

MATERIAL TEST RESULT

MESSRS	UNIMECH ENGINEERING (M) SDN. BHD.
JOB NAME	
JOB No.	
P.O.No.	APO-2004-0011
PRODUCT CODE	150SCTDZM<GT101>6

Certificate No.
1020331905-005-01-01-Z1

Date : 2020/07/17



Figure	150SCTDZ<GT101>6	Valve No.	
	Material ASTM A 216 Gr. WCB	Item No.	6
	Charge No.	Display No.	Name of Parts
1	WH01B3	WH01B3	BODY
2	WH9Z22	WH9Z22	BODY
3	WH01C2	WH01C2	BODY CAP
4			

CHEMICAL COMPOSITION %

Element	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V						
Spec.	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max						
	0.30	1.00	0.035	0.035	0.60	0.30	0.50	0.50	0.20	0.03						
1	0.19	0.90	0.023	0.011	0.43	0.02	0.07	0.07	0.02	0.01						
2	0.20	0.94	0.019	0.009	0.44	0.03	0.06	0.08	0.02	0.01						
3	0.19	0.91	0.017	0.010	0.38	0.02	0.04	0.05	0.01	0.01						
4																
Element	CE															
Spec.	Max															
	0.50															
1	0.36															
2	0.38															
3	0.35															
4																

TENSION TEST

IMPACT TEST

Item		Tensile str.	Yield str.	Elongation	Reduction				
Unit		MPa	MPa	%	%				
Spec.		485	Min	Min	Min				
		655	250	22	35				
1		575	351	31	62				
2		554	336	31	54				
3		574	367	32	60				
4									

Item									
Unit									
Spec.									
1									
2									
3									
4									

HEAT TREATMENT °C

Spec.		
1	N:930° C*3h AC	
2	N:930° C*3h AC	
3	N:930° C*3h AC	
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		

REMARKS

CE = C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15

Reviewed by _____

KITZ CORPORATION
 QC Manager

MATERIAL TEST RESULT

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PRODUCT CODE	150SCTDZM<GT101>6

Certificate No.
1020331905-005-01-01-Z2

Date : 2020/07/17



Figure	150SCTDZ<GT101>6	Valve No.	
Material	ASTM A 351 Gr. CF8M	Item No.	6
Charge No.	Display No.	Name of Parts	
1	JAO1M	BALL	
2			
3			
4			

CHEMICAL COMPOSITION %

Element	C	Mn	Si	S	P	Ni	Cr	Mo								
Spec.	Max	Max	Max	Max	Max	9.0	18.0	2.0								
	0.08	1.50	1.50	0.040	0.040	12.0	21.0	3.0								
1	0.05	0.90	0.60	0.011	0.029	9.5	18.6	2.2								
2																
3																
4																
Element																
Spec.																
1																
2																
3																
4																

TENSION TEST

IMPACT TEST

Item			Tensile str.	Yield str.	Elongation				
Unit			MPa	MPa	%				
Spec.			Min	Min	Min				
1			485	205	30				
2			600	365	44				
3									
4									

Item									
Unit									
Spec.									
1									
2									
3									
4									

HEAT TREATMENT °C

Spec.	Min 1040° C WQ
1	ST:1100° C* 1h 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

REMARKS

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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P.O.No.	APO-2004-0011
PRODUCT CODE	150SCTDZM<GT101>6

Certificate No.
1020331905-005-01-01-Z3

Date : 2020/07/17



Figure	150SCTDZ<GT101>6	Valve No.	
	Material ASTM A 276 TYPE316	Item No.	6
	Charge No.	Display No.	Name of Parts
1	9SK0040-LE2		STEM
2			
3			
4			

CHEMICAL COMPOSITION %

Element	C	Mn	P	S	Si	Ni	Cr	Mo								
Spec.	Max	Max	Max	Max	Max	10.00	16.00	2.00								
	0.08	2.00	0.045	0.030	1.00	14.00	18.00	3.00								
1	0.03	1.56	0.033	0.025	0.44	10.51	17.32	2.03								
2																
3																
4																
Element																
Spec.																
1																
2																
3																
4																

TENSION TEST

IMPACT TEST

Item			Tensile str.	Yield str.	Elongation	Reduction				
Unit			MPa	MPa	%	%				
Spec.			Min	Min	Min	Min				
1			515	205	30	40				
2			590	270	62	81				
3										
4										

Item										
Unit										
Spec.										
1										
2										
3										
4										

HEAT TREATMENT °C

Spec.	
1	
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

REMARKS

Reviewed by _____

KITZ CORPORATION
 QC Manager