NLIA Values

cenovus ENERGY

FITTING/VALVE TRANSFER PULL SHEET

MOD#

DATE:

MT #

	SIZE	#	ITEM DESCRIPTION	Body Heat #	Bonnet Heat #	TAG #	SN#	PO# / ITEM #
	8	300	Gate Valve	A60620	A60620	8-GF-03A00	KF813100-366	NLIA-2001/51
A01.101	"	"	"	A60624	A60713	"	-348	"
	"	"	"	A60624	A60624	"	-348	"
	"	"	"	A60624	A60620	"	-362	"
	6	150	Check Valve	72V36	132721A	CF-01A00	M/N 06-052RF8	NLIA-2000B/8
A00.002	6	600	Gate Valve	V18186	V18052	GF-06L00	2473/9	NLIA-2001/94
	"	"	"	V18106	V18218	"	/11	"
A00.007	6	300	Gate Valve	BND01C06	BNC04G02	GF-03A00	8515-000	NLIA-2001/36
	10	300	Gate Valve	F3711	F3825	GF-03A00	50421-1030-2	NLIA-2001/129
	"	"	"	F3857	F3827	"	-3	"
	8	300	"	7L394	76H22	GF-03A00	44132-120-19	NLIA-2001/125
	"	"	"	010L3	912H1	"	48082-301-11	"
A01.101	10	300	Gate Valve	F0960	F2443	GF-03A00	47219-180-2	NLIA-2001/151
	"	"	"	F0191	F2755	GF-03A00	-3	"
A00.007	6	300	Gate Valve	BND14C15	BND04C09	GF-03A00	N/A	NLIA-2001/36
	"	"	"	BND17A06	BND09C22	"	N/A	"
	3	300	Globe Valves	1H795	98U87	TF-03A00	38026-220-19	NLIA-2001/92
A00.002	"	"	"	21H078	3H732	"	-3	"
	"	"	"	90U63	3H733	"	-12	"
A01.101	12	150	Gate Valve	A60634	A60632	GF-01A00	KF81300-352	NLIA-2001/55
	"	"	"	A60632	A60632	"	-351	"
A01.101	10	150	Gate Valve	73CJB	72NJ1	GF-01V00	TNC-3689-011	NLIA-2000B/11
	"	"	"	72MJ6	71PJ6	"	"	"
	8	150	Gate Valve	5H392	5H023	GF-01A00	37685-050-339	NLIA-2001/149
	6	150	"	BNE55C02	BNE52B27	GF-01L00	8515-001	NLIA-2001/147
	4	300	"	1H736	1H304	GF-03A00	36582-350-9	NLIA-2001/146
	3	300	Globe Valve	BNC31H21	BNB03L28	TF-03A00	N/A	NLIA-2001/65
	"	"	"	"	"	"	"	"
A00.002	2	300	Gate Valve	716H2	640H4	GF-03S00	48489-360-21	NLIA-2001/89
	2	300	Gate Valve	3L973	581H9	"	-3	"
	"	"	"	692H0	578H7	"	-16	"
	"	"	"	615H5	708H6	"	-1	"

NLIA Valves.

cenovus ENERGY

FITTING/VALVE TRANSFER PULL SHEET

MOD#

DATE:

MT #

	SIZE	#	ITEM DESCRIPTION	Body Heat #	Bonnet Heat #	TAG #	SN#	PO# / ITEM #
A00.003	16	150	Gate Valve	A14405	A14414	GF-01A00	2F166149	NLIA-2001/13
	8	300	Gate Valve	A60620	A60620	GF-03A00	KF813110005	NLIA-2001/51
A01.101	"	"	"	A60711	A60624	"	KF813110006	"
	6	300	Gate Valve	BND13C15	BND17H29	GF-03A00	N/A	NLIA-2001/36
A00.007	"	"	"	BND16C12	BND15C14	"	"	"
A01.101	6	150	Gate Valve	BND02C24	BND06C28	GF-01A00	8515-001	NLIA-2001/49
	3	150	"	X2880	X1725	GF-01L00	53001-040-1	NLIA-2001/120
A00.007	"	"	"	X2880	X1725	"	-4	"
A01.101	"	"	"	BND32E17	BND04E28	GF-01A00	8512-001	NLIA-2001/44
	6	300	Gate Valve	BN804L10	BNC09B02	GF-03A00	8515-000	NLIA-2001/20
	~~2~~	~~150~~	~~"~~	~~678H3~~	~~05C8~~	~~GF-01A10~~	~~48489-790-139~~	~~NLIA-2001/115~~
A00.007	2	300	"	87326	9318H	GF-03A00	52147-630-42	NLIA-2001/116
	3	150	"	80L89	4697L	GF-01A00	52147-580-38	NLIA-2001/118
	2	150	"	BND54F10	BND51E02	GF-01L00	8510-002	NLIA-2001/144
A01.101	3	150	"	X2880	X1725	GF-01L00	53001-040-2	NLIA-2001/145
	"	"	"	X2880	X1725	"	-3	"
A00.007	2	150	Gate Valve	BND54F10	BND54F11	GF-01L00	8510-001	NLIA-2001/78
	2	150	Gate Valve	41L41	06SL3	GF-01A00	48489-790-85	NLIA-2001/156
A02.201	"	"	"	BND51L27	BND51L29	GF-01L00	N/A	NLIA-2001/157
	"	"	"	BND53M10	BND52L28	"	N/A	"
A00.002	3	300	Globe Valve	2H078	3H831	TF-03A00	38026-220-18	NLIA-2001/92
	"	"	"	2H106	99U10	"	-16	"

OA: 1 CPO # 65

OA: 1

VELAN

Certificate of Conformance

Certificate #: P4-128759

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 # :	S78H171552
Velan Order # :	M014-865258-W
Valve Design :	B16.34
Hydro Test Spec :	MSS-SP61/B16.34
Test Result :	ACCEPTABLE

Certificate Date :	30-JAN-2013		
Item Number :	17	Position No :	85
Quantity :	12		
Figure Number :	F10-1074C-02TY-W320		
Description :	VALVE 3" 300 GLOBE RF		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES :

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

ASTM Code: A216-08-WCB-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BNB02L27	BONNET	0.192	0.926	0.028	0.011	0.471	0.040	0.045	0.036	0.006	0.007
BNB03L27	BONNET	0.192	0.891	0.032	0.011	0.436	0.041	0.080	0.043	0.004	0.007
BNB03L28	BONNET	0.207	0.908	0.030	0.009	0.436	0.028	0.054	0.032	0.004	0.007
BNC03J10	BONNET	0.195	0.862	0.031	0.010	0.437	0.037	0.050	0.050	0.007	0.007
BNC17A07	BONNET	0.192	0.897	0.028	0.011	0.410	0.035	0.024	0.033	0.002	0.008
BNC22H19	BODY	0.201	0.954	0.017	0.013	0.478	0.042	0.045	0.052	0.006	0.007
BNC24H17	BODY	0.193	0.954	0.030	0.009	0.442	0.036	0.063	0.052	0.005	0.008

Heat Treatment: NORMALIZED

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

Heat Code	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNB02L27	558.0 / 80.9	351.0 / 50.9	29.8	57.0	/
BNB03L27	599.0 / 86.9	408.0 / 59.2	28.6	54.0	/
BNB03L28	571.0 / 82.8	371.0 / 53.8	28.8	54.0	/
BNC03J10	558.0 / 80.9	395.0 / 57.3	29.2	57.0	/
BNC17A07	562.0 / 81.5	334.0 / 48.4	28.4	53.0	/
BNC22H19	563.0 / 81.7	363.0 / 52.6	30.4	58.0	/
BNC24H17	546.0 / 79.2	346.0 / 50.2	29.0	57.0	/

Heat Code	Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
BNB02L27	/ /		/ /			
BNB03L27	/ /		/ /			
BNB03L28	/ /		/ /			
BNC03J10	/ /		/ /			
BNC17A07	/ /		/ /			
BNC22H19	/ /		/ /			
BNC24H17	/ /		/ /			

VLIA-DPH-2001

CDATE 15 TE-02000

VELAN

Certificate of Conformance

Certificate #: P4-128759

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC25H04	BODY	0.191	0.902	0.024	0.007	0.455	0.045	0.057	0.043	0.005	0.012	563.0 / 81.7	363.0 / 52.6	27.2	46.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC30H22	BODY	0.201	0.934	0.033	0.014	0.452	0.048	0.042	0.087	0.010	0.008	558.0 / 80.9	359.0 / 52.1	29.2	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC31H21	BODY	0.201	0.926	0.030	0.010	0.501	0.078	0.066	0.049	0.018	0.009	567.0 / 82.2	367.0 / 53.2	27.8	52.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC32H21	BODY	0.199	0.896	0.024	0.011	0.456	0.041	0.059	0.051	0.006	0.006	571.0 / 82.8	379.0 / 55.0	29.0	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		

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.

for

Manager of Q.C. Documentation

30-JAN_2013

Date

Customer Representative

Date

~~CL~~ 1

NLIA - DPH - 2001

CPO# 65

IF - 03A00

07.2

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 48489-360(80252017)
DATE: 2014-1-21

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	1	10209531	2G3RA12-NC-000	GATE VALVE,2G3R,C00/12 [-LLC-WEB,-B7M/2HM] GATE VALVE,2,300LB ASTM A216 WCB,F316/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003239MRC_S 78H 218	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.

NLIA-DPH-2001

CPO# 89 GF-03500

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. 48489-360(80252017)
DATE: 2014.1.21

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
48489-360-3	3L973	581H9	31A71												

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. 48489-360(80252017)
DATE: 2014.1.21

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
WEDGE	WCB	31A71	0.22	0.81	0.45	0.011	0.016	0.107	0.05	0.011	0.018	0.001				0.383	510	345	30	45	174			
BODY	WCB	3L973	0.205	1.035	0.407	0.016	0.025	0.057	0.039	0.005	0.029	0.005				0.395	490	315	32	68	188			
BONNET	WCB	581H9	0.208	1.07	0.402	0.012	0.032	0.034	0.016	0.007	0.032	0.002				0.398	625	400	33	53	167			

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

Of: 2

NEWAY	MATERIAL TEST REPORT EN 10204 2004-3.1	TC NO. 48489-360(80252017) DATE: 2014-1-21 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	10209531	2G3RA12-NC-000	GATE VALVE,2G3R,C00/12 [-LLC-WEB,-B7M/2HM] GATE VALVE,2,300LB ASTM A216 WCB,F316/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003239MRC_S 78H 218	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.

NLIA - DPH - 2001

CPO # 89 GF-03500

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. 48489-360(80252017)
DATE: 2014.1.21

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
48489-360-16	692H0	578H7	31A71												

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. 48489-360(80252017)
DATE: 2014.1.21

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
WEDGE	WCB	31A71	0.22	0.81	0.45	0.011	0.016	0.107	0.05	0.011	0.018	0.001				0.383	510	345	30	45	174			
BONNET	WCB	578H7	0.206	1.009	0.434	0.013	0.025	0.034	0.02	0.004	0.026	0.002				0.385	600	390	32	61	167			
BODY	WCB	692H0	0.211	1.031	0.393	0.009	0.027	0.046	0.016	0.007	0.023	0.002				0.396	600	395	30	56	159			

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

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NEWAY	MATERIAL TEST REPORT EN 10204 2004-3.1	TC NO. 48489-360(80252017) DATE: 2014-1-21 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	10209531	2G3RA12-NC-000	GATE VALVE,2G3R,C00/12 [-LLC-WEB,-B7M/2HM] GATE VALVE,2,300LB ASTM A216 WCB,F316/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003239MRC_S 78H 218	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.

NLIA - DPH - 2001

CPO# 89 GF-03500

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. 48489-360(80252017)
DATE: 2014.1.21

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
48489-360-21	716H2	640H4	31A71												

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. 48489-360(80252017)
DATE: 2014.1.21

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
WEDGE	WCB	31A71	0.22	0.81	0.45	0.011	0.016	0.107	0.05	0.011	0.018	0.001				0.383	510	345	30	45	174			
BONNET	WCB	640H4	0.208	1.043	0.424	0.01	0.028	0.044	0.018	0.007	0.021	0.002				0.395	610	400	29	56	159			
BODY	WCB	716H2	0.204	1.051	0.412	0.01	0.026	0.043	0.015	0.006	0.019	0.002				0.392	585	390	30	54	159			

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

EXARUM 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

ertificate/Serial/Job No: ZH73 / 11 Quality Department: John Ho

ıantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
	6	600	/ 103249	DSI 66LUF-N-LCC	GATE				8/23/2013

ressure Test: API598	☑ Satisfactory	Shell Pressure :	BackSeat :	Seat Pressure	Seat Air Pressure
		2225 psi / 15340.8 kPa	1650 psi / 11376 kPa	1650 psi / 11376.35 kPa	80 psi / 551.58 kPa

t	Specif.	HEAT No	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
ıY	ASTM A352 LCC-2006	V-18106	0.231	0.517	0.827	0.022	0.011	0.334	0.062	0.001	0.029	0.004		0.032		85.55 / 589.85	58.00 / 399.9	30.5	64	180	33	36	31		-50 / -45.56	WT
INET	ASTM A352 LCC-2006	V-18218	0.204	0.439	1.042	0.019	0.007	0.324	0.146	0.015	0.028	0.009		0.060		82.65 / 569.85	57.28 / 394.9	30.5	68.5	191	58	32	42		-50 / -45.56	WT
ɔGE	ASTM A352 LCC-2006	E 2140	0.20	0.47	1.20	0.032	0.012	0.10	0.03	0.015	0.014	0.001				84.83 / 584.88	41.76 / 287.9	30	48	160	31	33	35		-50 / -45.56	WT

ıt Treatment Codes:

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

ırt	Material
ACK SEAT	ASTM A276-316
ODY/BONNET	ASTM A352 LCC
OLTING	ASTM A320 L7M / ASTM A194 7M
ISC-WEDGE-CLAPPER	ASTM A352 LCC + 316SS Overlay
ACKING	GRAPHITE
EAT RING	ASTM A350-LF2 + Stl.6 Faced
TEM	ASTM A276-316
TEM NUT	ASTM A439-D2

Valves Tested per API598

Comply with the requirements of NACE MR0175-2002/MR0103

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

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

ɔrding 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 ɔrmity 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 fic 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.

NLIA-DPH-2001

CPO# 94 CF-06L00

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: ZH73 / 11

Quality Department: John Ho

Quantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
2	6	600	/ 103249	DSI 66LUF-N-LCC	GATE				8/23/2013

Pressure Test: API598 | ☑ Satisfactory

Shell Pressure :	BackSeat :	Seat Pressure	Seat Air Pressure
2225 psi	1650 psi	1650 psi	80 psi
15340.8 kPa	11376 kPa	11376.35 kPa	551.58 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

OA Line 11, CPO #10

OA: 4

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

ertificate/Serial/Job No: → ZH73 / 9

Quality Department: John Ho

uantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
	6	600	/ 103249	DSI 66LUF-N-LCC	GATE				8/23/2013

ressure Test: API598 | ☑ Satisfactory

Shell Pressure :	BackSeat :	Seat Pressure	Seat Air Pressure
2225 psi / 15340.8 kPa	1650 psi / 11376 kPa	1650 psi / 11376.35 kPa	80 psi / 551.58 kPa

Chemical Composition [%]

rt	Specif.	HEAT No	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	Al	N
DY	ASTM A352 LCC-2006	V-18106	0.231	0.517	0.827	0.022	0.011	0.334	0.062	0.001	0.029	0.004		0.032	
NNET	ASTM A352 LCC-2006	V18052	0.205	0.491	0.818	0.026	0.013	0.234	0.044	0.001	0.024	0.005		0.041	
DGE	ASTM A352 LCC-2006	E 2141	0.20	0.41	1.07	0.027	0.010	0.20	0.02	0.001	0.014	0.001			

Mechanical Properties

HEAT No	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
V-18106	85.55 / 589.85	58.00 / 399.9	30.5	64	180	33	36	31		-50 / -45.56	WT
V18052	85.55 / 589.85	58.00 / 399.9	30.5	61	185	28	32	30		-50 / -45.56	WT
E 2141	85.41 / 588.88	41.33 / 285	31	45	158	32	34	36		-50 / -45.56	WT

at Treatment Codes:

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

art	Material
ACK SEAT	ASTM A276-316
ODY/BONNET	ASTM A352 LCC
OLTING	ASTM A320 L7M / ASTM A194 7M
ISC-WEDGE-CLAPPER	ASTM A352 LCC + 316SS Overlay
ACKING	GRAPHITE
EAT RING	ASTM A350-LF2 + Stl.6 Faced
TEM	ASTM A276-316
TEM NUT	ASTM A439-D2

Valves Tested per API598

Comply with the requirements of NACE MR0175-2002/MR0103

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

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

rding 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 ormity 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 ific 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.

刘建庆

NLIA - DPH - 2001

PO# 94

GE - 06600

VARUM 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

rtificate/Serial/Job No: ZH73 / 9

Quality Department: John Ho

antity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
	6	600	/ 103249	DSI 66LUF-N-LCC	GATE				8/23/2013

essure Test: API598	☑ Satisfactory	Shell Pressure :	BackSeat :	Seat Pressure	Seat Air Pressure
		2225 psi 15340.8 kPa	1650 psi 11376 kPa	1650 psi 11376.35 kPa	80 psi 551.58 kPa

			Chemical Composition [%]													Mechanical Properties										
	Specif.	HEAT No	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

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38026-220(80150051)
DATE: 2014-4-18
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	10179018	3GL3RA8-000	GLOBE VALVE,3GL3R,C00/8 [-LLC-SSF-WEB,] GLOBE VALVE,3,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001753MRM_S16038009	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: BS1873 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.

NLIA-DPH-2001
CPO# 42 TF-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

EN 10204 2004-3.1

TC No. 38026-220(80150051)
DATE: 2014.4.18

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	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III
38026-220-19	1H795	98U87	32BE008												

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. 38026-220(80150051)
DATE: 2014.4.18

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
F6A-III	NORMALIZE	980~1050(1796~1922F)	1H/25MM.1H	AIR	GAS OR ELECTRIC
F6A-III	TEMPER	595(203F)	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												302			
		MIN.						11.5									760	585	15	35	235			
DISC	F6A-III	S2BE008	0.11	0.87	0.78	0.01	0.03	11.9	0.38								768	589	18	39	262			

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. 38026-220(80150051)
DATE: 2014.4.18

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	1H795	0.202	0.98	0.409	0.009	0.033	0.032	0.022	0.009	0.026	0.003				0.377	590	395	26	54	170			
BONNET	WCB	98U87	0.208	0.978	0.412	0.008	0.022	0.043	0.019	0.005	0.018	0.006				0.384	565	390	33	55	156			

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. 38026-220(80150051)
DATE: 2014-4-18
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	10179018	3GL3RA8-000	GLOBE VALVE,3GL3R,C00/8 [-LLC-SSF-WEB,] GLOBE VALVE,3,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001753MRM_S16038009	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: BS1873 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.

NCIA-DPH-2001

CPO# 92 TF-03400

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. 38026-220(80150051)
DATE: 2014.4.18

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	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III
38026-220-12	90U63	3H733	KCC005												

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. 38026-220(80150051)
DATE: 2014.4.18

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
F6A-III	NORMALIZE	980~1050(1796~1922F)	1H/25MM.1H	AIR	GAS OR ELECTRIC
F6A-III	TEMPER	595(203F)	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												302			
		MIN.						11.5									760	585	15	35	235			
DISC	F6A-III	KCC005	0.14	0.9	0.27	0.024	0.03	11.9	0.46								775	600	22	45	265			

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. 38026-220(80150051)
DATE: 2014.4.18

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	90U63	0.211	1.043	0.398	0.014	0.025	0.049	0.03	0.012	0.022	0.01				0.403	550	360	26	55	180			
BONNET	WCB	3H733	0.196	1.031	0.463	0.009	0.024	0.044	0.027	0.007	0.038	0.005				0.383	595	390	29	60	163			

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. 38026-220(80150051)
DATE: 2014-4-18
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	10179018	3GL3RA8-000	GLOBE VALVE,3GL3R,C00/8 [-LLC-SSF-WEB,] GLOBE VALVE,3,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001753MRM_S16038009	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: BS1873 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.

NLA - DPH - 2001

(PO# 92 TF-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 EN 10204 2004-3.1	TC No. 38026-220(80150051) DATE: 2014.4.18 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	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III
38026-220-3	2H078	3H732	52BE008												

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 38026-220(80150051)
DATE: 2014.4.18

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	2H078	0.2	1.054	0.404	0.009	0.032	0.044	0.024	0.009	0.032	0.004				0.391	550	365	31	49	163			
BONNET	WCB	3H732	0.216	0.959	0.461	0.01	0.019	0.033	0.016	0.005	0.019	0.002				0.386	585	380	32	60	163			

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. 38026-220(80150051)
DATE: 2014.4.18

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.C(F)	Holding time(h)	Cooling media	Furnace
F6A-III	NORMALIZE	980~1050(1796~1922F)	1H/25MM.1H	AIR	GAS OR ELECTRIC
F6A-III	TEMPER	595(203F)	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												302			
		MIN.						11.5									760	585	15	35	235			
DISC	F6A-III	S2BE008	0.11	0.87	0.78	0.01	0.03	11.9	0.38								768	589	18	39	262			

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. 38026-220(80150051)
DATE: 2014-4-18
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	10179018	3GL3RA8-000	GLOBE VALVE,3GL3R,C00/8 [-LLC-SSF-WEB,] GLOBE VALVE,3,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001753MRM_S16038009	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: BS1873 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.

NLIA - DPH - 2001

CPO# 92 TF - 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

EN 10204 2004-3.1

TC No. 38026-220(80150051)
DATE: 2014.4.18

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	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III		WCB	WCB	F6A-III
38026-220-3	2H078	3H732	32BE008												

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

FOCUS VENDOR DRAWING REVIEW

- [x] A. Approved. Manufacturing may proceed without changes. Submit Certified As Built Drawing
- [ ] B. Reviewed with comments. Resubmit. Manufacturing may proceed subject to incorporating the changes.
- [ ] C. Reviewed with comments. Resubmit. Proceed with material order only.
- [ ] D. Reviewed with comments. Resubmit DO NOT proceed with manufacturing or material order.
- [ ] E. Information/Certified/As-Built
- [ ] F. _____

Permission to proceed does not constitute acceptance or approval of design details, calculations, test methods or material developed or selected by the supplier and does not relieve the supplier from compliance with the contract or the purchase order requirements.

DATE Sep. 3, 2014 SIGNED

INSPECTION CERTIFICATE

(CHEMICAL, PHYSICAL & HYDROSTATIC)

PK VALVE CO.,LTD.
192-1 Shinchon-Dong, Seongsan-Gu
Changwon-city, Korea
Head Office TEL(Inf. Phone) : 055 – 268 – 3777
& Factory (Q.C Dept) : 055 – 268 – 3788
FAX : 055 – 266 – 2112
Homepage http://www.pkvalve.co.kr
E-mail : als7als7@pkvalve.co.kr

REPORT NO : 20140425-010 1 OF 1
DATE : 'Apr. 25. 2014
ARTICLE : SWING/CH BC RF CL150 WCB/13CR(HS)
P/O NO. : 3689
MFG. NO. : 14-00182-008

TAG NO : TNC-3689-008

SIZE : NPS 6 Q'ty : 1 Pcs.

PARTS NAME		Body(BD)	Bonnet(BN)	Disc(DS)	Body Seatring	Stem
MATERIAL	ASTM	A216-WCB	A105	A217-CA15	A106-B+STL.6	-

DIMENSION INSPECTION (ASME B16.10 & APPROVED DRAWING) (mm)								PRESSURE TEST (API 598)			VISUAL TEST
INSPECTION	Face to Face (End to End)	Flange Diameter	Bolt Circle	Dia. Of Raised Face	Flange Thickness	No. of Bolt Hole	Bolt Hole Diameter	SHELL (PSIG)	SEAT(WATER) (PSIG)	BACK SEAT (PSIG)	VISUAL
STANDARD	355.6	279.0	241.3	215.9	25.4	8	22.4	450	315	N/A	MSS-SP-55
RESULTS	*W.T	W.T	W.T	W.T	W.T	8	W.T	GOOD	GOOD	N/A	GOOD

※ W.T : Within Tolerance

HEAT NO.	PARTS	Q'TY	CHEMICAL COMPOSITION (MAX. %) (ASTM STD.)													TENSION TEST(MIN.) (ASTM)				HARDNESS	REMARK	
																T.S (N/㎟)	Y.P (N/㎟)	EL. %	R.A %		CE	Residual Aluminum
STANDARD	A216 WCB		C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V										
			0.30	0.60	1.00	0.035	0.035	0.50	0.50	0.20	0.30	0.03				485 655	250	22.0	35.0		MAX 0.45	MAX 0.050
STANDARD	A105		C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Cb									
			0.35	0.10 0.35	0.60 1.05	0.035	0.040	0.40	0.30	0.12	0.40	0.08	0.02			485	250	22.0	30.0			
STANDARD	A217 CA15		C	Si	Mn	P	S	Ni	Cr	Mo												
			0.15	1.50	1.00	0.040	0.025	1.00	11.50 14.00	0.50						620 795	450	18.0				
72V36	BODY	-	0.20	0.46	0.77	0.016	0.007	0.08	0.08	0.05	0.04	0.00				525	349	41.1	59.8		0.36	0.034
132721A	BONNET	-	0.16	0.23	1.14	0.018	0.002	0.06	0.22	0.04	0.09	0.01	0.00			540	348	30.0	62.0			
61AE6	DISC	-	0.09	0.92	0.62	0.031	0.002	0.18	12.66	0.03						730	667	29.2	44.7			

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REMARKS : IN ACCORDANCE WITH EN 10204 TYPE 3.1
HEAT TREATMENT : WCB & CA15 : NORMALIZING 925℃ X 2HR(A.C)
HEAT TREATMENT : CA15 : TEMPERING 750℃ X 2HR(A.C)
BODY SEATRING : WELDING FACED WITH STELLITE.6
C.E=C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

Cenovus FCCL Ltd. c/o DPH Focus
PO#: NL1A-DPH-2000B
Model: 06-152RF8
Line: 8 Tag: CF-01A00

Manager, Q.C Department Sang-Min Kim

Witness Inspector

We hereby certify that the above items have been tested and inspected in accordance with relevant codes and specifications.

NL1A-2000B
CPO#8 CF-01A00

FOCUS

CLIENT DOC NO	NL1A-DPH-2000B-F10-001-05		
VENDOR DOC NO	TNC-C008 LINE 8		
PROJECT:	12313-A-00	PO:	NL1A-DPH-2000B
TAG:	NA	REV:	0
Received:	JUNE 02, 2014		

REPORT NO : 20140516-012 1 OF 1
DATE : May. 16. 2014
ARTICLE : GATE BB RF CL150 WCB/13CR(FS)
P/O NO. : 3689
MFG. NO. : 14-00182-011

INSPECTION CERTIFICATE
(CHEMICAL, PHYSICAL & HYDROSTATIC)

TAG NO : TNC-3689-011

SIZE : NPS 10 Q'ty : 2 Pcs.

PK VALVE CO.,LTD.
192-1 Shinchon-Dong, Seongsan-Gu
Changwon-city, Korea
Head Office TEL(Int. Phone) : 055 - 268 - 3777
& Factory (Q.C Dept) : 055 - 268 - 3788
FAX : 055 - 266 - 2112
Homepage http://www.pkvalve.co.kr
E-mail : als7als7@pkvalve.co.kr

PARTS NAME		Body(BD)	Bonnet(BN)	Disc(DS)	Body Seatring	Stem
MATERIAL	ASTM	A216-WCB	A216-WCB	A217-CA15+STL.6	A106-B+STL.6	A479-410

	DIMENSION INSPECTION (ASME B16.10 & APPROVED DRAWING) (mm)							PRESSURE TEST (API 598)			VISUAL TEST
INSPECTION	Face to Face (End to End)	Flange Diameter	Bolt Circle	Dia. Of Raised Face	Flange Thickness	No. of Bolt Hole	Bolt Hole Diameter	SHELL (PSIG)	SEAT(AIR) (PSIG)	BACK SEAT (PSIG)	VISUAL
STANDARD	330.2	406.0	362.0	323.9	30.3	12	25.4	450	80	315	MSS-SP-55
RESULTS	*W.T	W.T	W.T	W.T	W.T	12	W.T	GOOD	GOOD	GOOD	GOOD

* W.T : Within Tolerance

HEAT NO.	PARTS	Q'TY	CHEMICAL COMPOSITION (MAX. %) (ASTM STD.)													TENSION TEST(MIN.) (ASTM)				HARDNESS	REMARK	
																T.S (N/㎟)	Y.P (N/㎟)	EL. %	R.A %		CE	Residual Aluminum
STANDARD	A216 WCB		C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V										
			0.30	0.60	1.00	0.035	0.035	0.50	0.50	0.20	0.30	0.03				485 655	250	22.0	35.0		MAX 0.45	MAX 0.050
STANDARD	A217 CA15		C	Si	Mn	P	S	Ni	Cr	Mo												
			0.15	1.50	1.00	0.040	0.025	1.00	11.50 14.00	0.50						620 795	450	18.0	30.0			
72MJ6	BODY	-	0.18	0.48	0.89	0.013	0.007	0.02	0.02	0.01	0.01	0.00				563	312	32.3	45.9		0.33	0.039
73CJB	BODY	-	0.17	0.42	0.89	0.013	0.007	0.06	0.04	0.01	0.02	0.00				557	315	32.4	48.5		0.33	0.049
71PJ6	BONNET	-	0.18	0.44	0.81	0.012	0.006	0.02	0.02	0.01	0.02	0.00				564	310	31.7	45.9		0.32	0.040
72NJ1	BONNET	-	0.18	0.45	0.87	0.012	0.007	0.03	0.03	0.01	0.01	0.00				573	317	32.4	48.3		0.33	0.042
6CFE3	DISC	-	0.09	0.85	0.61	0.021	0.001	0.12	12.45	0.04						720	634	25.0	45.8			
64TE1	DISC	-	0.10	0.91	0.68	0.027	0.002	0.14	12.31	0.05						739	652	29.4	44.8			
									BLANK													

REMARKS : IN ACCORDANCE WITH EN 10204 TYPE 3.1
HEAT TREATMENT : WCB & CA15 : NORMALIZING 925℃ X 2HR(A.C)
HEAT TREATMENT : CA15 : TEMPERING 750℃ X 2HR(A.C)
BODY SEATRING & DISC : WELDING FACED WITH STELLITE.6
C.E=C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

Cenovus FCCL Ltd. c/o DPH Focus
PO#: NL1A-DPH-2000B
Model: 10-G150RF5
Line: 11 Tag: GF-01V00

Manager, Q.C Department

Witness Inspector

We hereby certify that the above items have been tested and inspected in accordance with relevant codes and specifications.

NL1A-2000B
CPD# 811 GF-01V00

FOCUS

CLIENT DOC NO	NL1A-DPH-2000B-F10-001-15		
VENDOR DOC NO	10-G150RF5 (Line 11)		
PROJECT:	12313-A-00	PO:	NL1A-DPH-2000B
TAG:	N/A	REV:	0
Received:	June 30, 2014		

FOCUS VENDOR DRAWING REVIEW
- [x] A. Approved. Manufacturing may proceed without changes. Submit Certified As Built Drawing
- [ ] B. Reviewed with comments. Resubmit. Manufacturing may proceed subject to incorporating the changes.
- [ ] C. Reviewed with comments. Resubmit. Proceed with material order only.
- [ ] D. Reviewed with comments. Resubmit. DO NOT proceed with manufacturing or material order.
- [ ] E. Information/Certified/As-Built
- [ ] F.

Permission to proceed does not constitute acceptance or approval of design details, calculations, test methods or material developed or selected by the supplier and does not relieve the supplier from compliance with the requirements of the applicable purchase order.

DATE Sep.3,2014 SIGNED

OA Line 12 CPO # 13 OR-5

FARUM 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: ZF166 / 49

Quality Department: Jonhu Ho

Quantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
50	6	150	/ 103041	DSI 37XUF	GATE				6/12/2013

Pressure Test: API598 ☑ Satisfactory | **Shell Pressure:** 450 psi / 3102.64 kPa | **BackSeat:** 325 psi / 2240.8 kPa | **Seat Pressure** 325 psi / 2240.8 kPa | **Seat Air Pressure** 80 psi / 551.58 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-2008	A 14405	0.21	0.42	0.94	0.027	0.013	0.024	0.064	0.003	0.031	0.006		0.042		73.37 / 505.87	43.94 / 303	30	54	152						N
BONNET	ASTM A216 WCB-2008	A 14414	0.20	0.42	0.88	0.024	0.010	0.027	0.054	0.003	0.035	0.008		0.028		74.68 / 514.90	44.37 / 305.9	31	56	153						N
WEDGE	ASTM A216 WCB-2008	E 3231	0.19	0.44	0.92	0.020	0.006	0.030	0.05	0.010	0.030	0.004				84.97 / 585.85	41.76 / 287.9	32	44	160						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 A182 F6A Cr 13
PACKING	GRAPHITE
SEAT RING	ASTM A105 + Stl.6 Faced
STEM	ASTM A182 F6A Cr 13
STEM NUT	ASTM A439-D2

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.

刘建清

ULIA - DPH - 2001

PO# 13 GF-01400

FYARUM 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: ZF166 / 49

Quality Department: John Ho

Quantity	Size (NPS)	Class	Product	Description	Type	SONumber	Line	Sold to	Date
50	6	150	/ 103041	DSI 37XUF	GATE				6/12/2013

Pressure Test: API598 ☑ Satisfactory	Shell Pressure : 450 psi / 3102.64 kPa	BackSeat : 325 psi / 2240.8 kPa	Seat Pressure 325 psi / 2240.8 kPa	Seat Air Pressure 80 psi / 551.58 kPa

			Chemical Composition [%]													Mechanical Properties										
Part	Specif.	HEAT No	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

CA Line 5 CPO# 116

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 52147-630(80295430)
DATE: 2014-12-6
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA 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 EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003796MRC_S 759 242	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.

NLIA-DPH-2001
CPO#116 GF-03A10

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. 52147-630(80295430)
DATE: 2014.12.6

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
52147-630-42	873L6	9318H	74A47												

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. 52147-630(80295430)
DATE: 2014.12.6

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	670±10 (1238±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	74A47	0.1	0.77	0.95	0.01	0.03	12.12	0.1	0.01							693	511	18	44	255			

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. 52147-630(80295430)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	873L6	0.19	1.065	0.476	0.013	0.023	0.03	0.019	0.001	0.02	0.007				0.378	530	345	25	53	161			
BONNET	WCB	9318H	0.208	1.092	0.406	0.011	0.023	0.043	0.028	0.004	0.027	0.002				0.403	590	395	29	54	159			

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 6 CPO# 118

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 52147-580(80308924)
DATE: 2014-12-6
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	1	10178963	3G1RA8-000	GATE VALVE,3G1R,C00/8 [-LLC-WEB,-GBR] GATE VALVE,3,150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003796MRC_S 759 242	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.

NLIA- DPHF 2001
CPO#118 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

EN 10204 2004-3.1

TC No. 52147-580(80308924)
DATE: 2014.12.6

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
52147-580-38	80L89	4697L	31A18												

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NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 52147-580(80308924)
DATE: 2014.12.6

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	670±10 (1238±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	31A18	0.13	0.79	0.96	0.011	0.024	12.59	0.111	0.012							715	504	20	50	256			

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NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 52147-580(80308924)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	80L89	0.206	0.972	0.404	0.012	0.03	0.038	0.02	0.001	0.02	0.005				0.379	555	330	31	56	168			
BONNET	WCB	4697L	0.2	1.063	0.424	0.015	0.028	0.051	0.033	0.001	0.019	0.005				0.392	515	320	25	52	156			

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OA Line 7 CPO# 120

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 53001-40(80317191)
DATE: 2014-12-6
PAGE: 1 OF 3

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	6	10289143	3G1RC12-NC-000	GATE VALVE,3G1R,L21/12 [-LLC-WEB,-GBR] GATE VALVE,3,150LB ASTM A352 LCC,F316/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003945MRC_S 759 248	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.

NLIA-DPH-2001
CPO#120 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

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC No. 53001-40(80317191)
DATE: 2014.12.6

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
53001-040-1	X2880	X1725	6365L	* 53001-040-2	X2880	X1725	6365L	* 53001-040-3	X2880	X1725	6365L	53001-040-4	X2880	X1725	6365L
53001-040-5	X2880	X1725	6365L	53001-040-6	X2880	X1725	6365L								

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MATERIAL TEST REPORT

EN 10204 2004-3.1

NEWAY

TC NO. 53001-40(80317191)
DATE: 2014.12.6

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	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	6365L	0.218	1.044	0.399	0.013	0.021	0.025	0.013	0.001	0.022	0.003				0.4	525	355	32	65	159	28	29	32
BONNET	LCC	X1725	0.229	1.088	0.382	0.011	0.02	0.044	0.022	0.004	0.022	0.002				0.423	590	435	31	63	170	58	71	64
BODY	LCC	X2880	0.211	1.081	0.438	0.014	0.026	0.042	0.019	0.005	0.021	0.003				0.404	550	395	33	61	163	50	49	50

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OA line 8 CPO# 125

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 48082-301(80236402)
DATE: 2014-12-6
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC 9757 Stafford Centre Rd., Stafford USA USA	1	10178987	8G3RA8-000	GATE VALVE,8G3R,C00/8 [-LS-LLC-WEB,] GATE VALVE,8,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003146NVU_CSGGC	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.

NLIA-DPH-2001
CPO#125 GF-03A00

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. 48082-301(80236402)
DATE: 2014.12.6

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
48082-301-11	010L3	912H1	44A15												

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. 48082-301(80236402)
DATE: 2014.12.6

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	670±10 (1238±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	44A15	0.029	0.75	1.07	0.011	0.023	12.63	0.108	0.01							730	522	19	49	255			

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NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 48082-301(80236402)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	912H1	0.213	1.037	0.371	0.01	0.028	0.1	0.031	0.01	0.028	0.003				0.412	605	395	27	50	156			
BODY	WCB	010L3	0.192	1.046	0.382	0.015	0.024	0.045	0.028	0.007	0.031	0.009				0.382	540	340	29	59	164			

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 8 CPO# 125

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 44132-120(80197665)
DATE: 2014-12-6
PAGE: 1 OF 4

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC 9757 Stafford Centre Rd., Stafford USA USA	1	10178987	8G3RA8-000	GATE VALVE,8G3R,C00/8 [-LLC-WEB,] GATE VALVE,8,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6002624NVU_CSGGC	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.

NLIA-DPH-2001
CPO#125 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.

WITNESSED BY: _____

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. 44132-120(80197665)
DATE: 2014.12.6

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
44132-120-19	7L394	76H22	17A40												

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. 44132-120(80197665)
DATE: 2014.12.6

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	670±10 (1238±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	17A40	0.1	0.78	0.93	0.011	0.025	12.63	0.119	0.011							722	513	20	49	259			

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

EN 10204 2004-3.1

NEWAY

TC NO. 44132-120(80197665)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	7L394	0.206	0.986	0.372	0.017	0.034	0.067	0.039	0.001	0.016	0.004				0.388	515	355	23	54	185			
BONNET	WCB	76H22	0.192	1.09	0.438	0.008	0.028	0.041	0.017	0.011	0.025	0.004				0.388	580	385	35	50	146			

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 9 CPO# 129

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 50421-1030(80278099)
DATE: 2014-12-6
PAGE: 1 OF 8

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	7	10460982	10G3RA8-G-000	GATE VALVE,10G3R-A,C00/8 [-BA0C-LLC-OF35-WEB,] GATE VALVE,10,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,GEAR OPERATED,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003432MRC_S 759 228	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.

NLIA-DPH-2001
CPO#129 GF-03A00

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. 50421-1030(80278099)
DATE: 2014.12.6

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
50421-1030-1	F3854	F3761	51A57	* 50421-1030-2	F3711	F3825	61A33	* 50421-1030-3	F3857	F3827	61A33	50421-1030-4	F3855	F3644	61A33
50421-1030-5	F3828	F3761	61A30	50421-1030-6	F3870	F3761	61A33	50421-1030-7	F3872	F3761	61A33				

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. 50421-1030(80278099)
DATE: 2014.12.6

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	MDI010	0.44	0.58	0.24	0.024	0.018														295			

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

EN 10204 2004-3.1

TC NO. 50421-1030(80278099)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
A105N	NORMALIZE	850~920 (1562~1688°F)	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	LBC001	0.2	0.93	0.18	0.011	0.019	0.04	0.02	0.01	0.04	0.003				0.37	535	370	29	66	156			

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 50421-1030(80278099)
DATE: 2014.12.6

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	C.E.	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	YCB113	0.42	0.91	0.3	0.004	0.014	1		0.21							934	841	20	61	280			

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NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 50421-1030(80278099)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
F6A-II	NORMALIZE	980 ~1050 (NaN~1922°F)	1H/25MM,≥1H	AIR	ELECTRIC
F6A-II	TEMPER	≥675 (≥167°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	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	TPDC002	0.098	0.35	0.35	0.008	0.027	12.4	0.17								660	486	28	72	216			

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 3 CPO# 78

Certificate of Conformance

VELAN

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

Certificate #: P4-136702

Customer Name :	MRC CANADA ULC.
Customer Po # :	S759225007
Velan Order # :	M014-870277-W
Valve Design :	API-600
Hydro Test Spec :	API-600
Test Result :	ACCEPTABLE

Certificate Date :	02-JAN-2014		
Item Number :	13	Position No :	65
Quantity :	14		
Figure Number :	F08-0064C-31NB-W320		
Description :	VALVE 2" 150 GATE RF		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1

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

VALVE(S) MEET(S) NACE MR0175

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

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

ASTM Code: A352-06-LCB/LCC-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51D05	BODY	0.191	0.939	0.029	0.010	0.438	0.030	0.281	0.035	0.005	0.007	600.0 / 87.0	375.0 / 54.4	31.4	60.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												45.0 / 48.0 / 46.0	-46.0	33.2 / 35.4 / 33.9	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51D21	BONNET	0.200	0.950	0.030	0.012	0.414	0.029	0.259	0.043	0.005	0.007	583.0 / 84.6	383.0 / 55.5	29.0	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												41.0 / 45.0 / 42.0	-46.0	30.2 / 33.2 / 31.0	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51F14	BONNET	0.192	0.870	0.027	0.008	0.466	0.033	0.253	0.055	0.010	0.006	587.0 / 85.1	395.0 / 57.3	29.4	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												40.0 / 43.0 / 46.0	-46.0	29.5 / 31.7 / 33.9	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND53D07	BODY	0.187	0.852	0.027	0.009	0.484	0.031	0.252	0.034	0.004	0.006	578.0 / 83.8	363.0 / 52.6	32.2	61.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												48.0 / 43.0 / 47.0	-46.0	35.4 / 31.7 / 34.7	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND53F11	BODY	0.191	0.888	0.029	0.012	0.391	0.035	0.262	0.041	0.004	0.008	599.0 / 86.9	399.0 / 57.9	29.0	55.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												42.0 / 48.0 / 44.0	-46.0	31.0 / 35.4 / 32.5	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
* **BND54F10**	BODY	0.200	0.939	0.031	0.011	0.449	0.037	0.269	0.044	0.004	0.008	546.0 / 79.2	346.0 / 50.2	29.8	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												40.0 / 44.0 / 45.0	-46.0	29.5 / 32.5 / 33.2	-50.8	

NLIA-DPH-2001
CPO# 78 GF-01L00

VELAN

Certificate of Conformance

Certificate #: P4-136702

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND54F11	BONNET	0.201	0.901	0.030	0.008	0.491	0.032	0.257	0.054	0.011	0.007	594.0 / 86.2	407.0 / 59.0	35.0	59.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												43.0 / 45.0 / 45.0	-46.0	31.7 / 33.2 / 33.2	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND55D19	BONNET	0.195	0.853	0.024	0.009	0.407	0.032	0.275	0.039	0.006	0.007	575.0 / 83.4	367.0 / 53.2	29.6	55.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												45.0 / 43.0 / 42.0	-46.0	33.2 / 31.7 / 31.0	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND55F10	BODY	0.192	0.851	0.030	0.007	0.433	0.042	0.266	0.042	0.005	0.012	554.0 / 80.4	363.0 / 52.6	28.8	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												44.0 / 47.0 / 41.0	-46.0	32.5 / 34.7 / 30.2	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND60G28	BONNET	0.197	0.860	0.025	0.016	0.476	0.035	0.263	0.033	0.001	0.001	610.0 / 88.5	428.0 / 62.1	35.0	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												46.0 / 42.0 / 45.0	-46.0	33.9 / 31.0 / 33.2	-50.8	

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.

Mikael Bouchard for
Manager of Q.C. Documentation

02-JAN_2014
Date

Customer Representative

Date

YANCHENG H & M PRESSURE VALVE CO.,LTD	MATERIAL CERTIFICATE	Certificate No: KF-1401-09
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204 2.2)	5Certificate Date: 2014/01/16
Tel: +86-515-8281015 Fax: +86-515-8281015	Customer: KF / P/O No: P31240 / QTY: 5	Sheet 2 of 2
E-mail: ygf@public.yc.js.cn	Description: GATE VALVE8"300LB / CAT No:GA03011XU-8"-GO	

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	A13067	0.190	0.240	0.800	0.013	0.021	0.050	0.050	0.006	0.070	0.029		540	310	35	62	168
Stem	ASTM A182 F6a	S13082	0.098	0.520	0.250	0.019	0.025	...	...	...	11.87	0.260		660	475	28	70	218
Back Seat	ASTM A276 410	T41012	0.110	0.350	0.470	0.005	0.022	...	...	...	11.78	...		616	423	27	71	265

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

OA line 3+5
CPO# 51+81

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-1401-04
DATE: 2014.01.13
SHEET 1 OF 1

PRESSURE TEST CERTIFICATE

Pressure Test (As per API 598)						Name of Valves: GATE VALVE
Item		Test Pressure (MPa)	Test Durations (Sec.)	Allowable Leakage Rate (max)	Result	Size & Class:8" 300 LB
Shell Test		7.8	120	0	OK	Quantity: 2
Backseat Test		5.8	60	0	OK	Valve Material: ASTM A216 WCB
Seat Test	Hydro	5.8	120	0	OK	PO No.: P31255
	Air	0.6	120	0	OK	CAT No.: GA03011XU-8"-GO
Valve requirement		API600 (√)	BS1873 ( )	BS1868 ( )		NACE MR 0175 ( )

Serial No.	Heat No.			Lot No.				
	Body	Bonnet	Wedge	Seat Ring	Stem	Back Seat	Bolt	Nut
KF813110005	A60711	A60624	A60620	A13067	S13082	T41012	...	...
KF813110006	A60620	A60620	A60612	A13067	S13082	T41012	...	...

We hereby certify that the above valves have been tested as per API598 and comply to the specification of the purchase order.
NLIA-DPH-2001
CPO#51 GF-03A00

Inspector

Reviewed by

YANCHENG H & M PRESSURE VALVE CO.,LTD	MATERIAL CERTIFICATE	Certificate No: KF-1401-04
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204.3.1)	Certificate Date: 2014/01/13
Tel: +86-515-8281015 Fax: +86-515-8281003	Customer: KF / P/O No: P31255 / QTY: 2	Material: ASTM A216 WCB
E-mail: ygf@public.yc.js.cn	Description: GATE VALVE 8"300LB / CAT No:GA03011XU-8"-GO	Sheet 1 of 2

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.	0.035 Max.	0.035 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	A60711	0.206	0.800	0.035	0.026	0.488	0.045	0.050	0.138	0.025	0.002		520	258	25	38	166
BODY	A60620	0.190	0.750	0.027	0.018	0.414	0.049	0.055	0.158	0.024	0.006		509	260	24	37	159
BONNET	A60620	0.190	0.750	0.027	0.018	0.414	0.049	0.055	0.158	0.024	0.006		509	260	24	37	159
BONNET	A60624	0.204	0.860	0.028	0.019	0.451	0.049	0.057	0.175	0.025	0.005		519	272	29	36	169
WEDGE	A60620	0.190	0.750	0.027	0.018	0.414	0.049	0.055	0.158	0.024	0.006		509	260	24	37	159
WEDGE	A60612	0.213	0.700	0.028	0.020	0.451	0.046	0.055	0.151	0.024	0.004		510	266	32	37	164

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	MATERIAL CERTIFICATE	Certificate No: KF-1401-04
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204 2.2)	5Certificate Date: 2014/01/13
Tel: +86-515-8281015 Fax: +86-515-8281015	Customer: KF / P/O No: P31255 / QTY: 2	Sheet 2 of 2
E-mail: ygf@public.yc.js.cn	Description: GATE VALVE 8"300LB / CAT No:GA03011XU-8"-GO	

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	A13067	0.190	0.240	0.800	0.013	0.021	0.050	0.050	0.006	0.070	0.029		540	310	35	62	168
Stem	ASTM A182 F6a	S13082	0.098	0.520	0.250	0.019	0.025	...	...	...	11.87	0.260		660	475	28	70	218
Back Seat	ASTM A276 410	T41012	0.110	0.350	0.470	0.005	0.022	...	...	...	11.78	...		616	423	27	71	265

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

OA Line 4
CPO 55

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-1401-03
DATE: 2014.01.10
SHEET 1 OF 1

PRESSURE TEST CERTIFICATE

Pressure Test (As per API 598)						Name of Valves: GATE VALVE
Item		Test Pressure (MPa)	Test Durations (Sec.)	Allowable Leakage Rate (max)	Result	Size & Class:12" 150 LB
Shell Test		3.2	120	0	OK	Quantity: 3
Backseat Test		2.2	60	0	OK	Valve Material: ASTM A216 WCB
Seat Test	Hydro	2.2	120	0	OK	PO No.: P31240
	Air	0.6	120	0	OK	CAT No.: GA01011XU-12"-GO
Valve requirement		API600 (√)	BS1873 ( )	BS1868 ( )		NACE MR 0175 ( )

Serial No.	Heat No.			Lot No.				
	Body	Bonnet	Wedge	Seat Ring	Stem	Back Seat	Bolt	Nut
KF813100351 ✓	A60632	A60632	A60442	A13067	S13082	T41012	...	...
KF813100352 ✓	A60634	A60632	A60407	A13067	S13082	T41012	...	...
KF813100353 ✓	A60632	A60632	A69227	A13067	S13082	T41012	...	...

We hereby certify that the above valves have been tested as per API598 and comply to the specification of the purchase order.
NL1A-DPH-2001
CPO#55 GF-01A00

Inspector

Reviewed by

YANCHENG H & M PRESSURE VALVE CO.,LTD	MATERIAL CERTIFICATE	Certificate No: KF-1401-03
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204.3.1)	Certificate Date: 2014/01/10
Tel: +86-515-8281015 Fax: +86-515-8281003	Customer: KF / P/O No: P31240 / QTY: 3	Material: ASTM A216 WCB
E-mail: ygf@public.yc.js.cn	Description: GATE VALVE12"150LB / CAT No:GA01011XU-12"-GO	Sheet 1 of 2

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.	0.035 Max.	0.035 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	A60632	0.194	0.680	0.029	0.022	0.430	0.043	0.055	0.199	0.037	0.009		509	271	30	40	172
BODY	A60634	0.218	0.660	0.025	0.014	0.390	0.035	0.040	0.083	0.017	0.006		517	259	23	38	171
BONNET	A60632	0.194	0.680	0.029	0.022	0.430	0.043	0.055	0.199	0.037	0.009		509	271	30	40	172
WEDGE	A60442	0.208	0.720	0.028	0.019	0.455	0.027	0.036	0.059	0.020	0.001		500	269	26	39	169
WEDGE	A60407	0.210	0.740	0.030	0.020	0.420	0.025	0.032	0.061	0.023	0.002		507	266	28	37	174
WEDGE	A69227	0.207	0.740	0.027	0.014	0.440	0.010	0.036	0.039	0.023	0.001		500	260	25	38	161

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	MATERIAL CERTIFICATE	Certificate No: KF-1401-03
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204 2.2)	5Certificate Date: 2014/01/10
Tel: +86-515-8281015 Fax: +86-515-8281015	Customer: KF / P/O No: P31240 / QTY: 3	Sheet 2 of 2
E-mail: yqf@public.yc.js.cn	Description: GATE VALVE12"150LB / CAT No:GA01011XU-12"-GO	

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	A13067	0.190	0.240	0.800	0.013	0.021	0.050	0.050	0.006	0.070	0.029		540	310	35	62	168
Stem	ASTM A182 F6a	S13082	0.098	0.520	0.250	0.019	0.025	...	...	...	11.87	0.260		660	475	28	70	218
Back Seat	ASTM A276 410	T41012	0.110	0.350	0.470	0.005	0.022	...	...	...	11.78	...		616	423	27	71	265

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

OA Line 21 CPO#49 (1)

VELAN

INSPECTION CERTIFICATE
EN-10204-3.1

Certificate #: 74756

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 #: S78H21M462
Design Spec: API 600
Drawing Number: N/A
Tag Number(s): NONE

Velan Order #: M014-869527-W
Item Number: 03 Position No: 15
Quantity: 42
Figure Number: F14-0064C-02TY-W320
Description: VALVE 6" 150 GATE RF

NOTES: REF. CERT # 133342

Test Standard: API 598 Dimensional Examination: ACCEPTABLE Markings MSS SP-25: ACCEPTABLE Visual: ACCEPTABLE

Test Type		Shell	Packing	Seat (H.P.)	Seat (L.P.)	Backseat
Duration	(sec)	60	60	N/A	60	60
Pressure	(psig)	450	450	N/A	80	325
Result		ACCEPTABLE	ACCEPTABLE	N/A	ACCEPTABLE	ACCEPTABLE

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS / MECHANICALS

Supplier: BN
Heat Code: BND01C28
ASTM Code: A216-08-WCB-
Description: BODY

Carbon (C)	0.189	Manganese (Mn)	0.916	Phosphorous (P)	0.025
Sulfur (S)	0.009	Silicon (Si)	0.458	Copper (Cu)	0.034
Nickel (Ni)	0.035	Chromium (Cr)	0.042	Molybdenum (Mo)	0.005
Vanadium (V)	0.007				
C.E.	0.357				

Tensile (MPa)	583.000	Tensile (ksi)	84.557
Yield (MPa)	379.000	Yield (ksi)	54.969
Elongation (%)	31.800	Reduction Of Area (%)	54.900
Heat Treatment	NORMALIZED		

Supplier: BN
Heat Code: BND02C24
ASTM Code: A216-08-WCB-
Description: BODY

Carbon (C)	0.191	Manganese (Mn)	0.957	Phosphorous (P)	0.025
Sulfur (S)	0.008	Silicon (Si)	0.424	Copper (Cu)	0.030
Nickel (Ni)	0.027	Chromium (Cr)	0.041	Molybdenum (Mo)	0.005
Vanadium (V)	0.007				
C.E.	0.365				

Tensile (MPa)	591.000	Tensile (ksi)	85.717
Yield (MPa)	395.000	Yield (ksi)	57.290
Elongation (%)	29.000	Reduction Of Area (%)	55.000
Heat Treatment	NORMALIZED		

NLIA-DPH-2001
CPO#49 GF-01A00

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EN-10204-3.1

Certificate #: 74756

CHEMICALS								MECHANICALS			
Supplier :	BN	Carbon (C)	0.191	Manganese (Mn)	0.941	Phosphorous (P)	0.031	Tensile (MPa)	563.000	Tensile (ksi)	81.656
Heat Code :	BND02C26	Sulfur (S)	0.010	Silicon (Si)	0.469	Copper (Cu)	0.035	Yield (MPa)	355.000	Yield (ksi)	51.488
ASTM Code:	A216-12-WCB-	Nickel (Ni)	0.031	Chromium (Cr)	0.041	Molybdenum (Mo)	0.006	Elongation (%)	29.200	Reduction Of Area (%)	53.000
Description:	BODY	Vanadium (V)	0.008					Heat Treatment	NORMALIZED		
		C.E.	0.363								

Supplier :	BN	Carbon (C)	0.194	Manganese (Mn)	0.847	Phosphorous (P)	0.030	Tensile (MPa)	537.000	Tensile (ksi)	77.885
Heat Code :	BND02D09	Sulfur (S)	0.011	Silicon (Si)	0.422	Copper (Cu)	0.033	Yield (MPa)	338.000	Yield (ksi)	49.023
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.045	Chromium (Cr)	0.035	Molybdenum (Mo)	0.005	Elongation (%)	35.000	Reduction Of Area (%)	62.100
Description:	BODY	Vanadium (V)	0.008					Heat Treatment	NORMALIZED		
		C.E.	0.350								

Supplier :	BN	Carbon (C)	0.200	Manganese (Mn)	0.987	Phosphorous (P)	0.026	Tensile (MPa)	565.000	Tensile (ksi)	81.946
Heat Code :	BND02D11	Sulfur (S)	0.009	Silicon (Si)	0.413	Copper (Cu)	0.029	Yield (MPa)	306.000	Yield (ksi)	44.382
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.022	Chromium (Cr)	0.035	Molybdenum (Mo)	0.004	Elongation (%)	31.000	Reduction Of Area (%)	55.900
Description:	BONNET	Vanadium (V)	0.006					Heat Treatment	NORMALIZED		
		C.E.	0.377								

Supplier :	BN	Carbon (C)	0.187	Manganese (Mn)	0.971	Phosphorous (P)	0.022	Tensile (MPa)	561.000	Tensile (ksi)	81.366
Heat Code :	BND03C24	Sulfur (S)	0.006	Silicon (Si)	0.401	Copper (Cu)	0.037	Yield (MPa)	385.000	Yield (ksi)	56.275
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.076	Chromium (Cr)	0.047	Molybdenum (Mo)	0.006	Elongation (%)	31.600	Reduction Of Area (%)	61.100
Description:	BODY	Vanadium (V)	0.006					Heat Treatment	NORMALIZED		
		C.E.	0.368								

Supplier :	BN	Carbon (C)	0.186	Manganese (Mn)	0.895	Phosphorous (P)	0.033	Tensile (MPa)	599.000	Tensile (ksi)	86.878
Heat Code :	BND03C26	Sulfur (S)	0.012	Silicon (Si)	0.435	Copper (Cu)	0.049	Yield (MPa)	383.000	Yield (ksi)	55.549
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.056	Chromium (Cr)	0.057	Molybdenum (Mo)	0.009	Elongation (%)	33.400	Reduction Of Area (%)	58.000
Description:	BODY	Vanadium (V)	0.011					Heat Treatment	NORMALIZED		
		C.E.	0.358								

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INSPECTION CERTIFICATE
EN-10204-3.1

Certificate #: 74756

	CHEMICALS						MECHANICALS			
Supplier: BN	Carbon (C)	0.190	Manganese (Mn)	0.866	Phosphorous (P)	0.032	Tensile (MPa)	548.000	Tensile (ksi)	79.481
Heat Code: BND03D11	Sulfur (S)	0.010	Silicon (Si)	0.463	Copper (Cu)	0.030	Yield (MPa)	363.000	Yield (ksi)	52.649
ASTM Code: A216-08-WCB-	Nickel (Ni)	0.028	Chromium (Cr)	0.042	Molybdenum (Mo)	0.005	Elongation (%)	36.400	Reduction Of Area (%)	62.100
Description: BONNET	Vanadium (V)	0.010					Heat Treatment	NORMALIZED		
	C.E.	0.350								

Supplier: BN	Carbon (C)	0.186	Manganese (Mn)	0.847	Phosphorous (P)	0.025	Tensile (MPa)	563.000	Tensile (ksi)	81.656
Heat Code: BND04C24	Sulfur (S)	0.008	Silicon (Si)	0.437	Copper (Cu)	0.033	Yield (MPa)	363.000	Yield (ksi)	52.649
ASTM Code: A216-08-WCB-	Nickel (Ni)	0.031	Chromium (Cr)	0.054	Molybdenum (Mo)	0.021	Elongation (%)	30.400	Reduction Of Area (%)	58.000
Description: BODY	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
	C.E.	0.348								

Supplier: BN	Carbon (C)	0.192	Manganese (Mn)	0.925	Phosphorous (P)	0.033	Tensile (MPa)	563.000	Tensile (ksi)	81.656
Heat Code: BND04C28	Sulfur (S)	0.011	Silicon (Si)	0.421	Copper (Cu)	0.040	Yield (MPa)	351.000	Yield (ksi)	50.908
ASTM Code: A216-08-WCB-	Nickel (Ni)	0.037	Chromium (Cr)	0.048	Molybdenum (Mo)	0.004	Elongation (%)	29.400	Reduction Of Area (%)	57.000
Description: BODY	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
	C.E.	0.364								

Supplier: BN	Carbon (C)	0.189	Manganese (Mn)	0.903	Phosphorous (P)	0.029	Tensile (MPa)	559.000	Tensile (ksi)	81.076
Heat Code: BND05C28	Sulfur (S)	0.013	Silicon (Si)	0.457	Copper (Cu)	0.004	Yield (MPa)	371.000	Yield (ksi)	53.809
ASTM Code: A216-08-WCB-	Nickel (Ni)	0.041	Chromium (Cr)	0.049	Molybdenum (Mo)	0.006	Elongation (%)	36.000	Reduction Of Area (%)	59.100
Description: BONNET	Vanadium (V)	0.006					Heat Treatment	NORMALIZED		
	C.E.	0.355								

Supplier: BN	Carbon (C)	0.200	Manganese (Mn)	0.911	Phosphorous (P)	0.029	Tensile (MPa)	582.000	Tensile (ksi)	84.412
Heat Code: BND07D15	Sulfur (S)	0.016	Silicon (Si)	0.417	Copper (Cu)	0.041	Yield (MPa)	379.000	Yield (ksi)	54.969
ASTM Code: A216-08-WCB-	Nickel (Ni)	0.033	Chromium (Cr)	0.040	Molybdenum (Mo)	0.005	Elongation (%)	33.200	Reduction Of Area (%)	57.000
Description: BODY	Vanadium (V)	0.008					Heat Treatment	NORMALIZED		
	C.E.	0.367								

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Certificate #: 74756

CHEMICALS								MECHANICALS			
Supplier:	BN	Carbon (C)	0.190	Manganese (Mn)	0.966	Phosphorous (P)	0.032	Tensile (MPa)	581.000	Tensile (ksi)	84.267
Heat Code:	BND08D12	Sulfur (S)	0.008	Silicon (Si)	0.396	Copper (Cu)	0.031	Yield (MPa)	387.000	Yield (ksi)	56.130
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.024	Chromium (Cr)	0.059	Molybdenum (Mo)	0.004	Elongation (%)	29.800	Reduction Of Area (%)	58.000
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED		
		C.E.	0.369								

Supplier:	BN	Carbon (C)	0.195	Manganese (Mn)	0.990	Phosphorous (P)	0.031	Tensile (MPa)	583.000	Tensile (ksi)	84.557
Heat Code:	BND08D15	Sulfur (S)	0.010	Silicon (Si)	0.435	Copper (Cu)	0.038	Yield (MPa)	375.000	Yield (ksi)	54.389
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.042	Chromium (Cr)	0.054	Molybdenum (Mo)	0.008	Elongation (%)	32.200	Reduction Of Area (%)	62.100
Description:	BODY	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
		C.E.	0.378								

Supplier:	BN	Carbon (C)	0.192	Manganese (Mn)	0.922	Phosphorous (P)	0.031	Tensile (MPa)	570.000	Tensile (ksi)	82.671
Heat Code:	BND10D12	Sulfur (S)	0.015	Silicon (Si)	0.436	Copper (Cu)	0.038	Yield (MPa)	371.000	Yield (ksi)	53.809
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.035	Chromium (Cr)	0.053	Molybdenum (Mo)	0.004	Elongation (%)	35.400	Reduction Of Area (%)	59.100
Description:	BODY	Vanadium (V)	0.008					Heat Treatment	NORMALIZED		
		C.E.	0.364								

Supplier:	BN	Carbon (C)	0.187	Manganese (Mn)	0.868	Phosphorous (P)	0.034	Tensile (MPa)	575.000	Tensile (ksi)	83.397
Heat Code:	BND11D08	Sulfur (S)	0.009	Silicon (Si)	0.498	Copper (Cu)	0.032	Yield (MPa)	379.000	Yield (ksi)	54.969
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.051	Chromium (Cr)	0.072	Molybdenum (Mo)	0.010	Elongation (%)	31.600	Reduction Of Area (%)	57.000
Description:	BONNET	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
		C.E.	0.355								

Supplier:	BN	Carbon (C)	0.188	Manganese (Mn)	0.926	Phosphorous (P)	0.023	Tensile (MPa)	572.000	Tensile (ksi)	82.962
Heat Code:	BND13C29	Sulfur (S)	0.007	Silicon (Si)	0.397	Copper (Cu)	0.026	Yield (MPa)	379.000	Yield (ksi)	54.969
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.054	Chromium (Cr)	0.039	Molybdenum (Mo)	0.003	Elongation (%)	34.000	Reduction Of Area (%)	59.100
Description:	BONNET	Vanadium (V)	0.006					Heat Treatment	NORMALIZED		
		C.E.	0.357								

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INSPECTION CERTIFICATE
EN-10204-3.1

Certificate #: 74756

CHEMICALS								MECHANICALS			
Supplier :	BN	Carbon (C)	0.187	Manganese (Mn)	0.963	Phosphorous (P)	0.028	Tensile (MPa)	564.000	Tensile (ksi)	81.801
Heat Code :	BND13D29	Sulfur (S)	0.008	Silicon (Si)	0.466	Copper (Cu)	0.045	Yield (MPa)	367.000	Yield (ksi)	53.229
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.061	Chromium (Cr)	0.082	Molybdenum (Mo)	0.021	Elongation (%)	36.000	Reduction Of Area (%)	62.100
Description:	BONNET	Vanadium (V)	0.012					Heat Treatment	NORMALIZED		
		C.E.	0.378								

Supplier :	BN	Carbon (C)	0.200	Manganese (Mn)	0.900	Phosphorous (P)	0.031	Tensile (MPa)	583.000	Tensile (ksi)	84.557
Heat Code :	BND14C29	Sulfur (S)	0.009	Silicon (Si)	0.439	Copper (Cu)	0.034	Yield (MPa)	383.000	Yield (ksi)	55.549
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.036	Chromium (Cr)	0.052	Molybdenum (Mo)	0.007	Elongation (%)	32.000	Reduction Of Area (%)	59.100
Description:	BONNET	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
		C.E.	0.368								

Supplier :	BN	Carbon (C)	0.195	Manganese (Mn)	0.841	Phosphorous (P)	0.029	Tensile (MPa)	566.000	Tensile (ksi)	82.091
Heat Code :	BND16D16	Sulfur (S)	0.010	Silicon (Si)	0.419	Copper (Cu)	0.026	Yield (MPa)	355.000	Yield (ksi)	51.488
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.024	Chromium (Cr)	0.032	Molybdenum (Mo)	0.005	Elongation (%)	32.200	Reduction Of Area (%)	58.000
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED		
		C.E.	0.347								

Supplier :	BN	Carbon (C)	0.198	Manganese (Mn)	0.937	Phosphorous (P)	0.033	Tensile (MPa)	535.000	Tensile (ksi)	77.595
Heat Code :	BND20D22	Sulfur (S)	0.009	Silicon (Si)	0.435	Copper (Cu)	0.030	Yield (MPa)	350.000	Yield (ksi)	50.763
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.043	Chromium (Cr)	0.041	Molybdenum (Mo)	0.004	Elongation (%)	32.800	Reduction Of Area (%)	60.100
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED		
		C.E.	0.369								

Supplier :	BN	Carbon (C)	0.193	Manganese (Mn)	0.936	Phosphorous (P)	0.031	Tensile (MPa)	565.000	Tensile (ksi)	81.946
Heat Code :	BND21D13	Sulfur (S)	0.009	Silicon (Si)	0.481	Copper (Cu)	0.040	Yield (MPa)	383.000	Yield (ksi)	55.549
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.042	Chromium (Cr)	0.056	Molybdenum (Mo)	0.010	Elongation (%)	33.000	Reduction Of Area (%)	54.900
Description:	BONNET	Vanadium (V)	0.010					Heat Treatment	NORMALIZED		
		C.E.	0.370								

VELAN

INSPECTION CERTIFICATE
EN-10204-3.1

Certificate #: 74756

CHEMICALS								MECHANICALS					
Supplier:	BN	Carbon (C)	0.191	Manganese (Mn)	0.846	Phosphorous (P)	0.032	Tensile (MPa)	551.000	Tensile (ksi)	79.916		
Heat Code:	BND23D89	Sulfur (S)	0.008	Silicon (Si)	0.460	Copper (Cu)	0.029	Yield (MPa)	363.000	Yield (ksi)	52.649		
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.022	Chromium (Cr)	0.039	Molybdenum (Mo)	0.004	Elongation (%)	34.000	Reduction Of Area (%)	57.000		
Description:	BODY	Vanadium (V)	0.006					Heat Treatment	NORMALIZED				
		C.E.	0.345										
Supplier:	BN	Carbon (C)	0.186	Manganese (Mn)	0.926	Phosphorous (P)	0.029	Tensile (MPa)	566.000	Tensile (ksi)	82.091		
Heat Code:	BND24C31	Sulfur (S)	0.009	Silicon (Si)	0.435	Copper (Cu)	0.029	Yield (MPa)	363.000	Yield (ksi)	52.649		
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.028	Chromium (Cr)	0.039	Molybdenum (Mo)	0.006	Elongation (%)	31.600	Reduction Of Area (%)	58.000		
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED				
		C.E.	0.355										
Supplier:	BN	Carbon (C)	0.200	Manganese (Mn)	0.945	Phosphorous (P)	0.029	Tensile (MPa)	562.000	Tensile (ksi)	81.511		
Heat Code:	BND24D24	Sulfur (S)	0.010	Silicon (Si)	0.434	Copper (Cu)	0.028	Yield (MPa)	368.000	Yield (ksi)	53.374		
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.049	Chromium (Cr)	0.038	Molybdenum (Mo)	0.004	Elongation (%)	31.400	Reduction Of Area (%)	58.000		
Description:	BODY	Vanadium (V)	0.013					Heat Treatment	NORMALIZED				
		C.E.	0.374										
Supplier:	BN	Carbon (C)	0.200	Manganese (Mn)	0.958	Phosphorous (P)	0.033	Tensile (MPa)	597.000	Tensile (ksi)	86.588		
Heat Code:	BND25C26	Sulfur (S)	0.011	Silicon (Si)	0.438	Copper (Cu)	0.045	Yield (MPa)	387.000	Yield (ksi)	56.130		
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.052	Chromium (Cr)	0.051	Molybdenum (Mo)	0.007	Elongation (%)	35.000	Reduction Of Area (%)	58.000		
Description:	BODY	Vanadium (V)	0.008					Heat Treatment	NORMALIZED				
		C.E.	0.379										
Supplier:	BN	Carbon (C)	0.194	Manganese (Mn)	0.910	Phosphorous (P)	0.029	Tensile (MPa)	592.000	Tensile (ksi)	85.862		
Heat Code:	BND25D19	Sulfur (S)	0.009	Silicon (Si)	0.457	Copper (Cu)	0.030	Yield (MPa)	350.000	Yield (ksi)	50.763		
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.033	Chromium (Cr)	0.052	Molybdenum (Mo)	0.005	Elongation (%)	37.000	Reduction Of Area (%)	57.000		
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED				
		C.E.	0.363										

VELAN

INSPECTION CERTIFICATE
EN-10204-3.1

Certificate #: 74756

CHEMICALS								MECHANICALS			
Supplier :	BN	Carbon (C)	0.184	Manganese (Mn)	0.960	Phosphorous (P)	0.025	Tensile (MPa)	570.000	Tensile (ksi)	82.671
Heat Code :	BND27C26	Sulfur (S)	0.010	Silicon (Si)	0.392	Copper (Cu)	0.029	Yield (MPa)	371.000	Yield (ksi)	53.809
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.028	Chromium (Cr)	0.035	Molybdenum (Mo)	0.004	Elongation (%)	33.200	Reduction Of Area (%)	38.000
Description:	BODY	Vanadium (V)	0.006					Heat Treatment	NORMALIZED		
		C.E.	0.357								
Supplier :	BN	Carbon (C)	0.201	Manganese (Mn)	0.912	Phosphorous (P)	0.027	Tensile (MPa)	550.000	Tensile (ksi)	79.771
Heat Code :	BND27C30	Sulfur (S)	0.007	Silicon (Si)	0.406	Copper (Cu)	0.030	Yield (MPa)	359.000	Yield (ksi)	52.069
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.024	Chromium (Cr)	0.062	Molybdenum (Mo)	0.010	Elongation (%)	33.200	Reduction Of Area (%)	55.900
Description:	BODY	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
		C.E.	0.373								
Supplier :	BN	Carbon (C)	0.200	Manganese (Mn)	0.939	Phosphorous (P)	0.032	Tensile (MPa)	530.000	Tensile (ksi)	76.870
Heat Code :	BND28D03	Sulfur (S)	0.013	Silicon (Si)	0.444	Copper (Cu)	0.033	Yield (MPa)	359.000	Yield (ksi)	52.069
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.031	Chromium (Cr)	0.043	Molybdenum (Mo)	0.005	Elongation (%)	31.200	Reduction Of Area (%)	54.000
Description:	BODY	Vanadium (V)	0.008					Heat Treatment	NORMALIZED		
		C.E.	0.372								
Supplier :	BN	Carbon (C)	0.201	Manganese (Mn)	0.978	Phosphorous (P)	0.026	Tensile (MPa)	566.000	Tensile (ksi)	82.091
Heat Code :	BND29D05	Sulfur (S)	0.009	Silicon (Si)	0.394	Copper (Cu)	0.030	Yield (MPa)	363.000	Yield (ksi)	52.649
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.020	Chromium (Cr)	0.032	Molybdenum (Mo)	0.004	Elongation (%)	36.400	Reduction Of Area (%)	57.000
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED		
		C.E.	0.376								
Supplier :	BN	Carbon (C)	0.189	Manganese (Mn)	0.941	Phosphorous (P)	0.029	Tensile (MPa)	565.000	Tensile (ksi)	81.946
Heat Code :	BND30D04	Sulfur (S)	0.008	Silicon (Si)	0.462	Copper (Cu)	0.032	Yield (MPa)	359.000	Yield (ksi)	52.069
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.025	Chromium (Cr)	0.038	Molybdenum (Mo)	0.005	Elongation (%)	31.400	Reduction Of Area (%)	62.100
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED		
		C.E.	0.360								

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INSPECTION CERTIFICATE
EN-10204-3.1

Certificate #: 74756

	CHEMICALS						MECHANICALS			
Supplier: BN Heat Code: BND31C20 ASTM Code: A216-08-WCB- Description: BONNET	Carbon (C) Sulfur (S) Nickel (Ni) Vanadium (V) C.E.	0.200 0.013 0.031 0.008 0.372	Manganese (Mn) Silicon (Si) Chromium (Cr)	0.936 0.490 0.046	Phosphorous (P) Copper (Cu) Molybdenum (Mo)	0.028 0.035 0.004	Tensile (MPa) Yield (MPa) Elongation (%) Heat Treatment NORMALIZED	590.000 393.000 31.400	Tensile (ksi) Yield (ksi) Reduction Of Area (%)	85.572 56.710 58.000
Supplier: BN Heat Code: BND31C30 ASTM Code: A216-08-WCB- Description: BONNET	Carbon (C) Sulfur (S) Nickel (Ni) Vanadium (V) C.E.	0.187 0.008 0.029 0.007 0.353	Manganese (Mn) Silicon (Si) Chromium (Cr)	0.911 0.450 0.039	Phosphorous (P) Copper (Cu) Molybdenum (Mo)	0.027 0.032 0.005	Tensile (MPa) Yield (MPa) Elongation (%) Heat Treatment NORMALIZED	551.000 359.000 31.600	Tensile (ksi) Yield (ksi) Reduction Of Area (%)	79.916 52.069 61.100
Supplier: BN Heat Code: BND31D02 ASTM Code: A216-08-WCB- Description: BODY	Carbon (C) Sulfur (S) Nickel (Ni) Vanadium (V) C.E.	0.186 0.008 0.033 0.007 0.352	Manganese (Mn) Silicon (Si) Chromium (Cr)	0.907 0.475 0.039	Phosphorous (P) Copper (Cu) Molybdenum (Mo)	0.026 0.034 0.005	Tensile (MPa) Yield (MPa) Elongation (%) Heat Treatment NORMALIZED	569.000 367.000 31.600	Tensile (ksi) Yield (ksi) Reduction Of Area (%)	81.221 53.229 60.100
Supplier: BN Heat Code: BND31D04 ASTM Code: A216-08-WCB- Description: BODY	Carbon (C) Sulfur (S) Nickel (Ni) Vanadium (V) C.E.	0.201 0.013 0.023 0.007 0.365	Manganese (Mn) Silicon (Si) Chromium (Cr)	0.900 0.462 0.041	Phosphorous (P) Copper (Cu) Molybdenum (Mo)	0.028 0.029 0.004	Tensile (MPa) Yield (MPa) Elongation (%) Heat Treatment NORMALIZED	553.000 346.000 32.000	Tensile (ksi) Yield (ksi) Reduction Of Area (%)	80.206 50.183 60.100
Supplier: BN Heat Code: BND31D06 ASTM Code: A216-08-WCB- Description: BODY	Carbon (C) Sulfur (S) Nickel (Ni) Vanadium (V) C.E.	0.202 0.011 0.027 0.007 0.376	Manganese (Mn) Silicon (Si) Chromium (Cr)	0.958 0.477 0.037	Phosphorous (P) Copper (Cu) Molybdenum (Mo)	0.031 0.035 0.005	Tensile (MPa) Yield (MPa) Elongation (%) Heat Treatment NORMALIZED	573.000 387.000 35.000	Tensile (ksi) Yield (ksi) Reduction Of Area (%)	83.107 56.130 62.100

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INSPECTION CERTIFICATE
EN-10204-3.1

Certificate #: 74756

CHEMICALS

Supplier :	BN	Carbon (C)	0.199	Manganese (Mn)	0.847	Phosphorous (P)	0.032
Heat Code :	BND32C20	Sulfur (S)	0.013	Silicon (Si)	0.450	Copper (Cu)	0.027
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.027	Chromium (Cr)	0.038	Molybdenum (Mo)	0.004
Description:	BODY	Vanadium (V)	0.007				
		C.E.	0.354				

MECHANICALS

Tensile (MPa)	583.000	Tensile (ksi)	84.557
Yield (MPa)	387.000	Yield (ksi)	56.130
Elongation (%)	28.400	Reduction Of Area (%)	53.000
Heat Treatment	NORMALIZED		

Supplier :	BN	Carbon (C)	0.195	Manganese (Mn)	0.843	Phosphorous (P)	0.024
Heat Code :	BND32C26	Sulfur (S)	0.011	Silicon (Si)	0.438	Copper (Cu)	0.042
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.041	Chromium (Cr)	0.060	Molybdenum (Mo)	0.004
Description:	BODY	Vanadium (V)	0.008				
		C.E.	0.355				

Tensile (MPa)	554.000	Tensile (ksi)	80.351
Yield (MPa)	359.000	Yield (ksi)	52.069
Elongation (%)	33.000	Reduction Of Area (%)	54.900
Heat Treatment	NORMALIZED		

Supplier :	BN	Carbon (C)	0.187	Manganese (Mn)	0.971	Phosphorous (P)	0.024
Heat Code :	BND32C30	Sulfur (S)	0.006	Silicon (Si)	0.421	Copper (Cu)	0.027
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.026	Chromium (Cr)	0.045	Molybdenum (Mo)	0.006
Description:	BONNET	Vanadium (V)	0.007				
		C.E.	0.364				

Tensile (MPa)	559.000	Tensile (ksi)	81.076
Yield (MPa)	371.000	Yield (ksi)	53.809
Elongation (%)	33.000	Reduction Of Area (%)	54.900
Heat Treatment	NORMALIZED		

Supplier :	BN	Carbon (C)	0.197	Manganese (Mn)	0.885	Phosphorous (P)	0.033
Heat Code :	BND32D01	Sulfur (S)	0.010	Silicon (Si)	0.440	Copper (Cu)	0.031
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.038	Chromium (Cr)	0.037	Molybdenum (Mo)	0.004
Description:	BONNET	Vanadium (V)	0.008				
		C.E.	0.359				

Tensile (MPa)	611.000	Tensile (ksi)	88.618
Yield (MPa)	420.000	Yield (ksi)	60.916
Elongation (%)	26.800	Reduction Of Area (%)	45.000
Heat Treatment	NORMALIZED		

Supplier :	BN	Carbon (C)	0.201	Manganese (Mn)	0.984	Phosphorous (P)	0.032
Heat Code :	BND32D04	Sulfur (S)	0.012	Silicon (Si)	0.488	Copper (Cu)	0.028
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.021	Chromium (Cr)	0.035	Molybdenum (Mo)	0.006
Description:	BODY	Vanadium (V)	0.007				
		C.E.	0.378				

Tensile (MPa)	554.000	Tensile (ksi)	80.351
Yield (MPa)	355.000	Yield (ksi)	51.488
Elongation (%)	28.400	Reduction Of Area (%)	58.000
Heat Treatment	NORMALIZED		

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EN-10204-3.1

Certificate #: 74756

CHEMICALS

MECHANICALS

Supplier:	BN	Carbon (C)	0.189	Manganese (Mn)	0.873	Phosphorous (P)	0.029	Tensile (MPa)	555.000	Tensile (ksi)	80.496
Heat Code:	BND33D02	Sulfur (S)	0.010	Silicon (Si)	0.404	Copper (Cu)	0.031	Yield (MPa)	350.000	Yield (ksi)	50.763
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.023	Chromium (Cr)	0.038	Molybdenum (Mo)	0.005	Elongation (%)	35.400	Reduction Of Area (%)	59.100
Description:	BONNET	Vanadium (V)	0.008					Heat Treatment	NORMALIZED		
		C.E.	0.348								

Supplier:	BN	Carbon (C)	0.199	Manganese (Mn)	0.931	Phosphorous (P)	0.032	Tensile (MPa)	588.000	Tensile (ksi)	85.282
Heat Code:	BND33D06	Sulfur (S)	0.011	Silicon (Si)	0.426	Copper (Cu)	0.040	Yield (MPa)	379.000	Yield (ksi)	54.969
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.041	Chromium (Cr)	0.051	Molybdenum (Mo)	0.004	Elongation (%)	35.000	Reduction Of Area (%)	57.000
Description:	BONNET	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
		C.E.	0.372								

Supplier:	BN	Carbon (C)	0.200	Manganese (Mn)	0.890	Phosphorous (P)	0.032	Tensile (MPa)	559.000	Tensile (ksi)	81.076
Heat Code:	BND33D08	Sulfur (S)	0.011	Silicon (Si)	0.403	Copper (Cu)	0.040	Yield (MPa)	363.000	Yield (ksi)	52.649
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.044	Chromium (Cr)	0.059	Molybdenum (Mo)	0.005	Elongation (%)	34.000	Reduction Of Area (%)	62.100
Description:	BONNET	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
		C.E.	0.369								

Supplier:	BN	Carbon (C)	0.200	Manganese (Mn)	0.868	Phosphorous (P)	0.033	Tensile (MPa)	597.000	Tensile (ksi)	86.588
Heat Code:	BND33D10	Sulfur (S)	0.010	Silicon (Si)	0.439	Copper (Cu)	0.030	Yield (MPa)	375.000	Yield (ksi)	54.389
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.023	Chromium (Cr)	0.037	Molybdenum (Mo)	0.004	Elongation (%)	36.000	Reduction Of Area (%)	61.100
Description:	BODY	Vanadium (V)	0.007					Heat Treatment	NORMALIZED		
		C.E.	0.358								

Supplier:	BN	Carbon (C)	0.195	Manganese (Mn)	0.851	Phosphorous (P)	0.031	Tensile (MPa)	567.000	Tensile (ksi)	82.236
Heat Code:	BND14D02	Sulfur (S)	0.010	Silicon (Si)	0.478	Copper (Cu)	0.035	Yield (MPa)	367.000	Yield (ksi)	53.229
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.039	Chromium (Cr)	0.043	Molybdenum (Mo)	0.006	Elongation (%)	34.000	Reduction Of Area (%)	62.100
Description:	BONNET	Vanadium (V)	0.009					Heat Treatment	NORMALIZED		
		C.E.	0.353								

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EN-10204-3.1

Certificate #: 74756

CHEMICALS

Supplier :	BN	Carbon (C)	0.260	Manganese (Mn)	0.882	Phosphorous (P)	0.033
Heat Code :	BND34D04	Sulfur (S)	0.016	Silicon (Si)	0.428	Copper (Cu)	0.032
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.031	Chromium (Cr)	0.049	Molybdenum (Mo)	0.006
Description:	BODY	Vanadium (V)	0.008				
		C.E.	0.364				

MECHANICALS

Tensile (MPa)	553.000	Tensile (ksi)	80.206
Yield (MPa)	379.000	Yield (ksi)	54.969
Elongation (%)	35.000	Reduction Of Area (%)	60.100
Heat Treatment	NORMALIZED		

Supplier :	BN	Carbon (C)	0.187	Manganese (Mn)	0.957	Phosphorous (P)	0.034
Heat Code :	BND34D10	Sulfur (S)	0.016	Silicon (Si)	0.492	Copper (Cu)	0.039
ASTM Code:	A216-08-WCB-	Nickel (Ni)	0.035	Chromium (Cr)	0.061	Molybdenum (Mo)	0.005
Description:	BODY	Vanadium (V)	0.007				
		C.E.	0.366				

Tensile (MPa)	564.000	Tensile (ksi)	81.801
Yield (MPa)	359.000	Yield (ksi)	52.069
Elongation (%)	34.000	Reduction Of Area (%)	58.000
Heat Treatment	NORMALIZED		

Supplier :	BN	Carbon (C)	0.201	Manganese (Mn)	0.932	Phosphorous (P)	0.028
Heat Code :	BND36C26	Sulfur (S)	0.012	Silicon (Si)	0.413	Copper (Cu)	0.034
ASTM Code:	A216-08-WCB-(IT)Q	Nickel (Ni)	0.030	Chromium (Cr)	0.055	Molybdenum (Mo)	0.004
Description:	BODY	Vanadium (V)	0.008				
		C.E.	0.374				

Tensile (MPa)	579.000	Tensile (ksi)	83.977
Yield (MPa)	387.000	Yield (ksi)	56.130
Elongation (%)	28.400	Reduction Of Area (%)	54.800
Impact Energy 1 (FT-LB)	33.190	Impact Energy 2 (J)	45.000
Impact Energy 3 (FT-LB)	35.403	Impact Energy 4 (J)	48.000
Impact Energy 5 (FT-LB)	35.403	Impact Energy 6 (J)	48.000
Temperature (°F)	-20.200	Temperature (°C)	-29.000
Heat Treatment	QUEN & TEMP		

Velan certifies that all valve(s) described above are in compliance with purchase order and specification requirements.

Sacha Patton

Sacha Patton For,

Manager of Q.C. Documentation

01-AUG-2013

Date

Customer Representative

Date

OA Line 3
CPO 51

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

CPO: NL1A-DPH-2001 REV 4
CPO LINE: 23
TAG NO: 8-GF-03A10

Certificate No: KF-1401-01
DATE: 2014.01.13
SHEET 1 OF 1

PRESSURE TEST CERTIFICATE

Pressure Test (As per API 598)						Name of Valves: GATE VALVE
Item		Test Pressure (MPa)	Test Durations (Sec.)	Allowable Leakage Rate (max)	Result	Size & Class:8" 300 LB
Shell Test		7.8	120	0	OK	Quantity: 2
Backseat Test		5.8	60	0	OK	Valve Material: ASTM A216 WCB
Seat Test	Hydro	5.8	120	0	OK	PO No.: P31240
	Air	0.6	120	0	OK	CAT No.: GA03011XU-8"-GO
Valve requirement		API600 〔√〕	BS1873 〔 〕	BS1868 〔 〕		NACE MR 0175 〔 〕

Serial No.	Heat No.			Lot No.				
	Body	Bonnet	Wedge	Seat Ring	Stem	Back Seat	Bolt	Nut
KF813100348	A60624	A60713	A60612	A13067	S13082	T41012	...	...
KF813100349	A60624	A60624	A60627	A13067	S13082	T41012	...	...

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

Inspector 成 [illegible]

Reviewed by [illegible]

NL1A-DPH-2001
CPO#51 GF-03A00

YANCHENG H & M PRESSURE VALVE CO.,LTD	MATERIAL CERTIFICATE	Certificate No: KF-1401-01
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204.3.1)	Certificate Date: 2014/01/13
Tel: +86-515-8281015 Fax: +86-515-8281003	Customer: KF / P/O No: P31240 / QTY: 2	Material: ASTM A216 WCB
E-mail: ygf@public.yc.js.cn	Description: GATE VALVE8"300LB / CAT No:GA03011XU-8"-GO	Sheet 1 of 2

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.	0.035 Max.	0.035 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	A60624	0.204	0.860	0.028	0.019	0.451	0.049	0.057	0.175	0.025	0.005		519	272	29	36	169
BONNET	A60713	0.191	0.760	0.031	0.023	0.463	0.040	0.049	0.120	0.020	0.006		520	258	25	38	166
BONNET	A60624	0.204	0.860	0.028	0.019	0.451	0.049	0.057	0.175	0.025	0.005		519	272	29	36	169
WEDGE	A60612	0.213	0.700	0.028	0.020	0.451	0.046	0.055	0.151	0.024	0.004		510	266	32	37	164
WEDGE	A60627	0.211	0.750	0.026	0.022	0.470	0.047	0.053	0.202	0.022	0.006		523	270	29	40	168

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	MATERIAL CERTIFICATE	Certificate No: KF-1401-01
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204 2.2)	5Certificate Date: 2014/01/13
Tel: +86-515-8281015 Fax: +86-515-8281015	Customer: KF / P/O No: P31240 / QTY: 2	Sheet 2 of 2
E-mail: ygf@public.yc.js.cn	Description: GATE VALVE8"300LB / CAT No:GA03011XU-8"-GO	

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	A13067	0.190	0.240	0.800	0.013	0.021	0.050	0.050	0.006	0.070	0.029		540	310	35	62	168
Stem	ASTM A182 F6a	S13082	0.098	0.520	0.250	0.019	0.025	...	...	...	11.87	0.260		660	475	28	70	218
Back Seat	ASTM A276 410	T41012	0.110	0.350	0.470	0.005	0.022	...	...	...	11.78	...		616	423	27	71	265

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

OA line 3
CPO #51

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-1401-09
DATE: 2014.01.16
SHEET 1 OF 1

PRESSURE TEST CERTIFICATE

Pressure Test (As per API 598)						Name of Valves: GATE VALVE
Item		Test Pressure (MPa)	Test Durations (Sec.)	Allowable Leakage Rate (max)	Result	Size & Class:8" 300 LB
Shell Test		7.8	120	0	OK	Quantity: 5
Backseat Test		5.8	60	0	OK	Valve Material: ASTM A216 WCB
Seat Test	Hydro	5.8	120	0	OK	PO No.: P31240
	Air	0.6	120	0	OK	CAT No.: GA03011XU-8"-GO
Valve requirement		API600 〔√〕	BS1873 〔 〕	BS1868 〔 〕		NACE MR 0175 〔 〕

Serial No.	Heat No.			Lot No.				
	Body	Bonnet	Wedge	Seat Ring	Stem	Back Seat	Bolt	Nut
KF813100362 ✓	A60624	A60620	A60627	A13067	S13082	T41012	...	...
KF813100363 ✓	A60713	A60711	A60617	A13067	S13082	T41012	...	...
KF813100364 ✓	A60713	A60713	A60612	A13067	S13082	T41012	...	...
KF813100365	A60711	A60624	A60624	A13067	S13082	T41012	...	...
KF813100366 ✓	A60620	A60620	A60612	A13067	S13082	T41012	...	...

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

NLIA-DPH-2001
CPO#51 GF-03A00

YANCHENG H & M PRESSURE VALVE CO.,LTD	MATERIAL CERTIFICATE	Certificate No: KF-1401-09
No.6 Juheng Road Economic development Zone Yancheng City, China	(BS EN 10204.3.1)	Certificate Date: 2014/01/16
Tel: +86-515-8281015 Fax: +86-515-8281003	Customer: KF / P/O No: P31240 / QTY: 5	Material: ASTM A216 WCB
E-mail: ygf@public.yc.js.cn	Description: GATE VALVE8"300LB / CAT No:GA03011XU-8"-GO	Sheet 1 of 2

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.	0.035 Max.	0.035 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	A60624	0.204	0.860	0.028	0.019	0.451	0.049	0.057	0.175	0.025	0.005		519	272	29	36	169
BODY	A60713	0.191	0.760	0.031	0.023	0.463	0.040	0.049	0.120	0.020	0.006		520	258	25	38	166
BODY	A60711	0.206	0.800	0.035	0.025	0.488	0.045	0.050	0.138	0.025	0.002		508	258	27	39	168
BODY	A60620	0.190	0.750	0.027	0.018	0.414	0.049	0.055	0.158	0.024	0.006		509	260	24	37	159
BONNET	A60624	0.204	0.860	0.028	0.019	0.451	0.049	0.057	0.175	0.025	0.005		519	272	29	36	169
BONNET	A60713	0.191	0.760	0.031	0.023	0.463	0.040	0.049	0.120	0.020	0.006		520	258	25	38	166
BONNET	A60711	0.206	0.800	0.035	0.025	0.488	0.045	0.050	0.138	0.025	0.002		508	258	27	39	168
BONNET	A60620	0.190	0.750	0.027	0.018	0.414	0.049	0.055	0.158	0.024	0.006		509	260	24	37	159
WEDGE	A60612	0.213	0.700	0.028	0.020	0.451	0.046	0.055	0.151	0.024	0.004		510	266	32	37	164
WEDGE	A60627	0.211	0.750	0.026	0.022	0.470	0.047	0.053	0.202	0.022	0.006		523	270	29	40	168
WEDGE	A60624	0.204	0.860	0.028	0.019	0.451	0.049	0.057	0.175	0.025	0.005		519	272	29	36	169
WEDGE	A60617	0.185	0.780	0.032	0.023	0.459	0.054	0.063	0.176	0.028	0.007		511	256	25	36	170

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.*		

OA line 1 CPO# 20

Certificate of Conformance

Certificate #: 143460

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

Customer Name :	MRC GLOBAL COMPANY
Customer Po # :	N/A
Velan Order # :	014-999999-
Valve Design :	B16.34
Hydro Test Spec :	API-598
Test Result :	ACCEPTABLE

Certificate Date :	08-DEC-2014		
Item Number :	1	Position No :	
Quantity :	2		
Figure Number :	F-1064C-02TY		
Descrlption :	6" 300# CS BB GATE VLV		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES :
MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

ASTM Code: A216-08-WCB-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
★ BNB04L10	BODY	0.209	0.954	0.028	0.008	0.481	0.041	0.026	0.042	0.004	0.006
Heat Treatment		C.E.									
NORMALIZED		.3829									
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
★ BNC09B02	BONNET	0.199	0.936	0.023	0.008	0.494	0.035	0.048	0.038	0.004	0.007
Heat Treatment		C.E.									
NORMALIZED		.3703									
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND16C12	BODY	0.194	0.899	0.033	0.009	0.427	0.029	0.027	0.042	0.004	0.007
Heat Treatment		C.E.									
NORMALIZED		.3582									

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

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
542.0 / 78.6	342.0 / 49.6	30.6	60.0	/
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)
546.0 / 79.2	346.0 / 50.2	29.2	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)
584.0 / 84.7	398.0 / 57.7	34.4	58.0	/
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

08-DEC_2014
Date

Customer Representative

Date

NLIA - DPH - 2001
CPO# 20 GF-03A00

OA line 2 CPO# 36

Certificate of Conformance

VELAN

Certificate #: P4-132758

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 # :	S78H218462
Velan Order # :	M014-869527-W
Valve Design :	API-600
Hydro Test Spec :	API-600
Test Result :	ACCEPTABLE

Certificate Date :	03-JUL-2013		
Item Number :	09	Position No :	45
Quantity :	31		
Figure Number :	F14-1064C-02TY-W320		
Description :	VALVE 6" 300 GATE RF		
Draw No. & Rev :		REV	

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1

Tag Number(s) : NONE

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

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

ASTM Code: A216-08-WCB-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC04G01	BONNET	0.202	0.917	0.031	0.014	0.409	0.036	0.047	0.045	0.004	0.007	546.0 / 79.2	342.0 / 49.6	31.2	52.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
K BNC04G02	BONNET	0.198	0.903	0.030	0.010	0.473	0.039	0.048	0.047	0.007	0.007	567.0 / 82.2	359.0 / 52.1	29.4	47.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC06K04	BODY	0.202	0.902	0.029	0.010	0.483	0.041	0.047	0.065	0.006	0.011	546.0 / 79.2	350.0 / 50.8	28.8	60.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC07K02	BODY	0.190	0.968	0.019	0.016	0.500	0.046	0.069	0.142	0.010	0.006	591.0 / 85.7	387.0 / 56.1	28.8	49.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC09C22	BONNET	0.201	0.918	0.022	0.007	0.436	0.031	0.035	0.052	0.003	0.006	562.0 / 81.5	367.0 / 53.2	29.6	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC12D14	BONNET	0.202	0.949	0.035	0.011	0.413	0.038	0.048	0.047	0.005	0.008	546.0 / 79.2	346.0 / 50.2	30.6	60.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC15C16	BONNET	0.195	0.976	0.031	0.012	0.486	0.038	0.040	0.044	0.006	0.007	566.0 / 82.1	355.0 / 51.5	27.8	49.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		

NLIA-BPH-2001
CPO# 36 GF-03A00

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Certificate #: **P4-132758**

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC15H03	BONNET	0.207	0.929	0.032	0.010	0.473	0.042	0.053	0.050	0.007	0.008	550.0 / 79.8	346.0 / 50.2	29.0	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
* **BNC17H29**	BONNET	0.204	0.955	0.029	0.008	0.422	0.039	0.050	0.050	0.005	0.006	583.0 / 84.6	379.0 / 55.0	27.2	49.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC23G30	BONNET	0.194	0.969	0.025	0.008	0.453	0.036	0.069	0.048	0.007	0.007	575.0 / 83.4	367.0 / 53.2	29.6	55.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND01A02	BODY	0.192	0.981	0.025	0.008	0.416	0.030	0.027	0.048	0.004	0.006	595.0 / 86.3	403.0 / 58.5	26.8	49.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
* **BND01C06**	BODY	0.185	0.902	0.031	0.010	0.408	0.033	0.033	0.047	0.005	0.007	579.0 / 84.0	377.0 / 54.7	32.6	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND01C08	BODY	0.201	0.927	0.033	0.016	0.442	0.032	0.034	0.041	0.004	0.007	569.0 / 82.5	368.0 / 53.4	33.4	60.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND01C09	BODY	0.203	0.894	0.028	0.012	0.409	0.035	0.039	0.047	0.007	0.007	573.0 / 83.1	367.0 / 53.2	33.0	60.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND02A17	BODY	0.196	0.900	0.025	0.011	0.485	0.040	0.067	0.046	0.006	0.010	567.0 / 82.2	367.0 / 53.2	28.4	52.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND02C06	BODY	0.189	0.870	0.027	0.009	0.443	0.038	0.034	0.051	0.007	0.007	580.0 / 84.1	367.0 / 53.2	30.2	61.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		

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Certificate of Conformance

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Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND02C07	BODY	0.193	0.937	0.031	0.010	0.460	0.037	0.035	0.042	0.005	0.008	582.0 / 84.4	387.0 / 56.1	31.4	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND02C09	BODY	0.186	0.891	0.029	0.013	0.396	0.025	0.023	0.037	0.004	0.007	549.0 / 79.6	342.0 / 49.6	32.6	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND02D27	BODY	0.187	0.868	0.030	0.009	0.444	0.037	0.120	0.047	0.005	0.009	574.0 / 83.3	371.0 / 53.8	35.4	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND03C08	BODY	0.201	0.847	0.031	0.011	0.393	0.040	0.031	0.047	0.005	0.007	575.0 / 83.4	363.0 / 52.6	34.2	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND03C09	BODY	0.202	0.906	0.028	0.010	0.442	0.034	0.039	0.060	0.011	0.008	611.0 / 88.6	395.0 / 57.3	35.0	54.9	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND03C27	BODY	0.200	0.904	0.033	0.011	0.443	0.042	0.041	0.047	0.005	0.009	580.0 / 84.1	355.0 / 51.5	36.0	61.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND04C03	BONNET	0.190	0.830	0.027	0.009	0.417	0.038	0.038	0.040	0.005	0.009	547.0 / 79.3	330.0 / 47.9	31.6	62.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND04C08	BODY	0.189	0.912	0.023	0.009	0.405	0.037	0.031	0.045	0.005	0.008	583.0 / 84.6	391.0 / 56.7	32.0	63.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
K **BND04C09**	BONNET	0.209	0.835	0.034	0.011	0.455	0.035	0.035	0.049	0.006	0.008	585.0 / 84.8	359.0 / 52.1	32.6	61.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		

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Certificate of Conformance

Certificate #: P4-132758

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND05C23	BONNET	0.196	0.937	0.033	0.011	0.450	0.030	0.028	0.042	0.004	0.008	570.0 / 82.7	364.0 / 52.8	31.4	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
★ **BND09C22**	BONNET	0.192	0.858	0.025	0.010	0.394	0.028	0.027	0.041	0.004	0.007	579.0 / 84.0	387.0 / 56.1	28.6	53.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND10C17	BODY	0.188	0.928	0.028	0.009	0.427	0.026	0.022	0.032	0.004	0.007	577.0 / 83.7	375.0 / 54.4	30.6	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND11C18	BONNET	0.187	0.878	0.027	0.008	0.434	0.033	0.026	0.037	0.005	0.008	578.0 / 83.8	376.0 / 54.5	31.8	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND12C15	BODY	0.196	0.852	0.032	0.010	0.415	0.031	0.027	0.048	0.004	0.008	567.0 / 82.2	367.0 / 53.2	33.4	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
★ **BND13C15**	BODY	0.202	0.936	0.029	0.009	0.476	0.033	0.041	0.039	0.006	0.016	542.0 / 78.6	338.0 / 49.0	28.6	52.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND13C17	BODY	0.193	0.906	0.031	0.009	0.472	0.027	0.027	0.039	0.004	0.009	584.0 / 84.7	379.0 / 55.0	32.6	61.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND14C14	BONNET	0.201	0.885	0.030	0.012	0.422	0.024	0.021	0.064	0.004	0.007	587.0 / 85.1	387.0 / 56.1	28.6	49.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
★ **BND14C15**	BODY	0.194	0.870	0.029	0.010	0.458	0.025	0.021	0.033	0.004	0.006	558.0 / 80.9	359.0 / 52.1	28.6	54.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		

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Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND14C19	BODY	0.187	0.863	0.033	0.010	0.497	0.031	0.025	0.038	0.004	0.008	552.0 / 80.1	363.0 / 52.6	31.4	62.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND15C14	BONNET	0.185	0.852	0.034	0.010	0.440	0.030	0.027	0.046	0.005	0.007	560.0 / 81.2	363.0 / 52.6	32.4	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND15C15	BONNET	0.188	0.982	0.024	0.008	0.413	0.029	0.034	0.033	0.004	0.014	568.0 / 82.4	367.0 / 53.2	30.6	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND15C16	BONNET	0.192	0.935	0.034	0.010	0.433	0.029	0.029	0.056	0.004	0.007	573.0 / 83.1	379.0 / 55.0	32.2	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND15C17	BONNET	0.193	0.875	0.029	0.009	0.462	0.027	0.027	0.038	0.007	0.008	564.0 / 81.8	358.0 / 51.9	34.2	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND16C13	BODY	0.189	0.892	0.032	0.007	0.429	0.029	0.026	0.036	0.004	0.008	580.0 / 84.1	383.0 / 55.5	34.0	62.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND16D12	BODY	0.200	0.945	0.028	0.009	0.416	0.032	0.024	0.045	0.005	0.007	556.0 / 80.6	322.0 / 46.7	31.6	62.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND17A06	BODY	0.192	0.881	0.030	0.011	0.454	0.036	0.027	0.048	0.005	0.005	591.0 / 85.7	338.0 / 49.0	27.2	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND19C13	BODY	0.186	0.968	0.029	0.010	0.390	0.027	0.026	0.053	0.005	0.007	567.0 / 82.2	359.0 / 52.1	29.0	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		

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Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND19C15	BODY	0.194	0.907	0.029	0.012	0.391	0.029	0.031	0.046	0.005	0.011	567.0 / 82.2	351.0 / 50.9	29.6	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND25C20	BONNET	0.202	0.913	0.035	0.015	0.429	0.029	0.022	0.037	0.004	0.008	587.0 / 85.1	395.0 / 57.3	30.4	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND32D03	BODY	0.189	0.908	0.030	0.009	0.473	0.030	0.033	0.043	0.005	0.009	570.0 / 82.7	350.0 / 50.8	33.2	54.9	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND33B03	BONNET	0.189	0.931	0.031	0.008	0.414	0.034	0.034	0.044	0.009	0.008	570.0 / 82.7	326.0 / 47.3	30.8	61.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED												/ /		/ /		

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

03-JUL_2013

Date

Customer Representative

Date

OA line 2 CPO# 36

VELAN

Certificate of Conformance

Certificate #: 143460

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

Customer Name :	MRC GLOBAL COMPANY
Customer Po # :	N/A
Velan Order # :	014-999999-
Valve Design :	B16.34
Hydro Test Spec :	API-598
Test Result :	ACCEPTABLE

Certificate Date :	08-DEC-2014		
Item Number :	1	Position No :	
Quantity :	2		
Figure Number :	F-1064C-02TY		
Description :	6" 300# CS BB GATE 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: A216-08-WCB-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNB04L10	BODY	0.209	0.954	0.028	0.008	0.481	0.041	0.026	0.042	0.004	0.006	542.0 / 78.6	342.0 / 49.6	30.6	60.0	/
Heat Treatment		C.E.										Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED		.3829										/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNC09B02	BONNET	0.199	0.936	0.023	0.008	0.494	0.035	0.048	0.038	0.004	0.007	546.0 / 79.2	346.0 / 50.2	29.2	54.0	/
Heat Treatment		C.E.										Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED		.3703										/ /		/ /		
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
* BND16C12	BODY	0.194	0.899	0.033	0.009	0.427	0.029	0.027	0.042	0.004	0.007	584.0 / 84.7	398.0 / 57.7	34.4	58.0	/
Heat Treatment		C.E.										Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
NORMALIZED		.3582										/ /		/ /		

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

08-DEC_2014
Date

Customer Representative

Date

OA Line 1 CPO# 44 13

VELAN

Certificate of Conformance

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 # : S759225007
Velan Order # : M014-870277-W
Valve Design : API-600
Hydro Test Spec : API-600
Test Result : ACCEPTABLE

Certificate #: P4-134551

Certificate Date : 26-SEP-2013
Item Number : 01 Position No : 5
Quantity : 26
Figure Number : F10-0064C-02TY-W320
Description : VALVE 3" 150 GATE RF
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

ASTM Code: A216-09-WCB-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND02E29	BONNET	0.196	0.945	0.027	0.007	0.394	0.027	0.102	0.045	0.005	0.009

Heat Treatment
NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND03E30	BODY	0.193	0.875	0.032	0.010	0.441	0.039	0.046	0.043	0.007	0.008

Heat Treatment
NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND04E28	BONNET	0.189	0.900	0.024	0.007	0.474	0.042	0.012	0.065	0.025	0.010

Heat Treatment
NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND07F07	BONNET	0.192	0.841	0.029	0.009	0.450	0.032	0.032	0.042	0.004	0.006

Heat Treatment
NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND09E06	BODY	0.201	0.957	0.034	0.009	0.462	0.033	0.042	0.038	0.006	0.009

Heat Treatment
NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND11E27	BODY	0.195	0.880	0.030	0.009	0.494	0.032	0.068	0.052	0.007	0.009

Heat Treatment
NORMALIZED

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND12D13	BONNET	0.200	0.912	0.026	0.009	0.427	0.040	0.040	0.076	0.009	0.009

Heat Treatment
NORMALIZED

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

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
562.0 / 81.5	379.0 / 55.0	35.0	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)
565.0 / 81.9	367.0 / 53.2	35.0	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)
551.0 / 79.9	371.0 / 53.8	36.0	62.1	/
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)
551.0 / 79.9	359.0 / 52.1	33.0	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)
575.0 / 83.4	379.0 / 55.0	36.0	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)
579.0 / 84.0	379.0 / 55.0	33.0	62.1	/
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)
519.0 / 75.3	322.0 / 46.7	36.4	62.1	/
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

NL 1A - DPH- 2001
CPO# 44 GF-01A00

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Certificate #: P4-134551

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND14E16	BODY	0.199	0.853	0.029	0.010	0.407	0.041	0.044	0.054	0.009	0.012

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
563.0 / 81.7	369.0 / 53.5	34.0	58.0	/
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)
BND19E11	BODY	0.200	0.954	0.029	0.008	0.463	0.031	0.071	0.034	0.006	0.016

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
564.0 / 81.8	355.0 / 51.5	35.0	58.0	/
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)
BND23E11	BODY	0.199	0.943	0.029	0.007	0.464	0.032	0.036	0.040	0.007	0.015

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
551.0 / 79.9	346.0 / 50.2	32.0	62.1	/
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)
BND21E31	BODY	0.189	0.978	0.022	0.006	0.401	0.030	0.045	0.048	0.007	0.007

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
570.0 / 82.7	379.0 / 55.0	31.9	57.0	/
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)
BND24D18	BONNET	0.185	0.931	0.024	0.010	0.451	0.047	0.030	0.047	0.004	0.006

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
570.0 / 82.7	371.0 / 53.8	33.2	55.9	/
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)
BND16D22	BONNET	0.187	0.892	0.031	0.009	0.421	0.029	0.031	0.053	0.004	0.008

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
595.0 / 86.3	390.0 / 56.6	31.6	60.1	/
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)
BND27E30	BODY	0.200	0.954	0.031	0.010	0.488	0.040	0.050	0.060	0.009	0.009

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
597.0 / 86.6	387.0 / 56.1	35.0	57.0	/
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)
BND28D14	BONNET	0.200	0.936	0.032	0.012	0.417	0.042	0.050	0.070	0.012	0.011

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
616.0 / 89.3	396.0 / 57.4	35.0	57.0	/
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)
BND29E14	BODY	0.196	0.925	0.031	0.011	0.414	0.030	0.038	0.063	0.009	0.008

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
559.0 / 81.1	330.0 / 47.9	34.0	58.0	/
Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
/ /		/ /		

VELAN

Certificate of Conformance

Certificate #: P4-13-455I

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND30E24	BONNET	0.200	0.908	0.034	0.010	0.413	0.036	0.037	0.039	0.006	0.009

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
580.0 / 84.1	375.0 / 54.4	35.0	58.0	/

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)
BND32E17	BODY	0.199	0.871	0.028	0.010	0.425	0.038	0.061	0.070	0.010	0.009

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
562.0 / 81.5	367.0 / 53.2	31.0	57.0	/

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)
BND32E20	BODY	0.186	0.855	0.032	0.010	0.464	0.035	0.044	0.048	0.006	0.008

Heat Treatment
NORMALIZED

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
565.0 / 81.9	342.0 / 49.6	36.0	62.1	/

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.

Gilles Guertin for

Velan

26-SEP-2013

Date

Customer Representative

Date

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 50421-1030(80278099)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
WEDGE	WCB	61A30	0.18	0.77	0.45	0.01	0.016	0.088	0.038	0.02	0.024	0.001				0.334	495	315	37	64	171			
WEDGE	WCB	51A57	0.19	0.84	0.49	0.01	0.017	0.086	0.053	0.011	0.023	0.001				0.355	495	340	36	62	170			
BODY	WCB	F3855	0.194	0.987	0.45	0.01	0.021	0.099	0.028	0.008	0.01	0.002				0.383	530	350	30	45	163			
BONNET	WCB	F3827	0.194	0.993	0.443	0.007	0.027	0.193	0.051	0.021	0.017	0.005				0.408	540	350	28	49	170			
BONNET	WCB	F3644	0.207	1.068	0.413	0.008	0.027	0.112	0.039	0.013	0.018	0.004				0.415	560	365	28	40	170			
BODY	WCB	F3872	0.194	1.011	0.482	0.008	0.028	0.139	0.044	0.015	0.02	0.005				0.399	525	275	28	47	163			
BODY	WCB	F3854	0.186	1.013	0.414	0.009	0.023	0.13	0.045	0.015	0.018	0.004				0.389	530	355	30	41	163			
BONNET	WCB	F3825	0.194	0.979	0.398	0.008	0.031	0.116	0.049	0.014	0.019	0.004				0.389	525	345	28	46	163			
BODY	WCB	F3857	0.184	1.095	0.457	0.006	0.026	0.099	0.032	0.012	0.017	0.003				0.393	540	355	30	49	170			
BODY	WCB	F3828	0.195	1.057	0.413	0.008	0.026	0.075	0.026	0.007	0.014	0.004				0.391	535	350	29	42	159			
BODY	WCB	F3870	0.194	1.04	0.427	0.006	0.023	0.18	0.07	0.026	0.019	0.005				0.415	550	335	28	52	179			
BODY	WCB	F3711	0.188	1.021	0.418	0.008	0.026	0.134	0.053	0.017	0.017	0.004				0.394	530	345	28	41	170			
BONNET	WCB	F3761	0.197	1.015	0.426	0.007	0.029	0.082	0.032	0.01	0.018	0.004				0.389	540	355	26	42	170			

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. 50421-1030(80278099)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
WEDGE	WCB	61A33	0.2	0.76	0.44	0.017	0.018	0.069	0.024	0.01	0.01	0.001				0.345	510	335	34	59	169			

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

VELAN

Certificate of Conformance

OA Line 6 CPO 144

Certificate #: P4-136702

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 # :	S759225007
Velan Order # :	M014-870277-W
Valve Design :	API-600
Hydro Test Spec :	API-600
Test Result :	ACCEPTABLE

Certificate Date :	02-JAN-2014		
Item Number :	13	Position No :	65
Quantity :	14		
Figure Number :	F08-0064C-31NB-W320		
Description :	VALVE 2" 150 GATE RF		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1

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

VALVE(S) MEET(S) NACE MR0175

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

ASTM Code: A352-06-LCB/LCC-

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

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Heat Treatment
BND51D05	BODY	0.191	0.939	0.029	0.010	0.438	0.030	0.281	0.035	0.005	0.007	QUEN & TEMP
BND51D21	BONNET	0.200	0.950	0.030	0.012	0.414	0.029	0.259	0.043	0.005	0.007	QUEN & TEMP
BND51F14	BONNET	0.192	0.870	0.027	0.008	0.466	0.033	0.253	0.055	0.010	0.006	QUEN & TEMP
BND53D07	BODY	0.187	0.852	0.027	0.009	0.484	0.031	0.252	0.034	0.004	0.006	QUEN & TEMP
BND53F11	BODY	0.191	0.888	0.029	0.012	0.391	0.035	0.262	0.041	0.004	0.008	QUEN & TEMP
BND54F10	BODY	0.200	0.939	0.031	0.011	0.449	0.037	0.269	0.044	0.004	0.008	QUEN & TEMP

Heat Code	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51D05	600.0 / 87.0	375.0 / 54.4	31.4	60.1	/
BND51D21	583.0 / 84.6	383.0 / 55.5	29.0	56.0	/
BND51F14	587.0 / 85.1	395.0 / 57.3	29.4	57.0	/
BND53D07	578.0 / 83.8	363.0 / 52.6	32.2	61.1	/
BND53F11	599.0 / 86.9	399.0 / 57.9	29.0	55.0	/
BND54F10	546.0 / 79.2	346.0 / 50.2	29.8	57.0	/

Heat Code	Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
BND51D05	45.0 / 48.0 / 46.0	-46.0	33.2 / 35.4 / 33.9	-50.8		
BND51D21	41.0 / 45.0 / 42.0	-46.0	30.2 / 33.2 / 31.0	-50.8		
BND51F14	40.0 / 43.0 / 46.0	-46.0	29.5 / 31.7 / 33.9	-50.8		
BND53D07	48.0 / 43.0 / 47.0	-46.0	35.4 / 31.7 / 34.7	-50.8		
BND53F11	42.0 / 48.0 / 44.0	-46.0	31.0 / 35.4 / 32.5	-50.8		
BND54F10	40.0 / 44.0 / 45.0	-46.0	29.5 / 32.5 / 33.2	-50.8		

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CPO# 144 GF-01100

VELAN

Certificate of Conformance

Certificate #: P4-136702

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND54F11	BONNET	0.201	0.901	0.030	0.008	0.491	0.032	0.257	0.054	0.011	0.007	594.0 / 86.2	407.0 / 59.0	35.0	59.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												43.0 / 45.0 / 45.0	-46.0	31.7 / 33.2 / 33.2	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND55D19	BONNET	0.195	0.853	0.024	0.009	0.407	0.032	0.275	0.039	0.006	0.007	575.0 / 83.4	367.0 / 53.2	29.6	55.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												45.0 / 43.0 / 42.0	-46.0	33.2 / 31.7 / 31.0	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND55F10	BODY	0.192	0.851	0.030	0.007	0.433	0.042	0.266	0.042	0.005	0.012	554.0 / 80.4	363.0 / 52.6	28.8	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												44.0 / 47.0 / 41.0	-46.0	32.5 / 34.7 / 30.2	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND60G28	BONNET	0.197	0.860	0.025	0.016	0.476	0.035	0.263	0.033	0.001	0.001	610.0 / 88.5	428.0 / 62.1	35.0	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												46.0 / 42.0 / 45.0	-46.0	33.9 / 31.0 / 33.2	-50.8	

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.

Mikael Bouchard for
Manager of Q.C. Documentation

02-JAN_2014
Date

Customer Representative

Date

Certificate of Conformance

Certificate #: P4-136699

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 # :	S759228499
Velan Order # :	M014-870642-W
Valve Design :	API-600
Hydro Test Spec :	API-600
Test Result :	ACCEPTABLE

Certificate Date :	02-JAN-2014		
Item Number :	16	Position No :	80
Quantity :	11		
Figure Number :	F08-0064C-31NB-W320		
Description :	VALVE 2" 150 GATE RF		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1

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

VALVE(S) MEET(S) NACE MR0175

MATERIAL TEST RESULTS SHOWN BELOW:

CHEMICALS

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

ASTM Code: A352-06-LCB/LCC-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51D05	BODY	0.191	0.939	0.029	0.010	0.438	0.030	0.281	0.035	0.005	0.007	600.0 / 87.0	375.0 / 54.4	31.4	60.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												45.0 / 48.0 / 46.0	-46.0	33.2 / 35.4 / 33.9	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51D21	BONNET	0.200	0.950	0.030	0.012	0.414	0.029	0.259	0.043	0.005	0.007	583.0 / 84.6	383.0 / 55.5	29.0	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												41.0 / 45.0 / 42.0	-46.0	30.2 / 33.2 / 31.0	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51E02	BONNET	0.195	0.983	0.030	0.006	0.434	0.030	0.264	0.048	0.008	0.012	591.0 / 85.7	395.0 / 57.3	28.4	52.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												47.0 / 41.0 / 42.0	-46.0	34.7 / 30.2 / 31.0	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51F14	BONNET	0.192	0.870	0.027	0.008	0.466	0.033	0.253	0.055	0.010	0.006	587.0 / 85.1	395.0 / 57.3	29.4	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												40.0 / 43.0 / 46.0	-46.0	29.5 / 31.7 / 33.9	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND52F11	BODY	0.201	0.873	0.032	0.008	0.404	0.031	0.251	0.032	0.004	0.007	546.0 / 79.2	346.0 / 50.2	28.6	54.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												43.0 / 46.0 / 48.0	-46.0	31.7 / 33.9 / 35.4	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND53F11	BODY	0.191	0.888	0.029	0.012	0.391	0.035	0.262	0.041	0.004	0.008	599.0 / 86.9	399.0 / 57.9	29.0	55.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												42.0 / 48.0 / 44.0	-46.0	31.0 / 35.4 / 32.5	-50.8	

VELAN

Certificate of Conformance

Certificate #: P4-136699

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND54F11	BONNET	0.201	0.901	0.030	0.008	0.491	0.032	0.257	0.054	0.011	0.007	594.0 / 86.2	407.0 / 59.0	35.0	59.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												43.0 / 45.0 / 45.0	-46.0	31.7 / 33.2 / 33.2	-50.8	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND55F10	BODY	0.192	0.851	0.030	0.007	0.433	0.042	0.266	0.042	0.005	0.012	554.0 / 80.4	363.0 / 52.6	28.8	56.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												44.0 / 47.0 / 41.0	-46.0	32.5 / 34.7 / 30.2	-50.8	

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.

Mikael Bouchard for
Manager of Q.C. Documentation

02-JAN_2014
Date

Customer Representative

Date

OA Line 7 CPO 145

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 53001-40(80317191)
DATE: 2014-12-6

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	6	10289143	3G1RC12-NC-000	GATE VALVE,3G1R,L21/12 [-LLC-WEB,-GBR] GATE VALVE,3,150LB ASTM A352 LCC,F316/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003945MRC_S 759 248	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.

NLIA-DPH-2001
CPO#145 GF-01L00

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. 53001-40(80317191)
DATE: 2014.12.6

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
53001-040-1	X2880	X1725	6365L	53001-040-2	X2880	X1725	6365L	53001-040-3	X2880	X1725	6365L	53001-040-4	X2880	X1725	6365L
53001-040-5	X2880	X1725	6365L	53001-040-6	X2880	X1725	6365L								

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. 53001-40(80317191)
DATE: 2014.12.6

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	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	6365L	0.218	1.044	0.399	0.013	0.021	0.025	0.013	0.001	0.022	0.003				0.4	525	355	32	65	159	28	29	32
BONNET	LCC	X1725	0.229	1.088	0.382	0.011	0.02	0.044	0.022	0.004	0.022	0.002				0.423	590	435	31	63	170	58	71	64
BODY	LCC	X2880	0.211	1.081	0.438	0.014	0.026	0.042	0.019	0.005	0.021	0.003				0.404	550	395	33	61	163	50	49	50

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

07 Line 8000 146

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 36582-350(80139307)
DATE: 2014-12-6

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10178985	4G3RA8-000	GATE VALVE,4G3R,C00/8 [-LLC-WEB,] GATE VALVE,4,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSIONLOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6001275MRC_S75911022	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.

NLIA - DPH-2007
CPD#146 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

EN 10204 2004-3.1

TC No. 36582-350(80139307)
DATE: 2014.12.6

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
36582-350-9	1H736	1H304	5A486												

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. 36582-350(80139307)
DATE: 2014.12.6

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	5A486	0.13	0.86	0.86	0.01	0.026	12.47	0.18	0.025							730	565	22	52	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

EN 10204 2004-3.1

TC NO. 36582-350(80139307)
DATE: 2014.12.6

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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BODY	WCB	1H736	0.213	1.01	0.399	0.008	0.026	0.038	0.023	0.008	0.024	0.003				0.394	590	405	33	56	167			
BONNET	WCB	1H304	0.203	1.053	0.435	0.007	0.03	0.048	0.017	0.014	0.021	0.002				0.394	585	380	33	57	146			

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

VELAN

Certificate of Conformance

Certificate #: P4-141943 OA Line 9 CPO#147

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 # :	S759248808
Velan Order # :	M014-872767-W
Valve Design :	API-600
Hydro Test Spec :	API-600
Test Result :	ACCEPTABLE

Certificate Date :	17-SEP-2014		
Item Number :	10	Position No :	50
Quantity :	3		
Figure Number :	F14-0064C-31NB		
Description :	VALVE 6" 150 GATE RF		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1

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

VALVE(S) WERE CLEANED, INSPECTED, PACKAGED AND LABELLED IN COMPLIANCE VEL-QCI-1794, REVISION 6 FOR OXYGEN SERVICE P

MATERIAL TEST RESULTS SHOWN BELOW:

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

ASTM Code: A352-06-LCB/LCC-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
* BNE52B27	BONNET	0.191	0.928	0.025	0.009	0.442	0.028	0.279	0.038	0.004	0.007	574.0 / 83.3	399.0 / 57.9	32.0	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												43.0 / 46.0 / 42.0	-46.0	31.7 / 33.9 / 31.0	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNE53B26	BODY	0.197	0.867	0.031	0.010	0.470	0.031	0.265	0.042	0.005	0.006	591.0 / 85.7	407.0 / 59.0	31.0	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												45.0 / 43.0 / 44.0	-46.0	33.2 / 31.7 / 32.5	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
* BNE55C02	BODY	0.192	0.947	0.026	0.008	0.415	0.037	0.285	0.040	0.005	0.006	505.0 / 73.2	326.0 / 47.3	33.0	62.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												42.0 / 43.0 / 43.0	-46.0	31.0 / 31.7 / 31.7	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BNE58C01	BONNET	0.192	0.900	0.028	0.009	0.440	0.037	0.272	0.043	0.005	0.007	560.0 / 81.2	350.0 / 50.8	31.0	57.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												45.0 / 42.0 / 49.0	-46.0	33.2 / 31.0 / 36.1	-50.8	

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.

NLIA-DPH-2001
CPO#147 GF-01L00

Gilles Guertin for
Velan

17-SEP_2014
Date

Customer Representative

Date

OA 4ne 10 CP0149

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 37685-50(80151042)
DATE: 2014-12-6

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM TX 77477 10749 CASH RD. STAFFORD USA	1	10678522	8G1RA8-G-000	GATE VALVE,8G1R-G,C00/8 [-BA00-LLC-WEB,-GBR] GATE VALVE,8,150LB ASTM A216 WCB,F6A/HF RAISED FACE END,GEAR OPERATED,LOW EMISSIONGEAR OPERATED,LOW EMISSI

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.

NLIA-DPH-2001
CPO#149 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

EN 10204 2004-3.1

TC No. 37685-50(80151042)
DATE: 2014.12.6

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
37685-050-339	5H392	5H023	7A426												

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. 37685-50(80151042)
DATE: 2014.12.6

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	7A426	0.12	0.78	0.83	0.01	0.024	12.55	0.143	0.01							704	505	21	49	262			

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. 37685-50(80151042)
DATE: 2014.12.6

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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	5H023	0.198	1.068	0.441	0.01	0.024	0.04	0.03	0.016	0.036	0.005				0.393	585	390	32	53	156			
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			

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 11 CP0151

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-180(80244350)
DATE: 2014-12-6
PAGE: 1 OF 8

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	8	10460982	10G3RA8-G	GATE VALVE,10G3R-A,C00/8 [-BA0C-LLC-OF35-WEB,] GATE VALVE,10,300LB ASTM A216 WCB,F6A/HF RAISED FACE END,GEAR OPERATED,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
	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.

NLIA- DPH- 2001
CPO#151 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

EN 10204 2004-3.1

TC No. 47219-180(80244350)
DATE: 2014.12.6

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
47219-180-1	F0965	F2443	44A24	47219-180-2	F0960	F2443	44A26	47219-180-3	F1091	F2755	44A23	47219-180-4	F0892	F2698	44A27
47219-180-5	F1105	F2666	44A30	47219-180-6	F1091	F2296	44A30	47219-180-7	F1481	F2711	44A27	47219-180-8	F1819	F2699	44A26

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-180(80244350)
DATE: 2014.12.6

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	MBE010	0.44	0.58	0.24	0.024	0.018														295			

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NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-180(80244350)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
A105N	NORMALIZE	850~920 (1562~1688°F)	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	YXCE102	0.21	0.94	0.21	0.012	0.015	0.04	0.02	0.02	0.04	0.02				0.387	505	330	29	63	152			

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MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-180(80244350)
DATE: 2014.12.6

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	C.E.	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	ADF007	0.4	0.76	0.21	0.009	0.017	0.96		0.165							920	828	19	56	270			

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NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-180(80244350)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
F6A-II	NORMALIZE	980 ~1050 (NaN~1922°F)	1H/25MM,≥1H	AIR	ELECTRIC
F6A-II	TEMPER	≥675 (≥167°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	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	DDA035	0.13	0.38	0.44	0.01	0.026	11.9	0.16								606	398	19	38	219			

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-180(80244350)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	F2296	0.182	0.989	0.41	0.007	0.019	0.089	0.029	0.008	0.014	0.003				0.37	500	325	28	45	159			
BONNET	WCB	F2755	0.183	0.997	0.403	0.007	0.021	0.118	0.04	0.014	0.021	0.005				0.381	515	320	30	62	159			
BODY	WCB	F0892	0.197	1.042	0.432	0.01	0.026	0.126	0.039	0.021	0.023	0.004				0.405	530	360	27	47	163			
BODY	WCB	F1481	0.193	1.038	0.435	0.007	0.007	0.105	0.032	0.011	0.017	0.004				0.393	535	355	27	46	163			
WEDGE	WCB	44A24	0.2	0.82	0.48	0.017	0.015	0.067	0.03	0.011	0.036	0.001				0.357	530	335	36	64	167			
BONNET	WCB	F2443	0.191	0.976	0.54	0.01	0.023	0.262	0.089	0.025	0.021	0.006				0.42	565	405	27	46	170			
BODY	WCB	F1105	0.193	0.967	0.397	0.007	0.02	0.264	0.06	0.029	0.021	0.007				0.42	555	370	30	47	179			
BODY	WCB	F1819	0.197	1.036	0.42	0.008	0.021	0.116	0.044	0.021	0.015	0.003				0.402	510	320	30	56	163			
WEDGE	WCB	44A26	0.2	0.8	0.48	0.014	0.021	0.046	0.017	0.011	0.021	0.001				0.347	570	410	30	66	166			
BODY	WCB	F1091	0.183	1.084	0.458	0.006	0.018	0.082	0.026	0.008	0.016	0.005				0.385	535	370	30	46	170			
BODY	WCB	F0965	0.204	0.994	0.384	0.007	0.026	0.111	0.034	0.014	0.022	0.004				0.399	515	330	31	48	163			
WEDGE	WCB	44A27	0.2	0.9	0.5	0.011	0.01	0.118	0.014	0.01	0.027	0.001				0.379	545	365	30	59	172			
BONNET	WCB	F2711	0.183	1.026	0.452	0.01	0.025	0.143	0.04	0.02	0.023	0.005				0.392	520	340	27	55	163			

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 47219-180(80244350)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	F2699	0.192	1.032	0.435	0.009	0.025	0.118	0.047	0.01	0.018	0.004				0.395	535	350	30	52	167			
BONNET	WCB	F2666	0.189	0.988	0.388	0.009	0.022	0.105	0.043	0.009	0.016	0.005				0.381	525	335	31	55	170			
WEDGE	WCB	44A30	0.19	0.81	0.44	0.011	0.023	0.159	0.02	0.016	0.014	0.001				0.362	530	350	34	68	174			
BODY	WCB	F0960	0.203	0.98	0.415	0.009	0.027	0.218	0.063	0.032	0.037	0.005				0.424	535	330	34	48	170			
WEDGE	WCB	44A23	0.19	0.8	0.48	0.018	0.014	0.111	0.036	0.011	0.03	0.001				0.352	550	390	32	60	172			
BONNET	WCB	F2698	0.2	1.052	0.472	0.008	0.022	0.106	0.033	0.007	0.015	0.004				0.402	535	340	26	47	163			

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

OA Line1 CPO156

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 48489-790(80252017)
DATE: 2014-12-6

CUSTOMER	QUANTITY	PART NO.	PRODUCT CODE	PRODUCT DESCRIPTION
NEWAY VALVE INTERNATIONAL, INC-MRM 9757 Stafford Centre Rd., Stafford USA USA	1	10689933	2G1RA8-000	GATE VALVE,2G1R V3,C00/8 [-LLC-WEB,-GBR] GATE VALVE,2,150LB ASTM A216 WCB,F6A/HF RAISED FACE END,LOW EMISSION

PURCHASE ORDER:	PRESSURE TEST (Mpa/PSI)				OTHER INSPECTION			
6003239MRC_S 78H 218	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.

NLIA- DPH-2001
CPO#156 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.

WITNESSED BY: _____

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. 48489-790(80252017) DATE: 2014.12.6 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
48489-790-85	41L41	065L3	31A39												

NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 48489-790(80252017)
DATE: 2014.12.6

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	670±10 (1238±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	31A39	0.14	0.9	1.03	0.01	0.03	13	0.113	0.015							742	531	21	50	259			

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NEWAY

MATERIAL TEST REPORT

EN 10204 2004-3.1

TC NO. 48489-790(80252017)
DATE: 2014.12.6

MATERIAL COMPONENTS AND PROPERTIES:

Material	Heat treatment	Temp.°C(°F)	Holding time(h)	Cooling media	Furnace
WCB	NORMALIZE	920~940 (1688~1724°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	0.03	0.035	0.5	0.5	0.2	0.3	0.03					655				237			
		MIN.															485	250	22	35	135			
BONNET	WCB	065L3	0.207	0.99	0.395	0.013	0.028	0.045	0.018	0.024	0.028	0.009				0.391	550	355	29	53	167			
BODY	WCB	41L41	0.215	1.086	0.485	0.013	0.019	0.025	0.017	0.001	0.019	0.006				0.405	520	330	28	56	158			

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 58

Certificate of Conformance

Certificate #: P4-139239 CPO# 157

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 # :	S759248808
Velan Order # :	M014-872767-W
Valve Design :	API-600
Hydro Test Spec :	API-600
Test Result :	ACCEPTABLE

Certificate Date :	29-APR-2014		
Item Number :	08	Position No :	40
Quantity :	8		
Figure Number :	F08-0064C-31NB-W320		
Description :	VALVE 2" 150 GATE RF		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1

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

ASTM Code: A352-06-LCB/LCC-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND51L26	BODY	0.195	0.920	0.033	0.009	0.478	0.033	0.266	0.042	0.007	0.007
BND51L28	BONNET	0.194	0.947	0.030	0.008	0.410	0.035	0.286	0.042	0.007	0.007
BND51L29	BONNET	0.192	0.944	0.029	0.008	0.404	0.035	0.282	0.042	0.007	0.007
BND52L26	BONNET	0.191	0.954	0.024	0.007	0.452	0.037	0.274	0.051	0.009	0.008
BND52L27	BODY	0.187	0.939	0.028	0.013	0.468	0.036	0.260	0.041	0.006	0.005
BND52L27	BONNET	0.187	0.939	0.028	0.013	0.468	0.036	0.260	0.041	0.006	0.005

Heat Treatment: QUEN & TEMP

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

Heat Code	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51L26	579.0 / 84.0	395.0 / 57.3	33.0	61.0	/
BND51L28	585.0 / 84.8	412.0 / 59.8	33.0	61.0	/
BND51L29	584.0 / 84.7	412.0 / 59.8	31.0	58.0	/
BND52L26	589.0 / 85.4	387.0 / 56.1	33.2	61.1	/
BND52L27	574.0 / 83.3	392.0 / 56.9	31.0	61.0	/
BND52L27	574.0 / 83.3	392.0 / 56.9	31.0	61.0	/

Heat Code	Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
BND51L26	43.0 / 52.0 / 43.0	-46.0	31.7 / 38.4 / 31.7	-50.8		
BND51L28	62.0 / 47.0 / 51.0	-46.0	45.7 / 34.7 / 37.6	-50.8		
BND51L29	44.0 / 57.0 / 61.0	-46.0	32.5 / 42.0 / 45.0	-50.8		
BND52L26	42.0 / 47.0 / 42.0	-46.0	31.0 / 34.7 / 31.0	-50.8		
BND52L27	72.0 / 81.0 / 64.0	-46.0	53.1 / 59.7 / 47.2	-50.8		
BND52L27	72.0 / 81.0 / 64.0	-46.0	53.1 / 59.7 / 47.2	-50.8		

NLIA - DPH - 2001
CPO# 157 GF-01L00

VELAN

Certificate of Conformance

Certificate #: P4-139239

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND53L27	BODY	0.191	0.878	0.028	0.008	0.398	0.034	0.259	0.051	0.005	0.009

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
596.0 / 86.4	416.0 / 60.3	31.0	61.0	/
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
67.0 / 90.0 / 53.0	-46.0	49.4 / 66.4 / 39.1	-50.8	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
✓**BND53M10**	BONNET	0.199	0.937	0.031	0.008	0.410	0.030	0.270	0.043	0.003	0.006

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
545.0 / 79.0	344.0 / 49.9	33.2	61.1	/
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
43.0 / 49.0 / 44.0	-46.0	31.7 / 36.1 / 32.5	-50.8	

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND54L27	BONNET	0.193	0.892	0.029	0.011	0.425	0.034	0.259	0.040	0.006	0.006

Heat Treatment
QUEN & TEMP

Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
606.0 / 87.9	424.0 / 61.5	31.0	61.0	/
Impact Energy (J)	**Temperature (°C)**	**Impact Energy (ft-lb)**	**Temperature (°F)**	**F/B GS**
57.0 / 50.0 / 51.0	-46.0	42.0 / 36.9 / 37.6	-50.8	

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

29-APR_2014
Date

Customer Representative

Date

VELAN

Certificate of Conformance

Certificate #: P4-139517

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 # :	S759258276
Velan Order # :	M014-874039-W
Valve Design :	API-600
Hydro Test Spec :	API-600
Test Result :	ACCEPTABLE

Certificate Date :	13-MAY-2014		
Item Number :	06	Position No :	30
Quantity :	12		
Figure Number :	F08-0064C-31NB-W320		
Description :	VALVE 2" 150 GATE RF		
Draw No. & Rev :		REV	

Tag Number(s) : NONE

NOTES : ALL TESTS AND EXAMINATIONS MEET EN 10204-3.1/ ISO 10474-3.1

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

ASTM Code: A352-06-LCB/LCC-

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)
BND51L26	BODY	0.195	0.920	0.033	0.009	0.478	0.033	0.266	0.042	0.007	0.007
BND51L27	BODY	0.190	0.889	0.030	0.010	0.426	0.034	0.257	0.040	0.006	0.006
BND51L28	BONNET	0.194	0.947	0.030	0.008	0.410	0.035	0.286	0.042	0.007	0.007
BND51L29	BONNET	0.192	0.944	0.029	0.008	0.404	0.035	0.282	0.042	0.007	0.007
BND52L26	BODY	0.191	0.954	0.024	0.007	0.452	0.037	0.274	0.051	0.009	0.008
BND52L27	BODY	0.187	0.939	0.028	0.013	0.468	0.036	0.260	0.041	0.006	0.005

Heat Treatment: QUEN & TEMP

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

Heat Code	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND51L26	579.0 / 84.0	395.0 / 57.3	33.0	61.0	/
BND51L27	597.0 / 86.6	416.0 / 60.3	33.0	58.0	/
BND51L28	585.0 / 84.8	412.0 / 59.8	33.0	61.0	/
BND51L29	584.0 / 84.7	412.0 / 59.8	31.0	58.0	/
BND52L26	589.0 / 85.4	387.0 / 56.1	33.2	61.1	/
BND52L27	574.0 / 83.3	392.0 / 56.9	31.0	61.0	/

Heat Code	Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B	GS
BND51L26	43.0 / 52.0 / 43.0	-46.0	31.7 / 38.4 / 31.7	-50.8		
BND51L27	77.0 / 77.0 / 49.0	-46.0	56.8 / 56.8 / 36.1	-50.8		
BND51L28	62.0 / 47.0 / 51.0	-46.0	45.7 / 34.7 / 37.6	-50.8		
BND51L29	44.0 / 57.0 / 61.0	-46.0	32.5 / 42.0 / 45.0	-50.8		
BND52L26	42.0 / 47.0 / 42.0	-46.0	31.0 / 34.7 / 31.0	-50.8		
BND52L27	72.0 / 81.0 / 64.0	-46.0	53.1 / 59.7 / 47.2	-50.8		

VELAN

Certificate of Conformance

Certificate #: P4-139517

Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND52L28	BONNET	0.193	0.910	0.025	0.009	0.397	0.029	0.260	0.037	0.004	0.007	593.0 / 86.0	428.0 / 62.1	31.0	58.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												71.0 / 47.0 / 39.0	-46.0	52.4 / 34.7 / 28.8	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND53L27	BODY	0.191	0.878	0.028	0.008	0.398	0.034	0.259	0.051	0.005	0.009	596.0 / 86.4	416.0 / 60.3	31.0	61.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												67.0 / 90.0 / 53.0	-46.0	49.4 / 66.4 / 39.1	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND54L27	BONNET	0.193	0.892	0.029	0.011	0.425	0.034	0.259	0.040	0.006	0.006	606.0 / 87.9	424.0 / 61.5	31.0	61.0	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												57.0 / 50.0 / 51.0	-46.0	42.0 / 36.9 / 37.6	-50.8	
Heat Code	Desc	(C)	(Mn)	(P)	(S)	(Si)	(Cu)	(Ni)	(Cr)	(Mo)	(V)	Tensile (MPa / ksi)	Yield (MPa / ksi)	Elongation (%)	Reduction of Area(%)	Hardness (HB)
BND55M02	BONNET	0.192	0.935	0.026	0.006	0.428	0.032	0.263	0.044	0.005	0.007	592.0 / 85.9	400.0 / 58.0	34.2	60.1	/
Heat Treatment												Impact Energy (J)	Temperature (°C)	Impact Energy (ft-lb)	Temperature (°F)	F/B GS
QUEN & TEMP												46.0 / 43.0 / 43.0	-46.0	33.9 / 31.7 / 31.7	-50.8	

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.

Daniel Ouellette for
Manager of Q.C. Documentation

13-MAY_2014
Date

Customer Representative

Date