



"CONFIRM"

Chief mechanic of Shurtan GCC, LLC

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2021 y  
15



"O'zbekneftgaz" AJ  
"Shurtan gaz kimyo majmuasi" MCHJ  
MTRB xizmati  
RO'YXATGA OLINDI  
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**TECHNICAL ASSIGNMENT**  
for purchasing of ball valves  
for the needs of Shurtan GCC, LLC

No.	Name	Description
1	Ball valve	Operating pressure: 16 MPa, working pressure: 14 MPa, diameter: 20 mm, material: stainless steel, connection: 1/2" BSP.
2	Ball valve	Working pressure: 16 MPa, working pressure: 14 MPa, diameter: 20 mm, material: stainless steel, connection: 1/2" BSP.
3	Manufacturing standard	Ball valves are made according to standards ISO 17293, ISO 15724, ISO 15725.
4	Design version	UJ
5	Construction	As per attached A005 file.



## 1. GENERAL INFORMATION

1.1. Name
Ball valves
1.2. Basis and purpose of purchasing of goods
Basis: Approved request of polyethylene production plant for 2020 Purpose: Replacement of the damaged ball valves
1.3 Information about novelty (year of production/manufacture of goods)
The ball valves must be new, not previously used, and usable.
1.4 Development/manufacturing stages
According to the standard and technical documentation and design documentation of the manufacturer.
1.5 Development/manufacturing documents
According to the standard and technical documentation and design documentation of the manufacturer.

## 2. SCOPE OF APPLICATION

8" # 300 and 10" # 300 ball valves are used for the butene-1 production in the reactor system. Ball valves with the metal-to-metal seal used on pipelines are intended for sealing of the flow of operating medium with high temperature, high pressure, and abrasive fluids.

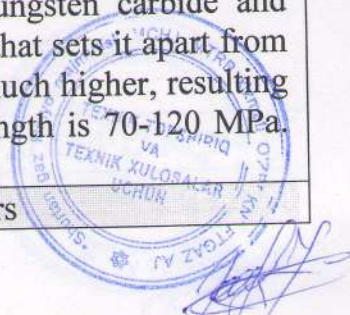
## 3. OPERATING CONDITIONS

According to item 4.1 of the present technical assignment

## 4. TECHNICAL REQUIREMENTS

### 4.1. Basic technical requirements

No	Name	Specification
1	Ball valve	Operating medium: 85% of butene-1, 14% of ethylene, 1% of by-products, operating temperature: 55°C, operating pressure: 30 kgf/cm <sup>2</sup> , pipe size: 8 "ASME # 300, end connection: flanged RF, seal type: metal-to-metal, manufacture: dismountable, metal seating with various coatings, leakage class: A, drive: gearbox.
2	Ball valve	Working medium: 85% butene-1, 14% ethylene, 1% by-products, working temperature: 55°C, working pressure: 30kgf/cm <sup>2</sup> , pipe size: 10" ASME # 300, end connection: flanged RF, seal type: metal-to-metal, manufacture: dismountable, metal seating with various spraying; leakage class: A, drive: gearbox.
Manufacturing standard		Ball valves are manufactured according to API 6D, API 608, ISO 17292, ISO 14723, ISO 14313, ASME B16.5, B16.25 standards
Climatic version		U1
Construction length		As per standard ASME B 16.10
Warranty		18 months
<p>The valve body can be manufactured either by casting or by forging, metal-to-metal sealing can be in a ball valve "with a ball in supports". Coating on the ball and seat seal area is reached by using of high velocity spray coating technique (HVOF) with tungsten carbide and chromium carbide spraying. Because the process uses a supersonic jet that sets it apart from traditional flame spraying, the particle impact rate on the substrate is much higher, resulting in better coating performance. Coating density 99.5%. Adhesion strength is 70-120 MPa. Speed is 1500-2000 m/s, speed of the sprayed particles is 300-500 m/s.</p>		
4.2 Main technical, economic and operational factors		





For stable operation of ball valves, the period of repair and replacement of spare parts should be carried out at least once during three years.

#### 4.3 Design requirements, installation and technical requirements

Design requirements:

1. The design of the ball valve shall be with a ball in supports, full bore.
2. To provide in the design of the gate seal the cleaning system and protection against the medium penetration between the seals.
3. The ball and ball valve seal shall have hardness of 65 HRC.
4. The stem shall withstand deformation and pressing.
5. To provide the stem with protection system against the side loads.
6. To provide the stem with by the sliding assembly.

II. Not allowed.

1. The design of the valve with the steam purging.
2. Using of the ball valve seals that are a part of the body.

III. Technical proposals that don't contain the design drawing and don't represent the design characteristics for the proposed valve will not be considered.

IV. Drawings are attached, design and dimensions shall correspond to the drawing in the appendix.

V. Production standard: The ball valves shall be manufactured as per API 6D, API 608, ISO 17292, ISO 14723, ISO 14313, ASME B16.5, B16.25 standards.

#### 4.4 Requirements for materials

Ball valves are used in the dimerization reactor system. The operating medium are Butene-1, ethylene and low molecular weight polymer, this mixture remains in smaller quantities on the pipe surface and in ball valves, which causes problems at opening and closing of the ball valves. On this basis, the sealing parts shall be made of metal-to-metal material. Therefore, the participating companies (manufacturers and suppliers) should take this situation into account during selecting of the sealing materials and design of the ball valve. Shall be According to the normative, technical and design documents of the manufacturer.

#### 4.5 Requirements for labeling

The marking shall comply with the requirements of state standards of the Republic of Uzbekistan, which do not contradict and are not inferior to generally accepted international standards. The marking of the goods must contain the decrypted name of the equipment, the name of the manufacturer, the address of the location of the manufacturer and the date of production.

#### 4.6 Requirements for sizes and packing

The dimensions shall correspond to the attached drawings.

The goods should be packed in the manufacturer's standard export package (sealed, tight, and duly packaged) that ensure its full safety from all kinds of damage during long-term storage and transportation of products, taking into account several transshipments on the way. The packing shall be designed for handling of goods by cranes and by hand.

The Seller is responsible for all losses and-or damages arising from improper and-or negligent packaging or protection of the equipment.

Other options and package sizes are subject to additional approval by the Customer to their acceptability.

### 5. REQUIREMENTS AS PER RULES FOR DELIVERY AND ACCEPTANCE

#### 5.1 Order of delivery and acceptance, Customer's additional requirements





The goods are accepted after testing of the shut-off control valves, if the technical parameters correspond to item 4.1, an acceptance certificate is drawn up in accordance with the contract.

The Customer accepts the goods according to the quantity, quality, completeness of the lot, and safekeeping of the goods as per the external signs (availability of mechanical damages, visible deformations of the individual units and parts of the goods and other similar obvious signs of damage) in accordance with the transport and accompanying documents, quality certificates of the manufacturer.

During receiving of the goods from the carrier, the Customer (consignee) shall check the conformity of the goods with the information specified in the contract, specifications, or additional agreements to it, as well as in transportation, enclosed documents, and the manufacturer quality certificates.

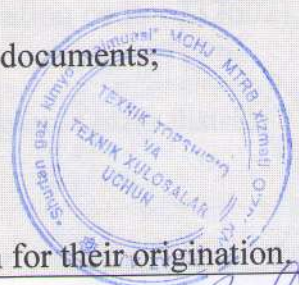
If, upon receipt of the goods, after receiving it from the carrier, a discrepancy of the goods in terms of quality / quantity is revealed, the Customer (consignee) is obliged to suspend acceptance of the goods, take measures to ensure the safekeeping of the goods and prevent mixing with other homogeneous goods and notify the Seller about this in writing form within 10 (ten) working days from the date of discovery of defects.

The Seller is obliged to send to the Customer (consignee), no later than 10 (ten) working days from the date of receipt the notification concerning the response about the participation of his representative in the further acceptance of the goods. The Seller's representative shall participate in the acceptance of the goods within a reasonable time, not exceeding 20 (twenty) calendar days from the date of receipt of the notification.

If Seller refuses to participate in the acceptance or fails to respond to the notification or his representative fails to come within the date specified in the contract, the Customer has the right to carry out further acceptance of goods according to the quality/quantity unilaterally with drawing up of an appropriate report.

The following information shall be indicated in the acceptance document of the goods:

- the name of the Customer (consignee) of the goods;
- number and date of drawing up of the report, place of acceptance of goods, beginning and completion of time of acceptance of goods;
- surnames and initials of the persons participating at acceptance of the goods, their positions, information about the documents confirming the persons' authority to participate in the acceptance of the goods, their requisite elements;
- names and addresses of the manufacturer and the Seller;
- the date and number of the notification of call of the Seller's representative;
- detected non-conformity of the goods, its nature;
- indication to the contract number and specification;
- name and labeling of goods according to the shipping documents for the corresponding lot of goods;
- number of pieces and weight of metal products according to shipping documents;
- condition of the container (packaging);
- weight of the identified shortage for each place;
- number of the shipping documents and quality certificate;
- size, steel grade, lot number; presence of a label;
- conclusion for nature of the identified defects of the goods and reason for their origination.





All persons involved in the acceptance of the goods shall sign the report.

### 5.2 Requirements for transfer of technical and other documents to the Customer during goods supply

The goods shall be accompanied by the following documentation:

- product conformity certificate;
- certificate for materials for manufacture;
- manufacturer's test report.
- invoice of the Seller with a description of the goods, indicating the quantity, unit price and total amount;
- consignment note issued in the name of the consignee with the mark of the departure station and the mark of the destination, the name of the Customer, the number and date of signing of the current contract;
- certificate of origin of the country indicating the number and date of the invoice;
- packing list;
- test report of the goods of the independent inspection company (third party)
- The goods quality certificate, issued by manufacture;
- product safety data sheet.

### 6. SAFETY REQUIREMENTS

Shut-off valves must comply with international quality and environmental safety requirements.

The quality of the goods must comply with the established standards and specifications of the manufacturer and be confirmed by a factory test certificate issued by the manufacturer. The quality of the product should ensure the possibility of its intended use without negative consequences.

### 7. REQUIREMENTS FOR QUALITY AND CLASSIFICATION

The goods must be of high quality; the quality guarantee period shall be at least 2 years. It is necessary to provide certificates (manufacturer's quality certificate and / or other certificates of international, recognized laboratories and testing centers). The service life of the product in accordance with the normative and technical documentation shall be 2 years.

### 8. REQUIREMENTS FOR QUANTITY, PACKAGING, AND TIME (PERIODICITY) OF DELIVERY

No	Name	Unit	Quantity
1	8" 300 ball valve	pcs	2
2	10" 300 ball valve	pcs	2

Before delivery of shut-off valves, the customer is provided with a detailed drawing for the supplied goods for approval.

Bidders shall submit the technical drawings and commercial proposals to the Customer. The production of goods begins after the technical conclusion of the Customer.

The delivery time of the goods shall be 2 months (60 calendar days) after the conclusion of the contract.

Wagon delivery / Container delivery: CIP – railway station Kengsoy (station code - 732602), SJSRC "Uzbekiston Temir Yullari".

Transport delivery: CIP – The Republic of Uzbekistan, Kashkadarya region, Guzar district, Shurtan settlement, 180300.





## 9. LIST OF APPENDICES

№	Application name	Number of sheets
1	Drawings of shut-off valves	2 (two)

\* Note: The developer is responsible for the correct filling-in and for the incomplete items.

Developers:


Deputy Chief Mechanic:

 M. Salaev

CMD Engineer:

 F. Botirov

Lead engineer of The logistic resources management service:

 G. Rakhmonov


Chief of PE shop:

 U. Bazarov

Senior mechanic of PE shop:

 Sh. Shukurov

Mechanic of Butene-1 unit:

 F. Chorshanbiev

Specification of the main parts of the ball valve with metal-to-metal seal

No	Name	Qty	Unit	Material	Weight	Remarks
1	Flange	1	PC	Flange	27	Automatic ball
2	Bolt	8	Stal	Stal	23	Automatic spring
3	Washer	10	Stal	Podluga	24	Automatic
4	Gasket	11	Stal	Serviz	25	Drain plug
5	Body	1	Stal	Top flange		
6	Technician	1	Stal	Carbox		
7	Washer	11	Stal	Serviz		

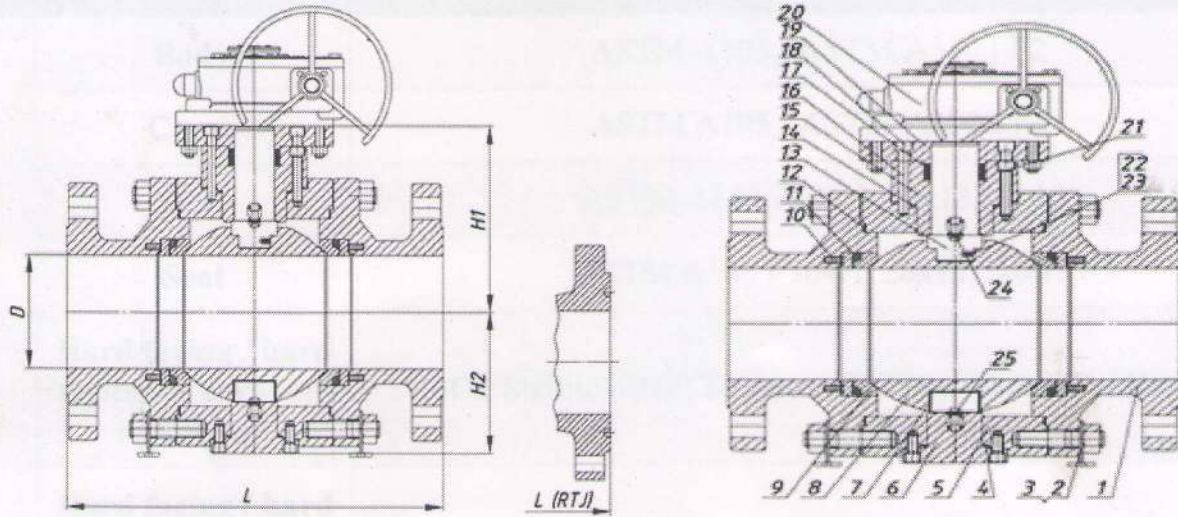


Телевот: Мухомарови Н. 



### Class 300 Full bore

Nominal diameter		Basic dimensions, mm			
Inch	mm	D	L-RF	H1	H2
8	200	203	457	398	
10	250	252	568	405	325



#### Specification of the main parts of the ball valve with metal-to-metal seal

No	Name	No	Name	No	Name	No	Name
1	Bonnet	8	Ball	15	Gland	22	Antistatic ball
2	Bolt	9	Seat	16	Stud	23	Antistatic spring
3	Nut	10	Spring	17	Packing	24	Air valve
4	Gasket	11	Seat seal	18	Screw	25	Drain plug
5	Body	12	Gasket	19	Top flange		
6	Trunnion	13	Stem	20	Gearbox		
7	Bearing	14	Gasket	21	Screw		





**Table with materials for ball valves with metal-to-metal sealing**

Operating medium		Water, air, steam, natural gas, oil, oil products and other media, the corrosion rate of which to the steels below is not more than 0.1 mm / year
Climatic version		U1
No.	Name	Carbon steel
1	Body	ASTM A105, ASTM A350 LF2
2	Cover	ASTM A105, ASTM A350 LF2
3	Ball	ASTM A182 F304H 20x13,30x13
4	Seat	ASTM A182 F304H, 20x13, 30x13
5	Hard facing / hard facing by spraying on the ball	13Cr, Stellite, ENP, Tungsten Carbide, Chromium Carbide
6	Hard facing / hard facing by spraying on seat	13Cr, Stellite, ENP, Tungsten Carbide, Chromium Carbide
7	Spindle	ASTM A182 F6a, 17-4PH, 4140,20x13, 30x13
8	Nut	ASTM A194 2H
9	Stud	ASTM A193 B7

For the sealing surfaces of the gate / seat the various combinations of surfacing materials can be used: the most common is stellite - 6 and 12, 13% Cr, Monel, ENP, Chromium carbide, Tungsten carbide.

