# **AVAILABLE MANUFACTURING SCOPE**

### Coils and Sheets

Available manufacturing scope of Commercially pure titanium products (KS40S, KS40, KS50, KS60, JIS Class-1, JIS Class-2, ASTM G1, ASTM G2)

	Sheet width Sheet (mm) thickness (mm)	W≦850	850 <w≦950< th=""><th>950<w≦1050< th=""><th>1050<w≦1250< th=""><th>1250<w≦1535< th=""><th>Surface finishing (KOBE STEEL) Standard</th></w≦1535<></th></w≦1250<></th></w≦1050<></th></w≦950<>	950 <w≦1050< th=""><th>1050<w≦1250< th=""><th>1250<w≦1535< th=""><th>Surface finishing (KOBE STEEL) Standard</th></w≦1535<></th></w≦1250<></th></w≦1050<>	1050 <w≦1250< th=""><th>1250<w≦1535< th=""><th>Surface finishing (KOBE STEEL) Standard</th></w≦1535<></th></w≦1250<>	1250 <w≦1535< th=""><th>Surface finishing (KOBE STEEL) Standard</th></w≦1535<>	Surface finishing (KOBE STEEL) Standard
	0.1≦t<0.3	KSI5-3-3-3 is	s also available.				BA
Cold rolled commercially	0.3≦t<0.50					JIS Class-1 and ASTM Class-G1 only	No.2D-R
pure titanium	0.50≦t<1.00					← 1350	No.2D-S No.2B BA
	1.00≦t≦3.0		Availab	le manufacturin	g scope		BA-S
Hot rolled commercially	3.0≦t<5.0						No.1
pure titanium	5.0≦t≦6.0					← 1300	NO.1

The maximum width of each product depends on material quality, thickness and degree of surface finish. For example, the available manufacturing scopes of high strength commercially pure titanium and titanium alloy are narrowed. Furthermore, in the case of BA finishing the effective width is 1,250mm and less. Please feel free to contact us for details.
The standard cut length range of each sheet type is from 2,000 to 4,000mm, but under 2,000mm and over 4,000mm are also available. Please feel free to contact us for these specials cut lengths.

• The sheet thickness from 0.01 to 0.1 mm and KSTI-1.5AL, KS3-2.5, KSTI-9, KS15-3-3-3 are also available. Please feel free to contact us for these thicknesses.

### Surface Finishing Details

KOBI	E STEEL Standard	Process	Compliance with	Ra,µm
Symbol	Surface treatment	PIOLESS	ASTM	(Reference value)
No.1	Shot blasting, pickling	Hot rolling→Atmospheric annealing →Shot blasting→Pickling	No.1	3-5
No.2D-R	Shot blasting, pickling	Cold rolling→Atmospheric annealing →Shot blasting→Pickling	No.2D	3-5
No.2D-S	AP (Annealed and Pickled)	Cold rolling→Atmospheric annealing →Salt→Pickling	No.2D	0.4-1.2
No.2B	AP skin pass	Cold rolling→Atmospheric annealing →Salt→Pickling→Skin pass	No.2B	0.2-0.6
BA	VA(Vacuum Annealed)	Cold rolling→Vacuum annealing	BA	0.4-1.2
BA-S	VA skin pass	Cold rolling→Vacuum annealing→Skin pass	_	0.2-0.6

	Applicable Standards
KOBE STEEL Standard	KS40S, KS40, KS50, KS60, KS70, KS85,KS100, KS120SI, KS40PDA, KS50PDA, KS50AKOT, KS60AKOT, KSG12, KSTI-1.5AL, KSTI-9, KS15-3-3-3
JIS H 4600	Class-1, Class-2, Class-3, Class-4, Class-11, Class-12, Class-14, Class-15, Class-61
ASTM B265	G1, G2, G3, G4, G7, G9, G11, G12, G33, G34,

Commercially pure titanium sheets complying with any other international standards are also optionally available upon request. Please feel free to contact us for details.

Plates

Plate width Plate thickness (mm)	W≦1,230	1,230< ₩ ≦1,400	1,400< ₩ ≦1,500	1,500< ₩ ≦2,000	2,000< ₩ ≦2,500	2,500< ₩ ≦3,000	3,000< ₩ ≦3,500	3,500< ₩ ≦4,000	4,000< ₩ ≦4,500	Length,(mm)
4≦t<5.5										2,500<
5.5≦t<6										L
6≦t<8										<6,000
8≦t<10										
10≦t<16				Available m	anufacturing	j scope				2,500<
16≦t<25										L
25≦t<50			<b>A</b>							<12,000
50≦t<80										
80≦t<100										
100≦t<150		AMS4911, AN are available of								2,500<
150≦t<170										<7,000
170≦t<200										

The plate surface is finished by shot blasting and pickling or polishing as standard, but finishing by other methods is also available. Please contact us for detailed information.

	Applicable Star
KOBE STEEL Standard	KS40S, KS40, KS50, KS60, KS70, KS85, KS100, KS1 KS50AKOT, KS60AKOT, KSG12, KS3-2.5, KS6-4, KS1
JIS H 4600	Class-1, Class-2, Class-3, Class-4, Class-11, Class-1
ASTM B265	G1, G2, G3, G5, G4, G7, G9, G11, G12, G33, G34
AMS	4911, 4918, 4919

Commercially pure titanium sheets complying with any other international standards are also optionally available upon request. Please feel free to contact us for details. Please contact us for the lengths of AMS4911 (Ti-6AI-4V), 4918 (Ti-6AI-6V-2Sn) and 4919(Ti-6AI-2Sn-4Zr-2Mo). The maximum length at 1000W is as follows.

25≦t<50	12,000mm
50≦t<100	10,000mm
100≦t<150	6,000mm
150≦t<200	4,000mm

Alloy sheet rolled products are also available. Please contact us for detailed information.



#### andards

120SI, KS40PDA, KS50PDA, STI-9, KS6-6-2

2, Class-14, Class-15, Class-60, Class-61



Appearance of No.2D-S (AP) and BA (VA)

# **AVAILABLE MANUFACTURING SCOPE**

## Thin Wall Welded Tubes

											٦	<b>Fhickne</b>	SS							
		mm	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
	mm	Inch Inch	0.012	0.016	0.020	0.024	0.028	0.031	0.035	0.039	0.043	0.047	0.051	0.055	0.059	0.063	0.067	0.071	0.075	0.079
	12.7	1/2																		
	15.9	5/8																		
	19.0	3/4																		
	22.2	7/8																		
_	25.4	1																		
lete	28.6	1 1/8						A	<b>/ailabl</b> e	manu	f <mark>acturi</mark> i	ig scop	e							
diameter	31.8	1 1/4																		
er d	34.9	1 3/8																		
Outer	38.1	1 1/2																		
	42.7	-																		
	48.6	-																		
	50.8	2																		
	54.0	2 1/8																		
	60.5	-																		
quali	nanufactur ty. Please sizes and	able scope contact us materials.	differs a for detail:	little dep s. Also, p	ending oi Iease cor	n the mat ntact us fo	erial or				Арр	licable	Standar	ds			Ņ	Standa welded tu	d tube	Velded s of special cifications
									STEEL ndard		(S40S, k (S50PD/					-1.5AL				
								JIS H4631 Class-1, Class-2, Class-11, Class-12, Class-14								14				

us ioi		Applicable Stalidalds	welded tubes	specificatio
	KOBE STEEL Standard	KS40S, KS40, KS50, KS60, KS40PDA, KS50PDA, KS50AKOT, KS60AKOT, KSTI-1.5AL		
	JIS H4631	Class-1, Class-2, Class-11, Class-12, Class-14		
	ASTM B338	G1, G2, G7, G11, G33		
	KOBE STEEL Standard	KS70, KS85, KSG12, KS3-2.5		
	JIS H4631	Class-3, Class-4, Class-15		
	ASTM B338	G3, G4, G9, G12, G34		

### Welded Pipes

VV	eiue		he	:2																													
																Th	ickn	ess															
Outer diameter		mm	0.3	0.4	0.5	0.7	1.0	1.5	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	30
Nominal diameter		inch	0.012	0.016	0.020	0.028	0.039	0.059	0.079	0.118	0.157	0.197	0.236	0.276	0.315	0.354	0.394	0.433	0.472	0.512	0.551	0.591	0.630	0.669	0.709	0.748	0.787	0.827	0.866	906	945	984	1.181
A	B	mm	0.0	0.0	Ö	Ö	Ö	0.0	0.(	0	0.	0.	0.1	0	0	0	0.7	0.	0.	0	0.1	0	0.0	0.0	0	0	0	0.	0.0	0	Ö	Ö	
6	1/8	10.5																															
8	1/4	13.8																															
10	3/8	17.3																															
15	1/2	21.7																															
		25.4																															
20	3/4	27.2																															
25	1	34.0																															
40	1 1/2	38.6																															
50	2	60.5																															
65	2 1/2	76.3																															
80	3	89.1																															
90	3 1/2	101.6																															
100	4	114.3																															
125	5	139.8																															
150	6	165.2																															
200	8	216.3										<b>—</b>		hla				:															
250	10	267.4												bie	man	ufac	cur	ing :	scop	be –													
300	12	318.5																															
350	14	355.6																															
400	16	406.4																															
450	18	457.2																															
500	20	508.0																															
600	24	609.6												_																			
The manu	facturable	e scope dif	fers a	little	dene	ndin	a on i	the m	ateria													<u></u>		d a								_	
		tact us for								" 🗖									Ap	plic	able	Sta	ndar	as									
other size.											KC	DBE	STE	EL		<s40< td=""><td>S, K</td><td>S40</td><td>, KS</td><td>50, K</td><td>S60</td><td>, KS</td><td>70, K</td><td>(S85</td><td>, KS</td><td>100,</td><td>KS3</td><td>3-2.5</td><td>,</td><td></td><td></td><td></td><td></td></s40<>	S, K	S40	, KS	50, K	S60	, KS	70, K	(S85	, KS	100,	KS3	3-2.5	,				
												Stan	dard		k	<s40< td=""><td>PDA</td><td>, KS</td><td>50P</td><td>DA, I</td><td>KS50</td><td>DAK</td><td>)T, K</td><td>S60/</td><td>AKO.</td><td>T, KS</td><td>G12</td><td>., KS</td><td>TI-1.</td><td>.5AL</td><td></td><td></td><td></td></s40<>	PDA	, KS	50P	DA, I	KS50	DAK	)T, K	S60/	AKO.	T, KS	G12	., KS	TI-1.	.5AL			
											JI	SH	463	5	С	lass	-1, (	Class	5-2, (	Clas	s- <b>3</b> ,	Clas	s-4,	Clas	ss-1	1, CI	ass-	12,	Class	s-14	, Cla	iss-1	5
																	Class-1, Class-2, Class-3, Class-4, Class-11, Class-12, Class-14, Class-15																

**ASTM B337** G1, G2, G3, G4, G7, G9, G11, G12, G33, G34

_	Sea	amle	ess	Tub	es a	and	Pip	es													
											Thick	ness									
		mm	1.0	1.2	1.4	1.6	1.8	2.0	2.3	2.6	2.9	3.2	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.0	9.0
		inch																			
			0.039	0.047	0.055	0.063	0.071	0.079	0.091	0.102	0.114	0.126	0.138	0.157	0.177	0.197	0.217	0.236	0.276	0.315	0.354
	mm	inch	O	0.	Ö	O	Ö	O	0.	Ö	Ö	0.	0.	Ö	0.	0.	0.	0.	0.	0.	O
	8																				
	10 12																				
	13.8																		KS 5		
	15.0																		N3 3		
	17.3																		KS 7	70	
	20																				
	21.7																				
	25	1																			
	27.2																				
	29																				
	30																				
	32 34																				
	34								-				-								
	38.1	1 1/2							– Avail	able m	anufact	turing s	scope -								
	40	1 1/2							-				-								
	42.7																				
<u> </u>	45																				
lete	48.6																				
iam	50																				
er d	50.8	2																			
Outer diameter	51																				
	54																				
	57	2 2/0																			
	60.5	2 3/8																			
	63.5	2 1/2																			
	65	2 112																			
	70																				
	73																				
	75																				
	76.2	3																			
	80																				
	82.6	3 1/4																			
		3 1/2																			
	89.1 90			-			Appli	icable S	tandar	ds											
	90 100			KOBE	STEFI 9	Standard					), KS70	KSG1	2								
	101.6	4			JIS H46						Class-1										
	1110	+					-					i, UldS	3-12								
	114.3	4 1/2			STM B	338	_ G1, C	G2, G3,	G7, G1	1, G12											
_	111.0																				

The manufacturable scope differs a little depending on the material quality. Please contact us for details. Also, please contact us for other sizes and materials.

Wi	ires, bars 🚃			
Shape	Manufacturable scope	Standard specification		Applicable Standards
	5.5≦d≦6.5¢×coil	Hot-rolling→annealing →shaving (SV) finish	KOBE STEEL Standard	KS40S, KS40, KS50, KS60, KS70, KS85, KS100, KS120SI, KS3-2.5, KS6-4, KSTI-9, KS15-3-3-3, KS13-11-3, KS15-5-3,
Wires	6.5≦d≦13.0¢×coil	Hot rolling→Annealing →peeling (PL) finish	JIS H 4670 ASTM B348 AMS	KS EL-F Class-1, Class-2, Class-3, Class-4, Class-61 G1, G2, G3, G4, G5, G9 4921, 4971, 4981, 4954, 4956
	10.0≦d≦14.0¢×L	Hot rolling→annealing →Centerless grinding finish	KOBE STEEL Standard	KS40S, KS40, KS50, KS60, KS70, KS100, KS120SI, KS3-2.5, KS6-4, KSTI-9, KS6-2-4-6, KS10-2-3, KS EL-F
Bars	14.0≦d≦60.0¢×L	Hot rolling→annealing →Bar turner finishing	JIS H 4670	Class-1, Class-2, Class-3, Class-60, Class-61
	60.0≦d≦250.0¢×L	Forging→annealing →lathe-turning finish	ASTM B348 AMS	G1, G2, G3, G5, G9 4921, 4928, 4965, 4971, 4981

The manufacturable scope differs a little depending on the material quality. Please contact us for details. Also, please contact us for other sizes and materials.

L=max 6,000