



TAIWAN VALVE COMPANY LTD.

3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG, R.O.C

Pos. 15, 19 St.

Inspection Certificate (EN 10204-3.1B)

Report No.: ECH-5A9902-050413

Page: 4/14

S/C ECH-5A9902

P/O 9460624 OP

Customer: ECONOSTO NEDERLAND B.V.

Article: ECON 3PC DIN2999 BALL VALVE

Material: EN10213-2(1995)/1.0619

Heat Treatment: 920 , Normalizing , Cooling by air, 1hr

A) Chemical Analysis

B) Tensile test / Hardness / Charpy (Test Temp RT)

| Spec | | | | B) Tensile test / Hardness / Charpy(Test Temp RT) | | | | | | | | | | | | | | | | | | | | | | | |
|------|---------|-------|---------|---|-----|------|------|------|-------|-------|------|------|------|------|-----|-----|-----------------------------|-----------------------------|------------------------------|--------------------|--------------------|----|------------------------------|----|-----|-----|----|
| Size | Heat No | Piece | Article | Min | Max | C % | Si % | Mn % | P % | S % | Ni % | Cr % | Mo % | Cu % | V % | N % | Rp 0.2 N/mm ² | Rp 1.0 N/mm ² | Tensile N/mm ² | Elong- ation(%) | Reduct- -ion(%) | HB | Energy Charpy Impact (Joule) | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | AVG | |
| | | | | | | 0.18 | - | 0.50 | - | - | - | - | - | - | - | - | - | 240 | - | 420 | 22 | - | - | - | - | 27 | |
| DN15 | ABC75 | 30 | BODY | | | 0.23 | 0.60 | 1.20 | 0.030 | 0.020 | - | - | - | - | - | - | - | - | - | 600 | - | - | - | - | - | - | |
| DN15 | CBC56 | 50 | BODY | | | 0.19 | 0.50 | 0.82 | 0.018 | 0.018 | - | - | - | - | - | - | - | 268 | - | 549 | 37 | - | 157 | 46 | 42 | 48 | 45 |
| DN15 | CBD60 | 48 | BODY | | | 0.22 | 0.43 | 0.71 | 0.027 | 0.013 | - | - | - | - | - | - | - | 259 | - | 521 | 33 | - | 191 | 51 | 52 | 54 | 52 |
| DN15 | E9AOJ | 52 | BODY | | | 0.20 | 0.45 | 0.74 | 0.022 | 0.012 | - | - | - | - | - | - | - | 260 | - | 469 | 30 | - | 191 | 45 | 42 | 41 | 43 |
| DN15 | NB933 | 75 | BODY | | | 0.18 | 0.51 | 0.64 | 0.013 | 0.014 | - | - | - | - | - | - | - | 251 | - | 524 | 27 | - | 162 | 44 | 46 | 45 | 45 |
| DN15 | CBC57 | 70 | CAP | | | 0.23 | 0.49 | 0.75 | 0.025 | 0.014 | - | - | - | - | - | - | - | 315 | - | 535 | 36 | - | 134 | 82 | 101 | 72 | 85 |
| DN15 | CBD40 | 80 | CAP | | | 0.22 | 0.43 | 0.72 | 0.025 | 0.015 | - | - | - | - | - | - | - | 255 | - | 502 | 31 | - | 193 | 52 | 54 | 50 | 52 |
| DN15 | E9AZ3 | 75 | CAP | | | 0.22 | 0.34 | 0.63 | 0.024 | 0.016 | - | - | - | - | - | - | - | 285 | - | 536 | 26 | - | 217 | 43 | 47 | 45 | 45 |
| DN15 | EBCD2 | 75 | CAP | | | 0.19 | 0.54 | 0.65 | 0.001 | 0.001 | - | - | - | - | - | - | - | 300 | - | 590 | 23 | - | 148 | 52 | 47 | 42 | 47 |
| DN15 | NB334 | 32 | CAP | | | 0.20 | 0.39 | 0.76 | 0.013 | 0.012 | - | - | - | - | - | - | - | 268 | - | 501 | 28 | - | 160 | 46 | 47 | 49 | 47 |
| DN15 | NB934 | 150 | CAP | | | 0.22 | 0.46 | 0.63 | 0.022 | 0.010 | - | - | - | - | - | - | - | 285 | - | 510 | 37 | - | 150 | 42 | 48 | 49 | 46 |
| DN15 | WB159 | 28 | CAP | | | 0.19 | 0.30 | 0.72 | 0.023 | 0.014 | - | - | - | - | - | - | - | 345 | - | 570 | 33 | - | 139 | 55 | 67 | 91 | 71 |
| DN20 | ABD38 | 10 | BODY | | | 0.19 | 0.54 | 0.68 | 0.020 | 0.009 | - | - | - | - | - | - | - | 267 | - | 519 | 46 | - | 154 | 44 | 41 | 43 | 43 |
| DN20 | CBD62 | 60 | BODY | | | 0.20 | 0.43 | 0.73 | 0.011 | 0.013 | - | - | - | - | - | - | - | 268 | - | 500 | 29 | - | 150 | 45 | 48 | 42 | 45 |
| DN20 | NB933 | 15 | BODY | | | 0.23 | 0.49 | 0.75 | 0.022 | 0.012 | - | - | - | - | - | - | - | 266 | - | 471 | 31 | - | 193 | 45 | 42 | 41 | 43 |
| | | | | | | | | | 0.025 | 0.014 | - | - | - | - | - | - | - | 315 | - | 535 | 36 | - | 134 | 82 | 101 | 72 | 85 |

C) Dimensional check and NDT

| Testing Item | Details | Result |
|--|---|--------|
| Visual inspection & dimensional check | Kennzeichnung auf Aluschild H13003, H13003 H13013, H13013 H13080, H13088 H13180, H13181 H13280, H13281 H14006, H14012 | OK |
| Surface crack inspection (PT) | N/A | |
| Radiographic examination (RT) | N/A | |
| I.K. Intergranular corrosion testing (ASTM A 262-98) | N/A | |

D) Remarks:

Delivery Condition:

Anti-rust

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/04/13

Works inspector

T.M. Cao.



TAIWAN VALVE COMPANY LTD.
3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG, R.O.C

| | | |
|---------------------------------------|-------------------------------|-----------|
| Inspection Certificate(EN 10204-3.1B) | Report No.: ECH-5A9902-050413 | Page: 3/7 |
|---------------------------------------|-------------------------------|-----------|

| | | |
|-----------------------------------|--------------------|-----------------------|
| Customer: ECONOSTO NEDERLAND B.V. | Valve Type: ECON | Date: 2005/04/13 |
| Specification: EN12516-1(2000) | P/I NO: ECH-5A9902 | Order No.: 9460624 OP |
| Material: EN10213-2(1995)/1.0619 | | |

Content of Delivery

| Leak and Pressure Test according to DIN EN12266-1(2003) | | | | | | | | | |
|---|-------------|-----------------------------|------|-------|-----------------------|--------------------|-------------------|-----------------|---------------------|
| Item No | No of Piece | Article | Size | Class | Trim (Ball/Stem/Seat) | Shell test (Water) | Seat test (Water) | Seat test (Air) | Test Result |
| 1 | 75 | ECON 3PC DIN2999 BALL VALVE | DN15 | PN63 | | 94.5Bar | 15SEC | N/A | Shell Acceptable |
| 2 | 30 | ECON 3PC DIN2999 BALL VALVE | DN15 | PN63 | | 94.5Bar | 15SEC | 6Bar | Seat-Water N/A |
| 3 | 150 | ECON 3PC DIN2999 BALL VALVE | DN15 | PN63 | | 94.5Bar | 15SEC | 6Bar | Seat-Air Acceptable |
| 4 | 60 | ECON 3PC DIN2999 BALL VALVE | DN20 | PN63 | | 94.5Bar | 15SEC | 6Bar | Acceptable |
| 5 | 25 | ECON 3PC DIN2999 BALL VALVE | DN20 | PN63 | | 94.5Bar | 15SEC | 6Bar | Acceptable |
| 6 | 90 | ECON 3PC DIN2999 BALL VALVE | DN25 | PN63 | | 94.5Bar | 15SEC | 6Bar | Acceptable |
| 7 | 20 | ECON 3PC DIN2999 BALL VALVE | DN32 | PN63 | | 94.5Bar | 15SEC | 6Bar | Acceptable |
| 8 | 10 | ECON 3PC DIN2999 BALL VALVE | DN40 | PN63 | | 94.5Bar | 15SEC | 6Bar | Acceptable |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |

Test Results

| Test Item | According | Result |
|---|-----------|------------|
| Check of Calculation and safety Requirements acc. to | EN12516-1 | Acceptable |
| Visual and functional tests | TV STD | Acceptable |
| NDE, material certificates (see material certificate, as annex) | N/A | N/A |

Annexes/ 1)Material certificates of pressure parts

2)Material list of other parts

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/04/13

Works inspector

Handwritten signature: K-M. Liao