

Shipbuilding - Cargo hooks

1. **Scope** This Japanese Industrial Standard specifies cargo hooks for ship use.

Remark: This Standard makes reference to the following standards:

JIS B 0205	Metric coarse screw threads
JIS B 0207	Metric fine screw threads
JIS B 2801	Shackles
JIS G 3101	Rolled steels for general structure
JIS G-4051	Carbon steels for machine structural use
JIS G 4303	Stainless steel bars
JIS G 4314	Cold rolled stainless steel strip for springs
JIS H 3260	Copper and copper alloy wires

2. **Classification** Cargo hooks shall be classified into six types, A (with swivel), AS (with swivel and stopper), B (with shackle), BS (with shackle and stopper), C, and CS (with stopper).

3. **Construction, shape and dimensions** The construction, shape and dimensions of cargo hooks shall be as shown in Attached Figs. 1 through 11, and in addition, shall conform to the following requirements:

- (1) The screw threads for the swivel shall conform to JIS B 0207.
- (2) The screw threads in the shackle and on the shackle bolt shall conform to JIS B 0205.
- (3) The shackles for Type C and Type CS shall conform to JIS B 2801.
- (4) The shape of a stopper is shown for reference only.

4. **Materials** The materials shall be as shown in Attached Figs. 1, 5 and 9.

5. **Tests and inspection** Cargo hooks shall be tested under the proof load prescribed in Table 1, and no part of them shall show abnormalities. The setting of the ring under test shall be as shown in Fig. 1.

Table 1

Type	Nominal load	Safe working load kN	Proof load kN
Type A, AS and Type B, BS	10	10	20
	20	20	40
	30	30	60
	50	50	100
Type C, CS	100	100	200
	150	150	300
	200	200	400

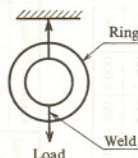


Fig. 1 Condition of ring at test

6. **Designation** Cargo hooks shall be designated by title, JIS number, type and nominal load.

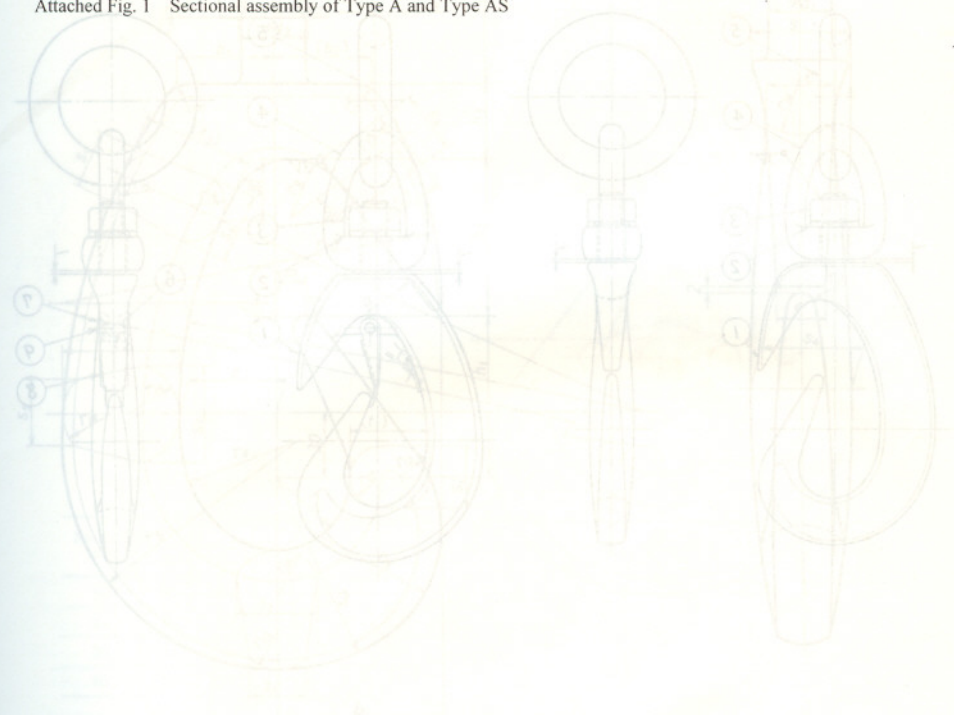
Example 1: Ship's cargo hook Type A10

Example 2: JIS F 2105 A10

7. **Marking** Cargo hooks shall be stamped at a readily visible part with the following particulars:

- (1) Safe working load, proof load, date of manufacture.
- (2) Manufacturer's name or mark.

Attached Fig. 1 Sectional assembly of Type A and Type AS



Nominal load	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa	ab	ac	ad	ae	af	ag	ah	ai	aj	ak	al	am	an	ao	ap	aq	ar	as	at	au	av	aw	ax	ay	az	ba	bb	bc	bd	be	bf	bg	bh	bi	bj	bk	bl	bm	bn	bo	bp	bq	br	bs	bt	bu	bv	bw	bx	by	bz	ca	cb	cc	cd	ce	cf	cg	ch	ci	cj	ck	cl	cm	cn	co	cp	cq	cr	cs	ct	cu	cv	cw	cx	cy	cz	da	db	dc	dd	de	df	dg	dh	di	dj	dk	dl	dm	dn	do	dp	dq	dr	ds	dt	du	dv	dw	dx	dy	dz	ea	eb	ec	ed	ee	ef	eg	eh	ei	ej	ek	el	em	en	eo	ep	eq	er	es	et	eu	ev	ew	ex	ey	ez	fa	fb	fc	fd	fe	ff	fg	fh	fi	fj	fk	fl	fm	fn	fo	fp	fq	fr	fs	ft	fu	fv	fw	fx	fy	fz	ga	gb	gc	gd	ge	gf	gg	gh	gi	gj	gk	gl	gm	gn	go	gp	gq	gr	gs	gt	gu	gv	gw	gx	gy	gz	ha	hb	hc	hd	he	hf	hg	hh	hi	hj	hk	hl	hm	hn	ho	hp	hq	hr	hs	ht	hu	hv	hw	hx	hy	hz	ia	ib	ic	id	ie	if	ig	ih	ii	ij	ik	il	im	in	io	ip	iq	ir	is	it	iu	iv	iw	ix	iy	iz	ja	jb	jc	jd	je	jf	jj	jk	jl	jm	jn	jo	jp	jq	jr	js	jt	ju	jv	jw	jx	ky	kz	la	lb	lc	ld	le	lf	lg	lh	li	lj	lk	ll	lm	ln	lo	lp	lq	lr	ls	lt	lu	lv	lw	lx	ly	lz	ma	mb	mc	md	me	mf	mg	mh	mi	mj	mk	ml	mm	mn	mo	mp	mq	mr	ms	mt	mu	mv	mw	mx	my	mz	na	nb	nc	nd	ne	nf	ng	nh	ni	nj	nk	nl	nm	nn	no	np	nq	nr	ns	nt	nu	nv	nw	nx	ny	nz	oa	ob	oc	od	oe	of	og	oh	oi	oj	ok	ol	om	on	oo	op	oq	or	os	ot	ou	ov	ow	ox	oy	oz	pa	pb	pc	pd	pe	pf	pg	ph	pi	pj	pk	pl	pm	pn	po	pp	pq	pr	ps	pt	pu	pv	pw	px	py	pz	qa	qb	qc	qd	qe	qf	qg	qh	qi	qj	qk	ql	qm	qn	qo	qp	qq	qr	qs	qt	qu	qv	qw	qx	qy	qz	ra	rb	rc	rd	re	rf	rg	rh	ri	rj	rk	rl	rm	rn	ro	rp	rq	rr	rs	rt	ru	rv	rw	rx	ry	rz	sa	sb	sc	sd	se	sf	sg	sh	si	sj	sk	sl	sm	sn	so	sp	sq	sr	ss	st	su	sv	sw	sx	sy	sz	ta	tb	tc	td	te	tf	tg	th	ti	tj	tk	tl	tm	tn	to	tp	tq	tr	ts	tt	tu	tv	tw	tx	ty	tz	ua	ub	uc	ud	ue	uf	ug	uh	ui	uj	uk	ul	um	un	uo	up	uq	ur	us	ut	uu	uv	uw	ux	uy	uz	va	vb	vc	vd	ve	vf	vg	vh	vi	vj	vk	vl	vm	vn	vo	vp	vq	vr	vs	vt	vu	vv	vw	wx	wy	wz	xa	xb	xc	xd	xe	xf	xg	xh	xi	xj	xk	xl	xm	xn	xo	xp	xq	xr	xs	xt	xu	xv	xw	xx	xy	xz	ya	yb	yc	yd	ye	yf	yg	yh	yi	yj	yk	yl	ym	yn	yo	yp	yq	yr	ys	yt	yu	yv	yw	yx	yy	yz	za	zb	zc	zd	ze	zf	zg	zh	zi	zj	zk	zl	zm	zn	zo	zp	zq	zr	zs	zt	zu	zv	zw	zx	zy	zz																																																																																																																																																												
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	501870	502893	503916	504939	505962	506985	508008	509031	510054	511077	512100	513123	514146	515169	516192	517215	518238	519261	520284	521307	522330	523353	524376	525399	526422	527445	528468	529491	530514	531537	532560	533583	534606	535629	536652	537675	538698	539721	540744

Remarks: 1. Dimensions in parentheses are given for reference only.

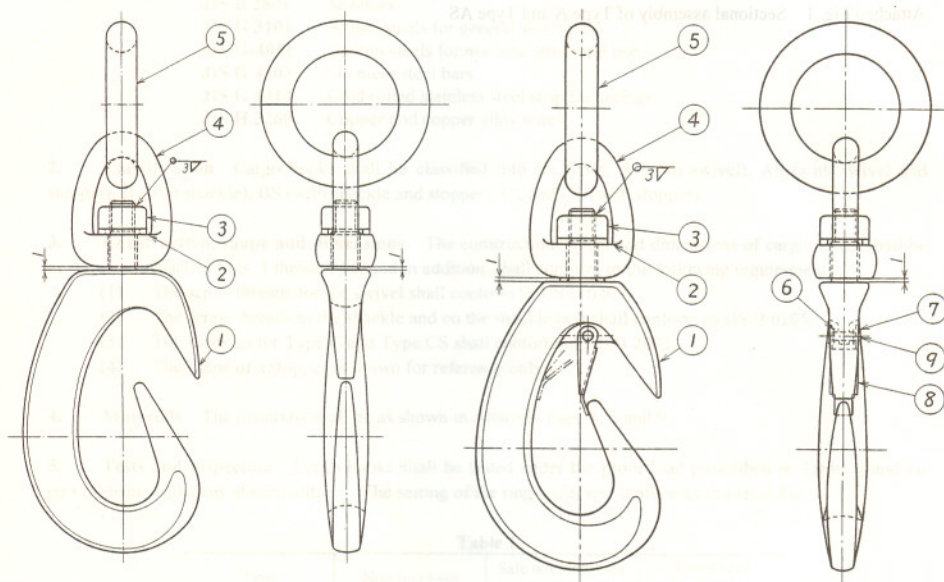
2. Calculated mass includes hook and eye, and is for reference only.

Fig.1 Type A and AS, Assembly

Unit: mm

Type A

Type AS

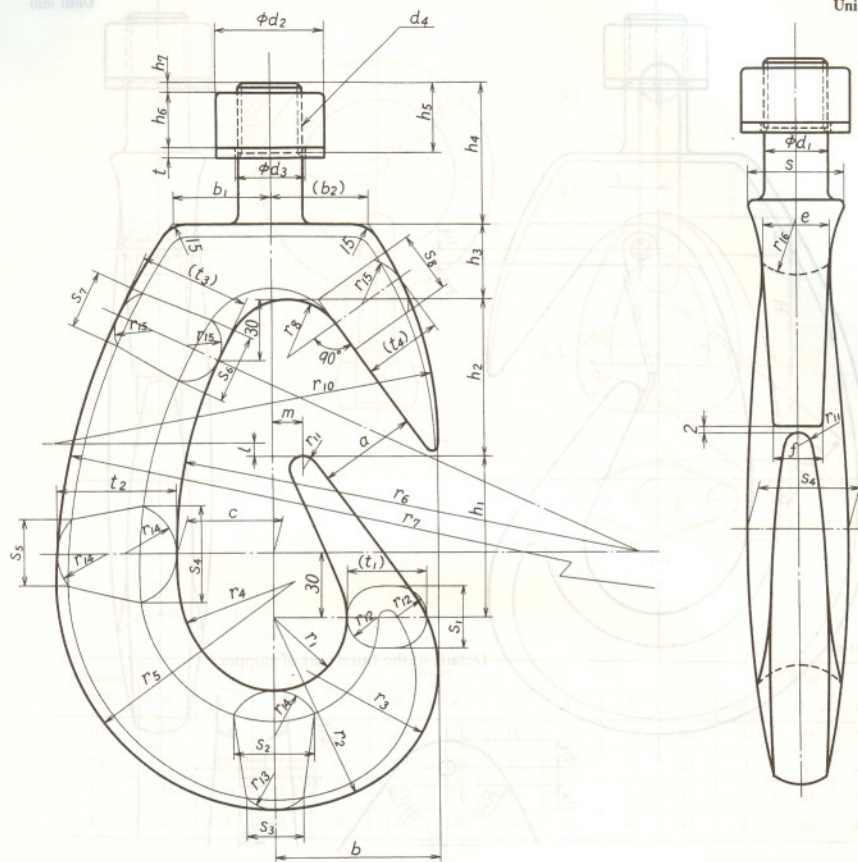


No.	Component	Material
1	Hook	JIS G 4051-S 25C
2	Washer	Brass plate
3	Nut	JIS G 4051-S 25 C or JIS G 3101-SS 41
4	Swivel	JIS G 4051-S 25 C
5	Ring	JIS G 4051-S 25 C or JIS G 3101-SS 400
6	Helical torsion spring	JIS G 4351-SUS 304-WPB (Recommended)
7	Pin and washer	JIS G 4303-SUS 304 (Recommended)
8	Stopper	JIS G 4303-SUS 304 (Recommended)
9	Split pin	JIS H 3260-C2600 W or C 2700 W (Recommended)

Remark: S 25 C shall be subjected to heat treatment so that the mechanical properties shown for reference in JIS B 4051 are satisfied.

Attached Fig. 2 Type A, Hook

Unit: mm



Unit: mm

Nominal load	a	b	b ₁	(b ₂)	c	d ₁	d ₂	d ₃	d ₄	e	f	h ₁	h ₂	h ₃	h ₄	h ₅	h ₆	h ₇	l	m	r ₁	r ₂	r ₃	r ₄	r ₅
10	38	57	34	(34)	37	22	36	23	M22 × 15	23	14	70	60	27	54	30	22	4.5	6	9	25	63	40	46	84
20	44	70	36	(36)	42	30	50	31.5	M30 × 2	28	20	74	70	37	70	40	30	4.5	5	11	30	80	52	52	102
30	47	79	38	(38)	44	36	60	37.5	M36 × 3	36	24	77	75	46	82	45	35	6	6	15	35	92	60	55	112
50	50	91	47	(47)	46	39	65	40.5	M39 × 3	42	30	80	80	50	93	52	40	6	2	18	40	108	67	65	133

Nominal load	r ₄	r ₅	r ₆	r ₁₀	r ₁₁	r ₁₂	r ₁₃	r ₁₄	r ₁₅	r ₁₆	s	s ₁	s ₂	s ₃	s ₄	s ₅	s ₆	s ₇	s ₈	t	(t ₁)	t ₂	(t ₃)	(t ₄)	Reference
10	180	263	(23)	153	4	10	14	17	12	15	35	20	25	15	32	24	23	21	17	4.5	(29)	38	(35)	(24)	6.0
20	203	270	(23.5)	167	5	13	16	22	18	22	45	26	34	20	42	30	32	28	25	4.5	(35)	50	(45)	(34)	12.0
30	224	306	(28)	184	7	15	18	25	19	28	50	30	40	24	48	34	36	32	30	5	(38)	57	(52)	(37)	20.0
50	240	335	(30)	208	8	17	20	30	25	38	60	34	46	28	56	40	46	42	39	6	(42)	68	(61)	(45)	36.3

- Remarks:
1. Dimensions in parentheses are given for reference only.
 2. Calculated mass includes swivel, ring and their accessories.