

**Europe Asia Pipeline Company LTD.**

**SPECIFICATION FOR**

**16” GATE VALVES FOR PIPELINE SERVICE**

**23009010**

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1. **GENERAL**

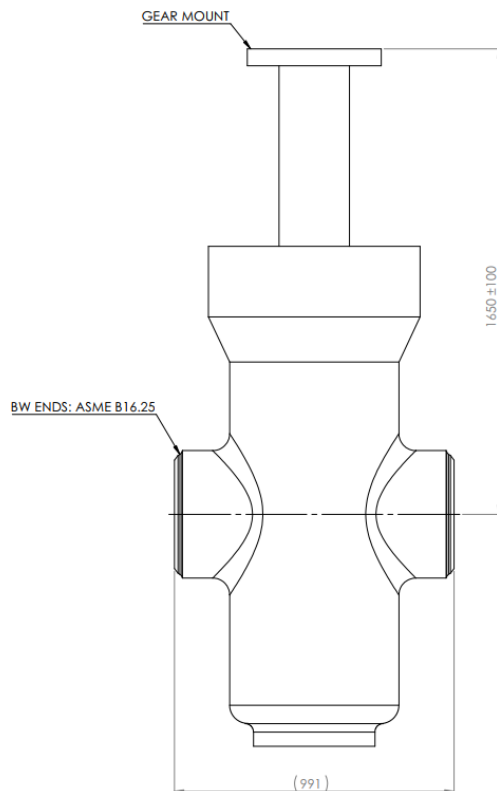
This specification covers the manufacture assembly, inspection, testing and supply of gate valves for EAPC Ltd.

The valves are for installation on 16" ASHKELON– HAIFA pipeline, site condition specified in paragraph 3.

2. **SCOPE OF SUPPLY**

The scope of supply shall include the following:

- 2.1 Two (2) 16" Gate valves. ANSI 600 B.W. Ends. ASME B16.25. Through conduit parallel expanding. With "AUMA" Electric actuators. Opening time: 4m30s ± 30s.
- 2.2 The valves shall be zero leakage, design as fire proof, full bore gate valves with B.W. ends.
  - 2.2.1 Through conduit parallel expanding gate valves (ANSI/ASA 600).
  - 2.2.2 The valves shall have outside screw and yoke with rising stem.
  - 2.2.3 The distance between the C.L and the gear mount is as shown in the picture:



**Pic 1 – distance between C.L to gear mount**

- 2.3 The valves shall be equipped with built in pressure thermal relief devices for relief of oversize pressure from closed bonnet to side.
- 2.4 The valves shall be equipped with vent and drain valves, and grease fittings.
- 2.5 The valves shall be with indicating S.S. 316 rod.
- 2.6 The quotation shall include the list of recommended spare parts list including special tools for assembly / disassembly.

### 3. **DESIGN REQUIREMENTS**

#### 3.1 **General**

The gate valves should be through conduit, and parallel expanding gate valves. The parallel expanding gate design should provide a tight mechanical seal and shall be unaffected by pressure variations. The full-bore design shall provide the same pressure drop as an equivalent length of pipe and shall allow passage of all types of scrapers (pigs). The gate valves shall be designed with positive stops that need no adjustment. The valves design shall provide the option for repair the valve while in line (pressure removed and valve drained).

#### 3.2 **Pipeline Data**

3.2.1 Diameter: 16"X0.406"

3.2.2 Standard: API 5L-X52

#### 3.3 **Site Conditions**

3.3.1 Eastern Mediterranean inland terminals,

3.3.2 Temperature: 5 – 55 °C

3.3.3 Humidity: up to 90%

#### 3.4 **Process Conditions**

Fluid : Crude oil

Temperature : +2°C to 55°C

Special Conditions : No

Installation : underground Service

#### 3.5 **Standards of Compliance**

3.5.1 Basic design: API 6D

3.5.2 Test & inspection: API 6D

3.5.3 Fire Safe Conforms: API 6FA

### 3.6 **Actuators**

#### 3.6.1 **General**

Valves shall be fitted with "AUMA" electric actuators.

Reversing contactors and circuit breaker will be installed in a separate electrical panel.

Corrosion protection: Permanently exposed to aggressive chemical substances, AUMA order code KS.

Insulated output drive AUMA IB according to the actuators chosen by the valves manufacturer & AUMA data.

#### 3.6.2 **Enclosure**

Water proof IP68.

Explosion proof approved for ZONE1: Enclosure protection EEXed IIB T3.

Cable entry: stopper plugs.

#### 3.6.3 **Wiring diagram**

Non integral control, double torque switch (1NC and 1NO) for each direction, 3 push buttons (open, stop, close).

Limits switching: triple switches (3NC and 3NO) for each position.

Local + remote +off switch key located in each position, with 3 normally open additional contacts, one for each position, wired to terminals.

Wiring diagram shall be submitted for client approval.

#### 3.6.4 **Motor**

Motor voltage: 400V/3PH/50HZ.

Motor installation: class F, 15 min rating, 60 starts per hour.

Heater: in switch compartment 24-48VDC.

Control elements: push buttons OPEN-STOP-CLOSE, indication lights OPEN-FUALT-CLOSE, all the control elements should be with 24VDC.

Motor protection: thermos witches (NC).

Operation under max differential pressure with 25% over sizing of torque.

- 3.6.5 Hand wheel for manual override.
- 3.6.6 Position indication: mechanical position indicator.
- 3.6.7 Socket connector: AUMA code KES (Ex e).

4. **TESTING**

Test certificates shall be transmitted to purchaser in 3 copies.

Vendor shall furnish details of the extent of shop assembly and testing procedures he intends to follow.

The testing shall be in accordance with API 6D standard.

**Test will be conducted only after installation of actuator**; manufacturer will supply complete tested equipment which includes valves tested with actuators.

Test procedure must include:

- 4.1 Torque calibration both final positions acc. to manufacturer standard
- 4.2 Detailed test certificate for each valve + actuator to be supplied Minimum information:
  - Serial numbers of valves and actuators to be indicated in test certificate
  - Low and high limits of torque calibration
  - Mechanical position indicator to be calibrated during test to achieve full compliance with gate position
  - The calibration of both limit switch and torque switch must ensure that limit switch will have priority over torque switch

5. **PAINTING**

5.1 Valves and actuators shall be coated in accordance with manufacturer standard and to meet site conditions as specified in para. 3.

5.2 Purchaser prefers powder coating. Vendor shall specify proposed coating in his quotation.

6. **ASSEMBLY OF COMPONENTS**

All units shall be supplied completely assembled – ready for installation.

7. **TAGGING**

7.1 Each item shall be tagged with number specified by purchaser and fitted with a S.S. 316 nameplate containing at least the following data:

7.1.1 Name of manufacturer

7.1.2 Size, rating and max. operating temperature

7.1.3 Manufacturer type & serial number

7.1.4 Calibration values for torque switch

7.1.5 Purchaser tag number

8. **MECHANICAL GUARANTEE**

Vendor will guarantee that the equipment furnished is free from faults in design, workmanship and materials.

Should any defect in design, materials, workmanship or operating characteristics develop during the first year of operation (but not over twenty four (24) months from the date of shipment), the Vendor will make all necessary or desirable alternations, repairs and replacements of said defective equipment, free of charge and shall also pay transportation involved of the above mentioned to and from the plant.

If the defect or functional failure cannot be corrected, the Vendor agrees to replace promptly, free of charge, the faulty equipment.

9. **DOCUMENTATION**

The following documents are to be transmitted in 3 copies in English:

With bid: General arrangement drawings of valve and actuator with overall dimensions

Cross section showing construction details

Material Specification

With Order: Installation, Operating and Maintenance Instruction, including full parts list and drawings explaining replacement of spares, wiring diagram and 3D model for valve and actuator.

Eur1 certificate **or** US Certificate of Origin will be required.

10. **BILL OF QUANTITIES**

<b>EAPC Pipeline - Gate valve design according to API 6D</b>						
<b>Item</b>	<b>Type</b>	<b>Size/Class/ Ends</b>	<b>Operation</b>	<b>Qty</b>	<b>Unit Price</b>	<b>Total Price</b>
1	Through conduit parallel expanding	16" ANSI 600 B.W	Electric actuator	2		