WALWORTH® Since 1842

**Industrial de Válvulas, S.A. de C.V.**

Industria lte 16 S/N Fracc. Industrial el Trébol de
Tepotzotlán, 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.):** *AC060BA08MA2A1BG*

**No. Serie (*Serial Number*):** V148C6445

**Fecha (*Date*):** *March 2, 2016*

***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 | Extremos (*Ends*): | RAISED FACE (RF TYPE "A") | Operación (*Operation*): | HANDWHEEL |
| Tipo de válvula (*Type of valve*): | GATE OS & Y | Cuerpo (*Shell*): | WCB | Otros (*Other requirements*): | |
| Diámetro (*Nominal diameter*): | 6 | Interiores (*Trim*): | #08 UT | | |
| Presión clase (*Pressure class*): | 150 | Figura No (*Figure Nr.*): | FIG 5202 | | |

## 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 | K5292 | 0.210 | 0.890 | 0.025 | 0.011 | 0.520 | 0.027 | 0.130 | 0.008 | 0.019 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| CUERPO (BODY) | ASTM_A_216_GR_WCB | K5358 | 0.184 | 0.979 | 0.035 | 0.017 | 0.369 | 0.034 | 0.040 | 0.016 | 0.035 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| DISCO 1 (DISC 1) | ASTM_A_216_GR_WCB | K5366 | 0.180 | 0.910 | 0.028 | 0.011 | 0.430 | 0.018 | 0.230 | 0.004 | 0.023 | 0.002 | 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 (*Tensile strength*) (*Kpsi*) | Tensión (*Yield 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) | K5292 | (910-940) °C, NORMALIZADO ( RECOCIDO ) 650 °C ENFRIAMIENTO CON AIRE<br>(910-940) °C, NORMALIZE ( ANNEAL ) 650 °C AIR COOL | 45.6750 | 75.4000 | 31 | 54 | 152 | 0 | 0 | 0 | 0 | 0 |
| CUERPO (BODY) | K5358 | (910-940) °C, NORMALIZADO ( RECOCIDO ) 650 °C ENFRIAMIENTO CON AIRE<br>(910-940) °C, NORMALIZE ( ANNEAL ) 650 °C AIR COOL | 44.3800 | 82.3600 | 34 | 46 | 163 | 0 | 0 | 0 | 0 | 0 |
| DISCO 1 (DISC 1) | K5366 | (910-940) °C, NORMALIZADO ( RECOCIDO ) 650 °C ENFRIAMIENTO CON AIRE<br>(910-940) °C, NORMALIZE ( ANNEAL ) 650 °C AIR COOL | 45.6750 | 74.6750 | 31 | 53 | 152 | 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 HIDROSTATICA SELLO 1 (*HIGH PRESSURE CLOSURE SIDE 1*) | 315 | 1 min | ACEPTADO (ACCEPTED) | | |
| PRUEBA HIDROSTATICA SELLO 2 (*HIGH PRESSURE CLOSURE SIDE 2*) | 315 | 1 min | ACEPTADO (ACCEPTED) | | |
| PRUEBA NEUMATICA SELLO 1 (*LOW PRESSURE CLOSURE SIDE 1*) | 80 | 1 min | ACEPTADO (ACCEPTED) | | |
| PRUEBA NEUMATICA SELLO 2 (*LOW PRESSURE CLOSURE SIDE 2*) | 80 | 1 min | ACEPTADO (ACCEPTED) | | |

ADMINISTRACIÓN DE WALWORTH® Since 1842 CALIDAD

*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 latestedition ).*

DESING IN ACCORDANCE WITH API 600 ( CAST STEEL GATE (OS & YOKE) )
API 599 METAL PLUG VALVES - FLANGED, THREADED AND WELDING
API 591 PROCESS VALVE QUALIFICATION PROCEDURE
API 623 STEEL GLOBE VALVES—FLANGED AND BUTT-WELDING ENDS, BOLTED BONNETS
API624 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 B16-11 FORGED FITTINGS, SOCKET - WELDING AND THREADED
ANSI/NACE MR0175/ISO 15156-1 MATERIALS FOR USE IN H2S-CONTAINING ENVIRONMENTS IN OIL AND GAS PRODUCTION
NACE MR0103 MATERIAL RESISTANT TO SULFIDE STRESS CRACKING IN CORROSIVE PETROLIEUM ENVIROMENT
MSS-SP61 PRESSURE TESTING OF STEEL VALVES

Quality Assurance Department

FAC-24 Rev. Original.