

MATERIAL TEST RESULT

MESSRS	KITZ VALVE & ACTUATION (MALAYSIA) SDN. BHD
JOB NAME	
JOB No.	
P. O. No.	MXS2000030
PRODUCT CODE	

Certificate No.
1020287832-007-01-01-Z1

Date : 2020/06/05



Figure	15OUTB<Z0P01>3	Valve No.	
Material	ASTM A 351 Gr. CF8	Item No.	7
No.	Charge No.	Display No.	Name of Parts
1	K021H1		BODY
2	K02S31		BODY
3	K03411		BODY
4	K02TF1		BODY

CHEMICAL COMPOSITION %

Element	C	Mn	Si	S	P	Ni	Cr	Mo							
Spec.	Max	Max	Max	Max	Max	8.0	18.0	Max							
No.	0.08	1.50	2.00	0.040	0.040	11.0	21.0	0.50							
1	0.05	0.97	1.27	0.005	0.031	8.2	18.3	0.09							
2	0.05	0.94	1.44	0.005	0.028	8.2	18.1	0.09							
3	0.05	0.91	1.28	0.005	0.027	8.2	18.3	0.06							
4	0.05	1.01	1.37	0.006	0.034	8.2	18.4	0.10							

TENSION TEST

IMPACT TEST

Item		Tensile str.	Yield str.	Elongation					
Unit		MPa	MPa	%					
Spec.		Min	Min	Min					
No.		485	205	35					
1		626	331	46					
2		591	322	56					
3		610	327	54					
4		610	333	51					

Item									
Unit									
Spec.									
No.									
1									
2									
3									
4									

HEAT TREATMENT °C

No.	Spec.	Min 1040° C WQ
1	ST:1080° C*110min WQ	
2	ST:1080° C*110min WQ	
3	ST:1080° C*110min WQ	
4	ST:1080° C*110min WQ	

N:Normalizing A:Annealing T:Tempering Q:Quenching AC:Air Cooling
 WQ:Water Quenching OQ:Oil Quenching WC:Water Cooling FC:Furnace Cooling ST:Solution Treatment

REMARKS

CERTIFIED TRUE COPY

Reviewed by _____

KITZ CORPORATION
 QC Manager

We hereby certify that the articles listed above are satisfactory in accordance with the requirements of the standard and purchase order.

MATERIAL TEST RESULT

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Certificate No.
1020287832-007-01-01-Z2

Date : 2020/06/05

KITZ

Figure 15OUTB<ZOP01>3	Valve No.	
Material ASTM A 351 Gr. CF8	Item No.	7
No. Charge No.	Display No.	Name of Parts
1 K02TB1		BODY
2 K02T81		BODY
3 K9Z2L1		BODY
4 K02T31		BODY

CHEMICAL COMPOSITION %

Element	C	Mn	Si	S	P	Ni	Cr	Mo							
Spec. No.	Max	Max	Max	Max	Max	8.0	18.0	Max							
1	0.05	1.01	1.37	0.040	0.040	11.0	21.0	0.50							
2	0.05	1.01	1.37	0.006	0.034	8.2	18.4	0.10							
3	0.05	0.99	1.36	0.002	0.032	8.2	18.2	0.07							
4	0.05	1.01	1.37	0.006	0.034	8.2	18.4	0.10							

TENSION TEST

IMPACT TEST

Item	Tensile str.	Yield str.	Elongation						
Unit	MPa	MPa	%						
Spec. No.	Min	Min	Min						
1	485	205	35						
2	610	333	51						
3	610	333	51						
4	564	310	53						
	610	333	51						

Item									
Unit									
Spec. No.									
1									
2									
3									
4									

HEAT TREATMENT °C

No.	Spec.	Min 1040° C WQ
1	ST:1080° C*110min WQ	
2	ST:1080° C*110min WQ	
3	ST:1080° C*110min WQ	
4	ST:1080° C*110min WQ	

N: Normalizing A: Annealing T: Tempering Q: Quenching AC: Air Cooling
 WQ: Water Quenching OQ: Oil Quenching WC: Water Cooling FC: Furnace Cooling ST: Solution Treatment

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Certificate No.
1020287832-007-01-01-Z3

Date : 2020/06/05



Figure	150UTB<ZOP01>3	Valve No.	
Material	ASTM A 351 Gr. CF8	Item No.	7
No.	Charge No.	Display No.	Name of Parts
1	K02T41		BODY
2	K996C1		BODY CAP
3	K02VJ1		BODY CAP
4	K983R1		BODY CAP

CHEMICAL COMPOSITION %

Element	C	Mn	Si	S	P	Ni	Cr	Mo								
Spec.	Max	Max	Max	Max	Max	8.0	18.0	Max								
No.	0.08	1.50	2.00	0.040	0.040	11.0	21.0	0.50								
1	0.05	1.01	1.37	0.006	0.034	8.2	18.4	0.10								
2	0.05	0.98	1.43	0.005	0.032	8.2	18.3	0.03								
3	0.05	0.97	1.38	0.006	0.032	8.2	18.4	0.19								
4	0.05	1.04	1.45	0.000	0.033	8.1	18.2	0.07								

TENSION TEST

IMPACT TEST

Item		Tensile str.	Yield str.	Elongation					
Unit		MPa	MPa	%					
Spec.		Min	Min	Min					
No.		485	205	35					
1		610	333	51					
2		580	334	45					
3		525	294	58					
4		586	323	61					

Item									
Unit									
Spec.									
No.									
1									
2									
3									
4									

HEAT TREATMENT °C

No.	Spec.	Min 1040° C WQ
1	ST:1080° C*110min WQ	
2	ST:1080° C*110min WQ	
3	ST:1080° C*110min WQ	
4	ST:1080° C*110min WQ	

N: Normalizing A: Annealing T: Tempering Q: Quenching AC: Air Cooling
 WQ: Water Quenching OQ: Oil Quenching WC: Water Cooling FC: Furnace Cooling ST: Solution Treatment

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Figure	15OUTB<ZOP01>3	Valve No.	
Material	ASTM A 351 Gr. CF8	Item No.	7
No.	Charge No.	Display No.	Name of Parts
1	K022B1		BODY CAP
2	K022B1		BODY CAP
3	K02VH1		BODY CAP
4	K983N1		BODY CAP

CHEMICAL COMPOSITION %

Element	C	Mn	Si	S	P	Ni	Cr	Mo						
Spec.	Max	Max	Max	Max	Max	8.0	18.0	Max						
No.	0.08	1.50	2.00	0.040	0.040	11.0	21.0	0.50						
1	0.05	0.98	1.36	0.005	0.030	8.2	18.4	0.04						
2	0.05	0.98	1.36	0.005	0.030	8.2	18.4	0.04						
3	0.05	0.97	1.38	0.006	0.032	8.2	18.4	0.19						
4	0.05	1.04	1.45	0.000	0.033	8.1	18.2	0.07						

TENSION TEST

Item		Tensile str.	Yield str.	Elongation				
Unit		MPa	MPa	%				
Spec.		Min	Min	Min				
No.		485	205	35				
1		649	352	53				
2		649	352	53				
3		525	294	58				
4		586	323	61				

IMPACT TEST

Item								
Unit								
Spec.								
No.								
1								
2								
3								
4								

HEAT TREATMENT °C

No.	Spec.	Min 1040° C WQ
1	ST:1080° C*110min WQ	
2	ST:1080° C*110min WQ	
3	ST:1080° C*110min WQ	
4	ST:1080° C*110min WQ	

N:Normalizing A:Annealing T:Tempering Q:Quenching AG:Air Cooling
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Figure	150UTB<ZOP01>3	Valve No.	
Material	ASTM A 351 Gr. CF8	Item No.	7
No.	Charge No.	Display No.	Name of Parts
1	K98611		BODY CAP
2	JA03		BALL
3			
4			

CHEMICAL COMPOSITION %

Element	C	Mn	Si	S	P	Ni	Cr	Mo							
Spec.	Max	Max	Max	Max	Max	8.0	18.0	Max							
No.	0.08	1.50	2.00	0.040	0.040	11.0	21.0	0.50							
1	0.05	0.95	1.46	0.001	0.033	8.3	18.3	0.06							
2	0.06	0.90	0.62	0.007	0.026	8.3	18.6	0.20							
3															
4															

TENSION TEST

IMPACT TEST

Item	Tensile str.	Yield str.	Elongation						
Unit	MPa	MPa	%						
Spec.	Min	Min	Min						
No.	485	205	35						
1	522	336	42						
2	563	288	57						
3									
4									

Item									
Unit									
Spec.									
No.									
1									
2									
3									
4									

HEAT TREATMENT °C

No.	Spec.	Min 1040° C WQ
1	ST:1080° C*110min WQ	
2	ST:1100° C*110min WQ	
3		
4		

N: Normalizing A: Annealing T: Tempering Q: Quenching AC: Air Cooling
 WQ: Water Quenching OQ: Oil Quenching WC: Water Cooling FC: Furnace Cooling ST: Solution Treatment

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Date : 2020/06/05

KITZ

Figure	15OUTB<ZOP01>3	Valve No.	
Material	ASTM A276 TYPE304	Item No.	7
No.	Charge No.	Display No.	Name of Parts
1	6B365115		STEM
2			
3			
4			

CHEMICAL COMPOSITION %

Element	C	Mn	P	S	Si	Ni	Cr								
Spec.	Max	Max	Max	Max	Max	8.00	18.00								
No.	0.08	2.00	0.045	0.030	1.00	11.00	20.00								
1	0.06	1.83	0.030	0.027	0.46	8.08	18.44								
2															
3															
4															

TENSION TEST

IMPACT TEST

Item		Tensile str.	Yield str.	Elongation	Reduction				
Unit		MPa	MPa	%	%				
Spec.		Min	Min	Min	Min				
No.		515	205	30	40				
1		726	627	38	66				
2									
3									
4									

Item									
Unit									
Spec.									
No.									
1									
2									
3									
4									

HEAT TREATMENT °C

No.	Spec.	
1	ST:1040°C WQ	
2		
3		
4		

N: Normalizing A: Annealing T: Tempering Q: Quenching AC: Air Cooling
 WQ: Water Quenching OQ: Oil Quenching WC: Water Cooling FC: Furnace Cooling ST: Solution Treatment

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