

Certificate/Serial/Job No: **XK303**

Quality Department: *John #6*

| Quantity | Size (NPS) | Class | Product  | Description | Type  | SONumber | Line | Sold to | Date       |
|----------|------------|-------|----------|-------------|-------|----------|------|---------|------------|
| 14       | 8          | 150   | / 103036 | DSI 137XU   | SWING |          |      |         | 11/28/2011 |

|                              |  |   |                       |                                     |                              |
|------------------------------|--|---|-----------------------|-------------------------------------|------------------------------|
| <b>Pressure Test:</b> API598 | <input checked="" type="checkbox"/> Satisfactory | Shell Pressure : 450 psi<br>3102.64 kPa | BackSeat : psi<br>kPa | Seat Pressure 325 psi<br>2240.8 kPa | Seat Air Pressure psi<br>kPa |
|------------------------------|--|---|-----------------------|-------------------------------------|------------------------------|

| Part | Specif. | HEAT# | Chemical Composition [%] |    |    |   |   |    |    |    |    |   |   |    |    | Mechanical Properties |     |                           |                         |              |              |              |             |             |             |
|------|---------|-------|--------------------------|----|----|---|---|----|----|----|----|---|---|----|----|-----------------------|-----|---------------------------|-------------------------|--------------|--------------|--------------|-------------|-------------|-------------|
|      |         |       | C                        | Si | Mn | P | S | Ni | Cr | Mo | Cu | V | W | Nb | Al | N                     | Ceq | Tensile<br>[ksi]<br>[MPa] | Yield<br>[ksi]<br>[MPa] | Elong<br>[%] | Reduc<br>[%] | Hard<br>[HB] | Ch.1<br>[J] | Ch.2<br>[J] | Ch.3<br>[J] |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |  |       |      |                 |                |    |    |     |  |  |  |  |  |  |  |   |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|--|-------|------|-----------------|----------------|----|----|-----|--|--|--|--|--|--|--|---|---|
| BODY    | ASTM A216 WCB-2008 | A 11816  | 0.200 | 0.43 | 0.85 | 0.023 | 0.012 | 0.025 | 0.048 | 0.003 | 0.034 | 0.004 |  | 0.033 | 0.36 | 74.53<br>513.87 | 44.37<br>305.9 | 28 | 57 | 153 |  |  |  |  |  |  |  |   | N |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |  |       | 0.34 | 73.23<br>504.90 | 53.65<br>369.9 | 33 | 60 | 151 |  |  |  |  |  |  |  | N |   |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |  |       | 0.36 | 78.59<br>541.86 | 50.03<br>344.9 | 32 | 58 | 150 |  |  |  |  |  |  |  | N |   |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |  |      |      |                 |                |    |    |     |  |  |  |  |  |  |  |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|--|------|------|-----------------|----------------|----|----|-----|--|--|--|--|--|--|--|---|
| BODY    | ASTM A216 WCB-2008 | A 11791  | 0.200 | 0.47 | 0.89 | 0.025 | 0.014 | 0.031 | 0.075 | 0.009 | 0.036 | 0.006 |  | 0.06 | 0.37 | 72.50<br>499.87 | 42.92<br>295.9 | 31 | 58 | 149 |  |  |  |  |  |  |  | N |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |  |      | 0.34 | 73.23<br>504.90 | 53.65<br>369.9 | 33 | 60 | 151 |  |  |  |  |  |  |  | N |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |  |      | 0.36 | 78.59<br>541.86 | 50.03<br>344.9 | 32 | 58 | 150 |  |  |  |  |  |  |  | N |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |  |       |      |                 |                |    |    |     |  |  |  |  |  |  |  |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|--|-------|------|-----------------|----------------|----|----|-----|--|--|--|--|--|--|--|---|
| BODY    | ASTM A216 WCB-2008 | A 11793  | 0.200 | 0.45 | 0.89 | 0.026 | 0.011 | 0.026 | 0.047 | 0.006 | 0.037 | 0.005 |  | 0.043 | 0.36 | 74.82<br>515.87 | 44.95<br>309.9 | 30 | 56 | 157 |  |  |  |  |  |  |  | N |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |  |       | 0.34 | 73.23<br>504.90 | 53.65<br>369.9 | 33 | 60 | 151 |  |  |  |  |  |  |  | N |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |  |       | 0.36 | 78.59<br>541.86 | 50.03<br>344.9 | 32 | 58 | 150 |  |  |  |  |  |  |  | N |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |  |       |      |                 |                |    |    |     |  |  |  |  |  |  |  |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|--|-------|------|-----------------|----------------|----|----|-----|--|--|--|--|--|--|--|---|
| BODY    | ASTM A216 WCB-2008 | A 11796  | 0.220 | 0.44 | 0.86 | 0.024 | 0.014 | 0.029 | 0.052 | 0.001 | 0.041 | 0.006 |  | 0.015 | 0.38 | 73.95<br>509.87 | 43.94<br>303   | 29 | 57 | 152 |  |  |  |  |  |  |  | N |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |  |       | 0.34 | 73.23<br>504.90 | 53.65<br>369.9 | 33 | 60 | 151 |  |  |  |  |  |  |  | N |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |  |       | 0.36 | 78.59<br>541.86 | 50.03<br>344.9 | 32 | 58 | 150 |  |  |  |  |  |  |  | N |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      |        |       |    |    |     |  |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|-------|----|----|-----|--|---|
| BODY    | ASTM A216 WCB-2008 | A 11792  | 0.200 | 0.43 | 0.85 | 0.023 | 0.013 | 0.028 | 0.057 | 0.002 | 0.034 | 0.005 | 0.008 | 0.36 | 77.29  | 46.26 | 25 | 51 | 159 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 532.9  | 319   |    |    |     |  |   |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |       | 0.34 | 73.23  | 53.65 | 33 | 60 | 151 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 504.90 | 369.9 |    |    |     |  |   |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |       | 0.36 | 78.59  | 50.03 | 32 | 58 | 150 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 541.86 | 344.9 |    |    |     |  |   |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      |        |       |    |    |     |  |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|-------|----|----|-----|--|---|
| BODY    | ASTM A216 WCB-2008 | A 11816  | 0.200 | 0.43 | 0.85 | 0.023 | 0.012 | 0.025 | 0.048 | 0.003 | 0.034 | 0.004 | 0.033 | 0.36 | 74.53  | 44.37 | 28 | 57 | 153 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 513.87 | 305.9 |    |    |     |  |   |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |       | 0.34 | 73.23  | 53.65 | 33 | 60 | 151 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 504.90 | 369.9 |    |    |     |  |   |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |       | 0.36 | 78.59  | 50.03 | 32 | 58 | 150 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 541.86 | 344.9 |    |    |     |  |   |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      |        |       |    |    |     |  |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|-------|----|----|-----|--|---|
| BODY    | ASTM A216 WCB-2008 | A 11793  | 0.200 | 0.45 | 0.89 | 0.026 | 0.011 | 0.026 | 0.047 | 0.006 | 0.037 | 0.005 | 0.043 | 0.36 | 74.82  | 44.95 | 30 | 56 | 157 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 515.87 | 309.9 |    |    |     |  |   |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |       | 0.34 | 73.23  | 53.65 | 33 | 60 | 151 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 504.90 | 369.9 |    |    |     |  |   |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |       | 0.36 | 78.59  | 50.03 | 32 | 58 | 150 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 541.86 | 344.9 |    |    |     |  |   |

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|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      |        |       |    |    |     |  |   |
|---------|--------------------|----------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|-------|----|----|-----|--|---|
| BODY    | ASTM A216 WCB-2008 | A 11814  | 0.210 | 0.47 | 0.87 | 0.025 | 0.012 | 0.031 | 0.059 | 0.004 | 0.034 | 0.004 | 0.038 | 0.37 | 72.50  | 41.91 | 31 | 58 | 149 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 499.87 | 289   |    |    |     |  |   |
| CLAPPER | ASTM A105-2005     | C 11139  | 0.18  | 0.19 | 0.9  | 0.015 | 0.007 | 0.02  | 0.04  | 0.004 | 0.06  | 0.000 |       | 0.34 | 73.23  | 53.65 | 33 | 60 | 151 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 504.90 | 369.9 |    |    |     |  |   |
| COVER   | ASTM A105-2005     | C 388189 | 0.20  | 0.22 | 0.87 | 0.005 | 0.002 | 0.003 | 0.05  | 0.003 | 0.005 | 0.001 |       | 0.36 | 78.59  | 50.03 | 32 | 58 | 150 |  | N |
|         |                    |          |       |      |      |       |       |       |       |       |       |       |       |      | 541.86 | 344.9 |    |    |     |  |   |

**Heat Treatment Codes:**

|                                       |                                      |                               |                                |                                 |                           |
|---------------------------------------|--------------------------------------|-------------------------------|--------------------------------|---------------------------------|---------------------------|
| <i>A</i> : Annealing                  | <i>AC</i> : Air Cooling              | <i>DA</i> : Double Aged       | <i>FT</i> : Furnace Treatment  | <i>N</i> : Normalizing          | <i>OQ</i> : Oil Quenched  |
| <i>Ph-3</i> : Precipitation Hardening | <i>SA</i> : Solution Annealed        | <i>SQ</i> : Solution Quenched | <i>ST</i> : Solution Treatment | <i>T</i> : Tempering            | <i>WC</i> : Water Cooling |
| <i>WO</i> : Water Quenched            | <i>WT</i> : Water Quenched/ Tempered |                               |                                | <i>NT</i> : Normalized/Tempered |                           |

| Part               | Material                    |
|--------------------|-----------------------------|
| BODY               | ASTM A216 WCB               |
| BOLTING            | ASTM A193 B7 / ASTM A194 2H |
| COVER              | ASTM A105                   |
| DISC-WEDGE-CLAPPER | ASTM A105 +13%Cr Overlay    |
| HINGE PIN          | ASTM A276 410               |
| SEAT RING          | ASTM A105 + Stl.6 Faced     |

Valves Tested per API598

We hereby certify, that the material described above complies with the order requirements.

**EC Declaration of Conformity:** JEV (Jiangyin Eastern Valve Co. Ltd.), Jiangsu Province, 214423, P.R. China

According to Annex VII of Pressure Equipment Directive 97/23/EC, hereby declare that the products detailed above are in compliance with PED 97/23/EC and have been manufactured in accordance with conformity assessment module B+D as approved Det Norske Veritas Inspection AB as Identification No 0575 (formally 0409). The products may cover Category I, II and III of pressure equipment. For the most specific risks of this equipment, safety and compliance with essential requirements of the Directive has been based on API 600, API598, ASME B16.34, ASME B16.5, ASME B16.10 latest edition.

Undersigned by Liu Jian Qing, representing Jiangyin Eastern Valve company Ltd. : 