CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.

Castco LRN: INS0150706-1-MISCEL

Acceptance Note

Date of issue	:	21 July 2015
Customer	:	Gate Way Valve & Fitting Ltd.
Address	:	Flat A1, 4/F., Galaxy Factory Building, 25-27 Lup Hop Street, San Po Kong, Kowloon, H.K.
Manufacturer	:	Waterfront Fluid Controls Ltd.
Subject	:	Inspection of ductile iron butterfly valve
Date of inspection	:	6 July 2015
Location of inspection	:	Customer's warehouse at San Po Kong, H.K.

Product description :

Item no.	Sample description	Nominal size (DN)	Quantity Supplied (no.)
1	"Waterfront" 362 series flange type butterfly valve	65	1
2		80	1
3		100	1
4		125	1
5		150	1
6		200	1
7		250	1
8		300	1
9	"Waterfront" 362 series wafer type butterfly valve	65	1
10		80	1
11		100	1
12		125	1
13		150	1
14		200	1
15		250	1
16		300	1
17	"Waterfront" 362 series full lugs type butterfly valve	65	1
18		80	1
19		100	1
20		125	1
21		150	1
22		200	1
23		250	1
24		300	1

/03

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E-mail: castco@netvigator.com Website: www.castco.com.hk

Castco LRN: INS0150706-1-MISCEL

Conclusion :
Based on our inspection results and reviewing the relevant documents, it was found that the above-mentioned for this delivery complied with the requirements of :

1. Standard requirement (as agreed with customer) : BS EN 593 : 2009, BS EN12266-1 : 2012, BS EN 1092-2 : 1997 and
2. Manufacturer's drawing

The inspected items are recommended for acceptance.

Inspected by : _____
W.K. Leung
(Inspector)

Approved by : _____
K.K. Ho
(Approved Signatory)

/03

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Date of issue : 21 July 2015

Castco LRN: INS0150706-1-MISCEL

Inspection Report

of

Ductile Iron Butterfly Valve

Location of inspection: **Customer's warehouse at San Po Kong, H.K.**

Date of inspection: **6 July 2015**

To:
Gate Way Valve & Fitting Ltd.
(Attn: Mr. Thomas Kwong)

Inspected by:

W.K. Leung
(Inspector)

Approved by:

K.K. Ho
(Approved Signatory)

/03

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Castco LRN: INS0150706-1-MISCEL

Inspection Report

Customer : Gate Way Valve & Fitting Ltd.

Address : Flat A1, 4/F., Galaxy Factory Building, 25-27 Lup Hop Street, San Po Kong, Kowloon, H.K.

Manufacturer : Waterfront Fluid Controls Ltd.

Subject : Inspection of ductile iron butterfly valve

Assigned inspector : Mr. W.K. Leung

At the request of "Gate Way Valve & Fitting Ltd., a local inspection of the manufactured products for installation at the project has been carried out with details as follow:

1. Date of inspection : 6 July 2015

2. Location of inspection : Customer's warehouse at San Po Kong, H.K.

3. Applicable standard (as agreed with customer) : BS EN 593 : 2009, BS EN12266-1 : 2012, BS EN 1092-2 : 1997 and the manufacturer's drawing

4. Scope of works :
   (1) Sampling for inspection
   (2) Visual appearance check
   (3) Dimensional measurement, protective coating thickness check and marking check
   (4) Witnessing hydrostatic pressure test
   (5) Review of customer's provide drawings and verification of measuring & testing equipments for validity
   (6) Conclusion
   (7) Issue acceptance note
   (8) Issue inspection report

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5. Inspection details & results:-

(1) Sampling for inspection:

Item no.	Sample description	Nominal size (DN)	Quantity supplied (no.)	Quantity of sample for inspection	
				Hydrostatic pressure test (no.)	Other test (no.)
1	"Waterfront" 362 series flange type butterfly valve	65	1	1	1
2		80	1	1	1
3		100	1	1	1
4		125	1	1	1
5		150	1	1	1
6		200	1	1	1
7		250	1	1	1
8		300	1	1	1
9	"Waterfront" 362 series wafer type butterfly valve	65	1	1	1
10		80	1	1	1
11		100	1	1	1
12		125	1	1	1
13		150	1	1	1
14		200	1	1	1
15		250	1	1	1
16		300	1	1	1
17	"Waterfront" 362 series full lugs type butterfly valve	65	1	1	1
18		80	1	1	1
19		100	1	1	1
20		125	1	1	1
21		150	1	1	1
22		200	1	1	1
23		250	1	1	1
24		300	1	1	1

Sampling procedure for the above inspection:-

A) For hydrostatic pressure test
- For lot size less than 20 nos, the sample size shall be equal to lot size. For lot size equal to or more than 20 nos, the sample size shall be 20 nos.

B) For other tests (Visual appearance, dimensional measurement, protective coating thickness check & marking check)
- Sample size shall be determined in accordance with BS 6001-1 : 1999 inspection level II, single sampling plan, A.Q.L. = 4.0

(2) Visual appearance check
- There were no obvious defect observed on the inspected samples of ductile iron butterfly valves and they were all generally acceptable. The valves were coated with blue epoxy coating.

(3) Dimensional measurement, protective coating thickness check & marking check
- The dimensions & coating thickness of the inspected samples were measured by the inspector. The actual dimensions & coating thickness were tabulated as following:

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"Waterfront" 362 series flange type butterfly valve

Item no.	Nominal size	Castco's identification mark on sample	øD1 (mm)	øD2 (mm)	L (mm)	N-ø (mm)	Protective coating thickness (µm)
1	DN65	INS0150706-1-MISCEL-1-1 CAS-WK	185	145	112	8-ø19	264~539
2	DN80	INS0150706-1-MISCEL-2-1 CAS-WK	201	160	115	8-ø19	283~492
3	DN100	INS0150706-1-MISCEL-3-1 CAS-WK	221	180	127	8-ø19	314~603
4	DN125	INS0150706-1-MISCEL-4-1 CAS-WK	250	211	140	8-ø19	277~536
5	DN150	INS0150706-1-MISCEL-5-1 CAS-WK	285	240	142	8-ø23	289~472
6	DN200	INS0150706-1-MISCEL-6-1 CAS-WK	340	295	153	12-ø23	266~503
7	DN250	INS0150706-1-MISCEL-7-1 CAS-WK	407	356	166	12-ø28	281~497
8	DN300	INS0150706-1-MISCEL-8-1 CAS-WK	461	410	179	12-ø28	277~475
Body marking : DN size PN16 Tag plate marking : W 362 SERIES BODY-GGG50 SEAT-EPDM PN16 15-06							

"Waterfront" 362 series wafer type butterfly valve

Item no.	Nominal size	Castco's identification mark on sample	øC (mm)	Ø (mm)	L (mm)	Protective coating thickness (µm)
9	DN65	INS0150706-1-MISCEL-9-1 CAS-WK	145	18	47	312~543
10	DN80	INS0150706-1-MISCEL-10-1 CAS-WK	161	18	48	279~481
11	DN100	INS0150706-1-MISCEL-11-1 CAS-WK	180	18	53	324~596
12	DN125	INS0150706-1-MISCEL-12-1 CAS-WK	211	18	56	265~474
13	DN150	INS0150706-1-MISCEL-13-1 CAS-WK	240	23	57	281~506
14	DN200	INS0150706-1-MISCEL-14-1 CAS-WK	295	23	61	322~554
15	DN250	INS0150706-1-MISCEL-15-1 CAS-WK	355	27	69	297~562
16	DN300	INS0150706-1-MISCEL-16-1 CAS-WK	411	27	80	308~499
Body marking : W PN16 DN size GGG50 Tag plate marking : W 362 SERIES BODY-GGG50 SEAT-EPDM PN16 15-06						

"Waterfront" 362 series full lugs type butterfly valve

Item no.	Nominal size	Castco's identification mark on sample	øC (mm)	N-ø (mm)	L (mm)	Protective coating thickness (µm)
17	DN65	INS0150706-1-MISCEL-17-1 CAS-WK	145	4-ø16	47	288~529
18	DN80	INS0150706-1-MISCEL-18-1 CAS-WK	160	8-ø16	48	266~603
19	DN100	INS0150706-1-MISCEL-19-1 CAS-WK	181	8-ø16	53	316~497
20	DN125	INS0150706-1-MISCEL-20-1 CAS-WK	212	8-ø16	56	285~519
21	DN150	INS0150706-1-MISCEL-21-1 CAS-WK	241	8-ø20	57	294~582
22	DN200	INS0150706-1-MISCEL-22-1 CAS-WK	296	12-ø20	60	271~543
23	DN250	INS0150706-1-MISCEL-23-1 CAS-WK	355	12~ø24	69	268~517
24	DN300	INS0150706-1-MISCEL-24-1 CAS-WK	411	12~ø24	80	284~604
Body marking : W PN16 DN size GGG50 Tag plate marking : W 362 SERIES BODY-GGG50 SEAT-EPDM PN16 15-06						

Note : The measured dimensions of the inspected samples were found to comply with the requirements of BS EN 1092-2 : 1997 and manufacturer's drawing.

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(4) Witnessing hydrostatic pressure test

- All the inspected sample of ductile iron butterfly valves were witnessed for hydrostatic pressure test by the inspector. There was no sign of leakage, sweating and defect observed during the tests and the test results were found to comply with the requirement of BS EN12266-1 : 2012 & BS EN 593 : 2009.

Castco identification mark on sample	Nominal size (DN)	Shell Test		Seat Test	
		Pressure (MPa)	Duration (sec.)	Pressure (MPa)	Duration (sec.)
INS0150706-1-MISCEL-1-1 CAS-WK	65	2.4	60	1.76	60
INS0150706-1-MISCEL-9-1 CAS-WK					
INS0150706-1-MISCEL-17-1 CAS-WK					
INS0150706-1-MISCEL-2-1 CAS-WK	80				
INS0150706-1-MISCEL-10-1 CAS-WK					
INS0150706-1-MISCEL-18-1 CAS-WK					
INS0150706-1-MISCEL-3-1 CAS-WK	100				
INS0150706-1-MISCEL-11-1 CAS-WK					
INS0150706-1-MISCEL-19-1 CAS-WK					
INS0150706-1-MISCEL-4-1 CAS-WK	125				
INS0150706-1-MISCEL-12-1 CAS-WK					
INS0150706-1-MISCEL-20-1 CAS-WK					
INS0150706-1-MISCEL-5-1 CAS-WK	150				
INS0150706-1-MISCEL-13-1 CAS-WK					
INS0150706-1-MISCEL-21-1 CAS-WK					
INS0150706-1-MISCEL-6-1 CAS-WK	200		120		120
INS0150706-1-MISCEL-14-1 CAS-WK					
INS0150706-1-MISCEL-22-1 CAS-WK					
INS0150706-1-MISCEL-7-1 CAS-WK	250				
INS0150706-1-MISCEL-15-1 CAS-WK					
INS0150706-1-MISCEL-23-1 CAS-WK					
INS0150706-1-MISCEL-8-1 CAS-WK	300				
INS0150706-1-MISCEL-16-1 CAS-WK					
INS0150706-1-MISCEL-24-1 CAS-WK					

(5) Review of customer's provide drawings and verification of measuring & testing equipments for validity

Appendix no.	Document type	Remark
A	Manufacturer's drawing	For review and information
B	Calibration certificate of pressure gauge	Check for validity
C	Calibration certificate of measuring tape	Check for validity
D	Calibration certificate of coating thickness gauge	Check for validity
E	Calibration certificate of Vernier caliper	Check for validity

(6) Conclusion

- Based on our inspection results and reviewing the relevant documents, the ductile iron butterfly valves for this delivery were found to comply with the requirements of BS EN 593 : 2009, BS EN12266-1 : 2012, BS EN 1092-2 : 1997 and manufacturer's drawing respectively.

End of Report

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APPENDIX A

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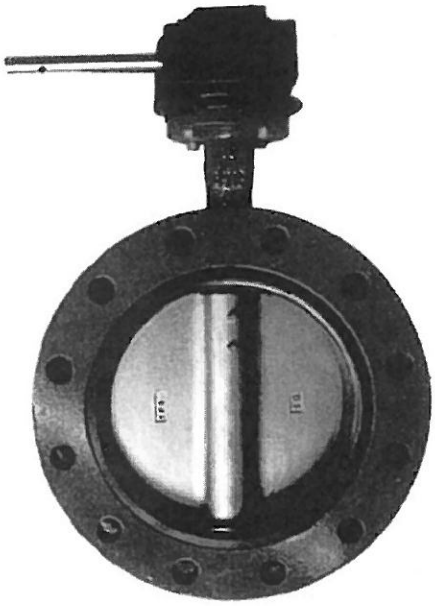
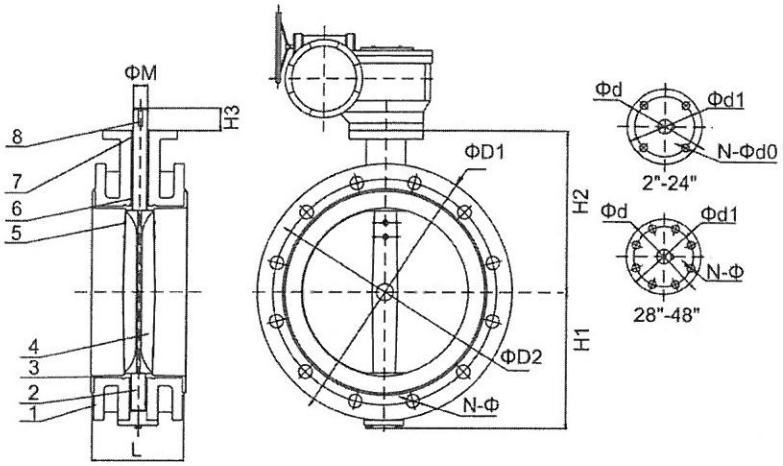
WATERFRONT

362 Vulcanized Seat Flange Butterfly Valve





Working Pressure	16 Bar
Test Pressure	24 Bar

Note:

1.Design and manufacture: API 609/EN 593/AWWA C504.
2.Flange dimensions: EN 1092-2/ASME B16.1.
3.Top flange dimensions: ISO 5211.
4.Face to face dimensions: EN 558/ISO 5752/DIN 3202.
5.Test and inspection: API 598.
6.Size up to 80".

Materials list:

1	Body	Cast iron/Ductile iron
2	Disc	Ductile iron/Al Bronze/S.S.
3	Stem	Stainless steel 410/316
4	Seat	NBR/EPDM/PTFE
5	Bushing	PTFE/Al Bronze
6	"O" ring	NBR/EPDM

DN	H1	H2	H3	L	ΦD1	ΦD2	N-Φ	ΦM	Φd	Φd1	N-Φ
50	80	110	30	108	165	125	4-19	12.6	65	50	4-8
65	80	134	30	112	185	145	8-19	12.6	65	50	4-8
80	95	131	30	114	200	160	8-19	12.6	65	50	4-8
100	114	150	30	127	220	180	8-19	15.7	90	70	4-10
125	123	170	30	140	250	210	8-19	18.9	90	70	4-10
150	139	180	30	140	285	240	8-23	18.9	90	70	4-10
200	175	210	37	152	340	295	12-23	22.1	125	102	4-12
250	203	245	37	165	405	355	12-28	28.4	125	102	4-12
300	242	276	37	178	460	410	12-28	31.6	125	102	4-12
400	296	376	51.2	216	580	525	16-31	33.2	175	140	4-18
450	316	407	51.2	222	640	585	20-31	38	175	140	4-18
500	352	448	64.2	229	715	650	20-34	41.2	175	140	4-18
600	441	518	70.2	267	840	770	20-37	50.6	210	165	4-22
700	473	560	86	292	910	840	24-37	55	300	254	8-18
800	527	620	86	318	1025	950	24-41	55	300	254	8-18
900	581	685	118	330	1125	1050	28-41	75	300	254	8-18
1000	653	735	142	410	1255	1170	28-44	85	350	298	8-18

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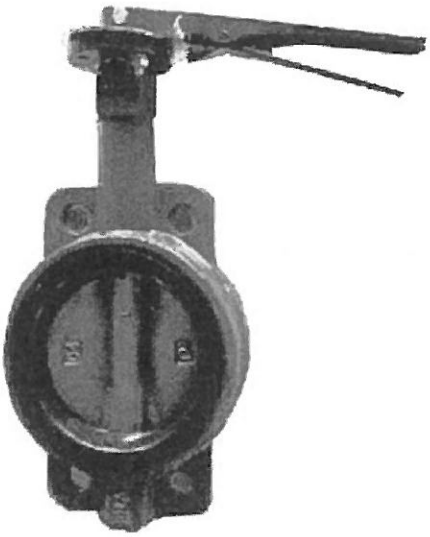
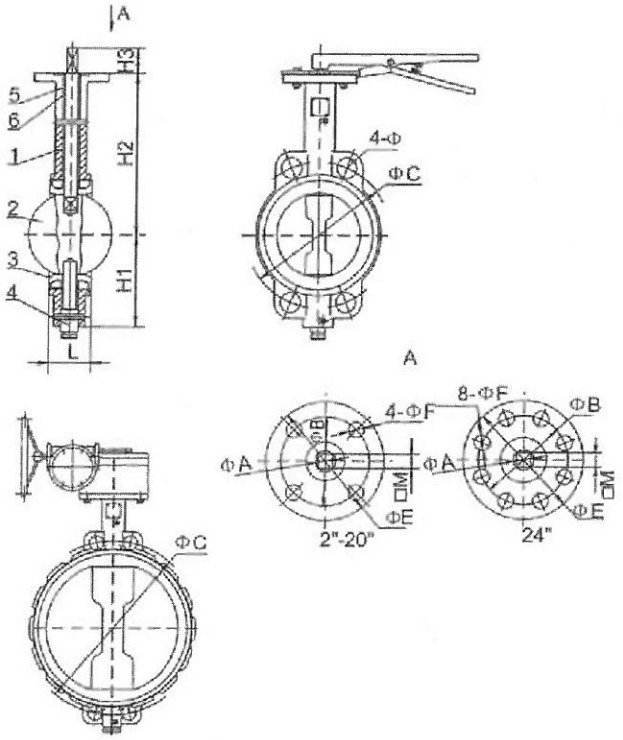
WATERFRONT

362 SERIES WAFER TYPE BUTTERFLY VALVE





Note:

1.Design and manufacture: EN 593/BS 5155/MSS SP-67.
2.Flange dimensions: EN 1092-2/BS 4504/ASME B16.1.
3.Top flange dimensions: ISO 5211.
4.Face to face dimensions: EN 558/ISO 5752/DIN 3202.
5.Test and inspection: API 598/EN593
6.Size up to 48".

Materials list:

1	Body	Cast iron/Ductile iron
2	Disc	Ductile iron/Al Bronze/Stainless steel
3	Seat	NBR/EPDM/PTFE
4	Stem	Stainless steel
5	Bushing	PTFE/Al Bronze
6	"O" ring	NBR/EPDM/Viton

DN	H1	H2	H3	L	DIN PN10		DIN PN16		ΦA	ΦE	ΦB	ΦF	ΦM
					ΦC	Φ	ΦC	Φ					
40	73	123	32	33	110	18	110	18	12.7	65	50	7	9
50	83	162	32	43	125	18	125	18	12.7	65	50	7	9
65	89	175	32	46	145	18	145	18	12.7	65	50	7	9
80	95	181	32	46	160	18	160	18	12.7	65	50	7	9
100	114	200	32	52	180	18	180	18	15.9	90	70	9	11
125	127	213	32	56	210	18	210	18	19.05	90	70	9	14
150	140	225	32	56	240	23	240	23	19.05	90	70	9	14
200	173	260	36	60	295	23	295	23	22.2	125	102	11	17
250	203	292	36	68	350	23	355	27	28.6	125	102	11	22
300	237	337	36	78	400	23	410	27	31.8	125	102	13	22

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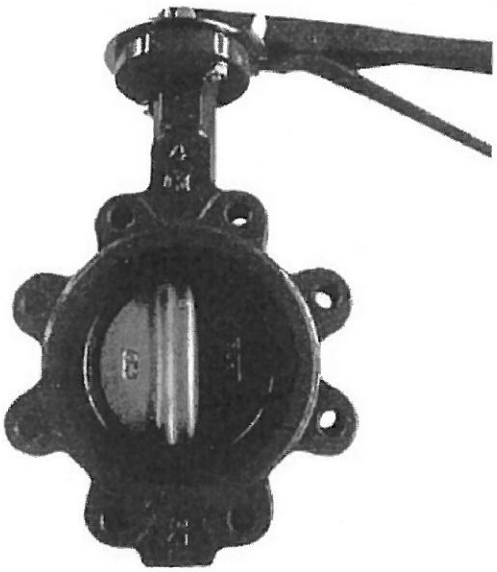
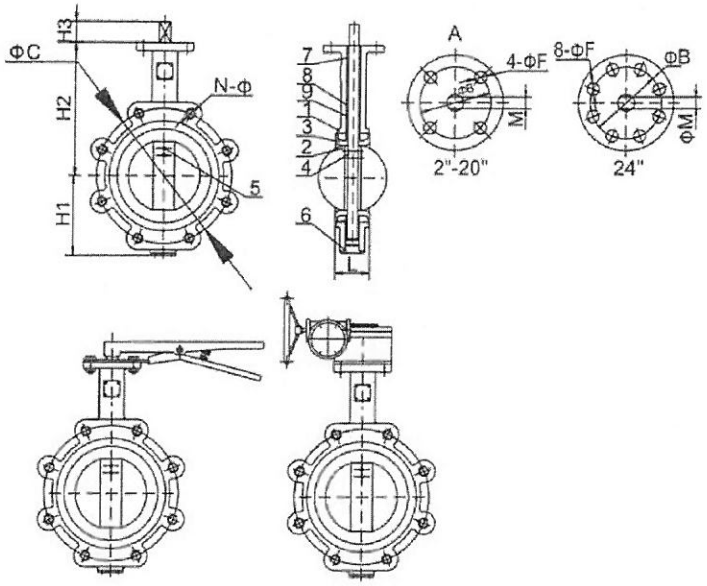
WATERFRONT

362 SERIES FULL LUGS TYPE BUTTERFLY VALVE





Working Pressure	**16 Bar**
Test Pressure	**24 Bar**

Note:

1.Design and manufacture: EN 593/BS 5155/MSS SP-67.
2.Flange dimensions: EN 1092-2/BS 4504/ASME B16.1.
3.Top flange dimensions: ISO 5211.
4.Face to face dimensions: EN 558/ISO 5752/DIN 3202.
5.Test and inspection: API 598/EN593.
6.Size up to 48".

Materials list:

1	Body	Cast iron/Ductile iron
2	Disc	Ductile iron/Al Bronze/S.S.
3	Seat	NBR/EPDM/PTFE
4	Stem	Stainless steel
5	Pin	Stainless steel
6	End cover	Cast iron/Ductile iron
7,8	Bushing	PTFE/Al Bronze
9	"O" ring	NBR/EPDM

DN	H1	H2	H3	L	ΦB	ΦC	ΦF	ΦM	N-Φ
40	61	134	32	33	50	110	9	10	4-16
50	76	162	32	43	70	125	9	10	4-16
65	80	175	32	46	70	145	9	10	4-16
80	95	181	32	46	70	160	9	10	8-16
100	114	200	32	52	70	180	9	12	8-16
125	127	213	32	56	70	210	9	14	8-16
150	140	225	32	56	70	240	9	14	8-20
200	173	260	36	60	102	295	11	17	12-20
250	203	292	36	68	102	355	11	22	12-24
300	237	337	36	78	125	410	13	24	12-24

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APPENDIX B

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步昇公證行
PACER SURVEYORS

CALIBRATION CERTIFICATE

Cert. No.: LC-41204-J3205 04 Dec. 2014

Client : 基法水管配件有限公司

Due Date : 03 Dec. 2015

ORIGINAL

Test Item :	Pressure Gauge		
Owner's Marking :	P891	Quantity :	1 Set
Capacity :	0 - 1000 Lb/sq. in.	Gradation:	20 Lb/sq. in.
Brand / Model :	KKK	Serial No :	N/M

Test Criteria : Calibration check according to BS EN837-1

Test Procedure : STP-502-rev.A

Test Equipment : Pressure Calibration Set (STE-025)

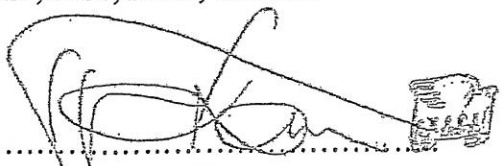
Test Result : The test item was tested in accordance with approved test procedures which are traceable to national international standards.

Test Item Reading Lb/sq. in.	Correction Lb/sq. in.		Tolerance
	Pressurizing	De-pressurizing	
0	0	0	+/- 2.5%
200	+1.0	+1.0	+/- 2.5%
400	+2.0	+2.5	+/- 2.5%
500	+3.0	+3.5	+/- 2.5%
700	+4.0	+4.5	+/- 2.5%
850	+5.0	+5.0	+/- 2.5%

The test was **Satisfactory**, and the test item is in good and sound condition, and in compliance with the test criteria.

END

RPE (Marine) – RP0141925
BSc, MSc, MBA, MHKIE



Frederick K.W. Chan

APPENDIX C

香港粉嶺安居街33號 33, On Kui Street, Fanling, Hong Kong. Tel : 2677 2138
香港粉嶺安全街29A號 29A, On Chuen Street, Fanling, Hong Kong. Fax: 2677 0351
E-mail: castco@netvigator.com Website: www.castco.com.hk

CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LTD.
香港粉嶺安居街33號 33, On Kui Street, Fanling, Hong Kong. Tel : 2677 2138
香港粉嶺安全街29A號 29A, On Chuen Street, Fanling, Hong Kong. Fax: 2677 0351
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HKLAS 032
CAL

Calibration Certificate
Calibration of Measuring Tape (Pocket Type)
[Calibration Procedure No. CAL-MTAPE]

Date of issue : 11 March 2015
Page 1 of 1 page
Castco LRN : CL0150206-6

Information supplied by customer :-

Customer : Castco Testing Centre Ltd.
Customer's ref. no. : --
Address : No.29A, On Chuen Street, On Lok Tsuen, Fanling, New Territories, Hong Kong.
Location of equipment : Inspection Section
Description of equipment (UUT) : - (Equipment I.D. No. : INS-MT02)

Manufacturer : Stanley
Range : 0 m to 3.5 m
Serial no. : --
Resolution : 1 mm/div.

CERTIFIED COPY
Castco Testing Centre Ltd.

Equipment used for calibration : -

1. Reference measuring tape, Castco I.D. No. : CL-RSST01
2. Thermometer, Castco I.D. No. : CL-WT34

Calibration results : -

Date of calibration : 6 February 2015
Average ambient temperature : 20°C
Range verified : 0 m to 3.5 m
Average relative humidity : 47%

Reference length (mm)	UUT reading (mm) Mean of 3 tests	Error (mm)	Measurement uncertainty	
			U (mm)	k
1000.0	1000.0	0.0	0.3	2.01
2000.0	2000.0	0.0	0.3	2.01
3000.0	3000.0	0.0	0.3	2.01
3500.0	3500.0	0.0	0.3	2.01

Note : Tensioning weight loaded to the UUT in this calibration : no load applied.
Remarks : -
1. All standards used for calibration are traceable to internationally recognized standard laboratories.
2. Next calibration due date : (1 year) 5 February 2016 (specified by customer)
3. The reported uncertainties are the expanded uncertainties U for 95% confidence level, together with their coverage factors k.

Checked by : _____ Approved signatory : _____

CHENG CHI HANG
Technical Officer

End of Report

HO KUI KONG
Technical Manager

HKAS has accredited this laboratory (Reg. No. 032 - CAL) under HOKLAS for specific calibration activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this certificate are traceable to the International System of Units (S.I.) or recognised measurement standards. This certificate shall not be reproduced unless with prior written approval from this laboratory.

APPENDIX D

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CASTCO TESTING CENTRE LTD.

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HKLAS 032
CAL

Calibration Certificate

Calibration on Coating Thickness Gauge for Accuracy of Reading

[Calibration Procedure No. CAL-ELCO]

Date of issue : 31 July 2014

Castco LRN : CL0140728-4

Information supplied by customer :-

Customer : Castco Testing Centre Ltd. Customer's ref. no. : --

Address : No.29A, On Chuen Street, On Lok Tsuen, Fanling, New Territories, Hong Kong.

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Castco Testing Centre Ltd.

Location of equipment : Inspection Section

Description of equipment (UUT) : - (Equipment I.D. No. : INS-CTG01)

Manufacturer : Elcometer Model No. : 456

Serial No. : HL1020

Range : F - 0 to 1500 μm (ferrous base); Resolution : F - 0.1 μm
N - 0 to 1500 μm (non-ferrous base) N - 0.1 μm

Equipment used for calibration : -

Set of standard calibration foils, Castco I.D. No. : CL-RTF04

Thermohygrometer, Castco I.D. No. : CL-WTH02

Laboratory calibration results : -

Date of calibration : 28 July 2014

Average ambient temperature : 20°C
Average relative humidity : 39%

I. Range F (using ferrous probe)

Actual thickness of standard foil (μm)	UUT measured mean reading (μm)	Error (μm)	Deviation (%)
12.4	12.4	0.0	-0.3
24.1	24.9	+0.8	+3.3
49.2	50.3	+1.1	+2.3
123.5	125.7	+2.2	+1.8
250.6	255.0	+4.4	+1.8
507.0	515.3	+8.3	+1.6
1021.4	1025.3	+3.9	+0.4
1479.0	1482.3	+3.3	+0.2

II. Range N (using non-ferrous probe)

Actual thickness of standard foil (μm)	UUT measured mean reading (μm)	Error (μm)	Deviation (%)
12.4	12.3	-0.1	-1.1
24.1	23.9	-0.2	-0.7
49.2	48.5	-0.7	-1.4
123.5	124.3	+0.8	+0.7
250.6	247.3	-3.3	-1.3
507.0	501.0	-6.0	-1.2
1021.4	1019.7	-1.7	-0.2
1479.0	1476.0	-3.0	-0.2

Remark(s) : -

1. All standards used for calibration are traceable to internationally recognized standard laboratories.
2. Next calibration due date : (1 year) 27 July 2015 (specified by customer)
3. The expanded uncertainty is ± 3.0 μm with a coverage factor k = 1.99 , providing a level of confidence approximately 95%.

Checked by : _____
CHENG CHI HANG
Technical Officer

End of Report

Approved signatory : _____
HO KUI KONG
Technical Manager

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APPENDIX E

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E-mail: castco@netvigator.com Website: www.castco.com.hk

HOKLAS 032
CAL

Calibration Certificate

Calibration of Vernier Caliper for Deviation of Reading

[BS 887 : 2008 clause 6; Calibration Procedure No. CAL-CALLIPER-DVR]

Date of issue : 4 September 2014
Page 1 of 1 page
Castco LRN : CL0140809-8

Information supplied by customer :-

Customer : Castco Testing Centre Ltd.
Customer's ref. no. : --

Address : No.29A, On Chuen Street, On Lok Tsuen, Fanling, New Territories, Hong Kong.

Location of equipment : Inspection Section

CERTIFIED COPY
Castco Testing Centre Ltd.

Description of equipment : - (Equipment I.D. No. : INS-VC01)

Manufacturer : Mitutoyo , Japan
Model No. : --

Type : Graduated Scale
Serial No. : 60114167

Measuring range : 0 to 200 mm
Readability : 0.02 mm/div.

Equipment used for calibration : -

Set of gauge blocks S/N 13495, Castco I.D. No. : CL-RSGB01

Calibration result : -

Date of calibration : 9 August 2014
Measured by the faces for external measurement

Average ambient temperature : 20°C
Average relative humidity : 38%

Gauge block actual length (mm)	Reading of caliper (mm) Mean of 3 tests	Deviation of reading (mm)
0	0.00	0.000
39.99994	40.00	+0.000
79.99978	80.00	+0.000
119.99970	120.00	+0.000
159.99996	160.00	+0.000
199.99990	200.00	+0.000

Remarks : 1. All standards used for calibration are traceable to internationally recognized standard laboratories.
2. Next calibration due date : (1 year) 8 August 2015 (specified by customer)
3. The expanded uncertainty is ±23 μm with a coverage factor k = 2, providing a level of confidence 95%.

Checked by : _____
CHENG CHI HANG
Technical Officer

Approved signatory : _____
HO KUI KONG
Technical Manager

End of Report

HKAS has accredited this laboratory (Reg. No. 032 - CAL) under HOKLAS for specific calibration activities as listed in the HOKLAS directory of accredited laboratories. The results shown in this certificate are traceable to the International System of Units (S.I.) or recognised measurement standards. This certificate shall not be reproduced unless with prior written approval from this laboratory.