

1. **Scope** This Japanese Industrial Standard specifies wire rope nippers for ships' topping lifts (hereinafter referred to as "nippers") used temporarily when topping lift wires are belayed to cleats etc.

- 2. Reference standards** The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. All standards are subject to revision, and parties to agreements are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

JIS B 0205	Metric coarse screw threads
JIS B 1181	Hexagon nuts and hexagon thin nuts
JIS B 1256	Plain washers
JIS B 1351	Split pins
JIS B 2801	Shackles
JIS F 3410	Ship's eye plates
JIS G 3101	Rolled steels for general structure
JIS G 3525	Wire ropes
JIS G 4051	Carbon steels for machine structural use
JIS H 3250	Copper and copper alloy rods and bars
JIS H 3260	Copper and copper alloy wires
JIS H 5120	Copper and copper alloy castings

3. **Construction, shapes and dimensions** Construction, shapes and dimensions of nippers shall be as given in Attached Tables 1 through 6 and Table 3.

4. **Materials** The materials of nippers shall be as given in Table 1.

Table 1 Materials

No.	Component	Material
1	Jamming piece	JIS G 4051-S25C
2	Jamming piece	
3	Eye bolt	
4	Hexagon nut	JIS G 3101-SS400
5	Split pin	JIS H 3260-C2600W
6	Socket	JIS H 5120-CAC406 or CAC301
7	Set screw	JIS H 3250-C3604BD or C3604BE
8	Eye bolt	JIS H 3250-C3771BD or C3771BE
9	Butterfly nut	JIS G 3101-SS400
10	Pin	
11	Clasp	Steel plate
12	Eye plate	Conform to JIS F 3410
13	Shackle	Conform to JIS B 2801
14	Thimble	Conform to JIS G 3101-SS400
15	Holding rope	Conform to JIS G 3525

5. **Loading inspection** Loading inspections of nippers shall be carried out according to the testing procedures shown in Fig. 6 under the screwing torque on the butterfly nut and the proof load given in Table 2, and the measured slippage of the wire rope in the socket shall be 3 mm or less, and no serious damage to the steel wire rope shall be caused.

Table 2 Reference values for load testing

Nominal size	Dia. of applicable wire rope mm	Working load kN	Test load kN	Screwing torque of butterfly nut N · cm	Reference Calculated mass kg
14-4	14 (6 × 24)	3.9	7.8	3766	2.15
16-4	16 (6 × 24)	3.9	7.8	3766	
18-4	18 (6 × 24)	3.9	7.8	3766	
20-5	20 (6 × 24)	4.9	9.8	3923	3.46
22-5	22 (6 × 24)	4.9	9.8	3923	
20-10	20 (6 × 24)	9.8	19.6	4903	13.7
22-10	22 (6 × 24)	9.8	19.6	4903	
24-10	24 (6 × 24)	9.8	19.6	4903	
26-10	26 (6 × 24)	9.8	19.6	4903	

6. **Designation** Nippers shall be designated by title, JIS number and nominal size.

Example: Ships' wire rope nipper 14-4 or JIS F 3435-14-4

7. **Marking** Nominal size shall be marked on a readily visible part of the body.

Table 3

Unit: mm

Nominal size	① and ② Jamming piece																											Cmt. mm			
	b ₁	b ₂	b ₃	b ₄	h	h ₁	h ₂	h ₃	h ₄	h ₅	d	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆	d ₇	e	f	r	r ₁	r ₂	r ₃	r ₄	r ₅	t ₁		t ₂	t ₃	t ₄
14-4 16-4 18-4	40	40	18	13	50	12	26	8	20	—	40	32	36	18.5	12.5	28	32	27	6	10	30	10	10	19	12	12	25.5	11	20		4
20-5 22-5	45	45	20	14	60	15	30	10	22	—	45	37	40	20.5	13.5	29	35	29	7	12	35	10	10	21	13	15	29.5	12	20.5		5
20-10 22-10 24-10 26-10	55	100	23	19.5	90	23	44	10	24	75	48	38	54	28	18.5	38	44	36	9	14	40	50	70	29	18.5	15	43	17	22.5		5

Nominal size	① and ② Jamming piece					③ Eye bolt												④ Nut	⑤ Split pin	⑥ Socket, jamming piece						
	t ₅	t ₆	n	c	p	d ₈	d ₉	d ₁₀	d ₁₁	s ₁	l ₁	l ₂	l ₃	l ₄	l ₅	r ₅	t ₇			d ₁₂	d ₁₃	d ₁₄	l ₆	l ₇	t ₈	
14-4 16-4 18-4	14	3	20	16	6	18	26	13	17	18	73	13	19	8	5.5	17	15	M18	4 × 40	38	30	M5	60	30	8	
20-5 22-5	16	3	26	21	7	20	28	14	18	18	75	15	20	8	5.5	18	16	M20	4 × 40	47	37	M6	75	37.5	10	
20-10 22-10 24-10 26-10	22	3	32	27	20	27	35	16	26	24	111	15	25	8	5.5	26	26	M27	4 × 45	50.5	38	M8	105	52.5	10	

Nominal size	⑦ Set screw						⑧ Eye bolt										⑨ Butterfly nut						⑩ Pin		⑪ Clasp	
	d ₅	d ₆	s ₂	t ₉	m	l ₈	d ₁₇	d ₁₈	d ₁₉	d ₂₀	d ₂₁	d ₂₂	l ₉	s ₃	t ₁₀	d ₂₃	d ₂₄	d ₂₅	d ₂₆	b	t ₁₁	t ₁₂	h ₆	d ₂₇	l ₁₀	t
14-4 16-4 18-4	M5	9	8	3.3	1.5	13	M18	18	24	12.5	6	24	80	65	19.5	32	28	13	M18	240	22	3.5	56	12	47	5
20-5 22-5	M6	11	10	4	1.5	15	M20	20	26	13.5	6	25	90	75	20	36	29	16	M20	250	27	3.5	65	13	50	5
20-10 22-10 24-10 26-10	M8	13	20	5	1.5	28	M22	22	37	18.5	10	27	115	75	22	45	38	16	M22	300	35	3.5	100	18	65	5



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