

SPC223/300 HA WEAPON FAMILY

OPERATOR MANUAL



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Related documents:


Parts catalogue.....	PC-SPC223-HA-EN
Parts catalogue.....	PC-SPC300-HA-EN

Advice	
	<p>This operator manual covers the entire SPC223/300 weapon family. The pictures usually show the standard version. Where necessary the operating steps are shown separately for the different variants.</p> <p>Due to continuous efforts to improve the weapon, it is possible that certain descriptions in this manual may differ from the actual weapon.</p>

Abbreviations

POA:	Point of aim
POI:	Point of impact
MPI:	Mean point of impact
Left / right side:	Defined looking in firing direction.

EYE PROTECTION MUST BE WORN!	
	<p>SAFETY GOGGLES MUST BE WORN WHEN DISASSEMBLING AND REASSEMBLING THE GUN. PARTS CAN GET INTO THE EYES IF HANDLED INCORRECTLY.</p>

EAR PROTECTION MUST BE WORN!	
	<p>SUITABLE HEARING PROTECTION MUST ALWAYS BE WORN WHEN SHOOTING WITH A FIREARM.</p>

1. General rules

READ MANUAL BEFORE USE.

1.1 Safety rules

1. Consider every weapon loaded until checked personally by the individual operator.
2. Always keep fingers off the trigger and outside the trigger guard until the sights are on target.
3. Always point the weapon in a safe direction.
4. Verify your target and the backstop.
5. Before firing always verify the serviceability and condition of both the weapon and ammunition.
6. Hearing and eye protection are mandatory.
7. Be sure to use NATO, SAAMI or CIP certified cartridges of correct caliber only.
8. If a cartridge fails to ignite, keep the muzzle pointed in a safe direction and open the chamber only after a minimum of 30 seconds.

SAFETY ADVICE!



Defects that can be traced back to the use of non NATO, SAAMI or CIP ammunition (especially reloaded cartridges) are not covered by the guarantee!

9. Live fire training should be carried out in open or well-ventilated areas to prevent excessive exposure to toxic gases.
10. Operate your weapon consciously and do not use excessive force.

1.2 Maintenance rules

1. The weapon is to be cleaned after each deployment or firing.
2. Any malfunctions are to be reported to the unit armorer or manufacturer.
3. The weapon is to be presented to the unit armorer for inspection after each mission or a minimum of once per year.

2. Technical specifications

2.1 Overview - SPC223/300



2.2 General description

The SPC223/300 is a self-loading rifle in .223 Rem. / .300 Blk.

The rifle is a gas operated rifle with a short-stroke gas piston system: the gas port near the muzzle directs the propellant gases behind the projectile via gas piston onto the bolt carrier and sets it in a recoiling motion. After the projectile has left the barrel, the recoiling bolt carrier unlocks the bolt head by means of a rotary movement. In the common recoil of the bolt head and carrier, the empty case is extracted and ejected, the hammer is cocked and the recoil spring compressed. At the end of the return stroke, a recoil buffer slows down the movement of the carrier and then the recoil spring accelerates it forward again. In the common forward stroke, the bolt head and carrier take a new cartridge from the magazine and feed it into the chamber. At the end of such a cycle, the gun is locked, loaded and cocked.

All operating elements such as the bolt catch, magazine catch, fire selector and charging handle are designed to be operated from both sides.

2.3 General technical data

Description	SPC HA
Manufacturer	B&T AG - Switzerland
Operating system	Short stroke gas piston
Sights	Iron sights (on NAR)
Bore height	80 mm / 3.14 in
Rail height	45.7 mm / 1.79 in
Interfaces	4 NATO accessory rails
Scope of delivery	Weapon with magazines, carrying sling, cleaning kit, case

Stock options	Stock length		Width	Weight
	Extracted [mm]	Retracted [mm]	[mm]	[g]
Retractable stock* (standard)	298	215	42	865
Telescopic stock PDW	247	164	57	978

* Standard - Extracted to the maximum, intermediate positions existent.

Technical data are provided for information only and shall not serve as acceptance criteria.

2.3.1 Technical data - SPC223 SA

Designation	SPC223 SA
Caliber	.223 Remington
Magazine capacity	30 rounds
Rifling	6 grooves, right hand twist
Barrel twist	178mm (1:7)

Type		«Barrel 222 mm»	Standard «Barrel 308 mm»	«Barrel 420 mm»	«Barrel 477 mm»
Barrel length	[mm]	222 (8.7")	308 (12.1")	420 (16.5")	477 (18.7")
Length standard	[mm]	708	680	766	878
Length receiver	[mm]	422	487	573	685
Width	[mm]	68	53	53	53
Height*	[mm]	207	211	211	211
Weight	[kg]	3.2	3.4	3.6	3.7

* Without magazine, flip-up sights folded.

2.3.2 Technical data - SPC300 SA

Designation	SPC300 SA
Caliber	.300 Blackout
Magazine capacity	30 rounds
Rifling	4 grooves, right hand twist
Barrel twist	203mm (1:8)

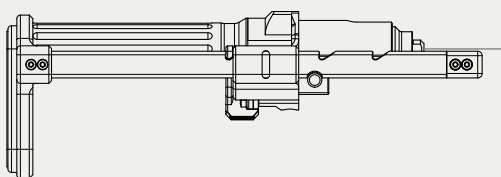
Barrel length	[mm]	222 (8.7")
Length standard	[mm]	708
Length receiver	[mm]	422
Width	[mm]	68
Height*	[mm]	207
Weight	[kg]	3.2

* Without magazine, flip-up sights folded.

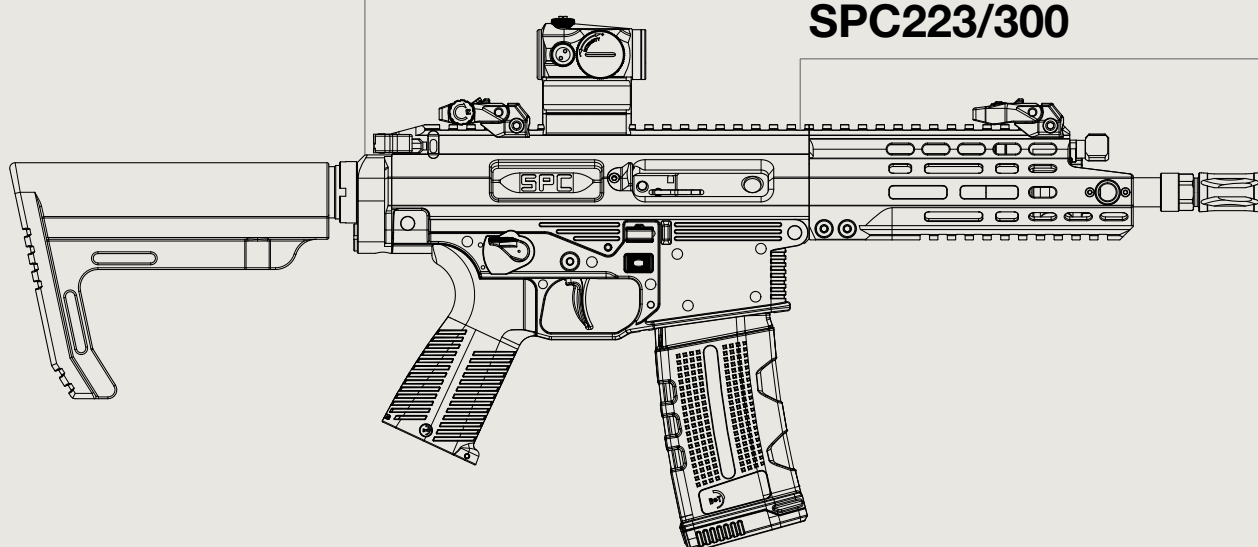
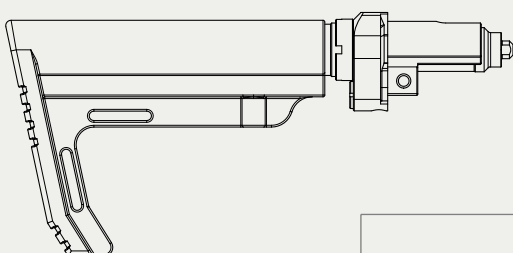
2.4 Variant overview

STOCK

Telescopic stock

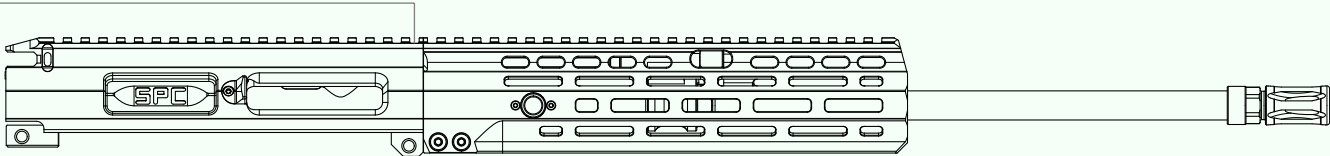


Retractable stock (standard)

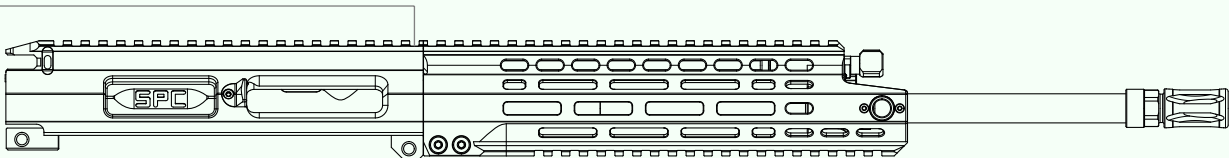


UPPER RECEIVER

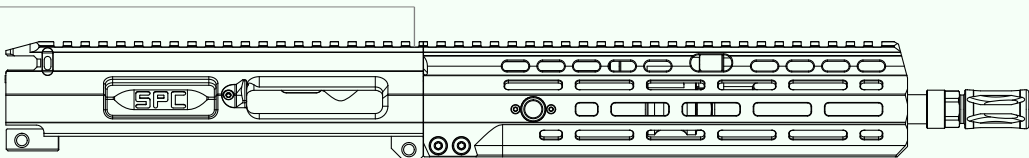
Barrel length 477 mm



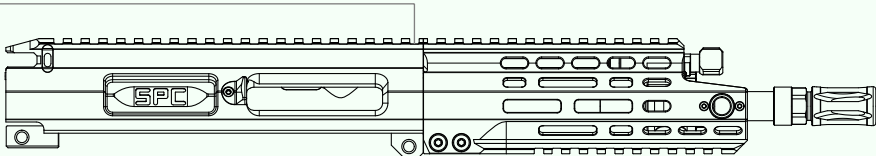
Barrel length 420 mm



Barrel length 308 mm (standard)

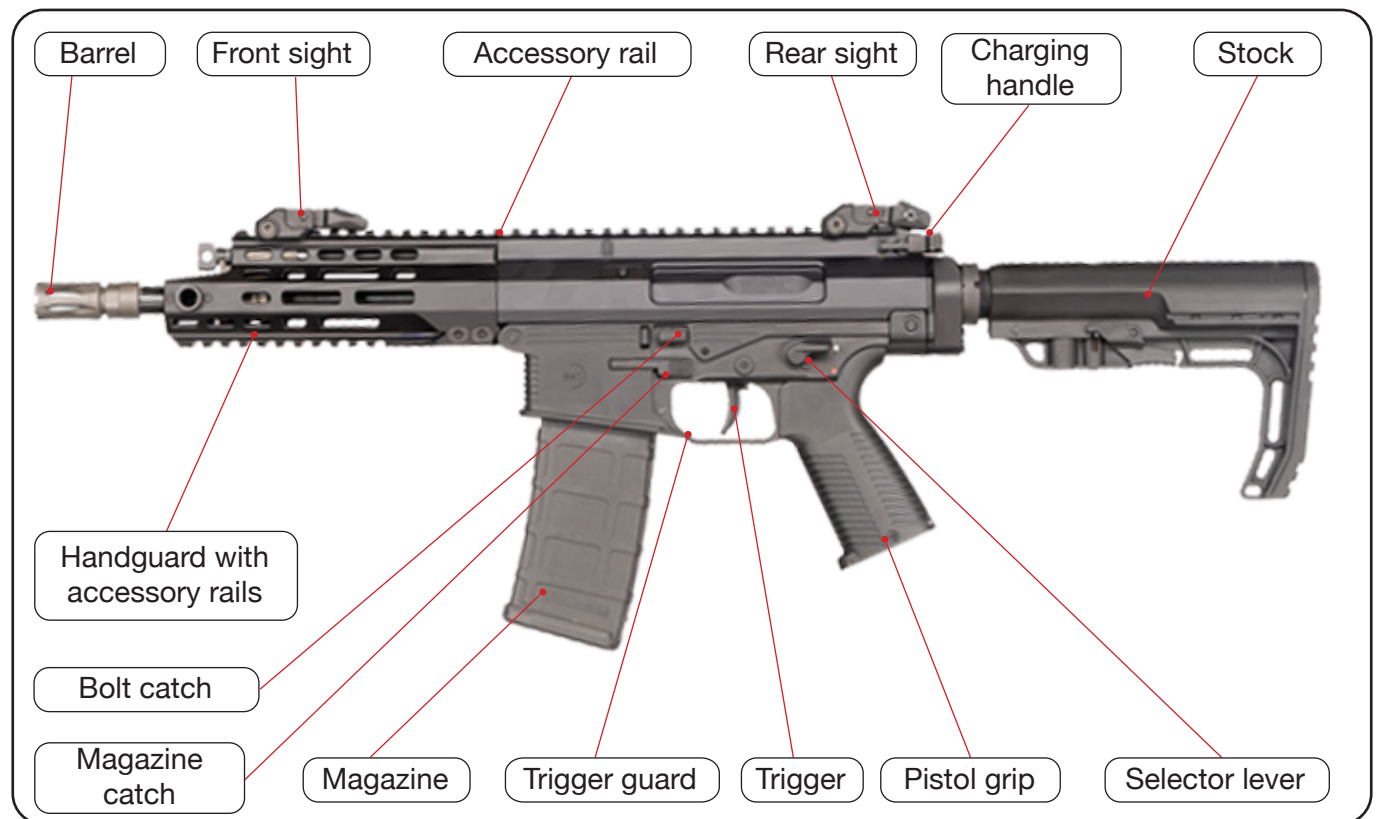


Barrel length 222 mm

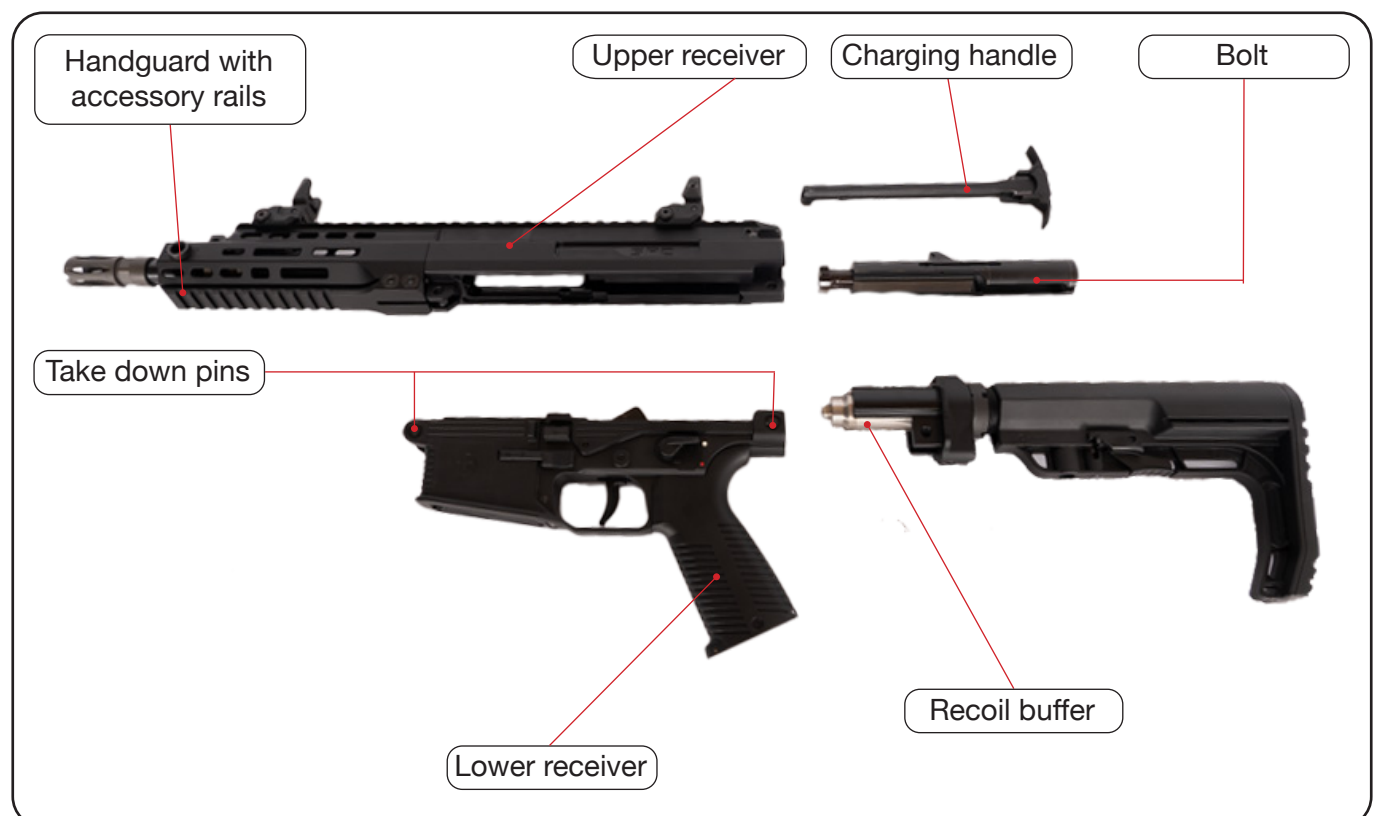


3. Nomenclature

3.1 Weapon complete



3.2 Weapon disassembled



4. Operating

4.1 Clearing weapon

- Rotate the fire selector to «safe» position (see chapter “4.2 Operating fire selector” page 13).
- Press the magazine retainer and pull the magazine downward out.



- Pull the charging handle completely to the rear and inspect the chamber visually to be clear.
- Lock the bolt in open position (see chapter “4.7 Bolt catch” page 18).



4.2 Operating fire selector

- The positions of the fire selector are marked on both sides of the weapon.
- Rotate the fire selector in order to engage the desired mode.



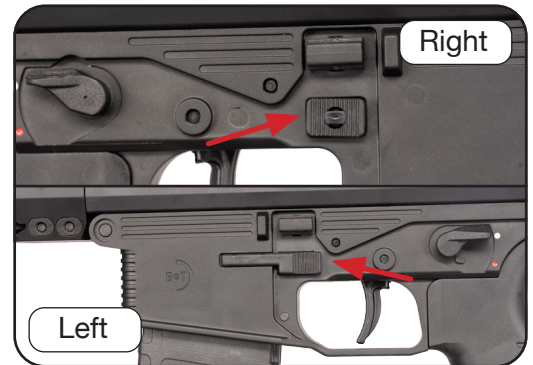
WHITE DOT = SAFE

RED DOT= SINGLE FIRE



4.3 Magazine catch

- a. The magazine catch is present on both sides of the weapon.



4.3.1 Operating magazine catch

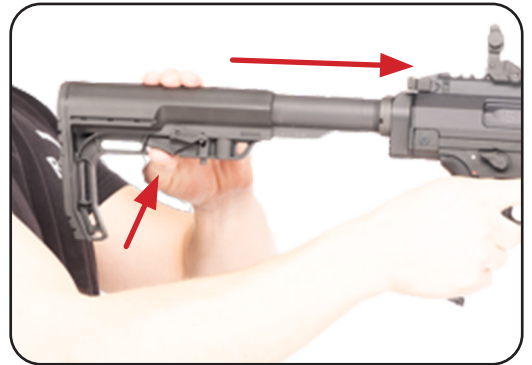
- a. Rotate the fire selector to «safe» position (see chapter “4.2 Operating fire selector” page 13).
- b. Press the magazine catch and pull the magazine downward out.



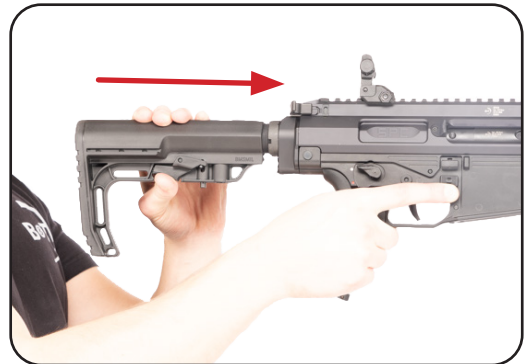
4.4 Operating the stock

4.4.1 Retracting the stock

- a. Hold the weapon with the firing hand on the pistol grip.
- b. With your free hand, press the adjustment knob and push the stock forward.

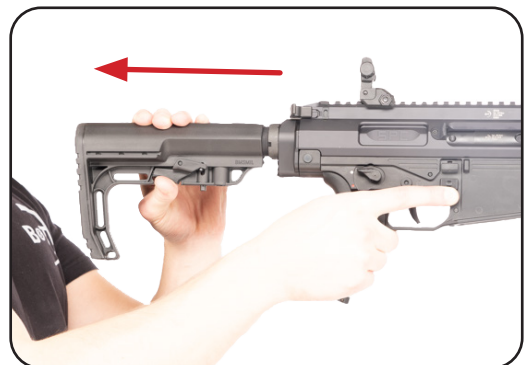


- c. Push in the stock until it reaches the end position and locks audibly in place.



4.4.2 Extracting the stock

- a. Hold the weapon with the firing hand on the pistol grip.
- b. With your free hand, press the adjustment knob and pull the stock backwards.



- c. Pull the stock out to the desired length and snap it into place in one of the different detent positions.



4.5 Pistol grip storage compartment

4.5.1 Opening the pistol grip cover

- a. Slide a screw driver in the gap at the front of the grip cover.
- b. Push the cover backward and lift it up.



4.5.2 Closing the pistol grip cover

- c. In order to close the cover, push it back until it audibly snaps into closed position.

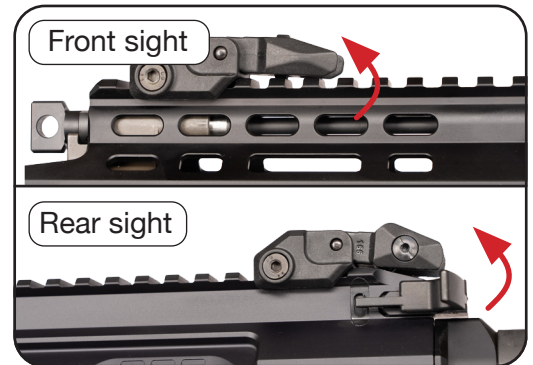


4.6 Iron sights

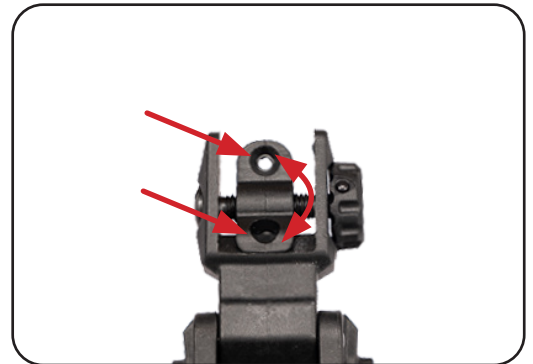
4.6.1 Engaging iron sights

a. Push front sight up until it snaps in upright position.

b. Push rear sight up until it snaps in upright position.

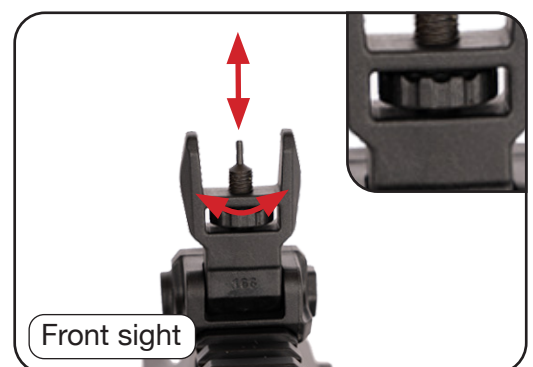


c. Select large or small aperture.

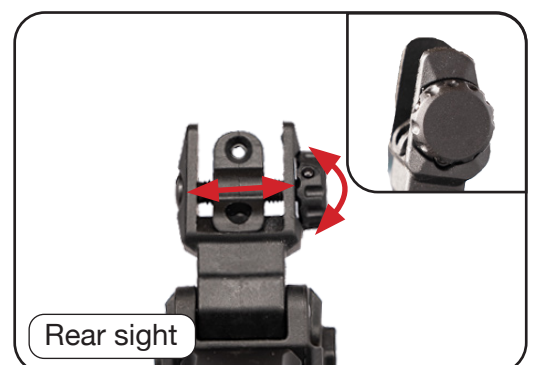


4.6.2 Adjustments

a. Turn the adjusting wheel of the front sight to the right or left to raise or lower the point of impact.



b. Turn the rear sight wheel anticlockwise or clockwise to move the point of impact to the right or left.



4.7 Bolt catch

4.7.1 Locking the bolt in open position

- a. Remove magazine (see section “4.3 Magazine catch” on page 14).
- b. Grab the charging handle and pull the bolt to the rearmost position and hold it there.



- c. Push the bolt catch upwards (available on left and right weapon side).
- d. Allow the bolt to travel forward until stopped and held by the bolt catch. Push the charging handle to its foremost position.



4.7.2 Closing bolt

- a. Push the external bolt catch (available on left and right weapons side) until the bolt snaps into closed position



4.8 Gas regulator

4.8.1 Function

In the standard versions of the SPC223/300 there are usually 3 different gas nozzle positions.

The different positions differ in the size of the diameter of the gas nozzle, which controls the necessary amount of gas for the function of the gun.


By changing the gas regulator, the diameter is changed and thus the gas quantity is increased or decreased.




The gas regulator can be changed by turning it clockwise or counterclockwise.

- Turn the gas regulator until it audibly engages in the desired position.



Advice	
	If the weapon is heated up, change the position using an appropriate tool.



SAFETY ADVICE!	
	«CHAPTER „4.8.3 POSITIONS SPC300“ PAGE 20»MUST BE OBSERVED! IF THE GAS NOZZLE IS INCORRECTLY ADJUSTED, THE RECOIL IS AMPLIFIED, WHICH PLACES AN UNNECESSARY LOAD ON THE GUN AND CAN LEAD TO MALFUNCTIONS.



4.8.2 Positions SPC223

The different diameters are clearly engraved, the number which is visible from above in the vertical position is decisive.

GAS REGULATOR - SMALLEST DIAMETER

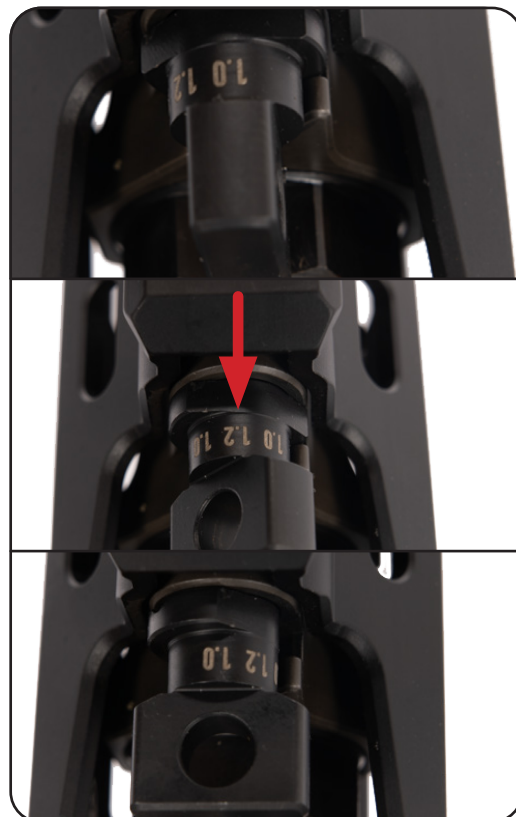
For shooting with suppressor, set the gas regulator to the smallest possible diameter.

GAS REGULATOR - INTERMEDIATE DIAMETER

For shooting without suppressor, set the gas regulator to the intermediate diameter.

GAS REGULATOR - LARGEST DIAMETER

If feed or ejection problems occur due to heavy fouling, set the gas regulator in the largest diameter. If the gun can only be operated in this position, cleaning is urgently recommended (see section “5.2 Cleaning and inspection” on page 27).



4.8.3 Positions SPC300

The different diameters are clearly engraved, the number which is visible from above in the vertical position is decisive.

GAS REGULATOR - SMALLEST DIAMETER

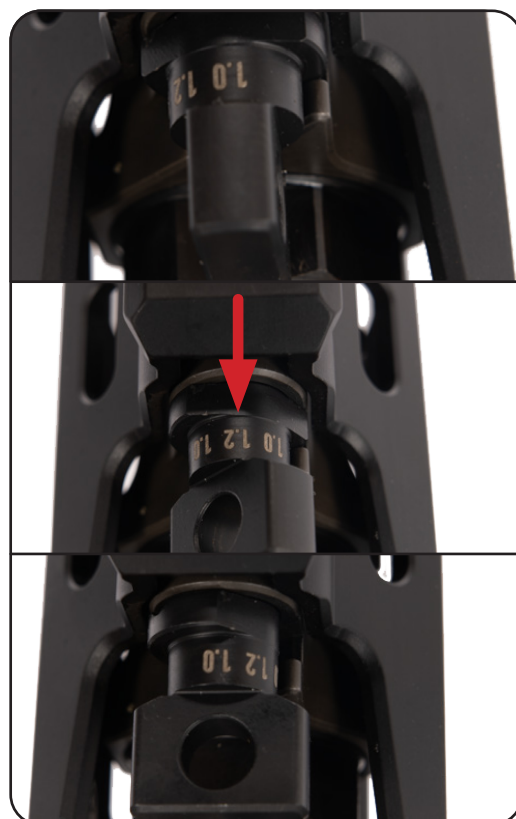
For shooting with suppressor and supersonic ammunition, set the gas regulator to the smallest possible diameter.

GAS REGULATOR - INTERMEDIATE DIAMETER

For shooting without suppressor and supersonic ammunition, set the gas regulator to the intermediate diameter.

GAS REGULATOR - LARGEST DIAMETER

For shooting with suppressor and subsonic ammunition, set the gas regulator to the largest possible diameter.



4.8.4 Finding the optimal setting

- a. Set the gas regulator in the smallest diameter.
- b. Prepare five rounds and load one into the magazine.
- c. Fire one shot and make sure the bolt is held in the open position. (Last round bolt hold open)
- d. If the bolt is held in the open position, repeat the procedure with the remaining four rounds.
- e. If malfunctions or failures occur, repeat the procedure with the next larger gas nozzle bore until proper function is ensured.



4.9 Loading and unloading weapon

4.9.1 Loading weapon

- Fill the cartridges one by one into the magazine.
- Grab the weapon and engage safety “4.2 Operating fire selector” page 13.
- Insert magazine.
- Pull the magazine slightly downward to verify it is locked in place.



- If the bolt is open, push the external bolt catch downwards.
- If the bolt is closed, vigorously pull back the charging handle to its rearmost position and allow the bolt to snap forward under its own power.



- Slightly pull the bolt rearward until you can spot the brass of the chambered cartridge in order to verify the weapon is loaded.

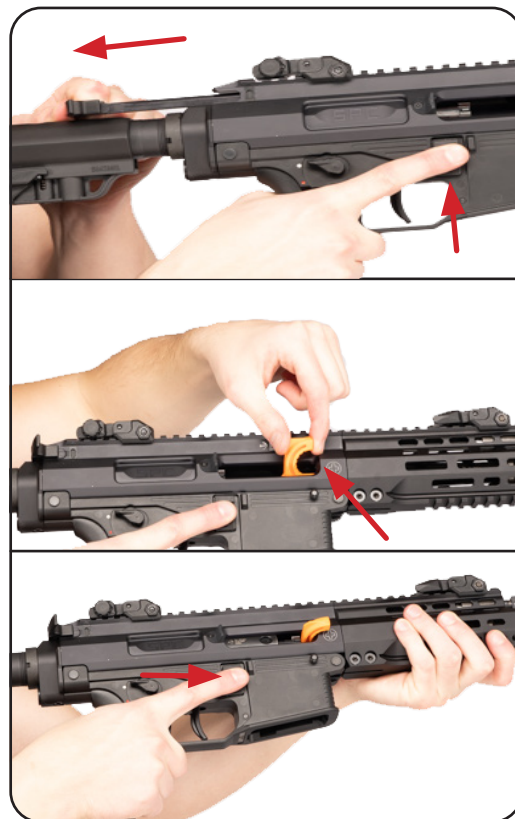


4.9.2 Unloading weapon during firing sessions


- Put the weapon in safety position (see section “4.2 Operating fire selector” on page 13).
- Remove the magazine (see section “4.3 Magazine catch” on page 14).
- Pull the charging handle rearward and observe the chambered cartridge being ejected.
- Hold the bolt in open position using the bolt catch (see section “4.7.1 Locking the bolt in open position” on page 18) and make a visual check to see if the chamber is empty.
- Recover the loose cartridge.

4.9.3 Unloading weapon for storage

- Unload the weapon (see section “4.9.2 Unloading weapon during firing sessions” on page 22).
- Close the bolt (see section “4.7.2 Closing bolt” on page 18).
- Unlock the weapon (see section “4.2 Operating fire selector” on page 13).
- Point the weapon into a safe direction and pull the trigger - the hammer strikes audibly.
- Put the weapon in safety position (see section “4.2 Operating fire selector” on page 13).
- Lock the bolt in open position (see section “4.7.1 Locking the bolt in open position” on page 18).
- Insert the “Safety-Flag”.
- Escort the bolt, with inserted safety flag, to the front.




4.10 Firing the SPC


SAFETY ADVICE!	
	(CONSIDER «CHAPTER „1.1 SAFETY RULES“ PAGE 5»)

- Prepare the sights (see section “4.6.1 Engaging iron sights” on page 17).
- Load the weapon (see section “4.9.1 Loading weapon” on page 22).
- Apply a proper firing position.
- Unlock the weapon (see section “4.2 Operating fire selector” on page 13).
- Pull the trigger until the shot is released.



Advice	
	(Consider «chapter „5.4 Functional check“ page 30»)

5. Maintenance procedures

Advice	
	Do not operate the trigger on the disassembled gun.



5.1 Disassembly

5.1.1 Disassembly of the weapon

- Carry out a safety check (see section “4.1 Clearing weapon” on page 13).
- Close the bolt (see section “4.7 Bolt catch” on page 18).
- Press the front and rear take-down pin from left side to right side and pull it out from right side until the lower receiver comes loose.



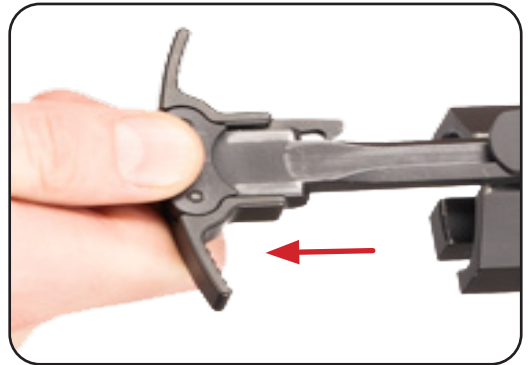
- Pull the stock out of the receiver.



- Separate the lower receiver from the weapon.



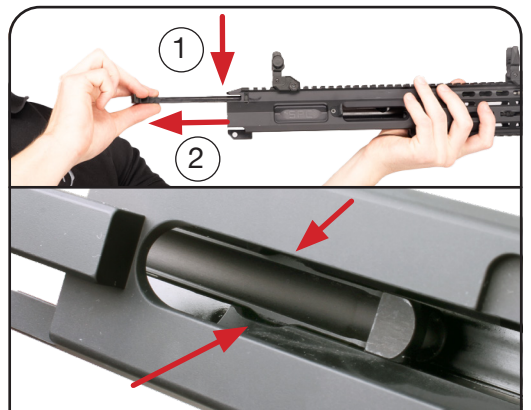
- f. Operate the locks on the charging handle and pull backwards.



- g. Continue to pull the charging handle rearward until the bolt becomes visible, then pull the bolt out of the upper receiver.



- h. Pull the charging handle back
- i. until it is congruent with the cutout in the upper receiver.



- j. Then push the charging handle down and pull it out of the upper receiver.

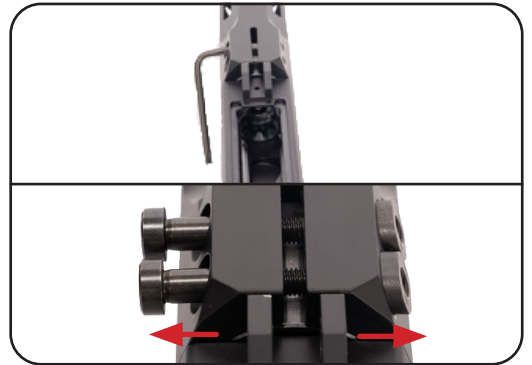


The weapon is now disassembled and ready for cleaning and inspections.

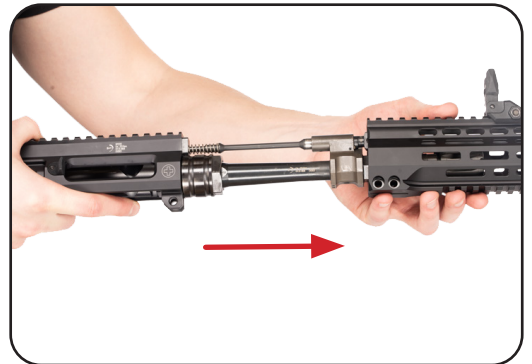


5.1.2 Disassembly of the upper receiver

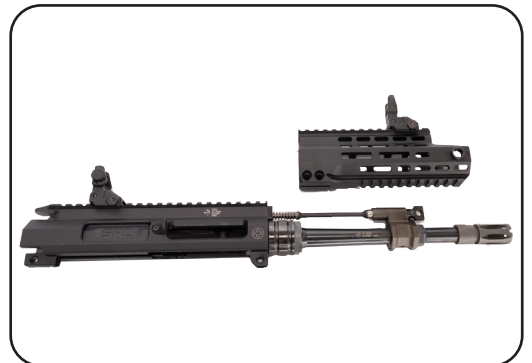
- a. Loosen the two locking bolts and remove them with the nut.



- b. Pull the hand guard forward away from the upper receiver and remove it.




The upper receiver is now disassembled and ready for cleaning and inspections.



5.2 Cleaning and inspection

- Use a cleaning rod of suitable length with a copper brush to clean the barrel from the rear side.
- Clean the upper and lower receiver with a small brush.
- Wipe all accessible areas with an oily cloth.
- Inspect all accessible parts by eye for cracks, deformation or other excessive wear.
- Lubricate all accessible surfaces of steel parts with a film of oil and protect them from rust.

SAFETY ADVICE!	
	REPORT DEFECTS IMMEDIATELY!



5.3 Reassembly

5.3.1 Reassembly of the weapon

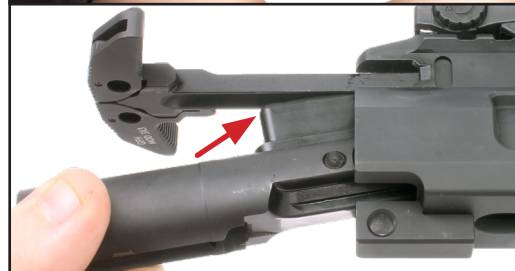
- Install the upper receiver (see section “5.3.2 Reassembly of the upper receiver” on page 29).
- Insert the charging handle into the upper receiver
- until it matches the cutout in the upper receiver.
- Then push the charging handle upwards and push it 1-2 cm further into the upper receiver, leaving the charging handle in this position.



e. Insert the bolt into the upper receiver.




f. The bolt guide must be in line with the charging handle guide.

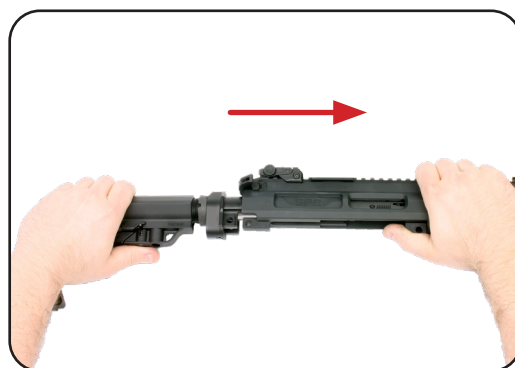


g. Slide the charging handle into the upper receiver until it locks into place.



h. Grasp the stock and retract into the receiver from the rear.

Advice	
	The telescopic stock must be in extracted position for pushing out the rear take-down pin.



i. Place the lower receiver on the upper receiver and push in the front and rear take-down pin from the right side.

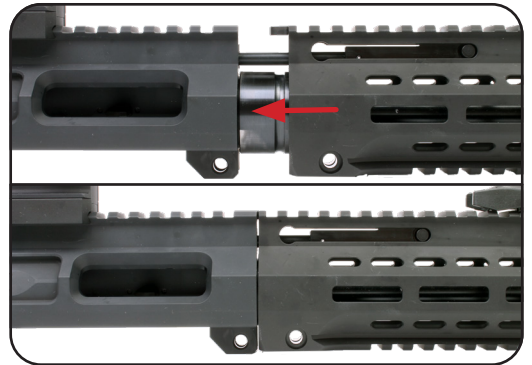


j. Carry out a functional check (see section “5.4 Functional check” on page 30).

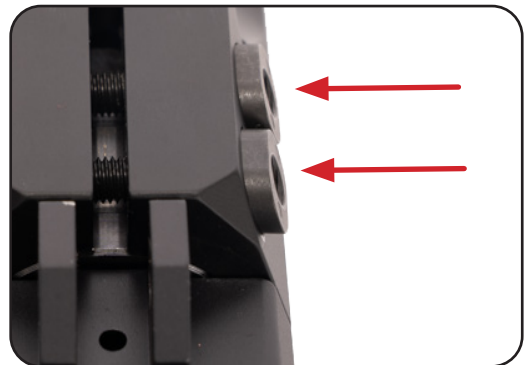


5.3.2 Reassembly of the upper receiver

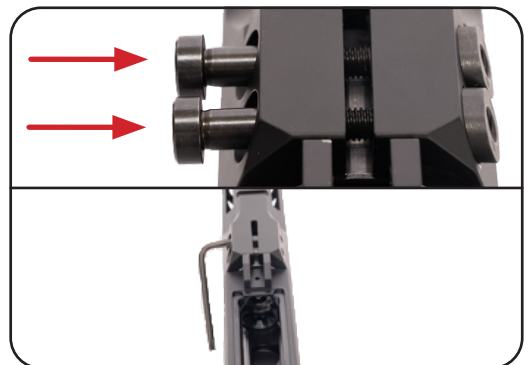
- a. Push the handguard into the upper receiver.



- b. Install the nuts into the upper receiver. Note correct alignment.



- c. Install the two locking bolts.



- d. Tighten the two locking bolts by hand (5Nm).


5.4 Functional check

- a. Carry out a safety check (see section “4.1 Clearing weapon” on page 13).
- b. Push on right side bolt catch » bolt shall snap into closed position.
- c. Pull charging handle to its rearmost position and push bolt catch upward » bolt shall stay in open.
- d. Push on left side bolt catch » bolt shall snap into closed position.
- e. Engage safety and pull trigger » hammer shall not strike.
- f. Rotate right side fire selector to single fire position and back to safe position » shall snap audibly in both positions.
- g. Rotate fire selector to single fire position, pull trigger and hold » hammer shall strike audibly.
- h. Pull charging handle to the rearmost position and slide it to forward position. Release trigger and pull it again » hammer shall strike audibly.
- i. Engage safety, insert an empty magazine and pull downward » magazine retainer must hold securely.
- j. Pull charging handle to rearmost position and release » bolt shall stay open.
- k. Push left magazine retainer and pull magazine downward » magazine shall come loose.
- l. Reinsert empty magazine, push right magazine retainer and pull magazine downward » magazine shall come loose.
- m. Pull charging handle to the rearmost position and release » Bolt shall run to closed position. Repeat steps i to m with all available magazines.
- n. Engage sights » both shall audibly snap in open position and point straight upward.
- o. Close sights » both shall audibly snap in closed position
- p. Check extracting and retracting and locking mechanisms of installed stock for proper function (see section “4.4 Operating the stock” on page 15).

If any function fails, disassemble the weapon, check for defective parts, reassemble the weapon and check for correct reassembly. If the failure persists, refer to armorer.

5.5 Troubleshooting

#	Observation	Immediate action
1	Inconsistent impacts	Control correct position and tight sit of the iron sights. Present weapon at first opportunity to armourer for inspection.
2	Failure to feed	Hold the bolt open with the bolt catch, remove the magazine, if there are still cartridges in the upper receiver, remove them. Insert the magazine, close the bolt by pressing the bolt catch. If the malfunction is repeated, use another magazine. If the malfunction persists, check the correct setting of the gas regulator. If failure repeats, clean weapon or present it to an armorer.
3	Failure to eject	Pull charging handle to rearmost position and observe for ejected shell or cartridge. Inspect barrel to be clear. Load a fresh cartridge. If the malfunction persists, check the correct setting of the gas regulator. If failure repeats, clean weapon or present it to an armorer.
4	Failure to strike	Hold the bolt open with the bolt catch and remove eventual obstructions captured in the upper receiver. Load a fresh cartridge. If failure repeats, clean weapon or present it to an armorer.
5	Failure to ignite	Wait 30 seconds with the muzzle pointing to a safe direction. Then pull charging handle to rearmost position and observe for ejected cartridge. Collect cartridge for later analyses. Load a fresh cartridge. Disassemble and clean the firing pin. Present weapon and ejected cartridge to an armorer at the first opportunity.
6	Heavy recoil	Check the correct setting of the gas regulator .



Advice	
	<p>Failure reports to the manufacturer must include the serial number, gun number, type of ammunition and a failure description.</p> <p>The report can be sent to B&T by E-Mail along with pictures</p>

6. Accessories

6.1 Suppressors

Picture	Art.-No.	Type	Description
	SD-140766-TI	SPC223	Suppressor PRINT-X UM NATO
	SD-140369	SPC223	Suppressor PRINT-X RBS QDM Compact


6.2 Stocks

Picture	Art.-No.	Description
	BT-500117	Retractable stock (Standard)
	BT-200634	Telescopic stock PDW


6.3 Magazines

Picture	Art.-No.	Type	Description
	MA-MAG556-BLK MA-MAG559-BLK	SPC223	Magazine 30 rounds Magazine 10 rounds
	BT-361173	SPC300	Magazine 30 rounds
	MA-MAG292-BLK BT-36846 MA-MAG290-BLK	APC308	Magazine 25 rounds Magazine 20 rounds Magazine 10 rounds
	MA-MAG595	SPC223	Magazine clamp

6.4 Flashlights

Picture	Art.-No.	Description
	BT-WMLX-B-W-L-GEN3	B&T Weapon Mounted Light GEN-3


6.5 Brass catcher

Picture	Art.-No.	Description
	BT-220608	Brasscatcher

6.6 Grips

Picture	Art.-No.	Description
	BT-231227-BK	Angled fore grip 45° picatinny rail attachment
	BT-211564-BL	Unigrip QD short
	BT-21840	Unigrip QD

6.7 Sights

Picture	Art.-No.	Description
	AP-200691	Aimpoint® sight ACRO P-2 3.5 MOA black

6.8 Maintenance

Picture	Art.-No.	Type	Description
	SC-64B_5.56 SC-64B_7.62	SPC223/300	Barrel brush (bronce)
	SC-64M_5.56 SC-64M_5.56	SPC223/300	Chamber brush (bronce steel)
	SC-AR15_5.56_8-32 SC-TR/M_7.62_8-32	SPC223	Cleaning kit

7. Warranty statement

Warranty claims on behalf of the Client are to be explicitly declared as such. During the legal warranty period, B&T provides warranty cover solely for defects that arise as a result of faulty materials, construction errors or poor workmanship. If a warranty claim is justified, B&T will, at its own discretion, either repair or replace the defective good. Costs incurred in transporting the defective good to B&T are borne by the Client. Spare parts fitted and replaced become the property of B&T.

Inasmuch as is legally permitted, any other liability of B&T is excluded, in particular liability for damages arising either directly or indirectly from the delivered good itself, from its use or from its defects

Merchandise is covered by the warranty provisions of the manufacturer. Parts that are naturally subject to wear and tear, damage arising from insufficient maintenance work, noncompliance with operating regulations and cases of force majeure are all excluded from warranty cover. Warranty claims lapse if the Client itself or third parties alter or repair the delivered good without the prior written consent of B&T. All product specifications are subject to change without prior notice. Published data are mean values and therefore not suitable acceptance criteria.

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This image shows a full page of blank graph paper. The grid consists of small, uniform squares formed by thin, light gray lines. There are no margins, text, or other markings on the page.