



Industrial de Válvulas, S.A. de C.V.

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

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

No. código interno (Product Code Nr.): AC040BA08MA2A1XR

No. Serie (Serial Number): V12NC1205

Fecha (Date): November 8, 2017

No. De Tag (Tag Number): _____

Clientes (Customer): _____

No Pedido del Cliente (Customer PO Nr.): _____

Partida (Customer Item): _____ Pedido Interno No (Walworth Sales Nr.): _____

Partida (Item): _____

| | | | | | |
|-----------------------------------|----------------------------|-------------------------|-------------------|-----------------------------|-----------|
| Linea de producto (Product line): | Cast Steel / Acero Fundido | Extremos (Ends): | RF | Operación (Operation): | Handwheel |
| Tipo de válvula (Type of valve): | Gate / Compuerta | Cuerpo (Body): | WCB | Anexo No. (Annex Nr.): | |
| Diámetro (Nominal diameter): | 4 | Interiores (Trim): | #08 ((API); (UT)) | Otros (Other requirements): | |
| Presión clase (Pressure class): | 150 | Figura No (Figure Nr.): | FIG 5202RF | | |

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 | C0556 | 0.199 | 0.944 | 0.029 | 0.011 | 0.441 | 0.007 | 0.068 | 0.051 | 0.033 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CUERPO (BODY) | ASTM_A_216_GR_WCB | C0511 | 0.215 | 0.922 | 0.022 | 0.012 | 0.430 | 0.001 | 0.015 | 0.006 | 0.025 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| DISCO 1 (DISC 1) | ASTM_A_216_GR_WCB | C1011 | 0.249 | 0.887 | 0.030 | 0.015 | 0.472 | 0.026 | 0.073 | 0.000 | 0.078 | 0.000 | 0.000 | 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) | | Prueba Impacto (Impact Test) (Joules) | | | | |
|-------------------|---------------|---|----------------------------------|-----------------------------------|------------------------------------|---|-------------------------|-----|---------------------------------------|-----|-----|-----|---|
| | | | | | | | 1st | 2nd | 1st | 2nd | 3rd | AVG | |
| BONETE (BONNET) | C0556 | (910-940) °C, NORMALIZADO (RECOCIDO) 650 °C ENFRIAMIENTO CON AIRE (910-940) °C, NORMALIZE (ANNEAL) 650 °C AIR COOL | 44.3700 | 75.1100 | 25 | 50 | 166 | 0 | 0 | 0 | 0 | 0 | 0 |
| CUERPO (BODY) | C0511 | (910-940) °C, NORMALIZADO (RECOCIDO) 650 °C ENFRIAMIENTO CON AIRE (910-940) °C, NORMALIZE (ANNEAL) 650 °C AIR COOL | 41.9050 | 75.1100 | 24 | 49 | 164 | 0 | 0 | 0 | 0 | 0 | 0 |
| DISCO 1 (DISC 1) | C1011 | (910-940) °C, NORMALIZADO (RECOCIDO) 650 °C ENFRIAMIENTO CON AIRE (910-940) °C, NORMALIZE (ANNEAL) 650 °C AIR COOL | 46.4000 | 78.3000 | 29 | 38 | 160 | 0 | 0 | 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 NEUMATICA SELLO 1 (LOW PRESSURE SIDE 1) | 80 | 1 min | ACEPTADO (ACCEPTED) | | |
| PRUEBA NEUMATICA SELLO 2 (LOW PRESSURE SIDE 2) | 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).

DESIGN AND TEST IN ACCORDANCE WITH:
API 598- VALVE INSPECTION AND TESTING
API 600- STEEL GATE VALVES-FLANGED AND BUTT-WELDING ENDS, BOLTED BONNETS

Quality Assurance Department
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FAC-24 Rev. Original.