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Class Rules

International Flying Junior Class Association



The Flying Junior was designed in 1956 by Uus van Essen in close cooperation with Coen Gulcher and was adopted as a World Sailing class in 1969.

sport / nature / technology



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INTRODUCTION

This introduction only provides an informal background and the International FJ Class Rules proper begin on the next page.

The intention of these rules is to ensure that boats in the International FJ Class are as alike as possible in hull form, hull weight, shape of centreboard- and rudder blade, mast and mast weight and sail plan.

FJ hulls, hull appendages, rigs and sails are measurement controlled.

Owners and crews should be aware that compliance with rules C.1 to C.6 are NOT checked as part of the certification process.

Rules regulating the use of equipment during a race are contained in Section C of these class rules, in ERS Part I and in the Racing Rules of Sailing.

PLEASE REMEMBER:

THESE RULES ARE **CLOSED CLASS RULES** WHERE IF IT DOES NOT SPECIFICALLY SAY THAT YOU MAY – THEN YOU SHALL NOT.

COMPONENTS, AND THEIR USE, ARE DEFINED BY THEIR DESCRIPTION.

PART I – ADMINISTRATION

Section A – General

A.1 LANGUAGE

- A.1.1 The official language of the class is English and in case of dispute over translation the English text shall prevail.
- A.1.2 The word “shall” is mandatory and the word “may” is permissive.
- A.1.3 Except where used in headings, when a term is printed in “**bold**” the definition in the ERS applies and when a term is printed in “*italics*” the definition in the RRS applies. When a term is printed “underlined” it is defined in these rules.

A.2 ABBREVIATIONS

- WS World Sailing
- MNA World Sailing Member National Authority.
- IFJO International FJ Class Organization.
- NFJO National FJ Class Organization.
- ERS Equipment Rules of Sailing.
- RRS Racing Rules of Sailing.

A.3 AUTHORITIES AND RESPONSIBILITIES

- A.3.1 The international authority of the class is World Sailing, which shall co-operate with the IFJO in all matters concerning these **class rules**.
- A.3.2 Neither World Sailing, an MNA, the IFJO, an NFJO, a certification authority, or an official measurer are under any legal responsibility in respect of these class rules and the accuracy of measurement, nor can any claims arising from these be entertained.
No claim arising from these class rules can be entertained.
- A.3.3 Notwithstanding anything contained herein, the **certification authority** has the authority to withdraw a **certificate** and shall do so on the request of World Sailing.

A.4 ADMINISTRATION OF THE CLASS

- A.4.1 World Sailing has delegated its administrative functions of the class to MNAs. The MNA may delegate part or all of its functions, as stated in these **class rules**, to an NFJO.
- A.4.2 In countries where there is no MNA, or the MNA does not wish to administrate the class, its administrative functions as stated in these **class rules** shall be carried out by the IFJO which may delegate the administration to an NFJO.

A.5 CLASS RULES VARIATIONS

- A.5.1 At World, Continental or Regional Championships the Notice of Race and Sailing Instructions may change the **class rules** only with the agreement of the IFJO and World Sailing.

A.6 CLASS RULES AMENDMENTS

- A.6.1 Amendments to these **class rules** shall be proposed by the IFJO and shall be subject to approval of World Sailing in accordance with World Sailing Regulations.

A.7 CLASS RULES INTERPRETATIONS

A.7.1 GENERAL

Interpretation of **class rules**, except as provided by A.7.2, shall be made in accordance with World Sailing Regulations.

A.7.2 AT AN EVENT

Any interpretation of class rules required at an event may be made by an International Jury constituted in accordance with the RRS. Such interpretation shall only be valid during the event and the organising authority shall, as soon as practical after the event, inform World Sailing, the MNA and the IFJO.

A.8 INTERNATIONAL CLASS FEE AND WORLD SAILING BUILDING PLAQUE

- A.8.1 The **hull** builder shall pay the International Class Fee to World Sailing.
- A.8.2 World Sailing shall, after having received the International Class Fee for the **hull**, send World Sailing Building Plaque to the **hull** builder. World Sailing Building Plaque shall be fixed by the **hull** builder into the **hull** and the **hull** builder shall deliver the international class fee receipt to the owner.
- A.8.3 The amount of the International Class Fee shall be reviewed by World Sailing in consultation with the IFJO.
- A.8.4 **Hulls** built, measured and registered before 1st July 1972 do not need to have an International Class Fee paid to World Sailing.

A.9 SAILNUMBERS

- A.9.1 Sail numbers shall be issued by the MNA of the country where the boat is registered, which may delegate this function to the NFJO.

A.10 HULL CERTIFICATION

- A.10.1 For a **hull** not previously certified, all items required on the measurement form shall be measured by an official measurer recognized by the IFJO and the details entered onto the measurement form.
- A.10.2 Upon satisfactory **hull** measurement three copies of the completed measurement form shall be supplied to the owner of the **hull**. The official measurer shall keep one copy of the measurement form.
- A.10.3 The owner shall send three copies of the completed measurement form together with any certification fee required to the **certification authority** in the country where the **hull** is to be registered.
- A.10.4 Upon receipt of the copies of the completed measurement form and the fee required, the certification authority shall issue a **certificate**. The **certificate** shall contain the information as stated on the measurement form, the sail number and the full name of the owner.
- A.10.5 The certification authority shall retain the measurement forms, which shall be transferred to the new certification authority when a **hull** is exported.

- A.10.6 The IFJO shall receive at regular intervals from each MNA details of sail numbers together with the names and addresses of owners and a copy of the measurement forms, or measurement certificates.

A.11 VALIDITY OF CERTIFICATE

- A.11.1 A **hull certificate** becomes invalid upon:
- (a) The change of any item recorded on the **certificate** beyond the limits of these **class rules**,
 - (b) Change of ownership,
 - (c) Withdrawal by the **certification authority**,
 - (d) The issue of a new **certificate**.

A.12 COMPLIANCE WITH CLASS RULES

- A.12.1 A **boat** ceases to comply with the **class rules** upon:
- (a) Alterations, replacements or repairs beyond the limits of the class rules.
 - (b) A change of **class rules** that causes equipment in use to cease to be permitted. Excluded is the **hull** and rig, which may comply with the **class rules** in force at the time of its initial fundamental measurement.

A.13 HULL RE-CERTIFICATION

- A.13.1 The **certification authority** may issue a new certificate to a previously certified hull showing dates of initial and new certification as applicable:
- (a) When a certificate has become invalid under A.11.1 (b) after receipt of the old certificate, and certification fee if required. If this **certification authority** is different from the previous **certification authority** then the new **certification authority** should receive the **hull** measurement form(s) from the old **certification authority** prior to re-certification. The new **certification authority** may issue the **hull** a new identification number.
 - (b) When the certificate has become invalid under A.11.1 (c), at its discretion.
 - (c) In other cases, by application of the procedure required for initial hull certification.
- A13.2 The **hull** shall be measured in accordance with the **class rules** in force when it first underwent certification control.

Section B – Boat Eligibility

For a **boat** to be eligible for *racing*, it shall comply with the rules in this section.

B.1 CLASS RULES AND CERTIFICATION

- (a) The **boat** shall be in compliance with the **class rules**.
- (b) The **boat** shall have a valid **hull certificate** and identification marks conform rule D.2.2.
- (c) **Sails** shall carry valid certification marks.

PART II – REQUIREMENTS AND LIMITATIONS

The **crew** and the **boat** shall comply with the rules in Part II when *racing*. The rules in Part II are **closed class rules**. Any dimension not determined in these rules is not restricted.

Certification control and **equipment inspection** shall be carried out in accordance with the ERS except where varied in this Part.

It is the owner's responsibility to ensure that his **boat** comply with these **class rules** at all times and that alterations, replacements or repairs to the **boat** do not invalidate the **certificate**.

Section C – Conditions for racing

C.1 GENERAL

C.1.1 RULES

- (a) The ERS Part I – Use of Equipment shall apply.
- (b) RRS 49.1 is changed to read “A **crew** member shall use no device designed to position his body outboard other than a **trapeze**, hiking straps and stiffeners worn under the tights”.
- (c) RRS 50.1(c) is changed as permitted by the rule itself, to allow the use of trapeze harnesses that are not of the quick release variety

C.2 CREW

C.2.1 LIMITATIONS

The **crew** shall consist of 2 persons.

C.3 PERSONAL EQUIPMENT

C.3.1 MANDATORY

- (a) The **boat** shall be equipped with a **personal floatation device** for each **crew** member to the minimum standard ISO 12402-5, USCG Type III, AS 4758 or equivalent. They shall be ready to use.

C.3.2 OPTIONAL

One **trapeze** belt or harness shall only be worn by one crew member. This rule changes RRS 49.1. A **trapeze** belt or harness shall weigh no more than 3.5kg weighed as determined by RRS Appendix H. This changes RRS 50.1 (b).

C.4 ADVERTISING

C.4.1 LIMITATIONS

Advertising is permitted only in accordance with World Sailing Advertising Code. (World Sailing Regulation 20).

C.5 PORTABLE EQUIPMENT

C.5.1 MANDATORY

(a) FOR USE

- (1) Except in self-bailing boats, at least one hand bailer or bucket of capacity of a minimum of 0.8 litres.

(b) NOT FOR USE

- (2) A towing rope minimum 20 m long of not less than 6 mm in diameter. The rope shall not be stowed in a buoyancy tank and shall be ready to use.
- (3) A minimum of one paddle minimum 900 mm long and minimum weight 0.30 kg. The paddle shall be ready to use.
- (4) If an anchor is prescribed in the Sailing Instructions the anchor, a chain, and a minimum of 20 m synthetic line of minimum 6 mm diameter shall weigh at least 2.3 kg. The line shall be attached directly or indirectly to the anchor and to the **boat**. The anchor shall be ready to use.

C.5.2 OPTIONAL

(a) FOR USE

- (1) Any electronic or mechanical timing devices.
- (2) Any magnetic or electronic compasses, provided they have no data correlation capability.
- (3) Drinks, food and packaging.
- (4) Any mechanical wind direction indicators.
- (5) Any extra clothing.

(b) NOT FOR USE

- (1) Any other portable equipment.

C.6 BOAT

C.6.1 LIMITATIONS

- (a) Unless specified in the Notice of Race and/or the Sailing Instructions there are no limitations concerning the amount of equipment, hull appendages, rigging and sails for use at an event. But only one **mast, boom, jib, mainsail, spinnaker, rudder, and centreboard or dagger board** may be aboard during a race.

C.7 HULL

C.7.1 LIMITATIONS

- (a) Any fittings may be used as long as the **hull** complies with these Class Rules.
- (b) Inspection hatch covers and drainage plugs shall be kept in place at all times while racing.
- (c) **Hulls** built from 1st January 1995 onwards shall have at least two separated watertight buoyancy tanks.
- (d) **Hulls** certified after 30 June 1972 shall carry the International Class Fee Plaque fixed in a conspicuous position.

C.7.2 MODIFICATIONS, MAINTENANCE AND REPAIR

The following is permitted without the approval of the IFJO Technical Committee. Unless stated otherwise items mentioned in this section may be obtained from any manufacturer or supplier.

- (a) The **hull** shell shall not be altered in any way except as permitted by these class rules.
- (b) Any holes are allowed.
- (c) Routine maintenance of the **hull** shell is permitted without re-measurement and re-certification.
- (d) Other parts of the **hull** may be modified within the limits of these rules without re-measurement and re-certification.

C.8 HULL APPENDAGES

The following is permitted without the approval of the IFJO Technical Committee. Unless stated otherwise items mentioned in this section may be obtained from any manufacturer or supplier.

C.8.1 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) **Hull appendages** shall not be altered in any way except as permitted by these **class rules**.
- (b) Any maintenance, repair or modifications within the limits of these **class rules** are permitted without re-measurement.

C.8.2 CENTREBOARD / DAGGER BOARD

C.8.2.1 MANDATORY

- (a) Any device shall be fitted to the **centreboard** or **dagger board** to prevent its trailing edge to be raked beyond the limitations in rule E 3.1 (e).
- (b) No trimtabs or hydrofoils shall be applied to the **centreboard** or **daggerboard**

C.8.2.2 OPTIONAL

- (a) Above the keel line any fittings may be used on the **centreboard** or **daggerboard**.

C.8.3 RUDDER

C.8.3.1 MANDATORY

- (a) Any device to keep the **rudder** attached to the **hull** even when the **boat** is inverted
- (b) No trimtabs or hydrofoils shall be applied to the **rudder**.

C.8.3.2 OPTIONAL

- (a) Any other fitting above the waterline are optional as long as the rudder complies with these class rules

C.9 RIG

C.9.1 PARTS

(a) MANDATORY

- (1) **Mast**
- (2) **Boom**
- (3) **Forestay**
- (4) **Mainsail** halyard
- (5) Jib halyard

(b) OPTIONAL

- (1) Any other **standing rigging**
- (2) Any other **running rigging**
- (3) **Trapeze**
- (4) Spinnaker pole
- (5) **Spreaders**
- (6) Mast ram (**mast** controller working in pressure)
- (7) Boom kicker (**boom vang** working in pressure)

(c) LIMITATIONS

Any other part of rigging is allowed except: running backstays, jib furling systems and spinnaker chutes.

C.9.2 DEFINITIONS

- (a) The **mast datum point** is the intersection of the deck line with the aft edge of the **mast** extended as necessary. If the **mast** is deck stepped the **mast datum point** is the intersection of the surface of the deck and the aft side of the **mast**, each extended as necessary.

C.9.3 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) **Spars** shall not be altered in any way except as permitted by these **class rules**. Any other parts of the **rig** may be altered.
- (b) Routine maintenance, repair and modification within the limits of these class rules is permitted without re-measurement.

C.9.4 CERTIFICATION

- (a) No certification of any part of the **rig** is required.

C.9.5 MAST

C.9.5.1 LIMITATIONS

- (a) Any **mast spar** may be used as long as it complies with these **class rules**.
- (b) The **jib** halyard shall be set below the **forestay rigging point**.
- (c) The **mast spar** shall be placed inside the **hull** shell or stepped on the deck and shall not rotate around its longitudinal axis.
- (d) Any fittings or equipment are optional.

C.9.6 BOOM

C.9.6.1 LIMITATIONS

- (a) Any **boom spar** may be used as long as it complies with these **class rules**.
- (b) Any fittings are optional.

C.9.7 SPINNAKER POLE

C.9.7.1 LIMITATIONS

- (a) Any **spinnaker pole** may be used as long as it complies with these **class rules**.
- (b) Any fittings are optional
- (c) The **spinnaker pole** may be used for any purpose as long as it complies with the RRS.

C.9.8 STANDING RIGGING

C.9.8.2 LIMITATIONS

- (a) Any **standing rigging** may be used as long as it complies with these **class rules**.
- (b) Any fittings are optional.

C.9.9 RUNNING RIGGING

C.9.9.1 LIMITATIONS

Any **running rigging** may be used as long as it complies with these **class rules**.

C.10 SAILS

C.10.1 MODIFICATIONS, MAINTENANCE AND REPAIR

Routine maintenance, repair or modification within the limits of these **class rules** is permitted.

C.10.2 MAINSAIL

(a) IDENTIFICATION

- (1) The **sail** identification shall comply with the RRS Appendix G with the exception that the class emblem do not have to be placed at different heights on the two sides of the **sail**.
- (2) The class emblem shall be the letters "FJ" not less than 300 mm high.

(b) USE

- (1) The **sail** shall be hoisted on a **halyard**. The arrangement shall permit hoisting and lowering of the **sail** whilst afloat.
- (2) **Luff** and foot bolt ropes or slides shall be in the **spar** grooves or tracks at all time when racing.
- (3) Battens may be placed in the **batten pockets**.

C.10.3 JIB

(a) IDENTIFICATION

No **sail** identification is necessary.

(b) LIMITATIONS

- (1) The jib tack shall be attached at or aft of the forestay attachment.
- (2) The **sail** shall be hoisted on a **halyard**. The arrangement shall permit hoisting and lowering of the **sail** whilst afloat.

C.10.4 SPINNAKER

(a) IDENTIFICATION

No **sail** identification is necessary.

Section D – Hull

D.1 PARTS

(a) MANDATORY

- (1) **Hull** shell.
- (2) Transom.

- (3) Gunwale rubbing strakes, running continuous on each gunwale.
- (4) Forestay fitting.
- (b) OPTIONAL
 - (1) Any other part or construction is optional, as long as the **hull** complies to the **class rules**.

D.2 GENERAL

D.2.1 RULES

The **hull** shall comply with the **class rules** in force at the time of initial **certification**.

D.2.2 IDENTIFICATION

- (a) The identification number and national letters in figures and letters not less than 25 mm high shall be either cut into or indelibly marked on the hog or the top of the **centreboard** case or near the shroud fittings. If the ownership of the **hull** has changed to another country, the new sail number and national letters shall be added.

D.2.3 DEFINITIONS

- (a) The '**hull**' coordinate system shall be used. More information concerning the **hull** coordinate system can be found in the World Sailing document Int. measurement manual.
- (b) The **hull datum point** is the intersection of the **hull** centre plane, the outside of the **hull** shell and the transom, each extended as necessary.
- (c) The sheerline datum points are the port and starboard intersections of the sheerline and the transom, each extended as necessary.
- (d) The keel line is the intersection of the **hull** centre plane and the outside of the **hull** shell.
- (e) The deck line is the imaginary line on the **hull** centre plane between the intersection of the upper edge of the transom with the **hull** centre plane and the highest point of the keel line.
- (f) The stem datum point is the intersection of the keel line and the deck line
The stations 1 through 9 are defined as planes through 3 points; two on the sheerlines and one on the keel line.
- (g) The baseline is the straight line on the **hull** centre plane through the points at the following vertical distances from the **hull** shell:

at **hull datum point** -175 mm
 at the intersection of the keel line and station 9
 (3340 mm from HDP, measured along keel line)-100 mm

D.2.4 BUILDERS

The **hull** may be built by any builder.

D.2.5 MATERIALS AND CONSTRUCTION

- (a) The **hull** may be built from any material.
- (b) The transom shall be set at the aft end of the **hull**.
- (c) Except keel bands, **centreboard** strips and self-bailers, fittings shall not extend outside the surface of the **hull** shell.

- (d) Drainage flaps or other fittings / construction shall not extend the **hull** shell beyond the transom.
- (e) Any other construction is allowed but the designed shape of the **hull** shell shall not be altered beyond the limits in these **class rules** as indicated in the table of offsets in Appendix H3.
- (f) Keel bands of any material may be fitted but shall not be let in or faired into the **hull** shell.

D.3 BUOYANCY TANKS

D.3.1 CONSTRUCTION

- (a) The **hull** shall have a separate bow buoyancy bag or slabs of rigid non-communicating air cell foam plastic of not less than 70 litres securely fastened or put into a tank.
- (b) Buoyancy tank inspection holes shall be of sufficient size to enable inspection of buoyancy. Covers shall be watertight, detachable and capable of resisting accidental dislodgement.

D.4 ASSEMBLED HULL

D.4.2 MEASUREMENT

The **hull** shall conform to the drawings and measures as presented in appendix H1 and H2. In the case of doubt about the **hull** shape, measurements on stations between 0 (transom), 3, 6, and 9 may be taken. Only templates supplied by World Sailing or IFJO shall be used for **hull** measurement.

For template measurement of the stations 0, 3, 6, and 9, three points shall be marked on the **hull** shell per station, one on every sheerline and one on the keel line. The points are defined by a distance from the **HDP** and the sheerline datum points, measured along the keel line or **sheerline**.

	Distance from hull datum point measured along the <u>keel line</u> (one point per station).	Distance from each sheerline datum points, measured along the sheerlines on both sides of the hull (two point per station).
Station 3	1115 mm	1124 mm
Station 6	2227 mm	2237 mm
Station 9	3340 mm	3402 mm

D.4.3 CONDITIONS FOR STATION AND STEM MEASUREMENTS.

The station templates shall be placed so that:

- (a) The station templates are situated entirely on the imaginary plane through the points set out on both **sheerlines** and on the keel line.
- (b) At least one lug (extension) of the station templates shall touch the **hull** shell.

(c) The centre of the station templates is situated on the hull centre plane.

The stem template shall be placed as follows:

(d) It shall be placed on the keel line with the aft end within 6 mm of station 9.

(e) Both lugs of the stem template shall touch the **hull** shell.

D.4.4 DIMENSIONS

	minimum	maximum
<u>Length of deckline</u>	4020 mm	4040 mm
Hull beam at sheerline , (=excluding rubbing strakes and fittings):		
at station 0	1140 mm	1160 mm
at station 3	1465 mm	1485 mm
at station 6	1386 mm	1406 mm
at station 9	724 mm	744 mm
Difference between the maximum and minimum deviation taken over both sides of any transversal hull station checked by a template (= maximum - minimum deviation)		10 mm
Vertical distance from the horizontal mark on the template to the upper side of the deck at the sheerline	-12 mm	12 mm
Clearance of stem template between the end lugs with the aft end of the stem template within 6 mm of station 9		6 mm
Vertical distance from the upper side of the template at the sheerline , to the upper side of the deck at the <u>stem datum point</u> , with the aft end of the stem template within 6 mm of station 9	-12 mm	12 mm
Vertical distance from <u>baseline</u> to the outside of hull shell:		
at station 3 (=A)	64 mm	84 mm
at station 6 (=B)	18 mm	38 mm
keel rocker;		
Sum of the vertical distance from the <u>baseline</u> to the outside of the hull shell at station 3 and 6 (= A + B)	92 mm	112 mm
Gunwale rubbing strakes;		
Depth	5 mm	35 mm
Width	5 mm	90 mm
Extension forward of <u>stem datum point</u>		50 mm
Extension aft of the transom		50 mm
Centerboard or daggerboard slot distance from hull datum point measured along the keel line		
If fitted for a centerboard	1288 mm	2262 mm

If fitted for a dagger board	1588 mm	2262 mm
Width of centerboard/dagger board slot		40 mm
Keel band thickness, if fitted		5 mm
Keel band width, if fitted		8.5 mm
Height of the transom at the hull centerplate	394 mm	406 mm
Radius between the hull shell and the transom		10 mm
Angle between the transom and the extension of the <u>keel line</u>	78°	90°
Deck height above the <u>deck line</u> . The spray deflector is not part of the deck		30 mm
Horizontal distance from center of forestay attachment to <u>stem datum point</u> excluding rubbing strakes		100 mm
Weight of the hull in dry condition including all fixed fittings, fixed ropes, buoyancy apparatus, protective finish, and corrector weights, but excluding sails, spars, rigging, hull appendages , floorboards unless glued to the hull shell and other equipment	75 kg	

D.4.4 HULL CORRECTOR WEIGHTS

Any **corrector weights** may be used and shall be permanently fastened to the **hull** by bolts, nuts, screws or glue.

	minimum	maximum
Total weight of corrector weights		5.0 kg

Section E – Hull appendages

E.1 PARTS

E.1.1 MANDATORY

- (a) **Centreboard** or **daggerboard**
- (b) **Rudder**

E.2 GENERAL

E.2.1 RULES

Hull appendages shall comply with the **class rules** in force at the time of **certification**.

E.2.2 MODIFICATIONS, MAINTENANCE AND REPAIR

Hull appendages shall not be altered in any way except as permitted by these **class rules**.

E.2.3 MANUFACTURER, MATERIAL AND CONSTRUCTION

- (a) The **hull** appendages may be built from any material.
- (b) The manufacturer is optional.

E.3 CENTREBOARD / DAGGERBOARD

E.3.1 DIMENSIONS AND CONSTRUCTION

- (a) The shape in the longitudinal plane of the part of the **centreboard/daggerboard** under the keel line when in its fully lowered position shall conform the Table of offsets in table 1, with maximum deviations conform figure 1. Both tables and figures are presented in Appendix H1.3
- (b) The shape in the horizontal cross sections is optional.
- (c) Above the **hull** keel line the shape of the **centreboard/daggerboard** is optional.
- (d) The **centreboard/daggerboard** may be rotated, the daggerboard may be retracted
- (e) Maximum depth and angle between trailing edge of the **centreboard/daggerboard** and the **hull** shell, excluding the keel band, shall conform figure 2 as presented in Appendix H1.3.
- (f) The maximum rotation around vertical and longitudinal axes shall be 90 deg.

E.4 RUDDER BLADE, RUDDER STOCK, TILLER AND TILLER EXTENSION

E.4.1 DIMENSIONS AND CONSTRUCTION

- (a) The shape in the longitudinal plane of the part of the rudder under the waterline shall be conform the Table of offsets in table 2. The deviation of that shape shall be conform figure 3. Both table and figures are presented in Appendix H1.4.
- (b) The shape in the horizontal cross sections is optional.

- (c) The shape and construction of the parts above the waterline is optional.
- (d) The maximum depth shall be conform figure 4 as presented in AppendixH1.4.
- (e) The rudder blade may be capable to be rotated and or, partially, retracted.

Section F – Rig

F.1 GENERAL

F.1.1 RULES

- (a) The **spars** and their fittings shall comply with the **class rules**.
- (b) The **standing rigging** and **running rigging** shall comply with these **class rules**.

F.1.2 MANUFACTURER

The manufacturer is optional.

F.2 MAST

F.2.1 MATERIALS AND CONSTRUCTION

- (a) The **mast spar** shall be made of wood or aluminium alloy, it may be anodized or painted.
- (b) The construction of the **mast spar** is optional, except that the **mast spar** shall include a fixed sail groove or track, which may or may not be integral with the **spar** but may be of any material.
- (c) The **lower limit mark** and **upper limit mark** shall be permanently marked in distinguishable colours.

F.2.2 DIMENSIONS

-	minimum	maximum
Lower point height		650-mm
Limit mark width	10-mm	
<u>Upper point height</u> , Distance from the lower point to the upper point .		4850 mm
Hoist height of the Spinnaker <u>measured from the lower point</u>	-	3500 mm
Mast spar curvature		40 mm
Mast weight if deck stepped, or	7.0 kg	
Mast weight if stepped inside the hull shell, includes halyards, trimlines and other lines or ropes going through the mast spar and other fittings permanently attached to the mast spar but without any removable parts of the trapeze system.	7.5 kg	
	-	-

F.3 BOOM

F.3.1 MATERIALS AND CONSTRUCTION

- (a) The **boom spar** shall be made of wood or aluminium alloy. It may be anodised or painted. May be of any material.
- (b) The construction of the **boom spar** is optional except that the **boom spar** shall include a fixed sail groove or track, which may be integral with the **spar**. The **sail** groove or track may be of any material.
- (c) The outer **limit mark** shall be marked in distinguishable colours.

F.3.2 DIMENSIONS

	minimum	maximum
Boom spar curvature		20 mm
Boom spar cross section		100 mm
Limit mark width	10 mm	
Outer point distance		2440 mm

F.4 SPINNAKER POLE

F.4.1 MATERIALS AND CONSTRUCTION

The **spinnaker pole** may be of any material and construction.

F.4.2 DIMENSIONS

	minimum	maximum
Distance between the outermost point of the spinnaker pole in its position in use and the intersection of the centre line of the spinnaker pole with the mast spar each extended as necessary and measured at 90°		1625 mm

F.5 STANDING RIGGING

F.5.1 MATERIALS AND CONSTRUCTION

The **standing rigging** may be made out of any material and construction.

F.5.2 DIMENSIONS

	minimum	maximum
Forestay diameter	2.5 mm	
Distance from the <u>stem datum point</u> to the intersection of the forestay extended as necessary with the deck.		100 mm

F.6 RUNNING RIGGING

F.6.1 MATERIALS AND CONSTRUCTION

Running rigging may be made out of any material and construction.

Section G – Sails

G.1 PARTS

(a) MANDATORY

(1) **Mainsail**

(2) Jib

(b) OPTIONAL

(1) **Spinnaker**

G.2 GENERAL

G.2.1 RULES

Sails shall comply with the **class rules** in force at the time of **certification**.

G.2.2 CERTIFICATION

(a) The official measurer shall certify **mainsails** and jibs in the tack and spinnakers in the head and shall sign and date the certification mark.

(b) World Sailing or an MNA may appoint one or more In-House Official Measurers to measure and **certify sails** produced by that manufacturer.

G.2.4 MANUFACTURER

The manufacturer is optional.

G.3 MAINSAIL

G.3.1 MATERIALS AND CONSTRUCTION

(a) The construction shall be : **soft sail**

(b) The **ply** shall consist of any material in any weight.

(c) The **body of the sail** shall consist of any **ply**

(d) Headboards may be built in any construction and of any material.

(e) The following are permitted: Stitching, glues, tapes, (corner) eyes, Cunningham eyes or pulleys leech line with cleat, any **windows**, tell tales, sail shape indicator stripes and all other items or constructions

(f) Battens may be built in any construction and of any material.

(g) The **sail** shall have not more than 3 batten pockets, which may contain battens.

(h) Stiffening of any other material than **soft sail** is not permitted.

(i) The following are permitted: bolt ropes, and all other items or constructions as long as they comply with these class rules

(j) The **leech** shall not extend aft of straight lines between:

(1) The **aft head point** and the intersection of the **leech** and the upper edge of the nearest **batten pocket**,

(2) The intersection of the **leech** and the lower edge of a **batten pocket** and the intersection of the **leech** and the upper edge of an adjacent **batten pocket** below,

(3) The **clew point** and the intersection of the **leech** and the lower edge of the nearest **batten pocket**.

G.3.2 DIMENSIONS

	minimum	maximum
Leech length		5260 mm
Upper width at upper leech point 2565 mm from head point		1600 mm
Upper width at upper leech point 1245 mm from head point		1015 mm
Top width		160 mm
Luff bolt rope length	3880 mm	
Thickness of Reinforcement		4 mm
Extension of headboard from head point at 90° to the luff		160 mm
Inside batten pocket length of Intermediate batten pocket		775 mm
Inside batten pocket length of Lowermost batten pocket		525 mm
Inside Batten pocket width		50 mm
Distance from intersection of leech with the centreline of the lower batten pocket and the clew point	1245 mm	1365 mm
Distance from intersection of leech with the centreline of intermediate batten pocket and the head point	2505 mm	2625 mm
Distance from intersection of leech with the centreline of upper batten pocket and the head point	1185 mm	1305 mm
Distance from head point to intersection of luff with the centreline of uppermost batten pocket		1290 mm

G.4 JIB

G.4.1 MATERIALS AND CONSTRUCTION

- (a) The construction shall be : **soft sail**
- (b) The **ply** shall consist of any material in any weight.
- (c) The **body of the sail** shall consist of any **ply**.
- (d) The leech shall not extend beyond a straight line from the aft head point to the clew point.
- (e) The following are permitted: Stitching, glues, tapes, (corner) eyes, Cunningham eyes or pulleys leech line with cleat, any **windows**, tell tales, sail shape indicator stripes and all other items or constructions as long as the **sails** comply with these **class rules**.

G.4.2 Dimensions

	minimum	maximum
--	---------	---------

Luff length	3800 mm
Leech length	3500 mm
Foot length	1950 mm
Foot Median	3660 mm
Foot irregularity	10 mm
Top Width	55 mm
Thickness of Reinforcement	4 mm

G.5 SPINNAKER

G.5.1 MATERIALES AND CONSTRUCTION

- (a) The construction shall be: **soft sail**
- (b) The **ply** shall consist of any material in any weight.
- (c) The **body of the sail** shall consist of any **ply**.
- (d) Any construction is permitted as long as it complies with the **class rules**

G.5.2 DIMENSIONS

	minimum	maximum
Leech length and luff length		3600 mm
Foot length		2400 mm
Foot Median		4200 mm
Half width		2600 mm
Thickness of Reinforcement		4 mm

PART III – APPENDICES

Section H

H.1.1 HULL, BOOM AND SPINAKER POLE PLAN.

Table of offsets

Hull International FJ

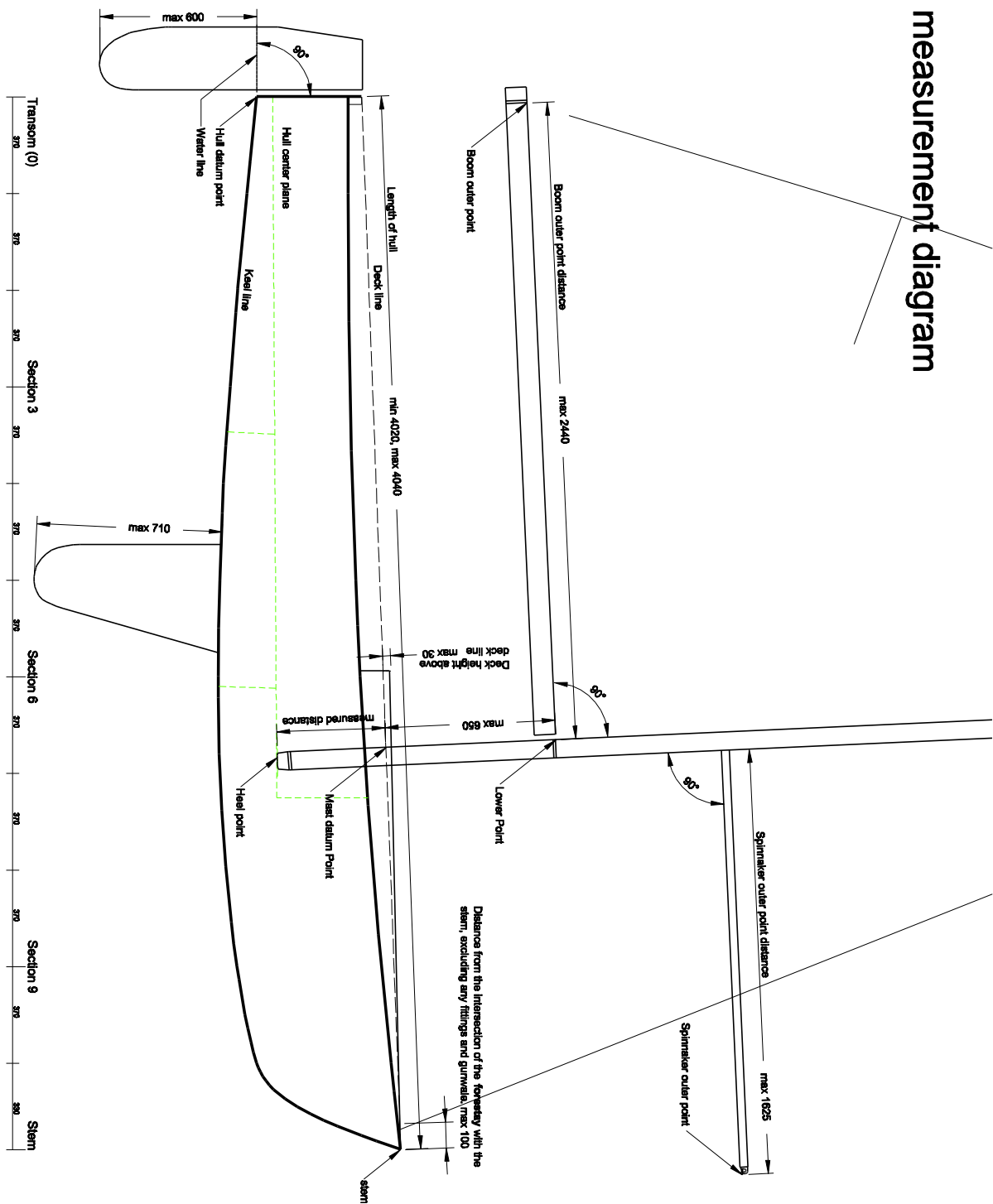
x Length (longitudinal direction)
y Width (transversal direction)
z Height (normal direction)
(0,0,0) = **Hull Datum Point**
all figures are in mm

Station		Waterlines					Buttocks			
		4	3	2	1	c.w.l.	keel	I	II	III
		z=400	z=300	z=200	z=100	z=0	y=0	y=150	y=300	y=450
0	x=0 (transom)						400	396.5	386.5	369.5
0	x=0 (transom)		570	550	487.5	3.5	0	17	36	76
1	x=370		640.5	624	575	300	-37	-17	0	27
2	x=740		697	683	645	503	-72	-50	-33	-14
3	x=1110		734	722.5	689	597	-101	-76	-57.5	-42.5
4	x=1480		747	734	700.5	615	-126.5	-95.5	-75	-56
5	x=1850		727	702.5	665	581	-140.5	-104	-80	-53
6	x=2220		675	643	594	502	-147	-102	-68	-25.5
7	x=2590	618	590	553	496	388.5	-140.5	-84	-39	-46
8	x=2960	500	469	430.5	371	257	-117	-50	29.5	247
9	x=3330	346	316.5	281	225	124	-75	20	250	
10	x=3700	165.5	136	106	66	3.5	0	354		
stem	x=4030						550			

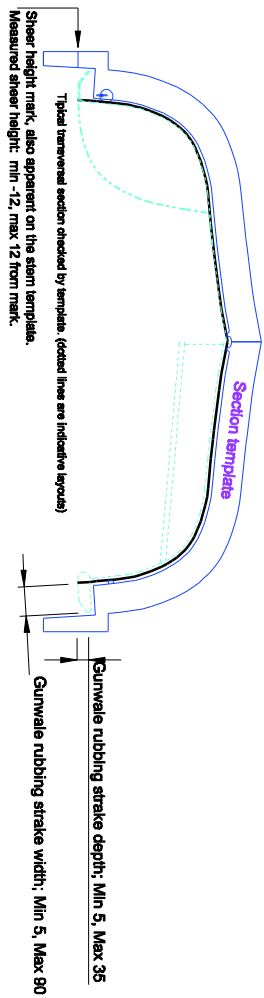
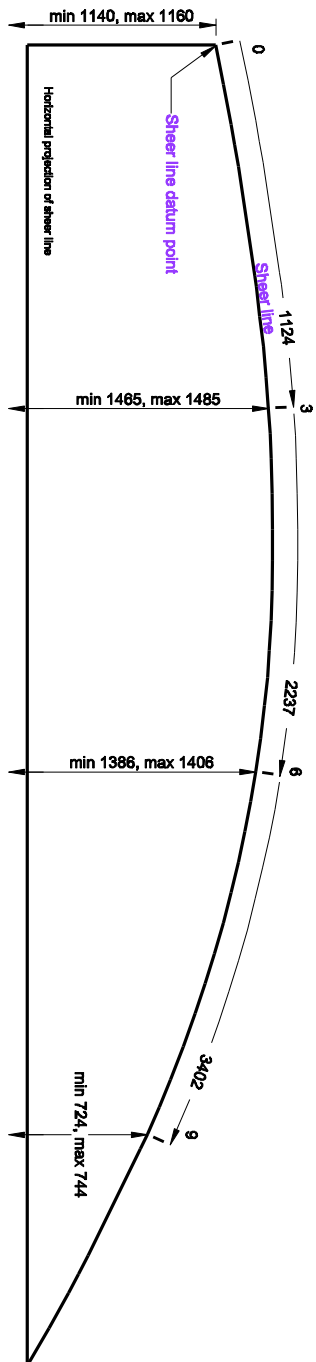
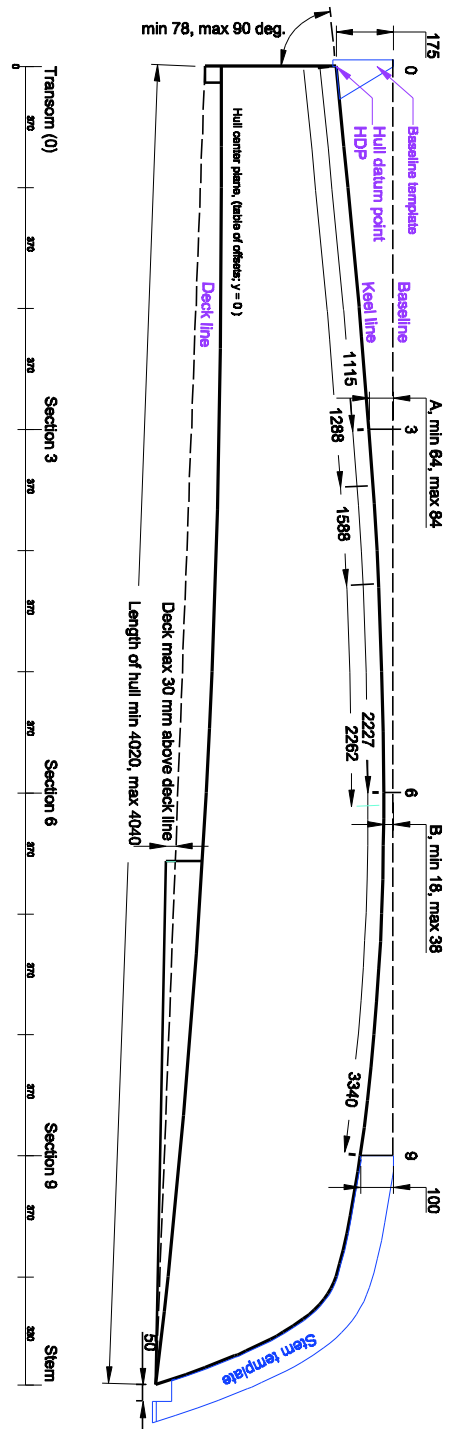
The table of offsets is derived from the blueprint of the drawing of the Int Flying Junior, dated mar-1973 by International Yacht Racing Union, 5 Buckingham Gate, London SW1E 6JT, mar-73.

Table made, and checked by Martijn Aarts (NL), 23-4-2013

Int. FJ measurement diagram



Int FJ Class hull measurement Plan



The drawings are NOT on scale, all values are in mm.
The Int. FJ uses the Hull coordinate system.
Drawn 24-7-2015, Martijn Aarts, The Netherlands.

H.1.3 CENTREBOARD / DAGGER BOARD

Table 1. Table of offsets centerboard/daggerboard.

Depth beneath hull (see figure 1)	Trailing edge	Leading edge
z	x ₁	x ₂
4,9		414,2
0	0,0	414,6
-100	0,0	386,2
-200	0,0	357,8
-300	0,0	329,4
-400	0,0	301,0
-500	0,0	272,7
-534,7	0,0	263,7
-550	0,5	258,5
-575	2,9	251,3
-598,7	6,9	254,5
-600	8,3	243,7
-625	16,5	235,8
-650	28,8	225,9
-660	35,4	221,1
-670	43,8	214,4
-680	53,6	206,3
-690	66,5	195,5
-700	84,9	178,5
-705	98,3	165,5
-707,5	108,0	154,0
-710	128,5	128,5

Figure 1. Deviation of design shape of centerboard/daggerboard.

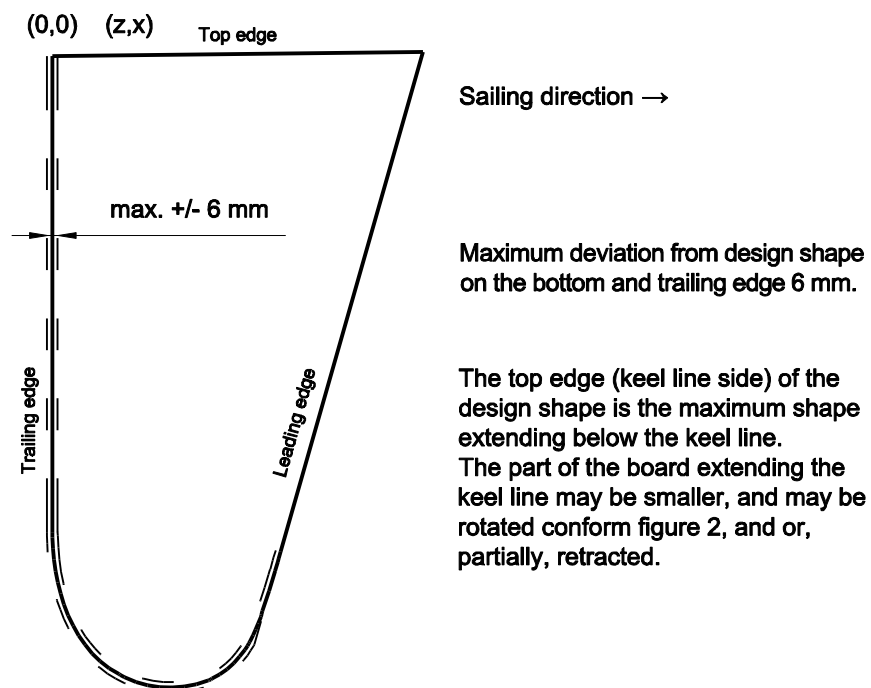
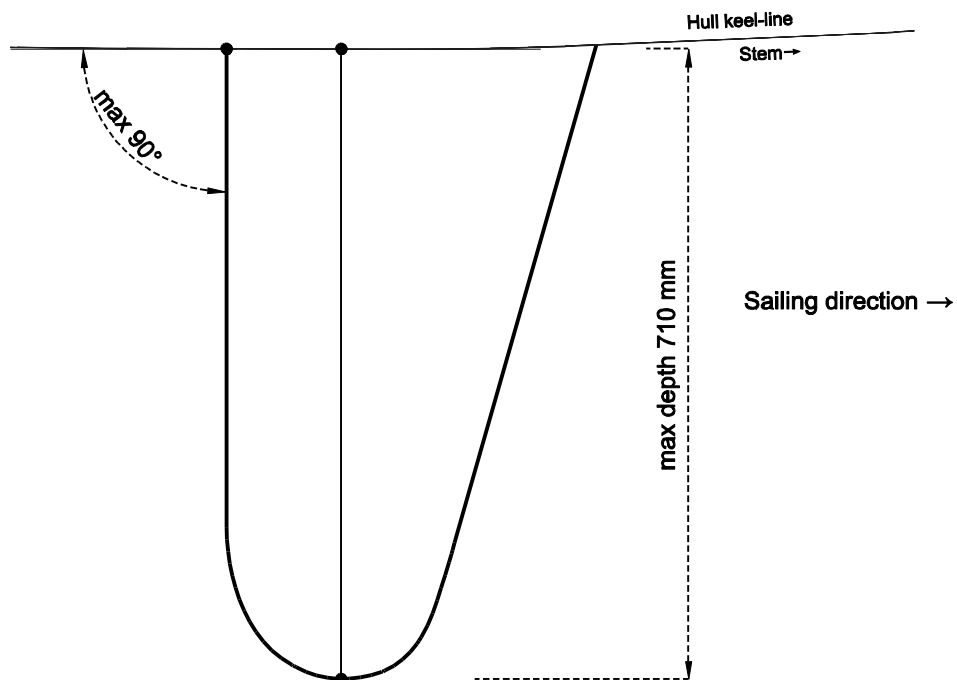


Figure 2. Max depth and angle of centreboard/daggerboard with hull keel line.



H.1.4 RUDDER

Table 2. Design shape, table of offsets rudderblade.

Depth beneath waterline	Trailing edge	Leading edge
z	x ₁	x ₂
0	-239,3	0,0
-100	-239,3	0,0
-200	-239,3	0,0
-300	-239,3	0,0
-306.7	-239.3	0,0
-325	-239,0	0,0
-350	-238,0	0,0
-375	-236,2	0,0
-400	-233,3	0,0
-425	-229,5	0,0
-450	-224,7	-0,3
-475	-218,6	-0,7
-500	-210,2	-2,0
-520	201,5	-4,6
-540	-190,3	-9,9
-560	-175,9	-20,0
-575	-161,7	-32,5
-585	-147,8	45,2
-590	-139,4	-54,0
-595	-127,4	-67,9
-597,5	-118,6	-77,3
-600	-98,9	-98,9

Figure 3. Deviation from design shape rudder blade

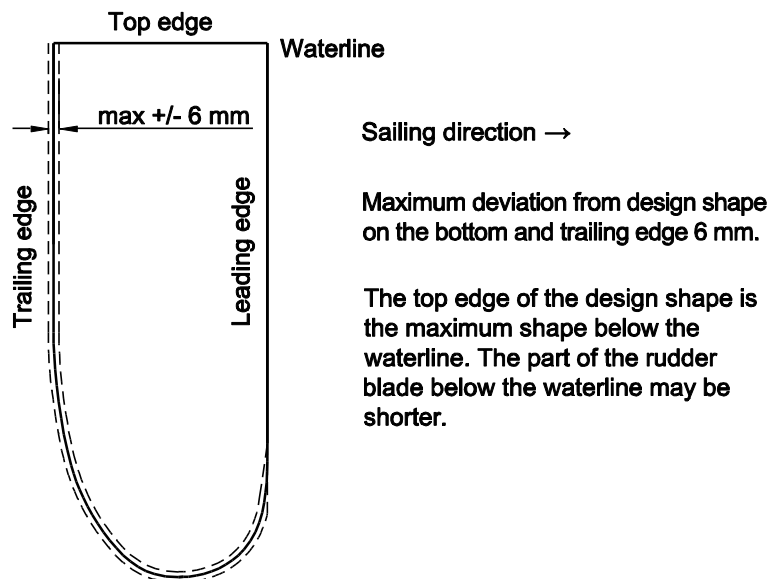
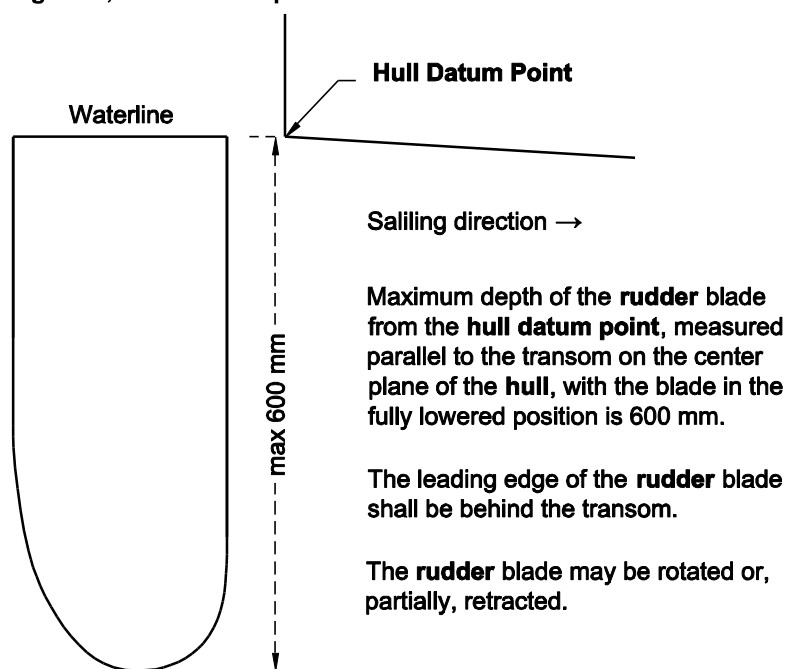


Figure 4; Maximum depth rudderblade



H.2 MEASUREMENT INSTRUCTIONS WITH THE HULL INVERTED

1. Mark the points of stations 3, 6 and 9 on the sheer lines and keel line. In reality, the points on the sheer line are derived by measuring along the sheer line on the underside of the gunwale rubbing strakes. Also mark the minimum and maximum points of the centerboard on the keel line.
2. Measure the centerboard slot, min, max and width.
3. Set up the baseline and measure keel rocker.
4. Measure stem with template, including sheer height, and extension of rubbing strake forward of stem.
5. Measure sections, including sheer height, height and width of rubbing strake.

Hull Datum Point (HDP); The **hull datum point** is the intersection of the **hull** center plane, the outside of the **hull** shell and the transom, each extended as necessary.

The Baseline is the line between the top of the stem template at station 9 and the top of the baseline template, placed at HDP, conform the drawing.

The top of the stem template at station 9 is a vertical offset of 100 mm from the keel line, the top of the baseline template is an offset of 175 mm from the keel line at HDP.

Centre board slot

Centre board slot measured along keel line
min 1588 from HDP if fitted for daggerboard,
min 1288 from HDP if fitted for centre board,
maximum 2262 from HDP.
Centerboard slot width max 40 mm

Keel rocker

Measure the distance from baseline to the keel line at station 3 (measurement A) and at station 6 (measurement B). The measurement is taken perpendicular to the baseline.
Sum of measurement A and measurement B = min 92, max 112.
 $92 < (A+B) < 112$

Stem section measurement

Stem template location 6 mm from station 9, this is between 3334 and 3346 mm from HDP measured along keel line.
Both lugs shall touch the keel line.
Clearance between template and keel line = Min 0, Max 6.

Section measurement

The sections 0, 3, 6, and 9 are measured.

Each section template is situated entirely on the imaginary plane through the three points set out on both sheer lines and on the keel line as shown on the diagram.

- ☐ The center of the template is situated on the keel line of the **hull**.
- ☐ The spacer (bar) on the deck side shall be placed and fastened.
- ☐ At least one lug (extensions) of the template shall touch the **Hull** shell.
- ☐ The rubbing strake shall not prevent the template from touching the **hull**.
- ☐ Just below the sheer lines the template shall be fixed on both sides by a wedge, a slider or by other means preventing movement during measurement.

Actual measurement:

Measure perpendicular to the **hull** shell on SB and P the maximum and minimum distance between the template and the hull shell. (see World Sailing Int. Measurement Manual pg. H 17).

The difference between the maximum and minimum value must be within 0 and 10 mm for all section templates.

The written Class Rules take precedence over these measurement instructions.

The drawings are NOT on scale, all values are in mm.

The Int. FJ uses the Hull coordinate system.

For thorough measurement instructions See World Sailing document; Int. Measurement Manual.

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