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مصوب



شرکت ملی گاز ایران
مدیریت پژوهش و فناوری
امور تدوین استانداردها

IGS

مشخصات فنی خرید

شیرهای سماوری جوشی / فلنجی - بخش اول ، ۲ تا ۲۴ اینچ ،
کلاسهای ۱۵۰ ، ۳۰۰ و ۶۰۰

Welded / Flanged Plug Valves - Part 1 , 2 to 24 Inches , Classes
150,300, and 600



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دفتر مدیرعامل



ابلاغ مصوبه هیأت مدیره

مدیر محترم پژوهش و فناوری

باسلام،

به استحضار می‌رساند در جلسه ۱۹۹۶ مورخ ۱۴۰۱/۱۰/۱۸ هیأت مدیره، نامه شماره گ.دب/۰۰۰/۹۶۶۹۷/۱۶ مورخ ۱۴۰۱/۱۰/۱۳ آن مدیریت در مورد تصویب نهایی مقررات فنی شرکت ملی گاز ایران به شرح زیر مطرح و مورد تصویب قرار گرفت.

۱- مشخصات فنی خرید شیرهای سماوری جوشی/فلنجی - بخش اول، ۲ تا ۲۴ اینچ، کلاس های ۶۰۰ و ۳۰۰، ۱۵۰

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۲- مشخصات فنی خرید اتصالات پلی اتیلن زین اسبی الکتروفیوژن

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سید محمد پیشوایی

دبیر هیأت مدیره

رونوشت: مدیرعامل محترم شرکت ملی گاز ایران و رئیس هیأت مدیره

اعضای محترم هیأت مدیره

مشاور و رئیس دفتر محترم مدیرعامل

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Foreword

This standard is intended to be mainly used by NIGC and contractors, and has been prepared based on interpretation of recognized standards, technical documents, knowledge, backgrounds and experiences in natural gas industry at national and international levels.

Iranian Gas Standards (IGS) are prepared, reviewed and amended by technical standard committees within NIGC Standardization division and submitted to the NIGC's "STANDARDS COUNCIL" for approval.

IGS Standards are subject to revision, amendment or withdrawal, if required. Thus the latest edition of IGS shall be checked/inquired by NIGC employees and contractors.

This standard must not be modified or altered by NIGC employees or its contractors. Any deviation from normative references and / or well-known manufacturer's specifications must be reported to Standardization division.

The technical standard committee welcomes comments and feedbacks about this standard, and may revise this document accordingly based on the received feedbacks.

General Definitions

Throughout this standard the following definitions, where applicable, should be followed:

- 1- "STANDARDIZATION DIV" is organized to deal with all aspects of industry standards in NIGC. Therefore, all enquiries for clarification or amendments are requested to be directed to mentioned division.
- 2- "COMPANY": refers to National Iranian Gas Company (NIGC).
- 3- "SUPPLIER": refers to a firm who will supply the service, equipment or material to NIGC whether as the prime producer or manufacturer or a trading firm.
- 4- "SHALL ": is used where a provision is mandatory.
- 5- "SHOULD": is used where a provision is advised only.
- 6- "MAY": is used where a provision is completely discretionary.

Website: <http://igs.nigc.ir>

E-mail: igs@nigc.ir



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1. Scope

1.1. General (Sub.)

This standard covers the minimum requirements for flanged/welding ends lubricated carbon steel taper plug valves , NPS 2 through 24, ASME class rating 150,300 and 600 ,service temperature range from -29 °C to +60 °C, meeting the requirements of ASME B 31.8 , suitable for non-sour natural gas transmission and distribution system.

Design, manufacturing, materials, dimensions, tolerances, inspection, testing and marking shall be according to API 6D, 24th edition: 2014 except as supplemented or amended by this specification.

Note: This specification supersedes IGS-M-PL-002-1(6) "Plug Valves Sizes 2" to 24" part (1).

1.1. Guidance for use of this specification:

(Add)

The amendments/ supplements to API 6D, 24th edition: 2014 given in this specification are directly equivalent sections or clauses in API 6D. All other paragraphs which are not amended by this supplementary shall remain valid as written. The following annotations, as specified hereunder, have been used at the beginning of each paragraph to indicate the type of change made to that paragraph of API 6D.

Sub. (Substitution) "The paragraph in API Spec. 6D shall be deleted and replaced by the new paragraph in this supplementary ".

Del. (Deletion) "The paragraph in API Spec. 6D shall be deleted without any replacement".

Add. (Addition) "The new paragraph with the new number shall be added to the relevant section of API Spec. 6D".

Mod. (Modification) "Part of the clause or paragraph in API Spec. 6D shall be modified and/or the new description and/or statement shall be added to that clause or paragraph as given in this supplementary.

2. Reference Codes and Standards (Add.)

Throughout this standard specification the standards and codes which mentioned in API 6D, 24th edition: 2014 and the following standard are referred to. The applicability of changes in standards and codes that occur after the date of this standard that referred shall be mutually agreed upon by the purchaser and supplier and / or manufacturer.

API 599: 2020, "Metal Plug Valves-Flanged, Threaded and Welding Ends".

API 6 D: 2014, "Specification for pipeline and piping valves".

ASME B36.10: 2018, "Welded and Seamless Wrought Steel pipe".

ASTM A 105: 2021, Standard specification for carbon steel forgings".

ASTM A 106:2019, "Standard specification for Seamless carbon steel pipe for High-Temperature service".

ASTM A 193: 2020, "Standard specification for alloy steel and stainless steel bolting materials for high temperature service".

ASTM A194:2020, "Standard specification for carbon and alloy steel nuts for bolts for high pressure of high temperature Service or both".

ASTM A216:2021, "Standard specification for carbon steel casting, suitable for fusion welding, for high temperature service".

ASTM B650:95-(2018), "Standard specification for electrodeposited engineering chromium coatings on ferrous substrates".

ASTM B733:2021, "Standard specification for autocatalytic (electro less) Nickel-Phosphorus coatings on metal".

ASTM D217:2021, "Standard specification for Cone Penetration of Lubricating Grease"

EN 10204: 2019, "Metallic Products-Type of Inspection Documents".

IGS-M-IN-304(2): 2021, "Gas over Oil Actuator".

IGS-M-PL-009(0):2005, "Hand wheel Operated Gear Box for Ball, Plug and Butterfly Valve".

IGS-M-PL-035(1):2019 Spiral Wound Gasket (Class Rating 150,300,600)

ISO 10474: 2013, "Steel and Steel Products-Inspection Documents".

ISO 10497:2010, "Testing of Valves-Fire type –testing requirements".

ISO 17020:2012, "Conformity Assessment-Requirements for the operation of various types of bodies performing inspection"

ISO 5211:2017, "Part-turn Actuator Attachments".

ISO 724:1993, "ISO general-purpose metric screw Threads-Basic dimensions"

ISO 9001:2015, "Quality management System-Requirements".

ISO TS 29001:2020, "Petroleum, Petrochemical and Natural Gas Industries-Sector Specific Requirements-Requirements for Product and Service Supply Organization".

MSS SP-6:2017, "Standard Finishes for Contact Face of Pipe, Flanges and Connecting-End Flanges of Valves and Fittings".

3. Terms, Definitions, Acronyms, Abbreviations, Symbols and Units

3.1. Terms and Definitions

(Sub.)

For the purposes of this standard specification the definitions mentioned in API 6D and the following definitions apply:

3.1.18. Maximum pressure differential (MPD)

(Mod.)

Maximum differential between the upstream and downstream pressure across the obturator base on valve's class rating.

Anti-Seize Thread Lubricant

(Add.)

A highly refined lubricant use during assembly to prevent galling, corrosion and seizing/gripping of threads due to weathering or chemicals.

Approval Agency

(Add.)

Authorized certifying body which approved by technical inspection division.

Subsidiaries of National Iranian Gas Company in order to identify these companies should refer to the URL (<http://inspect.nigc.ir>) for list of qualified companies in this field of use.

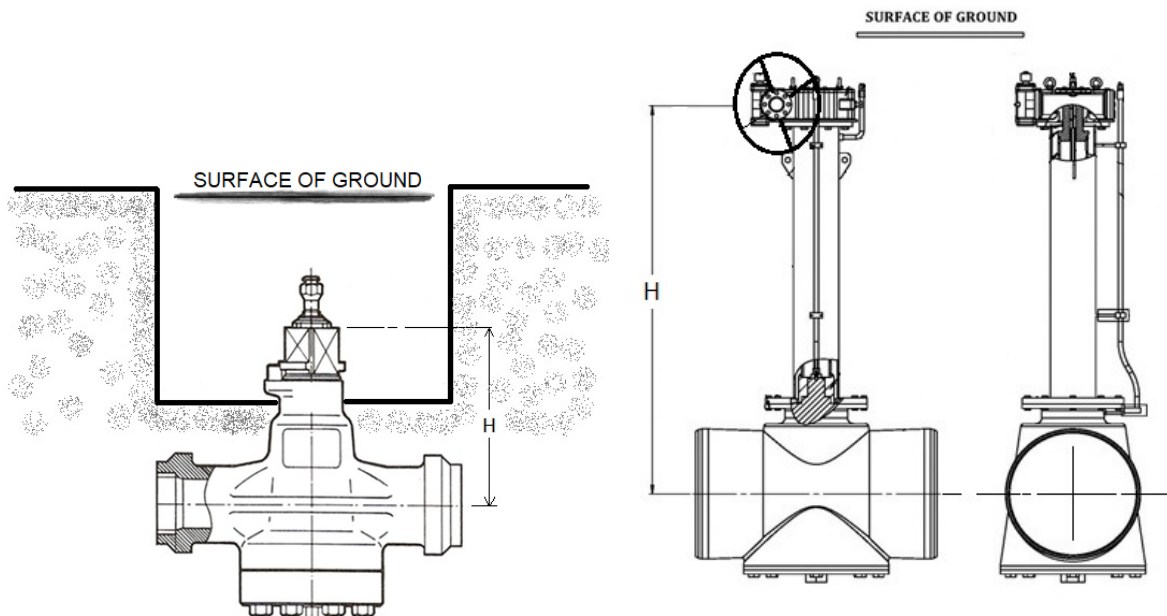
Carbon equivalent (Add.)

The carbon equivalent (CE) calculated in accordance with Equation:

$$(CE_{IIW} = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Ni + Cu)}{15})$$

Stem Extension Length (Add.)

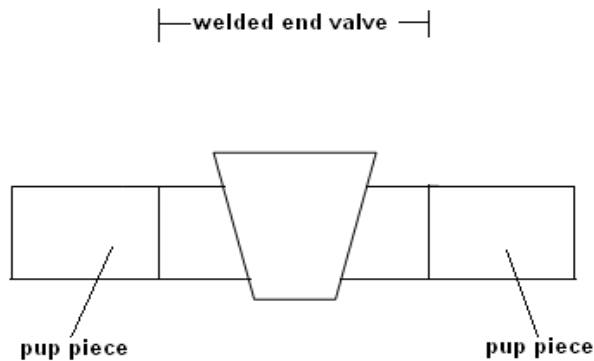
The distance from belowground valve centerline to hand wheel centerline/ operating level (H).



Extension Length Schematic

Pup pieces/ Transition piece (Add.)

A piece of pipe welded to end of valve allow for transition between the valve body (material, grade and thickness) and the adjacent pipe (material, grade and thickness) to which the valve is intended to be connected. These pieces will be ordered with the necessary extra length by purchaser. The thickness and material grade of the pup pieces and welding process shall be met the criteria of ASME B31.8.



Valve to pup-piece connection schematic

Regular Pattern

(Add.)

The plug port area of these valves is at least 60% of the end port area. The transition from the end ports to the bore is smooth, and entails no sudden alterations in shape or section which might cause excessive changes in velocity or direction of the fluid flowing in the pipeline.

Short Pattern

(Add.)

The plug port area of these valves is at least 40% of the end port area. Face to face/end to end length of these valves is shorter than the regular pattern near gate valves.

Venturi Pattern

(Sub.)

The plug port area of these valves is at least 40% of the end port area. These valves have a smooth transition from end to the bore and typically used in services where rate flow is not critical.

Type test

(Add.)

Testing performed on typical samples to prove that material, design, manufacturing etc. are complying with the specification's requirements. Type test certificate is valid until the materials, designation and production methods remain unchanged.