



**WALWORTH**  
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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.): **BT010KE08AANSBA1BG**

No. Lote (Batch Number): **AA00073160**

Fecha (Date): **August 22, 2017**

No. De Tag (Tag Number): **N/A**

Cientes (Customer): **PLESA ANAHUAC Y CIAS, S.A DE C.V.**

No Pedido del Cliente (Customer PO Nr.): **25849**

Partida (Customer Item): **26** Pedido Interno No (Walworth Sales Nr.): **D000070528**

Cantidad (Qty): **20** Partida (Item): **26**

|                                   |                              |                         |                   |                             |        |
|-----------------------------------|------------------------------|-------------------------|-------------------|-----------------------------|--------|
| Linea de producto (Product line): | Forged Steel / Acero Forjado | Extremos (Ends):        | Threaded (S)      | Operación (Operation):      | N/A    |
| Tipo de válvula (Type of valve):  | PISTON CHECK                 | Cuerpo (Body):          | A105N             | Anexo No. (Annex Nr.):      | 000000 |
| Diámetro (Nominal diameter):      | 1                            | Interiores (Trim):      | #08 ((API); (UT)) | Otros (Other requirements): |        |
| Presión clase (Pressure class):   | 800                          | Figura No (Figure Nr.): | FIG 5540S         |                             |        |

**COMPOSICION QUIMICA EN % (CHEMICAL COMPOSITION %)**

| Parte (Component) | Material (Material) | Colada (Heat) | % C   | % Mn  | % P   | % S   | % Si  | % Ni  | % Cr  | % Mo  | % Cu  | % V   | %     | %     | %     | %     | %     | %     |
|-------------------|---------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| CUERPO (BODY)     | ASTM_A_105N         | C27           | 0.183 | 0.981 | 0.021 | 0.023 | 0.214 | 0.044 | 0.056 | 0.021 | 0.059 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| YUGO (YOKE)       | ASTM_A_105N         | C27           | 0.183 | 0.981 | 0.021 | 0.023 | 0.214 | 0.044 | 0.056 | 0.021 | 0.059 | 0.001 | 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 |
| CUERPO (BODY)     | C27           | NORMALIZADO 927 °C-843 °C ENFRIADO EN AIRE 920 °C. NORMALIZE ( ANNEAL ) 621 °C FURNACE COOL | 45.2400                          | 92.9450                           | 42                                 | 54  | 159                     | 159 | 0                                     | 0   | 0   | 0   |
| YUGO (YOKE)       | C27           | NORMALIZADO 927 °C-843 °C ENFRIADO EN AIRE 920 °C. NORMALIZE ( ANNEAL ) 621 °C FURNACE COOL | 45.2400                          | 92.9450                           | 42                                 | 54  | 159                     | 159 | 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)                 | 2975                     | 0.25 min                | ACEPTADO (ACCEPTED) |                               |                    |
| PRUEBA HIDROSTATICA SELLO1 (HIGH PRESSURE CLOSURE SIDE 1) | 2175                     | 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 602-GATE, GLOBE, AND CHECK VALVES FOR SIZES DN100 (NPS 4) AND SMALLER FOR THE PETROLEUM AND NATURAL GAS INDUSTRIES

Quality Assurance Department  
Yolanda Ponciano Montoya  
FAC-24 Rev. Original.