# INSPECTION CERTIFICATE

| | |
|---|---|
| MESSRS | UNIMECH ENGINEERING (M) SDN. BHD. |
| DELIVER To | |
| JOB NAME | |
| JOB No. | |
| P.O.No. | APO-2004-0010 |
| PRODUCT CODE | |
| | |

Certificate No.
1020330282-025-01-01

Date : 2020/06/04

KITZ

## SPECIFICATION

| | |
|---|---|
| Manuf No. | 1020330282-025 |
| Description | 20K DUCTILE IRON GLOBE VALVE SCREWED ENDS |
| Figure | 20SY1 |
| Size | 1 inch(B) |
| Quantity | 16 |
| Valve No. | |
| Item No. | 25 |
| Kiki No. | |

## MAIN PARTS

| No. | Name of parts | Material |
|---|---|---|
| 001 | BODY | Gr. 60-40-18 |
| 002 | BONNET | Gr. 60-40-18 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

## TEST

| Pressure test | Judge. | Inspection fluid and pressure | | |
|---|---|---|---|---|
| Shell | Good | Hydro | 4.2 | MPa |
| | Good | Air | 2.8 | MPa |
| Seat | | Hydro | - | |
| | Good | Air | 0.6 | MPa |
| Back seat | | Hydro | - | |
| | | Air | - | |
| | | | | |
| | | | | |
| | | | | |

| Item | Judge. | Attached sheet |
|---|---|---|
| Material | Good | Material Test Result |
| Dimension | Good | |
| Visual | Good | |
| Operation | Good | |
| | | |
| | | |
| | | |
| | | |
| | | |

## NONDESTRUCTIVE EXAMINATION

| Type of examination and judgement | Attached sheet |
|---|---|
| | |

## REMARKS

REPRESENTATIVE TEST BY HYDRAULIC SHELL TEST HAS BEEN PERFORMED

R. Miyazawa

Witnessed by

KITZ CORPORATION
QC Manager

We hereby certify that the articles listed above are satisfactory in accordance with the requirements of the standard and purchase order.

# MATERIAL TEST RESULT

| | |
|---|---|
| MESSRS | UNIMECH ENGINEERING (M) SDN. BHD. |
| JOB NAME | |
| JOB No. | |
| P.O.No. | APO-2004-0010 |
| PRODUCT CODE | |
| | |

Certificate No.
1020330282-025-01-01-Z1

Date : 2020/06/04

KITZ

| | | | |
|---|---|---|---|
| Figure | 20SY1 | Valve No. | |
| | Material ASTM A 395 Gr. 60-40-18 | Item No. | 25 |

| № | Charge No. | Display No. | Name of Parts |
|---|---|---|---|
| 1 | 138 | | BODY |
| 2 | 13F | | BONNET |
| 3 | | | |
| 4 | | | |

**CHEMICAL COMPOSITION %**

| Element | C | Si | P | Mn | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spec. / № | Min 3.00 | *Max 2.50 | Max 0.080 | | | | | | | | | | | | | | |
| 1 | 3.61 | 2.59 | 0.021 | 0.26 | | | | | | | | | | | | | |
| 2 | 3.61 | 2.60 | 0.019 | 0.29 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |

| Element | | | | | | |
|---|---|---|---|---|---|---|
| Spec. / № | | | | | | |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |

**TENSION TEST**

**IMPACT TEST**

| Item | | | Tensile str. | Yield str. | Elongation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Unit | | | MPa | MPa | % | | | | | |
| Spec. / № | | | Min 415 | Min 275 | Min 18 | | | | | |
| 1 | | | 430 | 281 | 21 | | | | | |
| 2 | | | 430 | 282 | 21 | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |

| Item | Hardness | Microstructure | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Unit | HB | % | | | | | | | | |
| Spec. / № | 143 187 | Min 90 | | | | | | | | |
| 1 | 143 | 90 | | | | | | | | |
| 2 | 143 | 90 | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |

**HEAT TREATMENT °C**

| № | Spec. | | |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |

N:Normalizing A:Annealing T:Tempering Q:Quenching AC:Air Cooling
WQ:Water Quenching OQ:Oil Quenching WC:Water Cooling FC:Furnace Cooling ST:Solution Treatment

**REMARKS**

* Every 0.01% P reduction enables 0.08% Si increase each within the maximum 2.75%.
EN10204 Type 2.2

R. Miyazawa

Reviewed by

KITZ CORPORATION
QC Manager

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