



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 07/JAN/2020. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 27/NOV/2019 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Valve, Hy-Pro Manifold and Gauge Root
Model Name(s): M Series Instrument Manifolds and Gauge Root Valves

Presented to:

HY-LOK CORPORATION
#1467-1, SONGJEONG-DONG
KANGSEO-KU
Korea, Republic of

| | |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intended Service: | Hydraulic Fluids, Air, Lubricant and Fuel Oil Systems |
| Description: | Models - M Series including 2-valves, 3-valves, and 5-valves; Gauge/Root Valve including gauge valves, root valves and gauge 2-valves, Materials: Stainless Steel and Alloy 400 |
| Tier: | 3 |
| Ratings: | Pressure rating up to 6000psig (410 bar) @ 100 ϕ μ (38 $\dot{\text{E}}$), Temperature rating up to 1200 ϕ μ (648 $\dot{\text{E}}$) with optional Grafoil packing |
| Service Restrictions: | Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. |
| Comments: | Not Applicable |
| Notes / Documentation: | 1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 2. This type approval is based upon Manufacturer's Drawing (Doc. Nos. 120MV-DS, 120MV-DR and Catalog No. H-120MV) and Manufacturer's test report witnessed by IACS Members and ABS Surveyor. |
| Term of Validity: | This Product Design Assessment (PDA) Certificate 14-BKT1286795-PDA, dated 28/Nov/2014 remains valid until 27/Nov/2019 or until the Rules or specifications |

used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules:

The Rules applicable to this assessment are: 2014 Steel Vessel Rules 1-1-4/7.7, 1-1-Appendix 3 & 4, 4-1-1/Table 6, 4-6-2/5.11.4, 4-6-2/5.15, 4-6-2/5.17, 4-6-7/3.5.1, 2014 Steel Vessels Under 90 Meters (295 Feet) in Length 1-1-4/7.7, 1-1-Appendix 3 & 4, 2014 Mobile Offshore Drilling Units Rules 1-1-4/9.7, 1-1-Appendix 2 & 3, 2014 Facilities on Offshore Installations 1-1-4/9.7, 1-1-Appendix 2 & 3.

National Standards:

ASME B16.34(2013), ASME B31.1(2012), ASME B31.3(2012)

International Standards:

Government Authority:

EUMED:

Others:

| Model Certificate | Model Certificate No | Issue Date | Expiry Date |
|-------------------|----------------------|-------------|-------------|
| PDA | 14-BKT1286795-PDA | 28/NOV/2014 | 27/NOV/2019 |



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.