

KEG SPEARS

A & G-SYSTEM

Service Manual

Mounting · Dismounting · Disassembling · Assembling

Keg Spear with Safety System

Type A · JM-AX-02

Type G · JM-GX-02





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Read this manual completely before working on a spear.

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Safety symbols in this manual

DANGER	Will cause serious injury if not avoided.
WARNING	Could cause serious injury if not avoided.
CAUTION	Could cause minor injury or damage to the spear or keg.
NOTE	Useful information for correct use.

Document information

Document	AOB-MAN-02-EN
Version	1.0 · October 2026
Applies to	Keg Spear Type A (JM-AX-02) Keg Spear Type G (JM-GX-02)
Intended for	Breweries and keg/spear refurbishment companies
Related	AOB-MAN-01-EN Mounting & Dismounting



1. Safety & Warranty

Read this chapter before you start.

Aobaosi keg spears are built for years of daily use and can be serviced many times. Correct mounting, dismounting and servicing protects the people doing the work, the spear and the keg. Incorrect handling can damage the fitting and cause injury.



Pressurised keg. Never loosen or remove a spear from a keg that is still under pressure. The spear can be ejected with great force. Always depressurise the keg completely first (chapter 5, step 1).



Spring tension. The spear contains a pre-loaded spring. Keep hands and face clear of the spear head while unlocking or locking the Safety System, keep the Mounting/Dismounting Gun firmly attached, and open the clamp lever of the Assembling/Disassembling Tool slowly.

Intended use

The spear is the valve and extraction tube of a beverage keg. It is mounted in the keg neck and connected to a matching A-System or G-System coupler. Use it only for beer and other beverages, within the limits given in chapter 9.

Safety instructions

- Wear safety glasses and protective gloves.
- Work only on a completely depressurised keg.
- Use suitable tools in good condition (chapter 3).
- Service only clean, dismounted spears.
- Never re-use rubber parts: always fit a new body seal and CO₂ valve.
- Tighten to **80 ± 5 Nm**, never more.
- Never modify the spear or the Safety System.



2 years
WARRANTY

Aobaosi warrants its keg spears against defects in materials and workmanship for two years from the date of delivery.

The warranty does not cover normal wear, or damage caused by incorrect storage, mounting, dismounting, assembly, cleaning or use, by unsuitable cleaning agents, or by repairs and modifications made without Aobaosi's written approval. Full conditions: Aobaosi General Terms and Conditions of Sale, article 5.

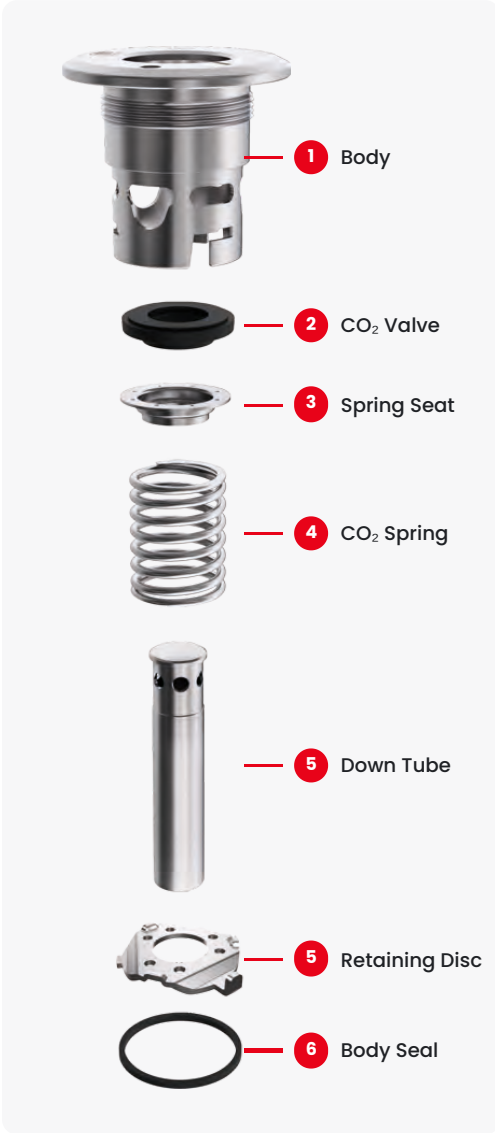
NOTE

Keep this manual at the workplace and pass it on to everyone who services spears.



2. Product Overview

Components and materials of the Aobaosi keg spear.



The Aobaosi A & G Type spears are flat-type spears with a single valve and an integrated **Safety System**. The body is connected to the **retaining disc**, which locks the body to the down tube. The fixed safety is part of the retaining disc. Types A and G share the same internal parts and are serviced in the same way. Only the body differs.

	COMPONENT	MATERIAL	TYPE A	TYPE G
1	Body	AISI 304	JM-AX-01-1	JM-GX-01-1
2	CO ₂ Valve	EPDM	JM-AX-01-3	JM-AX-01-3
3	Spring Seat	AISI 304	JM-AX-01-4	JM-AX-01-4
4	CO ₂ Spring	AISI 304	JM-AX-01-5	JM-AX-01-5
5	Down Tube + welded Retaining Disc	AISI 304	CJG-HJ-01	CJG-HJ-01
6	Body Seal	EPDM	JM-AX-01-6	JM-AX-01-6

AISI 304 = stainless steel (SUS304). EPDM seals comply with EC 1935/2004 and FDA 21 CFR 177.2600 for food contact.

Type A

Flange	Round, Ø 74.5 mm
Thread	2"-14 TPI BS 84
Coupler	A-System
Drawing	JM-AX-02

Type G

Flange	Triangular, Ø 70 mm
Thread	2"-14 TPI BS 84
Coupler	G-System
Drawing	JM-GX-02



3. Tools

Have these ready before you start.

We recommend Aobaosi tools: they are designed for Aobaosi spears and make every operation quick, safe and damage-free. Each tool reference is repeated in the steps where the tool is used.



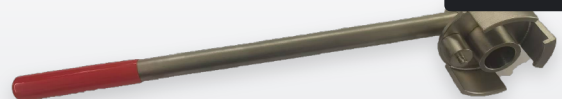
KSQ-AX-01

Mounting/Dismounting Gun

Clicks onto the CO₂ valve to hold the spear, turn the body and lock or unlock the Safety System.

Mounting

Dismounting



XQ-AX-01

Screw-in/Screw-out & Decompression Tool

Lever wrench that engages the spear flange to screw the spear into or out of the keg neck. Its pin enters the small hole in the flange and its pressure plunger opens the CO₂ valve to safely depressurise the keg.

Mounting

Dismounting

Decompression



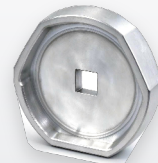
LJT-AX-01

Mounting Disc - Type A

To be used in combination with a torque wrench. Sets and verifies the tightening torque of Type A spears.

80 ± 5 Nm

60 Nm



LJT-GX-01

Mounting Disc - Type G

To be used in combination with a torque wrench. Sets and verifies the tightening torque of Type G spears.

80 ± 5 Nm

60 Nm



CZ-AX-01

Assembling/Disassembling Tool

Bench tool with clamp lever. Compresses the spring so the body can be released from, or locked onto, the down tube.

Disassembling

Assembling



JMD-01

Body Seal Fitting Cone

Placed on the body to slide a new body seal into position without stretching or damaging it.

Assembling

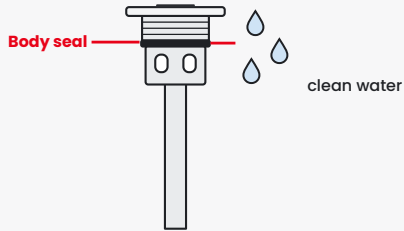
NOTE

Also have **clean water** and genuine spare parts ready (chapter 7). Clean and dry all tools after use.

4. Mounting

Steps 1 – 6 of 8 · Prepare and insert the spear

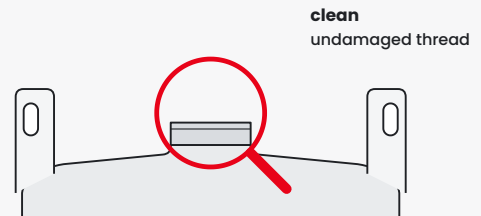
1



Moisten the body seal

Wet the body seal with clean water. A moist seal slides into the neck without damage.

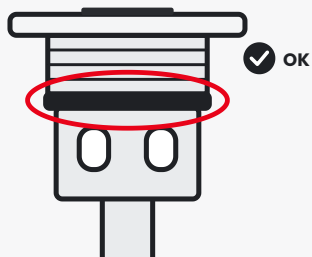
2



Check the keg neck

The keg neck and its thread must be clean and undamaged. Clean the neck if necessary.

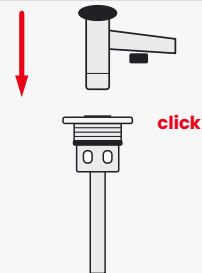
3



Check the body seal

The body seal must be undamaged and correctly seated on the designated sealing surface or in the designated groove, as applicable. Replace a damaged seal.

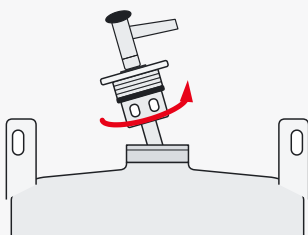
4



Attach the gun

Press the Mounting/Dismounting Gun **KSQ-AX-01** onto the CO₂ valve until it clicks. **Do not press the trigger.**

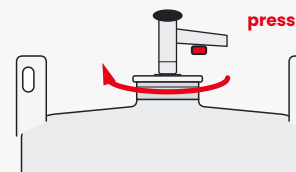
5



Unlock and insert

Hold the gun firmly and turn the spear body **anticlockwise** to release the down tube. Tilt the down tube and guide it through the keg neck.

6



Lock the Safety System

Turn the spear body **clockwise** back to its original position. When you feel resistance, press the trigger to release the gun.



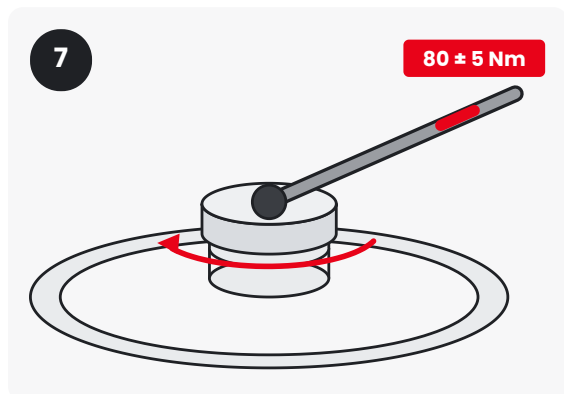
WARNING

Keep the gun firmly attached to the spear during steps 4 to 6. The spring is under tension while the Safety System is unlocked.



4. Mounting

Steps 7 – 8 of 8 · Tighten and check



Tighten the spear

Turn the spear **clockwise** into the keg neck. Hold the keg firmly and tighten with a continuous, steady movement.

Tightening torque 80 ± 5 Nm

Screw-in/Screw-out Tool

XQ-AX-01

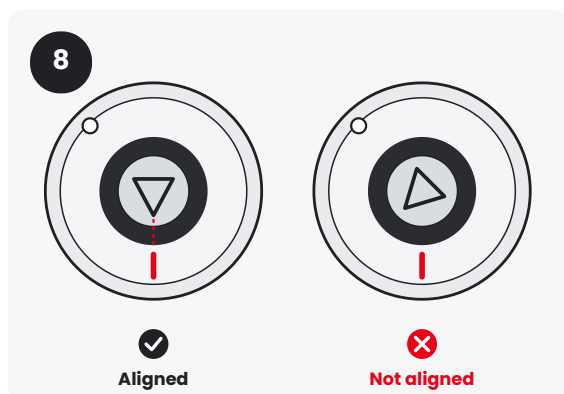
For everyday mounting.

Mounting Disc + torque wrench

LJT-AX-01 Type A ·

LJT-GX-01 Type G

Recommended: sets and verifies the exact torque.



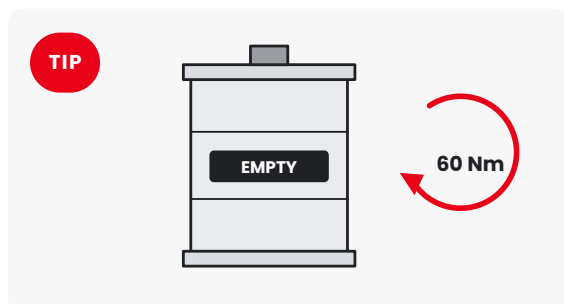
Check the alignment

Remove the tool and look at the top of the spear. The **tip of the triangle** on the CO₂ valve must point exactly at the **straight line** on the body. This confirms that the Safety System is locked.

Type A and Type G carry the same marking.

CAUTION

Not aligned? Do not use the keg.
Repeat steps 4 to 6 until the triangle and the line are aligned.



Check returning kegs

After several trips to the market and back, the spear can gradually lose torque. Check **empty kegs returning from the market** before refilling, and re-tighten the spear to **60 Nm** with the Mounting Disc and a torque wrench.

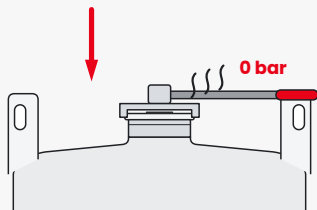
5. Dismounting

Steps 1 – 6 · Remove the spear from the keg



Depressurise first. Never start dismounting before step 1 is complete and the keg is free of pressure.

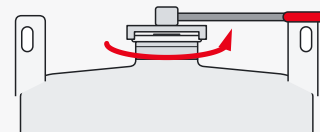
1



Depressurise the keg

Place the Screw-in/Screw-out & Decompression Tool **XQ-AX-01** on the spear. Its pin goes into the small hole and the pressure plunger in the middle opens the CO₂ valve. Hold until no more gas escapes.

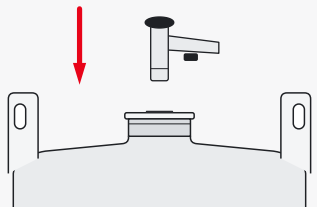
2



Unscrew the spear

With the same tool **XQ-AX-01**, turn the spear **anticlockwise** until the thread is free.

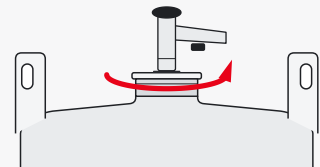
3



Attach the gun

Press the Mounting/Dismounting Gun **KSQ-AX-01** onto the CO₂ valve until it clicks. **Do not press the trigger.**

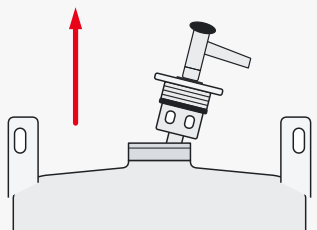
4



Unlock the Safety System

Hold the gun firmly and turn the spear body **anticlockwise** to release it from the down tube.

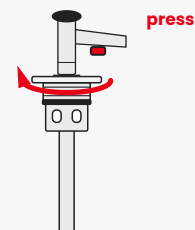
5



Remove the spear

Tilt the down tube and lift the spear out of the keg neck.

6



Lock the spear again

Turn the body **clockwise** back onto the down tube and press the trigger to release the gun. The spear is ready for servicing (chapter 6).

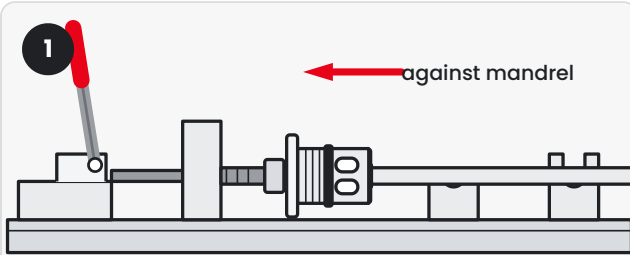
6. Disassembling

Steps 1 – 6 · Take the spear apart on the bench tool



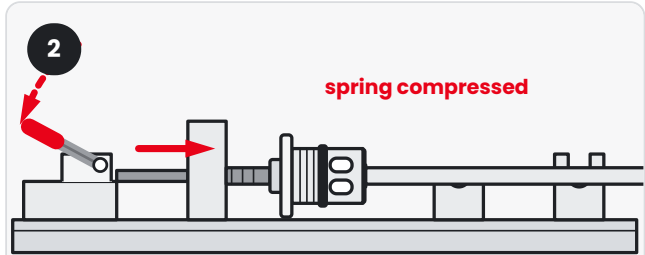
WARNING

Spring tension. Open the clamp lever slowly. In step 5, **always lever the down tube upwards**: pushing it downwards can release the spring suddenly and make it fly out of the tool.



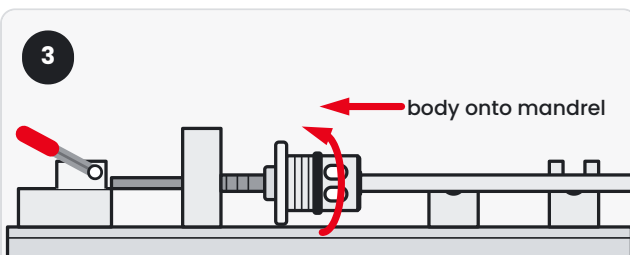
Place the spear in the tool

Open the clamp lever of the Assembling/Disassembling Tool **CZ-AX-01**. Lay the spear in the tool: body against the mandrel, down tube in the cradle.



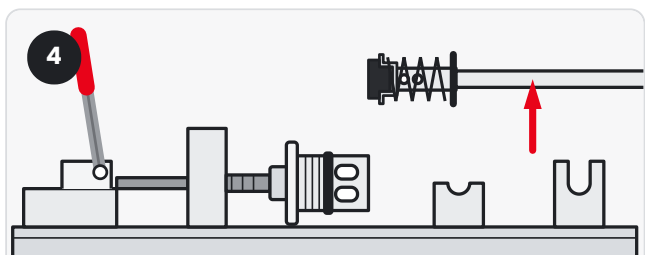
Close the clamp lever

Close the clamp lever. The tool compresses the spring and takes the load off the Safety System.



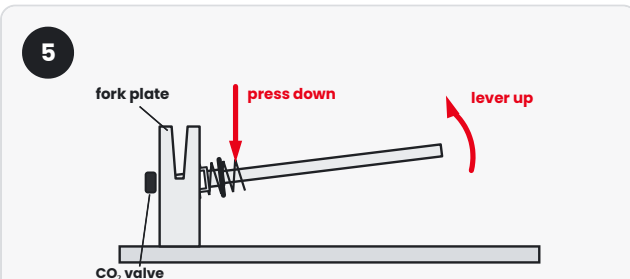
Unlock the body

Hold the down tube and turn the body **anticlockwise** until it releases from the retaining disc. Slide the body back onto the mandrel.



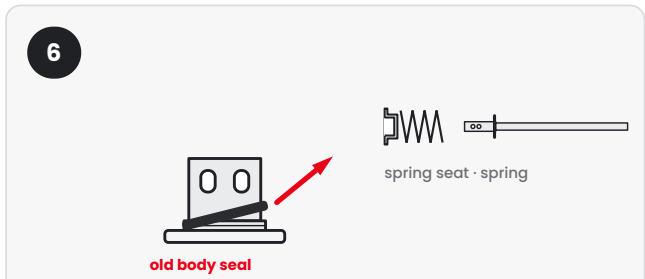
Take out the down tube

Open the clamp lever slowly to relax the spring. Lift out the down tube with its parts and remove the body.



Remove the CO₂ valve

Push the bevelled fork plate at the end of the tool between the CO₂ valve and the spring seat. Press down firmly and **lever the down tube upwards** to lift the valve off. **Never push the tube downwards.**



Remove the remaining parts

Slide the spring seat and the spring off the down tube. Remove the body seal. Discard the CO₂ valve and the body seal: **never re-use rubber parts.**



7. Inspection & Spare Parts

Clean, inspect and replace before assembling.



Clean

We recommend cleaning all metal parts in an **ultrasonic cleaner with an acid ultrasonic cleaning solution**, then rinsing them with clean water. Inspect the parts when they are clean and dry.

Inspect & replace

PART	REPLACE WHEN	ACTION
• Body seal	Always replace.	New, moistened body seal JM-AX-01-6
• CO₂ valve	Always replace.	New, moistened CO ₂ valve JM-AX-01-3
• CO₂ spring	Corrosion, cracks, deformation or loss of tension.	Replace JM-AX-01-5
• Spring seat	Deformation, burrs, damaged sealing surface.	Replace JM-AX-01-4
• Down tube	Bent tube, damaged or deformed retaining disc.	Replace CJG-HJ-01
• Body	Damaged flange, thread or sealing surfaces, cracks, worn locking slots.	Replace JM-AX-01-1 / JM-GX-01-1

Spare parts

Body Seal

EPDM · JM-AX-01-6
Type A and G

CO₂ Valve

EPDM · JM-AX-01-3
Type A and G

CO₂ Spring

AISI 304 · JM-AX-01-5
Type A and G

Spring Seat

AISI 304 · JM-AX-01-4
Type A and G

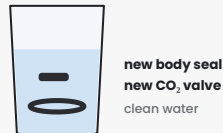
NOTE

When ordering spare parts, mention the spear type (A or G) and the part number.

8. Assembling

Steps 1 – 6 of 8 · Rebuild the spear

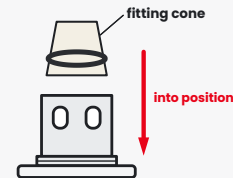
1



Moisten the new seals

Put a new body seal and a new CO₂ valve in clean water. Moist rubber parts slide into place without damage.

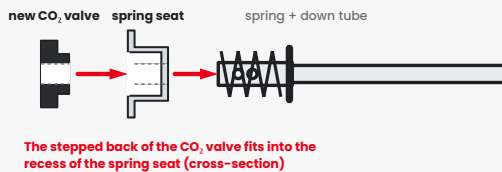
2



Fit the body seal

Stand the body on its flange and place the Body Seal Fitting Cone **JMD-01** on top. Slide the new body seal over the cone and remove the cone. The body seal must be undamaged and correctly seated on the designated sealing surface or in the designated groove, as applicable. Then slide the body onto the mandrel of the tool.

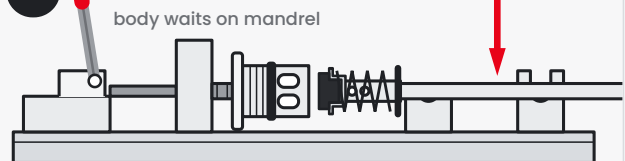
3



Build up the down tube

Slide the CO₂ spring and the spring seat onto the down tube, then the new CO₂ valve. **The recess of the spring seat faces the CO₂ valve:** the back of the valve fits exactly into it.

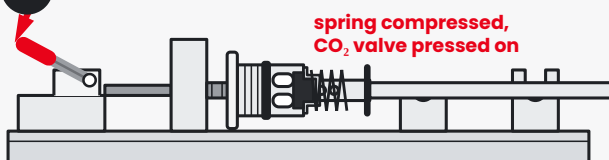
4



Place the down tube in the tool

Lay the down tube assembly in the cradle of the tool **CZ-AX-01**. Centre the spring on the retaining disc. The body stays on the mandrel.

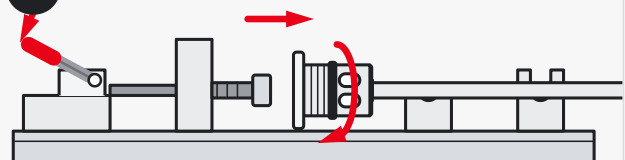
5



Mount the CO₂ valve

Close the clamp lever. The tool compresses the spring and presses the CO₂ valve fully into position on the down tube.

6



Lock the body

Slide the body onto the retaining disc until it sits in the lugs. Turn the body **clockwise** until it locks.

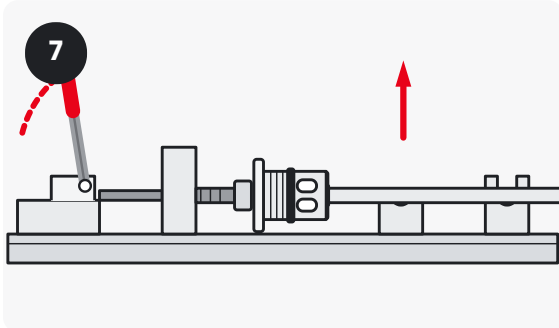
CAUTION

Use only new, genuine rubber parts. A re-used body seal or CO₂ valve can leak and contaminate the beverage.



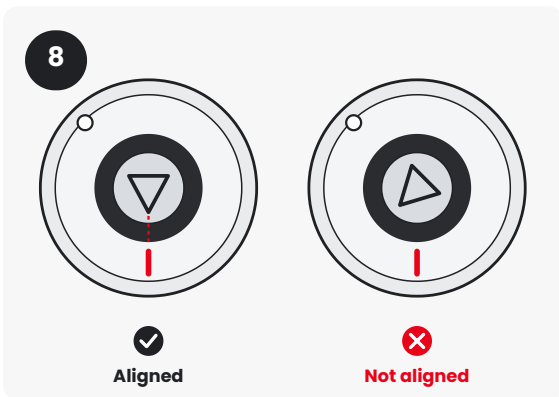
8. Assembling & Leak Test

Steps 7 – 8 of 8 · Release, check and test



Release the spear

Open the clamp lever slowly and take the assembled spear out of the tool. Check that the body seal and the CO₂ valve sit correctly.

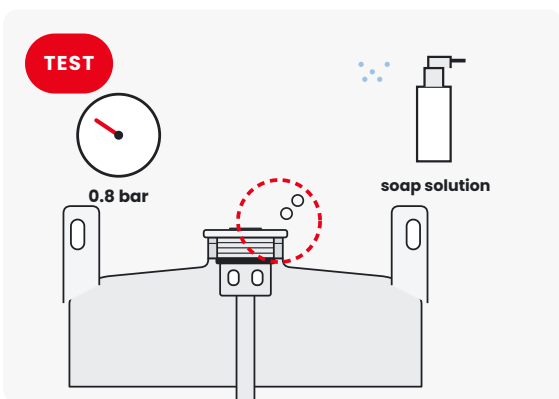


Check the alignment

The **tip of the triangle** on the CO₂ valve must point exactly at the **straight line** on the body. This confirms that the Safety System is locked.

CAUTION

Not aligned? Put the spear back in the tool and repeat steps 4 to 7.



Leak test

Mount the serviced spear in a keg (chapter 4) and pressurise the keg to a low test pressure of **0.8 bar**. Spray a leak detection solution, such as soapy water, onto the spear head, the CO₂ valve and the keg neck.

No bubbles may form within 10 seconds. If bubbles appear, depressurise the keg, dismount the spear and check it again.

This practical check covers the accessible sealing areas. It does not replace a full functional test of the internal seals.



9. Technical Data

Dimensions, torque, materials and compliance.

TYPE A · JM-AX-02		TYPE G · JM-GX-02
GENERAL		
Spear type	Flat-type keg spear, single valve, with Safety System	
Coupler	A-System	G-System
DIMENSIONS		
Flange	Round · Ø 74.5 ± 0.1 mm	Triangular · Ø 70 ± 0.1 mm
Thread	2"–14 TPI BS 84	
Body bore · body diameter	Ø 35.7 +0.1/0 mm · Ø 48 0/-0.1 mm	
Tube connection	Ø 43.5 ± 0.1 mm	
Down tube	Ø 19 mm · length according to keg height	
Keg neck bore	Ø 44.4 mm	
Distance tube – keg bottom	9 mm	
Valve stroke	9 – 12 mm	
MOUNTING		
Tightening torque	80 ± 5 Nm, continuous	
Re-tightening (empty returned kegs)	60 Nm	
MATERIALS & COMPLIANCE		
Metal parts	Stainless steel AISI 304 (SUS304)	
Seals (CO ₂ valve, body seal)	EPDM · hardness 81 ± 3 Shore A	
FOOD CONTACT COMPLIANCE		
European Union	Reg. (EC) 1935/2004 · EDQM Technical Guide on metals and alloys · migration tests ref. Reg. (EU) 10/2011	
Germany · France	LFGB § 30/31 · French DGCCRF metals guidance and BPA law (BPA not detected)	
United States	FDA 21 CFR 177.2600 (EPDM) · California Prop 65 (lead, PFAS not detected)	
Japan	Food Sanitation Law, MHW Notice No. 370 (EPDM CO ₂ valve)	
OPERATING LIMITS		
Max. working pressure	3 bar	
Max. temperature	135 °C	

Test reports (SGS, Intertek) available on request. Full tolerances: see appendix. Specifications may change without notice.



10. Care, Troubleshooting & Service

Keep spears in top condition.

Care

- Clean spears with the regular keg washing cycle, using caustic and acid detergents according to the brewery's cleaning procedure.
- Replace the body seal every time the spear is dismantled.
- Store spears and spare parts dry, dust-free and out of direct sunlight.
- Clean and dry the tools after use.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
• Leak at the keg neck	Body seal damaged or not seated. Torque too low.	Replace the body seal and moisten it. Mount again and tighten to 80 ± 5 Nm.
• Spear difficult to screw in	Dirt or damage on the keg neck thread.	Clean and inspect the thread. Never force the spear.
• Triangle and line not aligned	Safety System not fully locked.	Mounting: repeat steps 4 to 6. Assembling: repeat steps 5 to 7.
• Gun does not release	Body not fully turned back, or trigger pressed too early.	Turn the body clockwise to the stop, then press the trigger.
• Gas leak at the CO₂ valve	CO ₂ valve worn or damaged, spring seat damaged.	Disassemble the spear (chapter 6) and replace the parts (chapter 7).
• Body does not lock in the tool	Spring not seated correctly, or not compressed far enough.	Open the tool, centre the spring on the retaining disc and repeat assembling steps 4 to 6.

Service & contact



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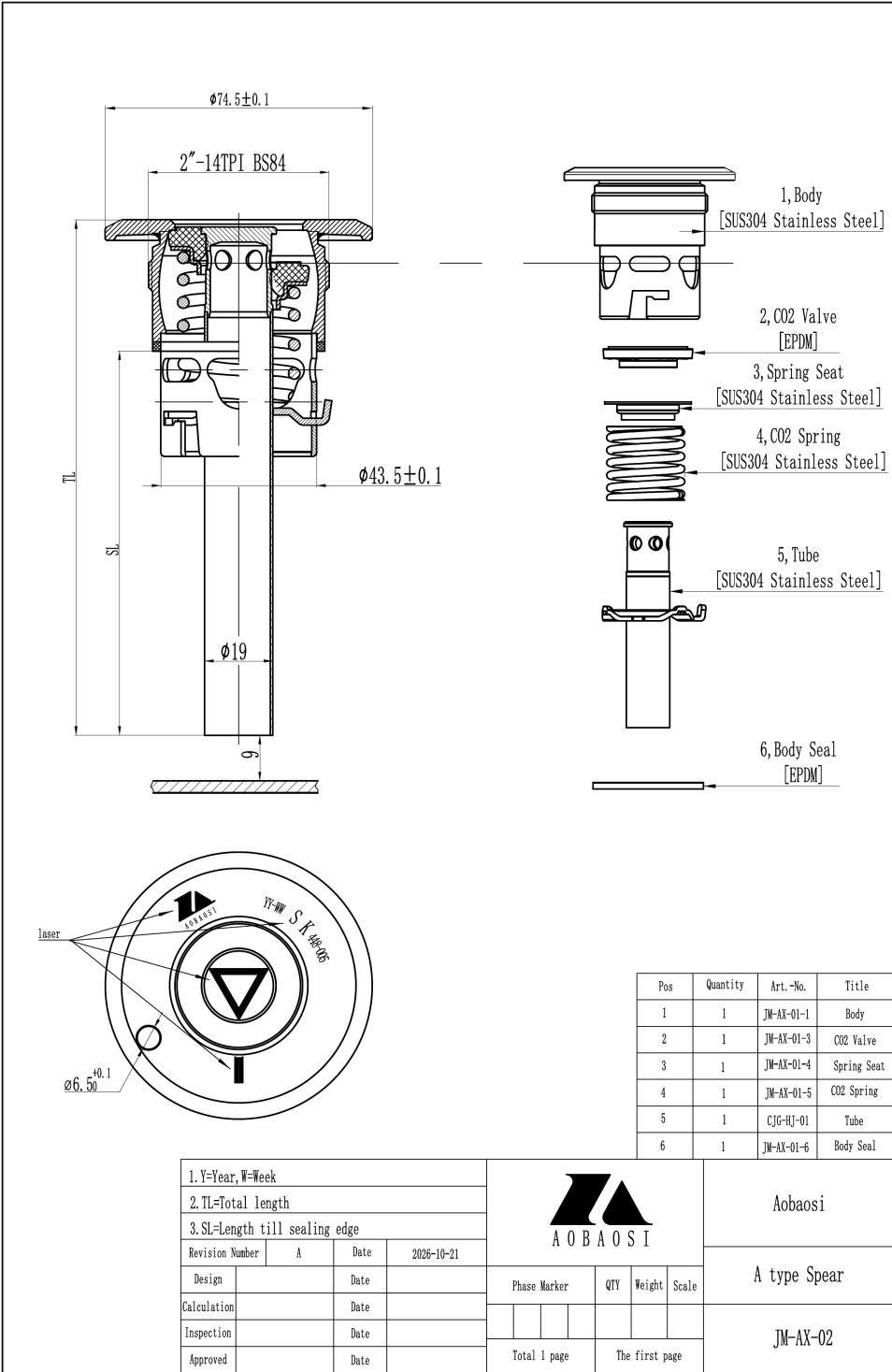
NOTE

For service, spare parts or warranty claims, always mention the spear type (A or G), the drawing number and the code engraved on the flange.



A. Technical Drawing

Assembly drawing JM-AX-02 · Keg Spear Type A with Safety System

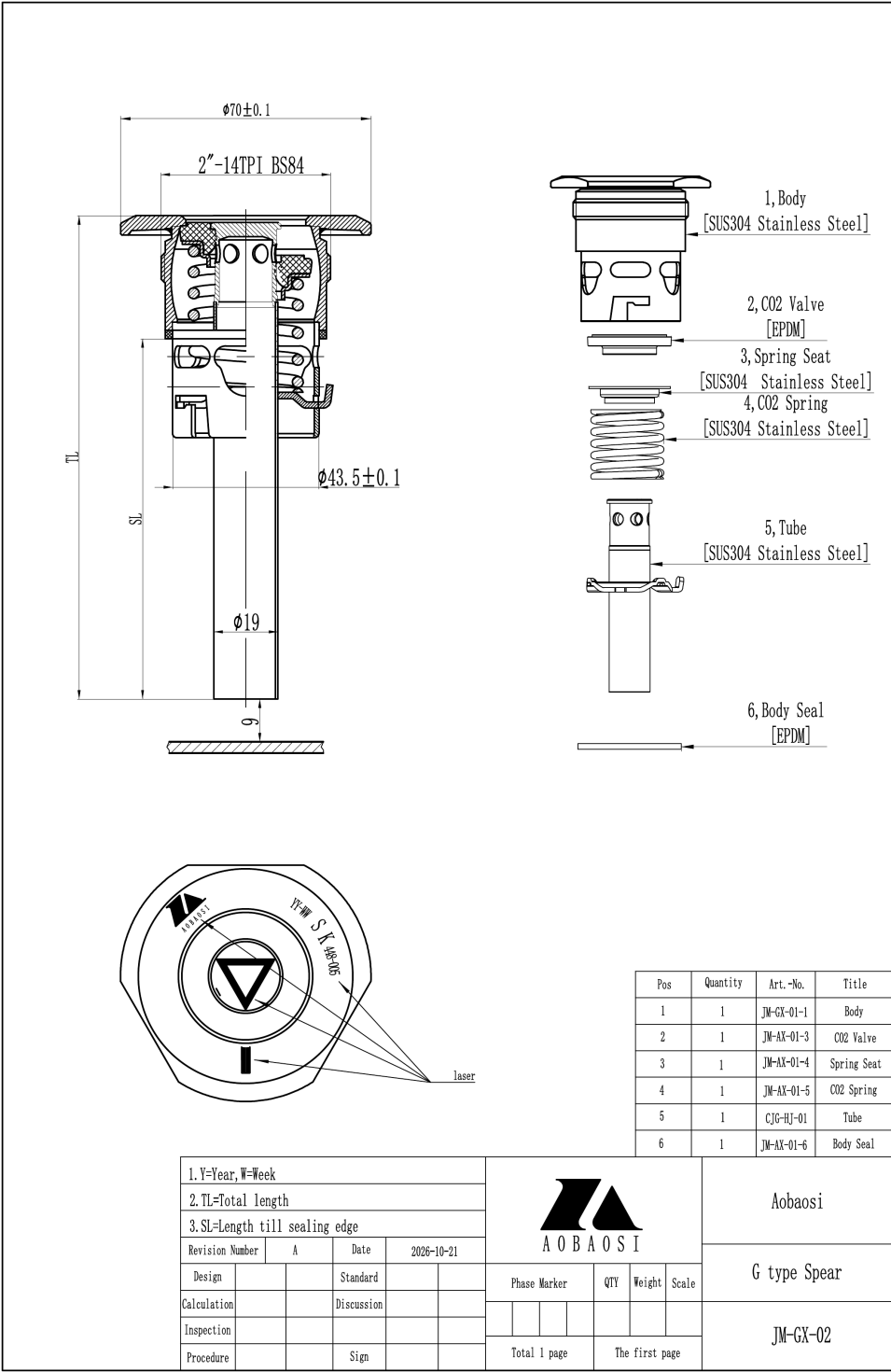


Reference drawing. For controlled copies, contact Aobaosi quoting drawing number JM-AX-02.



A. Technical Drawing

Assembly drawing JM-GX-02 · Keg Spear Type G with Safety System



Reference drawing. For controlled copies, contact Aobaosi quoting drawing number JM-GX-02.



Keg necks · Keg spears · Keg couplers

Zhejiang Aobaosi Intelligent Manufacturing Co., Ltd.

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www.aobaosi.tech

AOB-MAN-02-EN

Version 1.0 · October 2026

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