Valves and Measurement

257 Holloway Blvd.
Ville Platte, La 70586
Tel +1 337 363 7500
Fax +1 337 363 9701

CAMERON
A Schlumberger Company

6/5/2017

CERTIFICATE OF TESTS AND COMPLIANCE

CUSTOMER: CI ACTUATION

CUST P/O NO.: 585952

CAMERON SALES ORDER NO.: 3474537

CAMERON S/O ITEM NO.: 600

VALVE PART NO.: CAM-BV

VALVE TRIM: 216

☑ ***CAMERON*** ☐ ***TOM WHEATLEY*** ☐ ***GROVE*** ☐ ***WKM*** ☐ ***G4N*** ☐ ***TK*** ☐ ***TXT***

VALVE SIZE/PRESSURE 4 X 4 " 300 # WE x WE

VALVE SERIAL NUMBER(S):

120969711	-1-2-3-4-5-6

TEST PRESSURES (PSI):

SHELL TEST: 1125 ***SEAT TEST:*** 825 ***AIR TEST:***

SPECIAL TEST (IF APPLICABLE):

DOUBLE BLOCK AND BLEED TEST: 825

Cameron, a Schlumberger company, certifies that the above listed valve(s) complies with all requirements of product specification API 6D and has/have successfully passed all applicable test in accordance with requirements thereof, including additional customer requirements agreed upon in the above indicated sales order. These results, as retained within our quality management system, have been verified and to the best of our knowledge are true and correct.

Robin Laughlin
Quality Representative
Cameron, a Schlumberger company

257 Holloway Blvd.
Ville Platte, LA 70586-9778
Tel 337-363-7500
Fax 337-363-7516

6/5/2017

CERTIFICATE OF COMPLIANCE

CUSTOMER: CI ACTUATION

CUST. P/O NO.: 585952

CAMERON SALES ORDER NO.: 3474537

CAMERON S/O ITEM NO.: 600

VALVE PART NO.: CAM-BV

VALVE TRIM: 216

VALVE SIZE/PRESSURE: 4 X 4 " 300 # WE x WE

VALVE SERIAL NUMBER(S):

TEMP. RATING: -50 To+ 250

120969711-1-2-3-4-5-6

Cameron certifies that the above listed valve (s) comply with and/or have been tested to, all the applicable provisions of API 6D, the purchase order descriptions and specifications and the pre-qualified material of NACE MR0175 / ISO 15156. Regarding NACE, this certification does not imply or warrant the application of the product in compliance with NACE MR0175 / ISO 15156 service conditions in which the customer/user installs the product.

Robin Laughlin
Quality Representative
Cameron - Valves and Measurement

SP-000736-09

Ball Valve 2"- 12" Assembly Set-Out Report

ID 35809

Production Order Number: 120969711 **Qty** 6 **Assy Part no:** CAM-BV **Rev** 01

Add Ons

ped	lockdev	c02	pups	ext	wormshaft ext	coat	lifteyes	low_temp
☐	☑	☐	☐	☐	☐	☐	☐	☐

turn/grind	customer_witness	drain	hot	vent/seal	block
☐	☐	☐	☐	☐	☐

Valve

ut	mag	dye
☐	☐	☐

Size 4x4 WEXWE **API WP Class** 300 **SP-** 586-10

Sub-Assy Part no 508070-04-06-19 **rev** 03 **Set-out Date** 5/30/2017

Valve SN	Sub Assy SN	EC A SN	EC A HN	EC B SN	EC B HN
1	120941776-6		16/70562		16/70562
2	120941776-1		16/70562		16/70562
3	120830273-13		16/70562		16/70562
4	120830273-12		16/70562		16/70562
5	120830273-9		16/70562		16/70562
6	120830273-14		16/70562		16/70562

Forging A EC PN: 510303-04-10-51 **End Connector:** 510303-04-10-51 **rev** 04

Forging B EC PN: 510303-04-10-51 **End Connector:** 510303-04-10-51 **rev** 04

Comments: T216 6/13/17

Pup-Pipes:

Setout performed by: SCOTT JOHNSON **Stamp / Man number:** 27620

Cleared by: BLafleur **Date cleared:** 5/31/2017

Material clearance:

ID 7891

Ball Valve 2"-12"Sub Set-Out Reports

Form E-VP-1058C

Assy Part No: 508070-04-06-19 Rev: 03 Work order no: 120830273 Size : 4

Trim: Valve : Qty : 20 Sp(s) :

Sub-Assy Serial NO.	Upper Shell/Body P/N 2014657-03-95 Rev 03		Lower Shell/Body P/N 2014658-03-95 Rev 03		Plug/Ball P/N 561303-04-20-26 Rev 01		Comments
	Serial No	Heat No	Serial No	Heat No	Serial No	Heat No	
1	s/n 4510454710-10-124	hn HN24935	s/n 4510460096-10-83	hn 24935	s/n 4510979883-	h/n 429587	SV 1-15
2	s/n 4510454710-10-182	hn HN24935	s/n 4510460096-10-18	hn 24935	s/n 4510979883-	h/n 429587	
3	s/n 4510454710-10-146	hn HN24935	s/n 4510460096-10-12	hn 24935	s/n 4510979883-	h/n 429587	
4	s/n 4510454710-10-179	hn HN24935	s/n 4510460096-10-59	hn 24935	s/n 4510979883-	h/n 429587	
5	s/n 4510454710-10-109	hn HN24935	s/n 4510460096-10-102	hn 24935	s/n 4510979883-	h/n 429587	
6	s/n 4510454710-10-99	hn HN24935	s/n 4510460096-10-54	hn 24935	s/n 4510979883-	h/n 429587	
7	s/n 4510454710-10-30	hn HN24935	s/n 4510460096-10-02	hn 24935	s/n 4510979883-	h/n 429587	
8	s/n 4510454710-10-134	hn HN24935	s/n 4510460096-10-64	hn 24935	s/n 4510979883-	h/n 429587	
9	s/n 4510454710-10-64	hn HN24935	s/n 4510460096-10-44	hn 24935	s/n 4510979883-	h/n 429587	
10	s/n 4510454710-10-43	hn HN24935	s/n 4510460096-10-69	hn 24935	s/n 4510979883-	h/n 429587	
11	s/n 4510454710-10-89	hn HN24935	s/n 4510460096-10-58	hn 24935	s/n 4510979883-	h/n 429587	
12	s/n 4510454710-10-115	hn HN24935	s/n 4510460096-10-08	hn 24935	s/n 4510979883-	h/n 429587	
13	s/n 4510454710-10-72	hn HN24935	s/n 4510460096-10-98	hn 24935	s/n 4510979883-	h/n 429587	
14	s/n 4510454710-10-80	hn HN24935	s/n 4510460096-10-106	hn 24935	s/n 4510979883-	h/n 429587	
15	s/n 4510454710-10-107	hn HN24935	s/n 4510460096-10-56	hn 24935	s/n 4510979883-	h/n 429587	
16	s/n 4510454710-10-67	hn HN24935	s/n 4510460096-10-22	hn 24935	s/n 4510979883-	h/n 429587	

Forging Up Shell Part no: 2014657-03-95 Forging Plug Part no: 561303-04-20-26

Forging Lw Shell Part no: 2014658-03-95

Comments:

Employee Date completed: 9/21/2016 QA employee lafleurb Date approved 9/28/2016

ID 7891

Ball Valve 2"-12"Sub Set-Out Reports

Form E-VP-1058C

Assy Part No: 508070-04-06-19 Rev: 03 Work order no: 120830273 Size : 4

Trim: Valve : Qty : 20 Sp(s) :

Sub-Assy Serial NO.	Upper Shell/Body P/N 2014657-03-95 Rev 03		Lower Shell/Body P/N 2014658-03-95 Rev 03		Plug/Ball P/N 561303-04-20-26 Rev 01		Comments
	Serial No	Heat No	Serial No	Heat No	Serial No	Heat No	
17	s/n 4510454710-10-40	hn HN24935	s/n 4510460096-10-24	hn 24935	s/n 4510979883-	h/n 429587	
18	s/n 4510454710-10-112	hn HN24935	s/n 4510460096-10-93	hn 24935	s/n 4510979883-	h/n 429587	
19	s/n 4510454710-10-158	hn HN24935	s/n 4510460096-10-74	hn 24935	s/n 4510979883-	h/n 429587	
20	s/n 4510454710-10-16A	hn HN24935	s/n 4510460096-10-81	hn 24935	s/n 4510979883-	h/n 429587	

Forging Up Shell Part no: 2014657-03-95 Forging Plug Part no: 561303-04-20-26

Forging Lw Shell Part no: 2014658-03-95

Comments:

Employee Date completed: 9/21/2016 QA employee lafleurb Date approved 9/28/2016

ID 8213

Ball Valve 2"-12"Sub Set-Out Reports

Form E-VP-1058C

Assy Part No: 508070-04-06-19 **Rev:** 03 **Work order no:** 120941776 **Size :** 4"

Trim: **Valve :** **Qty :** 20 **Sp(s) :**

Sub-Assy Serial NO.	Upper Shell/Body P/N 2014657-03-95 Rev 03		Lower Shell/Body P/N 2014658-03-95 Rev 03		Plug/Ball P/N 561303-04-20-26 Rev 01		Comments
	Serial No	Heat No	Serial No	Heat No	Serial No	Heat No	
1	s/n 4511187306-10-64	hn 28985	s/n 4511171381-10-177	hn 28985	s/n 4511169945	h/n 429587	AS 1-20
2	s/n 4511187306-10-37	hn 28985	s/n 4511171381-10-122	hn 28985	s/n 4511169945-	h/n 429587	
3	s/n 4511187306-10-63	hn 28985	s/n 4511171381-10-132	hn 28985	s/n 4511169945-	h/n 429587	
4	s/n 4511187306-10-44	hn 28985	s/n 4511171381-10-143	hn 28985	s/n 4511169945-	h/n 429587	
5	s/n 4511187306-10-51	hn 28985	s/n 4511171381-10-142	hn 28985	s/n 4511169945-	h/n 429587	
6	s/n 4511187306-10-38	hn 28985	s/n 4511171381-10-120	hn 28985	s/n 4511169945-	h/n 429587	
7	s/n 4511187306-10-67	hn 28985	s/n 4511171381-10-173	hn 28985	s/n 4511169945-	h/n 429587	
8	s/n 4511187306-10-73	hn 28985	s/n 4511171381-10-139	hn 28985	s/n 4511169945-	h/n 429587	
9	s/n 4511187306-10-62	hn 28985	s/n 4511171381-10-123	hn 28985	s/n 4511169945-	h/n 429587	
10	s/n 4511187306-10-39	hn 28985	s/n 4511171381-10-124	hn 28985	s/n 4511169945-	h/n 429587	
11	s/n 4511187306-10-55	hn 28985	s/n 4511171381-10-162	hn 28985	s/n 4511169945-	h/n 429587	
12	s/n 4511187306-10-52	hn 28985	s/n 4511171381-10-147	hn 28985	s/n 4511169945-	h/n 429587	
13	s/n 4511187306-10-57	hn 28985	s/n 4511171381-10-115	hn 28985	s/n 4511169945-	h/n 429587	
14	s/n 4511187306-10-56	hn 28985	s/n 4511171381-10-116	hn 28985	s/n 4511169945-	h/n 429587	
15	s/n 4511187306-10-60	hn 28985	s/n 4511171381-10-119	hn 28985	s/n 4511169945-	h/n 429587	
16	s/n 4511187306-10-75	hn 28985	s/n 4511171381-10-145	hn 28985	s/n 4511169945-	h/n 429587	

Forging Up Shell Part no: 2014657-03-95 **Forging Plug Part no:** 561300-04-20-26

Forging Lw Shell Part no: 2014658-03-95

Comments:

Employee **Date completed:** 5/1/2017 **QA employee** manuelpa **Date approved** 5/30/2017

ID 8213

Ball Valve 2"-12"Sub Set-Out Reports

Form E-VP-1058C

Assy Part No: 508070-04-06-19 **Rev:** 03 **Work order no:** 120941776 **Size :** 4"

Trim: **Valve :** **Qty :** 20 **Sp(s) :**

Sub-Assy Serial NO.	Upper Shell/Body P/N 2014657-03-95 Rev 03		Lower Shell/Body P/N 2014658-03-95 Rev 03		Plug/Ball P/N 561303-04-20-26 Rev 01		Comments
	Serial No	Heat No	Serial No	Heat No	Serial No	Heat No	
17	s/n 4511187306-10-40	hn 28985	s/n 4511171381-10-156	hn 28985	s/n 4511169945-	h/n 429587	
18	s/n 4511187306-10-79	hn 28985	s/n 4511171381-10-133	hn 28985	s/n 4511169945-	h/n 429587	
19	s/n 4511187306-10-72	hn 28985	s/n 4511171381-10-178	hn 28985	s/n 4511169945-	h/n 429587	
20	s/n 4511187306-10-02	hn 28985	s/n 4511171381-10-180	hn 28985	s/n 4511169945-	h/n 429587	

Forging Up Shell Part no: 2014657-03-95 **Forging Plug Part no:** 561300-04-20-26

Forging Lw Shell Part no: 2014658-03-95

Comments:

Employee **Date completed:** 5/1/2017 **QA employee** manuelpa **Date approved** 5/30/2017

INSPECTION TEST CERTIFICATE

UNI EN 10204 3.1

No.130/2017/2

Customer	CAM ENGINEERED VAL - VILLE PLATTE CAMERON				
Purchase Order	4511400690	Our Order	17/170085	Material	A350 LF2 CL.1
Specification	MS-021239-02-02 R.01, MS-021000-01 Rev.10			Standard	ASTM
Supply condition	Forged, Normalized, Finished to drawing				

ARTICLE

Pos.	Qty	Description	Heat no
30	40,00 pcs	E/C 4" API 150/600 WE B/M T28 P/N 510303-04-10-51 R.03 Dwg. X-071203-04-10 R.01 Seat Pck BX-001399-04-02 R.04	16/70562

HEAT TREATMENT

Type	Heating	Temperature °C	Holding Time h	Cooling
Normalized		930	1	Air

CHEMICAL ANALYSIS (%)

Steel Maker	Riva Acciaio	Heat nr.	16/70562	Method of Manufacture	EAF

C % 0.23 max	Mn % 0.6-1.35	Si % 0.15-0.3	P % 0.025 max	S % 0.02 max	Ni % 0.4 max	Cr % 0.3 max	Mo % 0.12 max	Cu % 0.4 max	Al %	Sn %	V % 0.03 max	T %
0,1900	1,0500	0,1900	0,0150	0,0100	0,0600	0,1000	0,0100	0,1800	0,0250	0,0090	0,0020	

Nb % 0.02 max	Co %	Ti %	Ca %	Sb %	Pb %	As %	PRE %	C.Eq. % 0.43 max	Cu+Ni+Cr+V+Mo % 1 max	Cr+Mo % 0.32 max
0,0030		0,0160						0,4000	0,3520	0,1100

MECHANICAL PROPERTIES

Obtained on part: No — Obtained on QTC: Yes, heat treated with parts

Test Nr.	Dia mm	Area mm2	Lenght mm	Direction L

Temp	Yield point	Tensile Test	Elongation	Reduction	Impact Test			
°C	Rp 0,2% (N/mm2) 275 min	R (N/mm2) 485-655	A (%) 22 min	Z (%) 30 min	Type KV	Temp (°C) -46	Dir. L	Values J 27 min A,21 min V
RT	339,0	525,0	31,4	56,4	KV	-46	L	40-44-49
					Lateral expansion mm			

Hardness Test		
Type	Values	On QTC or Part
HB	143-197	
HB	155,0	On QTC

Grain size		NCR	

Notes

We hereby certify that the results reported on this test report represent the actual attributes of the material furnished and indicate full compliance with all applicable specifications and contract requirements. This is a EN 10204 Type 3.1 certificate. COVIS s.r.l is a ISO 9001:2008 certified facility, ref. certificate registration # 44 100126915. CERTIFIED TO MEET EN10204/3.1
Visual and dimensional check performed 100%: conforming. These components are verified to be free of radioactive contamination.
Heat treatment performed using furnaces calibrated in accordance with API 6D 24th ed., Annex F or API 6A Annex M.
Material in acc with NACE MR-01-75 last edition. Charpy impact specimen size: 10x10x55 mm.

APPROVED
By 162333 at 4:18 pm, 4/13/17

Conforming to the Original Certificate nr.	34773 RA - 2160950 FR - 5933 S	MS-021239-02-02 Rev 01

Date	COVIS S.R.L.	COVIS S.R.L.	Inspectors
08/03/2017	Prepared by: COVIS S.R.L. QUALITY CONTROL LINDA NICOLI	Approved by: COVIS S.R.L. QUALITY CONTROL	

INSPECTION TEST CERTIFICATE

UNI EN 10204 3.1

No.342/2016/1

APPROVED
By 176747 at 3:58 pm, 9/13/16

Customer	CAM ENGINEERED VAL - VILLE PLATTE CAMERON				
Purchase Order	4510979883	Our Order	15/150475	Material	AISI 4130
Specification	MS-013026 Rev.01			Standard	AISI
Supply condition	Forged, Q+T, Finish machined to dwg., ENP				

ARTICLE

Pos.	Qty	Description	Heat no
10	100,00 pz	PLUG 4" API 150-600/2000 B/M; 1.5" Stem P/N 561303-04-20-26 Rev.01 Dwg. X-070333-04-20 R.06	429587

HEAT TREATMENT

Type	Heating	Temperature °C	Holding Time h	Cooling
Quenched				
Tempered				

CHEMICAL ANALYSIS (%)

Steel Maker	Acciaierie Bertoli Safau	Heat nr.	429587	Method of Manufacture	

C % 0.27-0.33	Mn % 0.4-1	Si % 0.15-0.3	P % 0.025 max	S % 0.025 max	Ni % 0.5 max	Cr % 0.8-1.15	Mo % 0.15-0.5	Cu % 0.35 max	Al %	Sn %	V % 0.05 max	T %
0,3000	0,4800	0,2400	0,0070	0,0020	0,1500	1,0100	0,2000	0,2100			0,0050	

Nb %	Co %	Ti %	Ca %	Sb %	Pb %	As %	PRE %	C.Eq. %		

MECHANICAL PROPERTIES

Obtained on part: No

Obtained on QTC: Yes, heat treated with parts

Test Nr.	Dia mm	Area mm2	Lenght mm	Direction L

Temp	Yield point	Tensile Test	Elongation	Reduction	Impact Test			
°C	Rp 0,2% (N/mm2) 517 min	R (N/mm2) 690 min	A (%) 18 min	Z (%) 35 min	Type KV	Temp (°C) -46	Dir. L	Values J 27min A,21 min V
RT	721,0	780,0	24,4	71,0	KV	-46	L	58-66-62
					Lateral expansion mm			

Hardness Test		
Type	Values 207-235	On QTC or Part
HB	217,0	On QTC

Grain size		NCR	

Notes

We hereby certify that the results reported on this test report represent the actual attributes of the material furnished and indicate full compliance with all applicable specifications and contract requirements. This is a EN 10204 Type 3.1 certificate. COVIS s.r.l is a ISO 9001:2008 certified facility, ref. certificate registration # 44 100126915.
CERTIFIED TO MEET EN10204/3.1
Visual and dimensional check performed 100%: conforming
These components are verified to be free of radioactive contamination.

Conforming to the Original Certificate nr.	2160097FR-1422/2BTT-128840/1ABS

Date	COVIS S.R.L.	COVIS S.R.L.	Inspectors
22/07/2016	Prepared by: COVIS S.R.L. QUALITY CONTROL	Approved by: COVIS S.R.L. QUALITY CONTROL ENG. MIRKO SCHIAVO	

SANKALP ENGINEERING & SERVICES PVT. LTD.
Gat No. 1093/l & 1093/l, Chakan Shikrapur Road, Karandi,
T:- Shirur, Dist:- Pune.412208
www.sankalpenggservices.com
sales@sesglobal.in

Material Test Certificate EN 10204 Type 3.1

Certificate No. SES/CAM/MCC/ 015/067

Date June 1, 2015

Customer name & address: CAM ENGINEERED VAL - VILLE PLATTE

Die No:	1357	**Heat Code**	B5C018	**Qty supplied**	200 Nos
Product details:	LOWER BODY 4" CLASS 150-600 WITH 1/2" NPT DRAIN PORT	**Heat No.**	24935	**Material grade:**	ASTM A350 Gr LF2 Class 1
Part No.	2014658-03-95 Rev. 01	**PO No**	4510460096	**Line Item**	00010
Melting Practice	MBF/EAF/LF/VD/CCP/RM	**Cam. Std.**	MS-007039-05 Rev.03	**Reduction Ratio**	10.80:1

Product supply condition: Forged , Heat Treated & Machined

APPROVED
By 96766 at 3:56 pm, 6/18/15

MS-007039-05 REV.03

Chemistry

		C%	Mn%	Si%	P%	S%	Cr%	Mo%	Ni %	Nb%	V%	Cu%	C.E.
Required	Min.	-	-	0.15	-	-	-	-	-	-	-	-	-
	Max	0.21	1.35	0.30	0.030	0.030	0.30	0.12	0.40	0.02	0.05	0.40	0.43
Observed		0.17	1.24	0.25	0.012	0.005	0.018	0.002	0.12	0.0002	0.002	0.01	0.41

Heat treatment Process details

Procedure	-	Quality Plan	-	HT Lot No .	SF - 2803	QTC Type	Sacrificial
Heat Treatment Furnace	Coutinuous Hardening & Tempering Furnace			Temperature Monitoring Method		A	

Heat Treatment : Quenched & Tempered

		Austenizing	Soaking	Quenching	Quenchant Temperature	Tempering	Soaking	Cooling
Required	Min.	-	-	Water		-	-	Air cooling
	Max.	-				-		
Actual		930°C	2 hours	Water	Before = 38°C After = 39°C	680°C	3 hours	Air cooling

Mechanical Properties

	T.S Mpa	Y.S Mpa	RA%	Elongation %	Charpy Impact Test at -46°C in longitudinal direction- Size- 10 X 10 X 55 mm				QTC Hardness HB	Part Hardness HB	Remarks
Required	483 - 559	277 Min	30% Min	22% Min	Min. Avg. 27J		Min. Individual 21J		197 HB Max.	197 HB Max.	Accepted
Observed	520.59	371.92	72.16	37.96	250	260	266	258.66J	156 HB	156-170 HB	

NDE Testing

1) MPI tested as per ASTM E709 & found ok

2) The products supplied are tested for radio active contamination. & found free from radioactive elements.

Conclusion and remarks:The batch complies with the Specification requirements & hence accepted.

Prepared by :

NAME : Sandeep

SIGN :

DATE : June 1, 2015

DEPARTMENT : Q.A.

SANKALP ENGG. SERVICES PVT. LTD. QA PUNE-411208

Approved by :

NAME : M.M.KSHIRSAGAR

SIGN :

DATE : June 1, 2015

DEPARTMENT : Q.A.

SANKALP ENGINEERING & SERVICES PVT. LTD. Gat No. 1093/I & 1093/I, Chakan Shikrapur Road, Karandi, T:- Shirur, Dist:- Pune.412208 www.sankalpenggservices.com sales@sesglobal.in	**Material Test Certificate EN 10204 Type 3.1**	**Certificate No. SES/CAM/MCC/ 015/068**	**Date June 1, 2015**

Customer name & address: CAM ENGINEERED VAL - VILLE PLATTE

Die No:	1356	**Heat Code**	B5C018	**Qty supplied**	200 Nos
Product details:	UPPER BODY 4"ANSI150-600T31-FINIS	**Heat No.**	24935	**Material grade:**	ASTM A350 Gr LF2 Class 1
Part No.	2014657-03-95 Rev. 01	**PO No**	4510454710	**Line Item**	00010
Melting Practice	MBF/EAF/LF/VD/CCP/RM	**Cam. Std.**	MS-007039-05 Rev.03	**Reduction Ratio**	10.80:1

Product supply condition: Forged , Heat Treated & Machined

APPROVED
By 96766 at 3:40 pm, 6/18/15

MS-007039-05 REV.03

Chemistry

		C%	Mn%	Si%	P%	S%	Cr%	Mo%	Ni %	Nb%	V%	Cu%	C.E.	
Required	Min.	-	-	0.15	-	-	-	-	-	-	-	-	-	
	Max	0.21	1.35	0.30	0.030	0.030	0.30	0.12	0.40	0.02	0.05	0.40	0.43	
Observed		0.17	1.24	0.25	0.012	0.005	0.018	0.002	0.12	0.0002	0.002	0.01	0.41	

Heat treatment Process details

Procedure	-	Quality Plan	-	HT Lot No .	SF - 2803	QTC Type	Sacrificial
Heat Treatment Furnace	Coutinuous Hardening & Tempering Furnace			Temperature Monitoring Method		A	

Heat Treatment : Quenched & Tempered

		Austenizing	Soaking	Quenching	Quenchant Temperature	Tempering	Soaking	Cooling
Required	Min.	-	-	Water		-	-	Air cooling
	Max.	-				-		
Actual		930°C	2 hours	Water	Before = 35°C After = 39°C	680°C	3 hours	Air cooling

Mechanical Properties

	T.S Mpa	Y.S Mpa	RA%	Elongation %	Charpy Impact Test at -46°C in longitudinal direction- Size- 10 X 10 X 55 mm				QTC Hardness HB	Part Hardness HB	Remarks
Required	483 - 559	277 Min	30% Min	22% Min	Min. Avg. 27J		Min. Individual 21J		197 HB Max.	197 HB Max.	Accepted
Observed	520.59	371.92	72.16	37.96	250	260	266	258.66J	156HB	156-170 HB	

NDE Testing

1) MPI tested as per ASTM E709 & found ok

2) The products supplied are tested for radio active contamination. & found free from radioactive elements.

Conclusion and remarks:The batch complies with the Specification requirements & hence accepted.

Prepared by :

NAME : SANDEEP

SIGN :

DATE : June 1, 2015

DEPARTMENT : Q.A.

QA

Approved by :

NAME : M.M.KSHIRSAGAR

SIGN :

DATE : June 1, 2015

DEPARTMENT : Q.A.

CAMERON
A Schlumberger Company

Testing Report

257 Holloway Boulevard
Ville Platte, LA 70586-9778
Tel: 337-363-7500
Fax: 337-363-7516

Production Order:	120969711	Serial Number:	1
Part Number:	CAM-BV Rev: 01	Valve Type:	T31
End Connections:	WE x WE	Valve Size:	4.00
Bore Type:	Full	ANSI Class:	300
Test Date:	6/1/2017		
Test Type:	Test	Overall Valve Length:	14.0000 inches
Seat Type:	DBB	Overall Result:	Pass
Comments:		Tested With Pup Pipe:	No
		Tested With Extension:	No

Test Procedure:	bx-1200-8-95	Rev:	12	Test Procedure:	Rev:
Test Procedure:		Rev:		Test Procedure:	Rev:
Test Procedure:		Rev:		Test Procedure:	Rev:
Test Procedure:		Rev:		Test Procedure:	Rev:
Test Procedure:		Rev:		Test Procedure:	Rev:

Hydro Test

Tester: 27719 - Salvator Difulco Workcenter: 75292 - Cam 2-6

Gage #:	bv-12060	Due Date:	8/6/2017
Gage #:		Due Date:	
Gage #:		Due Date:	

Test Medium: Water, Glycol, Rust Inhibitor

Low Pressure Body:	1	Min @	40/80	PSI	Result:	Pass
Hydro Body:	2	Min @	1125	PSI	Result:	Pass
Seat A:	2	Min @	825	PSI	Result:	Pass
Seat B:	2	Min @	825	PSI	Result:	Pass
DoubleBlock:	2	Min @	825	PSI	Result:	Pass

Are Charts Required? No

Is Cavity Relief Test Required?	No
Is Torque Test Required?	No
Is Air Test Required?	No
Is Nitrogen Body Test Required?	No
Is Nitrogen Seat Test Required?	No
Is Drift Test Required?	No
Is Function Test Required:	No

Shell Test – No visible leakage permitted.
Seat Leakage for soft seated valves – No visible leakage permitted.
Seat leakage for metal seated valves shall be as agreed upon with the customer, reference the applicable test procedure.

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A Schlumberger Company

Testing Report

257 Holloway Boulevard
Ville Platte, LA 70586-9778
Tel: 337-363-7500
Fax: 337-363-7516

Production Order:	120969711	Serial Number:	2
Part Number:	CAM-BV Rev: 01	Valve Type:	T31
End Connections:	WE x WE	Valve Size:	4.00
Bore Type:	Full	ANSI Class:	300
Test Date:	6/1/2017		
Test Type:	Test	Overall Valve Length:	14.0000 inches
Seat Type:	DBB	Overall Result:	Pass
Comments:		Tested With Pup Pipe:	No
		Tested With Extension:	No

Test Procedure:	bx-1200-8-95	Rev: 12	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:

Hydro Test

Tester: 27719 - Salvator Difulco Workcenter: 75292 - Cam 2-6

Gage #:	bv-12060	Due Date:	8/6/2017
Gage #:		Due Date:	
Gage #:		Due Date:	

Test Medium: Water, Glycol, Rust Inhibitor

Low Pressure Body:	1	Min @	40/80	PSI	Result:	Pass
Hydro Body:	2	Min @	1125	PSI	Result:	Pass
Seat A:	2	Min @	825	PSI	Result:	Pass
Seat B:	2	Min @	825	PSI	Result:	Pass
DoubleBlock:	2	Min @	825	PSI	Result:	Pass

Are Charts Required? No

Is Cavity Relief Test Required?	No
Is Torque Test Required?	No
Is Air Test Required?	No
Is Nitrogen Body Test Required?	No
Is Nitrogen Seat Test Required?	No
Is Drift Test Required?	No
Is Function Test Required:	No

Shell Test – No visible leakage permitted.
Seat Leakage for soft seated valves – No visible leakage permitted.
Seat leakage for metal seated valves shall be as agreed upon with the customer, reference the applicable test procedure.

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A Schlumberger Company

Testing Report

257 Holloway Boulevard
Ville Platte, LA 70586-9778
Tel: 337-363-7500
Fax: 337-363-7516

Production Order:	120969711	Serial Number:	3
Part Number:	CAM-BV Rev: 01	Valve Type:	T31
End Connections:	WE x WE	Valve Size:	4.00
Bore Type:	Full	ANSI Class:	300
Test Date:	6/1/2017		
Test Type:	Test	Overall Valve Length:	14.0000 inches
Seat Type:	DBB	Overall Result:	Pass
Comments:		Tested With Pup Pipe:	No
		Tested With Extension:	No

Test Procedure:	bx-1200-8-95	Rev: 12	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:

Hydro Test

Tester: 27719 - Salvator Difulco Workcenter: 75292 - Cam 2-6

Gage #:	bv-12060	Due Date:	8/6/2017
Gage #:		Due Date:	
Gage #:		Due Date:	

Test Medium: Water, Glycol, Rust Inhibitor

Low Pressure Body:	1	Min @	40/80	PSI	Result:	Pass
Hydro Body:	2	Min @	1125	PSI	Result:	Pass
Seat A:	2	Min @	825	PSI	Result:	Pass
Seat B:	2	Min @	825	PSI	Result:	Pass
DoubleBlock:	2	Min @	825	PSI	Result:	Pass

Are Charts Required? No

Is Cavity Relief Test Required?	No
Is Torque Test Required?	No
Is Air Test Required?	No
Is Nitrogen Body Test Required?	No
Is Nitrogen Seat Test Required?	No
Is Drift Test Required?	No
Is Function Test Required:	No

Shell Test – No visible leakage permitted.
Seat Leakage for soft seated valves – No visible leakage permitted.
Seat leakage for metal seated valves shall be as agreed upon with the customer, reference the applicable test procedure.

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A Schlumberger Company

257 Holloway Boulevard
Ville Platte, LA 70586-9778
Tel: 337-363-7500
Fax: 337-363-7516

Testing Report

Production Order:	120969711	Serial Number:	4
Part Number:	CAM-BV Rev: 01	Valve Type:	T31
End Connections:	WE x WE	Valve Size:	4.00
Bore Type:	Full	ANSI Class:	300
Test Date:	6/1/2017		
Test Type:	Test	Overall Valve Length:	14.0000 inches
Seat Type:	DBB	Overall Result:	Pass
Comments:		Tested With Pup Pipe:	No
		Tested With Extension:	No

Test Procedure:	bx-1200-8-95	Rev: 12	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:

Hydro Test

Tester: 27719 - Salvator Difulco Workcenter: 75292 - Cam 2-6

Gage #:	bv-12060	Due Date:	8/6/2017
Gage #:		Due Date:	
Gage #:		Due Date:	

Test Medium: Water, Glycol, Rust Inhibitor

Low Pressure Body:	1	Min @	40/80	PSI	Result:	Pass
Hydro Body:	2	Min @	1125	PSI	Result:	Pass
Seat A:	2	Min @	825	PSI	Result:	Pass
Seat B:	2	Min @	825	PSI	Result:	Pass
DoubleBlock:	2	Min @	825	PSI	Result:	Pass

Are Charts Required? No

Is Cavity Relief Test Required?	No
Is Torque Test Required?	No
Is Air Test Required?	No
Is Nitrogen Body Test Required?	No
Is Nitrogen Seat Test Required?	No
Is Drift Test Required?	No
Is Function Test Required:	No

Shell Test – No visible leakage permitted.
Seat Leakage for soft seated valves – No visible leakage permitted.
Seat leakage for metal seated valves shall be as agreed upon with the customer, reference the applicable test procedure.

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A Schlumberger Company

Testing Report

257 Holloway Boulevard
Ville Platte, LA 70586-9778
Tel: 337-363-7500
Fax: 337-363-7516

Production Order:	120969711	Serial Number:	5
Part Number:	CAM-BV Rev: 01	Valve Type:	T31
End Connections:	WE x WE	Valve Size:	4.00
Bore Type:	Full	ANSI Class:	300
Test Date:	6/1/2017		
Test Type:	Test	Overall Valve Length:	14.0000 inches
Seat Type:	DBB	Overall Result:	Pass
Comments:		Tested With Pup Pipe:	No
		Tested With Extension:	No

Test Procedure:	bx-1200-8-95	Rev: 12	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:

Hydro Test

Tester: 27719 - Salvator Difulco Workcenter: 75292 - Cam 2-6

Gage #:	bv-12060	Due Date:	8/6/2017
Gage #:		Due Date:	
Gage #:		Due Date:	

Test Medium: Water, Glycol, Rust Inhibitor

Low Pressure Body:	1	Min @	40/80	PSI	Result:	Pass
Hydro Body:	2	Min @	1125	PSI	Result:	Pass
Seat A:	2	Min @	825	PSI	Result:	Pass
Seat B:	2	Min @	825	PSI	Result:	Pass
DoubleBlock:	2	Min @	825	PSI	Result:	Pass

Are Charts Required? No

Is Cavity Relief Test Required?	No
Is Torque Test Required?	No
Is Air Test Required?	No
Is Nitrogen Body Test Required?	No
Is Nitrogen Seat Test Required?	No
Is Drift Test Required?	No
Is Function Test Required:	No

Shell Test – No visible leakage permitted.
Seat Leakage for soft seated valves – No visible leakage permitted.
Seat leakage for metal seated valves shall be as agreed upon with the customer, reference the applicable test procedure.

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Testing Report

257 Holloway Boulevard
Ville Platte, LA 70586-9778
Tel: 337-363-7500
Fax: 337-363-7516

Production Order:	120969711	Serial Number:	6
Part Number:	CAM-BV Rev: 01	Valve Type:	T31
End Connections:	WE x WE	Valve Size:	4.00
Bore Type:	Full	ANSI Class:	300
Test Date:	6/1/2017		
Test Type:	Test	Overall Valve Length:	14.0000 inches
Seat Type:	DBB	Overall Result:	Pass
Comments:		Tested With Pup Pipe:	No
		Tested With Extension:	No

Test Procedure:	bx-1200-8-95	Rev: 12	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:
Test Procedure:		Rev:	Test Procedure:		Rev:

Hydro Test

Tester: 27719 - Salvator Difulco Workcenter: 75292 - Cam 2-6

Gage #: bv-12060	Due Date: 8/6/2017	Test Medium: Water, Glycol, Rust Inhibitor	
Gage #:	Due Date:		
Gage #:	Due Date:		

Low Pressure Body:	1	Min @	40/80	PSI	Result:	Pass
Hydro Body:	2	Min @	1125	PSI	Result:	Pass
Seat A:	2	Min @	825	PSI	Result:	Pass
Seat B:	2	Min @	825	PSI	Result:	Pass
DoubleBlock:	2	Min @	825	PSI	Result:	Pass

Are Charts Required? No

Is Cavity Relief Test Required?	No
Is Torque Test Required?	No
Is Air Test Required?	No
Is Nitrogen Body Test Required?	No
Is Nitrogen Seat Test Required?	No
Is Drift Test Required?	No
Is Function Test Required:	No

Shell Test – No visible leakage permitted.
Seat Leakage for soft seated valves – No visible leakage permitted.
Seat leakage for metal seated valves shall be as agreed upon with the customer, reference the applicable test procedure.