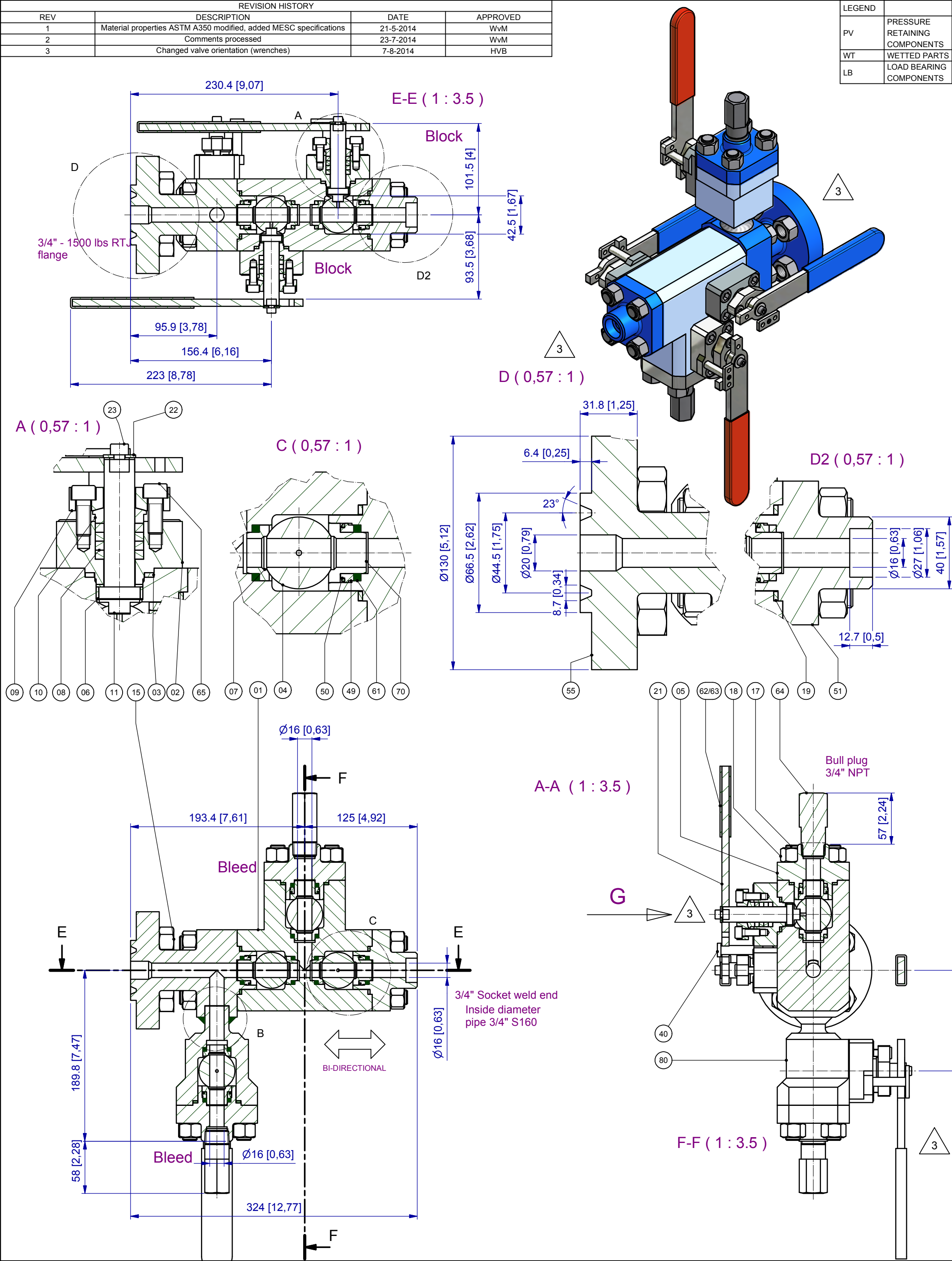


| REVISION HISTORY |                                                                   |           |          |
|------------------|-------------------------------------------------------------------|-----------|----------|
| REV              | DESCRIPTION                                                       | DATE      | APPROVED |
| 1                | Material properties ASTM A350 modified, added MESG specifications | 21-5-2014 | WvM      |
| 2                | Comments processed                                                | 23-7-2014 | WvM      |
| 3                | Changed valve orientation (wrenches)                              | 7-8-2014  | HVB      |



| LEGEND |                               |
|--------|-------------------------------|
| PV     | PRESSURE RETAINING COMPONENTS |
| WT     | WETTED PARTS                  |
| LB     | LOAD BEARING COMPONENTS       |

| PART LIST |                          |     |                                |                                 |    |    |    |            |          |              |            |  |
|-----------|--------------------------|-----|--------------------------------|---------------------------------|----|----|----|------------|----------|--------------|------------|--|
| ITEM      | PART                     | QTY | MATERIAL DESC                  | MATERIAL SPEC                   | PV | WT | LB | NACE       | HARDNESS | TEMP RANGE   | TEMP BASIS |  |
| 01        | BODY                     | 1   | LOW TEMP CARBON STEEL          | ASTM A350-LF2 Cl. 1             | X  | X  | X  | MAX 22 HRC |          | -46°C +363°C |            |  |
| 02        | BONNET                   | 4   | LOW TEMP CARBON STEEL          | ASTM A350-LF2 Cl. 1             | X  | X  | X  | MAX 22 HRC |          | -46°C +363°C |            |  |
| 03        | GASKET                   | 4   | 316/GRAPHITE                   |                                 |    | X  |    |            |          | -50°C +450°C |            |  |
| 04        | BALL                     | 4   | ALLOY825 CHROME CARBIDE COATED | B425 UNS N08825/77-302 S3       |    | X  | X  |            |          | -50°C +450°C |            |  |
| 05        | BODY                     | 2   | LOW TEMP CARBON STEEL          | ASTM A350-LF2 Cl. 1             | X  | X  | X  | MAX 22 HRC |          | -46°C +363°C |            |  |
| 06        | STEMRING                 | 4   | ALLOY 625                      |                                 |    | X  | X  |            |          | -50°C +450°C |            |  |
| 07        | SEAT                     | 4   | ALLOY825 CHROME CARBIDE COATED | B425 UNS N08825/77-302 S3       |    | X  | X  |            |          | -50°C +450°C |            |  |
| 08        | PACKING                  | 4x4 | SUPAGRAF PREMIER               | GRAPHITE                        |    | X  | X  |            |          | -50°C +425°C |            |  |
| 09        | GLANDFLANGE              | 4   | STAINLESS STEEL                | SS 316                          |    |    | X  | MAX 22 HRC |          | -50°C +450°C |            |  |
| 10        | GLANDBUSH                | 4   | ALLOY 825                      | B425 UNS N08825                 |    |    | X  |            |          | -50°C +450°C |            |  |
| 11        | STEM                     | 4   | ALLOY 825                      | B425 UNS N08825                 |    | X  | X  |            |          | -50°C +450°C |            |  |
| 13        | METRIC SOCKET HEAD SCREW | 4x4 | STAINLESS STEEL                | ASTM F738M / ISO 3506-1 (A4-70) |    |    | X  |            |          | -50°C +450°C |            |  |
| 15        | STUD                     | 4   | LOW ALLOY                      | ASTM A320-L7M                   |    |    | X  | MAX 22 HRC |          | -50°C +425°C |            |  |
| 17        | STUD                     | 3x4 | LOW ALLOY                      | ASTM A320-L7M                   |    |    | X  | MAX 22 HRC |          | -50°C +450°C |            |  |
| 18        | NUT                      | 4x4 | LOW ALLOY                      | A194-7M                         |    |    | X  | MAX 22 HRC |          | -50°C +450°C |            |  |
| 19        | GASKET                   | 4   | 316/GRAPHITE                   |                                 |    |    | X  |            |          | -50°C +450°C |            |  |
| 21        | WRENCH                   | 4   | STAINLESS STEEL                | A182-F316                       |    |    |    |            |          | -50°C +450°C |            |  |
| 22        | WASHER                   | 4   | STAINLESS STEEL                | SS 304 (A2)                     |    |    |    |            |          | -46°C +450°C |            |  |
| 23        | METRIC SOCKET HEAD SCREW | 4   | STAINLESS STEEL A4-70          | ASTM F738M / ISO 3506-1 (A4-70) |    |    |    |            |          | -50°C +450°C |            |  |
| 40        | ENDSTOP                  | 4   | STAINLESS STEEL                | A182-F316                       |    |    |    |            |          | -50°C +450°C |            |  |
| 49        | SUPPORT RING             | 4   | ALLOY 825                      | B425-UNS N08825                 |    | X  |    |            |          | -50°C +450°C |            |  |
| 50        | WAVE SPRING              | 4   | INCONEL 718                    |                                 |    | X  |    |            |          | -50°C +450°C |            |  |
| 51        | BODY                     | 1   | LOW TEMP CARBON STEEL          | ASTM A350-LF2 Cl. 1             | X  | X  | X  | MAX 22 HRC |          | -46°C +363°C |            |  |
| 55        | BODY                     | 1   | LOW TEMP CARBON STEEL          | ASTM A350-LF2 Cl. 1             | X  | X  | X  | MAX 22 HRC |          | -46°C +363°C |            |  |
| 61        | SEAT SEAL                | 8   | GRAPHITE                       |                                 |    | X  |    |            |          | -50°C +450°C |            |  |
| 62        | SLEEVE RED               | 2   | HIGH TEMP COATING              |                                 |    |    |    |            |          |              |            |  |
| 63        | SLEEVE BLUE              | 2   | HIGH TEMP COATING              |                                 |    |    |    |            |          |              |            |  |
| 64        | PLUG 3/4" NPT            | 2   | LOW TEMP CARBON STEEL          | ASTM A350-LF2 Cl. 1             | X  | X  | X  | MAX 22 HRC |          | -46°C +363°C |            |  |
| 65        | METRIC SOCKET HEAD SCREW | 8   | STAINLESS STEEL A4-70          | ASTM F738M / ISO 3506-1 (A4-70) |    |    | X  | MAX 22 HRC |          | -50°C +450°C |            |  |
| 70        | SEAT                     | 4   | ALLOY825 CHROME CARBIDE COATED | B425 UNS N08825/77-302 S3       |    | X  | X  |            |          | -50°C +450°C |            |  |
| 80        | BODY                     | 1   | LOW TEMP CARBON STEEL          | ASTM A350-LF2 Cl. 1             | X  | X  | X  | MAX 22 HRC |          | -46°C +363°C |            |  |

WEIGHT:  
N/A (64,4 lbs)

| DESIGN acc.to VBAF-2000          |                    |          |
|----------------------------------|--------------------|----------|
| PRESS. 256Bar                    | TEMP. -50 to 363°C |          |
| PRESSURE TEST acc.to 77/130-2012 |                    |          |
| BODY hydr.                       | SEAT hydr.         | SEAT air |
| 384 Bar                          | 282 Bar            | 6-7 Bar  |

TECHNICAL NOTES:  
A) BREAK TORQUE: 34Nm, MAX STEM :100Nm  
B) HYDROTEST PRESSURE: 385 BAR  
C) LAG HEIGHT ACC. TO 77/200  
D) GLAND BOLTING THREAD: M10 TORQUE: 24Nm  
E) BODY BOLTING THREAD: M16 TORQUE: 75Nm

DESIGN NOTES:  
1) DESIGN ACC. TO ISO 14313/API 6D/ EEMUA 182  
2) DESIGN SPEC. PRESSURE RATING: ASME CL 1500  
3) TEMP REQUIREMENT: -50°C TO 363°C  
4) SOUR STEAM SERVICE: NACE MR-01-75 / ISO 15156  
5) FULL BORE  
6) END TO END ACC. MAN. STANDARD  
7) MAT. BODY: CARBON STEEL LOW TEMP.  
8) MAT TRIM: ALLOY 825 / CHROMIUM CARBIDE COATING  
9) IMPACT TEST BODY MATERIAL: -50°C / 21J  
10) INHERENTLY FIRE SAFE DESIGN ALL METAL CONSTRUCTION  
11) ANTI BLOW OUT STEM

ADDITIONAL REQUIREMENTS:  
MESG SPE 77/130 2012  
MESG SPE 77/170 2012  
MESG SPE 77/200 2012  
MESG SPE 77/300 2012  
MESG SPE 77/300A 2013  
MESG SPE 77/300B 2013  
MESG SPE 77/302 2012  
MESG SPE 77/303 2012  
MESG SPE 77/312 2012  
MESG SPE 85/203 2012  
MESG SPE 85/204 2012  
INSPECTION CAT.: IC-I

|                                                                                                                 |     |           |                                |  |
|-----------------------------------------------------------------------------------------------------------------|-----|-----------|--------------------------------|--|
| Size/Description/Rating/Ends:<br><b>Double Block &amp; Bleed DN20 - 1500 lbs<br/>RTJ flanged / SW / 3/4"NPT</b> |     |           | Drawing No:<br><b>57289-00</b> |  |
| Design:                                                                                                         | WvM | 9-5-2014  | Scale: 0,29:1                  |  |
| Approved:                                                                                                       | JHV | 21-5-2014 | Revision: 3                    |  |
| <b>MERWEDE</b><br>VALVES<br>HARDINXVELD - GIESSENDAM<br>THE NETHERLANDS                                         |     |           | <b>A2</b>                      |  |