CLIF Surplus

cenovus ENERGY

FITTING/VALVE TRANSFER PULL SHEET

MOD#	DATE:	MT #	

SIZE	#	ITEM DESCRIPTION	Body Heat #	Bonnet Heat #	TAG #	SN#	PO# / ITEM #
6	150	Gate Valve	94089	3H811	GF-01A00	37685-040-17	CLIF-2206/4
"	"	"	2H788	4H761	"	-92	"
"	"	"	L0860	L0305	"	-400	"
12	150	Extended Stem Gate	N5541W	N5228W	SP-1546	7701216337AN	CLIF-3005/4
12	300	Gate Valve	7923B	8383B	GF-03A00	37685-180-103	CLIF-2206/67
"	"	"	8151B	8347B	"	-109	"
10	300	Gate Valve	6005B	6168B	GF-03A00	34557-190-16	CLIF-2206/66
2	150	Gate Valve	R01429	R01338	GF-01V00	KF813010948	CLIF-2206/219.
"	"	"	BN820K13	BNB22H12	"	N/A	CLIF-2206/219.
2	150	Gate Valve	BNB15H29	BNB21H13	GF-01A10	N/A	CLIF-2201/23
2	150	"	BNB15C27	BNB30D16	GF-01V00	N/A	CLIF-2206/219.
2	150	"	4H836	93074	GF-01A10	37685-010-641	CLIF-2204/23
6	150	Check Valve	A12869	60518	CF-01A00	2072B19-13	CLIF-2207/4
"	"	"	A13293	60518	"	-19	"
"	"	"	A12993	60518	"	-27	"
2	300	Gate Valve	A10645	A10645	GF-03A00	207XK78/84	CLIF-2204/61
1 1/2	1500	Gate Valve	BDA	BBI	GS-15V00	N/A	CLIF-2001/69
"	"	"	"	BCG	"	"	"
1 1/2	1500	Globe Valve	BCQ	BBU	TS-15V10	"	CLIF-2001/78
"	"	"	"	BCE	"	"	"
3/4	1500	Globe Valve	BCK	BDG	TS-15V10	"	CLIF-2001/20
2	300	Globe Valve	BNB06H04	BNB17H23	TF-03A00	N/A	CLIF-2204/138
2	150	Gate Valve	H6096	L0839	GF-01A10	37685-010-237	CLIF-2206/23
2	300	Gate Valve	61093	4H713	GF-03A00	37685-130-109	CLIF-2206/83.
6	300	Check Valve	A5133	J1864	CF-03A00	TJ52-39	CLIF-2207/20
12	150	Gate Valve	BNB73A25	BNB72B13	GF-01A00	N/A	CLIF-2201/7
10	300	Gate Valve	6721B	6615B	GF-03A10	35506-390-1	CLIF-2215/88
"	"	"	6730B	6601B	"	-3	"
"	"	"	7227B	7157B	"	36181-210-42	"
2	300	Gate Valve	7H353	L1170	GF-03L00	38278-400-67	CLIF-2206/179
"	"	"	"	3H213	"	-66	"

cenovus ENERGY

FITTING/VALVE TRANSFER PULL SHEET

MOD#	DATE:	MT #	

SIZE	#	ITEM DESCRIPTION	Body Heat #	Bonnet Heat #	TAG #	SN#	PO# / ITEM #
2	150	Gate Valve	98U34	3H567	GF-01V00	37685-010-2	CLIF-2009/219
3	150	Globe Valve	BNB06L25	BNB04L23	JF-01A00	N/A	CLIF-2206/126
8	150	Gate Valve	3H489	4H783	GF-01A10	37685-050-380	CLIF-2209/27
2	150	Gate Valve	879H1	0124H	GF-01L00	47219-030-11	CLIF-2217/43
1	800	Gate Valve	MMFWB3	MMFUB1	GX-08A00	N/A	CLIF-2206/277
1	800	"	MMFKU4	MMF8K2	GT-08A00	"	?
1	800	Check Valve	EY0	MD33	CT-08L00	"	CLIF-2202/68
1	800	Gate Valve	MMFKU1	MMF8K2	GT-08A00	"	CLIF-2206/272
1 1/2	800	"	MMCVJ5	MMFKU2	GT-08B00	"	CLIF-2206/313
1	800	Gate Valve	MMCJL1	MMCF11	GT-08A00	"	CLIF-2204/272
1	2000	Ball Valve	D12D	LLFAJL	BS-20L00	N/A	CLIF-2203/60
1.5	800	Gate Valve	MMHU16	MMCPL4	GS-08A00	"	CLIF-2216/265
"	"	"	MMHPC1	MMCJL2	"	"	"
"	"	"	"	MMFOU5	"	"	"
"	"	"	MMHU16	MMCJL2	"	"	"
"	"	"	"	"	"	"	"
"	"	"	"	"	"	"	"
"	"	"	"	MMHT05	"	"	"
"	"	"	MMHPC1	MMCJL2	"	"	"
"	"	Globe Valve	MMDAF2	MMACU3	TS-08A00	"	CLIF-2216/289
"	"	"	MMJC2	MMZCC1	"	"	"
3/4	800	Gate Valve	AAAE	AAAS	GX-08A00	"	CLIF-2218/276
1/2	1500	Ball Valve	D27D	FLCADL	BX-20L00	"	CLIF-2214/65
"	"	"	"	"	"	"	"
3/4	"	"	B12	LLBAJL	"	"	CLIF-2214/66
3/4	800	Gate Valve	MMTP2	MMHAU1	GS-08L00	"	CLIF-2217/266
1	2000	Ball Valve	D950565	N/A	BX-20L00	"	CLIF-2203/67

OA line 22,23
CPO #15, 33

VALVE TEST CERTIFICATE / CERTIFICATE OF CONFORMANCE

Certificate No. : JX-140321-24

VALVE INFORMATION

VALVE TYPE	SW BALL VALVE	MODEL NUMBER	T3-F-10-SW-15-L
SIZE	1FP	SERIAL NUMBER	13D27G0001-13D27G0050
CLASS	1500	QUANTITY	50

VALVE DETAIL

BODY/ADAPTER	ASTM LF2	BALL	CF8M
STEM	A564-630	SEAT	TFM
SEALS	GRAPHITE	O-RINGS	VITON
BOLTS			

VALVE HEAT NO.

BODY No.	D12D						
CAP No.	LLFAJL						
BALL No.	X32						
STEM No	R5631						
BOLTING No.							
NUT No.							

VALVE DESIGN CODE

DESIGN CODE:	ASME B16.34	YES	DESIGN CODE:	ASME B16.5	NO
	NACE MR0175/ISO 15156 LATEST REV.	YES		API 607 Rev 5	YES
	ASME B16.10	NO		API 598	YES
	ASME B16.11	YES		ASME B1.20.1	NO
	API 608	YES		PED-97/23/EC,MODULE H	YES

VALVE TEST RESULTS

TEST PERFORMED	CODE	HYDRO SHELL	HYDRO SEAT	AIR SEAT		
PRESSURE- PSI/ MPA /BAR		MPA/PSI	MPA/PSI	MPA/PSI	-	-
TEST PRESSURE	API 598	38.3/5558	28.1/4075	0.55/87	-	-
DURATION (Second MIN.)	API 598	15	15	15	-	-
TEST RESULTS		PASS	PASS	PASS	-	-
DIMENSIONAL CHECK	B16.10/B16.5	PASS	-	-	-	-
OPERATIONAL CHECK		PASS				
VISUAL	MSS-SP-55	PASS	-	-	-	-

EC Certificate of Conformity Number- CE 0035/01 202 CHI/Q-08 0297
Notified Body: TÜV Rheinland Industries Service GMBH
Am Grauen Staein, D-51105, Köln
Inspected and tested in accordance with the standards noted.

JAG
Quality Control
CANADA

DATE: 21-Mar-14

#29 Building A, No.99 HuaiHe Middle Road Jingang industrial Park Dalian Develop Zone China.

CLIF-2203
CPO #60 BS-20L00

#29 Building A,No.99 HuaiHe Middle Road Jingang Industrial Park Dallan Develop Zone China

MATERIAL TEST REPORT
ISO EN 10204 2004-3.1 CE 0035

Valve Description	SW BALL VALVE	Customer P.O.	D-7293	Lot Number	13D27G0001-13D27G0050	Page	1 OF 1
Figure Number	T3-F-10-SW-15-L	MTR Report No.	JX-140321-24	Quantity	50	Date	21-Mar-14

Material	Description	Heat Number	Chemical Composition												Mechanical Properties								
			C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Nb+Ta	Yield Strength (KSI)	Tensile Strength (KSI)	Elongation δ(%)	Reduction of Area ψ(%)	HB	Charpy(-50°F)(J) 1	2	3	Average
A350-LF2-11	Standard		≤0.3	0.15-0.3	0.6-1.35	≤0.035	≤0.04	≤0.4	≤0.3	≤0.12	≤0.4	≤0.08	≤0.02	---	≥36	70-95	≥22	≥30	137-197				≥27
	BODY	D12D	0.19	0.24	0.8	0.008	0.003	0.02	0.17	0	0.04	0	0	---	52	76.8	29	78.5	170	220	212	210	214
	CAP	LLFAJL	0.2	0.22	0.8	0.013	0.015	0.01	0.015	0.002	0	0	0	---	61	84	36.5	77	160	126	96	135	119
A351-CF8M-10	Standard		≤0.08	≤1.5	≤1.5	≤0.04	≤0.04	9-12	18-21	2-3	---	---	---	---	≥30	≥70	≥30		HRC≤22				
	BALL	X32	0.031	1.34	1.25	0.03	0.032	9.95	19.84	2.15	---	---	---	---	35.5	76	34		18				
A564-630-10	Standard		≤0.07	≤1.0	≤1.0	≤0.04	≤0.03	3-5	15-17.5	---	3-5	---	---	0.15-0.45	≥105	≥125	≥16	≥50	HRC24-33	Charpy(-75°F)(J)			≥41
	STEM	R5631	0.02	0.45	0.62	0.029	0.026	4.31	15.1	---	3.39	---	---	0.22	127	136	22	72	32	96	102	99	99

Material	Heat Treat	Temperature	Time	Cooling Media
LF2	Quenching plus tempering	900°C	1.2-2 hours	Air cooled
		810°C~830°C	1-2 hours	Water cooled
		690°C~710°C	1.3-2.1 hours	Air cooled
CF8M	Quench	1050°C~1080°C	2 hours	Water cooled
A564-630	Double age hardening thermal treatment	1040°C	1 hours	Water cooled
		620°C	4 hours	Air cooled
		621°C	4 hours	Air cooled

Material meet NACE MR0175/ISO 15156

JAG
&
Quality Control
CANADA

OA line 29

CPO 265

VELAN

Certificate of Conformance

Certificate #: P4-133631

Plant 4 Velan Inc.
1010 Cowie Street
Granby, Quebec
Canada, J2J 1E7
Phone : 450-378-2305
Fax : 450-378-6865

Customer Name :	MRC CANADA ULC.
Customer Po # :	S759225013
Velan Order # :	M014-870278-W
Valve Design :	API-602
Hydro Test Spec :	API-602
Test Result :	ACCEPTABLE

Certificate Date :	20-AUG-2013		
Item Number :	11	Position No :	35
Quantity :	12		
Figure Number :	W07-2054B-02TY		
Description :	VALVE 1 1/2" 800 GATE BB		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1
MATERIAL TEST RESULTS SHOWN BELOW

CHEMICALS

MECHANICALS [F/B: flatenning/ bending; GS: Grain size]

ASTM Code: A105-09--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMCJL2	BONNET	0.210	0.910	0.017	0.020	0.180	0.003	0.007	0.012	0.005	0.002

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
520.0 / 75.4	352.0 / 51.1	35.1	64.8	159.0 / 167.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMCPL4	BONNET	0.210	1.000	0.032	0.015	0.240	0.004	0.005	0.006	0.005	0.002

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
516.0 / 74.8	355.0 / 51.5	35.0	64.2	152.0 / 167.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

ASTM Code: A105-11--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMEWM7	BONNET	0.180	0.960	0.017	0.018	0.230	0.010	0.014	0.120	0.002	0.001

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
523.0 / 75.9	358.0 / 51.9	34.8	63.6	156.0 / 167.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMFCX2	BONNET	0.200	0.930	0.006	0.022	0.220	0.012	0.016	0.120	0.003	0.001

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
520.0 / 75.4	355.0 / 51.5	34.6	64.8	156.0 / 167.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMFOU5	BONNET	0.190	0.970	0.019	0.020	0.240	0.013	0.031	0.130	0.003	0.002

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
518.0 / 75.1	357.0 / 51.8	35.7	63.8	152.0 / 159.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMHPC1	BODY	0.190	0.940	0.015	0.019	0.250	0.034	0.027	0.120	0.005	0.003

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
523.0 / 75.9	361.0 / 52.4	35.4	63.6	159.0 / 163.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

CLIF-2216 CPO#265
GS-08A00

VELAN

Certificate of Conformance

Certificate #: P4-133631

Velan hereby certifies that the valve(s) described above is (are) in conformance with the purchase order and specification requirements. The test report represents the actual attributes of items furnished and all test results are in full conformance with applicable specification and purchase order requirements.

Gilles Delafontaine for

Velan

20-AUG_2013

Date

Customer Representative

Date

OA line 29
CPO 265

Certificate of Conformance

VELAN

Certificate #: P4-132572

Plant 4 Velan Inc.
1010 Cowie Street
Granby, Quebec
Canada, J2J 1E7
Phone : 450-378-2305
Fax : 450-378-6865

Customer Name :	MRC CANADA ULC.
Customer Po # :	S78H218475
Velan Order # :	M014-869528-W
Valve Design :	API-602
Hydro Test Spec :	API-602
Test Result :	ACCEPTABLE

Certificate Date :	26-JUN-2013		
Item Number :	08	Position No :	25
Quantity :	16		
Figure Number :	W07-2054B-02TY		
Description :	VALVE 1 1/2" 800 GATE BB		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1
MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS / MECHANICALS [F/B: flatenning/ bending; GS: Grain size]

ASTM Code: A105-09--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMCJL2	BONNET	0.210	0.910	0.017	0.020	0.180	0.003	0.007	0.012	0.005	0.002

Heat Treatment: NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
520.0 / 75.4	352.0 / 51.1	35.1	64.8	159.0 / 167.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

ASTM Code: A105-11--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMHAA2	BODY	0.200	0.960	0.015	0.018	0.230	0.030	0.024	0.140	0.004	0.003

Heat Treatment: NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
518.0 / 75.1	358.0 / 51.9	36.5	65.5	159.0 / 163.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMHTO5	BONNET	0.200	0.950	0.015	0.018	0.230	0.018	0.027	0.120	0.004	0.003

Heat Treatment: NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
525.0 / 76.1	362.0 / 52.5	35.6	65.5	156.0 / 167.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMHUI6	BODY	0.190	0.940	0.020	0.030	0.240	0.014	0.026	0.130	0.003	0.003

Heat Treatment: NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
522.0 / 75.7	360.0 / 52.2	35.0	64.2	159.0 / 163.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMIFT3	BODY	0.210	0.940	0.014	0.022	0.250	0.017	0.018	0.120	0.002	0.003

Heat Treatment: NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
521.0 / 75.6	360.0 / 52.2	35.0	65.4	159.0 / 163.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMIOY1	BODY	0.200	0.950	0.030	0.022	0.250	0.010	0.021	0.120	0.002	0.003

Heat Treatment: NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
525.0 / 76.1	360.0 / 52.2	35.0	65.3	159.0 / 163.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMIWY5	BONNET	0.200	0.950	0.013	0.017	0.240	0.020	0.022	0.110	0.005	0.003

Heat Treatment: NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
521.0 / 75.6	362.0 / 52.5	35.5	65.5	156.0 / 163.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

CLIF-2216 CPO#265
GS-0BA00

VELAN

Certificate of Conformance

Certificate #: P4-132572

Velan hereby certifies that the valve(s) described above is (are) in conformance with the purchase order and specification requirements. The test report represents the actual attributes of items furnished and all test results are in full conformance with applicable specification and purchase order requirements.

Gilles Delafontaine for

Velan

26-JUN_2013

Date

Customer Representative

Date

OA-1
OA-60
CPO-289

Certificate of Conformance

Certificate #: 140195

Plant 1 Velan Inc.
2125 Ward Avenue
Montreal, Quebec
Canada, H4M 1T6
Phone : 514-748-7743
Fax : 514-748-7641

Customer Name :	MRC GLOBAL COMPANY
Customer Po # :	N/A
Velan Order # :	011-999999-
Valve Design :	API-602
Hydro Test Spec :	API-602
Test Result :	ACCEPTABLE

Certificate Date :	11-JUN-2014		
Item Number :	1	Position No :	
Quantity :	1		
Figure Number :	S-2074W-02TY		
Description :	11 2" 800 FS WB GLOBE VLV		
Draw No. & Rev :		REV	
Tag Number(s) :	NONE		

NOTES :
MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

MECHANICALS [F/B: flatenning/ bending; GS: Grain size]

ASTM Code: A105-05--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMACU3	BONNET	0.230	0.930	0.020	0.022	0.220	0.007	0.005	0.006	0.005	0.002
Heat Treatment		C.E.									
NORMALIZED		.3884									

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
521.0 / 75.6	352.0 / 51.1	35.0	65.5	152.0 / 163.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

ASTM Code: A105-09--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMDAF2	BODY	0.220	0.990	0.028	0.015	0.210	0.004	0.005	0.008	0.005	0.002
Heat Treatment		C.E.									
NORMALIZED		.3886									

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
521.0 / 75.6	349.0 / 50.6	33.3	62.8	156.0 / 167.0

Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
/ /		/ /			

Velan hereby certifies that the valve(s) described above is (are) in conformance with the purchase order and specification requirements. The test report represents the actual attributes of items furnished and all test results are in full conformance with applicable specification and purchase order requirements.

Sattie Beresford

Sattie Beresford for
Velan

11-JUN-2014
Date

Customer Representative

Date

CLIF-2216
CPO#289 TS-08A0J

OA-1
OA line 60
CPO 289

VELAN

Certificate of Conformance

Certificate #: 133392

Plant 1 Velan Inc.
2125 Ward Avenue
Montreal, Quebec
Canada, H4M 1T6
Phone : 514-748-7743
Fax : 514-748-7641

Customer Name :	MRC GLOBAL COMPANY
Customer Po # :	N/A
Velan Order # :	011-999999-
Valve Design :	API-602
Hydro Test Spec :	API-602
Test Result :	ACCEPTABLE

Certificate Date :	06-AUG-2013		
Item Number :		Position No :	
Quantity :	3		
Figure Number :	S07-2074W-02TY		
Description :	1 1/2" 800 WB GLOBE A105N		
Draw No. & Rev		REV	
Tag Number(s) :	NONE		

NOTES :
MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

MECHANICALS [F/B: flatenning/ bending; GS: Grain size]

ASTM Code: A105-01--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
FWF	BODY	0.210	1.060	0.014	0.022	0.280	0.007	0.040	0.190	0.010	0.002	0.008

Heat Treatment	C.E.
NORMALIZED	.4302

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
510.0 / 74.0	339.0 / 49.2	32.2	66.8	149.0 / 156.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
HBO	BODY	0.200	1.000	0.013	0.020	0.240	0.010	0.010	0.000	0.010	0.002	0.010

Heat Treatment	C.E.
NORMALIZED	.3704

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
515.0 / 74.7	319.0 / 46.3	30.0	61.0	149.0 / 156.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
JCZ	BODY	0.210	1.000	0.018	0.026	0.230	0.040	0.060	0.225	0.025	0.000	0.020

Heat Treatment	C.E.
NORMALIZED	.4333

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
510.0 / 74.0	334.0 / 48.4	34.6	68.2	152.0 / 157.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

ASTM Code: A105-03--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMTMX5	BONNET	0.220	1.120	0.020	0.032	0.190	0.012	0.030	0.000	0.000	0.000

Heat Treatment	C.E.
NORMALIZED	.4095

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
505.0 / 73.2	336.0 / 48.7	35.4	66.8	149.0 / 156.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

ASTM Code: A105-05--

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
MMZCC1	BONNET	0.190	1.090	0.022	0.022	0.210	0.004	0.005	0.170	0.001	0.005

Heat Treatment	C.E.
NORMALIZED	.4075

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
507.0 / 73.5	345.0 / 50.0	35.7	63.4	156.0 / 163.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

CLIF-2216
CPO#289 TS-08A00

VELAN

Certificate of Conformance

Certificate #: 133392

Velan hereby certifies that the valve(s) described above is (are) in conformance with the purchase order and specification requirements. The test report represents the actual attributes of items furnished and all test results are in full conformance with applicable specification and purchase order requirements.

Sattie Beresford for
Velan

06-AUG_2013
Date

Customer Representative

Date

OA line 7
CPO# 276

BONNEY FORGE

MILL TEST REPORTS

Bonney Forge
14496 Croghan Pike
Mt. Union, PA 17066

CERTIFIED MILL TEST REPORT

MRC Canada 3/31/2014

LOT NO CHEMICAL ANALYSIS, PHYSICAL PROPERTIES, REMARKS

AAAE Body

3/4" HL-11-SW/T A105N

C	0.190	MN	0.840	P	0.010	S	0.008	SI	0.220
NI	0.050	CR	0.080	MO	0.010	CU	0.120	V	0.020
AL	0.025	Nb	0.000						

CE(LONG FORMULA) = 0.363

T/S(PSI) 72809 Y/S(PSI) 45686 EL(%) 33.400 RA(%) 68.600

BRINELL HARDNESS 141

Click here for Original Steel Mill Certification

AAAS Bonnet

3/4" HL-11-SW/T A105N

C	0.200	MN	0.900	P	0.009	S	0.010	SI	0.180
NI	0.050	CR	0.080	MO	0.010	CU	0.130	V	0.019
AL	0.020	Nb	0.002						

CE(LONG FORMULA) = 0.384

T/S(PSI) 72809 Y/S(PSI) 43801 EL(%) 28.600 RA(%) 58.000

BRINELL HARDNESS 143

Click here for Original Steel Mill Certification

1. THE MATERIAL SUPPLIED WAS INSPECTED AND MANUFACTURED IN ACCORDANCE WITH EN DIN 10204:2004 EDITION TYPE 3.1 INSPECTION DOCUMENT.
2. CERTIFYING ASTM A105-10 / ASME SA105-10 EDITION.
3. TESTING AND ACCEPTANCE CRITERIA FOR THESE VALVES ARE IN ACCORDANCE WITH THE REQUIREMENTS OF API-598 (NINTH EDITION, SEPTEMBER 2009).

CL1F-2218
CPO#276 GX-08A00

4. TRIM COMPONENTS AND BOLTING ARE IN ACCORDANCE WITH THE PURCHASE ORDER REQUIREMENTS AND MATERIAL SPECIFICATIONS.
5. THE MATERIAL SUPPLIED IDENTIFIED AS A105N WAS NORMALIZED IN ACCORDANCE WITH ASTM A105 HEAT TREATING REQUIREMENTS.

THIS DOCUMENT HAS BEEN ELECTRONICALLY SUBMITTED.

Cancel Logout

OA-1

OA: 26 CPO# 65

DALIAN JAG FLOCOMPONENTS CO., LTD.

VALVE TEST CERTIFICATE / CERTIFICATE OF CONFORMANCE

Certificate No. : JX-130901-10

VALVE INFORMATION

VALVE TYPE	SW X NPT BALL VALVE	**MODEL NUMBER**	T3-F-05-TS-15-L
SIZE	1/2FP	**SERIAL NUMBER**	13Q25C0001-13Q25C0050
CLASS	1500	**QUANTITY**	50

VALVE DETAIL

BODY/ADAPTER	ASTM LF2	**BALL**	CF8M
STEM	A564-630	**SEAT**	TFM
SEALS	GRAPHITE	**O-RINGS**	VITON
BOLTS			

VALVE HEAT NO.

BODY No.	D27D						
CAP No.	LFKAGL	LFGAJL	FLCADL	LFBAAL			
BALL No.	X33						
STEM No	R5412						
BOLTING No.							
NUT No.							

VALVE DESIGN CODE

DESIGN CODE:	**ASME B16.34**	YES	**DESIGN CODE:** **ASME B16.5**	NO
	NACE MR0175/ISO 15156 LATEST REV.	YES	**API 607 Rev 5**	YES
	ASME B16.10	NO	**API 598**	YES
	ASME B16.11	YES	**ASME B1.20.1**	YES
	API 608	YES	**PED-97/23/EC,MODULE H**	YES

VALVE TEST RESULTS

TEST PERFORMED	CODE	HYDRO SHELL	HYDRO SEAT	AIR SEAT		
PRESSURE- PSI/ MPA /BAR		MPA/PSI	MPA/PSI	MPA/PSI	-	-
TEST PRESSURE	API 598	38.3/5558	28.1/4075	0.55/87	-	-
DURATION (Second MIN.)	API 598	15	15	15	-	-
TEST RESULTS		PASS	PASS	PASS	-	-
DIMENSIONAL CHECK	B16.10/B16.5	PASS	-	-	-	-
OPERATIONAL CHECK		PASS				
VISUAL	MSS-SP-55	PASS	-	-	-	-

EC Certificate of Conformity Number- CE 0035/01 202 CHI/Q-08 0297
Notified Body: TÜV Rheinland Industries Service GMBH
Am Grauen Staein, D-51105, Köln
Inspected and tested in accordance with the standards noted.

QC APPROVED

DATE: 1-Sep-13

#29 Building A, No.99 HuaiHe Middle Road Jingang industrial Park Dalian Develop Zone China.

CLIF-2214
CPO#65 BX-20L00

DALIAN JAG FLOCOMPONENTS CO., LTD.

#29 Building A,No.99 HuaiHe Middle Road Jinqang industrial Park Dallan Develop Zone China

MATERIAL TEST REPORT
ISO EN 10204 2004-3.1 CE 0035

Valve Description			SW X NPT BALL VALVE				**Customer P.O.**				D-7013			**Lot Number**	13Q25C0001-13Q25C0050			**Page**			1 OF 1		
Figure Number			T3-F-05-TS-15-L				**MTR Report No.**				JX-130901-10			**Quantity**	50			**Date**			1-Sep-13		
			Chemical Composition												**Mechanical Properties**								
Material	Description	Heat Number	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Nb+Ta	Yield Strength (KSI)	Tensile Strength (KSI)	Elongation δ(%)	Reduction of Area ψ(%)	HB	Charpy(-50°F)(J) 1	2	3	Average
A350-LF2-11	Standard		≤0.3	0.15-0.3	0.6-1.35	≤0.035	≤0.04	≤0.4	≤0.3	≤0.12	≤0.4	≤0.08	≤0.02	---	≥36	70-95	≥22	≥30	137-197				≥27
	BODY	D27D	0.19	0.24	0.8	0.008	0.003	0.02	0.17	0	0.04	0	0	---	52.9	80	23	75	160	220	226	232	226
	CAP	LFKAGL	0.18	0.21	0.8	0.01	0.004	0.017	0.13	0.002	0	0	0	---	57.3	76.8	29	70.5	161	127	81	146	118
		LFBAAL	0.19	0.24	0.8	0.009	0.002	0.001	0.05	0.01	0	0	0	---	50	73.91	29	75.5	170	41	64	42	49
		LFGAJL	0.19	0.23	0.8	0.012	0.006	0.014	0.13	0.016	0	0	0	---	51.5	76.8	37.5	74.5	179	182	179	186	182
		FLCADL	0.21	0.23	0.92	0.017	0.002	0.014	0.029	0.01	0	0	0	---	50.7	71	40.5	75	143	230	210	188	209
A351-CF8M-10	Standard		≤0.08	≤1.5	≤1.5	≤0.04	≤0.04	9-12	18-21	2-3	---	---	---	---	≥30	≥70	≥30		HRC≤22				
	BALL	X33	0.032	1.33	1.23	0.03	0.033	9.94	19.85	2.14	---	---	---	---	35.3	76	32		18				
A564-630-10	Standard		≤0.07	≤1.0	≤1.0	≤0.04	≤0.03	3-5	15-17.5	---	3-5	---	---	0.15-0.45	≥105	≥125	≥16	≥50	HRC24-33	Charpy(-75°F)(J)			≥41
	STEM	R5412	0.02	0.47	0.64	0.027	0.017	4.31	15.12	---	3.43	---	---	0.22	116	135	23	70	30	104	103	101	103

Material	Heat Treat	Temperature	Time	Cooling Media
LF2	Quenching plus tempering	900°C	1.2-2 hours	Air cooled
		810°C~830°C	1-2 hours	Water cooled
		690°C~710°C	1.3-2.1 hours	Air cooled
CF8M	Quench	1050°C~1080°C	2 hours	Water cooled
A564-630	Double age hardening thermal treatment	1040°C	1 hours	Water cooled
		620°C	4 hours	Air cooled
		621°C	4 hours	Air cooled

QC APPROVED:

Material meet NACE MR0175/ISO 15156

OA -2

OA-27 CPO#66

DALIAN JAG FLOCOMPONENTS CO., LTD.

VALVE TEST CERTIFICATE / CERTIFICATE OF CONFORMANCE

Certificate No. : JX-130630-8

VALVE INFORMATION

VALVE TYPE	NPT X SW BALL VALVE	**MODEL NUMBER**	T3-R-07-TS-15-L
SIZE	3/4"RP	**SERIAL NUMBER**	13W31D0001-13W31D0200
CLASS	1500	**QUANTITY**	200

VALVE DETAIL

BODY/ADAPTER	ASTM LF2	**BALL**	CF8M
STEM	A564-630	**SEAT**	TFM
SEALS	GRAPHITE	**O-RINGS**	VITON
BOLTS			

VALVE HEAT NO.

BODY No.	B12						
CAP No.	LLCAJL	FLCADL	LLBAJL				
BALL No.	X23						
STEM No	R5151						
BOLTING No.							
NUT No.							

VALVE DESIGN CODE

DESIGN CODE:	**ASME B16.34**	YES	**DESIGN CODE:**	**ASME B16.5**	NO
	NACE MR0175/ISO 15156 LATEST REV.	YES		**API 607 Rev 5**	YES
	ASME B16.10	NO		**API 598**	YES
	ASME B16.11	YES		**ASME B1.20.1**	YES
	API 608	YES		**PED-97/23/EC,MODULE H**	YES

VALVE TEST RESULTS

TEST PERFORMED	CODE	HYDRO SHELL	HYDRO SEAT	AIR SEAT		
PRESSURE- PSI/ MPA /BAR		MPA/PSI	MPA/PSI	MPA/PSI	-	-
TEST PRESSURE	API 598	38.3/5558	28.1/40/5	0.55/87	-	-
DURATION (Second MIN.)	API 598	15	15	15	-	-
TEST RESULTS		PASS	PASS	PASS	-	-
DIMENSIONAL CHECK	B16.10/B16.5	PASS	-	-	-	-
OPERATIONAL CHECK		PASS				
VISUAL	MSS-SP-55	PASS	-	-	-	-

EC Certificate of Conformity Number- CE 0035/01 202 CHI/Q-08 0297
Notified Body: TÜV Rheinland Industries Service GMBH
Am Grauen Stein, D-51105, Köln
Inspected and tested in accordance with the standards noted.

DATE: 30-Jun-13

#29 Building A, No.99 HuaiHe Middle Road Jingang Industrial Park Dalian Develop Zone China.

CLIF-2214
CPO#66 BX-20L00

OA: 27

DALIAN JAG FLOCOMPONENTS CO., LTD.

#29 Building A,No.99 HuaHe Middle Road Jinganq Industrial Park Dalian Develop Zone China

MATERIAL TEST REPORT
ISO EN 10204 2004-3.1 CE 0035

Valve Description	NPT X SW BALL VALVE	Customer P.O.	D-6446	Lot Number	13W31D0001-13W31D0200	Page	1 OF 1
Figure Number	T3-R-07-TS-15-I.	MTR Report No.	JX-130630-8	Quantity	200	Date	30-Jun-13

Material	Description	Heat Number	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Nb+Ta	Yield Strength (KSI)	Tensile Strength (KSI)	Elongation δ(%)	Reduction of Area ψ(%)	HB	Charpy(-50°F)(J) 1	2	3	Average
			Chemical Composition												Mechanical Properties								
A350-LF2-11	Standard		≤0.3	0.15-0.3	0.6-1.35	≤0.035	≤0.04	≤0.4	≤0.3	≤0.12	<0.4	<0.08	<0.02	---	≥36	70-95	≥22	≥30	137-197				≥27
	BODY	B12	0.27	0.26	0.8	0.01	0.005	0.08	0.14	0.001	0.16	0.0015	0.002	---	58.7	88.4	28	59	166	150	150	150	150
	CAP	LLCAJL	0.2	0.22	0.8	0.013	0.015	0.01	0.15	0.002	0	0	0	---	50.7	71.7	37	76	160	190	120	132	147
		FLCADL	0.21	0.23	0.92	0.017	0.002	0.014	0.029	0.01	0	0	0	---	50.7	71	40.5	75	143	230	210	188	209
		LLBAJL	0.2	0.22	0.8	0.013	0.015	0.01	0.15	0.002	0	0	0	---	54	76	35	71.5	160	38	79	74	63
A351-CF8M-10	Standard		≤0.08	≤1.5	≤1.5	≤0.04	≤0.04	9-12	18-21	2-3	---	---	---	---	≥30	≥70	≥30		HRC≤22				
	BALL	X23	0.08	1.35	1.24	0.03	0.033	9.94	19.83	2.14	---	---	---	---	35.4	76	32		17				
A564-630-10	Standard		≤0.07	≤1.0	≤1.0	≤0.04	≤0.03	3-5	15-17.5	---	3-5	---	---	0.15-0.45	≥105	≥125	≥16	≥50	HRC24-33	Charpy(-75°F)(J)			≥41
	STEM	R5151	0.01	0.43	0.65	0.028	0.024	4.34	15.28	---	3.44	---	---	0.21	124	137	22	69	30	89	84	86	59.3

Material	Heat Treat	Temperature	Time	Cooling Media
LF2	Quenching plus tempering	900°C	1.2-2 hours	Air cooled
		810°C~830°C	1-2 hours	Water cooled
		690°C~710°C	1.3-2.1 hours	Air cooled
CF8M	Quench	1050°C~1080°C	2 hours	Water cooled
A564-630	Double age hardening thermal treatment	1040°C	1 hours	Water cooled
		620°C	4 hours	Air cooled
		621°C	4 hours	Air cooled

Material meet NACE MR0175/ISO 15156

QC APPROVED.

OA Line 9
CPO # 266

VELAN

Certificate of Conformance

Certificate #: P1-137207

Plant 1 Velan Inc.
2125 Ward Avenue
Montreal, Quebec
Canada, H4M 1T6
Phone : 514-748-7743
Fax : 514-748-7641

Customer Name :	MRC GLOBAL COMPANY
Customer Po # :	N/A
Velan Order # :	011-999999-
Valve Design :	API-602
Hydro Test Spec :	API-602
Test Result :	ACCEPTABLE

Certificate Date :	24-JAN-2014		
Item Number :	1	Position No :	
Quantity :	3		
Figure Number :	W04--2054B-26NB		
Description :	3/4" 800 BB GATE LF2		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : IT IS THE END USER'S RESPONSIBILITY TO ENSURE THAT MATERIALS ARE SUITABLE FOR THE INTENDED SERVICE.

VALVES MEET THE MATERIAL REQUIREMENTS OF CURRENT NACE MR0103 & NACE MR0175 / ISO 15156.

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

MECHANICALS [F/B: flatenning/ bending; GS: Grain size]

ASTM Code: A350-11-LF2-CL1

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMHWK5	BONNET	0.190	0.940	0.014	0.020	0.230	0.016	0.022	0.120	0.003	0.002	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
523.0 / 75.9	362.0 / 52.5	36.2	63.8	163.0 / 187.0
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
404.0 / 404.0 / 404.0	-46.0	298.0 / 298.0 / 298.0	-50.0	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMTK1	BODY	0.190	0.940	0.013	0.022	0.270	0.040	0.030	0.150	0.003	0.003	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
520.0 / 75.4	358.0 / 51.9	35.0	65.3	167.0 / 183.0
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
404.0 / 385.1 / 395.9	46.0	298.0 / 284.0 / 292.0	-50.0	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMTP2	BODY	0.190	0.940	0.014	0.020	0.230	0.016	0.022	0.120	0.003	0.002	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
525.0 / 76.1	363.0 / 52.6	34.8	63.6	163.0 / 179.0
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
404.0 / 404.0 / 404.0	-46.0	298.0 / 298.0 / 298.0	-50.0	

ASTM Code: A350-12-LF2-CL1

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMIZE3	BONNET	0.190	0.940	0.020	0.018	0.230	0.018	0.021	0.120	0.003	0.002	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
523.0 / 75.9	362.0 / 52.5	35.3	62.3	170.0 / 187.0
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
295.6 / 265.7 / 325.4	-46.0	218.0 / 196.0 / 240.0	-50.0	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMJVL7	BONNET	0.190	0.960	0.014	0.016	0.210	0.014	0.026	0.120	0.003	0.005	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
525.0 / 76.1	362.0 / 52.5	35.0	65.3	170.0 / 179.0
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
203.4 / 157.3 / 298.3	-46.0	150.0 / 116.0 / 220.0	-50.0	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMUJ3	BODY	0.190	0.940	0.020	0.018	0.230	0.018	0.021	0.120	0.003	0.002	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
521.0 / 75.6	362.0 / 52.5	35.4	65.3	163.0 / 170.0
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
295.6 / 265.7 / 325.4	-46.0	218.0 / 196.0 / 240.0	-50.0	

CLIF-2217
GS-08600 CPO # 266

Certificate of Conformance

Certificate #: P1-137207

Velan hereby certifies that the valve(s) described above is (are) in conformance with the purchase order and specification requirements. The test report represents the actual attributes of items furnished and all test results are in full conformance with applicable specification and purchase order requirements.

Sattie Beresford for

Velan

24-JAN_2014

Date

Customer Representative

Date

VELAN

Certificate of Conformance

Certificate #: P1-126615

Plant 1 Velan Inc.
2125 Ward Avenue
Montreal, Quebec
Canada, H4M 1T6
Phone : 514-748-7743
Fax : 514-748-7641

Customer Name :	MRC CANADA ULC.
Customer Po # :	S759151344
Velan Order # :	M011-863354-W
Valve Design :	B16.34/API-602
Hydro Test Spec :	API-598
Test Result :	ACCEPTABLE

Certificate Date :	05-NOV-2012		
Item Number :	53	Position No :	140
Quantity :	200		
Figure Number :	W04-2054B-26NB		
Description	3/4" 800 BB GATE LF2		
Draw No. & Rev :	N/A	REV	N/A

Tag Number(s) : NONE

NOTES : VALVE(S) MEET(S) NACE MR0175-2002
MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS / MECHANICALS [F/B: flatenning/ bending; GS: Grain size]

ASTM Code: A350-07-LF2-CL1

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMSJ1	BODY	0.190	0.970	0.015	0.017	0.220	0.011	0.011	0.110	0.003	0.002	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
526.0 / 76.3	368.0 / 53.4	34.8	64.4	156.0 / 167.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
379.6 / 401.3 / 401.3	-46.0	280.0 / 296.0 / 296.0	-50.0	

ASTM Code: A350-11-LF2-CL1

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMFLB3	BONNET	0.200	1.010	0.022	0.015	0.290	0.017	0.015	0.150	0.002	0.001	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
518.0 / 75.1	357.0 / 51.8	36.2	63.6	167.0 / 179.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
366.1 / 344.4 / 368.8	-46.0	270.0 / 254.0 / 272.0	-50.0	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMHAU1	BONNET	0.190	0.940	0.013	0.022	0.270	0.040	0.030	0.150	0.003	0.003	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
528.0 / 76.6	360.0 / 52.2	35.2	64.2	163.0 / 179.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
404.0 / 385.1 / 395.9	-46.0	298.0 / 284.0 / 292.0	-50.0	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMSW2	BODY	0.190	1.000	0.015	0.025	0.230	0.008	0.014	0.120	0.003	0.001	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
531.0 / 77.0	362.0 / 52.5	34.8	65.3	167.0 / 179.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
184.4 / 184.4 / 189.8	-46.0	136.0 / 136.0 / 140.0	-50.0	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	(Cb)
MMTK1	BODY	0.190	0.940	0.013	0.022	0.270	0.040	0.030	0.150	0.003	0.003	0.000

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
520.0 / 75.4	358.0 / 51.9	35.0	65.3	167.0 / 183.0
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
404.0 / 385.1 / 395.9	-46.0	298.0 / 284.0 / 292.0	-50.0	

CLIF-2217
GS-08L00 CPO#266

VELAN

Certificate of Conformance

Certificate #: P1-126615

Velan hereby certifies that the valve(s) described above is (are) in conformance with the purchase order and specification requirements. The test report represents the actual attributes of items furnished and all test results are in full conformance with applicable specification and purchase order requirements.

Sandra Cardoso for

Manager of Q.C. Documentation

05-NOV_2012

Date

Customer Representative

Date

CAMERON

VALVES & MEASUREMENT

Wednesday, 27-Feb-2013

From:

Cameron Canada Corporation
3707 97 St.
Edmonton, Alberta, Canada
T6E6J2
Phone : 780-468-2732
Web Site : www.c-a-m.com

To:

Subject:

Serial	2702314	Quantity/Series	01

Comments:

Part #: 5A-T3R10TS20LZ3

Description: 1" RP 2000 WOG FNPTxSHT SW SLT,FIRESAFE,

Sales Order: n/a

Customer P/O: n/a

CL1F-2203
CPO#67 BX-20600

CAMERON

VALVES & MEASUREMENT

Wednesday, 27-Feb-2013

From:

Cameron Canada Corporation
3707 97 St.
Edmonton, Alberta, Canada
T6E6J2
Phone : 780-468-2732
Web Site : www.c-a-m.com

To:

Document Summary Page

The documents are printed in the following order:

#	Heat #	Heat Code	Job/Serial #	Material #	Description
1	S	LOC			Nutron T3, B3, B2 Sour
2	Hydro Test	598			API 598
3	D95D565				BODY,7/8" 4000 WOG,ASTM A105/LF2
4	S6611				BALL,7/8",ASTM A351 GR CF8M
5	322773				CAP,1" RP 6000 WOG SW-SHT,ASTM A350 LF2
6	Z94D591				CAP,1" RP 4000 WOG FNPT, ASTM A105/LF2
7	R4551				STEM,7/8",ASTM A564 17-4 H1150 NACE

VALVES & MEASUREMENT
Cameron Canada Corporation
3707 - 97 Street
Edmonton Alberta Canada T6E 6J2
Phone 780.463.6868
Fax 780.465.1244
www.c-a-m.com

GENERAL LETTER OF COMPLIANCE

for Valve Models:

T3, B3 & B2

Style 'S': Sour Service

Cameron Valves & Measurement hereby certifies that the design, fabrication, testing and quality control of the above NUTRON brand ball valves for Sour Service have been made in accordance with the following applicable standards (latest edition in effect at time of manufacture): API 598 (1-1/2" and smaller), ASME B16.34, CSA Z245.15 Sour Service (2" FP and larger) and V&M Engineering Standards. As part of compliance to these specifications, the valves have been marked in accordance with MSS SP-25. The valve has also been marked "SOUR" as required by CSA Z245.15 marking requirements for Sour Service.

The materials of construction for this valve conform to the metallurgical requirements of NACE MR0175/ISO 15156:2003 (Parts 1 & 2 for Carbon & Alloy Steels in SSC Region 3 Sour Service and Parts 1 & 3 for CRA's as specified in CSA Z245.15 Chapter 13). According to NACE MR0175-2003/ISO 15156, it is the customer's/user's responsibility to ensure that the valve materials will be satisfactory in the intended service.

The minimum service temperature of these valves is -29°C/-20°F.

The 'Z' option code designation at the end of a figure number indicates that the valve meets the requirements of API-607 Fourth Edition, May 1993.

These valves (1-1/2" and larger) conform to the Pressure Equipment Directive requirements and are marked as CE certified (Certificate #8888-001-2002).

The B2 valve model is constructed to be anti-static as standard.

Approved by:
Greg Ogaranko, M.Eng., P.Eng.
Engineering Manager

04/28/10
EWR 7463-03 Rev.06.doc

VALVES & MEASUREMENT
Cameron Canada Corporation
3707-97th St.
Edmonton Alberta Canada T6E 6J2
Phone 780.468.2732
www.c-a-m.com

CERTIFICATE OF CONFORMANCE

API 598 Pressure Testing – Carbon and Low Alloy Steel (2" RP and Smaller)

COMPLIANCE: These valves are tested in accordance with Cameron Valves & Measurement's standard procedures and API Standard 598, as per the chart below.

Test durations are 15 seconds in length as a minimum. Test duration is defined as the period of inspection after the valve is fully prepared and is under full pressure.

Butt weld end valves shall be tested in accordance with the ANSI rating.

Actual test pressure is rounded to next highest increment on the gauge.

Carbon & Low Alloy Steel
Shell and Seat Test Pressures
(Table Based on Rating for Group 1.1 Materials per ANSI B16.34)

Valve Class	Maximum Working Pressure	Hydrostatic Shell Test Pressure (PSI)	Air Seat Test Pressure +/- 10 PSI
150 ANSI	285	450	80
300 ANSI	740	1125	80
600 ANSI	1480	2225	80
800 ANSI	1975	3000	80
900 ANSI	2220	3350	80
1500 ANSI	3705	5575	80
2500 ANSI	6170	9275	80
275 WOG	275	425	80
720 WOG	720	1100	80
1000 WOG	1000	1500	80
1440 WOG	1440	2175	80
1500 WOG	1500	2250	80
2000 WOG	2000	3000	80
2160 WOG	2160	3250	80
3000 WOG	3000	4500	80
3600 WOG	3600	5400	80
4000 WOG	4000	6000	80
5000 WOG	5000	7500	80
6000 WOG	6000	9000	80

M. Aide

Murray Aide, Quality Manager

CAMERON

Material Test Report

Specification Notes:

Name	Revision	Grade	Description	Revision Year
ASTM A105/ASTM A350 GR LF2			Carbon & Low-Alloy Steel Forgings	2011

Product Information:

Item #	Product Code	Description	Heat Number	Heat Code	PO #
1	5A-10001032400	BODY,7/8" 4000 WOG,ASTM A105/LF2	D95D565		

Chemical Information:

Item #	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	V	CE	Cb/Nb	Cu+Ni	Cr+Mo
Min		0.6			0.15									
Max	0.23	1.35	0.035	0.035	0.3	0.4	0.3	0.12	0.4	0.08	0.43	0.02	1.00	0.32
1	.20	.90	.008	.007	.21	.06	.087	.03	.025	.054	0.3899	.012		

Physical Information:

Item #	Tensile (psi)	Yield (psi)	% Elongation	Charpy ft-lb (average of a set)	Charpy Temp (°F)	% Red of Area	Hardness (Brinell)
Min	70000	36000	22	15	-80	30	137
Max	95000				-50		187
1	75420	55840	31.5	161, 168, 170	-50	72.5	153

Additional Notes:

QUENCHING @920'C 2HRS @800'C 2HRS
TEMPERING @700'C 2HRS

We certify that the items referenced in this document were manufactured and tested in accordance with Cameron Purchase Order requirements and EH10204 3.1

M. Ciola
Quality Manager
Cameron Canada

原璋實業有限公司
WON ZONE CORPORATION
3F No. 185 Chung Hwa Road Sec. 2. Chung Li City 320, Taiwan R.O.C.
320 桃園縣中壢市中華路2段185號3樓 統一編號：16879927
Tel: (03)4341 325 Fax: +886-3-4341 525 E-mail: wonzone.taiwan@msa.hinet.net

ISO 9001 No 01 100 029186

CERTIFICATE OF CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES	CERTIFICATE NO. 120725- 3 DATE: 25-Jul-12

To. CAMERON CANADA CORPORATION
3707-97th Street, EDMONTON, AB T6E 6J2, CANADA

INVOICE NO. WZ-120725A	Your Order No. 4503442572/406503/408736/415485
Material Specification: ASTM A351 CF8M	Heat Treatment: Solution Annealed

Q'TY	PART NAME	DRAWING No.	Heat Code	Mechanical Properties			
				T.S.(KSI)	Y.S.(KSI)	ELO.(%)	HBW
				70 min	30 min	30 min	140-237
5,040	5A-11501041617 Ball 7/8"	#06002-010	U2101	76.4	41.9	46	145
5,040	5A-11501041617 Ball 7/8"	#06002-010	S6611	79.6	46.9	44.5	162
2,016	5A-11501541617 Ball 1½"	#06003-010	S6482	76.7	41.2	46.7	150
300	5A-11503041617 Ball 3"	#06005-010	U2091	79.8	46.3	36.9	167
50	5A-21506041220002 Ball 6"	#06024	U2081	78.9	46.0	36.5	161
100	5A-21504041220002 Ball 4"	#06040-041	S6483	77.3	45.0	35.9	168

Heat Code	Chemical Composition (%)								
	C	Mn	Si	S	P	Cr	Ni	Mo	
	0.08max	1.5max	1.5max	.040max	.040max	18-21	9-12	2.0-3.0	
U2101	0.0470	0.9700	0.453	0.0085	0.034	18.56	9.30	2.10	
S6611	0.0548	0.7913	0.4771	0.0080	0.0344	18.5197	9.4061	2.1775	
S6482	0.0507	1.0200	0.4040	0.0088	0.0211	18.9400	9.4767	2.1567	
U2091	0.0485	0.8600	1.2050	0.0063	0.0275	18.3500	9.0600	2.0650	
U2081	0.0750	0.9200	1.1700	0.0150	0.0380	18.3900	9.2100	2.0700	
S6483	0.0695	0.8500	1.1550	0.0115	0.0310	18.3300	9.0600	2.0100	

NOTE: CERTIFICATE ACCORDING TO EN 10204/3.1B

QUALITY CONTROL INSPECTOR	MANAGER
Sandy Yeh	Grant Hsu

Cameron Approved
By: lala Date:08/15/12 8.58

CAMERON

Material Test Report

Specification Notes:

Name	Revision	Grade	Description	Revision Year
ASTM A350/A350M - 12 w/ MS-021009-01-02		LF2 Class 1	Carbon & Low-Alloy Steel Forgings	2012

Product Information:

Item #	Product Code	Description	Heat Number	Heat Code	PO #
1	5A-1010701031600	CAP,1" RP 6000 WOG SW-SHT,ASTM A350 LF2	322773		

Chemical Information:

Item #	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	V	CE	Cb/Nb	Cr+Mo	Cu+Ni
Min		0.6			0.15									
Max	0.21	1.35	0.030	0.030	0.3	0.4	0.3	0.12	0.4	0.05	0.43	0.02	0.32	1.00
1	.200	.830	.023	.005	.210	.070	.130	.020	.180	.002	0.390	.001		

Physical Information:

Item #	Tensile (psi)	Yield (psi)	% Elongation	Charpy ft-lb (average of a set)	Charpy Temp (°F)	% Red of Area	Hardness (Brinell)	Charpy ft-lbf (1 specimen of a set)
Min	70000	36000	22	20	-80	30	143	16
Max	95000				-50		197	
1	82010	62453	32.2	49, 49, 51	-50	73.3	173	

Additional Notes:

AUSTENITIZED @ 920'C 80 MIN OIL QUENCHED
TEMPERED @ 620'C 2 HRS AIR COOLED

Chemical Information Notes:
1. RES 0.402

We certify that the items referenced in this document were manufactured and tested in accordance with Cameron Purchase Order requirements and EH10204 3.1

M. Ciola
Quality Manager
Cameron Canada

原璋實業有限公司
WON ZONE CORPORATION
3F No. 185 Chung Hwa Road Sec. 2, Chung Li City 320, Taiwan R.O.C.
320 桃園縣中壢市中華路2段185號3樓 統一編號：16879927
Tel: (03)4341 325 Fax: +886-3-4341 525 E-mail: wonzone.taiwan@msa.hinet.net

ISO 9001 No. 01 100 029106

CERTIFICATE OF CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES	CERTIFICATE NO. 120314- 1 DATE: 14-Mar-12

To. COOPER CAMERON CANADA LTD.-NUTRON
2125-64 AVENUE, EDMONTON AB T6P 1Z4, CANADA

INVOICE NO. WZ-120314A	Your Order No. 4503205721/207262/244872/284025/233955

MATERIAL SPECIFICATION: ASTM A-564 TYPE 630 H1150D

Q'TY	PART NAME	DRAWING No.	Heat Code	Mechanical Properties					
				Y.S.(KSI)	T.S.(KSI)	ELO.(%)	HRC	RA (%)	ft-lbf (-75°F)
				105 min	125 min	16 min	24~33	50 min	15 min
4,000	5A-11300513617 Stem 1/2"	#02001	R4541	130	138	20.5	32	74	120/114/107
11,520	5A-11301013617 Stem 7/8"	#02002	R4551	109	138	21	29	72	114/114/114
801	5A-11301513617005 Stem 1½"	#02122	DQ	117	133	21.5	29	71	97/90/87
1,899	5A-11301513617005 Stem 1½"	#02122	DS	126	140	23	32	69	96/89/87
142	5A-11302013617005 Stem 2"	#02123	DP	141	146	20	32	71	118/108/109
1,112	5A-11302013617005 Stem 2"	#02123	DR	138	144	21	33	72	91/99/80
100	5A-11303013370005 Stem 3"	#02124	DN	116	129	22	30	71	78/78/79
168	5A-11303013074 Stem 3"	#02005	DK	136	144	19	33	70	35/38/36
192	5A-11303013074 Stem 3"	#02005	DN	116	129	22	30	71	78/78/79
96	5A-11501513617 Ball 1½"	#06003	S6113	133	143	19.5	33	71	87/80/87
36	5A-11502013617 Ball 2"	#06004	S6183	131	141	20	31	70	38/36/36

Heat Code	Chemical Composition (%)									
	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Nb+Ta
	0.07max	1.0max	1.0max	.030max	.040max	15-17.5	3.0-5.0	0.5 max	3.0-5.0	0.15-0.45
DK	0.02	0.66	0.49	0.024	0.029	15.05	4.34	0.19	3.34	0.20
DN	0.02	0.62	0.45	0.021	0.028	15.13	4.24	0.10	3.41	0.20
DP	0.02	0.61	0.44	0.020	0.027	15.09	4.34	0.21	3.39	0.21
DQ	0.02	0.66	0.45	0.025	0.030	15.19	4.31	0.11	3.38	0.18
DR	0.02	0.64	0.45	0.020	0.030	15.27	4.23	0.16	3.39	0.22
DS	0.03	0.63	0.48	0.026	0.029	15.43	4.24	0.15	3.39	0.21
R4541	0.02	0.65	0.46	0.024	0.029	15.45	4.27	0.17	3.50	0.22
R4551	0.02	0.65	0.46	0.024	0.029	15.45	4.27	0.17	3.50	0.22
S6113	0.02	0.61	0.44	0.020	0.027	15.09	4.34	0.21	3.39	0.21
S6183	0.02	0.66	0.49	0.024	0.029	15.05	4.34	0.19	3.34	0.20

Solution Treatment: 1900°F for 30 Min/Inch (Minimum of 1 Hour), Fast Air Cooling to below 90°F
Double Aged at 1150°F for 4 hours minimum and cooled to below 90°F in air

Cameron Approved
By: laia Date:05/02/12 8:45

NOTE: CERTIFICATE ACCORDING TO EN 10204/3.1B

QUALITY CONTROL INSPECTOR	MANAGER
Sandy Yeh	Grant Hsu

NEWAY

MATERIAL TEST REPORT

EN 10204-2004 3.1

TC No. 53754-130(80325249)
DATE: 2014.09.29

CUSTOMER:	QUANTITY	PART No.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	12	10209463	2G3RC12-NC-000 \ITEM ID: 09C2 1257	2G3R,L21/12 [-LLC-WEB,] GATE VALVE,2,300LB ASTM A352 LCC,F316/HF RAISED FACE END,LOWEMISSION

PURCHASE ORDER: 6004037MRC_S 759 252079 \ S 759 252079 LINE ITEM:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131.	5.7/826.	0.6/87					

PROJECT NO:

APPLICABLE STANDARDS AND SPECIFICATION

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266 NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL SPECIFICATION
- VALVES CONFORM TO NACE STANDARD MR.0103 LATEST REVISION

CLIF-VI-2218
CPO#179 GF-~~[illegible]~~ D3L00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

WITNESSED BY: _____

NEWAY VALVE Ken Li
Q.C. Manager

Address: NO. 666 TaiShan Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY	MATERIAL TEST REPORT EN 10204-2004 3.1	TC No. 53754-130(80325249) DATE: 2014.09.29 PAGE: 2 OF 8

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	LCC	LCC	LCC			LCC	LCC	LCC	
53754-130-1	X1688	X1892	92L47	/	53754-130-2	X0730	X0652	92L48	/
53754-130-3	X1919	X1864	92L47	/	53754-130-4	X0730	X1918	92L48	/
53754-130-5	X1688	X1892	0951L	/	53754-130-6	X4220	X0652	92L47	/
53754-130-7	X4220	X1918	92L43	/	53754-130-8	X4221	X2614	92L43	/
53754-130-9	X4220	X2559	92L48	/	53754-130-10	X4462	X4221	92L48	/
53754-130-11	X4462	X3253	92L48	/	53754-130-12	X4220	X1864	92L48	/

NEWAY

MATERIAL TEST REPORT

EN 10204-2004 3.1

TC No. 53754-130(80325249)
DATE: 2014.09.29

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
LCC	NORMALIZE	910-930 (1670-1706°F)	1H/25MM,>=1.5H	AIR	GAS
LCC	QUENCHED	920-940 (1688-1724°F)	1H/25MM,>=2.5H	WATER	GAS
LCC	TEMPER	610-630 (1130-1166°F)	4H	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E.	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST VALUE TEMP °C: -50		
		MAX.	0.250	1.200	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237	Avg. 27 J Min: 22 J		
		MIN.															485	275	22	35	135	1	2	3
BODY	**LCC**	**X0730**	**0.213**	**1.082**	**0.402**	**0.010**	**0.021**	**0.057**	**0.027**	**0.005**	**0.031**	**0.003**				**0.410**	**530**	**370**	**33**	**53**	**163**	**60**	**63**	**42**
BODY	**LCC**	**X1688**	**0.219**	**1.075**	**0.441**	**0.007**	**0.031**	**0.080**	**0.018**	**0.011**	**0.019**	**0.002**				**0.419**	**600**	**435**	**31**	**61**	**159**	**47**	**55**	**54**
BODY	**LCC**	**X1919**	**0.218**	**1.048**	**0.396**	**0.010**	**0.021**	**0.052**	**0.023**	**0.004**	**0.022**	**0.002**				**0.407**	**580**	**410**	**30**	**59**	**159**	**45**	**60**	**52**
BODY	**LCC**	**X4220**	**0.213**	**1.066**	**0.436**	**0.011**	**0.023**	**0.063**	**0.032**	**0.011**	**0.027**	**0.004**				**0.410**	**560**	**415**	**31**	**64**	**156**	**48**	**52**	**49**
BODY	**LCC**	**X4221**	**0.225**	**1.053**	**0.387**	**0.011**	**0.020**	**0.049**	**0.024**	**0.006**	**0.024**	**0.003**				**0.415**	**610**	**465**	**30**	**60**	**163**	**47**	**54**	**45**
BODY	**LCC**	**X4462**	**0.223**	**1.075**	**0.411**	**0.010**	**0.025**	**0.047**	**0.029**	**0.008**	**0.034**	**0.004**				**0.418**	**590**	**450**	**31**	**65**	**163**	**29**	**30**	**27**
BONNET	**LCC**	**X0652**	**0.218**	**1.022**	**0.402**	**0.010**	**0.021**	**0.038**	**0.018**	**0.004**	**0.019**	**0.002**				**0.400**	**565**	**395**	**32**	**62**	**163**	**43**	**33**	**40**
BONNET	**LCC**	**X1864**	**0.226**	**1.049**	**0.399**	**0.010**	**0.024**	**0.059**	**0.023**	**0.007**	**0.025**	**0.003**				**0.418**	**590**	**410**	**32**	**64**	**163**	**55**	**66**	**58**
BONNET	**LCC**	**X1892**	**0.227**	**1.067**	**0.425**	**0.010**	**0.023**	**0.052**	**0.020**	**0.003**	**0.019**	**0.002**				**0.419**	**590**	**415**	**30**	**55**	**159**	**42**	**53**	**48**
BONNET	**LCC**	**X1918**	**0.226**	**1.010**	**0.403**	**0.011**	**0.023**	**0.048**	**0.022**	**0.004**	**0.027**	**0.003**				**0.409**	**600**	**430**	**30**	**58**	**159**	**47**	**46**	**51**
BONNET	**LCC**	**X2559**	**0.217**	**1.090**	**0.429**	**0.011**	**0.028**	**0.047**	**0.020**	**0.004**	**0.016**	**0.003**				**0.412**	**575**	**395**	**31**	**63**	**167**	**47**	**47**	**40**

Address: NO. 666 TaiShan Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204-2004 3.1

TC No. 53754-130(80325249)
DATE: 2014.09.29

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
LCC	NORMALIZE	910-930 (1670-1706°F)	1H/25MM,>=1.5H	AIR	GAS
LCC	QUENCHED	920-940 (1688-1724°F)	1H/25MM,>=2.5H	WATER	GAS
LCC	TEMPER	610-630 (1130-1166°F)	4H	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E.	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST VALUE TEMP °C: -50		
		MAX.	0.250	1.200	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237	Avg. 27 J Min: 22 J		
		MIN.															485	275	22	35	135	1	2	3
BONNET	**LCC**	**X2614**	**0.215**	**1.051**	**0.391**	**0.013**	**0.031**	**0.050**	**0.023**	**0.012**	**0.034**	**0.002**				**0.407**	**535**	**390**	**33**	**54**	**170**	**40**	**39**	**44**
BONNET	**LCC**	**X3253**	**0.217**	**1.020**	**0.420**	**0.010**	**0.024**	**0.060**	**0.021**	**0.008**	**0.026**	**0.002**				**0.404**	**565**	**390**	**31**	**63**	**163**	**48**	**47**	**44**
BONNET	**LCC**	**X4221**	**0.225**	**1.053**	**0.387**	**0.011**	**0.020**	**0.049**	**0.024**	**0.006**	**0.024**	**0.003**				**0.415**	**610**	**465**	**30**	**60**	**163**	**47**	**54**	**45**
WEDGE	**LCC**	**0951L**	**0.224**	**1.069**	**0.424**	**0.018**	**0.027**	**0.065**	**0.026**	**0.008**	**0.021**	**0.005**				**0.421**	**580**	**395**	**26**	**52**	**176**	**39**	**38**	**37**
WEDGE	**LCC**	**92L43**	**0.215**	**0.994**	**0.380**	**0.018**	**0.023**	**0.055**	**0.021**	**0.005**	**0.019**	**0.003**				**0.396**	**505**	**310**	**33**	**66**	**153**	**34**	**26**	**32**
WEDGE	**LCC**	**92L47**	**0.222**	**1.039**	**0.438**	**0.018**	**0.023**	**0.055**	**0.019**	**0.004**	**0.018**	**0.003**				**0.410**	**565**	**390**	**32**	**61**	**171**	**35**	**64**	**48**
WEDGE	**LCC**	**92L48**	**0.212**	**0.974**	**0.371**	**0.017**	**0.023**	**0.053**	**0.022**	**0.004**	**0.016**	**0.003**				**0.389**	**570**	**380**	**27**	**57**	**173**	**30**	**28**	**31**

Address: NO. 666 TaiShan Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204-2004 3.1

TC No. 53754-130(80325249)
DATE: 2014.09.29

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
7M	QUENCHED	>=850 (1562°F)	1H/25MM,>=1H	OIL	ELECTRIC
7M	TEMPER	>=620 (1148°F)	1H/25MM,>=1H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Mo %								TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST VALUE TEMP °C: -50		
		MAX.	0.490	1.100	0.350	0.040	0.035	1.200	0.250												235	Avg. 40 J Min: 28 J		
		MIN.	0.370	0.650	0.150			0.750	0.150												159	1	2	3
NUT	**7M**	**SDC041**	**0.420**	**0.720**	**0.220**	**0.005**	**0.008**	**1.010**	**0.160**												**225**	**56**	**52**	**59**

Address: NO. 666 TaiShan Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204-2004 3.1

TC No. 53754-130(80325249)
DATE: 2014.09.29

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
F316	SOLUTION	1040~1100 (1904~2012°F)	1H/25MM,>=1H	WATER	ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	N %						TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST VALUE TEMP °C: -29		
		MAX.	0.080	2.000	1.000	0.030	0.045	18.00	14.00	3.000	0.100										237	Avg. 27 J Min: 22 J		
		MIN.						16.00	10.00	2.000							515	205	30	50		1	2	3
STEM	**F316**	**VCC1214**	**0.025**	**1.010**	**0.560**	**0.005**	**0.030**	**16.37**	**10.07**	**2.050**	**0.003**						**540**	**225**	**50**	**70**	**165**			

Address: NO. 666 TaiShan Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204-2004 3.1

TC No. 53754-130(80325249)
DATE: 2014.09.29

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
L7M	QUENCHED	>=850 (1562°F)	1.25H	OIL	ELECTRIC
L7M	TEMPER	>=620 (1148°F)	1.5H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Mo %								TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST VALUE TEMP °C: -73		
		MAX.	0.480	1.000	0.350	0.040	0.035	1.100	0.250												235	Avg. 27 J Min: 22 J		
		MIN.	0.380	0.750	0.150			0.800	0.150								690	550	18	50	200	1	2	3
BOLT	**L7M**	**FEC058**	**0.400**	**0.850**	**0.260**	**0.005**	**0.015**	**0.970**	**0.180**								**726**	**638**	**18**	**59**	**223**	**38**	**32**	**34**

Address: NO. 666 TaiShan Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204-2004 3.1

TC No. 53754-130(80325249)
DATE: 2014.09.29

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
LF2	NORMALIZE	850~920 (1562~1688°F)	1H/25MM,>=1H	AIR	ELECTRIC
LF2	QUENCH	910~940 (1670~1724°F)	1H/25MM,>=1H	WATER	ELECTRIC
LF2	TEMPER	593~649 (1099~1200°F)	1H/25MM,>=1H	AIR	ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %	Nb %			C.E.	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST VALUE TEMP °C: -50		
		MAX.	0.300	1.350	0.300	0.040	0.035	0.300	0.400	0.120	0.400	0.080	0.020				655				187	Avg. 27 J Min: 22 J		
		MIN.		0.600	0.150												485	250	22	30		1	2	3
SEAT RING	**LF2**	**YXCE102**	**0.210**	**0.960**	**0.210**	**0.012**	**0.004**	**0.060**	**0.020**	**0.010**	**0.060**	**0.010**	**0.010**			**0.391**	**540**	**320**	**36**	**58**	**156**	**36**	**51**	**55**

Address: NO. 666 TaiShan Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

OA Line 1 CPO179

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38278-400(80155253)
DATE: 2014-12-5
PAGE: 1 OF 3

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	1	10209463	2G3RC12-NC-000	GATE VALVE,2G3R,L21/12 [-LLC-WEB,] GATE VALVE,2,300LB ASTM A352 LCC,F316/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001811MRC_S75913476	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL
- VALVES CONFORM TO NACE STANDARD MR.0175 LATEST REVISION

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-VI-2218
CPO #179 GF-03L00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC No. 38278-400(80155253)
DATE: 2014.12.5

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	LCC	LCC	LCC		LCC	LCC	LCC		LCC	LCC	LCC		LCC	LCC	LCC
38278-400-69	7H353	L1170	6U171												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38278-400(80155253)
DATE: 2014.12.5

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
LCC	NORMALIZE	910-930 (1670-1706°F)	1H/25MM	AIR	GAS
LCC	QUENCHED	920-940 (1688-1724°F)	1H/25MM	WATER	GAS
LCC	TEMPER	610-630 (1130-1166°F)	4H	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.25	1.2	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237	-50	27.00	22.00
		MIN.															485	275	22	35	135			
BONNET	LCC	L1170	0.228	1.022	0.437	0.01	0.022	0.059	0.029	0.002	0.015	0.005				0.414	530	355	29	58	165	32	46	36
BODY	LCC	7H353	0.186	0.966	0.415	0.008	0.023	0.043	0.019	0.01	0.026	0.003				0.361	615	445	33	68	170	72	64	75
WEDGE	LCC	6U171	0.218	1.031	0.409	0.014	0.029	0.056	0.023	0.01	0.026	0.003				0.407	655	530	25	51	170	27	26	36

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38278-400(80155253)
DATE: 2014-12-5

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	1	10209463	2G3RC12-NC-000	GATE VALVE,2G3R,L21/12 [-LLC-WEB,] GATE VALVE,2,300LB ASTM A352 LCC,F316/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001811MRC_S75913476	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL
- VALVES CONFORM TO NACE STANDARD MR.0175 LATEST REVISION

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-V1-2206
CPO#179 GF-03L00

WITNESSED BY: _____

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC No. 38278-400(80155253)
DATE: 2014.12.5

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	LCC	LCC	LCC		LCC	LCC	LCC		LCC	LCC	LCC		LCC	LCC	LCC
38278-400-66	7H353	3H213	6U171												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38278-400(80155253)
DATE: 2014.12.5

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
LCC	NORMALIZE	910-930 (1670-1706°F)	1H/25MM	AIR	GAS
LCC	QUENCHED	920-940 (1688-1724°F)	1H/25MM	WATER	GAS
LCC	TEMPER	610-630 (1130-1166°F)	4H	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.25	1.2	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237	-50	27.00	22.00
		MIN.															485	275	22	35	135			
WEDGE	LCC	6U171	0.218	1.031	0.409	0.014	0.029	0.056	0.023	0.01	0.026	0.003				0.407	655	530	25	51	170	27	26	36
BODY	LCC	7H353	0.186	0.966	0.415	0.008	0.023	0.043	0.019	0.01	0.026	0.003				0.361	615	445	33	68	170	72	64	75
BONNET	LCC	3H213	0.21	1.026	0.394	0.011	0.023	0.043	0.026	0.013	0.032	0.006				0.397	615	380	33	68	167	60	48	62

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38278-400(80155253)
DATE: 2014-12-5

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	1	10209463	2G3RC12-NC-000	GATE VALVE,2G3R,L21/12 [-LLC-WEB,] GATE VALVE,2,300LB ASTM A352 LCC,F316/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001811MRC_S75913476	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL
- VALVES CONFORM TO NACE STANDARD MR.0175 LATEST REVISION

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-V1-2206
CPO#179 GF-03L00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC No. 38278-400(80155253)
DATE: 2014.12.5

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	LCC	LCC	LCC		LCC	LCC	LCC		LCC	LCC	LCC		LCC	LCC	LCC
38278-400-67	7H353	L1170	15U26												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38278-400(80155253)
DATE: 2014.12.5

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
LCC	NORMALIZE	910-930 (1670-1706°F)	1H/25MM	AIR	GAS
LCC	QUENCHED	920-940 (1688-1724°F)	1H/25MM	WATER	GAS
LCC	TEMPER	610-630 (1130-1166°F)	4H	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.25	1.2	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237	-50	27.00	22.00
		MIN.															485	275	22	35	135			
BONNET	LCC	L1170	0.228	1.022	0.437	0.01	0.022	0.059	0.029	0.002	0.015	0.005				0.414	530	355	29	58	165	32	46	36
BODY	LCC	7H353	0.186	0.966	0.415	0.008	0.023	0.043	0.019	0.01	0.026	0.003				0.361	615	445	33	68	170	72	64	75
WEDGE	LCC	15U26	0.224	1.041	0.434	0.018	0.026	0.056	0.042	0.006	0.043	0.005				0.417	535	350	31	67	147	51	42	32

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

Newmans®
A Cameron Joint Venture Company
Newco® OIC®
13127 Trinity Dr., Stafford, TX 77477
Tel: 281-302-4900 Fax: 281-302-4801

Material Test Report

12/19/12

Cert No: 648260

ISO 9001:2008 RWTUV Cert # 08-1016 EN 10204-3.1
CRN: OC12551.2

Item No: M1120015FKCB*227RF***GZ
Size/Type: 12" / Gate
Quantity: 1
Country of Origin: China
FigNo: 12 11F-CB2-EXT-GO

Inspection
Dimension: Passed
Visual: Passed

Pressure Test Result

Item	Test Pressure (Mpa)	Test Pressure (PSI)	Duration (sec)	Test Result
Shell	3.103	450	120	Passed
Backseat	2.241	325	60	Passed
Seat Hydro	-	-	-	
Seat Air	0.552	80	120	Passed

Standard: API 598 / ASME B16.34

Customer: AR THOMSON GROUP
Customer Number: 14160
Customer PO: 229735
Newmans SO: UB824
Project Name:
Valve Serial No:
Description: 12 11F-CB2-EXT-GO 150 WCB FLGDTEL) HO GATE OSY BOLT BON FX WD
Customer Tag No:

Part: Body Type 3.1 — Material Code: A216 WCB — Heat No: N5541W

Heat Treatment: NORMALIZING: 920 Deg C x 3h Air cooling
Notes:

Chem Comp (%)	C	Cr	Cu	Mn	Mo	Ni	P	S	Si	V
Spec: Min:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spec: Max:	0.30	0.50	0.30	1.00	0.20	0.50	0.040	0.05	0.60	0.03
Val:	0.190	0.035	0.026	0.900	0.004	0.018	0.029	0.020	0.460	0.003

Physical Props	Tensile KSI	Yield KSI	Elong %	Reduct %	Hard(HB)
	70.0	36.0	22.0	35.0	100.0
	95.0	99.9	100.0	100.0	225.0
	78.3	49.3	26.0	36.0	159.0

Part: Bonnet/Cap Type 3.1 — Material Code: A216 WCB — Heat No: N5228W

Heat Treatment: NORMALIZING: 920 Deg C x 3h Air cooling
Notes:

Chem Comp (%)	C	Cr	Cu	Mn	Mo	Ni	P	S	Si	V
Spec: Min:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spec: Max:	0.30	0.50	0.30	1.00	0.20	0.50	0.040	0.05	0.60	0.03
Val:	0.210	0.030	0.034	0.820	0.004	0.021	0.032	0.031	0.460	0.004

Physical Props	Tensile KSI	Yield KSI	Elong %	Reduct %	Hard(HB)
	70.0	36.0	22.0	35.0	100.0
	95.0	99.9	100.0	100.0	225.0
	78.3	47.1	24.0	35.0	154.0

CL1F-V1-3005
CPO #4 SP-1546

Comments: Newmans declares that the parts above are in accordance with applicable material specification and purchase order requirements.
No Asbestos is contained in this product. Packing: Flexible Graphite | Gasket: Corrugated (316) W/ Grafoil
Valves convered in this certificate are in full compliance with purchase order requirements and specifications.

Signature 12/19/12

MTR created by: AB

Powered by idsTAG.com

5

CPO#68,6TOA LINE 7,5

DOUGLAS CHERO Spa
FORGED VALVES
DOUGLAS ITALIA
Cap. Soc. Euro 1.033.000,00 i.v.

CERTIFIED QUALITY MANAGEMENT SYSTEM ISO 9001:2008 SINCERT
COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV = ISO 9001:2008 =

CERTIFICATE ACCORDING TO:
DIN EN 10204/3.1 - BS EN 10204/3.1

CERTIFICATE NO.	DATE	SHEET
120160	28/02/2012	025/070

CUSTOMER
PRO-TECH VALVE SALES INC.

REF. 11.0577 DTD 08/11/2011 PART. ____ COMP. X

P.ORDER 84491

ITEM	Q.TY	DESCRIPTION	DIMENS.	CUSTOMER CODE / NOTES
41	47	PISTON CHECK VALVE c.800 RB BB NPT -Stell.Seat	3/4"	NACE-TRIM12
42	37	PISTON CHECK VALVE c.800 RB BB NPT -Stell.Seat	1"	NACE-TRIM12

APPLICABLE STANDARD
API 602 - BS EN ISO 15761 - ASME B16.34
ASME B16.5 - ASME B16.10 - ASME B16.11 - ASME B1.20.1
MATERIAL ACCORDING TO NACE MR0175.

ITEM	PART NAME	MATERIAL	HEAT CODE	HEAT NUMBER	C%	Mn%	Si%	S%	P%	Cr%	Mo%	Ni%	Ti%	Cu%	Fe%	Al%	C.E.	Cb/Nb%	V%	Sn% N%	TS MPa	YS	E%	R%	HB
41	Body	ASTM A350/LF2	E-YL	72299	0,180	1,010	0,210	0,020	0,013	0,080	0,010	0,060		0,190		0,025	0,383	0,000	0,002	0,006	517	320	32,00	56,00	160
	Body	ASTM A350/LF2	E-YA	1T7528	0,190	0,880	0,210	0,006	0,010	0,070	0,010	0,100		0,400		0,023	0,386	0,001	0,002	0,015	515	335	30,00	59,00	158
	Cover	ASTM A350/LF2	M-D261	08/72968	0,190	0,910	0,180	0,005	0,010	0,060	0,010	0,040		0,130		0,027	0,371	0,000	0,019	0,006	510	316	32,60	57,40	151
	Piston	A182/F316		310854	0,024	1,570	0,350	0,028	0,033	17,000	2,000	10,100								0,026	642	361	49,00	72,00	181
	Seat	A182/F316 Stel.		310854	0,024	1,570	0,350	0,028	0,033	17,000	2,000	10,100								0,026	642	361	49,00	72,00	181
	Body Screw	ASTM A193/B8M C.1		172674	0,013	1,590	0,430	0,001	0,024	16,940	2,040	11,230									758	655	37,80	59,60	238
42	Body	ASTM A350/LF2	E-YS	70377	0,175	1,090	0,220	0,012	0,011	0,070	0,010	0,060		0,190		0,025	0,390	0,000	0,003	0,005	520	320	31,00	56,00	156
	Body	ASTM A350/LF2	E-YO	70377	0,175	1,090	0,220	0,012	0,011	0,070	0,010	0,060		0,190		0,025	0,390	0,000	0,003	0,009	520	320	31,00	56,00	161
	Cover	ASTM A350/LF2	M-D33	08/76303	0,195	0,890	0,220	0,010	0,012	0,130	0,010	0,070	0,015	0,160		0,022	0,390	0,001	0,016	0,011	511	317	32,70	57,00	154
	Piston	A182/F316		995045	0,020	1,660	0,390	0,028	0,030	16,500	2,020	10,000								0,029	633	360	50,00	73,00	181
	Seat	A182/F316 Stel.		995845	0,020	1,660	0,390	0,028	0,030	16,500	2,020	10,000								0,029	633	360	50,00	73,00	181
	Body Screw	ASTM A193/B8M C.1		172811	0,024	1,560	0,440	0,001	0,026	16,750	2,010	11,190									785	655	38,60	58,80	238

HEAT TREATMENT

ASTM A350/LF2	HEATING AT 900°C FOR 1 HOUR EACH 25mm OF THICKNESS; COOLING IN STILL AIR
A182/F316	SOLUBILIZED AT 1050°C min. AND QUENCHED IN WATER
ASTM A193/B8M C.1	CARBIDE SOLUTION TREATED

PARTICULAR	ITEM	VALUES(J)	TEMP.
E-YL	41	159 167 148	-46°C
E-YA	41	39 40 39	-46°C
M-D261	41	173 148 160	-46°C
E-YS	42	162 149 158	-46°C
E-YO	42	63 63 55	-46°C
M-D33	42	49 44 47	-46°C

REMARKS
WE DECLARE THAT THE VALUES INDICATED ARE IN CONFORMITY WITH THE MILL CERTS AVAILABLE C/o Q.C.DEPT.DOUGLAS CHERO SPA
ASTM A105N & A350/LF2 MATERIAL : PHOSPHATIZED.

ITEM 41,42:
IMPACT TEST KV-46°C

API 598 / BS EN 12266-1 TEST CERTIFICATION D.C. PROCEDURE 140 R.7

Rating		c.800	c.800
Hydrostatic body test	BAR	211	211
Hydrostatic seat test/backseat test	BAR	156	156
Air seat test	BAR	6	6

QUALITY CONTROL
DOUGLAS-CHERO S.p.A.
Quality Control
RIZZI VALTER

QUALITY ASSURANCE

CUSTOMER'S INSPECTOR
DATE: ____

DDC. GQDC0001/01 ITEN REV.13

CLIF-2202 CPO#68
& CT-08L00

OALine 54 CPO# 46

Material Test Report

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name :

Valve Description : 1 IN 800 class gate

Figure Number : c-2054b-02ty

Quantity :

Date : 19-NOV-12

MATERIAL TEST RESULTS SHOWN BELOW:

IMPERIAL

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code A105-11-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb) at °F	F/B	GS	DESCR.
MMFWB3	0.180	1.000	0.016	0.025	0.230	0.007	0.021	0.110	0.003	0.003	35.5	74.3	36.2	64.8	152.0 / 163.0				

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A105-11-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb) at °F	F/B	GS	DESCR.
MMFUB1	0.200	0.960	0.009	0.016	0.200	0.012	0.020	0.110	0.003	0.004	51.8	75.1	35.8	66.1	152.0 / 167.0				

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF#12206
CPO#277 GX-08400

OA Line 22 CPO# 25

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 34597-190(80097851)
DATE: 2012-11-20

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178988	10G3RA8-000	GATE VALVE,10G3R V1,C00/8[-LLC-SSF.] GATE VALVE,10,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
PO6000898MRM_S865265	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600(2009) ASME B16.34(2009)
- TEST. API598(2009) EN12266(2003)
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

CLIF-V1-2206
CPO#66 GF-03A00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 34597-190(80097851)
DATE: 2012.11.20

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB
34597-190-16	6005B	6168B	801U6												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 34597-190(80097851)
DATE: 2012.11.20

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50°F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
WEDGE	WCB	801U6	0.208	0.992	0.392	0.012	0.024	0.046	0.021	0.01	0.03	0.004				0.389	600	385	32	51	152			
BODY	WCB	6005B	0.201	0.981	0.382	0.009	0.022	0.138	0.049	0.015	0.025	0.004				0.401	565	385	25	39	163			
BONNET	WCB	6168B	0.198	1.017	0.41	0.01	0.024	0.174	0.049	0.019	0.031	0.004				0.412	535	340	33	57	170			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

FORUM ENERGY TECHNOLOGIES DSI

OA INP #6 CPO #2

Inspection Certificate and Material Test Report
(EN10204-1991 3.1.B / EN10204-2004 3.1)

DSI Valve Solutions
12735 Dairy Ashford
Stafford TX 77477
281-637-2000 - Fax 281-637-2299
www.dsivalve.com

Certificate/Serial/Job No: ZB19

Quality Department: John Ho

Quantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
43	6	150	/ 103034	DSI 137XU	SWING				11/15/2012

Pressure Test: API598	☑ Satisfactory	Shell Pressure : 450 psi / 3102.64 kPa	BackSeat : psi / kPa	Seat Pressure 325 psi / 2240.8 kPa	Seat Air Pressure psi / kPa

Part	Specif.	HEAT#	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	W	Nb	Al	N	Ceq	Tensile [ksi] [MPa]	Yield [ksi] [MPa]	Elong [%]	Redu [%]	Hard [HB]	Ch.1 [J]	Ch.2 [J]	Ch.3 [J]	Ch. A [J]	Temp. [F] [C]	Heat
			Chemical Composition [%]															Mechanical Properties										
ZB19 / 6																												
BODY	ASTM A216 WCB-2008	A 12870	0.220	0.43	0.91	0.024	0.011	0.032	0.093	0.002	0.040	0.004			0.006		0.40	74.39 512.90	44.37 305.9	29	57	150						N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002					0.35	74.53 513.87	47.85 329.9	30	64	158						N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003						76.85 529.86	53.65 369.9	24.5	64	155						N
ZB19 / 7																												
BODY	ASTM A216 WCB-2008	A 12869	0.200	0.43	0.89	0.025	0.013	0.031	0.063	0.004	0.044	0.004			0.042		0.37	74.24 511.87	43.50 299.9	31	56	151						N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002					0.35	74.53 513.87	47.85 329.9	30	64	158						N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003						76.85 529.86	53.65 369.9	24.5	64	155						N
ZB19 / 8																												
BODY	ASTM A216 WCB-2008	A 12992	0.210	0.43	0.88	0.025	0.012	0.027	0.065	0.002	0.031	0.004			0.023		0.37	76.56 527.86	45.97 317	26	53	155						N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002					0.35	74.53 513.87	47.85 329.9	30	64	158						N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003						76.85 529.86	53.65 369.9	24.5	64	155						N
ZB19 / 9																												
BODY	ASTM A216 WCB-2008	A 12997	0.210	0.41	0.87	0.024	0.012	0.029	0.082	0.005	0.033	0.007			0.027		0.38	72.50 499.87	43.07 297	32	57	150						N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002					0.35	74.53 513.87	47.85 329.9	30	64	158						N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003						76.85 529.86	53.65 369.9	24.5	64	155						N
ZB19 / 10																												

CLIF-V1-2207
CPO#4 CF-01A00

BODY	ASTM A216 WCB-2008	A 12997	0.210	0.41	0.87	0.024	0.012	0.029	0.082	0.005	0.033	0.007	0.027	0.38	72.50 499.87	43.07 297	32	57	150		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 11																						
BODY	ASTM A216 WCB-2008	A 12868	0.210	0.43	0.86	0.029	0.012	0.035	0.065	0.003	0.035	0.004	0.027	0.37	73.37 505.87	43.21 297.9	33	57	149		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 12																						
BODY	ASTM A216 WCB-2008	A 12999	0.210	0.46	0.89	0.028	0.017	0.034	0.055	0.003	0.029	0.003	0.031	0.37	74.68 514.90	44.66 307.9	30	55	154		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 13																						
BODY	ASTM A216 WCB-2008	A 12859	0.200	0.43	0.89	0.025	0.013	0.031	0.063	0.004	0.044	0.004	0.042	0.37	74.24 511.87	43.50 299.9	31	56	151		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 14																						
BODY	ASTM A216 WCB-2008	A 12997	0.210	0.41	0.87	0.024	0.012	0.029	0.082	0.005	0.033	0.007	0.027	0.38	72.50 499.87	43.07 297	32	57	150		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 15																						
BODY	ASTM A216 WCB-2008	A 12868	0.210	0.43	0.86	0.029	0.012	0.035	0.065	0.003	0.035	0.004	0.027	0.37	73.37 505.87	43.21 297.9	33	57	149		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 16																						
BODY	ASTM A216 WCB-2008	A 13293	0.200	0.40	0.88	0.025	0.010	0.026	0.060	0.003	0.022	0.006	0.008	0.36	71.92 495.87	43.79 301.9	31	57	149		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 17																						
BODY	ASTM A216 WCB-2008	A 13291	0.220	0.43	0.95	0.025	0.013	0.030	0.071	0.008	0.033	0.006	0.01	0.40	76.56 527.86	45.53 313.9	26	53	156		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N

COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 18

BODY	ASTM A216 WCB-2008	A 12996	0.200	0.43	0.89	0.024	0.012	0.026	0.065	0.006	0.035	0.007	0.023	0.37	76.13 524.9	45.53 313.9	26	55	154			N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158			N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 19

BODY	ASTM A216 WCB-2008	A 13293	0.200	0.40	0.88	0.025	0.010	0.026	0.060	0.003	0.022	0.006	0.008	0.36	71.92 495.87	43.79 301.9	31	57	149			N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158			N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 20

BODY	ASTM A216 WCB-2008	A 12991	0.200	0.42	0.93	0.031	0.012	0.027	0.066	0.004	0.035	0.005	0.006	0.37	74.10 510.90	43.94 303	32	57	150			N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158			N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 21

BODY	ASTM A216 WCB-2008	A 13294	0.200	0.43	0.94	0.027	0.011	0.024	0.057	0.002	0.026	0.008	0.008	0.37	72.50 499.87	43.21 297.9	33	58	147			N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158			N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 22

BODY	ASTM A216 WCB-2008	A 13289	0.210	0.41	0.90	0.023	0.019	0.034	0.055	0.003	0.052	0.005	0.023	0.38	75.40 519.86	43.50 299.9	26	51	150			N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158			N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 23

BODY	ASTM A216 WCB-2008	A 12991	0.200	0.42	0.93	0.031	0.012	0.027	0.066	0.004	0.035	0.005	0.006	0.37	74.10 510.90	43.94 303	32	57	150			N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158			N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 24

BODY	ASTM A216 WCB-2008	A 12999	0.210	0.46	0.89	0.028	0.017	0.034	0.055	0.003	0.029	0.003	0.031	0.37	74.68 514.90	44.66 307.9	30	55	154			N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158			N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155			N

ZB19 / 25

BODY	ASTM A216 WCB-2008	A 12998	0.210	0.44	0.92	0.025	0.015	0.027	0.075	0.006	0.035	0.005	0.018	0.38	73.08 503.87	43.50 299.9	32	58	152		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 26																						
BODY	ASTM A216 WCB-2008	A 13294	0.200	0.43	0.94	0.027	0.011	0.024	0.057	0.002	0.026	0.008	0.008	0.37	72.50 499.87	43.21 297.9	33	58	147		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 27																						
BODY	ASTM A216 WCB-2008	A 12993	0.210	0.42	0.89	0.026	0.012	0.025	0.063	0.002	0.034	0.004	0.039	0.38	74.68 514.90	44.37 305.9	32	57	154		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N
ZB19 / 28																						
BODY	ASTM A216 WCB-2008	A 13291	0.220	0.43	0.95	0.025	0.013	0.030	0.071	0.008	0.033	0.006	0.01	0.40	76.56 527.86	45.53 313.9	26	53	156		N
CLAPPER	ASTM A105-2005	C 90029	0.19	0.21	0.92	0.012	0.008	0.02	0.03	0.003	0.04	0.002		0.35	74.53 513.87	47.85 329.9	30	64	158		N
COVER	ASTM A105-2005	C 60518	0.18	0.21	0.97	0.022	0.022	0.05	0.08	0.001	0.04	0.003			76.85 529.86	53.65 369.9	24.5	64	155		N

Heat Treatment Codes:

A : Annealing	*AC : Air Cooling*	*DA : Double Aged*	*FT : Furnace Treatment*	*N : Normalizing*	*OQ : OilQuenched*
Ph-3 : Precipitation Hardening	*SA : Solution Annealed*	*SQ : Solution Quenched*	*ST : Solution Treatment*	*T : Tempering*	*WC : Water Cooling*
WQ : Water Quenched	*WT : Water Quenched/ Tempered*			*NT 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 Confirmity: 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 assesment 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 Jianyin Eastern Valve company Ltd. :

刘建青

Material Test Report

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name : MRC CANADA

Valve Description : 2 IN 150 class GATE

Figure Number : F08-0064C-02TY

Quantity :

Date : 17-DEC-12

MATERIAL TEST RESULTS SHOWN BELOW:

IMPERIAL

CHEMICALS / MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-08-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
BNB09H21	0.201	0.951	0.022	0.009	0.422	0.037	0.024	0.020	0.001	0.008	49.0	78.0	28.4	54.0	/	/	/			
BNB15H29	0.202	0.922	0.026	0.010	0.468	0.039	0.027	0.030	0.001	0.006	53.8	81.7	30.8	60.0	/	/	/			

CHEMICALS / MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-08-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
BNB20K30	0.210	0.894	0.034	0.011	0.452	0.030	0.021	0.039	0.007	0.006	53.8	81.7	29.0	56.0	/	/	/			
BNB21H13	0.201	0.959	0.026	0.010	0.443	0.035	0.042	0.085	0.002	0.007	55.0	85.7	28.2	49.0	/	/	/			

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF-2201 CPO#23

GF-01A10

cpo23 oaline22

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02
PAGE: 1 OF 25

CUSTOMER:	QUANTITY	PART No.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	105	10178961	2G1RA8-000	2G1R V2,C00/8 [-LLC-SSF-WEB,-GBR] GATE VALVE,2,150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER: 6001659MRC-S759124230	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464.	2.2/319.	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION

- P/T RATING: ASME B16.34 (2009)
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600(2009) ASME B16.34(2009)
- TEST: API598(2009) EN12266(2003)
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL SPECIFICATION

CLIF-V1-2204
CPO#23 GF-01A10

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE Ken Li
Q.C. Manager

WITNESSED BY: _____

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

cp023 oaline 22

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 37685-10(80151042) DATE: 2012.05.02 PAGE: 2 OF 25

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-010-586	L0059	6H214	6A751	/	37685-010-601	5H739	2H588	7A062	/
37685-010-602	5H402	93U20	6A752	/	37685-010-608	6H214	2H837	79U65	/
37685-010-614	6H214	93U91	75U50	/	37685-010-615	L0806	93U91	75U59	/
37685-010-617	46U52	99U38	75U59	/	37685-010-620	6H314	3H772	78U56	/
37685-010-623	5H254	3H772	72U24	/	37685-010-625	5H402	3H773	6A152	/
37685-010-626	5H401	0H603	79U40	/	37685-010-628	5H823	3E820	5A765	/
37685-010-630	4H664	3H894	6A760	/	37685-010-634	4H985	3H772	6A750	/
37685-010-637	4H952	4H689	78U56	/	37685-010-641	4H836	93U74	7A463	/
37685-010-644	5H554	95U47	75U50	/	37685-010-652	4H146	99U38	78U56	/
37685-010-653	4H289	3H789	6A758	/	37685-010-657	3H945	3H789	78U56	/
37685-010-661	4H290	L1085	75U59	/	37685-010-663	4H928	3H772	75U49	/
37685-010-665	4H289	93U74	79U66	/	37685-010-666	4H289	3H894	79U40	/
37685-010-670	5H554	L0038	79U40	/	37685-010-674	4H986	3H773	78U56	/
37685-010-677	4H611	L0038	5A700	/	37685-010-680	5H043	94U83	6A759	/
37685-010-681	4H289	5H529	79U52	/	37685-010-683	3H821	3H843	5A461	/

cpo23 oaline22

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-010-684	4H612	4H896	79U79	/	37685-010-686	6H185	3E773	78U56	/
37685-010-692	6H067	5H945	6A159	/	37685-010-693	6H214	3H868	5A461	/
37685-010-694	5H103	L0916	6A750	/	37685-010-696	5H400	3H868	6A753	/
37685-010-697	5H254	3H843	79U40	/	37685-010-700	5H284	L0173	5A461	/
37685-010-707	5H254	69U27	72U42	/	37685-010-713	5H613	5H739	75U50	/
37685-010-714	95U16	97U40	6A760	/	37685-010-715	5H613	5H945	75U50	/
37685-010-716	5H460	L0916	79U52	/	37685-010-717	5H945	93U91	75U60	/
37685-010-718	4H262	4H504	75U59	/	37685-010-719	5H740	97U53	75U50	/
37685-010-720	5H343	L0759	75U49	/	37685-010-723	5E823	98U89	75U59	/
37685-010-724	5H740	4H596	7A062	/	37685-010-725	5H613	5H739	75U60	/
37685-010-728	5H460	5H977	5A707	/	37685-010-729	5E613	93U61	75U60	/
37685-010-731	5H521	4H811	75U50	/	37685-010-732	5H521	6H104	6A156	/
37685-010-737	5H521	4H718	72U24	/	37685-010-738	5H343	H9044	75U49	/
37685-010-743	6H612	3H773	75U50	/	37685-010-750	5H856	5H913	75U50	/
37685-010-752	5H769	5H855	75U50	/	37685-010-759	L0759	3E867	6A758	/

Address: NO 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

cpo 23 oaline 22

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 37685-10(80151042) DATE: 2012.05.02 PAGE: 4 OF 25

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-010-771	5H521	2H588	75U50	/	37685-010-789	L0337	3H772	75U50	/
37685-010-796	94U83	92U66	75U50	/	37685-010-807	6H185	93U32	72U74	/
37685-010-818	5H521	4H786	75U60	/	37685-010-819	5H612	L0368	7A061	/
37685-010-820	5H795	4H146	75U59	/	37685-010-821	5H813	L0916	73U10	/
37685-010-822	5H343	5H739	75U60	/	37685-010-826	5H461	97U40	7A061	/
37685-010-829	5H582	97U65	75U59	/	37685-010-831	4H214	5H855	79U52	/
37685-010-832	5H612	L0315	75U50	/	37685-010-835	39U57	93U61	6A463	/
37685-010-840	6H185	4H596	75U49	/	37685-010-841	5H854	5H944	75U50	/
37685-010-842	L0606	99U57	75U60	/	37685-010-844	6H104	2H895	75U59	/
37685-010-845	6H306	3H554	75U50	/	37685-010-853	6H185	4H719	75U59	/
37685-010-855	6H306	94U83	75U59	/	37685-010-858	6H008	93U91	75U50	/
37685-010-860	6H306	2H837	75U49	/	37685-010-861	6H038	4H786	75U59	/
37685-010-863	39U57	5H739	6A154	/	37685-010-864	6H367	4H786	75U50	/
37685-010-867	40U09	2H978	6A159	/	37685-010-868	5H854	93U20	75U59	/
37685-010-875	46U52	94U83	75U60	/	37685-010-876	5H979	4H810	75U59	/

Cpo23oaline22

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-010-878	43U60	L0476	75U49	/	37685-010-881	6H867	4H449	75U60	/
37685-010-883	5H885	95U47	75U49	/	37685-010-886	5H759	92U81	75U49	/
37685-010-888	6H104	3H789	6A750	/	37685-010-894	5H978	99U01	7A061	/
37685-010-896	5H461	99U38	5A461	/	37685-010-899	1Z234	97U40	7A059	/
37685-010-903	5H915	99U38	6A157	/	37685-010-905	5H358	98U89	7A463	/
37685-010-907	6H104	95U47	7A463	/	37685-010-908	5H913	96U57	6A750	/
37685-010-911	6H185	96U57	6A760	/	37685-010-912	5H913	98U89	7A059	/
37685-010-913	5H914	99U26	7A463	/					

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.033					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	39U57	0.209	1.052	0.433	0.011	0.025	0.048	0.035	0.006	0.042	0.006				0.401	525	345	31	63	141			
BODY	WCB	3H358	0.193	0.986	0.419	0.011	0.024	0.039	0.015	0.007	0.029	0.004				0.370	585	384	29	60	167			
BODY	WCB	3H821	0.208	1.045	0.421	0.008	0.025	0.027	0.008	0.001	0.024	0.002				0.390	585	390	28	59	163			
BODY	WCB	3H915	0.191	0.997	0.350	0.009	0.022	0.039	0.014	0.001	0.028	0.003				0.369	515	310	30	61	159			
BODY	WCB	40U09	0.214	0.979	0.371	0.010	0.023	0.033	0.020	0.001	0.029	0.005				0.388	530	330	30	59	155			
BODY	WCB	43U60	0.207	1.015	0.419	0.016	0.025	0.045	0.014	0.002	0.024	0.006				0.389	485	300	36	62	148			
BODY	WCB	46U52	0.212	1.001	0.400	0.013	0.026	0.048	0.029	0.006	0.039	0.006				0.395	530	350	30	57	155			
BODY	WCB	4H146	0.206	1.027	0.443	0.009	0.028	0.036	0.016	0.008	0.021	0.004				0.389	605	395	24	56	149			
BODY	WCB	4H214	0.212	1.009	0.457	0.010	0.025	0.034	0.024	0.012	0.033	0.005				0.394	610	400	29	56	163			
BODY	WCB	4H262	0.212	1.012	0.416	0.009	0.023	0.022	0.013	0.005	0.021	0.002				0.389	550	345	33	60	152			
BODY	WCB	4H289	0.211	0.979	0.418	0.009	0.027	0.041	0.017	0.010	0.023	0.002				0.387	600	380	26	56	152			

Address NO 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN															485	250	22	35	135			
BODY	WCB	4H290	0.202	0.999	0.461	0.006	0.028	0.022	0.014	0.009	0.016	0.002				0.377	600	395	27	61	152			
BODY	WCB	4H611	0.213	1.042	0.424	0.013	0.026	0.051	0.027	0.009	0.032	0.004				0.403	590	385	32	60	159			
BODY	WCB	4H612	0.205	0.993	0.437	0.009	0.023	0.036	0.019	0.016	0.024	0.004				0.385	555	365	30	61	174			
BODY	WCB	4H664	0.195	0.996	0.460	0.008	0.024	0.038	0.017	0.012	0.022	0.003				0.374	585	385	32	60	159			
BODY	WCB	4H836	0.207	1.010	0.404	0.008	0.027	0.030	0.014	0.005	0.017	0.002				0.385	565	380	30	54	159			
BODY	WCB	4H928	0.200	0.982	0.409	0.009	0.024	0.042	0.020	0.006	0.027	0.003				0.377	580	375	31	57	163			
BODY	WCB	4H952	0.207	1.062	0.452	0.009	0.028	0.049	0.024	0.006	0.027	0.003				0.399	615	410	35	61	179			
BODY	WCB	4H983	0.198	1.051	0.451	0.009	0.027	0.041	0.028	0.010	0.024	0.003				0.387	575	385	25	62	163			
BODY	WCB	4H986	0.199	0.993	0.415	0.010	0.029	0.044	0.026	0.008	0.027	0.003				0.379	575	375	31	52	159			
BODY	WCB	5H043	0.208	1.043	0.470	0.008	0.028	0.031	0.026	0.012	0.025	0.003				0.394	595	390	31	57	159			
BODY	WCB	5H103	0.200	1.021	0.438	0.008	0.029	0.039	0.021	0.012	0.025	0.003				0.384	570	380	31	66	159			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				CE	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN															485	250	22	35	135			
BODY	WCB	5H254	0.220	1.020	0.482	0.011	0.031	0.036	0.021	0.010	0.038	0.003				0.404	575	380	30	53	146			
BODY	WCB	5H284	0.201	0.967	0.395	0.011	0.031	0.038	0.025	0.012	0.037	0.003				0.377	570	385	31	52	156			
BODY	WCB	5H343	0.200	1.044	0.446	0.007	0.023	0.050	0.028	0.013	0.032	0.003				0.391	555	355	33	61	156			
BODY	WCB	5H400	0.208	1.002	0.410	0.011	0.025	0.038	0.021	0.008	0.024	0.003				0.388	580	375	35	63	143			
BODY	WCB	5H401	0.203	1.046	0.419	0.009	0.023	0.029	0.023	0.013	0.032	0.003				0.390	575	365	32	60	156			
BODY	WCB	5H402	0.200	0.993	0.409	0.011	0.027	0.048	0.027	0.012	0.033	0.003				0.382	575	390	32	53	170			
BODY	WCB	5H460	0.193	0.995	0.367	0.010	0.027	0.040	0.027	0.010	0.029	0.004				0.373	575	385	35	61	156			
BODY	WCB	5H461	0.205	0.977	0.381	0.017	0.028	0.049	0.025	0.011	0.027	0.004				0.384	560	375	36	61	163			
BODY	WCB	5H521	0.191	1.072	0.460	0.010	0.027	0.037	0.023	0.009	0.031	0.004				0.383	590	395	32	51	170			
BODY	WCB	5H554	0.203	0.987	0.425	0.011	0.027	0.045	0.025	0.011	0.031	0.004				0.383	575	390	35	54	159			
BODY	WCB	5H582	0.206	1.047	0.442	0.010	0.028	0.046	0.025	0.009	0.027	0.004				0.396	580	390	31	57	159			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	5H612	0.198	1.045	0.428	0.011	0.026	0.043	0.024	0.008	0.029	0.005				0.387	570	360	32	59	149			
BODY	WCB	5H613	0.209	1.008	0.430	0.010	0.026	0.045	0.023	0.009	0.030	0.004				0.392	555	355	30	56	159			
BODY	WCB	5H739	0.202	1.007	0.455	0.010	0.026	0.042	0.023	0.010	0.031	0.004				0.385	600	390	30	45	149			
BODY	WCB	5H740	0.199	1.024	0.485	0.013	0.029	0.037	0.022	0.012	0.029	0.004				0.384	565	380	33	61	170			
BODY	WCB	5H769	0.206	1.009	0.443	0.010	0.026	0.033	0.018	0.009	0.029	0.004				0.387	590	385	31	57	152			
BODY	WCB	5H795	0.202	1.092	0.442	0.008	0.032	0.024	0.018	0.014	0.024	0.002				0.395	595	395	32	60	156			
BODY	WCB	5H823	0.200	0.963	0.392	0.008	0.025	0.025	0.017	0.008	0.027	0.003				0.371	590	385	31	55	163			
BODY	WCB	5H854	0.190	0.996	0.474	0.008	0.027	0.034	0.015	0.011	0.023	0.003				0.368	570	360	34	56	167			
BODY	WCB	5H856	0.199	1.035	0.411	0.009	0.026	0.040	0.029	0.011	0.034	0.005				0.387	575	380	30	55	159			
BODY	WCB	5H885	0.213	1.033	0.505	0.009	0.026	0.056	0.026	0.012	0.031	0.004				0.403	580	370	35	60	159			
BODY	WCB	5H913	0.205	1.021	0.478	0.008	0.029	0.052	0.023	0.012	0.036	0.005				0.393	595	395	33	50	163			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				CE	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.330					655				237			
		MIN															485	250	22	35	135			
BODY	WCB	5H914	0.197	1.032	0.441	0.010	0.025	0.054	0.022	0.010	0.028	0.004				0.386	580	380	35	60	163			
BODY	WCB	5H915	0.205	1.089	0.427	0.010	0.023	0.056	0.036	0.020	0.031	0.006				0.407	600	395	32	57	157			
BODY	WCB	5H945	0.207	1.014	0.411	0.007	0.027	0.053	0.019	0.012	0.031	0.003				0.393	585	375	33	59	163			
BODY	WCB	5H978	0.195	1.092	0.426	0.011	0.025	0.043	0.028	0.009	0.031	0.008				0.393	585	390	31	57	163			
BODY	WCB	5H979	0.197	1.014	0.446	0.010	0.024	0.046	0.049	0.018	0.058	0.006				0.387	590	390	32	61	167			
BODY	WCB	6H008	0.195	1.010	0.394	0.011	0.025	0.053	0.032	0.019	0.032	0.005				0.383	580	370	30	50	163			
BODY	WCB	6H038	0.191	1.015	0.415	0.009	0.026	0.069	0.017	0.006	0.027	0.004				0.379	595	395	36	52	170			
BODY	WCB	6H067	0.191	0.958	0.425	0.010	0.024	0.036	0.021	0.010	0.028	0.004				0.364	580	370	32	52	167			
BODY	WCB	6H104	0.207	0.958	0.441	0.011	0.029	0.037	0.022	0.010	0.029	0.005				0.380	590	390	35	62	156			
BODY	WCB	6H185	0.199	1.010	0.441	0.010	0.030	0.067	0.023	0.015	0.031	0.004				0.388	575	375	31	59	179			
BODY	WCB	6H214	0.198	1.021	0.451	0.010	0.026	0.051	0.028	0.009	0.031	0.005				0.385	575	370	35	56	156			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E.	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	6H306	0.190	0.989	0.488	0.008	0.028	0.033	0.016	0.005	0.022	0.003				0.366	595	410	33	62	179			
BODY	WCB	6H314	0.195	0.982	0.414	0.010	0.030	0.039	0.019	0.018	0.029	0.003				0.374	570	385	32	57	167			
BODY	WCB	6H612	0.201	1.014	0.409	0.009	0.026	0.041	0.023	0.010	0.029	0.004				0.384	565	390	36	61	163			
BODY	WCB	94U83	0.198	1.046	0.376	0.017	0.025	0.044	0.037	0.008	0.027	0.007				0.388	525	335	33	53	154			
BODY	WCB	95U16	0.205	1.089	0.402	0.009	0.017	0.125	0.074	0.023	0.023	0.007				0.424	525	325	29	58	157			
BODY	WCB	L0059	0.216	0.994	0.399	0.010	0.027	0.051	0.028	0.009	0.024	0.006				0.398	535	335	27	54	169			
BODY	WCB	L0337	0.194	1.058	0.395	0.015	0.026	0.063	0.035	0.012	0.022	0.008				0.391	550	365	27	54	153			
BODY	WCB	L0606	0.206	0.987	0.375	0.011	0.024	0.037	0.024	0.003	0.016	0.004				0.382	540	335	28	49	165			
BODY	WCB	L0759	0.204	1.031	0.398	0.014	0.027	0.054	0.034	0.003	0.029	0.008				0.393	515	315	31	54	165			
BODY	WCB	L1234	0.217	1.011	0.387	0.010	0.022	0.052	0.022	0.001	0.019	0.005				0.400	540	320	31	52	169			
BONNET	WCB	0H603	0.201	1.035	0.435	0.009	0.028	0.064	0.025	0.008	0.029	0.003				0.392	540	335	33	56	179			

Address NO. 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax 86-512-666-51360 http //www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	2H588	0.208	1.026	0.428	0.007	0.025	0.027	0.023	0.009	0.023	0.002				0.390	575	355	35	60	146			
BONNET	WCB	2H837	0.206	0.975	0.408	0.009	0.026	0.052	0.027	0.010	0.025	0.003				0.385	615	400	29	54	149			
BONNET	WCB	2H895	0.200	1.041	0.352	0.008	0.023	0.062	0.040	0.012	0.024	0.003				0.393	580	385	33	62	156			
BONNET	WCB	2H978	0.190	0.963	0.376	0.010	0.024	0.058	0.029	0.015	0.031	0.003				0.370	575	400	38	60	163			
BONNET	WCB	3H554	0.202	1.047	0.410	0.008	0.028	0.025	0.016	0.011	0.028	0.002				0.387	600	400	33	56	167			
BONNET	WCB	3H772	0.203	1.004	0.422	0.009	0.026	0.033	0.023	0.015	0.022	0.005				0.384	595	385	34	58	167			
BONNET	WCB	3H773	0.202	1.075	0.432	0.010	0.025	0.039	0.024	0.005	0.024	0.005				0.394	585	375	34	59	163			
BONNET	WCB	3H789	0.203	1.009	0.428	0.011	0.025	0.049	0.021	0.006	0.028	0.003				0.386	605	385	28	57	163			
BONNET	WCB	3H820	0.217	0.981	0.405	0.012	0.024	0.064	0.014	0.001	0.023	0.003				0.397	590	385	27	56	163			
BONNET	WCB	3H843	0.202	1.061	0.466	0.009	0.023	0.026	0.020	0.016	0.019	0.003				0.390	580	380	30	60	156			
BONNET	WCB	3H867	0.212	1.078	0.437	0.006	0.025	0.030	0.017	0.012	0.015	0.002				0.403	585	380	25	58	163			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO	CHEMICAL ANALYSIS										MECHANICAL PROPERTIES											
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030				655				237			
		MIN														485	250	22	35	135			
BONNET	WCB	3H868	0.202	1.016	0.444	0.007	0.022	0.022	0.020	0.010	0.017	0.002			0.381	595	385	33	60	156			
BONNET	WCB	3H894	0.202	1.044	0.483	0.008	0.024	0.027	0.021	0.011	0.020	0.002			0.387	580	375	35	59	156			
BONNET	WCB	4H146	0.206	1.027	0.443	0.009	0.028	0.036	0.016	0.008	0.021	0.004			0.389	605	395	24	56	149			
BONNET	WCB	4H449	0.202	1.100	0.474	0.008	0.029	0.031	0.016	0.005	0.021	0.005			0.396	580	390	29	58	167			
BONNET	WCB	4H504	0.198	1.016	0.403	0.010	0.025	0.041	0.021	0.008	0.028	0.003			0.381	565	370	30	61	159			
BONNET	WCB	4H596	0.197	1.013	0.443	0.008	0.020	0.033	0.014	0.010	0.018	0.003			0.377	595	390	32	59	167			
BONNET	WCB	4H689	0.197	0.977	0.419	0.007	0.027	0.027	0.016	0.016	0.026	0.002			0.372	605	395	36	56	156			
BONNET	WCB	4H718	0.206	1.055	0.431	0.012	0.029	0.040	0.028	0.011	0.033	0.004			0.397	580	385	27	53	174			
BONNET	WCB	4H719	0.194	0.982	0.401	0.008	0.025	0.035	0.021	0.011	0.027	0.003			0.371	580	385	26	59	156			
BONNET	WCB	4H786	0.220	0.965	0.398	0.010	0.025	0.033	0.021	0.006	0.026	0.002			0.392	595	390	36	64	163			
BONNET	WCB	4H810	0.205	0.993	0.439	0.010	0.031	0.038	0.025	0.008	0.029	0.003			0.384	580	385	30	56	170			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50℉)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP°C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	4H811	0.206	0.999	0.442	0.009	0.030	0.030	0.019	0.012	0.031	0.003				0.385	585	375	29	55	167			
BONNET	WCB	4H896	0.209	1.029	0.429	0.009	0.025	0.034	0.024	0.005	0.025	0.003				0.392	585	380	34	57	167			
BONNET	WCB	5H529	0.201	1.021	0.426	0.009	0.023	0.031	0.020	0.006	0.034	0.002				0.383	550	365	34	57	163			
BONNET	WCB	5H739	0.202	1.007	0.455	0.010	0.026	0.042	0.023	0.010	0.031	0.004				0.385	600	390	30	45	149			
BONNET	WCB	5H855	0.206	1.012	0.413	0.009	0.026	0.040	0.019	0.008	0.030	0.004				0.388	575	355	35	59	163			
BONNET	WCB	5H913	0.205	1.021	0.478	0.008	0.029	0.052	0.023	0.012	0.036	0.005				0.393	595	395	33	50	163			
BONNET	WCB	5H944	0.207	0.986	0.442	0.011	0.022	0.057	0.020	0.008	0.045	0.003				0.389	580	380	33	48	163			
BONNET	WCB	5H945	0.207	1.014	0.411	0.007	0.027	0.053	0.019	0.012	0.031	0.003				0.393	585	375	33	59	163			
BONNET	WCB	5H977	0.202	1.006	0.429	0.008	0.024	0.070	0.023	0.010	0.029	0.004				0.390	565	350	31	62	163			
BONNET	WCB	69U27	0.210	0.988	0.377	0.017	0.025	0.060	0.036	0.002	0.028	0.007				0.393	530	355	32	59	143			
BONNET	WCB	6H104	0.207	0.958	0.441	0.011	0.029	0.037	0.022	0.010	0.029	0.005				0.380	590	390	35	62	156			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	6H214	0.198	1.021	0.451	0.010	0.026	0.051	0.028	0.009	0.031	0.005				0.385	575	370	35	56	156			
BONNET	WCB	92U66	0.220	0.982	0.441	0.014	0.029	0.046	0.026	0.001	0.024	0.007				0.398	545	355	32	51	173			
BONNET	WCB	92U81	0.205	1.024	0.455	0.013	0.022	0.066	0.028	0.020	0.022	0.010				0.398	560	370	27	50	158			
BONNET	WCB	93U20	0.194	1.054	0.414	0.011	0.029	0.046	0.020	0.011	0.020	0.001				0.384	555	385	27	48	156			
BONNET	WCB	93U32	0.203	1.029	0.413	0.013	0.023	0.054	0.027	0.001	0.025	0.007				0.390	520	340	29	52	138			
BONNET	WCB	93U61	0.201	1.046	0.416	0.022	0.026	0.049	0.036	0.010	0.023	0.007				0.392	510	315	25	58	140			
BONNET	WCB	93U74	0.217	1.026	0.405	0.012	0.020	0.035	0.022	0.001	0.017	0.006				0.399	520	335	32	51	149			
BONNET	WCB	93U91	0.210	1.023	0.396	0.013	0.022	0.046	0.022	0.002	0.017	0.007				0.394	530	345	31	53	165			
BONNET	WCB	94U83	0.198	1.046	0.376	0.017	0.025	0.044	0.037	0.008	0.027	0.007				0.388	525	335	33	53	154			
BONNET	WCB	95U47	0.211	1.066	0.423	0.014	0.022	0.051	0.028	0.009	0.020	0.007				0.405	525	350	29	54	146			
BONNET	WCB	96U57	0.202	1.095	0.412	0.008	0.026	0.034	0.018	0.002	0.017	0.004				0.395	515	330	27	53	142			

Address NO 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E.	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	97U40	0.192	1.064	0.424	0.012	0.024	0.043	0.030	0.006	0.018	0.006				0.384	590	395	25	41	187			
BONNET	WCB	97U53	0.204	1.029	0.366	0.014	0.028	0.045	0.034	0.001	0.021	0.005				0.389	550	355	28	53	145			
BONNET	WCB	97U65	0.216	1.024	0.427	0.009	0.025	0.048	0.024	0.007	0.017	0.006				0.402	510	335	22	50	168			
BONNET	WCB	98U89	0.203	1.069	0.406	0.014	0.031	0.049	0.033	0.010	0.021	0.006				0.398	560	330	29	49	196			
BONNET	WCB	99U01	0.212	1.045	0.442	0.017	0.027	0.049	0.030	0.010	0.025	0.008				0.403	580	415	29	54	184			
BONNET	WCB	99U26	0.200	1.060	0.425	0.012	0.026	0.044	0.029	0.007	0.021	0.006				0.391	550	370	30	58	198			
BONNET	WCB	99U38	0.216	1.076	0.462	0.014	0.025	0.041	0.029	0.013	0.023	0.007				0.411	565	395	29	47	169			
BONNET	WCB	99U57	0.219	1.062	0.429	0.014	0.030	0.045	0.031	0.007	0.019	0.006				0.411	520	350	29	55	138			
BONNET	WCB	H9044	0.211	1.072	0.462	0.012	0.024	0.076	0.031	0.017	0.039	0.006				0.414	595	400	33	58	156			
BONNET	WCB	L0038	0.213	1.034	0.415	0.013	0.028	0.043	0.028	0.009	0.021	0.007				0.400	535	335	29	54	154			
BONNET	WCB	L0173	0.212	1.053	0.396	0.013	0.034	0.040	0.023	0.001	0.017	0.004				0.399	525	360	27	54	145			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	L0315	0.194	1.025	0.376	0.011	0.023	0.039	0.026	0.001	0.013	0.004				0.376	500	315	31	57	175			
BONNET	WCB	L0368	0.208	1.032	0.396	0.011	0.023	0.038	0.023	0.001	0.012	0.004				0.391	580	385	31	53	165			
BONNET	WCB	L0476	0.216	0.985	0.394	0.015	0.023	0.062	0.031	0.017	0.020	0.010				0.401	510	340	24	51	175			
BONNET	WCB	L0759	0.204	1.031	0.398	0.014	0.027	0.054	0.034	0.003	0.029	0.008				0.393	515	315	31	54	165			
BONNET	WCB	L0916	0.211	1.058	0.423	0.012	0.025	0.064	0.039	0.005	0.023	0.007				0.407	540	360	32	58	158			
BONNET	WCB	L1085	0.219	1.070	0.434	0.013	0.030	0.053	0.025	0.014	0.022	0.002				0.414	550	370	28	54	196			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50 F)	1H/25MM.>=2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50 F)	1H/25MM.>=2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %							TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.150	1.000	1.500	0.040	0.040	14.00	1.000	0.500							795				286			
		MIN.						11.50									620	450	18	30	253			
WEDGE	CA15	6A751	0.140	0.770	0.890	0.010	0.029	13.41	0.202	0.092							732	518	20	50	263			
WEDGE	CA15	6A752	0.110	0.790	0.980	0.011	0.029	12.41	0.202	0.099							697	495	21	52	259			
WEDGE	CA15	6A753	0.130	0.810	1.020	0.010	0.025	12.23	0.185	0.096							732	526	21	50	254			
WEDGE	CA15	6A758	0.100	0.840	0.850	0.011	0.020	12.01	0.112	0.091							718	514	20	50	254			
WEDGE	CA15	6A759	0.110	0.790	0.930	0.017	0.028	12.60	0.102	0.091							739	527	21	48	257			
WEDGE	CA15	6A760	0.120	0.830	0.930	0.014	0.024	12.56	0.110	0.091							712	507	20	50	259			
WEDGE	CA15	72U24	0.099	0.620	0.582	0.012	0.021	12.31	0.765	0.201							775	580	19	39	266			
WEDGE	CA15	72U42	0.106	0.731	0.603	0.009	0.021	12.21	0.765	0.201							785	575	18	34	261			
WEDGE	CA15	72U74	0.111	0.718	0.605	0.010	0.020	12.26	0.659	0.133							695	490	22	48	262			
WEDGE	CA15	73U10	0.105	0.768	0.592	0.021	0.026	12.29	0.744	0.199							635	450	27	44	261			
WEDGE	CA15	75U49	0.108	0.784	0.611	0.011	0.019	12.35	0.682	0.132							790	505	21	53	275			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
F6A-II	NORMALIZE	980 ~1050℃ (1796~1922℉)	1H/25MM,>=1H	AIR	ELECTRIC
F6A-II	TEMPER	>=675 (1247℉)	1H/25MM,>=1H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
			C %	Mn %	Si %	S %	P %	Cr %	Ni %								TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP℃	Avg	Min
		MAX.	0.150	1.000	1.000	0.030	0.040	13.50	0.500												229			
		MIN.						11.50									585	380	18	35	167			
STEM	**F6A-II**	**DAF010**	**0.120**	**0.420**	**0.290**	**0.010**	**0.030**	**11.70**	**0.130**								**826**	**648**	**23**	**36**	**210**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
2H	QUENCH	850 (1562°F)	1H/25MM,>=1H	WATER	ELECTRIC
2H	TEMPER	455 (851°F)	1H/25MM,>=1H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C %	Mn %	Si %	S %	P %										TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.		1.000	0.400	0.050	0.040														327			
		MIN.	0.400																		248			
NUT	**2H**	**YAG197**	**0.440**	**0.680**	**0.190**	**0.007**	**0.016**														**280**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax:86-512-666-51360 http://www.newayvalve.com

OA Line 114 CPO#Fd 1d

Material Test Report

VELAN

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name : MRC CANADA

Figure Number : S05-2054B-02TY

Valve Description : 1 IN 800 class GATE

Quantity :

Date : 14-JAN-13

IMPERIAL

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A105-11-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
MMFKU1	0.200	0.960	0.014	0.020	0.220	0.019	0.016	0.120	0.002	0.002	51.5	75.4	35.0	65.3	152.0 / 159.0	/	/			BODY

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A105-11-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
MMFBK2	0.190	1.000	0.015	0.025	0.230	0.008	0.014	0.120	0.003	0.001	51.8	75.6	35.2	64.4	152.0 / 167.0	/	/			BONNET/COVER

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF-V1-2206
CPO# 272 GT-08A00

Off line 16.1/ CPO 219

Material Test Report

VELAN

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name : imre CANADA

Valve Description : 2 IN 150 class GATE VALVE

Figure Number : F0064C-02NE

Quantity :

Date : 14-MAR-13

MATERIAL TEST RESULTS SHOWN BELOW

IMPERIAL

CHEMICALS / MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-08-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR
BNB15C27	0.200	0.915	0.037	0.016	0.451	0.037	0.019	0.042	0.001	0.005	52.1	80.4	27.8	55.0	/	/	/			BODY
BNB20K13	0.194	0.894	0.028	0.012	0.422	0.032	0.027	0.048	0.003	0.005	51.5	80.9	28.2	52.0	/	/	/			BODY
BNB23J03	0.204	0.976	0.025	0.016	0.464	0.048	0.034	0.072	0.003	0.010	49.6	78.6	32.4	54.0	/	/	/			BODY
BNB33D21	0.200	0.961	0.028	0.013	0.400	0.025	0.018	0.021	0.001	0.005	56.1	85.7	28.8	53.0	/	/	/			BODY

CHEMICALS / MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-07-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
BN910B16	0.201	0.900	0.034	0.016	0.413	0.035	0.065	0.082	0.002	0.001	55.5	84.6	36.9	46.0	/	/	/			BONNET COVER
BN916C21	0.194	0.910	0.023	0.012	0.416	0.021	0.010	0.040	0.008	0.001	50.9	79.8	29.2	54.8		/	/			BONNET COVER

ASTM Code: A216-08-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
BNB22H12	0.207	0.881	0.028	0.011	0.407	0.033	0.026	0.021	0.001	0.007	53.8	81.7	29.4	57.0	/	/	/			BONNET COVER
BNB24D12	0.206	0.885	0.036	0.018	0.451	0.027	0.035	0.049	0.001	0.006	53.8	83.4	28.6	54.0	/	/	/			BONNET COVER
BNB30D16	0.196	0.863	0.033	0.023	0.416	0.035	0.058	0.085	0.001	0.005	52.1	80.9	29.2	57.0	/	/	/			BONNET COVER

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF-VI-2206
CPO#219 GF-01V00

Material Test Report Oaline 1 CPO# 313

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name : MRC MIDFIELD

Figure Number :

Valve Description : 1-1/2 IN 800 class gate

Quantity :

Date : 13-FEB-13

IMPERIAL

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A105-09-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
MMCVJ5	0.220	0.950	0.018	0.016	0.210	0.004	0.008	0.016	0.005	0.002	51.5	74.8	34.6	63.8	152.0 / 163.0	/	/			

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A105-11-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
MMFKU2	0.200	0.960	0.014	0.020	0.220	0.019	0.016	0.120	0.002	0.002	51.8	75.1	35.0	65.3	152.0 / 159.0	/	/			

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF-V1-2206
CPO# 313 GT-08A00

Material Test Report OA41 CPO#272

VELAN

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name : MRC CANADA

Figure Number : S05-2054B-02TY

Valve Description : 1 IN 800 class GATE VALVE

Quantity :

Date : 10-APR-13

MATERIAL TEST RESULTS SHOWN BELOW:

IMPERIAL

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A105-09-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
MMCJL1	0.210	0.910	0.017	0.020	0.180	0.003	0.007	0.012	0.005	0.002	50.0	75.4	35.7	62.8	159.0 / 167.0	/	/			BODY

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A105-09-- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
MMCFI1	0.220	1.130	0.027	0.010	0.250	0.009	0.012	0.059	0.001	0.002	51.1	74.8	34.6	63.8	156.0 / 167.0	/	/			BONNET/COVER

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF-VI-2204
GT-08A00 CPO#272

UH LIN-2 C-

Material Test Report

VELAN

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name : MRC CANADA

Figure Number : F-0064C-02TY

Valve Description : 12 IN 150 class GATE VALVE

Quantity :

Date : 14-JAN-13

MATERIAL TEST RESULTS SHOWN BELOW:

IMPERIAL

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-08-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
BNB73A25	0.185	0.800	0.030	0.016	0.435	0.036	0.041	0.059	0.014	0.005	50.2	79.8	31.0	58.0		/	/			BODY

CHEMICALS

MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-08-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR.
BNB72B13	0.181	0.920	0.030	0.014	0.399	0.031	0.044	0.031	0.003	0.005	51.5	88.0	28.6	57.0		/	/			BONNET COVER

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF - V1 - 2201
CRO #7 GF-01A00

cpo138 oaline 51

Material Test Report

VELAN

VELAN INC.
7007 Cote de Liesse
Montreal
Canada H4T 1G2

Customer Name : MRC CANADA

Figure Number : F08-1074C-02TY

Valve Description : 2 IN 300 class GLOBE

Quantity : 6

Date : 10-JUL-12

MATERIAL TEST RESULTS SHOWN BELOW:

IMPERIAL

CHEMICALS / MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-08-WCB- NORMALIZED

HEAT CODE	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	YIELD	UTS	Elong	R.A.	Hard. (HB)	Impact (ft-lb)	at °F	F/B	GS	DESCR
BNB05L29	0.198	0.933	0.029	0.010	0.401	0.037	0.028	0.042	0.005	0.007	56.1	84.0	28.4	53.0	/	/	/			BODY
BNB06H04	0.208	0.910	0.031	0.017	0.496	0.029	0.035	0.022	0.001	0.006	57.3	85.1	28.8	54.0	/	/	/			BODY
BNB08L26	0.200	0.900	0.032	0.010	0.460	0.037	0.026	0.036	0.003	0.006	52.6	81.7	29.0	56.0	/	/	/			BODY
BNB09H24	0.210	0.904	0.031	0.012	0.423	0.046	0.028	0.036	0.001	0.005	49.0	79.2	28.6	55.0	/	/	/			BODY
BNB09L26	0.205	0.894	0.031	0.015	0.426	0.037	0.025	0.040	0.003	0.007	50.9	80.9	27.2	46.0	/	/	/			BODY

CHEMICALS / MECHANICALS

[Yied & UTS (Tensile)=Ksi; Elong. & R.A.=%; F/B=Flattening/Bending; GS=Grain Size]

ASTM Code: A216-08-WCB- NORMALIZED

BNB03H16	0.198	0.880	0.025	0.013	0.394	0.037	0.065	0.041	0.002	0.007	50.2	79.2	29.4	58.0	/	/	/			BONNET/COVER
BNB04H12	0.203	0.946	0.030	0.018	0.453	0.032	0.037	0.047	0.001	0.007	54.4	83.4	29.0	56.0	/	/	/			BONNET/COVER
BNB17H23	0.192	0.916	0.025	0.009	0.490	0.037	0.024	0.036	0.001	0.006	52.1	80.9	30.6	60.0	/	/	/			BONNET/COVER
BNB23M11	0.192	0.980	0.027	0.013	0.403	0.034	0.031	0.050	0.004	0.009	47.9	77.5	28.8	58.0	/	/	/			BONNET/COVER

All Velan valves are tested in accordance with specification required by the design. Valves designed to API specifications API 594, API 600, API 602, API 603, API 608 and API 609 are tested to API 598. Valves designed to B16.34 are tested to B16.34 and MSS-SP-61.

This report is issued by a computerized system and is valid without signature. The chemical and mechanical reports and testing criteria for the customer selected heat code are validated by Velan. All header info on this certificate (including customer name, valve description, figure number and quantity) has been supplied by the user of the VelCert application.

CLIF-V1-2204
CPO # 138 TF-03A00

OA Line 10/ CPO

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-10(80146733)
DATE: 2013-4-9
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178961	2G1RA8-000	GATE VALVE,2G1R V2,C00/8 [-LLC-SSF-WEB,-GBR] GATE VALVE,2,150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464	2.2/319	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-VI-2206
CPO#23 GF-01A10

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-10(80146733)
DATE: 2013.4.9

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15
37685-010-237	H6096	L0839	5A703												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-10(80146733)
DATE: 2013.4.9

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	102010(186850F)	1H/25MM,2H	AIR	GAS FURNACE
CA15	TEMPER	75010(138250F)	1H/25MM,2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.15	1	1.5	0.04	0.04	14	1	0.5							795				286			
		MIN.						11.5									620	450	18	30	253			
WEDGE	CA15	5A703	0.11	0.79	0.99	0.01	0.024	12.57	0.132	0.037							740	520	19	49	257			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-10(80146733)
DATE: 2013.4.9

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	93010(170650F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	H6096	0.204	0.986	0.409	0.011	0.028	0.058	0.028	0.007	0.028	0.003				0.386	540	350	34	57	179			
BONNET	WCB	L0839	0.213	1.055	0.41	0.011	0.02	0.077	0.04	0.003	0.028	0.015				0.412	535	325	31	57	196			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

Oaline | CPO# 83

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-130(80141127)
DATE: 2013-2-14
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178982	2G3RA8-000	GATE VALVE,2G3R,C00/8 [-LLC-WEB,] GATE VALVE,2,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-VI-2206
CPO#83 GF-03A10

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-130(80141127)
DATE: 2013.2.14

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15
37685-130-109	61U93	4H713	6A753												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-130(80141127)
DATE: 2013.2.14

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50°F)	1H/25MM,≥2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50°F)	1H/25MM,≥2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.15	1	1.5	0.04	0.04	14	1	0.5							795				286			
		MIN.						11.5									620	450	18	30	253			
WEDGE	CA15	6A753	0.13	0.81	1.02	0.01	0.025	12.23	0.185	0.096							732	526	21	50	254			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-130(80141127)
DATE: 2013.2.14

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50°F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES											
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	4H713	0.207	1.041	0.439	0.012	0.028	0.037	0.024	0.01	0.028	0.005				0.394	575	375	31	63	174			
BODY	WCB	61U93	0.206	1.092	0.457	0.014	0.027	0.058	0.04	0.003	0.033	0.006				0.406	520	355	32	57	148			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA Line 25 CPO# 26

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-180(80139244)
DATE: 2012-11-20

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178989	12G3RA8-000	GATE VALVE,12G3R V1,C00/8[-LLC-SSF,] GATE VALVE,12,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600(2009) ASME B16.34(2009)
- TEST: API598(2009) EN12266(2003)
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

CLIF-V1-2206
CPO#67 GF-03A00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-180(80139244)
DATE: 2012.11.20

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB
37685-180-109	8151B	8347B	6A111												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-180(80139244)
DATE: 2012.11.20

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	93010(170650F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
YOKE	WCB	R0165	0.207	1.008	0.457	0.017	0.03	0.047	0.047	0.029	0.033	0.017				0.399	530	340	34	65	148			
BODY	WCB	8151B	0.207	0.993	0.389	0.007	0.025	0.11	0.024	0.008	0.021	0.003				0.4	525	340	24	42	170			
BONNET	WCB	8347B	0.197	1.011	0.45	0.01	0.027	0.113	0.04	0.013	0.026	0.004				0.396	545	350	31	48	156			
WEDGE	WCB	6A111	0.2	0.76	0.41	0.013	0.018	0.032	0.051	0.061	0.014	0.002				0.35	526	323	25	44	160			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

NEWAY

TC NO. 37685-180(80139244)
DATE: 2012-11-20

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178989	12G3RA6-000	GATE VALVE,12G3R V1,C00/8[-LLC-SSF,] GATE VALVE,12,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600(2009) ASME B16.34(2009)
- TEST: API598(2009) EN12266(2003)
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

CLIF-V1-2206
CPO#67 GF-03A00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-180(80139244)
DATE: 2012.11.20

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB
37685-180-103	7923B	8383B	6A113												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-180(80139244)
DATE: 2012.11.20

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	93010(170650F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
YOKE	WCB	R0165	0.207	1.008	0.457	0.017	0.03	0.047	0.047	0.029	0.033	0.017				0.399	530	340	34	65	148			
BONNET	WCB	8383B	0.21	0.991	0.423	0.01	0.026	0.073	0.027	0.008	0.025	0.004				0.396	550	350	28	37	163			
BODY	WCB	7923B	0.198	1.046	0.401	0.009	0.022	0.07	0.027	0.009	0.021	0.003				0.392	530	430	32	50	170			
WEDGE	WCB	6A113	0.19	0.79	0.48	0.013	0.018	0.049	0.034	0.01	0.049	0.002				0.339	526	318	24	43	165			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA line 4/ CPO line 4

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80148650)
DATE: 2013-4-17
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178966	6G1RA8-000	GATE VALVE,6G1R.C00/8 [-LLC-WEB,-GBR] GATE VALVE,6.150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464	2.2/319	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CL/F- V1- 2206
CPO#4 GF-01A00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-40(80148650)
DATE: 2013.4.17

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15
37685-040-400	L0860	L0305	6A442												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80148650)
DATE: 2013.4.17

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	102010(186850F)	1H/25MM,2H	AIR	GAS FURNACE
CA15	TEMPER	75010(138250F)	1H/25MM,2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.15	1	1.5	0.04	0.04	14	1	0.5							795				286			
		MIN.						11.5									620	450	18	30	253			
WEDGE	CA15	6A442	0.13	0.75	0.89	0.01	0.025	12.01	0.122	0.039							705	515	18	59	253			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80148650)
DATE: 2013.4.17

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	93010(170650F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	L0305	0.208	1.03	0.403	0.014	0.026	0.054	0.024	0.004	0.02	0.005				0.395	535	360	29	54	183			
BODY	WCB	L0860	0.209	1.017	0.398	0.012	0.023	0.052	0.031	0.002	0.03	0.007				0.395	535	330	32	59	154			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA 4 CPO#4

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80151042)
DATE: 2013-4-19
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178966	6G1RA8-000	GATE VALVE,6G1R,C00/8 [-LLC-WEB,-GBR] GATE VALVE,6,150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464	2.2/319	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-V1-2206
CPO#4 GF-01A00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-40(80151042)
DATE: 2013.4.19

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15
37685-040-17	94U89	3H811	7A163												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80151042)
DATE: 2013.4.19

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50°F)	1H/25MM,≥2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50°F)	1H/25MM,≥2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.15	1	1.5	0.04	0.04	14	1	0.5							795				286			
		MIN.						11.5									620	450	18	30	253			
WEDGE	CA15	7A163	0.13	0.74	0.87	0.011	0.024	12.46	0.119	0.01							725	518	18	47	260			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80151042)
DATE: 2013.4.19

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50°F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	94U89	0.206	1.077	0.402	0.02	0.03	0.054	0.039	0.007	0.025	0.008				0.404	535	370	32	54	157			
BONNET	WCB	3H811	0.208	1.093	0.427	0.009	0.026	0.037	0.019	0.009	0.026	0.004				0.403	605	410	30	49	149			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA 4 CPO #4

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80151042)
DATE: 2013-4-19
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178966	6G1RA8-000	GATE VALVE,6G1R,C00/8 [-LLC-WEB,-GBR] GATE VALVE,6.150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464	2.2/319	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-V1-2206
CPO#4 GF-01A00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-40(80151042)
DATE: 2013.4.19

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15
37685-040-92	2H788	4H761	1H841												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-40(80151042)
DATE: 2013.4.19

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50°F)	1H/25MM.≥2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50°F)	1H/25MM.≥2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.15	1	1.5	0.04	0.04	14	1	0.5							795				286			
		MIN.						11.5									620	450	18	30	253			
WEDGE	CA15	1H841	0.116	0.554	0.547	0.009	0.025	12.53	0.711	0.121							725	655	21	54	269			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

CERTIFIED MATERIAL TEST REPORT

WILLIAMS

38-52 Review Ave. · Long Island City, NY 11101 · (Phone) 718-392-1660 · (Fax) 718-729-5106

CERTIFICATE ACCORDING TO: EN 10204/3.1 | CUSTOMER ORDER No: 702062 | TAG NO. GS-15V00 | ITEM NO.4

CUSTOMER	DESCRIPTION	HEAT TREATMENT:	MATERIAL:
QUANTUM SUPPLY LTD	1-1/2" 1500# GATE VALVE, SW A105N TRIM 5 WB NACE	NORMALIZING	ASTM A105N

FIGURE NUMBER	SIZE	CLASS	TYPE	QTY.	SERIAL NUMBER	CERTIFICATE NUMBER	DATE
F150SW-3N WB	1-1/2"	1500	GATE VALVE	4		PO 2283	2012-8-12

PRESSURE TEST

SHELL (HYDROSTATIC)			H.P. CLOSURE (HYDROSTATIC)			L.P. CLOSURE (AIR)			BACKSEAT (HYDROSTATIC)		
PRESSURE	5575	PSIG	PRESSURE	4100	PSIG	PRESSURE	80	PSIG	PRESSURE	4100	PSIG
DURATION	60	SECONDS	DURATION	60	SECONDS	DURATION	60	SECONDS	DURATION	60	SECONDS

I.A.W. SPE 77-302			I.A.W. FIRE SAFE DESIGN		I.A.W. N.A.C.E. MR-0175		VISUAL INSPECTION	
IGC TEST PASSED:	YES	NO	API 6FA	■ API 607	■ YES	NO	STANDARD MSS SP-55	RESULT OK

DIMENSIONAL EXAMINATION (AS APPLICABLE)

AS PER MANUFACTURER	ASME B16.5	ASME B1.20.1	ASME B16.11	ASME B16.34	API 6D	ASME B16.25	ASME B16.9	OTHER
N.A.	N.A.	N.A.	W.T.	W.T.	N.A.	N.A.	N.A.	N.A.

TEST CODE	DESIGN CODE
API 598	API 602

MATERIAL CERTIFICATE

DESCRIPTION			CHEMICAL COMPOSITION % (<)													MECHANICAL PROPERTIES (>)					Shock Velocity (-46℃)	
PART	MATERIAL	HEAT NO.	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V	Ti	Nb	Fe	T.S. Mpa	Y.P. Mpa	EL. (%)	R.A. (%)	HARD NESS (HB)	Average (J)	Min (J)
BODY	A105N	BDA	0.180	0.260	0.770	0.022	0.006	0.100	0.040	0.080	0.050	0.011	–	–	–	520.0	318.0	33.0	61.0	158	-	-
BONNET	A105N	BBI	0.180	0.270	0.830	0.014	0.009	0.060	0.020	0.060	0.080	0.017	–	–	–	531.0	331.0	39.0	67.0	160	-	-
BONNET	A105N	BBU	0.200	0.270	0.780	0.015	0.008	0.060	0.010	0.060	0.040	0.017	–	–	–	517.0	309.0	31.0	61.0	170	-	-
BONNET	A105N	BCG	0.180	0.230	0.840	0.016	0.010	0.040	0.020	0.070	0.040	0.017	–	–	–	505.0	355.0	29.5	62.5	165	-	-

NOTE: MATERIALS COMPLY WITH NACE MR 0103-2010, MR 0175-2009 AND ISO 15156

We hereby certify that the above valves are reported true and correct. | QA DEPARTMENT

LEGEND: W.T. - WITHIN TOLERANCE | N.A. - NOT APPLICABLE | I.A.W. - IN ACCORDANCE WITH

Cenovus FCCL Ltd c/o Vista IMVM JV Corp.
Christina Lake Phase 1F Expansion
PO #: CL1F-209830-VI-2001
Line: ~~10~~ 69 Tag: 1-1/2-GS-15V00

Cenovus FCCL Ltd c/o Vista IMV JV Corporation
PO #: CL1F-209830-VI-2001
Model: 1.5-F150SW-3N WB
Line: 69 Tag: 1-1/2-GS-15V00

WILLIAMS

CERTIFIED MATERIAL TEST REPORT

38-52 Review Ave. · Long Island City, NY 11101 · (Phone) 718-392-1660 · (Fax) 718-729-5106

CERTIFICATE ACCORDING TO: EN 10204/3.1 | CUSTOMER ORDER No: 701852 | TAG NO. | ITEM NO.11

CUSTOMER	DESCRIPTION	HEAT TREATMENT:	MATERIAL:
QUANTUM SUPPLY LTD	1-1/2" 1500# GATE VALVE, A105N, TRIM 5, SW ENDS, WB,NACE	NORMALIZING	A105N

FIGURE NUMBER	SIZE	CLASS	TYPE	QTY.	SERIAL NUMBER	CERTIFICATE NUMBER	DATE
F150SW-3N WB	1-1/2"	1500	GATE VALVE	25		PO 2236	2012-5-17

PRESSURE TEST

SHELL (HYDROSTATIC)			H.P. CLOSURE (HYDROSTATIC)			L.P. CLOSURE (AIR)			BACKSEAT (HYDROSTATIC)		
PRESSURE	5575	PSIG	PRESSURE	4100	PSIG	PRESSURE	80	PSIG	PRESSURE	4100	PSIG
DURATION	120	SECONDS	DURATION	60	SECONDS	DURATION	60	SECONDS	DURATION	60	SECONDS

I.A.W. SPE 77-302			I.A.W. FIRE SAFE DESIGN		I.A.W. N.A.C.E. MR-0175		VISUAL INSPECTION	
IGC TEST PASSED:	YES	NO	API 6FA	API 607	■ YES	NO	STANDARD MSS SP-55	RESULT OK

DIMENSIONAL EXAMINATION (AS APPLICABLE)

AS PER MANUFACTURER	ASME B16.5	ASME B1.20.1	ASME B16.11	ASME B16.34	API 6D	ASME B16.25	ASME B16.9	OTHER
W.T.	N.A.	N.A.	W.T.	W.T.	N.A.	N.A.	N.A.	N.A.

TEST CODE	DESIGN CODE
API 598	API 602

MATERIAL CERTIFICATE

DESCRIPTION			CHEMICAL COMPOSITION % (<)													MECHANICAL PROPERTIES (>)					Shock Velocity (-46℃)	
PART	MATERIAL	HEAT NO.	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V	Ti	Nb	Fe	T.S. Mpa	Y.P. Mpa	EL. (%)	R.A. (%)	HARDNESS (HB)	Average (J)	Min (J)
BODY	A105N	BDA	0.180	0.260	0.770	0.022	0.006	0.100	0.040	0.080	0.050	0.011	–	–	–	520.0	318.0	33.0	61.0	158	-	-
BONNET	A105N	BBC	0.210	0.290	0.840	0.019	0.007	0.120	0.050	0.090	0.060	0.018	–	–	–	530.0	320.0	30.0	60.0	164	-	-
BONNET	A105N	D35	0.180	0.300	0.780	0.028	0.029	0.220	0.030	0.086	0.040	0.018	–	–	–	500.0	276.0	45.0	78.0	160	-	-

NOTE: MATERIALS COMPLY WITH NACE MR 0103-2010, MR 0175-2009 AND ISO 15156

We hereby certify that the above valves are reported true and correct. | QA DEPARTMENT

LEGEND: W.T. - WITHIN TOLERANCE | N.A. - NOT APPLICABLE | I.A.W. - IN ACCORDANCE WITH

CERTIFIED MATERIAL TEST REPORT

WILLIAMS

38-52 Review Ave. · Long Island City, NY 11101 · (Phone) 718-392-1660 · (Fax) 718-729-5106

CERTIFICATE ACCORDING TO: EN 10204/3.1

CUSTOMER ORDER No: 702062

TAG NO. TS-15V10

ITEM NO.9

CUSTOMER	DESCRIPTION	HEAT TREATMENT:	MATERIAL:
QUANTUM SUPPLY LTD	3/4" 1500# Y-GLOBE VALVE, SW A105N TRIM 5 WB NACE	NORMALIZING	ASTM A105N

FIGURE NUMBER	SIZE	CLASS	TYPE	QTY.	SERIAL NUMBER	CERTIFICATE NUMBER	DATE
F1502YSW-3N WB	3/4"	1500	Y-GLOBE VALVE	30		PO 2283	2012-8-12

PRESSURE TEST

SHELL (HYDROSTATIC)			H.P. CLOSURE (HYDROSTATIC)			L.P. CLOSURE (AIR)			BACKSEAT (HYDROSTATIC)		
PRESSURE	5575	PSIG	PRESSURE	4100	PSIG	PRESSURE	80	PSIG	PRESSURE	4100	PSIG
DURATION	60	SECONDS	DURATION	60	SECONDS	DURATION	60	SECONDS	DURATION	60	SECONDS

I.A.W. SPE 77-302			I.A.W. FIRE SAFE DESIGN		I.A.W. N.A.C.E. MR-0175	
IGC TEST PASSED:	YES	NO	API 6FA	■ API 607	■ YES	NO

VISUAL INSPECTION	
STANDARD	RESULT
MSS SP-55	OK

TEST CODE	DESIGN CODE
API 598	API 602

DIMENSIONAL EXAMINATION (AS APPLICABLE)

AS PER MANUFACTURER	ASME B16.5	ASME B1.20.1	ASME B16.11	ASME B16.34	API 6D	ASME B16.25	ASME B16.9	OTHER
N.A.	N.A.	N.A.	W.T.	W.T.	N.A.	N.A.	N.A.	N.A.

MATERIAL CERTIFICATE

DESCRIPTION			CHEMICAL COMPOSITION % (<)													MECHANICAL PROPERTIES (>)					Shock Velocity (-46°C)	
PART	MATERIAL	HEAT NO.	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V	Ti	Nb	Fe	T.S. Mpa	Y.P. Mpa	EL. (%)	R.A. (%)	HARDNESS (HB)	Average (J)	Min (J)
BODY	A105N	BCK	0.220	0.290	0.780	0.016	0.008	0.060	0.020	0.060	0.040	0.017	–	–	–	521.0	321.0	31.0	62.0	160	-	-
BODY	A105N	BDD	0.190	0.280	0.770	0.022	0.007	0.080	0.040	0.060	0.070	0.011	–	–	–	533.0	334.0	33.0	65.0	157	-	-
BODY	A105N	CAI	0.200	0.310	0.800	0.030	0.011	0.220	0.030	0.088	0.050	0.020	–	–	–	515.0	275.0	45.0	70.0	182	-	-
BODY	A105N	BBS	0.190	0.280	0.740	0.017	0.010	0.100	0.030	0.070	0.050	0.017	–	–	–	517.0	321.0	34.0	63.0	161	-	-
BONNET	A105N	BDG	0.190	0.300	0.790	0.020	0.008	0.060	0.020	0.080	0.070	0.010	–	–	–	529.0	330.0	36.0	64.0	159	-	-
BONNET	A105N	BCE	0.190	0.260	0.770	0.018	0.010	0.050	0.010	0.050	0.050	0.016	–	–	–	521.0	310.0	30.0	59.0	164	-	-
BONNET	A105N	BCF	0.210	0.280	0.800	0.020	0.006	0.050	0.020	0.060	0.040	0.017	–	–	–	524.0	325.0	33.0	64.0	160	-	-

NOTE: MATERIALS COMPLY WITH NACE MR 0103-2010, MR 0175-2009 AND ISO 15156

We hereby certify that the above valves are reported true and correct.

QA DEPARTMENT

LEGEND: W.T. - WITHIN TOLERANCE | N.A. - NOT APPLICABLE | I.A.W. - IN ACCORDANCE WITH

Cenovus FCCL Ltd c/o Vista-IMV
PO#: CL1F-209830-VI-2001
Line: 20 Tag: ¾-TS-15V10

#4

cpo61 oaline 26

FORUM ENERGY TECHNOLOGIES DSI

Inspection Certificate and Material Test Report
(EN10204-1991 3.1.B / EN10204-2004 3.1)

DSI-Valve Solutions
12735 Dairy Ashford
Stafford TX 77477
281-637-2000 - Fax 281-637-2299
www.dsivalve.com

Certificate/Serial/Job No: XK78

Quality Department: John Ho

Quantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
91	2	300	/ 103051	DSI 23XUF	GATE				11/27/2011

Pressure Test: API598	☑ Satisfactory	Shell Pressure :	1125 psi / 7756.6 kPa	BackSeat :	825 psi / 5688.2 kPa	Seat Pressure :	825 psi / 5688.17 kPa	Seat Air Pressure	80 psi / 551.58 kPa

Part	Specif.	HEAT#	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	W	Nb	Al	N	Ceq	Tensile [ksi] [MPa]	Yield [ksi] [MPa]	Elong [%]	Reduc [%]	Hardn [HB]	Ch.1 [J]	Ch.2 [J]	Ch.3 [J]	Ch. Av [J]	Temp. [F] [C]	Heat
			Chemical Composition [%]															Mechanical Properties										
XK78 / 78																												
BODY	ASTM A216 WCB-2008	A10643	0.220	0.43	0.89	0.028	0.013	0.021	0.047	0.003	0.039	0.006			0.015		0.38	74.53 513.87	44.37 305.9	28	57	152						N
BONNET	ASTM A216 WCB-2008	A10959	0.230	0.43	0.93	0.029	0.023	0.024	0.081	0.001	0.037	0.005			0.011		0.41	72.50 499.87	43.50 299.9	31	58	149						N
WEDGE	ASTM A217 CA15-2007	D3708	0.11	0.84	0.87	0.025	0.010	0.102	12.19	0.012	0.020							101.94 702.85	72.50 499.9	19	50	257						N
XK78 / 79																												
BODY	ASTM A216 WCB-2008	A10957	0.210	0.45	0.86	0.026	0.014	0.024	0.047	0.001	0.039	0.005			0.031		0.37	72.94 502.90	43.21 297.9	31	58	150						N
BONNET	ASTM A216 WCB-2008	A10965	0.220	0.47	0.85	0.027	0.016	0.022	0.055	0.002	0.041	0.004			0.023		0.38	73.95 509.87	43.94 303	28	56	154						N
WEDGE	ASTM A217 CA15-2007	D3706	0.13	0.95	0.83	0.016	0.011	0.101	12.72	0.016	0.025							102.52 706.85	72.21 497.9	19	52	256						N
XK78 / 80																												
BODY	ASTM A216 WCB-2008	A10958	0.200	0.44	0.86	0.023	0.013	0.020	0.040	0.002	0.043	0.009			0.027		0.36	76.85 529.86	46.40 319.9	25	49	160						N
BONNET	ASTM A216 WCB-2008	A10640	0.210	0.43	0.85	0.022	0.013	0.026	0.054	0.004	0.040	0.005			0.012		0.37	72.94 502.90	43.21 297.9	31	58	149						N
WEDGE	ASTM A217 CA15-2007	D3709	0.09	0.91	0.72	0.023	0.011	0.123	12.62	0.050	0.020							101.07 696.85	72.36 498.9	20	52	270						N
XK78 / 81																												
BODY	ASTM A216 WCB-2008	A10641	0.210	0.45	0.90	0.024	0.016	0.025	0.047	0.005	0.037	0.005			0.011		0.38	76.27 525.86	44.95 309.9	26	55	153						N
BONNET	ASTM A216 WCB-2008	A10644	0.210	0.44	0.89	0.025	0.019	0.031	0.033	0.005	0.045	0.003			0.054		0.37	73.81 506.90	43.79 301.9	30	57	150						N
WEDGE	ASTM A217 CA15-2007	D3126	0.09	0.87	0.78	0.022	0.010	0.112	12.72	0.021	0.027							104.40 719.81	74.53 513.9	19	52	269						N
XK78 / 82																												

CLIF-2204
CPO#61 GF-03A00

BODY	ASTM A216 WCB-2008	W14615	0.199	0.49	0.98	0.031	0.012	0.024	0.032	0.001	0.038	0.007		0.38	85.70 590.88	56.70 390.9	27	47	168		N
BONNET	ASTM A216 WCB-2008	A10962	0.220	0.46	0.85	0.029	0.019	0.053	0.098	0.009	0.037	0.005	0.012	0.39	74.24 511.87	43.94 303	30	57	150		N
WEDGE	ASTM A217 CA15-2007	D3123	0.11	0.87	0.79	0.025	0.010	0.131	12.68	0.019	0.060				101.50 699.82	72.21 497.9	18.4	48	260		N
XK78 / 83																						
BODY	ASTM A216 WCB-2008	A10952	0.210	0.45	0.92	0.024	0.012	0.028	0.056	0.005	0.052	0.004	0.019	0.38	75.98 523.86	45.82 315.9	27	55	155		N
BONNET	ASTM A216 WCB-2008	A10913	0.200	0.48	0.95	0.025	0.025	0.030	0.054	0.005	0.037	0.006	0.017	0.38	74.53 513.87	44.23 305	28	57	152		N
WEDGE	ASTM A217 CA15-2007	D3124	0.12	0.79	0.77	0.022	0.011	0.117	12.86	0.020	0.024				103.24 711.81	73.52 506.9	19	51	266		N
XK78 / 84																						
BODY	ASTM A216 WCB-2008	A10645	0.210	0.46	0.82	0.028	0.014	0.023	0.043	0.001	0.036	0.004	0.023	0.36	76.56 527.86	45.97 317	26	53	158		N
BONNET	ASTM A216 WCB-2008	A10645	0.210	0.46	0.82	0.028	0.014	0.023	0.043	0.001	0.036	0.004	0.023	0.36	76.56 527.86	45.97 317	26	53	158		N
WEDGE	ASTM A217 CA15-2007	D3123	0.11	0.87	0.79	0.025	0.010	0.131	12.68	0.019	0.060				101.50 699.82	72.21 497.9	18.4	48	260		N
XK78 / 85																						
BODY	ASTM A216 WCB-2008	A10917	0.200	0.47	0.88	0.025	0.015	0.022	0.045	0.003	0.038	0.005	0.008	0.36	75.98 523.86	45.97 317	26	54	156		N
BONNET	ASTM A216 WCB-2008	A10919	0.200	0.43	0.81	0.022	0.014	0.024	0.043	0.003	0.043	0.006	0.06	0.35	75.98 523.86	45.10 311	29	57	155		N
WEDGE	ASTM A217 CA15-2007	D3124	0.12	0.79	0.77	0.022	0.011	0.117	12.86	0.020	0.024				103.24 711.81	73.52 506.9	19	51	266		N
XK78 / 86																						
BODY	ASTM A216 WCB-2008	A10956	0.200	0.47	0.88	0.028	0.020	0.026	0.057	0.004	0.034	0.006	0.023	0.36	74.24 511.87	44.37 305.9	27	55	152		N
BONNET	ASTM A216 WCB-2008	A10644	0.210	0.44	0.89	0.025	0.019	0.031	0.033	0.005	0.045	0.003	0.054	0.37	73.81 508.90	43.79 301.9	30	57	150		N
WEDGE	ASTM A217 CA15-2007	D3705	0.13	1.02	0.73	0.011	0.010	0.110	13.05	0.024	0.062				103.24 711.81	72.94 502.9	18.6	49	259		N
XK78 / 87																						
BODY	ASTM A216 WCB-2008	A10920	0.210	0.43	0.82	0.024	0.015	0.025	0.048	0.004	0.037	0.006	0.06	0.36	72.94 502.90	43.36 299	30	57	149		N
BONNET	ASTM A216 WCB-2008	A10913	0.200	0.48	0.95	0.025	0.025	0.030	0.054	0.005	0.037	0.006	0.017	0.38	74.53 513.87	44.23 305	28	57	152		N
WEDGE	ASTM A217 CA15-2007	D3124	0.12	0.79	0.77	0.022	0.011	0.117	12.86	0.020	0.024				103.24 711.81	73.52 506.9	19	51	266		N
XK78 / 88																						
BODY	ASTM A216 WCB-2008	A11242	0.200	0.44	0.81	0.026	0.015	0.018	0.053	0.007	0.039	0.007	0.009	0.35	74.53 513.87	43.79 301.9	28	56	152		N
BONNET	ASTM A216 WCB-2008	A10642	0.220	0.44	0.92	0.024	0.012	0.023	0.050	0.003	0.041	0.006	0.045	0.39	72.50 499.87	43.21 297.9	31	58	149		N
WEDGE	ASTM A217 CA15-2007	D3705	0.13	1.02	0.73	0.011	0.010	0.110	13.05	0.024	0.062				103.24 711.81	72.94 502.9	18.6	49	259		N
XK78 / 89																						
BODY	ASTM A216 WCB-2008	A10964	0.200	0.43	0.83	0.025	0.013	0.025	0.052	0.001	0.032	0.005	0.034	0.35	75.84 522.9	44.95 309.9	26	54	157		N
BONNET	ASTM A216 WCB-2008	A10914	0.220	0.45	0.82	0.027	0.015	0.024	0.035	0.001	0.026	0.005	0.043	0.37	75.84 522.9	44.95 309.9	27	56	153		N

WEDGE	ASTM A217 CA15-2007	D3122	0.09	0.96	0.82	0.025	0.010	0.134	12.48	0.032	0.091				104.26 718.85	74.82 515.9	18.4	50	259			N
XK78 / 90																						
BODY	ASTM A216 WCB-2008	A10953	0.220	0.46	0.91	0.027	0.018	0.031	0.036	0.004	0.045	0.005		0.39	74.24 511.87	43.94 303	28	57	151			N
BONNET	ASTM A216 WCB-2008	A10914	0.220	0.45	0.82	0.027	0.015	0.024	0.035	0.001	0.026	0.005	0.043	0.37	75.84 522.9	44.95 309.9	27	56	153			N
WEDGE	ASTM A217 CA15-2007	D3123	0.11	0.87	0.79	0.025	0.010	0.131	12.68	0.019	0.060				101.50 699.82	72.21 497.9	18.4	48	260			N
XK78 / 91																						
BODY	ASTM A216 WCB-2008	A10956	0.200	0.47	0.88	0.028	0.020	0.026	0.057	0.004	0.034	0.006	0.023	0.36	74.24 511.87	44.37 305.9	27	55	152			N
BONNET	ASTM A216 WCB-2008	A10648	0.200	0.46	0.91	0.026	0.016	0.028	0.055	0.005	0.041	0.005	0.06	0.37	76.56 527.86	45.97 317	26	53	157			N
WEDGE	ASTM A217 CA15-2007	D3123	0.11	0.87	0.79	0.025	0.010	0.131	12.68	0.019	0.060				101.50 699.82	72.21 497.9	18.4	48	260			N

Heat Treatment Codes:

A :	*Annealing*	*AC* :	*Air Cooling*	*DA* :	*Double Aged*	*FT* :	*Furnace Treatment*	*N* :	*Normalizing*	*OQ* :	*OilQuenched*
Ph-3 :	*Precipitation Hardening*	*SA* :	*Solution Annealed*	*SQ* :	*Solution Quenched*	*ST* :	*Solution Treatment*	*T* :	*Tempering*	*WC* :	*Water Cooling*
WQ :	*Water Quenched*	*WT* :	*Water Quenched/ Tempered*					*NT*	*Normalized/Tempered*		

Part	Material
BACK SEAT	ASTM A276 410
BODY/BONNET	ASTM A216 WCB
BOLTING	ASTM A193 B7 / ASTM A194 2H
DISC-WEDGE-CLAPPER	ASTM A217 CA15
PACKING	GRAPHITE
SEAT RING	ASTM A105 + Stl.6 Faced
STEM	ASTM A182 F6A Cl. 3
STEM NUT	ASTM A439-D2

Valves Tested per API598

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

CE Declaration of Confirmity: 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 assesment 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 Jianyin Eastern Valve company Ltd.

刘建清

OA line 34 CPO # ~~34~~ 219

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-10(80145982)
DATE: 2013-7-30
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178961	2G1RA8-000	GATE VALVE,2G1R V2,C00/8 [-LLC-SSF-WEB,-GBR] GATE VALVE,2,150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001659MRC-S75912423	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464	2.2/319	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-VI-2208 [redacted]

CPO#219 GF-01N00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 37685-10(80145982) DATE: 2013.7.30 PAGE: 2 OF 4

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15		WCB	WCB	CA15
37685-010-2	98U34	3H567	19U18												

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-10(80145982)
DATE: 2013.7.30

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50°F)	1H/25MM,≥2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50°F)	1H/25MM,≥2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.15	1	1.5	0.04	0.04	14	1	0.5							795				286			
		MIN.						11.5									620	450	18	30	253			
WEDGE	CA15	19U18	0.111	0.629	0.501	0.012	0.023	12.47	0.735	0.193							725	515	22	43	259			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 37685-10(80145982)
DATE: 2013.7.30

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50°F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP °C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	98U34	0.218	1.042	0.417	0.009	0.029	0.034	0.019	0.007	0.021	0.006				0.404	550	365	31	57	201			
BONNET	WCB	3H567	0.217	1.027	0.426	0.009	0.03	0.089	0.018	0.021	0.023	0.003				0.414	580	380	31	57	167			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA lines
CPO 219

YANCHENG H & M PRESSURE VALVE CO., LTD

NO.6 Juheng Road, Economic Development Zone, Yancheng City, China
Tel: +86-515-8281015 Fax: +86-515-8281015 E-mail: ygf@public.yc.js.cn

Certificate No: KF-1304-04
DATE: 2013.04.11
SHEET 1 OF 2

PRESSURE TEST CERTIFICATE

Pressure Test (As per API 598)						Name of Valves: Gate Valves
Item		Test Pressure (MPa)	Test Durations (Sec.)	Allowable Leakage Rate (max)	Result	Size & Class:2" 150 LB
Shell Test		3.2	60	0	OK	Quantity: 28
Backseat Test		2.2	60	0	OK	Valve Material: ASTM A216 WCB
Seat Test	Hydro	2.2	60	0	OK	PO No.: P30602
	Air	0.6-0.7	60	0	OK	CAT No.: GA01011U-2"
Valve requirement		API600 〔√〕	BS1873 〔 〕	BS1868 〔 〕		NACE MR 0175 〔 〕

Serial No.	Heat No.			Lot No.				
	Body	Bonnet	Wedge	Seat Ring	Stem	Back Seat	Bolt	Nut
KF813010927	R01430	R01439	R01464	K13015	A13076	A12016	C12630	C13002
KF813010928	R01425	R01323	R01475	K13015	A13076	A12016	C12630	C13002
KF813010929	R01125	R01343	R01459	K13015	A13076	A12016	C12630	C13002
KF813010930	R01424	R01320	R01470	K13015	A13076	A12016	C12630	C13002
KF813010931	R01429	R01191	R01459	K13015	A13076	A12016	C12630	C13002
KF813010932	R01424	R01356	R01475	K13015	A13076	A12016	C12630	C13002
KF813010933	R01424	R01320	R01415	K13015	A13076	A12016	C12630	C13002
KF813010934	R01429	R01202	R01459	K13015	A13076	A12016	C12630	C13002
KF813010935	R01424	R01346	R01459	K13015	A13076	A12016	C12630	C13002
KF813010936	R01425	R01358	R01464	K13015	A13076	A12016	C12630	C13002
KF813010937	R01411	R01323	R01459	K13015	A13076	A12016	C12630	C13002
KF813010938	R01429	R01398	R01464	K13015	A13076	A12016	C12630	C13002
KF813010939	R01425	R01398	R01459	K13015	A13076	A12016	C12630	C13002
KF813010940	R01429	R01336	R01464	K13015	A13076	A12016	C12630	C13002
KF813010941	R01429	R01386	R01464	K13015	A13076	A12016	C12630	C13002
KF813010942	R01424	R01343	R01464	K13015	A13076	A12016	C12630	C13002
KF813010943	R01430	R01320	R01464	K13015	A13076	A12016	C12630	C13002
KF813010944	R01429	R01386	R01464	K13015	A13076	A12016	C12630	C13002
KF813010945	R01424	R01358	R01459	K13015	A13076	A12016	C12630	C13002
KF813010946	R01429	R01348	R01196	K13015	A13076	A12016	C12630	C13002
KF813010947	R01425	R01398	R01475	K13015	A13076	A12016	C12630	C13002
KF813010948	R01429	R01338	R01459	K13015	A13076	A12016	C12630	C13002
KF813010949	R01424	R01328	R01459	K13015	A13076	A12016	C12630	C13002

We hereby certify that the above valves have been tested as per API598 and comply to the specification of the purchase order.

Inspector

Reviewed by

CLIF-VI-2206
CPO#219 GF-01V00

OA line 5
CPO219

YANCHENG H & M PRESSURE VALVE CO., LTD

NO.6 Juheng Road, Economic Development Zone, Yancheng City, China
Tel: +86-515-8281015 Fax: +86-515-8281015 E-mail: ygf@public.yc.js.cn

Certificate No: KF-1304-04
DATE: 2013.04.11
SHEET 2 OF 2

PRESSURE TEST CERTIFICATE

Pressure Test (As per API 598)						Name of Valves: Gate Valves
Item		Test Pressure (MPa)	Test Durations (Sec.)	Allowable Leakage Rate (max)	Result	Size & Class:2" 150 LB
Shell Test		3.2	60	0	OK	Quantity: 28
Backseat Test		2.2	60	0	OK	Valve Material: ASTM A216 WCB
Seat Test	Hydro	2.2	60	0	OK	PO No.: P30602
	Air	0.6-0.7	60	0	OK	CAT No.: GA01011U-2"
Valve requirement		API600 (√)	BS1873 ( )	BS1868 ( )		NACE MR 0175 ( )

Serial No.	Heat No.			Lot No.				
	Body	Bonnet	Wedge	Seat Ring	Stem	Back Seat	Bolt	Nut
KF813010950	R01128	R01343	R01454	K13015	A13076	A12016	C12630	C13002
KF813010951	R01425	R01328	R01459	K13015	A13076	A12016	C12630	C13002
KF813010952	R01424	R01323	R01459	K13015	A13076	A12016	C12630	C13002
KF813010953	R01425	R01343	R01459	K13015	A13076	A12016	C12630	C13002
KF813010954	R01424	R01333	R01459	K13015	A13076	A12016	C12630	C13002

We hereby certify that the above valves have been tested as per API598 and comply to the specification of the purchase order.

Inspector

Reviewed by

YANCHENG H & M PRESSURE VALVE CO.,LTD
No.6 Juheng Road Economic development Zone
Yancheng City, China
Tel: +86-515-8281015 Fax: +86-515-8281003
E-mail: ycf@public.yc.js.cn

MATERIAL CERTIFICATE

(BS EN 10204.3.1)

Certificate No: KF-1304-04
Certificate Date: 2013/04/11

Customer: KF | P/O No: P30602 | QTY: 28 | Material: ASTM A216 WCB
Description: GATE VALVE2"150LB | CAT No:GA01011U-2" | Sheet 1 of 3

Name of Parts	Heat No	CHEMICAL ANALYSIS (%) MAX											MECHANICAL PROPERTIES				
		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Others	Tensile	Yield	Elongation	Reduction	Hardness
		0.3 Max.	1.0 Max.	0.04 Max.	0.045 Max.	0.6 Max.	0.3 Max.	0.5 Max.	0.5 Max.	0.2 Max.	0.03 Max.		485-655 Mpa	250Min. MPa	22% Min.	35% Min.	HB
BODY	R01125	0.209	0.947	0.024	0.016	0.475	0.021	0.027	0.037	0.001	0.018		545	330	33	49	149
BODY	R01128	0.204	0.858	0.022	0.016	0.415	0.020	0.025	0.056	0.004	0.016		530	330	36	57	154
BODY	R01411	0.221	0.915	0.030	0.018	0.503	0.090	0.044	0.050	0.001	0.009		540	340	35	57	153
BODY	R01424	0.199	0.902	0.023	0.013	0.485	0.028	0.018	0.031	0.001	0.013		570	365	33	59	161
BODY	R01425	0.194	0.845	0.021	0.015	0.425	0.027	0.018	0.014	0.001	0.005		540	335	30	45	152
BODY	R01429	0.209	0.883	0.020	0.015	0.470	0.026	0.017	0.005	0.001	0.001		535	310	32	48	158
BODY	R01430	0.220	0.859	0.022	0.015	0.462	0.031	0.020	0.015	0.001	0.001		570	370	32	53	162
BONNET	R01191	0.197	0.945	0.023	0.016	0.446	0.023	0.017	0.035	0.001	0.006		530	340	36	60	147
BONNET	R01202	0.211	0.848	0.028	0.015	0.419	0.019	0.025	0.047	0.001	0.001		520	320	31	54	145
BONNET	R01320	0.212	0.943	0.024	0.018	0.465	0.019	0.042	0.053	0.001	0.016		545	340	32	57	157
BONNET	R01323	0.207	0.876	0.024	0.019	0.407	0.023	0.039	0.047	0.001	0.011		565	365	32	57	158
BONNET	R01328	0.202	0.920	0.022	0.018	0.490	0.025	0.036	0.034	0.003	0.011		560	360	35	58	156
BONNET	R01333	0.225	0.989	0.028	0.016	0.476	0.033	0.036	0.091	0.001	0.013		550	350	40	64	152
BONNET	R01336	0.224	0.855	0.028	0.014	0.485	0.025	0.022	0.041	0.001	0.008		545	350	34	55	151
BONNET	R01338	0.206	0.869	0.028	0.017	0.497	0.020	0.022	0.039	0.001	0.001		525	345	40	64	158
BONNET	R01343	0.214	0.950	0.028	0.019	0.563	0.026	0.019	0.030	0.001	0.001		540	335	34	57	152
BONNET	R01346	0.205	0.902	0.026	0.014	0.499	0.022	0.021	0.038	0.001	0.001		535	340	34	61	151
BONNET	R01348	0.212	0.911	0.024	0.018	0.561	0.025	0.027	0.042	0.001	0.001		530	335	34	59	154
BONNET	R01356	0.221	0.945	0.027	0.018	0.492	0.024	0.015	0.041	0.001	0.001		525	355	28	49	152
BONNET	R01358	0.221	0.898	0.030	0.020	0.458	0.025	0.014	0.041	0.001	0.001		545	350	33	54	158
BONNET	R01386	0.214	0.841	0.023	0.018	0.491	0.029	0.013	0.024	0.001	0.012		530	365	36	54	152

HEAT TREATMENT	REMARKS	Signature / Date	Inspector
Normalizing	*We hereby certify that the materials described above have been tested and comply to the material specifications of the purchase order.*		

YANCHENG H & M PRESSURE VALVE CO.,LTD
No.6 Juheng Road Economic development Zone
Yancheng City, China
Tel: +86-515-8281015 Fax: +86-515-8281003
E-mail: yqf@public.yc.js.cn

MATERIAL CERTIFICATE

(BS EN 10204.3.1)

Certificate No: KF-1304-04
Certificate Date: 2013/04/11

Customer: KF | P/O No: P30602 | QTY: 28 | Material: ASTM A216 WCB
Description: GATE VALVE2"150LB | CAT No:GA01011U-2' | Sheet 2 of 3

Name of Parts	Heat No	CHEMICAL ANALYSIS (%) MAX											MECHANICAL PROPERTIES				
		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Others	Tensile	Yield	Elongation	Reduction	Hardness
		0.3 Max.	1.0 Max.	0.04 Max	0.045 Max.	0.6 Max	0.3 Max.	0.5 Max.	0.5 Max.	0.2 Max.	0.03 Max.		485-655 Mpa	250Min. MPa	22% Min.	35% Min.	HB
BONNET	R01398	0.222	0.906	0.025	0.017	0.476	0.033	0.016	0.030	0.001	0.009		535	330	33	55	153
BONNET	R01429	0.228	0.836	0.025	0.017	0.438	0.038	0.024	0.020	0.003	0.019		550	350	32	53	161
WEDGE	R01196	0.218	0.925	0.028	0.016	0.458	0.026	0.024	0.049	0.001	0.001		570	365	35	57	151
WEDGE	R01415	0.212	0.790	0.026	0.022	0.470	0.029	0.013	0.017	0.001	0.018		540	315	27	54	159
WEDGE	R01454	0.226	0.830	0.023	0.008	0.430	0.037	0.023	0.025	0.004	0.015		580	375	31	54	180
WEDGE	R01459	0.194	0.805	0.024	0.018	0.386	0.033	0.034	0.040	0.001	0.012		540	340	34	59	158
WEDGE	R01464	0.217	0.903	0.027	0.017	0.499	0.038	0.040	0.071	0.001	0.012		550	355	32	54	152
WEDGE	R01470	0.225	0.930	0.025	0.015	0.445	0.034	0.026	0.029	0.003	0.010		545	340	33	50	152
WEDGE	R01475	0.222	0.859	0.027	0.016	0.456	0.027	0.025	0.029	0.001	0.013		540	355	31	53	154

HEAT TREATMENT	REMARKS	Signature / Date	Inspector
Normalizing	*We hereby certify that the materials described above have been tested and comply to the material specifications of the purchase order.*		

YANCHENG H & M PRESSURE VALVE CO.,LTD
No.6 Juheng Road Economic development Zone Yancheng City, China
Tel: +86-515-8281015 Fax: +86-515-8281015
E-mail: vgf@public.yc.js.cn

MATERIAL CERTIFICATE

(BS EN 10204 2.2)

Certificate No: KF-1304-04
5Certificate Date: 2013/04/11

Customer: KF
P/O No: P30602
QTY: 28
Description: GATE VALVE2"150LB
CAT No:GA01011U-2"

Name of Parts	Material	Lot No	CHEMICAL ANALYSIS (%) MAX											MECHANICAL PROPERTIES				
			C	Si	Mn	S	P	Cu	Mo	V	Cr	Ni	Others	Tensile MPa	Yield MPa	Elongation n%	Reduction %	Hardness HB
Seat Ring	ASTM A105+HF	K13015	0.190	0.190	0.860	0.011	0.014	0.110	0.030	0.015	0.050	0.038		520	312	33	57	162
Stem	ASTM A182 F6A	A13076	0.090	0.305	0.380	0.018	0.025	0.090	...	...	12.10	0.170		660	479	27.5	72.5	209
Back Seat	ASTM A276 410	A12016	0.095	0.310	0.520	0.011	0.026	...	...	...	11.70	0.200		700	495	22.5	69	189
Bolt	ASTM A193 B7	C12030	0.400	0.240	0.790	0.009	0.010	...	0.193	...	0.990	...		924	831.6	20	63	285
Nut	ASTM A194 2H	C13002	0.460	0.230	0.610	0.015	0.022	...	...	...	...	...		...	...	...	...	285

REMARKS

We hereby certify that the materials described above have been tested and comply to the material specifications of the purchase order.

Signature / Date

Inspector

FORUM ENERGY TECHNOLOGIES DSI

Inspection Certificate and Material Test Report
(EN10204-1991 3.1.B / EN10204-2004 3.1)

CA Line 33 CPO#20

DSI-Valve Solutions
12735 Dairy Ashford
Stafford TX 77477
281-637-2000 - Fax 281-637-2299
www.dsivalve.com

Certificate/Serial/Job No: TJ52 / 39

Quality Department: John Ho

Quantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
98	6	300	103021 / 51100024	DSI 149XU	SWING				6/13/2007

Pressure Test: API598	☑ Satisfactory	Shell Pressure :	BackSeat :	Seat Pressure	Seat Air Pressure
		1125 psi 7756.6 kPa	psi kPa	825 psi 5688.17 kPa	psi kPa

Part	Specif.	HEAT No	Chemical Composition [%] C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Al	N	Mechanical Properties Tensile [ksi] [MPa]	Yield [ksi] [MPa]	Elong [%]	Redu [%]	Hard [HB]	Ch.1 [J]	Ch.2 [J]	Ch.3 [J]	Ch. A [J]	Temp. [F] [C]	HT
BODY	ASTM A216 WCB-2004	A 5133	0.230	0.45	0.89	0.027	0.025	0.031	0.028	0.001	0.023	0.004				76.27 525.86	46.55 321	25	46	154						N
CLAPPER	ASTM A696 Grade C-1990	180	0.186	0.22	0.48	0.013	0.017	0.043	0.035	0.011	0.094					73.95 509.87	48.58 334.9	39	58	154						N
COVER	ASTM A216 WCB-2004	J 1864	0.200	0.45	0.81	0.026	0.022	0.017	0.016	0.016	0.036	0.003				75.84 522.9	46.26 319	28	40	164						N

Heat Treatment Codes:

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

Part	Material
BODY/COVER	ASTM A216 WCB
BOLTING	ASTM A193 B7 / ASTM A194 2H
DISC-WEDGE-CLAPPER	ASTM A216 WCB + 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 Confirmity: 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 assesment 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 Jianyin Eastern Valve company Ltd. :

CLIF-2207 CPO#20
CF-03A00

FORUM ENERGY TECHNOLOGIES DSI

Inspection Certificate and Material Test Report
(EN10204-1991 3.1.B / EN10204-2004 3.1)

DSI-Valve Solutions
12735 Dairy Ashford
Stafford TX 77477
281-637-2000 - Fax 281-637-2299
www.dsivalve.com

Certificate/Serial/Job No: TJ52 / 39

Quality Department: John Ho

Quantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
98	6	300	103021 / 51100024	DSI 149XU	SWING				6/13/2007

Pressure Test: API598 ☑ Satisfactory	Shell Pressure : 1125 psi / 7756.6 kPa	BackSeat : psi / kPa	Seat Pressure 825 psi / 5688.17 kPa	Seat Air Pressure psi / kPa

Part	Specif.	HEAT No	Chemical Composition [%]													Mechanical Properties										
			C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Al	N	Tensile [ksi] [MPa]	Yield [ksi] [MPa]	Elong [%]	Redu [%]	Hard [HB]	Ch.1 [J]	Ch.2 [J]	Ch.3 [J]	Ch. A [J]	Temp. [F] [C]	HT

VELAN

Certificate of Conformance

Certificate #: P4-122144

Customer: Velan Inc.	Customer Name:	SHIC - SHIPFIELD	
Customer Ref: MISC	Customer Po #:	C-00142962	
Order: Order	Velan Order #:		
Quantity: 2 Pcs	Valve Design:		
Material: 316 (SS 316)	Hydro Test Spec:	MSS-SP61 Rev.04	
Size: 1 Inch	Test Results:	ACCEPTABLE	

Certificate Date:	10-MAY-2012		
Item Number:	10	Position No:	10
Quantity:	2		
Figure Number:	F10-00FM-B2TY-WC50		
Description:	VALVE 1" 150 GLOBE RF		
Draw No. & Rev:		REV	
Tag Number(s):	NONE		

NOTES:

MATERIAL TEST RESULTS SHOWN BELOW.

CHEMICALS

Material Code: A216-WCB

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BN8011W	BODY	0.191	0.74	0.019	0.008	0.405	0.057	0.054	0.081	0.006	0.007

Heat Treatment: NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BN802L30	BODY	0.206	0.76	0.025	0.010	0.449	0.042	0.025	0.034	0.002	0.007

Heat Treatment: NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BN803H02	BONNET	0.191	0.952	0.032	0.030	0.306	0.024	0.021	0.001	0.001	0.006

Heat Treatment: NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BN804L23	BONNET	0.230	0.892	0.025	0.011	0.436	0.036	0.021	0.043	0.004	0.005

Heat Treatment: NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BN804L23	BONNET	0.206	0.909	0.023	0.015	0.362	0.031	0.031	0.018	0.007	0.006

Heat Treatment: NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BN805L22	BONNET	0.197	0.956	0.026	0.010	0.410	0.032	0.043	0.052	0.004	0.005

Heat Treatment: NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BN805L24	BONNET	0.198	0.966	0.032	0.011	0.400	0.029	0.035	0.048	0.003	0.001

Heat Treatment: NORMALIZED

MECHANICALS [F/B: flatenning/ bending; GS: Grain size]

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
565.0 / 81.9	355.0 / 51.5	27.8	47.6	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
579.0 / 84.0	379.0 / 55.0	26.8	45.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
554.0 / 80.4	351.0 / 50.9	29.4	57.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
616.0 / 89.3	416.0 / 60.3	28.4	54.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
554.0 / 80.4	355.0 / 51.5	27.6	52.9	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
558.0 / 80.9	359.0 / 52.1	30.4	58.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
558.0 / 80.9	351.0 / 50.9	28.4	53.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

CLF-VL-226 CP#426 TI 6.5.C.6

VELAN

Certificate of Conformance

Certificate #: F4-122144

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
[illegible]	BODY	[illegible]	[illegible]	[illegible]	[illegible]	0.242	0.034	0.106	0.080	0.006	0.005

Heat Treatment

[illegible]

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
[illegible]	BODY	[illegible]	[illegible]	[illegible]	[illegible]	0.243	[illegible]	[illegible]	0.066	[illegible]	[illegible]

Heat Treatment

[illegible]

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
[illegible]	BODY	[illegible]	[illegible]	[illegible]	[illegible]	3.45	0.023	0.007	0.038	0.004	0.001

Heat Treatment

NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
[illegible]	BONNET	0.206	[illegible]	0.012	0.011	0.490	0.017	0.049	0.057	0.006	0.007

Heat Treatment

NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
[illegible]	BONNET	[illegible]	[illegible]	[illegible]	0.008	0.47	0.014	[illegible]	0.059	0.010	0.005

Heat Treatment

[illegible]

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
[illegible]	BONNET	[illegible]	[illegible]	[illegible]	0.008	0.494	[illegible]	0.012	0.041	0.045	[illegible]

Heat Treatment

[illegible]

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
611.0 / 88.6	420.0 / 60.9	27.0	50.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
[illegible]	[illegible] / 51.5	29.2	[illegible]	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
[illegible] / [illegible]	395.0 / 57.3	29.0	67.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
595.0 / 86.3	395.0 / 57.3	29.4	53.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
553.0 / 80.9	346.0 / 50.2	31.4	47.0	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
[illegible]	[illegible] / [illegible]	26.0	[illegible]	
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS

Velan hereby certifies that the valve(s) described above is (are) in conformance with the purchase order and specification requirements. The test report represents the actual attributes of items furnished and all test results are in full conformance with applicable specification and purchase order requirements.

[illegible] 06 MAY 2012

Manager of Q.C. Documentation — Date

Customer Representative — Date

CA Line 1 CPO#27

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02
PAGE: 1 OF 29

CUSTOMER:	QUANTITY	PART No.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	120	10678522	8G1RA8-G-000	8G1R-G,C00/8 [-BA00-LLC-SSF-WEB,-GBR] GATE VALVE,8,150LB ASTM A216 WCB,F6a/HF RAISED FACE END,GEAR OPERATED,LOW EMISSION

PURCHASE ORDER: 6001659MRC-S759124230	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464	2.2/319	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION

- P/T RATING: ASME B16.34 (2009)
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600(2009) ASME B16.34(2009)
- TEST: API598(2009) EN12266(2003)
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL SPECIFICATION

CLIF-UJ-2209

CPO#27 GF-01A10

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

WITNESSED BY: _____

NEWAY VALVE Ken Li
Q.C. Manager

Address: NO. 999 Xiang,Jiang Road SuZhou New District China Tel: 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 37685-50(80151042) DATE: 2012.05.02 PAGE: 2 OF 29

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-050-13	1H200	4H933	6A470	/	37685-050-20	5H086	4H615	6A739	/
37685-050-21	5H535	4H638	7A048	/	37685-050-36	4H486	4H933	6A741	/
37685-050-42	4H723	4H720	1H841	/	37685-050-44	4H230	1H459	7A049	/
37685-050-121	5H568	4H507	6A472	/	37685-050-125	5H024	4H509	6A465	/
37685-050-144	5H503	4H533	6A465	/	37685-050-182	4H355	4H353	6A406	/
37685-050-183	4H668	4H248	6A468	/	37685-050-184	4H485	4H721	7A047	/
37685-050-187	4H998	4H318	7A048	/	37685-050-196	4H875	4H749	6A477	/
37685-050-230	5H536	4H638	7A048	/	37685-050-231	5H502	4H638	6A408	/
37685-050-236	4H433	1H036	6A473	/	37685-050-242	4H431	4H691	6A408	/
37685-050-243	4H407	4H968	4A746	/	37685-050-245	4H294	4H876	6A475	/
37685-050-247	L0989	5H023	6A474	/	37685-050-248	6H085	5H085	6A473	/
37685-050-250	L0989	4H908	6A477	/	37685-050-251	4H807	1H037	6A414	/
37685-050-259	4H691	4H245	6A465	/	37685-050-264	4H487	5H055	6A414	/
37685-050-265	4H319	4H876	6A475	/	37685-050-267	4H321	1H120	6A740	/
37685-050-274	4H294	4H507	6A472	/	37685-050-278	3H778	4H355	6A475	/

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 37685-50(801510420) DATE: 2012.05.02 PAGE: 3 OF 29

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-050-279	4H319	4H613	6A406	/	37685-050-280	4H431	4H507	6A467	/
37685-050-283	4H936	4H722	6A739	/	37685-050-285	5H056	4H968	7A424	/
37685-050-287	5H056	4H935	6A417	/	37685-050-288	4H138	4H782	7A427	/
37685-050-290	4H781	4H508	7A428	/	37685-050-291	5H026	4H380	6A469	/
37685-050-292	4H936	4H751	6A406	/	37685-050-296	4H966	4H908	7A425	/
37685-050-297	5H084	5H055	6A470	/	37685-050-300	4H533	4H749	7A424	/
37685-050-301	H7516	4H272	6A408	/	37685-050-302	H9746	5H053	7A159	/
37685-050-303	L0989	4H434	6A406	/	37685-050-304	68H97	5H053	6A465	/
37685-050-307	H9767	4H723	6A467	/	37685-050-308	81H88	4H847	7A158	/
37685-050-312	4H205	4H807	7A421	/	37685-050-314	4H248	5H053	7A426	/
37685-050-315	80H79	5H086	5A486	/	37685-050-316	4H231	4H782	7A424	/
37685-050-317	L1067	4H484	6A477	/	37685-050-318	6H144	4H247	7A425	/
37685-050-319	L1179	4H431	7A159	/	37685-050-320	6H319	4H269	7A432	/
37685-050-321	6H520	4H667	7A159	/	37685-050-323	L0830	4H936	7A432	/
37685-050-325	5H115	4H484	7A422	/	37685-050-329	L1474	4H406	7A428	/

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 37685-50(80151042) DATE: 2012.05.02 PAGE: 4 OF 29

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-050-327	5H087	4H874	7A161	/	37685-050-328	3H490	4H378	7A426	/
37685-050-329	L0631	4H665	7A421	/	37685-050-330	L0681	5H056	7A429	/
37685-050-331	4H997	4H379	6A477	/	37685-050-332	5H536	4H997	2A552	/
37685-050-333	5H392	4H247	7A422	/	37685-050-334	3H468	4H558	7A434	/
37685-050-335	5H814	4H641	6A418	/	37685-050-336	5H842	4H692	7A157	/
37685-050-337	5H788	4H230	6A469	/	37685-050-338	5H814	4H204	7A424	/
37685-050-339	5H392	5H023	7A426	/	37685-050-340	5H626	4H586	7A161	/
37685-050-341	3H490	4H292	7A425	/	37685-050-342	5H087	4H318	7A431	/
37685-050-343	5H478	4H484	7A159	/	37685-050-344	L1179	4H692	7A160	/
37685-050-345	L1084	4H874	7A431	/	37685-050-346	L0707	5H116	7A422	/
37685-050-347	L1179	4H380	7A160	/	37685-050-348	L1446	4H616	7A426	/
37685-050-350	L0707	4H997	7A425	/	37685-050-355	L0524	4H749	7A160	/
37685-050-357	4H532	4H557	7A434	/	37685-050-358	4H487	4H806	7A162	/
37685-050-359	5H717	4H665	7A429	/	37685-050-360	5H716	4H320	7A424	/
37685-050-361	5H685	4H584	7A431	/	37685-050-362	5H715	4H484	7A422	/

PRODUCT TRACEABILITY TABLE

SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.	SERIAL NO.	MATERIAL CODE AND HEAT NO.			PRODUCT NO.
	BODY	BONNET	WEDGE/DISC			BODY	BONNET	WEDGE/DISC	
	WCB	WCB	CA15			WCB	WCB	CA15	
37685-050-364	5H623	4H781	7A425	/	37685-050-365	66U93	4H230	6A477	/
37685-050-366	6H086	4H405	7A433	/	37685-050-367	6H258	4H292	7A434	/
37685-050-370	L1179	4H783	7A428	/	37685-050-371	6H085	4H532	7A412	/
37685-050-373	6H144	5H023	7A428	/	37685-050-374	5H842	5H116	7A431	/
37685-050-375	5H087	4H749	6A477	/	37685-050-376	L1084	4H271	7A422	/
37685-050-377	5H995	4H320	7A422	/	37685-050-378	L1446	4H484	7A426	/
37685-050-380	3H489	4H783	7A429	/	37685-050-381	5H996	4H616	7A434	/
37685-050-382	5H418	5H086	7A429	/	37685-050-383	5H479	4H484	7A422	/
37685-050-384	6H413	5H026	7A158	/	37685-050-386	6H200	4H665	7A161	/
37685-050-387	6H055	4H406	7A430	/	37685-050-388	6H113	4H665	7A422	/
37685-050-389	6H503	4H722	7A422	/	37685-050-390	6H260	4H781	7A160	/
37685-050-391	5H844	4H318	7A426	/	37685-050-392	5H844	4H407	7A421	/
37685-050-393	5H756	4H781	7A421	/	37685-050-395	5H995	4H781	7A428	/
37685-050-396	6H260	5H117	7A421	/	37685-050-397	3H490	4H584	6A475	/
37685-050-398	5H814	4H586	7A158	/	37685-050-399	5H717	5H087	7A157	/

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	1H200	0.203	1.080	0.430	0.006	0.026	0.037	0.020	0.011	0.029	0.002				0.396	600	395	32	54	149			
BODY	WCB	3H468	0.191	0.968	0.432	0.010	0.027	0.035	0.025	0.008	0.030	0.004				0.365	575	365	32	59	163			
BODY	WCB	3H489	0.199	1.027	0.401	0.007	0.023	0.025	0.016	0.010	0.026	0.002				0.380	580	380	37	54	156			
BODY	WCB	3H490	0.194	1.036	0.411	0.010	0.025	0.049	0.036	0.015	0.034	0.004				0.385	580	380	33	55	167			
BODY	WCB	3H778	0.214	1.019	0.409	0.008	0.027	0.031	0.016	0.008	0.021	0.002				0.395	585	395	32	52	167			
BODY	WCB	4H138	0.215	1.052	0.465	0.012	0.027	0.041	0.024	0.008	0.032	0.004				0.405	600	400	29	62	143			
BODY	WCB	4H205	0.192	0.988	0.427	0.008	0.023	0.026	0.016	0.012	0.022	0.002				0.367	565	370	31	60	149			
BODY	WCB	4H230	0.206	1.021	0.411	0.008	0.023	0.026	0.016	0.011	0.021	0.004				0.387	580	385	27	51	156			
BODY	WCB	4H231	0.214	0.998	0.400	0.007	0.023	0.022	0.013	0.012	0.020	0.002				0.390	580	380	26	58	146			
BODY	WCB	4H248	0.199	1.003	0.387	0.007	0.023	0.075	0.015	0.009	0.021	0.002				0.386	565	380	28	57	156			
BODY	WCB	4H294	0.200	1.008	0.548	0.011	0.028	0.037	0.024	0.016	0.027	0.003				0.383	575	340	28	59	152			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	4H319	0.202	1.007	0.396	0.008	0.024	0.027	0.015	0.011	0.022	0.003				0.381	605	405	28	42	159			
BODY	WCB	4H321	0.209	1.030	0.395	0.008	0.026	0.029	0.020	0.012	0.027	0.002				0.392	605	395	28	55	167			
BODY	WCB	4H355	0.210	1.019	0.443	0.007	0.027	0.022	0.013	0.016	0.021	0.003				0.390	620	395	27	50	156			
BODY	WCB	4H407	0.207	0.998	0.423	0.006	0.032	0.024	0.015	0.011	0.018	0.002				0.383	585	385	32	60	167			
BODY	WCB	4H431	0.194	1.067	0.416	0.007	0.032	0.033	0.019	0.009	0.025	0.003				0.384	595	390	28	60	170			
BODY	WCB	4H433	0.219	0.990	0.397	0.010	0.028	0.046	0.018	0.008	0.025	0.004				0.398	620	390	31	59	159			
BODY	WCB	4H485	0.203	0.973	0.439	0.009	0.023	0.153	0.029	0.006	0.024	0.004				0.401	570	375	31	61	167			
BODY	WCB	4H486	0.202	0.999	0.417	0.008	0.024	0.028	0.015	0.009	0.021	0.002				0.379	580	380	31	57	175			
BODY	WCB	4H487	0.206	1.013	0.420	0.007	0.028	0.029	0.015	0.008	0.020	0.002				0.385	580	365	30	62	156			
BODY	WCB	4H532	0.197	0.996	0.414	0.008	0.020	0.054	0.015	0.008	0.019	0.003				0.378	575	405	31	61	167			
BODY	WCB	4H533	0.202	1.039	0.436	0.007	0.024	0.027	0.014	0.011	0.017	0.002				0.385	575	370	33	61	159			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP°C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	4H668	0.201	0.994	0.419	0.012	0.026	0.044	0.024	0.008	0.026	0.005				0.381	605	395	29	54	156			
BODY	WCB	4H691	0.204	0.968	0.456	0.012	0.027	0.036	0.021	0.011	0.026	0.004				0.379	585	385	37	60	163			
BODY	WCB	4H723	0.196	0.975	0.465	0.009	0.025	0.028	0.016	0.008	0.022	0.003				0.369	570	360	32	61	159			
BODY	WCB	4H781	0.208	0.982	0.413	0.010	0.026	0.031	0.017	0.006	0.023	0.003				0.382	595	385	28	57	159			
BODY	WCB	4H807	0.199	0.993	0.434	0.010	0.028	0.045	0.030	0.009	0.029	0.005				0.380	580	395	36	55	159			
BODY	WCB	4H875	0.200	0.973	0.449	0.011	0.022	0.027	0.017	0.006	0.021	0.003				0.372	580	375	29	58	170			
BODY	WCB	4H936	0.203	1.006	0.412	0.009	0.029	0.049	0.018	0.007	0.021	0.003				0.385	575	370	31	57	167			
BODY	WCB	4H966	0.204	1.045	0.523	0.008	0.027	0.073	0.019	0.009	0.026	0.003				0.398	585	380	34	63	174			
BODY	WCB	4H997	0.197	1.019	0.496	0.010	0.027	0.057	0.026	0.012	0.032	0.004				0.385	585	395	31	58	159			
BODY	WCB	4H998	0.199	0.981	0.400	0.011	0.028	0.048	0.028	0.014	0.030	0.004				0.380	560	365	25	63	159			
BODY	WCB	5H024	0.201	1.030	0.449	0.009	0.029	0.044	0.031	0.015	0.028	0.004				0.389	575	380	29	57	163			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E.	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	5H026	0.212	1.040	0.418	0.009	0.027	0.049	0.021	0.008	0.024	0.003				0.400	555	375	34	52	159			
BODY	WCB	5H056	0.195	1.024	0.443	0.010	0.028	0.052	0.024	0.011	0.026	0.003				0.382	595	385	34	52	163			
BODY	WCB	5H084	0.210	1.016	0.420	0.011	0.026	0.039	0.026	0.012	0.026	0.005				0.394	570	375	33	59	170			
BODY	WCB	5H086	0.195	1.082	0.439	0.008	0.027	0.039	0.025	0.010	0.026	0.004				0.389	570	385	34	65	170			
BODY	WCB	5H087	0.205	1.008	0.431	0.013	0.031	0.042	0.026	0.017	0.028	0.005				0.389	570	385	30	57	156			
BODY	WCB	5H115	0.200	1.007	0.397	0.010	0.025	0.046	0.025	0.010	0.024	0.004				0.383	560	360	35	61	159			
BODY	WCB	5H392	0.209	0.976	0.405	0.012	0.026	0.035	0.027	0.011	0.027	0.003				0.385	580	370	33	59	170			
BODY	WCB	5H418	0.196	0.984	0.407	0.011	0.023	0.040	0.023	0.008	0.032	0.004				0.374	580	390	33	57	163			
BODY	WCB	5H478	0.204	0.964	0.473	0.010	0.031	0.064	0.024	0.014	0.026	0.003				0.384	580	375	33	57	163			
BODY	WCB	5H479	0.212	1.040	0.429	0.010	0.029	0.046	0.029	0.011	0.028	0.005				0.402	585	390	34	62	163			
BODY	WCB	5H502	0.218	1.013	0.435	0.016	0.023	0.030	0.023	0.008	0.032	0.002				0.399	580	385	35	60	159			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(801510421)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP°C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	**WCB**	**5H503**	**0.207**	**1.003**	**0.400**	**0.013**	**0.028**	**0.044**	**0.026**	**0.011**	**0.033**	**0.004**				**0.390**	**560**	**375**	**35**	**49**	**163**			
BODY	**WCB**	**5H535**	**0.196**	**1.013**	**0.426**	**0.010**	**0.027**	**0.029**	**0.019**	**0.009**	**0.026**	**0.003**				**0.376**	**590**	**400**	**32**	**59**	**163**			
BODY	**WCB**	**5H536**	**0.210**	**1.013**	**0.433**	**0.011**	**0.027**	**0.090**	**0.021**	**0.018**	**0.027**	**0.004**				**0.404**	**575**	**380**	**28**	**54**	**156**			
BODY	**WCB**	**5H568**	**0.214**	**0.994**	**0.461**	**0.013**	**0.029**	**0.042**	**0.028**	**0.010**	**0.030**	**0.005**				**0.395**	**585**	**385**	**31**	**51**	**163**			
BODY	**WCB**	**5H623**	**0.211**	**1.061**	**0.472**	**0.011**	**0.026**	**0.041**	**0.027**	**0.005**	**0.031**	**0.004**				**0.402**	**585**	**385**	**34**	**57**	**156**			
BODY	**WCB**	**5H626**	**0.210**	**1.011**	**0.446**	**0.010**	**0.026**	**0.057**	**0.022**	**0.006**	**0.028**	**0.004**				**0.395**	**550**	**355**	**31**	**57**	**159**			
BODY	**WCB**	**5H685**	**0.205**	**0.995**	**0.420**	**0.011**	**0.024**	**0.042**	**0.034**	**0.003**	**0.031**	**0.005**				**0.385**	**560**	**375**	**32**	**57**	**163**			
BODY	**WCB**	**5H715**	**0.200**	**1.012**	**0.431**	**0.009**	**0.032**	**0.028**	**0.015**	**0.011**	**0.027**	**0.002**				**0.380**	**575**	**395**	**29**	**50**	**167**			
BODY	**WCB**	**5H716**	**0.210**	**0.990**	**0.403**	**0.009**	**0.026**	**0.038**	**0.020**	**0.011**	**0.029**	**0.003**				**0.389**	**590**	**390**	**28**	**50**	**152**			
BODY	**WCB**	**5H717**	**0.201**	**1.003**	**0.423**	**0.011**	**0.031**	**0.032**	**0.019**	**0.012**	**0.034**	**0.004**				**0.381**	**590**	**395**	**30**	**59**	**163**			
BODY	**WCB**	**5H756**	**0.203**	**1.023**	**0.446**	**0.013**	**0.029**	**0.039**	**0.024**	**0.010**	**0.029**	**0.004**				**0.388**	**570**	**370**	**34**	**55**	**163**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(hr	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	5H788	0.205	1.019	0.437	0.010	0.027	0.036	0.022	0.011	0.029	0.003				0.388	580	375	31	57	167			
BODY	WCB	5H814	0.216	1.091	0.448	0.009	0.025	0.025	0.017	0.007	0.028	0.003				0.408	585	390	32	56	170			
BODY	WCB	5H842	0.211	1.099	0.548	0.011	0.029	0.032	0.020	0.007	0.027	0.003				0.406	580	380	32	64	159			
BODY	WCB	5H844	0.209	1.028	0.497	0.010	0.029	0.037	0.020	0.008	0.029	0.003				0.393	570	390	39	60	163			
BODY	WCB	5H995	0.216	1.062	0.513	0.009	0.027	0.035	0.022	0.007	0.025	0.004				0.405	580	380	27	55	170			
BODY	WCB	5H996	0.213	1.000	0.444	0.010	0.025	0.039	0.029	0.009	0.029	0.005				0.394	580	360	34	61	167			
BODY	WCB	66U93	0.206	1.005	0.387	0.010	0.026	0.021	0.008	0.006	0.015	0.001				0.381	530	355	31	51	150			
BODY	WCB	68U97	0.208	1.045	0.439	0.014	0.022	0.064	0.029	0.007	0.036	0.004				0.402	535	335	29	56	137			
BODY	WCB	6H055	0.199	0.972	0.441	0.010	0.024	0.036	0.018	0.006	0.023	0.004				0.373	525	274	29	57	156			
BODY	WCB	6H085	0.192	0.969	0.427	0.011	0.026	0.048	0.023	0.011	0.031	0.004				0.370	585	370	34	56	156			
BODY	WCB	6H086	0.200	1.022	0.465	0.008	0.023	0.034	0.020	0.010	0.025	0.003				0.383	560	365	30	62	156			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	**WCB**	**6H113**	**0.195**	**1.059**	**0.443**	**0.009**	**0.029**	**0.041**	**0.026**	**0.009**	**0.032**	**0.003**				**0.386**	**530**	**320**	**32**	**59**	**163**			
BODY	**WCB**	**6H144**	**0.205**	**0.974**	**0.421**	**0.007**	**0.026**	**0.033**	**0.020**	**0.007**	**0.026**	**0.003**				**0.379**	**580**	**390**	**32**	**52**	**159**			
BODY	**WCB**	**6H200**	**0.191**	**0.957**	**0.438**	**0.009**	**0.027**	**0.039**	**0.018**	**0.005**	**0.023**	**0.002**				**0.362**	**605**	**415**	**31**	**55**	**167**			
BODY	**WCB**	**6H258**	**0.208**	**0.983**	**0.432**	**0.010**	**0.026**	**0.056**	**0.023**	**0.013**	**0.025**	**0.003**				**0.389**	**550**	**345**	**35**	**61**	**159**			
BODY	**WCB**	**6H260**	**0.195**	**1.033**	**0.433**	**0.008**	**0.025**	**0.045**	**0.024**	**0.012**	**0.026**	**0.004**				**0.383**	**595**	**390**	**31**	**64**	**152**			
BODY	**WCB**	**6H319**	**0.204**	**1.023**	**0.474**	**0.010**	**0.028**	**0.043**	**0.025**	**0.011**	**0.030**	**0.004**				**0.390**	**580**	**375**	**35**	**57**	**167**			
BODY	**WCB**	**6H413**	**0.205**	**1.014**	**0.414**	**0.012**	**0.027**	**0.048**	**0.029**	**0.007**	**0.028**	**0.005**				**0.390**	**580**	**390**	**30**	**55**	**170**			
BODY	**WCB**	**6H503**	**0.219**	**1.016**	**0.449**	**0.010**	**0.024**	**0.140**	**0.025**	**0.016**	**0.033**	**0.004**				**0.424**	**595**	**405**	**31**	**56**	**163**			
BODY	**WCB**	**6H520**	**0.201**	**0.970**	**0.436**	**0.010**	**0.031**	**0.060**	**0.020**	**0.012**	**0.022**	**0.004**				**0.381**	**580**	**380**	**30**	**57**	**179**			
BODY	**WCB**	**80U79**	**0.207**	**1.020**	**0.383**	**0.014**	**0.025**	**0.043**	**0.026**	**0.008**	**0.030**	**0.004**				**0.392**	**570**	**355**	**34**	**60**	**170**			
BODY	**WCB**	**81U88**	**0.201**	**1.017**	**0.396**	**0.011**	**0.028**	**0.046**	**0.034**	**0.002**	**0.032**	**0.006**				**0.386**	**540**	**355**	**32**	**56**	**184**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	**WCB**	**H7516**	**0.199**	**1.051**	**0.421**	**0.011**	**0.024**	**0.048**	**0.026**	**0.006**	**0.038**	**0.003**				**0.390**	**580**	**380**	**34**	**57**	**163**			
BODY	**WCB**	**H9746**	**0.192**	**1.009**	**0.407**	**0.010**	**0.024**	**0.040**	**0.034**	**0.012**	**0.037**	**0.006**				**0.377**	**570**	**370**	**31**	**57**	**156**			
BODY	**WCB**	**H9767**	**0.197**	**1.067**	**0.441**	**0.010**	**0.024**	**0.045**	**0.037**	**0.010**	**0.040**	**0.005**				**0.392**	**565**	**365**	**30**	**57**	**143**			
BODY	**WCB**	**L0524**	**0.219**	**1.001**	**0.412**	**0.015**	**0.032**	**0.063**	**0.031**	**0.016**	**0.024**	**0.002**				**0.406**	**540**	**365**	**24**	**51**	**198**			
BODY	**WCB**	**L0631**	**0.207**	**1.061**	**0.436**	**0.012**	**0.030**	**0.048**	**0.022**	**0.018**	**0.024**	**0.002**				**0.401**	**550**	**315**	**25**	**56**	**146**			
BODY	**WCB**	**L0681**	**0.218**	**1.078**	**0.408**	**0.012**	**0.028**	**0.047**	**0.031**	**0.005**	**0.026**	**0.006**				**0.413**	**545**	**350**	**29**	**52**	**169**			
BODY	**WCB**	**L0707**	**0.218**	**1.043**	**0.410**	**0.014**	**0.022**	**0.054**	**0.026**	**0.002**	**0.026**	**0.006**				**0.408**	**535**	**330**	**28**	**49**	**195**			
BODY	**WCB**	**L0830**	**0.202**	**1.068**	**0.436**	**0.016**	**0.031**	**0.058**	**0.022**	**0.017**	**0.023**	**0.003**				**0.399**	**525**	**325**	**31**	**58**	**145**			
BODY	**WCB**	**L0989**	**0.200**	**0.999**	**0.402**	**0.012**	**0.029**	**0.051**	**0.025**	**0.013**	**0.020**	**0.002**				**0.383**	**560**	**380**	**26**	**58**	**166**			
BODY	**WCB**	**L1067**	**0.197**	**1.046**	**0.413**	**0.002**	**0.018**	**0.079**	**0.030**	**0.037**	**0.023**	**0.009**				**0.400**	**520**	**310**	**27**	**48**	**136**			
BODY	**WCB**	**L1084**	**0.214**	**1.021**	**0.428**	**0.012**	**0.031**	**0.019**	**0.010**	**0.018**	**0.018**	**0.002**				**0.392**	**575**	**330**	**27**	**47**	**165**			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP°C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BODY	**WCB**	**L1179**	**0.196**	**1.079**	**0.420**	**0.012**	**0.031**	**0.017**	**0.017**	**0.024**	**0.024**	**0.001**				**0.385**	**550**	**325**	**30**	**56**	**188**			
BODY	**WCB**	**L1446**	**0.216**	**1.066**	**0.421**	**0.014**	**0.028**	**0.131**	**0.043**	**0.015**	**0.031**	**0.005**				**0.429**	**520**	**305**	**30**	**59**	**198**			
BODY	**WCB**	**L1474**	**0.210**	**1.076**	**0.450**	**0.012**	**0.029**	**0.099**	**0.035**	**0.019**	**0.026**	**0.003**				**0.418**	**565**	**325**	**31**	**55**	**185**			
BONNET	**WCB**	**1H036**	**0.194**	**0.993**	**0.396**	**0.009**	**0.022**	**0.036**	**0.025**	**0.010**	**0.056**	**0.002**				**0.375**	**570**	**375**	**32**	**53**	**163**			
BONNET	**WCB**	**1H037**	**0.216**	**0.993**	**0.441**	**0.010**	**0.027**	**0.035**	**0.023**	**0.009**	**0.032**	**0.003**				**0.395**	**580**	**385**	**32**	**58**	**159**			
BONNET	**WCB**	**1H120**	**0.197**	**0.958**	**0.403**	**0.009**	**0.031**	**0.033**	**0.021**	**0.015**	**0.039**	**0.002**				**0.371**	**575**	**370**	**34**	**59**	**174**			
BONNET	**WCB**	**1H459**	**0.206**	**0.973**	**0.372**	**0.009**	**0.023**	**0.075**	**0.018**	**0.013**	**0.026**	**0.003**				**0.389**	**585**	**395**	**33**	**57**	**167**			
BONNET	**WCB**	**4H204**	**0.211**	**1.034**	**0.445**	**0.006**	**0.030**	**0.022**	**0.014**	**0.011**	**0.020**	**0.002**				**0.393**	**570**	**360**	**34**	**61**	**152**			
BONNET	**WCB**	**4H230**	**0.206**	**1.021**	**0.411**	**0.008**	**0.023**	**0.026**	**0.016**	**0.011**	**0.021**	**0.004**				**0.387**	**580**	**385**	**27**	**51**	**156**			
BONNET	**WCB**	**4H245**	**0.191**	**0.962**	**0.400**	**0.006**	**0.028**	**0.027**	**0.020**	**0.012**	**0.022**	**0.002**				**0.362**	**585**	**395**	**28**	**56**	**152**			
BONNET	**WCB**	**4H247**	**0.204**	**1.036**	**0.438**	**0.007**	**0.029**	**0.032**	**0.018**	**0.012**	**0.023**	**0.002**				**0.389**	**570**	**375**	**33**	**59**	**149**			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES										
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	4H248	0.199	1.003	0.387	0.007	0.023	0.075	0.015	0.009	0.021	0.002				0.386	565	380	28	57	156			
BONNET	WCB	4H269	0.213	1.046	0.469	0.007	0.025	0.019	0.017	0.011	0.021	0.003				0.396	600	400	27	57	156			
BONNET	WCB	4H271	0.213	1.033	0.413	0.008	0.026	0.026	0.019	0.013	0.024	0.003				0.396	550	365	28	56	152			
BONNET	WCB	4H272	0.213	1.048	0.437	0.010	0.027	0.037	0.022	0.011	0.026	0.003				0.401	590	335	28	51	152			
BONNET	WCB	4H292	0.209	0.983	0.451	0.007	0.026	0.029	0.016	0.009	0.021	0.002				0.383	580	365	26	54	156			
BONNET	WCB	4H318	0.208	1.021	0.455	0.007	0.026	0.025	0.014	0.009	0.019	0.001				0.387	610	410	24	54	159			
BONNET	WCB	4H320	0.207	1.016	0.390	0.007	0.026	0.025	0.016	0.012	0.022	0.003				0.387	610	400	34	58	159			
BONNET	WCB	4H353	0.204	1.041	0.413	0.008	0.024	0.036	0.018	0.012	0.024	0.002				0.390	580	360	27	59	163			
BONNET	WCB	4H355	0.210	1.019	0.443	0.007	0.027	0.022	0.013	0.016	0.021	0.003				0.390	620	395	27	50	156			
BONNET	WCB	4H378	0.205	0.986	0.436	0.008	0.028	0.032	0.017	0.010	0.021	0.003				0.381	605	395	32	59	170			
BONNET	WCB	4H379	0.208	1.028	0.411	0.007	0.028	0.027	0.016	0.016	0.026	0.002				0.391	590	380	31	60	143			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	4H380	0.209	1.047	0.465	0.010	0.024	0.038	0.022	0.007	0.029	0.004				0.397	580	380	30	55	159			
BONNET	WCB	4H405	0.201	1.045	0.447	0.008	0.023	0.029	0.019	0.015	0.022	0.003				0.387	570	370	32	60	167			
BONNET	WCB	4H406	0.203	1.024	0.451	0.007	0.026	0.023	0.016	0.015	0.023	0.004				0.385	585	390	31	58	167			
BONNET	WCB	4H407	0.207	0.998	0.423	0.006	0.032	0.024	0.015	0.011	0.018	0.002				0.383	585	385	32	60	167			
BONNET	WCB	4H431	0.194	1.067	0.416	0.007	0.032	0.033	0.019	0.009	0.025	0.003				0.384	595	390	28	60	170			
BONNET	WCB	4H434	0.197	1.026	0.440	0.008	0.024	0.029	0.012	0.009	0.016	0.002				0.378	590	395	32	53	159			
BONNET	WCB	4H484	0.208	1.014	0.426	0.008	0.023	0.035	0.021	0.009	0.026	0.004				0.390	595	395	26	62	156			
BONNET	WCB	4H507	0.201	1.001	0.521	0.008	0.024	0.028	0.016	0.012	0.021	0.003				0.379	605	395	32	61	156			
BONNET	WCB	4H508	0.216	1.062	0.453	0.010	0.031	0.033	0.020	0.007	0.022	0.003				0.404	600	370	29	58	156			
BONNET	WCB	4H509	0.194	1.054	0.421	0.008	0.025	0.039	0.025	0.009	0.028	0.005				0.384	605	385	26	58	167			
BONNET	WCB	4H532	0.197	0.996	0.414	0.008	0.020	0.054	0.015	0.008	0.019	0.003				0.378	575	405	31	61	167			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(801510421)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	**WCB**	**4H533**	**0.202**	**1.039**	**0.436**	**0.007**	**0.024**	**0.027**	**0.014**	**0.011**	**0.017**	**0.002**				**0.385**	**575**	**370**	**33**	**61**	**159**			
BONNET	**WCB**	**4H557**	**0.207**	**1.092**	**0.435**	**0.008**	**0.024**	**0.031**	**0.019**	**0.011**	**0.025**	**0.003**				**0.401**	**585**	**385**	**32**	**57**	**159**			
BONNET	**WCB**	**4H558**	**0.210**	**1.018**	**0.463**	**0.009**	**0.022**	**0.040**	**0.015**	**0.010**	**0.018**	**0.003**				**0.392**	**595**	**395**	**34**	**58**	**146**			
BONNET	**WCB**	**4H584**	**0.214**	**0.987**	**0.425**	**0.007**	**0.022**	**0.027**	**0.015**	**0.013**	**0.020**	**0.003**				**0.389**	**585**	**360**	**27**	**59**	**159**			
BONNET	**WCB**	**4H586**	**0.199**	**1.045**	**0.501**	**0.009**	**0.031**	**0.038**	**0.021**	**0.007**	**0.023**	**0.006**				**0.386**	**590**	**405**	**29**	**59**	**159**			
BONNET	**WCB**	**4H613**	**0.198**	**0.955**	**0.427**	**0.011**	**0.024**	**0.094**	**0.020**	**0.008**	**0.025**	**0.006**				**0.382**	**570**	**310**	**29**	**59**	**159**			
BONNET	**WCB**	**4H615**	**0.194**	**1.008**	**0.422**	**0.009**	**0.025**	**0.044**	**0.030**	**0.014**	**0.034**	**0.004**				**0.379**	**580**	**385**	**33**	**63**	**152**			
BONNET	**WCB**	**4H616**	**0.200**	**1.017**	**0.420**	**0.011**	**0.026**	**0.047**	**0.023**	**0.013**	**0.030**	**0.004**				**0.386**	**595**	**405**	**27**	**62**	**170**			
BONNET	**WCB**	**4H638**	**0.204**	**1.026**	**0.468**	**0.013**	**0.029**	**0.036**	**0.020**	**0.009**	**0.025**	**0.004**				**0.388**	**620**	**410**	**31**	**58**	**156**			
BONNET	**WCB**	**4H641**	**0.199**	**1.081**	**0.494**	**0.011**	**0.025**	**0.049**	**0.022**	**0.006**	**0.025**	**0.004**				**0.394**	**610**	**400**	**27**	**53**	**174**			
BONNET	**WCB**	**4H665**	**0.202**	**0.967**	**0.451**	**0.011**	**0.028**	**0.031**	**0.020**	**0.010**	**0.022**	**0.004**				**0.375**	**590**	**395**	**29**	**58**	**170**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				CE	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	**WCB**	**4H667**	**0.215**	**0.986**	**0.432**	**0.010**	**0.029**	**0.030**	**0.015**	**0.013**	**0.029**	**0.003**				**0.391**	**605**	**385**	**31**	**48**	**159**			
BONNET	**WCB**	**4H691**	**0.204**	**0.968**	**0.456**	**0.012**	**0.027**	**0.036**	**0.021**	**0.011**	**0.026**	**0.004**				**0.379**	**585**	**385**	**37**	**60**	**163**			
BONNET	**WCB**	**4H692**	**0.215**	**1.093**	**0.469**	**0.009**	**0.026**	**0.038**	**0.023**	**0.015**	**0.032**	**0.003**				**0.412**	**605**	**380**	**32**	**56**	**163**			
BONNET	**WCB**	**4H720**	**0.195**	**1.052**	**0.404**	**0.009**	**0.027**	**0.034**	**0.020**	**0.011**	**0.023**	**0.004**				**0.383**	**565**	**380**	**33**	**60**	**163**			
BONNET	**WCB**	**4H721**	**0.203**	**0.958**	**0.458**	**0.008**	**0.027**	**0.030**	**0.016**	**0.014**	**0.028**	**0.003**				**0.375**	**640**	**420**	**36**	**59**	**156**			
BONNET	**WCB**	**4H722**	**0.196**	**0.983**	**0.421**	**0.009**	**0.026**	**0.034**	**0.024**	**0.015**	**0.030**	**0.004**				**0.374**	**590**	**400**	**33**	**58**	**174**			
BONNET	**WCB**	**4H723**	**0.196**	**0.975**	**0.465**	**0.009**	**0.025**	**0.028**	**0.016**	**0.008**	**0.022**	**0.003**				**0.369**	**570**	**360**	**32**	**61**	**159**			
BONNET	**WCB**	**4H749**	**0.209**	**0.970**	**0.452**	**0.010**	**0.028**	**0.029**	**0.019**	**0.008**	**0.032**	**0.003**				**0.382**	**595**	**390**	**32**	**54**	**174**			
BONNET	**WCB**	**4H751**	**0.213**	**0.982**	**0.456**	**0.012**	**0.024**	**0.038**	**0.018**	**0.007**	**0.022**	**0.004**				**0.389**	**570**	**360**	**30**	**57**	**170**			
BONNET	**WCB**	**4H781**	**0.208**	**0.982**	**0.413**	**0.010**	**0.026**	**0.031**	**0.017**	**0.006**	**0.023**	**0.003**				**0.382**	**595**	**385**	**28**	**57**	**159**			
BONNET	**WCB**	**4H782**	**0.215**	**0.994**	**0.477**	**0.012**	**0.030**	**0.035**	**0.023**	**0.009**	**0.029**	**0.004**				**0.394**	**610**	**380**	**36**	**57**	**174**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel : 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES								
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	4H783	0.210	0.955	0.444	0.010	0.023	0.035	0.024	0.007	0.028	0.004				0.382	580	390	27	57	156			
BONNET	WCB	4H806	0.193	1.005	0.436	0.008	0.023	0.024	0.018	0.005	0.021	0.002				0.369	575	365	29	58	170			
BONNET	WCB	4H807	0.199	0.993	0.434	0.010	0.028	0.045	0.030	0.009	0.029	0.005				0.380	580	395	36	55	159			
BONNET	WCB	4H847	0.193	0.985	0.436	0.010	0.026	0.033	0.021	0.008	0.023	0.003				0.369	560	360	34	62	159			
BONNET	WCB	4H874	0.210	1.024	0.443	0.009	0.026	0.042	0.024	0.006	0.028	0.003				0.394	585	385	34	56	163			
BONNET	WCB	4H876	0.204	1.025	0.430	0.007	0.025	0.063	0.027	0.007	0.033	0.003				0.393	590	385	27	57	163			
BONNET	WCB	4H908	0.205	1.056	0.445	0.010	0.023	0.049	0.027	0.007	0.028	0.004				0.397	565	375	32	59	156			
BONNET	WCB	4H933	0.204	1.014	0.413	0.010	0.029	0.052	0.023	0.007	0.024	0.003				0.389	565	360	30	62	167			
BONNET	WCB	4H935	0.197	0.997	0.453	0.009	0.028	0.040	0.020	0.006	0.021	0.003				0.376	595	405	32	60	174			
BONNET	WCB	4H936	0.203	1.006	0.412	0.009	0.029	0.049	0.018	0.007	0.021	0.003				0.385	575	370	31	57	167			
BONNET	WCB	4H968	0.194	1.008	0.462	0.009	0.026	0.059	0.018	0.006	0.022	0.003				0.378	580	375	33	63	170			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	930±10 (1706±50 F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS													MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %				C.E	TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.230	1.280	0.600	0.045	0.040	0.500	0.500	0.200	0.300	0.030					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	4H997	0.197	1.019	0.496	0.010	0.027	0.057	0.026	0.012	0.032	0.004				0.385	585	395	31	58	159			
BONNET	WCB	5H023	0.198	1.068	0.441	0.010	0.024	0.040	0.030	0.016	0.036	0.005				0.393	585	390	32	53	156			
BONNET	WCB	5H026	0.212	1.040	0.418	0.009	0.027	0.049	0.021	0.008	0.024	0.003				0.400	555	375	34	52	159			
BONNET	WCB	5H053	0.198	1.037	0.416	0.009	0.024	0.034	0.020	0.008	0.023	0.004				0.383	585	380	32	53	170			
BONNET	WCB	5H055	0.196	1.069	0.442	0.009	0.024	0.086	0.023	0.008	0.028	0.006				0.398	590	390	31	57	167			
BONNET	WCB	5H056	0.195	1.024	0.443	0.010	0.028	0.052	0.024	0.011	0.026	0.003				0.382	595	385	34	52	163			
BONNET	WCB	5H085	0.193	0.971	0.401	0.010	0.030	0.050	0.024	0.007	0.027	0.003				0.370	555	370	33	58	159			
BONNET	WCB	5H086	0.195	1.082	0.439	0.008	0.027	0.039	0.025	0.010	0.026	0.004				0.389	570	385	34	65	170			
BONNET	WCB	5H087	0.205	1.008	0.431	0.013	0.031	0.042	0.026	0.017	0.028	0.005				0.389	570	385	30	57	156			
BONNET	WCB	5H116	0.203	1.021	0.430	0.012	0.029	0.045	0.027	0.014	0.027	0.005				0.390	585	375	32	53	167			
BONNET	WCB	5H117	0.204	1.022	0.447	0.009	0.029	0.036	0.025	0.013	0.032	0.004				0.389	560	360	32	61	174			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50 F)	1H/25MM,>=2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50 F)	1H/25MM,>=2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo							TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%							MPa	MPa	%	%	HB	TEMP °C	Avg	Min
		MAX.	0.150	1.000	1.500	0.040	0.040	14.00	1.000	0.500							795				286			
		MIN.						11.50									620	450	18	30	253			
WEDGE	**CA15**	**1H841**	**0.116**	**0.554**	**0.547**	**0.009**	**0.025**	**12.53**	**0.711**	**0.121**							**725**	**655**	**21**	**54**	**269**			
WEDGE	**CA15**	**2A552**	**0.120**	**0.860**	**0.980**	**0.010**	**0.029**	**12.80**	**0.169**	**0.025**							**720**	**555**	**20**	**45**	**267**			
WEDGE	**CA15**	**4A746**	**0.120**	**0.810**	**0.910**	**0.011**	**0.028**	**12.27**	**0.164**	**0.026**							**729**	**514**	**19**	**49**	**262**			
WEDGE	**CA15**	**5A486**	**0.130**	**0.860**	**0.860**	**0.010**	**0.026**	**12.47**	**0.180**	**0.025**							**730**	**565**	**22**	**52**	**260**			
WEDGE	**CA15**	**6A406**	**0.090**	**0.700**	**0.820**	**0.010**	**0.020**	**12.14**	**0.129**	**0.092**							**729**	**532**	**21**	**48**	**264**			
WEDGE	**CA15**	**6A408**	**0.110**	**0.790**	**0.970**	**0.011**	**0.023**	**12.47**	**0.133**	**0.034**							**650**	**525**	**25**	**65**	**266**			
WEDGE	**CA15**	**6A414**	**0.090**	**0.800**	**0.930**	**0.011**	**0.022**	**12.28**	**0.107**	**0.027**							**685**	**485**	**26**	**58**	**253**			
WEDGE	**CA15**	**6A417**	**0.130**	**0.700**	**0.830**	**0.011**	**0.024**	**12.62**	**0.128**	**0.032**							**695**	**500**	**22**	**54**	**259**			
WEDGE	**CA15**	**6A418**	**0.110**	**0.780**	**1.030**	**0.010**	**0.022**	**12.39**	**0.135**	**0.031**							**720**	**560**	**32**	**55**	**254**			
WEDGE	**CA15**	**6A465**	**0.120**	**0.800**	**0.950**	**0.010**	**0.025**	**12.38**	**0.138**	**0.011**							**703**	**512**	**19**	**48**	**260**			
WEDGE	**CA15**	**6A467**	**0.100**	**0.760**	**0.890**	**0.010**	**0.023**	**12.76**	**0.122**	**0.010**							**725**	**528**	**20**	**51**	**261**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50 F)	1H/25MM.>=2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50 F)	1H/25MM.>=2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %							TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.150	1.000	1.500	0.040	0.040	14.00	1.000	0.500							795				286			
		MIN.						11.50									620	450	18	30	253			
WEDGE	CA15	6A468	0.100	0.800	0.870	0.010	0.024	12.89	0.117	0.011							716	523	19	52	255			
WEDGE	CA15	6A469	0.110	0.870	0.980	0.011	0.024	12.79	0.121	0.010							686	494	21	50	260			
WEDGE	CA15	6A470	0.110	0.800	0.930	0.010	0.025	12.58	0.132	0.011							724	529	20	53	254			
WEDGE	CA15	6A472	0.100	0.800	0.870	0.011	0.024	12.19	0.114	0.035							729	520	21	50	260			
WEDGE	CA15	6A473	0.100	0.720	0.980	0.010	0.024	12.17	0.115	0.014							702	505	24	48	257			
WEDGE	CA15	6A474	0.110	0.840	0.940	0.010	0.024	12.74	0.115	0.011							650	450	26	48	259			
WEDGE	CA15	6A475	0.100	0.760	0.890	0.010	0.022	12.23	0.128	0.011							675	485	24	56	261			
WEDGE	CA15	6A477	0.110	0.730	0.870	0.012	0.022	12.31	0.108	0.024							685	460	23	51	255			
WEDGE	CA15	6A739	0.090	0.750	0.830	0.011	0.022	12.04	0.102	0.090							739	524	22	47	260			
WEDGE	CA15	6A740	0.090	0.820	0.840	0.010	0.022	12.74	0.109	0.075							734	521	19	50	256			
WEDGE	CA15	6A741	0.100	0.780	0.820	0.010	0.020	12.52	0.104	0.053							721	510	19	49	259			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel 86-512-666-51365 Fax 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50 F)	1H/25MM,>=2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50 F)	1H/25MM,>=2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %							TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.150	1.000	1.500	0.040	0.040	14.00	1.000	0.500							795				286			
		MIN.						11.50									620	450	18	30	253			
WEDGE	**CA15**	**7A047**	**0.100**	**0.760**	**0.840**	**0.014**	**0.021**	**12.68**	**0.108**	**0.087**							**722**	**514**	**19**	**50**	**254**			
WEDGE	**CA15**	**7A048**	**0.090**	**0.770**	**0.860**	**0.011**	**0.019**	**12.91**	**0.102**	**0.089**							**704**	**505**	**19**	**52**	**263**			
WEDGE	**CA15**	**7A049**	**0.090**	**0.750**	**0.850**	**0.013**	**0.022**	**12.62**	**0.116**	**0.070**							**695**	**492**	**21**	**54**	**261**			
WEDGE	**CA15**	**7A157**	**0.130**	**0.790**	**1.040**	**0.010**	**0.024**	**12.08**	**0.139**	**0.090**							**715**	**507**	**20**	**52**	**254**			
WEDGE	**CA15**	**7A158**	**0.110**	**0.750**	**0.950**	**0.010**	**0.026**	**12.66**	**0.155**	**0.092**							**718**	**508**	**19**	**50**	**261**			
WEDGE	**CA15**	**7A159**	**0.120**	**0.780**	**0.990**	**0.011**	**0.025**	**12.64**	**0.133**	**0.090**							**724**	**518**	**18**	**49**	**260**			
WEDGE	**CA15**	**7A160**	**0.110**	**0.750**	**1.030**	**0.010**	**0.024**	**12.23**	**0.140**	**0.091**							**698**	**499**	**20**	**51**	**253**			
WEDGE	**CA15**	**7A161**	**0.110**	**0.780**	**0.950**	**0.011**	**0.026**	**12.55**	**0.156**	**0.092**							**724**	**519**	**20**	**50**	**258**			
WEDGE	**CA15**	**7A162**	**0.120**	**0.730**	**0.850**	**0.010**	**0.023**	**12.42**	**0.117**	**0.093**							**695**	**488**	**21**	**51**	**261**			
WEDGE	**CA15**	**7A421**	**0.110**	**0.700**	**0.940**	**0.010**	**0.022**	**12.66**	**0.129**	**0.092**							**722**	**510**	**20**	**52**	**264**			
WEDGE	**CA15**	**7A422**	**0.100**	**0.780**	**0.870**	**0.011**	**0.022**	**12.50**	**0.108**	**0.096**							**710**	**502**	**19**	**48**	**260**			

Address: NO. 999 XiangJiang Road SuZhou New District China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50 F)	1H/25MM,>=2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50 F)	1H/25MM,>=2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES									
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %							TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.150	1.000	1.500	0.040	0.040	14.00	1.000	0.500							795				286			
		MIN.						11.50									620	450	18	30	253			
WEDGE	CA15	7A424	0.100	0.780	0.830	0.011	0.025	12.48	0.106	0.011							717	510	20	50	259			
WEDGE	CA15	7A425	0.100	0.770	0.870	0.011	0.023	12.60	0.129	0.011							725	523	22	52	263			
WEDGE	CA15	7A426	0.120	0.780	0.830	0.010	0.024	12.55	0.143	0.010							704	505	21	49	262			
WEDGE	CA15	7A427	0.120	0.790	0.890	0.010	0.026	12.57	0.121	0.010							723	519	19	49	265			
WEDGE	CA15	7A428	0.100	0.820	1.040	0.011	0.025	12.85	0.158	0.012							723	511	20	52	265			
WEDGE	CA15	7A429	0.110	0.790	0.910	0.013	0.026	12.74	0.138	0.011							737	520	19	48	261			
WEDGE	CA15	7A430	0.110	0.700	0.930	0.010	0.025	12.75	0.173	0.010							714	509	21	51	264			
WEDGE	CA15	7A431	0.120	0.750	0.920	0.011	0.025	12.37	0.165	0.011							731	531	20	49	255			
WEDGE	CA15	7A432	0.120	0.780	1.010	0.010	0.026	12.98	0.184	0.012							733	525	19	50	260			
WEDGE	CA15	7A433	0.110	0.790	0.960	0.010	0.023	12.22	0.106	0.085							724	518	21	52	256			
WEDGE	CA15	7A434	0.100	0.770	0.890	0.017	0.017	12.56	0.103	0.048							730	527	19	49	260			

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC No. 37685-50(801510042)
DATE: 2012.05.02

MATERIAL COMPONENTS AND PROPERTIES

Material	Heat treatment	Temp°C(°F)	Holding time(h)	Cooling media	Furnace
CA15	NORMALIZE	1020±10 (1868±50 F)	1H/25MM,>=2H	AIR	GAS FURNACE
CA15	TEMPER	750±10 (1382±50 F)	1H/25MM,>=2.5H	AIR	GAS FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %							TS MPa	YS MPa	E %	R %	HARD HB	IMPACT TEST (JOULE) TEMP °C	Avg	Min
		MAX.	0.150	1.000	1.500	0.040	0.040	14.00	1.000	0.500							795				286			
		MIN.						11.50									620	450	18	30	253			
WEDGE	**CA15**	**7A442**	**0.110**	**0.830**	**0.980**	**0.011**	**0.023**	**12.06**	**0.102**	**0.093**							**715**	**508**	**20**	**50**	**255**			

2022-01-22

CPO# 43 GF-01400

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA line 1/cbo. 43

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-30(80244350)
DATE: 2014-3-25
PAGE: 1 OF 3

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	1	10752246	2G1RC12-NC	GATE VALVE,2G1R V3,L21/12 [-LLC-WEB.-GBR] GATE VALVE,2,150LB ASTM A352 LCC,F316/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003058MRC_S 78H 211	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	3.2/464	2.2/319	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL
- VALVES CONFORM TO NACE STANDARD MR.0175 LATEST REVISION

NOTE ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-VI-2217

CP04-43 GF-01L00

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

WITNESSED BY: _____

Address: No. 999 Xinagjiang Road Suzhou New District. China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA line 24 CP088

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 35906-390(80113973)
DATE: 2013-4-16
PAGE: 1 OF 7

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178988	10G3RA8-000	GATE VALVE,10G3R,C00/8 [-LLC-WEB.] GATE VALVE,10,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001136MRM_S 759 101	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF-VI-2215

CPO# 88 6F-03A10

QUALITY WHALER (MY) ASSURANCE

WITNESSED BY _____

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 35906-390(80113973) DATE: 2013.4.16 PAGE: 2 OF 7

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB
35906-390-1	8721B	8815B	4A065												

WHALER (NING) QUALITY ASSURANCE

APR 17 2013

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 35906-390(80113973)
DATE: 2013.4.16

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
2H	QUENCH		1H/25MM,1H	WATER	ELECTRIC
2H	TEMPER		1H/25MM,1H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.		1	0.4	0.05	0.04												0	0	327			
		MIN.	0.4																		248			
NUT	2H	YAG202	0.44	0.68	0.19	0.007	0.016														290			

WHALER (HK) QUALITY ASSURANCE

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 35906-390(80113973)
DATE: 2013.4.16

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
A105N	NORMALIZE	850~920(1562~1688F)	1H/25MM,1H	AIR	ELECTRIC FURNACE

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.35	1.05	0.35	0.04	0.035	0.3	0.4	0.12	0.4	0.08									187			
		MIN.		0.6	0.1												485	250	22	30				
SEAT RING	A105N	LBF001	0.2	0.95	0.15	0.011	0.021	0.04	0.02	0.001	0.001	0.001				0.368	495	340	30	65	158			

WHALEN (MIC) QUALITY ASSURANCE

MAR 1 4 2013

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-668-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 35906-390(80113973)
DATE: 2013.4.16

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
B7	QUENCH		1H/25MM,1H	OIL	ELECTRIC
B7	TEMPER		1H/25MM,1H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	CE	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.49	1.1	0.35	0.04	0.035	1.2		0.25											321			
		MIN.	0.37	0.65	0.15			0.75		0.15							860	720	16	50				
BOLT	B7	YAG028	0.39	0.77	0.25	0.01	0.01	0.96		0.194							922	829	22	61	290			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 35906-390(80113973)
DATE: 2013.4.16

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
F6A-II	NORMALIZE	980~1050(NaN~1922F)	1H/25MM,1H	AIR	ELECTRIC
F6A-II	TEMPER	675(167F)	1H/25MM,1H	AIR	GAS OR ELECTRIC

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.15	1	1	0.03	0.04	13.5	0.5												229			
		MIN.						11.5									585	380	18	35	167			
STEM	F6A-II	DAL005	0.12	0.57	0.47	0.015	0.03	12	0.25								603	401	32	39	215			

WHALER (MIG) QUALITY ASSURANCE

APR 2 2 2013

APR 22 2013

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 35906-390(80113973)
DATE: 2013.4.16

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	93010(170850F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS														MECHANICAL PROPERTIES							
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	6721B	0.199	1.006	0.428	0.011	0.027	0.078	0.028	0.006	0.03	0.004				0.389	510	330	32	54	163			
WEDGE	WCB	4A085	0.2	0.81	0.42	0.016	0.026	0.185	0.027	0.013	0.014	0.002				0.378	500	285	27	55	168			
BONNET	WCB	6615B	0.199	0.977	0.408	0.015	0.03	0.14	0.055	0.014	0.033	0.005				0.4	540	360	29	46	170			

QUALITY ASSURANCE WHALER (MIC)

APR 0 2 2013

APR 02 2013

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

OA line 24 CPO 88

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC NO. 35906-390(80113973) DATE: 2013-4-16 PAGE: 1 OF 3

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178988	10G3RA8-000	GATE VALVE,10G3R,C00/8 [-LLC-WEB,] GATE VALVE,10 300LB ASTM A216 WCB,F8A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001136MRM_S 759 101	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CLIF- VI - 2215

CPO# 88 GF-03A10

WHALER (MIC) QUALITY ASSURANCE

WITNESSED BY: _____

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order.

NEWAY VALVE

Q.C. Manager

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

APR 08 2014

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 35906-390(80113973)
DATE: 2013.4.16

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	93010(170850F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	6730B	0.206	1.042	0.428	0.013	0.028	0.106	0.035	0.014	0.03	0.003				0.409	535	350	30	56	170			
BONNET	WCB	6601B	0.211	1.099	0.53	0.008	0.025	0.14	0.038	0.01	0.027	0.004				0.429	555	365	28	48	170			
WEDGE	WCB	4A085	0.2	0.81	0.42	0.016	0.026	0.185	0.027	0.013	0.014	0.002				0.378	500	285	27	55	168			

WHALEN (M/S) QUALITY ASSURANCE

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http //www.newayvalve.com

MRR CEN-1839

OA line24CP088

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC NO. 36181-210(80124358) DATE: 2013-4-16 PAGE: 1 OF 3

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178988	10G3RA8-000	GATE VALVE,10G3R,C00/8 [-LLC-WEB,] GATE VALVE 10 3RS0/8 ASTM A216 WCB,F6A/HF RAISED FACE END LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
8001191MRM_S86531179	HYDROSTATIC		PNEUM	RESULT	VISUAL	DIMENSION	OPERATION	MARKING
PROJECT NAME:	SHELL	SEATS/BACKSEAT	SEATS	OK	OK	OK	OK	OK
	7.8/1131	5.7/827	0.6/87					

APPLICABLE STANDARDS AND SPECIFICATION:

- P/T RATING: ASME B16.34
- MAIN MATERIAL: RELEVANT ASTM STANDARD
- DESIGN: API600 ASME B16.34
- TEST: API598 EN12266
- TRIM MATERIAL (SEAT/STEM) AND BOLTING ARE ACCORDING TO THE P.O. AND MATERIAL

NOTE: ALL RELATED STANDARDS ARE THE LATEST VERSION.

CCIF-VI - 2215

CPO#88 GF-03A10

QUALITY ASSURANCE (MIC) WHALER

WITNESSED BY: _____

We hereby certify that the valves listed above are manufactured and tested in accordance with the requirements of valve standard and purchase order

NEWAY VALVE

Q.C. Manager

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com

MAR 03 2014 1809

NEWAY	MATERIAL TEST REPORT ISO EN 10204 2004-3.1	TC No. 36181-210(80124358) DATE: 2013.4.16 PAGE: 2 OF 3

PRODUCT TRACEABILITY

SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.			SERIAL NO.	MATERIAL CODE AND HEAT NO.		
	BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC		BODY	BONNET	WEDGE/DISC
	WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB		WCB	WCB	WCB
36181-210-42	7227B	7157B	4A731												

QUALITY ASSURANCE WHALER (NL)

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-665-51360 http://www.newayvalve.com

MRB-CEN-1839

NEWAY

MATERIAL TEST REPORT

ISO EN 10204 2004-3.1

TC NO. 36181-210(80124358)
DATE: 2013.4.16

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	93010(170650F)	1H/25MM	AIR	GAS

We hereby certify that the material are manufactured, inspected and tested in accordance with the material specification and purchase order requirements.

PART NAME	MATERIAL	HEAT NO.	CHEMICAL ANALYSIS											MECHANICAL PROPERTIES										
			C	Mn	Si	S	P	Cr	Ni	Mo	Cu	V	Al	Nb	Fe	C.E.	TS	YS	E	R	HARD	IMPACT TEST (JOULE)		
			%	%	%	%	%	%	%	%	%	%	%	%	%		Mpa	Mpa	%		HB	TEMP C	Avg	Min
		MAX.	0.23	1.28	0.6	0.045	0.04	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	7157B	0.201	1.026	0.405	0.007	0.022	0.096	0.039	0.006	0.017	0.003				0.397	525	315	30	47	163			
WEDGE	WCB	4A731	0.22	0.84	0.47	0.023	0.015	0.147	0.035	0.011	0.04	0.001				0.397	538	335	24	45	171			
BODY	WCB	7227B	0.203	0.992	0.37	0.009	0.024	0.094	0.05	0.005	0.019	0.004				0.394	525	345	29	62	163			

Address: No. 999 Xinagjiang Road Suzhou New District, China Tel: 86-512-666-51365 Fax: 86-512-666-51360 http://www.newayvalve.com