

INSPECTION CERTIFICATE

MESSRS	UNIMECH ENGINEERING (M) SDN. BHD.
DELIVER To	
JOB NAME	
JOB No.	
P.O.No.	APO-2004-0011
PRODUCT CODE	150SCTDZM<GT101>21/2

Certificate No.
1020331905-002-01-01

Date : 2020/07/17

KITZ

SPECIFICATION

Manuf No.	1020331905-002
Description	CLASS 150 CAST STEEL BALL VALVE FLANGED ENDS
Figure	150SCTDZ<GT101>21/2
Size	21/2 inch(B)
Quantity	2
Valve No.	
Item No.	3
Kiki No.	

MAIN PARTS

No.	Name of parts	Material
001	BODY	Gr. WCB
002	BODY CAP	Gr. WCB
003	STEM	TYPE316
004	BALL	Gr. CF8M

TEST

Pressure test	Judge.	Inspection fluid and pressure	
Shell		Hydro	-
	Good	Air	3.0 MPa
Seat		Hydro	-
	Good	Air	0.6 MPa
Back seat		Hydro	-
		Air	-

Item	Judge.	Attached sheet
Material	Good	Material Test Result
Dimension	Good	
Visual	Good	
Operation	Good	

NONDESTRUCTIVE EXAMINATION

Type of examination and judgement	Attached sheet

REMARKS

Witnessed 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

MESSRS	UNIMECH ENGINEERING (M) SDN. BHD.
JOB NAME	
JOB No.	
P.O.No.	APO-2004-0011
PRODUCT CODE	150SCTDZM<GT101>21/2

Certificate No.
1020331905-002-01-01-Z1

Date : 2020/07/17



Figure	150SCTDZ<GT101>21/2	Valve No.	
	Material ASTM A 216 Gr. WCB	Item No.	3
	Charge No.	Display No.	Name of Parts
1	T9Y71	T9Y71	BODY
2	T01R1	T01R1	BODY
3	T01V1	T01V1	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	0.20	0.83	0.014	0.002	0.43	0.02	0.04	0.11	0.01	0.00						
2	0.21	0.82	0.013	0.002	0.43	0.01	0.06	0.06	0.00	0.00						
3	0.21	0.80	0.013	0.002	0.41	0.01	0.02	0.06	0.00	0.00						
4																
Element	CE															
Spec.	Max															
	0.50															
1	0.37															
2	0.36															
3	0.36															
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		516	312	28	51				
2		514	312	29	52				
3		514	311	29	51				
4									

Item									
Unit									
Spec.									
1									
2									
3									
4									

HEAT TREATMENT °C

Spec.	
1	A:910°C*2.0h FC
2	A:910°C*2.0h FC
3	A:910°C*2.0h FC
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

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

MATERIAL TEST RESULT

MESSRS	UNIMECH ENGINEERING (M) SDN. BHD.
JOB NAME	
JOB No.	
P.O.No.	APO-2004-0011
PRODUCT CODE	150SCTDZM<GT101>21/2

Certificate No.
1020331905-002-01-01-Z2

Date : 2020/07/17



Figure	150SCTDZ<GT101>21/2	Valve No.	
	Material ASTM A 351 Gr. CF8M	Item No.	3
	Charge No.	Display No.	Name of Parts
1	P88M		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	0.07	0.89	0.97	0.003	0.031	9.2	18.7	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			550	321	50				
3									
4									

Item									
Unit									
Spec.									
1									
2									
3									
4									

HEAT TREATMENT °C

Spec.	Min 1040° C WQ	
1	ST:1100° C*60min 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

MESSRS	UNIMECH ENGINEERING (M) SDN. BHD.
JOB NAME	
JOB No.	
P.O.No.	APO-2004-0011
PRODUCT CODE	150SCTDZM<GT101>21/2

Certificate No.
1020331905-002-01-01-Z3

Date : 2020/07/17



Figure	150SCTDZ<GT101>21/2	Valve No.	
	Material ASTM A 276 TYPE316	Item No.	3
	Charge No.	Display No.	Name of Parts
1	5X527003		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	0.05	1.50	0.028	0.027	0.27	10.09	17.01	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			714	637	36	66				
2										
3										
4										

Item										
Unit										
Spec.										
1										
2										
3										
4										

HEAT TREATMENT °C

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

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.