ValveWitness INSPECTION

Buyer's Valve Inspection Checklist

Free printable checklist for overseas buyers · Stage 1 & 2

Three stages, from purchase order to container. Tick each box only when you hold a record of it — a document, a photo, a reading or a signature.

How to use it: attach Stage 1 to your PO, send Stage 2 to the factory with the expected DUPRO date, and keep Stage 3 for the inspection day. Exact test pressures, hold durations, leakage values and AQL acceptance numbers come from the licensed standard edition named in your PO.

1 Before booking · pre-PO verification

Check	What to fix in writing before production	✓
Standard and edition	Name the design and test standards with year, e.g. API 600 + API 598:2023, or EN 12266-1:2012. "API 598" with no year invites argument later.	☐
Leakage rate	For ISO 5208 / EN 12266-1 write the lettered rate (e.g. "Leakage rate A"). For API 598 state seat type and any optional tests.	☐
Hold times and test fluids	Confirm the factory's procedure uses the minimum durations of your edition, and which tests are water and which are air or inert gas.	☐
AQL plan	ISO 2859-1 or ANSI/ASQ Z1.4, inspection level (usually General II) and AQL per defect class: critical, major, minor.	☐
Drawing and tolerances	An approved drawing with critical dimensions and tolerances marked: face-to-face, flange OD, bolt circle, raised-face diameter, bore.	☐
Test and inspection scope	Which tests the factory runs on 100% of valves, how many you witness, and which steps are hold points (no shipment until released).	☐
Documents required	EN 10204 3.1 (or 3.2) certificates, 100% test records, gauge calibration certificates, packing list — and when they must be ready.	☐

2 During production (DUPRO)

Best booked when bodies are machined but still unpainted — the last point where faults are cheap to fix.

Check	What to see while valves are still bare metal	✓
Raw material and MTC	EN 10204 3.1 certificates match heat numbers cast or stamped on bodies and bonnets; chemistry and mechanicals match the ordered grade.	☐
Casting / forging visual	Bare castings and forgings: sand holes, cracks, cold shuts, porosity, repaired areas — before paint hides them.	☐
Critical machined dimensions	Sample critical dimensions on machined parts against the drawing: seat bores, stem diameters, flange faces and facing finish.	☐
Pre-paint pressure testing	Shell and seat tests run on bare, dry valves, so weeping through the body or a pinhole is visible. Witness here if testing is a hold point.	☐
Trend check	Recurring defects across the first batch are cheaper to fix now than at PSI. Record serials of anything set aside.	☐

We report facts from samples inspected; no certificates or accreditation marks issued. Always follow the licensed standard edition named in your PO.

Buyer's Valve Inspection Checklist

Stage 3 · Pre-shipment inspection (PSI) — 12-area field checklist · evidence rules

The order an inspector works in on site. Sampling to ISO 2859-1 or ANSI/ASQ Z1.4, General Level II unless the PO says otherwise.

3 Pre-shipment inspection: 12 areas

Area	What the inspector checks	✓
1. Readiness gate	100% of the order finished and at least 80% packed. If not, the visit may be postponed or reported as PENDING.	☐
2. Documents and gauges	MTCs, 100% factory test records, gauge ID and calibration validity; thickness gauge checked with foils before use.	☐
3. Quantity and random selection	Count cases and pieces against PO and packing list. The inspector — not the factory — picks the sample cartons for AQL.	☐
4. Markings	Body marks and nameplate to MSS SP-25 or EN 19 as the PO requires: maker, material, rating, size, heat number, flow arrow.	☐
5. Dimensions	Face-to-face, flange OD, bolt circle, hole diameter, raised-face diameter and facing finish against drawing and standard.	☐
6. Visual workmanship	Castings, sealing faces, paint runs, missing parts, bolt threads, bore cleanliness. Each defect classed critical, major or minor.	☐
7. Pressure test witness	Shell → backseat (if fitted) → high-pressure seat → low-pressure air seat, as the PO requires. Gauge, serial and timed hold recorded.	☐
8. Operation	Full open / close; smooth, no binding. Handwheel turns or operating torque against the drawing or data sheet; no gland leak after.	☐
9. Coating DFT and colour	Readings per sample at agreed points (body, bonnet, flange back); average and minimum recorded; shade checked against the RAL card.	☐
10. PMI (only if ordered)	Portable XRF on stem, body and seat overlay, verified against a check standard. Supports, never replaces, the MTC.	☐
11. Packing and ISPM 15	Flange end covers fitted, valve position per spec, preservation, ISPM 15 mark on wood, shipping marks match the PO.	☐
12. Witness log and closing record	Facts explained to the factory; defect list acknowledged in writing. Report in English, normally within 24 hours.	☐

Stop and escalate if you find a critical defect (crack, test leakage, wrong material), goods unfinished or short, a gauge with no valid calibration, a nameplate or heat number that does not match the documents, or any request to "let it pass".

4 Evidence rules worth asking any inspector for

- Date, time and location watermark on every photo.
- Overview shot first, then the close-up.
- Defect photos with a ruler and the serial or case number.
- Gauge and caliper readings readable in the photo.
- Pressure holds filmed with gauge and valve in frame.
- Anything not seen is written "Not witnessed".
- Original photos kept and delivered; nothing deleted.
- Defect list signed by the factory as acknowledged.

We report facts from samples inspected; no certificates or accreditation marks issued. Always follow the licensed standard edition named in your PO.

ValveWitness INSPECTION

Buyer's Valve Inspection Checklist

Quick checkpoints for gate, ball, butterfly and check valves

5 Quick valve-type checkpoints

Gate valves

Wedge and seat	Seat rings and wedge faces free of scratches; wedge travel full and centred.	☐
Backseat test	Applies only where a backseat is fitted; valve fully open.	☐
Stem and turns	Stem straight, threads clean; handwheel turns to full open recorded.	☐
Face-to-face	ASME B16.10 or EN 558 series named in the PO.	☐

Ball valves

Floating or trunnion	Confirm the design matches the data sheet; seat material as ordered.	☐
Cavity and specials	Cavity relief, anti-static device or DBB tests only where specified — and witnessed if they are.	☐
Ball and seats	Ball surface finish, seat insert condition, stops aligned with port.	☐
Operating torque	Smooth quarter turn; torque or actuator sizing to the data sheet.	☐

Butterfly valves

Disc clearance	Disc swings clear of the pipe bore and adjacent flange ID for the stated schedule.	☐
Liner and seat	Rubber or PTFE liner bonded, no cuts or blisters; seat test from the direction(s) in the PO.	☐
Lug and wafer	Lug threads and bolt holes to the flange standard; centring holes on wafer bodies.	☐
Gearbox / actuator	Mounting orientation, position indicator, travel stops set at open and closed.	☐

Check valves

Flow arrow	Arrow cast or plated in the correct direction; matches the nameplate.	☐
Disc movement	Disc, hinge pin or spring moves freely; silent / nozzle types close without sticking.	☐
Seat test direction	Seat test applied from the downstream side — and a low-pressure air seat test if ordered.	☐
Orientation	Suitability for horizontal or vertical installation as stated on the data sheet.	☐

Notes / findings

PO no. _____ Factory city / date _____ Checked by _____

Need an inspector at a Zhejiang factory? ValveWitness Inspection — Kevin Lyu (吕中国), independent valve & machinery inspector, Ningbo High-tech Zone. PSI, DUPRO, pressure test witnessing, loading supervision and factory audits. The factory performs pressure tests on its own bench; we witness, time and record them. Free guide online: valvewitness.com/guides/valve-inspection-checklist/

We report facts from samples inspected; no certificates or accreditation marks issued. Always follow the licensed standard edition named in your PO.