Specification of Monotype-XV

Accepted and valid from May 2025 vote

Note: Class rules prevails over this specification

GENERAL

1.1 The intention of these rules is that the ice yachts shall be as alike as possible in all respects affecting speed and ease of handling in order that racing success shall depend on the skill of the crew.

1.2 Except where these rules specifically permit variations, ice yachts of this class shall be alike in hull form, construction, weight and weight distribution, rigging spars, runners and sail plan.

Note: In deciding whether an item is permitted it should be noted that, in a One-Design Class, unless the rules specifically state that something is permitted, it shall be assumed to be prohibited.

Full Class rules in a separate document.

3. Construction and Measurement Rules

3.1 Fuselage

Specification	MAX	MIN
3.1.1 Length overall	7465	7435
3.1.2 Distance from bow to mast step pivoting point (center of the ball)	1430	1300
3.1.2.1 Distance from top of the deck at mast step to top of the pivoting point (top of the ball)	65	opt.
3.1.3 Distance from bow to the front of the first cockpit	2655	2625
3.1.4 Distance from bow to the front of the second cockpit	4505	4475
3.1.5 Distance from bow to the end of the second cockpit (to the point of intersection of seat back and deck)	5615	5585
3.1.6 Distance from bow to pivot axis of steering runner	7165	7135

Table 1: Fuselage measurements (all dimensions in mm)

Note: No more than three fixed ball positions are allowed.

3.1.7 Thickness of plywood details:

- 3.1.7.1 Cockpit bottom, bulkhead, sides: MAX 6.4 mm, MIN 5.6 mm
- 3.1.7.2 Deck between cockpits: MAX opt., MIN 4.0 mm
- 3.1.7.3 In other places: MAX opt., MIN 3.0 mm
- 3.1.8 Not more than six additional beams should be used for bow deck reinforcement, two additional floors for bow bottom
- 3.1.9 Design of the mast plank (strengthening construction between deck and bottom) is optional
- 3.1.10 Minimum cross-section of bottom stringers is 25 x 25 mm
- 3.1.11 Minimum cross-section of deck stringers is 25 x 35 mm
- 3.1.12 Deck stringers are reinforced in cockpit part with stringer, but the thickness of deck stringer, reinforcement and sidewall should not be less than 60 mm
- 3.1.13 Fuselage shall be constructed of wood only and edges can be covered with one layer of fibreglass. Max distance of reinforcements from edge: 35 mm
- 3.1.14 A seat for the helmsman is optional. A removable seatback for the crew is allowed
- 3.1.15 The outer 60 mm ring of the bulkhead number 4 shall be as in the official plans. The dimensions interior of that ring are optional

All other dimensions should be taken from the official plans.

3.2 Runner Plank

Specification	**MAX**	**MIN**
3.2.1 Length overall	4300	4280
3.2.2 Width under the fuselage	258	252
3.2.3 Thickness under the fuselage	103	90
3.2.4 Width at ends	228	222
3.2.5 Thickness at ends	43	37
3.2.6 Distance from centreline to shroud plate (stay tang)	1250	1230
3.2.7 curve measured between a base line through the joints between the chocks and the plank at the center of the chocks and the underside of the plank; highest point for a positive camber, lowest point for a negative camber.	35	-35

Table 2: Runner plank measurements (all dimensions in mm)

- 3.2.8 Runner plank should be constructed of conifer. Non-conifer plywood may be used as a reinforcement of the runner plank in the chock area. Fibreglass is not permitted

- 3.2.9 Construction of runner plank is optional
- 3.2.10 Fixing of runner plank to the fuselage is optional except bolts should not reeve the runner plank

3.3 Mast

Specification	MAX	MIN
3.3.1 Length overall (including hardware)	7250	7230
3.3.2 Width - measured 400 mm from mast heel to 4400 mm from mast heel	183	177
3.3.3 Thickness - measured 400 mm from mast heel to 4400 mm from mast heel	75	69
3.3.4 Distance from mast heel to the underside of the sail mark	7000	-
3.3.5 Width at sail mark	85	75
3.3.6 Thickness at sail mark	56	46
3.3.7 Distance from mast heel to mast hound (load bearing point, underside of the hole)	3900	3800
3.3.8-9 Lower crosspieces must be mounted between these distances from mast heel	2100	2050
3.3.10 Upper crosspieces must be mounted between these distances from mast heel	3930	3830
3.3.11 Length of lower crosspiece	240	210
3.3.12 Length of upper crosspiece	500	450

Table 3: Mast measurements (all dimensions in mm)

- 3.3.13 The bottom of the mast must be fitted with a socket that will pivot freely on the mast step deck ball
- 3.3.13 Halyard fixing and positioning is free
- 3.3.14 Mast shall be constructed of conifer. Crosspieces must be constructed of hardwood (ash or oak). Fibreglass is not permitted
- 3.3.15 Mast must be hollow, internal construction is optional, but the official drawings show the minimum for a strong mast
- 3.3.16 The profile of the mast cross-section must assume a reasonable fair and continuous curve
- 3.3.17 Luff groove material is optional 30 mm from aft edge of the mast. The luff groove can be reinforced with fiberglass taping max 40 mm from the aft end

3.4 Boom

Specification	MAX	MIN
3.4.1 Length overall without fittings	4500	4480
3.4.2 Height (in the area 800 mm from the front edge back to 4000 mm from the front edge). Height may be tapered outside this area	123	117
3.4.3 Thickness	49	43
3.4.4 Distance between the front edge of the sail mark and (extension of) the aft edge of the mast	4400	4390

Table 4: Boom measurements (all dimensions in mm)

- 3.4.5 Boom must be constructed of conifer
- 3.4.6 Boom must be hollow
- 3.4.7 Fixing of boom to mast is optional
- 3.4.8 The profile of the boom cross-section is optional
- 3.4.9 Fibreglass is permitted for repairs of mast, boom and runner plank, it should be with less length than 500 mm
- 3.4.10 Luff groove material is optional 25 mm from upper edge of the boom

3.5 Runners

3.5.1 Steel Plate Type

3.5.1.1 Side Runners

Specification	MAX	MIN
3.5.1.1.1 Plate thickness	11	9
3.5.1.1.2 Plate length	1250	1130
3.5.1.1.3 Plate height	175	165
3.5.1.1.4 Distance between the front edge and centre of the bolt hole	785	755
3.5.1.1.5 Distance from runner upper edge to the centre of the bolt hole	32	28
3.5.1.1.6 Thickness (in chock area) with adjusting plates	49	47

Table 5: Side runners - steel plate type (all dimensions in mm)

3.5.1.2 Steering Runner

Specification	MAX	MIN
3.5.1.2.1 Plate thickness	11	9
3.5.1.2.2 Plate length	910	810
3.5.1.2.3 Plate height	175	140
3.5.1.2.4 Distance between the front edge and centre of the bolt hole	555	525
3.5.1.2.5 Distance from runner upper edge to the centre of the bolt hole	32	28
3.5.1.2.6 Thickness (in chock area) with adjusting plates	49	47

Table 6: Steering runner - steel plate type (all dimensions in mm)

- 3.5.2 Length of the runner stiffener assembly should not be less than 80% of the total runner length and the height of the stiffener should not be less than 60 mm inside the runner shock area (including steering runner)
- 3.5.2.1 Allowed materials for the stiffeners in this assembly are: steel, wood and fibreglass. Carbon fibre is not allowed
- 3.5.3 Type of steel plate is optional
- 3.5.3.1 The leading edge of all runners must be finished to a safe radius. Along the leading edge of the steel runner the minimum allowed thickness of the plate must be reached within 50 mm measured from the normal tangents of the leading edge
- 3.5.3.2 The sharpened ice contact edge may be rounded or sharpened to an included angle of not less than 85 degrees. The camber (crown) and shape of the ice contact edge is optional. Along the sharpened ice contact edge, the rounded edge or sharpened angle is allowed to be faired to the sides of the steel providing the thickness of the steel plate is not reduced below the allowed minimum

3.5.4 Wood Type Runners

- 3.5.4.1 Hard wood shall be used (oak), fibreglass may be added
- 3.5.4.2 Runner cross section profile is prismatic; of essentially constant height and thickness. But may be tapered below the minimum height outside the chock area with a maintained cross section, to a minimum height of 90 mm. The cross section can be further tapered in height and thickness over the front 350 mm and/or the aft 100 mm of the runner

3.5.4.3 Side Runners

Specification	MAX	MIN
3.5.4.3.1 Length	1535	1485
3.5.4.3.2 Height	175	165
3.5.4.3.3 Thickness (without adjusting plates)	49	44
3.5.4.3.4 Distance between the front edge and centre of the bolt hole	935	885
3.5.4.3.5 Distance from runner upper edge to the centre of the bolt hole	32	28

Table 7: Side runners - wood type (all dimensions in mm)

3.5.4.4 Steering Runner

Specification	MAX	MIN
3.5.4.4.1 Length	1115	1065
3.5.4.4.2 Height	150	140
3.5.4.4.3 Thickness (without adjusting plates)	49	44
3.5.4.4.4 Distance between the front edge and centre of the bolt hole	665	615
3.5.4.4.5 Distance from runner upper edge to the centre of the bolt hole	32	28

Table 8: Steering runner - wood type (all dimensions in mm)

3.5.5 Runner Edge Requirements

- The front upper edge of all runners should have minimum 15 mm radius

3.5.6 Runner Base and Cut

Specification	MAX	MIN
3.5.6.1 Longitudinal distance from pivot axis of steering runner to connecting line between pivot axis of side runners measured right-angle	4910	4890
3.5.6.2 Lateral distance between side runner edges below pivot axis (to be measured in sailing trim excluding ballast and sailors)	4059	4037

Table 9: Runner base and cut measurements (all dimensions in mm)

3.6 Sail

Definitions:

- **Head point** is the intersection of a (n extended) line along the luff, outside of the boltrope with its perpendicular, touching the top of the sail
- **Tack point** is the intersection of a (n extended) line along the luff, outside of the boltrope with a (n extended) line along the foot, outside of the boltrope
- **Clew point** is the intersection of a (n extended) line along the leech, with a (n extended) line along the foot, outside of the boltrope

Specification	**MAX**	**MIN**
3.6.1 Material shall be woven polyester	-	-
3.6.2 Length of luff, head point to tack point	6850	6600
3.6.3 Length of foot, tack point to clew point	4400	4220
3.6.4 Length of leech, head point to clew point	6800	6600

Table 10: Sail measurements (all dimensions in mm)

- 3.6.5 There shall be two girth measurements including bolt rope to be determined by folding the sail in quarters, using the defining points to determine 3/4 points of luff and leech, and half points of luff and leech. Using these points on luff and leech, three quarter girth measurement shall be 1320 mm or less, half girth measurement 2450 mm or less
- 3.6.5.1 Concavities in the leech shall be maximum 1% of the distance between battens
- 3.6.6 The sail shall be constructed with five batten pockets. All five batten pockets and battens shall be full length of the sail width
- 3.6.7 Batten pockets shall lie in horizontal position
- 3.6.8 Batten material structural characteristics are optional
- 3.6.9 Batten pocket width is 85 mm or less
- 3.6.10 Distance between centre lines of batten pockets, with the top batten no closer to the top than 1040: MAX 1080 mm, MIN 1040 mm
- 3.6.11 The head width, outside of boltrope to leech shall be 145 or less
- 3.6.12 Sail may have two rows of reef points
- 3.6.13 National letter(s), yacht number and insignia "XV" shall be affixed on upper part on both sides of the sail, the colour of the material used should contrast with the sail and be a minimum of 350 mm high
- 3.6.14 A window in the sail is required. The window may be any shape and placed in several sections. Sizes in square centimeters: MAX 9000, MIN 2000
- 3.6.15 A monotype sail is set with the luff boltrope in the luff groove in the mast and the foot boltrope in the groove in the boom

3.7 Rigging

- 3.7.1 Forestay shall be steel cable 7 mm or more in diameter
- 3.7.2 Shrouds shall be steel cable 6 mm or more in diameter
- 3.7.3 All other stays and steel cables shall be 3 mm or more in diameter
- 3.7.4 The sheet should have number of sheaves: MAX 11, MIN 9
- 3.7.5 Material of sheet blocks is optional
- 3.7.6 Two sheet cleats may be installed. Material of sheet cleats is optional

3.8 Fittings

3.8.1 Side Chocks

Specification	**MAX**	**MIN**
3.8.1.1 Length of chock	342	338
3.8.1.2 Height of chock	103	97
3.8.1.3 Width of runner slot at the smallest dimension where the chock comes in contact with the side of the runner or stiffening element	49	47
3.8.1.4 Distance from lower edge of the chock to the centre of the bolt hole	32	28

Table 11: Side chock measurements (all dimensions in mm)

3.8.1.5 Construction of side chock is optional
In contravention of specification 3.8.4, the aluminium 6082 side chock as produced by skarcon is also class legal

3.8.2 Steering

Specification	**MAX**	**MIN**
3.8.2.1 Steering wheel diameter	opt.	400
3.8.2.2 Diameter of hawser reel	40	35
3.8.2.3 Diameter of steering runner sector	opt.	380
3.8.2.4 Height of steering chock	95	opt.
3.8.2.5 Distance from the lower edge of the steering runner chock to the centre of the bolt hole	27	23
3.8.2.6 Steering chock axis diameter	opt.	27

Table 12: Steering measurements (all dimensions in mm)

- 3.8.2.7 Diameter of steering chock steel cable shall be 3 mm or more
- 3.8.2.8 Steering chock may incorporate a shock absorbing feature
- 3.8.3 Constructions and dimensions of fittings not fixed in these specification are optional
- 3.8.4 Fibreglass, light metals and their alloys are prohibited except current rules permit the usage

3.9 Weight

The minimum weight of a complete Monotype-XV without ballast and crew should be **205 kg**.

Complete Monotype-XV should consist of:

- Fuselage with all hardware, blocks
- Mast with stays hardware and halyard used while sailing
- Runner plank with hardware
- Runners - one set
- Sail with five battens

4. Additional Rules

4.1 Ballast

The use of ballast during competition is allowed and it should be installed in the cockpit. Ballast placed outside the cockpit can be used during speed races only and should be fixed properly. Sand, lead or steel shot is recommended for ballast. The use of big separate heavy things is prohibited.

4.2 Crew

During competition the crew may be one or two persons.

Revision History

Release Date	Comment
1999-05-29	First release
2015-02-26	Changes accepted by annual meeting 2014: Added: 3.1.15, Added: 3.5.2.1, Removed "Two sets of runners can be used during one event." from 3.5.5
2018-06-01	Changes included from annual meeting 2018 and mail voting
2019-06-25	Changes included from annual meeting 2019 and mail voting (May 2019)
2020-08-01	Specification of sail
2025-05-02	Runnerplank specification by vote

Table 13: Document revision history