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| IGS-M-PM-100(1) | اسفند 1403 |
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شرکت ملی گاز ایران  
مدیریت پژوهش و فناوری  
امور استانداردها

# IGS

مشخصات فنی خرید

دستگاه بودارکننده گاز - کنار گذر و تزریقی

Gas Odorizer-Bypass and Injection



تاریخ: ۱۴۰۴/۰۳/۰۳

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دفتر مدیرعامل



## ابلاغ مصوبه هیأت مدیره

مدیر محترم پژوهش و فناوری

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باسلام،

به استحضار می‌رساند در جلسه ۲۱۰۵ مورخ ۱۴۰۴/۰۲/۱۴ هیأت مدیره، نامه شماره ۹۳۳۷ مورخ ۱۴۰۴/۰۱/۲۷ آن مدیریت درمورد تصویب نهایی مقررات فنی شرکت ملی گاز ایران به شرح زیر مطرح و مورد تصویب قرار گرفت.

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۲- دستورالعمل ارزیابی آزمایشگاه های کالیبراسیون کنتورهای دیافراگمی گاز طبیعی برای مصارف خانگی و تجاری و صدور گواهی نامه

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این مصوبه در حکم مصوبه مجمع عمومی شرکت های فرعی محسوب و لازم الاجرا می باشد.

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## Foreword

This standard specification is intended to be mainly used by N.I.G.C. and contractors. It has been prepared based on interpretation of recognized standards and technical documents, as well as knowledge, backgrounds, and experiences in gas industries at national and international levels.

Iranian Gas Standard (IGS) are prepared, reviewed and amended by technical standard committees within NIGC standardization division of research and technology management and submitted to "the standards council of NIGC" for approval.

IGSs are subjected to revision, amendment or withdrawal, if required, and thus the latest edition of IGS shall be checked / inquired by NIGC's users.

This standard must not be modified or altered by NIGC employees or its contractors. Any deviation or conflicts between this specification and other applicable standards, codes, procedures or well-known manufacturer's specifications must be resolved in writing by the user or its representative through Manager, Engineering Department or standardization division of NIGC.

The technical standard committee welcomes comments and feedback from concerned or interested corporations and individuals regarding this standard, and may revise this document accordingly based on the received feedback.

## 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) or affiliated companies.
- 3- "SUPPLIER": refers to a firm who will supply the service, equipment or material to IGS specification whether as the prime producer or manufacturer or a trading firm.
- 4- "PURCHASER": refers to National Iranian Gas Company (NIGC), affiliated companies, or contractors.
- 5- "SHALL ": is used where a provision is mandatory.
- 6- "SHOULD": is used where a provision is advised only.
- 7- "MAY": is used where a provision is completely discretionary.

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## IGS-M-PM-100(1) 2025 SUMMARY OF CHANGES

The most important changes include the following but are not limited to, and the complete reading of the standard text by the end user is mandatory:

| Clause    | Title                           |
|-----------|---------------------------------|
| 1         | SCOPE                           |
| 2         | REFERENCES                      |
| 3         | DEFINITION                      |
| 5         | ABBREVIATIONS                   |
| 6         | FABRICATION AND WELDING         |
| 7         | TESTS AND INSPECTIONS           |
| 8         | GUARANTEE                       |
| 9         | MARKING                         |
| 10        | SHIPMENT, PACKING AND PACKAGING |
| 11        | DOCUMENTATION                   |
| ANNEX "A" | DOCUMENT INDEX                  |
| ANNEX "B" | DATA SHEET                      |
| ANNEX "C" | ODORANT LOADER                  |
| ANNEX "D" | Capacity of Odorizer Tank       |
| ANNEX "E" | By-Pass Type Odorizer           |
| ANNEX "F" | Injection Type Odorizer         |

## Contents

|                                                         |    |
|---------------------------------------------------------|----|
| 1.SCOPE .....                                           | 4  |
| 2. REFERENCES .....                                     | 4  |
| 3. DEFINITION .....                                     | 5  |
| 4. ABBREVIATIONS.....                                   | 5  |
| 5.TECHNICAL SPECIFICATION.....                          | 6  |
| 5.1. MATERIALS.....                                     | 6  |
| 5.2. DESIGN REQUIREMENTS .....                          | 6  |
| 5.3. BYPASS TYPE ODORIZER.....                          | 8  |
| 5.4. INJECTION TYPE ODORIZER.....                       | 8  |
| 5.5. ODORANT .....                                      | 9  |
| 6. FABRICATION AND WELDING .....                        | 9  |
| 6.1. WELDERS QUALIFICATION TEST (WQT) .....             | 9  |
| 6.2. WELDING PROCEDURES (WPS & PQR).....                | 10 |
| 6.3. WELDING.....                                       | 10 |
| 6.4. REPAIR AND RE-INSPECTION.....                      | 10 |
| 6.5. HEAT TREATMENT.....                                | 10 |
| 6.6. QUALITY ASSURANCE.....                             | 11 |
| 7. TESTS AND INSPECTIONS .....                          | 11 |
| 7.1. TESTS.....                                         | 11 |
| 7.2. INSPECTIONS.....                                   | 12 |
| 7.3. VISUAL INSPECTION .....                            | 13 |
| 8. GUARANTEE .....                                      | 13 |
| 9. MARKING.....                                         | 13 |
| 10. SHIPMENT, PACKING AND PACKAGING.....                | 14 |
| 11. DOCUMENTATION.....                                  | 14 |
| ANNEX “A” DOCUMENT INDEX.....                           | 15 |
| ANNEX “B” DATA SHEET.....                               | 16 |
| ANNEX “C” ODORANTLOADERSPECIFICATIONS.....              | 18 |
| ANNEX “D” (INFORMATIVE) Capacity of Odorizer Tank ..... | 20 |
| ANNEX “E” (INFORMATIVE) By-Pass Type Odorizer .....     | 21 |
| ANNEX “F” (INFORMATIVE) Injection Type Odorizer .....   | 23 |

## 1.SCOPE

This standard covers the minimum requirements for the technical specification, material, welding, fabrication, inspection, marking, packing and shipping of packaged bypass-type and injection-type gas odorizers used in natural gas network. In case of any deviation from this standard, it shall be clearly stated on technical information submitted by the supplier. The supplier shall furnish complete unit including all necessary parts to insure satisfactory, economical and safe operation.

This standard does not supersede the accepted pressure vessel codes but only supplements them with regard to certain conditions not fully covered in the codes. The equipment shall be designed for full load, unattended continuous operation without the provision of special housing or shelters etc. Compliance with this standard is the responsibility of the manufacturer.

## 2. REFERENCES

Throughout this standard, the following dated and undated standards/codes are referred to. These referenced documents shall be, to the extent specified herein, from a part of this standard. For dated references, the edition cited applies. For undated references, the latest edition of the referenced documents applies.

### 2.1. NORMATIVE REFERENCES

ASME Boiler & Pressure Vessel Code SECTION VIII, DIVISION 1: “Design, Material, Manufacturing and Inspection, Unfired Pressure Vessels”

ASME Boiler & Pressure Vessel Code SECTION IX: “Welding, Brazing, and Fusing Qualification”

ASME B16.5: “Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard ASME B16.5”

ASME B16.11: “Forged Fittings, Socket-Welding and Threaded”

ASME B.16.20: “Metallic Gaskets for Pipe Flanges”

ASME B.18.2.1: “Square and Hex Bolts and Screws (Inch Series)”

ASME B.18.2.2: “Square and Hex Nuts (Inch Series)”

ASME B.31.8: “Gas Transmission and Distribution Piping Systems”

ASME B31.3: “Process Piping”

API 520: “Sizing, Selection, and Installation of Pressure-Relieving Devices in Refineries Part-1-Sizing and selection”

API 527: “Seat tightness of pressure relief valves”

API 609: “Butterfly Valves: Double Flanged, Lug- and Wafer-Type”

API-602: “Steel Gate, Globe, and Check Valves for Sizes NPS 4 (DN 100) and Smaller for the Petroleum and Natural Gas Industries”

API-674: "Positive Displacement Pumps- Reciprocating"

IPS-G-GN-210: "Packing & Packages"

IPS-M-EL-176: "Material and Equipment Standard for Uninterruptible Power Supply System (UPS)"

IPS-E-In-140: "Level Instruments"

IPS-C-IN-190: "Installation and Construction Standard for Transmission Systems"

IPS-E-PR-170: "Process flow diagram"

IPS-E-PR-230: "Engineering Standard for Piping & Instrumentation Diagrams (P & IDs)"

IPS-M-EL-271: "Material and Equipment Standard for Low Voltage Cables and Wires"

IGS-O-CH-042: "Painting Procedure for Gas Industry Installations"

IGS-M-IN-308: "Mechanical Plumbs"

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

IGS-M-PL-002-4: "Female Threaded End Carbon Steel Ball Valves Size 1/2" through 2", Class Rating 800"

IGS-M-PL-018: "Covered Electrodes, Series (60,70,80,90,100,110,120) for Shield Metal Arc Welding" IGS-

M-PL-011: "Butterfly Valves, Class Rating: 150, Size: 2-12 In."

IGS-M-CH-038: "Odorant as used for Odorization of Natural Gas"

IGS-E-EL-032: "Explosion Proof Electrical Equipment's Layout in Risk Areas for Pressure" Reduction Stations (TBS, CGS) and Measuring Stations (MS)"

IGS-O-SF-006: "Health, Safety and Environmental Measures and Considerations for Natural Gas Odorant"

IGS-C-CH-038: "Measurement and Monitoring of the Odor Intensity of Natural Gas (New Odorant)"

ISO 3834: "Quality Requirements for Fusion Welding of Metallic Materials"

### 3. DEFINITION

**Maximum Allowable Working Pressure:** The maximum pressure, at the top of the vessel, at which the weakest part of the vessel can handle.

**Pressure Supply Unit:** Equipment for pressurizing barrel in order to injecting odorant to the odorizing tank.

**Lance:** A device for making connection between barrel and the odorizer tank.

### 4. ABBREVIATIONS

API: American Standard Institute

ASME: American Society of Mechanical Engineers

AVL: Approved Vendor List

GTAW: Gas Tungsten Arc Welding

IGS: Iranian Gas Standard

IPS: Iranian Petroleum Standard

ITP: Inspection and Test Plan

MR: Material Requisition

NIGC: National Iranian Gas Company

PQR: Procedure Qualification Report

QCP: Quality Control Plan

TTP: Time Table Plan

SMAW: Shielded Metal Arc Welding

WPS: Welding Procedure Specification

WQT: Welder Qualification Test

## **5. TECHNICAL SPECIFICATION**

### **5.1. MATERIALS**

**5.1.1.** The odorant tank shall be made of stainless steel 316L.

**5.1.2.** Tubes, fittings, valves, and all instruments shall be made of stainless steel 316.

**5.1.3.** All associated components in contact with odorant shall be resistant to chemical effects of the odorant.

### **5.2. DESIGN REQUIREMENTS**

**5.2.1.** The odorizer tank shall be designed, manufactured, inspected, tested and constructed in accordance with the latest edition of the ASME code, Section VIII, Division 1 and its subsequent addenda.

**5.2.2.** The odorizer shall be designed and fabricated to be suitable for outdoor installation and for the most adverse environmental condition of operation.

**5.2.3.** The odorizer shall be designed to withstand the loads exerted by internal pressure, weight of the vessel, wind, earthquake, flood, impact and site conditions. It shall be assumed that wind and earthquake loads do not occur simultaneously, so the odorizer should be designed for either wind or earthquake loading whichever is greater.