

MATERIAL TEST RESULT

MESSRS	UNIMECH ENGINEERING (M) SDN. BHD.
JOB NAME	
JOB No.	
P.O.No.	APO-2004-0010
PRODUCT CODE	

Certificate No.
1020330662-022-01-01-Z1

Date : 2020/07/03



Figure	10SF3/4	Valve No.	
	Material ASTM A 395 Gr. 60-40-18	Item No.	36
	Charge No.	Display No.	Name of Parts
1	139		BODY
2			
3			
4			

CHEMICAL COMPOSITION %

Element	C	Si	P	Mn												
Spec.	Min	*Max	Max													
	3.00	2.50	0.080													
1	3.62	2.66	0.018	0.28												
2																
3																
4																

TENSION TEST

IMPACT TEST

Item			Tensile str.	Yield str.	Elongation				
Unit			MPa	MPa	%				
Spec.			Min	Min	Min				
			415	275	18				
1			425	281	21				
2									
3									
4									

Item	Hardness	Microstructure							
Unit	HBW	%							
Spec.	143	Min							
	187	90							
1	143	90							
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

* Every 0.01% P reduction enables 0.08% Si increase each within the maximum 2.75%.
 EN10204 Type 2.2

 Reviewed by

R. Miyazawa
KITZ CORPORATION
 QC Manager

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Figure	10SF3/4	Valve No.	
Material	ASTM A 217 Gr. CA15	Item No.	36
Charge No.	YK4952	Display No.	
Name of Parts		CAP	
1			
2			
3			
4			

CHEMICAL COMPOSITION %

Element	C	Mn	P	S	Si	Ni	Cr	Mo								
Spec.	Max	Max	Max	Max	Max	Max	11.5	Max								
	0.15	1.00	0.040	0.025	1.50	1.00	14.0	0.50								
1	0.11	0.59	0.018	0.006	0.57	0.19	13.2	0.01								
2																
3																
4																

TENSION TEST

IMPACT TEST

Item		Tensile str.	Yield str.	Elongation	Reduction				
Unit		MPa	MPa	%	%				
Spec.		620	Min	Min	Min				
		795	450	18	30				
1		748	629	21	45				
2									
3									
4									

Item									
Unit									
Spec.									
1									
2									
3									
4									

HEAT TREATMENT °C

Spec.	
1	Q:970°C*1h OQ , T:640°C*1h AC
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

EN10204 Type 2.2

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