



Industrial de Válvulas, S.A. de C.V.

CERTIFICATE OF MATERIALS & TEST REPORT (CMTR)
 (CERTIFICADO DE CALIDAD DE MATERIALES Y REPORTE DE PRUEBAS CMTR)
 ACCORDING TO EN 10204 TYPE 3.1

Industria Ite 16 S/N Fracc. Industrial el Trébol de
 Tepetztlán, Estado de México, México C.P. 54610

No. código interno (Product Code Nr.): **AG020BA08MA2A1XG** No. Serie (Serial Number): **V138G1222**
 Fecha (Date): **September 28, 2016** No. De Tag (Tag Number): _____
 Clientes (Customer): _____ No Pedido del Cliente (Customer PO Nr.): _____
 Partida (Customer Item): _____ Partida (Item): _____

Linea de producto (Product line): **Cast Steel** RF Series A: _____
 Tipo de válvula (Type of valve): **Globe** Operación (Operation): **Handwheel**
 Diámetro (Nominal diameter): **2** Otros (Other requirements): _____
 Presión clase (Pressure class): **150** Figura No (Figure Nr.): **FIG 5275**

COMPOSICION QUIMICA EN % (CHEMICAL COMPOSITION %)

| Parte (Component) | Material (Material) | Colada (Heat) | % C | % Mn | % P | % S | % Si | % Ni | % Cr | % Mo | % Cu | % V | % | % | % | % | % |
|-------------------|---------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BONETE (BONNET) | ASTM_A_216_GR_WCB | H8223 | 0.201 | 0.893 | 0.022 | 0.020 | 0.366 | 0.035 | 0.083 | 0.010 | 0.055 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CUERPO (BODY) | ASTM_A_216_GR_WCB | K3519 | 0.175 | 0.896 | 0.022 | 0.008 | 0.503 | 0.027 | 0.045 | 0.005 | 0.029 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| DISCO 1 (DISC 1) | ASTM_A_105N | G996 | 0.189 | 0.725 | 0.026 | 0.019 | 0.282 | 0.032 | 0.049 | 0.016 | 0.058 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

PROPIEDADES MECANICAS (MECHANICAL TESTING)

| Parte (Component) | Colada (Heat) | Condición de TT Normalizado & revenido Heat Treatment condition (Normalized & tempered) | Cedencia (Yield strength) (Kpsi) | Tensión (Tensile strength) (Kpsi) | Alar. En 2" (Elong. In 2") (% min) | Reduccion de area (Reduction of area) (% min) | Dureza (Hardness) (Bhn) | 1st | 2nd | 1st | 2nd | 3rd | AVG |
|-------------------|---------------|---|----------------------------------|-----------------------------------|------------------------------------|---|-------------------------|-----|-----|-----|-----|-----|-----|
| BONETE (BONNET) | H8223 | (910-940) °C. NORMALIZADO (RECOCCIDO) 850 °C ENFRIAMIENTO CON AIRE (910-940) °C. NORMALIZE (ANNEAL) 850 °C AIR COOL | 46.1100 | 84.5350 | 25 | 60 | 152 | 0 | 0 | 0 | 0 | 0 | 0 |
| CUERPO (BODY) | K3519 | (910-940) °C. NORMALIZADO (RECOCCIDO) 850 °C ENFRIAMIENTO CON AIRE (910-940) °C. NORMALIZE (ANNEAL) 850 °C AIR COOL | 53.8500 | 84.1000 | 34 | 56 | 159 | 0 | 0 | 0 | 0 | 0 | 0 |
| DISCO 1 (DISC 1) | G996 | NORMALIZADO 927 °C-843 °C ENFRIADO EN AIRE 820 °C. NORMALIZE (ANNEAL) 821 °C FURNACE COOL | 44.9500 | 80.7650 | 33 | 61 | 160 | 160 | 160 | 0 | 0 | 0 | 0 |

PRUEBAS DE PRESIÓN DE ACUERDO CON API 598 (PRESSURE TEST IN ACCORDANCE WITH API 598)

| TIPO DE PRUEBA (Type of test) | PRESION (Pressure) (Psi) | TIEMPO (Duration) (min) | RESULTADO (Result) | TIPO DE PRUEBA (Type of test) | RESULTADO (Result) |
|---|--------------------------|-------------------------|---------------------|-------------------------------|--------------------|
| HIDROSTATICA DE CASCO (HYDROSTATIC SHELL) | 450 | 1 min | ACEPTADO (ACCEPTED) | | |
| HIDROSTATICA DE CASQUILLO (HYDROSTATIC BACK SEAT) | 450 | 1 min | ACEPTADO (ACCEPTED) | | |
| PRUEBA HIDROSTATICA SELLO1 (HIGH PRESSURE SIDE 1) | 315 | 1 min | ACEPTADO (ACCEPTED) | | |
| PRUEBA NEUMATICA SELLO1 (LOW PRESSURE SIDE 1) | 80 | 1 min | ACEPTADO (ACCEPTED) | | |



Certificamos que este producto ha sido diseñado, fabricado y probado de acuerdo con nuestro sistema de administración de calidad y con los requisitos establecidos en una o más de las siguientes normas en su última edición. (We hereby certify this product has been designed, manufactured and tested according to our quality management system and requirements stated in one or more of the following standards on their latest edition).

- API 598 METAL PLUG VALVES, FLANGED, THREADED AND WELDING
- API 600 STEEL GLOBE VALVES, FLANGED
- API 603 STEEL GLOBE VALVES, FLANGED
- API 604 STEEL GLOBE VALVES, FLANGED
- API 607 TYPE TESTING OF RISING STEM VALVES EQUIPPED WITH GRAPHITE PACKING FOR FUGITIVE EMISSIONS
- ANSI B16-10 FACE TO FACE AND END TO END DIMENSIONS OF VALVES
- ANSI B16-34 FLANGED END CONNECTIONS FOR VALVES
- ANSI B16-43 FLANGED END CONNECTIONS FOR VALVES
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[Signature]

Quality Assurance Department
 Yolanda Ponciano Montoya

FAC-24 Rev. Original.