AXOVENTRA MOTION SYSTEMS

# AV-600 technical specification

Trunnion-ball valve reference for higher-pressure and larger-bore isolation studies.

Illustrative engineering visualization. Final production geometry may differ.

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| DOCUMENT CODE | AXO-AV-600-TDS-R02 |
| REVISION / DATE | R02 / 23 OCTOBER 2026 |
| STATUS | ENGINEERING REVIEW |
| PUBLICATION CLASS | Uncontrolled public review copy |
| INTENDED USE | Preliminary technical orientation and enquiry preparation only |

**PRE-RELEASE TECHNICAL INFORMATION**

Do not use this document for procurement, fabrication, installation, operation, maintenance, or safety decisions. Final values require approved project data and controlled engineering release.

01 / DOCUMENT CONTROL

# Purpose, authority, and limits

This issue improves technical clarity and document control while preserving a strict boundary between a draft reference platform and released equipment.

## Document purpose

AV-600 is presented as a reference configuration for preliminary duty review. It does not establish guaranteed performance, approved dimensions, pressure-temperature rating, material grade, certification, code compliance, manufacturing completion, or fitness for a particular service.

## Authority hierarchy

| Priority | Authority |
|---|---|
| 1 | Client-controlled product master, approved drawings, certificates, and test records |
| 2 | Project requisition, approved datasheet, specifications, and purchase order |
| 3 | Released calculations, drawings, inspection/test records, and manuals |
| 4 | This public engineering-review document |

## Visual and content status

| Item | R02 status |
|---|---|
| Product identity | Client draft; approval pending |
| Numeric ranges | Reference only; conditions and evidence pending |
| Image | Illustrative; provenance and public-use approval pending |
| Standards | Applicability pathway only; no conformance claim |
| Contact/facility claims | Not published until client-confirmed |

02 / REFERENCE CONFIGURATION

# What the model currently means

Trunnion-ball valve reference for higher-pressure and larger-bore isolation studies.

## Published draft facts

| Attribute | R02 reference basis |
|---|---|
| Draft size range | DN50-DN600; client draft, not approved |
| Draft class range | ASME Class 150-2500; material/temperature dependent |
| Features | DBB, cavity relief, sealant only when design supports them |
| Actuation | Manual, pneumatic, electric, or hydraulic by duty |

## Intended study contexts

| Application | Qualification boundary |
|---|---|
| Transmission gas | Suitability depends on approved fluid, operating cases, interfaces, hazards, and project requirements. |
| Refining | Suitability depends on approved fluid, operating cases, interfaces, hazards, and project requirements. |
| LNG terminals | Suitability depends on approved fluid, operating cases, interfaces, hazards, and project requirements. |
| High-pressure process | Suitability depends on approved fluid, operating cases, interfaces, hazards, and project requirements. |

## Configuration boundary

Valve platform for preliminary isolation, throttling, and severe-service configuration studies. Equipment scope, geometry, materials, auxiliaries, controls, dimensions, ratings, and tests remain project-specific.

03 / SELECTION INPUTS

# Data required before selection

Selection must use the complete operating envelope. A nominal model, flow, size, or pressure class cannot replace the approved project basis.

01 Fluid, solids, corrosion, erosion, toxicity, and emissions requirements

02 Design and operating pressure-temperature cases plus transients

03 Function, flow direction, shutoff, leakage, emergency action, and fail position

04 Piping class, size, class, ends, bore, actuation, accessories, and interfaces

05 Inspection, shell/seat testing, NDE, fire testing, certificates, and preservation

## Operating-case matrix

| Case | Minimum data to record |
|---|---|
| Normal / rated | Composition, phase, flow, pressure, temperature, utilities, control state |
| Minimum / turndown | Stable operating requirement, recycle/bypass, control margin |
| Maximum | Maximum continuous conditions and duration |
| Start-up / shutdown | Sequence, ramp rates, thermal state, utilities, permissives |
| Trip / upset | Initiating event, transient conditions, safe state, relief interfaces |

## Enquiry output

Engineering should return a data-gap register, preliminary selection basis, responsibility boundary, standards list, proposed verification plan, and controlled document schedule.

04 / ENGINEERING VERIFICATION

# Work required to close the release gate

The following checks are not optional marketing detail. They are the evidence required to convert a reference platform into a project configuration.

01 Pressure-temperature rating for the selected material group and construction

02 Body, trim, stem, seat, packing, seals, and bolting compatibility

03 Hydraulic/flow review where throttling, noise, cavitation, flashing, or erosion may occur

04 Actuator sizing, travel, fail action, stroking time, and functional checks

05 Applicable product standard, test standard, purchaser options, and evidence

## Open model checks

01 Confirm API 6D scope, bore, DBB definition, seats, and cavity relief.

02 Release actuator sizing and fire-test evidence where specified.

## Release evidence

| Discipline | Expected controlled output |
|---|---|
| Process / application | Approved duty cases, calculations, operating envelope, assumptions |
| Mechanical / materials | Configuration, ratings, materials, interfaces, drawings, design reviews |
| Controls / instrumentation | Narrative, cause-and-effect, alarms, trips, set points, interfaces |
| Quality / testing | ITP, procedures, results, deviations, traceability, release status |
| Lifecycle | Installation, commissioning, operation, maintenance, spares, preservation |

05 / STANDARDS PATHWAY

# Applicability, edition, and evidence

A standards reference identifies a review path. It is not a statement that this model is certified, stamped, licensed, monogrammed, or compliant.

| Reference | R02 use |
|---|---|
| ASME B16.34-2025 | Covers pressure-temperature ratings, materials, dimensions, examination, testing, and marking for covered valve constructions. |
| API valve standards | API 6D, 608, 609, 600, or 602 may be pathways depending on valve type and purchase scope. |

## Standards review questions

01 Does the selected equipment type fall inside the standard scope?

02 Which edition, addenda, errata, purchaser supplements, and jurisdiction apply?

03 Which optional or supplemental requirements are invoked by the project?

04 What design, manufacturing, examination, testing, marking, and documentation evidence is required?

05 Who has authority to approve exceptions and issue the conformance statement?

## Source identifiers

CLIENT-DRAFT-001; ASME-B16.34-2025; API-VALVE-UPDATES

06 / RELEASE CHECKLIST & SOURCES

# Before this document can become approved product data

| Release item | Required evidence |
|---|---|
| Identity | Approved product master and variant/model mapping |
| Performance / rating | Calculations, curves/tables, conditions, tolerances, and test basis |
| Materials / dimensions | Controlled material schedule and approved drawings |
| Quality / certification | Applicable ITP, reports, certificates, approvals, and release authority |
| Media / rights | Confirmed ownership, licence, or approved illustrative-use basis |
| Approval | Named engineering, quality, legal, and document-control sign-off |

## Sources used for R02

| Source ID | Publisher / location | Use |
|---|---|---|
| CLIENT-DRAFT-001 | Existing Axoventra workspace product and document draft | Client-controlled draft; engineering approval not provided |
| API-VALVE-UPDATES | American Petroleum Institute - valve standard updates | https://www.api.org/products-and-services/api-monogram-and-apiqr/latest-updates |
| ASME-B16.34-2025 | ASME B16.34-2025 product page | https://www.asme.org/codes-standards/find-codes-standards/b16-34-valves-flanged-threaded-welding-end/2025 |

END OF DOCUMENT

AXO-AV-600-TDS-R02 | R02 | ENGINEERING REVIEW | SHA-256 recorded in public/documents/pdf-manifest.csv after generation.