (dot size 4 MOA) Ghost ring iron sights (sight radius 339 mm), adj. in windage	
Interfaces:	4 NATO accessory rails STANAG 4694	
Standard supply:	Weapon complete with siderails, rail covers and carrying sling	

## 3. Operating principle

When the weapon is closed, the locking lug under the barrel is held in position by the two locking latches and the barrel is locked (ref. fig. 3.1). When pushing the breech lever forward, a rising wedge is spreading the two latches like a couple of shears, releasing the locking lug and thus unlocking the barrel (fig. 3.1). By the force of the barrel spring, the barrel snaps open and can be loaded manually.

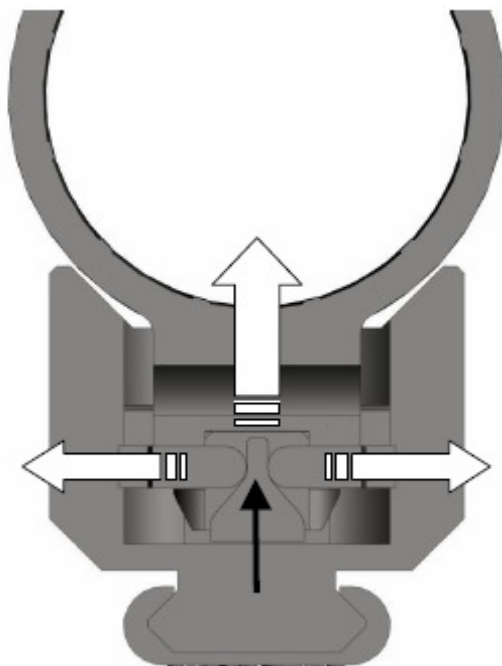


Fig. 3.1

When the launcher is loaded, the operator can release the shot simply by pulling the double action only trigger (fig. 3.2). The firing pin (part of the hammer) touches the primer of the cartridge only when the trigger releases the covert hammer, then it snaps immediately back in a safe position.

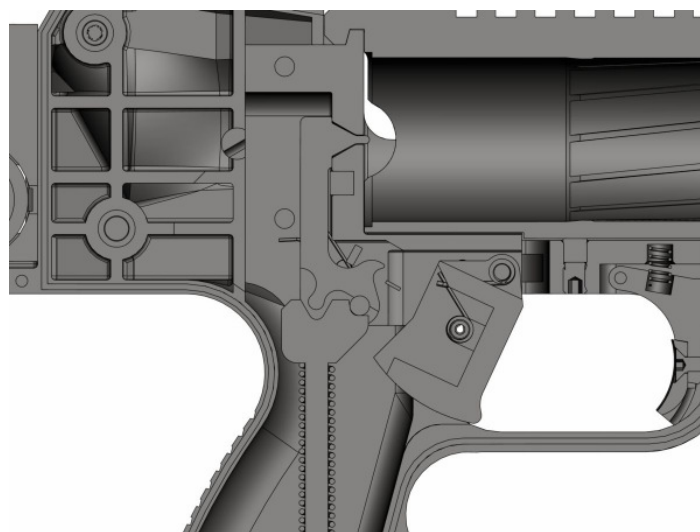


Fig. 3.2

In order to increase the operational safety of the launcher, a manual push-through safety is available which locks the hammer with the firing pin in safe distance of the primer.

Some comments about the operating principle of 40 x 46 mm grenades: Unlike conventional small arms cartridges, the case shows two chambers (see fig. 3.3). When the firing pin strikes on the primer, it ignites the propellant which is in the inner high pressure chamber. The combustion gases are then released by diffusors into the outer low pressure chamber. It is the force of the gases in the low pressure chamber which drive the projectile, which is set on top of this named chamber, through the barrel.

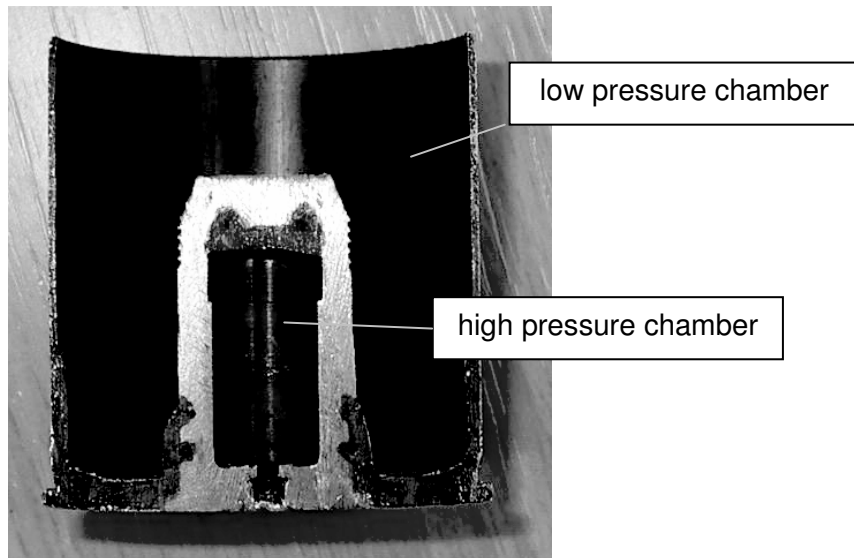


Fig. 3.3: Cut through fired 40 x 46 mm grenade

Concerning internal ballistics, recoil, mechanical stress on the weapon and quality control of the grenades, it is always the maximum pressure in the outer low pressure chamber to consider.

40 x 46 mm ammunitions exist in two distinctive qualities: One is warhead (HE) grenades with a payload of around 200 grams - typically an explosive projectile - and working with low chamber pressures of approx. 200 bar. The other is less lethal (LL) munitions with low mass kinetic energy projectiles or a chemical agent as payload; their working pressure is around four times lower than with HE grenades.

The GL-06 is designed for use with LL munitions but strong enough to withstand the pressure of a HE grenade.

## 4. Compatible ammunitions

Compatibility is limited by dimensions and maximum pressures.

The critical dimensions are outlined in fig. 4.1. Note that the cartridge overall length is of no importance: 40 x 46 mm munitions of any length can be loaded in the GL-06.

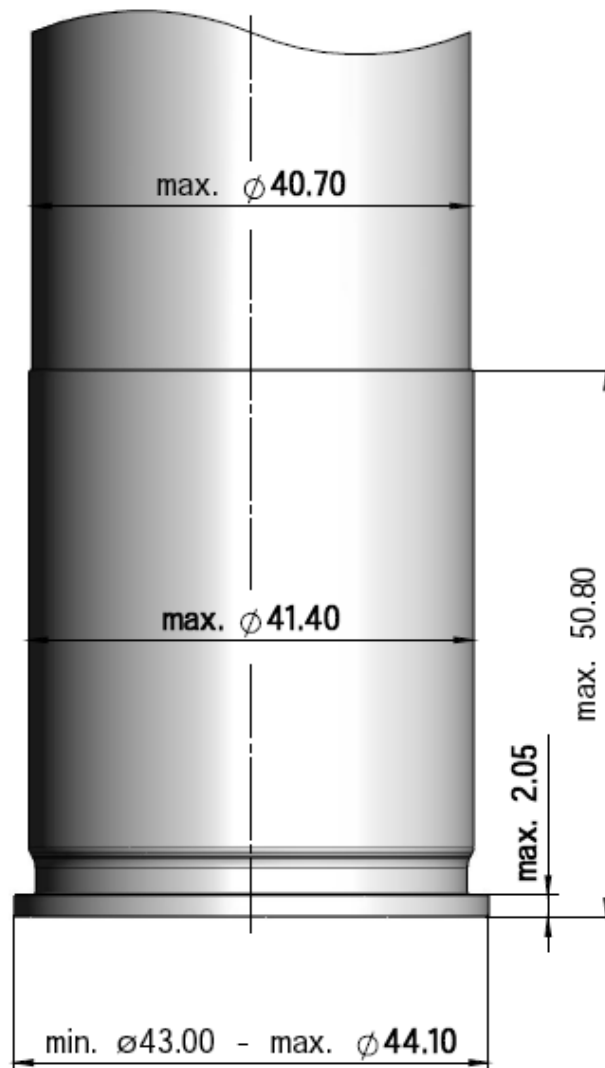


Fig. 4.1: Compatible dimensions

Regarding the pressure compatibility, the maximum pressure in the low pressure chamber at extreme service conditions (ESCP) is to consider. ESC is the most dangerous conform condition of ammunition (according to ammo manufacturer specs), e.g. after 24 h high temperature storage.

In an inspection lot of ten cartridges, the average ( $m$ ) and the standard deviation ( $s$ ) of ESCP must comply with

$$m_{\text{ESCP}} + 2.91 \cdot s_{\text{ESCP}} \leq 230 \text{ bar}$$

## 5. Ballistic data

The sights of the GL-06 launcher are set point blank to 25 m with SIR 40 mm (B&T BT-23510); ballistic data below.

<b>x [m]</b>	<b>v [m/s]</b>	<b>E [J]</b>	<b>ED [J/mm<sup>2</sup>]</b>	<b>t [s]</b>	<b>dia<sub>0,99</sub> [mm]</b>
0	85	116	0.092	0.00	0
5	84	112	0.089	0.06	29
10	82	109	0.087	0.12	59
15	81	106	0.084	0.18	90
20	80	102	0.082	0.24	121
25	79	99	0.079	0.31	152
30	78	97	0.077	0.37	184
35	77	94	0.075	0.43	217
40	75	91	0.072	0.50	250
45	74	88	0.070	0.57	283
50	73	86	0.068	0.64	317

Table 5.1: Ballistic data of SIR impact round (projectile mass 32 grams)

x: Distance

v: Velocity

E: Kinetic energy

ED: Energy density

t: Flight time

dia<sub>0,99</sub>: Diameter of circular target with hit probability of 99%



## 6. Exploded view and parts list

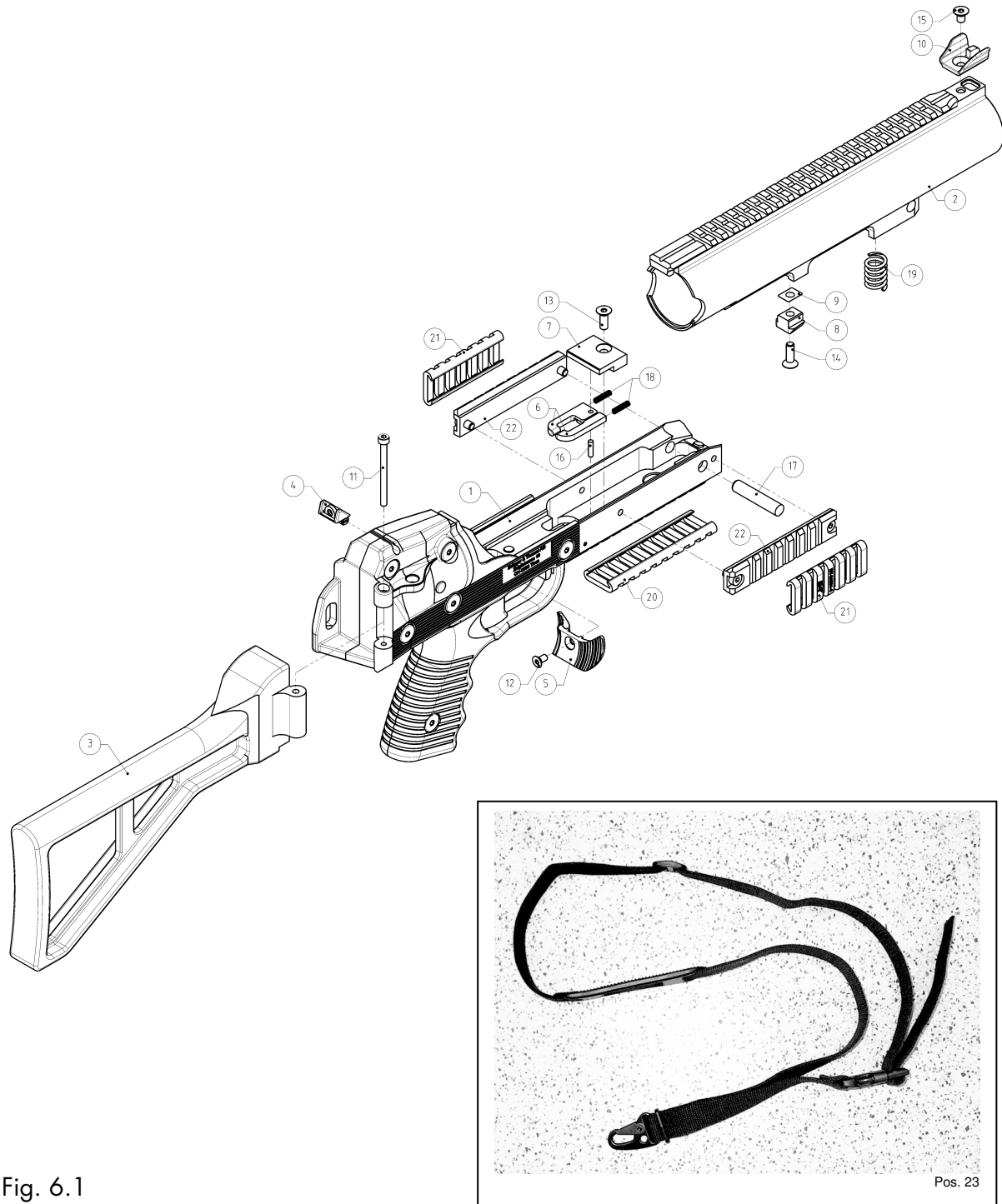


Fig. 6.1

# Technical Specifications GL-06

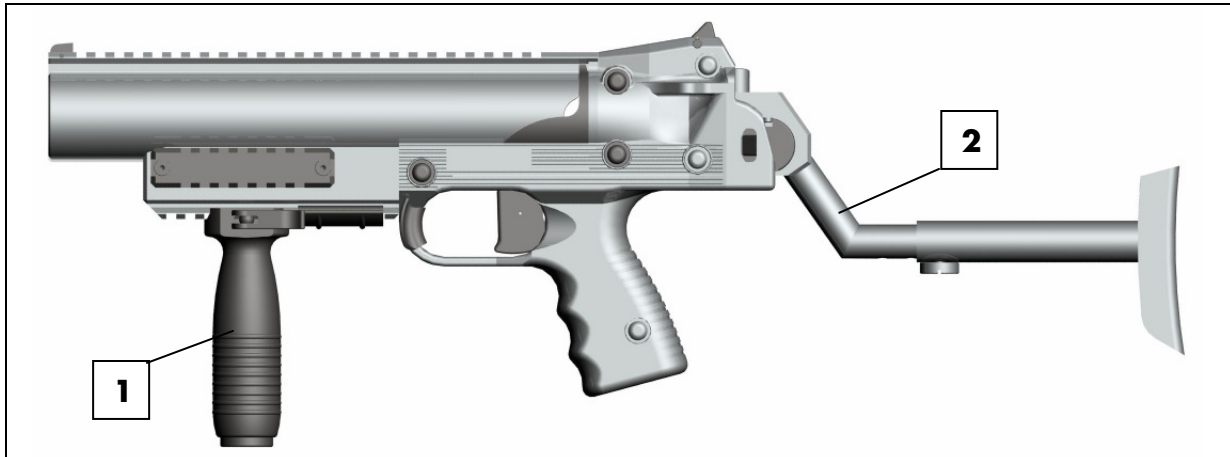


<b>Pos.</b>	<b>Designation</b>	<b>Part Number</b>
1	Main assembly (for BT-31000 or BT-31000-1)	BT-31047
2	Barrel (only)	BT-31010
3	Folding stock complete	BT-20218
4	Rear sight assembly	BT-30223
5	Breech lever	BT-31012
6	Locking latches (left/right identical, two per weapon)	BT-31020
7	Locking latch retainer	BT-31022
8	Locking lug	BT-31013
9	Spacer (if necessary)	BT-31029
10	Front sight	BT-31008
11	Folding stock axle screw	BT-31031
12	Breech lever screw	BT-31032
13	Retainer screw	BT-31035
14	Locking lug screw	BT-31036
15	Front sight screw	BT-31033
16	Locking latch axle pin	BT-31040
17	Breech axle pin	BT-31043
18	Locking latch springs (two per weapon)	BT-31067
19	Barrel spring	BT-31049
20	Rail protector	BT-21204-3
21	Side rail protectors (two per weapon)	BT-21204-4
22	Side rails with screws (two per weapon)	BT-21731
23	Sling	BT-400967-1

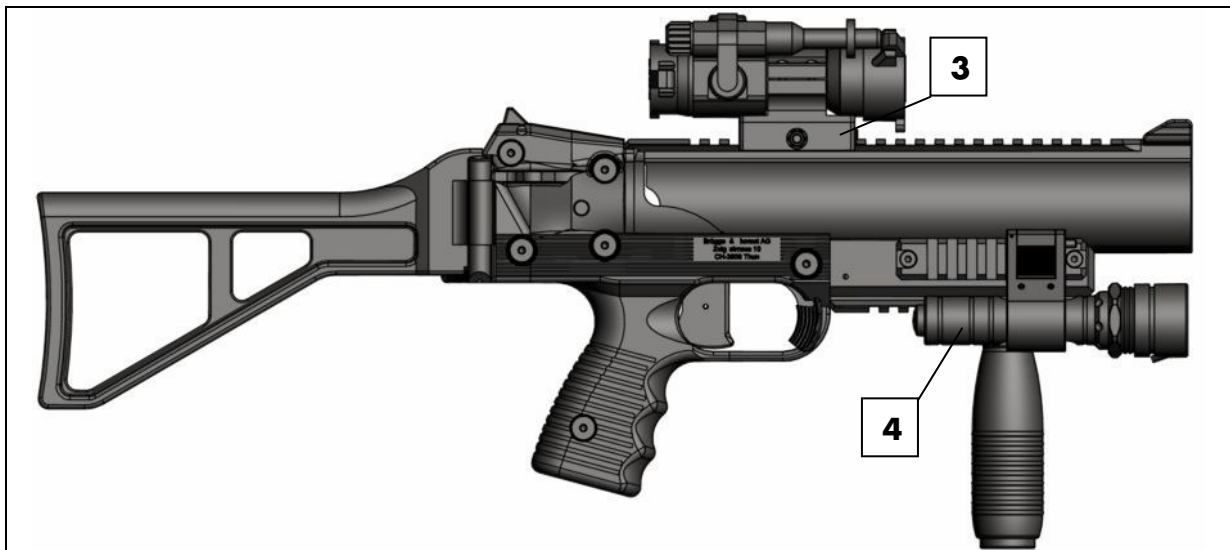
For more details refer to parts catalogue PC-2889.

## 7. Accessories

### 7.1 Tactical



Pos.	Description	Product ID
1	B&T quick detachable vertical handgrip	BT-21773
1a	B&T screw-on vertical handgrip NSN 1005-17-117-0959	BT-21203
2	B&T foldable ballistic helmet visor stock	BT-20222



Pos.	Description	Product ID
3	B&T quick detachable mounts for optical sights	various
4	B&T tactical light 6 V	BT-211017
	B&T tactical light 9 V	BT-211016
	B&T tactical light 6 V IR	BT-21803

B&T carrying bag for 1 launcher and 20 cartridges	tbd
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## 7.2 Training

B&T dummy cartridge	BT-23440
B&T reloading device for SIR cartridges (fig. 7.1)	BT-23970
Driving load for SIR cartridges	MA-2134810



Fig. 7.1

## 7.3 Maintenance

Cleaning rod	ER-285021
Barrel brush 40 mm	ER-285030
Headspace gauge kit	BT-31070
Firing pin protrusion gauge	BT-31063
Optical sight collimator	tbd

### **8. Manufacturer's warranty information**

- a. The manufacturer's warranty covers the complete system with all genuine components and accessories.
- b. The warranty is valid three years from the date of acceptance of the weapon system by the customer's authority.
- c. The warranty is applicable on all non-conformities in material or workmanship detected during the period.