



CERTIFICADO DE CALIDAD/QUALITY CERTIFICATE

EN 10 204 3.1 B

|  |                      |                            |               |
|--|----------------------|----------------------------|---------------|
| Factura / Invoice:                           | Cantidad / Quantity: | Certificado / Certificate: | Fecha / Date: |
| 97703  | 4.00                 | EE97703/12                 | 9/Dic/03      |
| Descripción / Description:                   |                      |                            |               |
| 446-M 3/4" S.E. NPT                          |                      |                            |               |
| Cliente / Customer:                          |                      |                            |               |
| 7 TUBOS CONEXIONES Y TANQUES, S. A. DE C. V. |                      |                            |               |

Numero de Rastreabilidad / Tracability Number:

03E15417, 03G13834, 03E15416, 03E15415

ORIGINAL



Válvulas Worcester de México, S.A. de C.V., certifica que el material indicado cumple con nuestras especificaciones como se describe en nuestras catálogos, hojas de especificación, dibujos y en otra literatura. Los productos, partes, materiales indicados aquí han sido comprados, fabricados, inspeccionados, probados de acuerdo con estas especificaciones, a nuestro sistema de calidad ISO 9001, y ASME/ANSI B16.34-1998 inciso (7).

Válvulas Worcester de México, S.A. de C.V., hereby certifies that the material supplied is in accordance with our specifications as describe in our catalog, specification sheets, drawings, and other literature. The products, parts and materials identified herein have been purchased, manufactured, inspected and tested in accordance with these specifications, our ISO 9001 quality assurance program, and ASME/ANSI B16.34-1998 part (7).

Elaboro / Elaborated by:

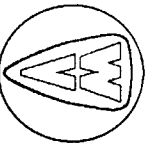
[Signature]

Jose Luis Perez C.
Metrologista

Aprobo / Aproved by:

[Signature]

Ing. Saturnino Padilla Becerra.
Gerente de Aseguramiento de Calidad
Quality Ass. Manager.



VALVULAS WORCESTER DE MEXICO, S.A. DE C.V.  
RHINO VALVES WORLDWIDE



CERTIFICADO DE CALIDAD / QUALITY CERTIFICATE

CERTIFICADO / CERTIFICATE: EE97703/12

| COMPONENTES |                 | MATERIAL      |
|-------------|-----------------|---------------|
| No.         | COMPONENTES     | MATERIAL      |
| 1           | CUERPO / BODY   | ASTM A216 WCB |
| 2           | TAPA / PIPE END | ASTM A216 WCB |
| 3           | VASTAGO / STEM  | AISI 316      |
| 4           | ESFERA / SPHERE | AISI 316      |

| ANALISIS QUIMICO / CHEMICAL ANALYSIS |       |       |       |       |       |        |       |        |       |       |     |     | PROPIEDADES MECANICAS / MECHANICAL PROPERTIES |     |     |     |                          |                  |                    |                |              |              |                   |                |           |          |
|--------------------------------------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-----|-----|---|-----|-----|-----|--------------------------|------------------|--------------------|----------------|--------------|--------------|-------------------|----------------|-----------|----------|
| No.                                  | C%    | Mn%   | Si%   | P%    | S%    | Cr%    | Mo%   | Ni%    | Cu%   | V%    | Fe% | Al% | N%  | Zn% | Pb% | Sn% | RESISTENCIA A LA TENSION | TENSILE STRENGTH | LIMITE DE CEDENCIA | YIELD STRENGTH | % ELONGACION | % ELONGATION | REDUCCION DE AREA | REDUCTION AREA | DUREZA    | HARDNESS |
| 1                                    | 0.220 | 1.200 | 0.460 | 0.016 | 0.010 | 0.042  | 0.001 | 0.043  | 0.045 | 0.001 | X   | X   | X   | X   | X   | X   | 535 Mpa                  | 320 Mpa          | 320 Mpa            | 28             | 28           | 50           | 50                | 164 HB         | 164 HB    |          |
| 2                                    | 0.230 | 0.990 | 0.400 | 0.015 | 0.008 | 0.001  | 0.001 | 0.026  | 0.041 | 0.001 | X   | X   | X   | X   | X   | X   | 540 Mpa                  | 320 Mpa          | 320 Mpa            | 27             | 27           | 49           | 49                | 152 HB         | 152 HB    |          |
| 3                                    | 0.050 | 1.700 | 0.260 | 0.023 | 0.028 | 17.020 | 2.480 | 10.190 | X     | X     | X   | X   | X   | X   | X   | X   | 83070 PSI                | 41180 PSI        | 41180 PSI          | 56             | 56           | X            | X                 | 135-143HB      | 135-143HB |          |
| 4                                    | 0.040 | 1.000 | 0.420 | 0.025 | 0.002 | 17.470 | 2.050 | 11.650 | X     | X     | X   | X   | X   | X   | X   | X   | 78244 PSI                | 36079 PSI        | 36079 PSI          | 62             | 62           | 78           | 78                | 116 HB         | 116 HB    |          |

**ORIGINAL**

| TIPO DE PRUEBA                | PSI   | RESULTADO             |
|-------------------------------|-------|-----------------------|
| TYPE OF TEST                  | PSI   | RESULT                |
| PRUEBA HIDRAULICA DEL CUERPO  | 1500  | SIN FUGA              |
| HYDRAULIC TEST ON BODY        | 1500  | "OK" NO LEAKAGE FOUND |
| PRUEBA HIDRAULICA EN ASIENTOS | 1100  | SIN FUGA              |
| HYDRAULIC TEST ON SEATS       | 1100  | "OK" NO LEAKAGE FOUND |
| PRUEBA NEUMATICA EN ASIENTOS  | 50-80 | SIN FUGA              |
| NEUMATIC TEST ON SEATS        | 50-80 | "OK" NO LEAKAGE FOUND |