

Road Two, Industrial Estate, Winsford, Cheshire. United Kingdom  
Phone: +44 (0)1606 552041 Fax: +44 (0)1606 558275

Customer Name: **ALSTOM POWER CENTRALES - BELFORT**  
Customer Inquiry: **EMAIL**  
Customer PO: **745117 P12 73077**  
Ultimate User: **MARITZA EAST 1 BULGARIA**  
Tag: **01/02 LBC20 AA011**  
Application: **START-UP CONTROL VALVE**

CV Inquiry: **DMS/060909/PM1**  
CV Job: **WH/00071**  
CV Job Ref: **CW32709**  
CV Serial#: **07CW32709/01-02**  
Item: **10**  
Quantity: **2**

**Description : 8 Inch, Class 600 STD, BW, A217 WC9, GS, CV700 160-5R**

FLUID: **Steam**

## SERVICE CONDITIONS

|         | FLOW<br>t/hr | P1<br>bar.a | P2<br>bar.a | Temp<br>deg C | Cv                 | Cv<br>(%) | Travel<br>(%) | Valve Outlet Vel.<br>ft/min                           | Noise<br>(dBA) | Velocity Head<br>bar.a |
|---------|--------------|-------------|-------------|---------------|--------------------|-----------|---------------|---|----------------|------------------------|
| COND 1  | 31.8         | 16.54       | 15.0        | 299.5         | 396.2              | 87%       | 83%           | 9373  | <70            | 0.30                   |
| COND 2  | 64.2         | 39.2        | 15.0        | 334.0         | 164.06             | 36%       | 37%           | 19420   | 76             | 3.73                   |
| COND 3  |              |             |             |               |                    |           |               |   |                |                        |
| COND 4  |              |             |             |               |                    |           |               |   |                |                        |
| COND 5  |              |             |             |               |                    |           |               |   |                |                        |
| SHUTOFF |              | 54          | 1.01        |               | Allowable Leakage: |           |               | Predicted noise level with Insulation (IEC 60534-8-3) |                | Insulation             |
| DESIGN  |              | 54          |             | 500           | ANSI FCI 70-2      | Class IV  |               |   |                | 3.0 Inch               |

## BODY AND BONNET

Style: **GS - General Service, Globe**  
 Size: **8 Inch**  
 ASME Class: **600 Standard**  
 Body Inlet: **Butt Weld, Sch 40 Per ANSI B16.25, Fig. 2b**  
 Body Outlet: **Butt Weld, Sch 40 Per ANSI B16.25, Fig. 2b**  
 Material: **ASTM A217 WC9**  
 Inlet Pipe: **8" Sch 8mm WT**  
 Outlet Pipe: **8" Sch 8mm WT**

Bonnet Type: **Bolted w/Extension & Bonnet Spacer**  
Packing Material: **Grafoil**  
Packing Hardware: **Stainless Steel**  
Options: **Single Packed**  
Service: **Continuous Modulation**

TRIM

Size: **8 Inch with 4,2 Turns**  
 Style: **RAVEN (Balanced with Piston rings)**  
 Flow Direction: **UNDER THE WEB**  
 Stem Diameter: **1.00 Inch**  
 Characteristic: **RAVEN**

Seat Type: **Metal**  
Trim Material: **400/70 SST & 300SST Disc Stack**  
Max. Cv Available: **457.5 @Max Travel of 4.5" (+/-1/8)**  
Min. Controllable Cv of Trim: **12.96**

## ACTUATOR

Actuator Model: **CV700 160-5R**

Actuator Mounting Style: **4 x Studded**

Action: **Reverse**      (Air Fail Closed)

Actuator Spring: **357580**

Handwheel: **None**

Spring Rate: 70

Frame Material: **Ductile Iron**

Max Stem Thrust Required to Close: **1422**

Air Pressure Available: **4.0** bar.g

Max Stem Thrust Required to Open: **730**

Air Pressure Required: **2.9 bar.g**

Bench Set: 11 - 32

**lbf/in****lbf****lbf**

**psi.g**

## ACCESSORIES

Positioner: **Siemens SIPART PS2, Single Acting**  
 Positioner Input Range: **4-20 mA**  
 Position FeedBack Module (4-20mA): **YES**  
 Alarm Module: **NO**  
 HART Module: **NO**

Airlock: **None**

Filter/Regulator: **Norgren B64G-4GK-AD3-RMN**

Qty: 1

Solenoid Valve: **ASCO (110V DC)**

Qty: 1

### De-Energise to Vent Actuator

Booster Relay: **RK 3000**

Qtv: 1

Additional Acc'y: **Pneumatic Isolation Valve**

Piping: 1/2" Stainless Steel Tubing (Hoke)

Limit Switches: **None**

## COMMENTS

Solenoid Tag Number 01/02 LBC20AA011 A  
 Stroking Speed Opening or Closing shall be less than 10 Seconds

|            |                 |                                       |             |
|------------|-----------------|---------------------------------------|-------------|
|            |                 |                                       |             |
| 06         | CMN             | Cond 2 flow changed. Tag No corrected | Oct-31-2007 |
| 05         | CMN             | Per Customer Comments                 | Aug-31-2007 |
| 04         | JRL             | Tag Number Change                     | Aug-23-2007 |
| 03         | IJW             | Released For Contract Use             | Jan-24-2007 |
| 02         | MW              | Revised For L2 Meeting                | Nov-20-2006 |
| 01         | MW              | Revised For RAVEN Trim                | Oct-25-2006 |
| 00         | MW              | Original Data Sheet                   | Aug-31-2006 |
| <b>Rev</b> | <b>Initials</b> | <b>Description</b>                    | <b>Date</b> |

|                    |                     |
|--------------------|---------------------|
| Program Rev Level: | UK-1-2 (WS Version) |
|--------------------|---------------------|



## RECOMMENDED SPARES LIST

|                |                                  |                    |                    |                 |                |
|----------------|----------------------------------|--------------------|--------------------|-----------------|----------------|
| CUSTOMER NAME  | ALSTOM POWER CENTRALES - BELFORT | VENDOR CONTRACT N° | WH/00071           | DATE            | 21-May-07      |
| PROJECT NAME   | MARITZA EAST 1 BULGARIA          | DOCUMENT N°        | RSUCW32709/01 & 02 | AFTERMARKET REF | DGE070206/RSLS |
| CUSTOMER PO N° | 745117 P12 73077                 | REV STATUS         | 0                  | CONTACT         | D.G.EDWARDS    |

| Qty Of Valves | 2 OFF | Description | GS Globe 8" ANSI 600 |
|---------------|-------|-------------|----------------------|
|---------------|-------|-------------|----------------------|

| Tag N°         | Serial N°       | Qty Installed Per Valve | CD Drawing N° | Drawing Item         | Description                                     | Part N°      | Notes | Recommended 2 Yrs Operation |
|----------------|-----------------|-------------------------|---------------|----------------------|---|--------------|-------|-----------------------------|
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 3,4,5,18,20,21,22,40 | Assy Trim, Raven 8" 4, 2T 64P Consisting Of #   | C99127AAQA   |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 3+                   | Plug #  | C33752-XMC   |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 4+                   | Trim Stack #                                    | C33829-AQA   |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 5+                   | Seat #  | C32826-XMC   |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 18+                  | Spirol Pin #                                    | U20-122      |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 20++                 | Trim Gasket #                                   | S269587      | 1     | 2                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 21+                  | Trim Spacer #                                   | C33836-XMC   |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 22+                  | Trim Gasket #                                   | S353698      | 1     | 2                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 2                       | CD32709       | 40++                 | Piston Ring #                                   | C30140-BPP   | 1     | 4                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 6+                   | Stem  | STM320328001 | 1     | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 9++                  | Bonnet Gasket                                   | S197477      | 1     | 2                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | CD32709       | 10+                  | Gland Washer                                    | S373408      |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | See Manual    | 14,30,32,33,35,36    | Actuator Spares Kit 160R-L 1" Consisting of ### | C80141-AQA   |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | See Manual    | 14+                  | Diaphragm # # #                                 | S195964BPP   |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | See Manual    | 32++                 | Gasket # # #                                    | S356999      |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | See Manual    | 33+                  | U Cup Seal # #                                  | S357800      |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | See Manual    | 35+                  | O Ring (Inner) # # #                            | S357801      |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | See Manual    | 36+                  | O Ring (Outer) # # #                            | S357802      |       | 1                           |
| 0102LBC20AA011 | CW32709/01 & 02 | 1                       | See Manual    | 30+                  | Bushing   | S356093      |       | 1                           |

### NOTES

### COMMENTS

Please note that items marked with a [ 1 ], must be changed during an inspection or maintenance overhaul it should be ensured that these items are available before commencing the inspection.  
 Do Not Re-Use