

Cage Code 60042

GSA 07F 0056J



**F 420 - F 470 - F 530**

***Field Service Manual*** (SEPT 1999)

**Operations - Maintenance - Illustrated Parts Breakdown**

<b>SERIE</b>	<b>BOAT TYPE</b>	<b>NSN</b>
<b>0353</b>	<b>F 420 STANDARD</b>	
<b>0352</b>	<b>F 470 STANDARD</b>	<b>1940-01-161-3993</b>
<b>0341</b>	<b>F 470 TACOM</b>	
<b>03011</b>	<b>F 470 BARE</b>	<b>1940-01-459-1335</b>
<b>03012</b>	<b>F 470 ALL-UP</b>	<b>1940-01-459-1333</b>
<b>03014</b>	<b>F 470 AZTEC</b>	
<b>0309</b>	<b>F 530 TACOM IAB</b>	<b>1940-01-445-9692</b>

**Zodiac P/N 11044 - NSN 7610-01-456-0273**

## F470 CRATE WEIGHT & DIMENSIONS

Crate 62" x 35" x 26" = 1600 mm x 890 mm x 660 mm

\* Weight 450 lbs. = 204 kg.

Volume 0.94 cu. meters

\* (F470 weights will vary, depending on their model type)

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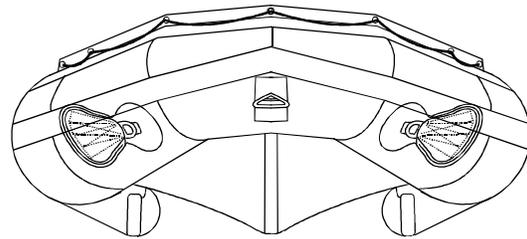
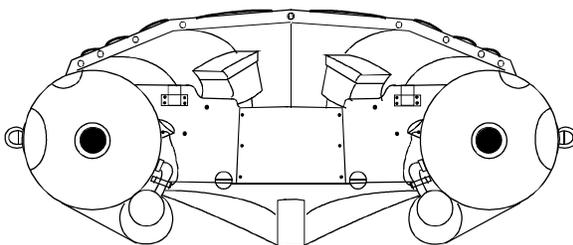
The Zodiac F-470 CRRC (Combat Rubber Raiding/Reconnaissance Craft) inflatable craft is designed for rugged and military uses, where speed of deployment and rapid infiltration/exfiltration are essential. This boat is self-contained, and when used with CO<sub>2</sub>/compressed air system will deploy its hull and integrated slatted floorboard and self-inflate within two minutes. It, therefore, can be dropped by parachute or during heliborne operations and be deployed in the water or on the ground without the need of assembling floorboards, stringers or braces.

It is the most advanced and appropriate system to support special operations.

Typical applications include:  
U.S. Navy Sea Systems Command (NAVSEA)  
U.S. Navy COMNAVSPECWARCOM  
U.S. Navy Salvage and Diving Operations  
U.S. Navy Underwater Construction Battalions (UCB)  
U.S. Air Force Special Operations Command, Combat Control Teams  
U.S. Army Readiness Command  
U.S. Army Corps of Engineers  
U.S. Army Rangers Airborne  
U.S. Army Special Forces Group Airborne  
U.S. Army Jungle Operations Training Center (JOTC)  
U.S. Army Joint Spec Ops Command  
U.S. Marine Corps

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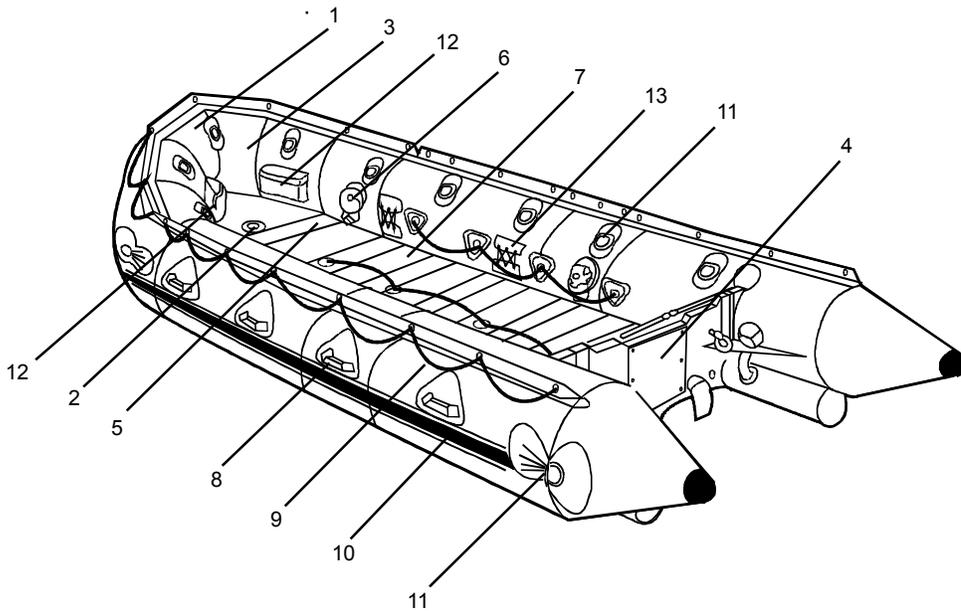
**Futura Hull Boats *"are a remarkable balance of technology, design and performance never achieved before in inflatable boats."***



The F470 "Futura Hull" is a result of Zodiac's R&D Department, and brings a totally new performance capability to inflatable boats. The originality of this concept lies in adding two smaller shock-absorbing tubes to the main buoyancy tubes and linking them together with a shock-absorbing skirt.

This type of hull configuration has two main advantages: The shock-absorbing angle, which relates to the hull penetration into the water, is narrower than on traditional hulls. The deeper "V" shape improves the directional stability of the boat and provides a more comfortable ride. The two shock-absorbing tubes also add rigidity to the hull

and help lift it on a plane quicker. Once planing, the handling is further enhanced by a tunnel-hull effect produced by the suction of air flowing beneath the hull between the small tubes. These tubes then act as rails under the boat, giving the F470 "Futura Hull" exceptional maneuverability and responsiveness.



**Fixed Standard Equipment**

**1. Hull**

- 1 - large diameter (19-11/16") black buoyancy tube, U-shaped, divided into 5 airtight chambers.
- 2 - black shock-absorbing tubes or speed skegs.
- 1 - black bottom, reinforced at the center line with a wide black rubbing strake (60 mm/2-3/8").
- 2 - black rubbing strake reinforcements under shock-absorbing tubes.
- 2 - shock-absorbing skirts linking skegs to main tubes.

Total number of airtight chambers:  
 Main buoyancy tube - 5 chambers  
 Inflatable keel - 1 chamber  
 Shock-absorbing speed skegs - 2 chambers when clamped off.

**2. Keel**

- 1 - inflatable keel with metal valve cap, valve insert and base.

**3. Hull Fabric**

HD1880 dtx polyamide coated with HY/NEO. This high resistance nylon is coated with HY compound on the exterior for chafing, UV, ozone, and mild acid resistance and NEO for superior airtight integrity on the inside. Method of assembly is cold vulcanization with interior airtight latex bead.

**4. Transom**

- Multi-directional aviation-grade marine plywood at 90 degrees to each other, 1-9/16" thick, black polyurethane varnish (for short shaft engines).
- 2 - large volume self-bailer "socks"
- 1 - wooden pad on exterior
- 1 - metallic outboard engine motor mount with engine safety ring
- 1 - retaining batten for floorboards
- 2 - transom bracing straps
- 2 - anti-splash triangles
- 2 - stainless 3" lifting eyes

**5. Thrustboard**

Bow fixed ash thrust-board equipped for lifting sling attachments. Black polyurethane varnish.

**6. Valves**

- 1 - metal keel valve
  - 4 - metal intercommunication over-pressure release valves on main buoyancy tube with intercommunicating closing position by rotation
  - 4 - valve caps and inserts with membranes and thoroidal rings
  - 2 - overpressure valves
  - 2 - compressed-air diffuser valves
  - 2 - L-shaped elbows communicating between main and lower buoyancy tubes equipped with metallic clamps - all valve bases, valve caps and valve inserts are metallic and corrosion free
- Main buoyancy to lower buoyancy tube communication elbows are Neoprene. Barbed valve insert and valve bases are high-impact Delrin plastic for compatibility.

**7. Floorboards**

- 1 - roll-up rapid-deployment aluminum slatted floor covered by fabric. This is an integral part of the boat and does not have to be installed or dismantled (but is removable).

- 1 - lacing sheath for inflation bottle.

**8. Handles**

- 1 - corrosion-free metallic bow carrying/mooring handle with 14 mm black polyethylene mooring line (not for towing).

- 10 - Heavy-duty carrying handles, black spray deflecting-- 5 port, 5 starboard.

**9. Lifelines**

- 2 - Three-strand, black polyester lifelines, 14 mm, woven through lacing cuffs on top of main buoyancy tubes.

- 2 - 14 mm black polyester grab lines on both interior sides of the main buoyancy tubes.

- 1 - grab line mounted on D53 rings in middle of the roll-up floor.

**10. Rubbing Strakes**

- 1 - wide, black ripple and tear-drop spray-deflecting rubbing strake around entire main buoyancy tube exterior

- 2 - rubbing strakes 60 mm/2-3/8" wide under speed tube skegs.

- 1 - rubbing strake 60 mm/2-3/8" wide under keel center line.

**11. D-Rings**

- 4 - heavy duty D300 corrosion-free towing rings on 300 mm span support--2 on bow, to be towed by, and 2 on the aft cones, to tow with.

- 13 - D53 corrosion-free rings in-board of lacing cuff: port (6) starboard (6) and bow (1)

- 4 - D53 corrosion-free rings on roll-up floor with khaki nylon strap linking them together.

- 8 - D25 corrosion-free rings on inside of the buoyancy tube near floor, linked together with 14 mm black nylon grab line: 4 on port and 4 on starboard.

**12. Pouches**

- 2 - water-resistant pouches with Velcro closure: 1 starboard bow and 1 port bow

**13. Paddle Sheaths**

- 4 - sheaths designed to hold 6 paddles

**14. Loose Standard Equipment**

- 1 - rot-resistant carry bag (boat)

- 6 - black paddles

- 2 - foot pumps and 2 hoses

- 1 - repair kit

- 1 - pressure gauge

- 1 - heavy duty towing bridle, and

- 1 - heavy duty lifting sling, both with their hardware

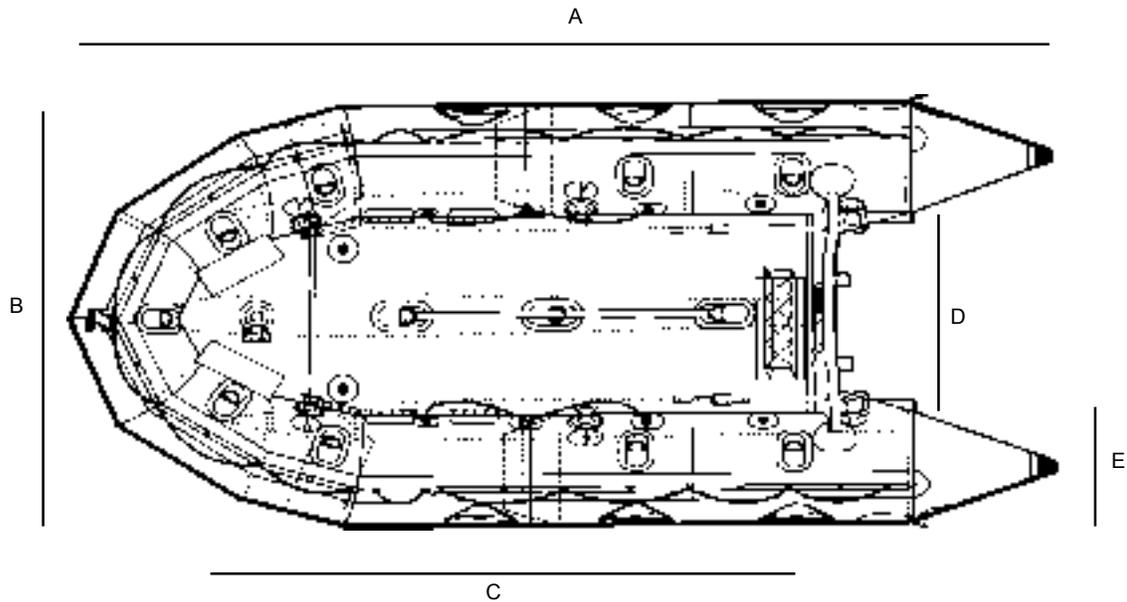
**These configurations are of the *standard F 470 CRRC*. Please check Product Definition Sheets, pages 22 to 30, for *specific* boat configurations.**

**F 420 - F 470 - F 530**

## Section I

# ***PRODUCT SPECIFICATIONS***





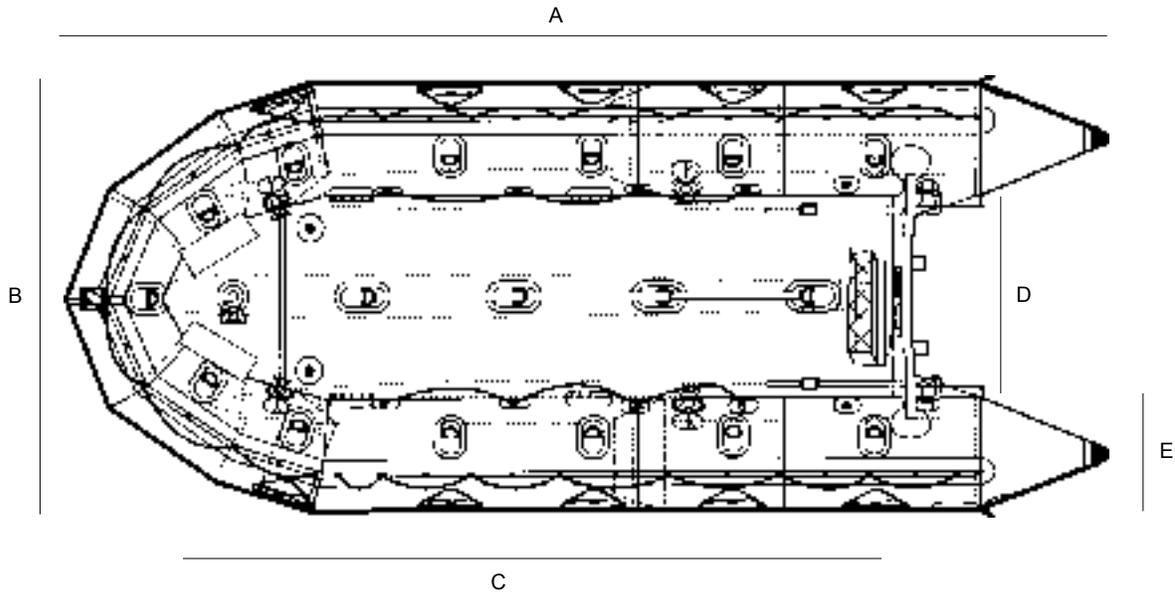
**Specifications F420 STANDARD, Serie 0353**

Overall Length	A	4.20 m	13' 9"
Overall Width	B	1.75 m	5' 9"
Inside Length	C	3.15 m	10' 4"
Inside Width	D	0.81 m	2' 8"
Tube Diameter	E	0.455 m	18"
Passengers (maximum)		4/6	4/6
Payload, Roll-up Floor (ALU)		600 kg	1,323 lbs
Payload, Hard Deck (ALU floorboard)		780 kg	1,720 lbs
Horsepower (max.), Roll-up Floor (ALU)		35 hp, short shaft	35 hp, short shaft
Horsepower (max.), Hard Deck (ALU floorboards)		55 hp, short shaft	55 hp, long shaft
Horsepower (max.), Twin Engines (ALU floorboards)		N/A	N/A
Weight, boat with roll-up floor		120 kg	265 lbs
Weight, compressed gas bottle (indicative)		20 kg	45 lbs
Boat Volume		1,320 l. cu.	47 cu. ft.
Folded Dimensions, with roll-up floor (approx.)		0.43 x 0.91 m	1' 5" x 3'
Number of Airtight Chambers		3 MBT + 2 LBT + 1 KBT	Total 6

**Tolerances of Weights and Measures: +/- 5%**

**All engines must be through-bolted through the transom.**

**When lifting personnel in a boat, only certified lifting slings should be used and should be recertified yearly.**



**Specifications F470 STANDARD - Serie 0352**

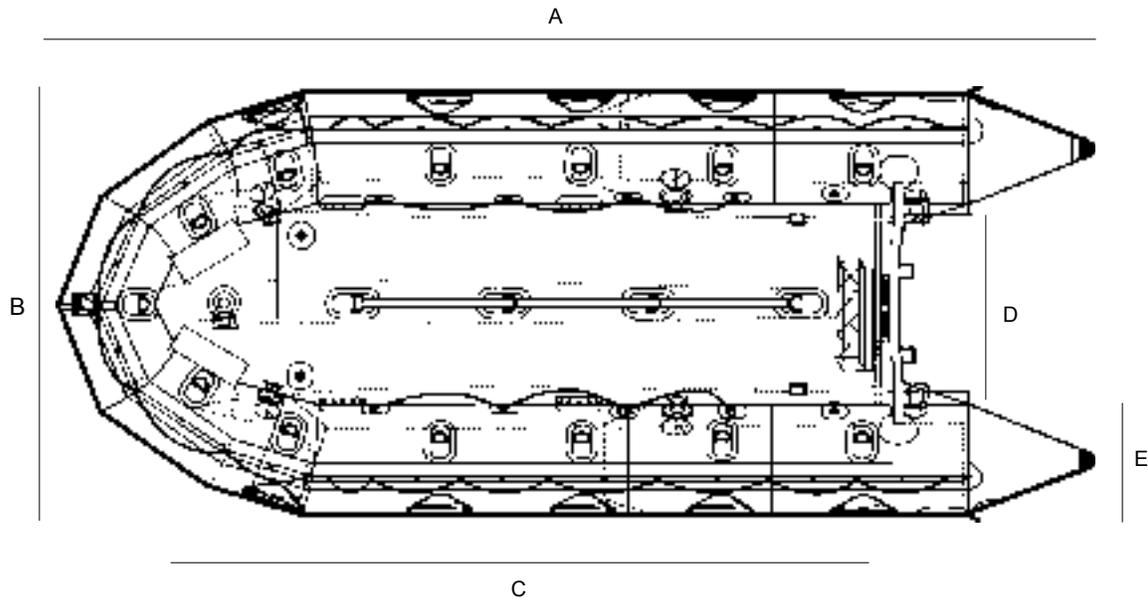
Overall Length	A	4.70 m	15' 5"
Overall Width	B	1.90 m	6' 3"
Inside Length	C	3.40 m	11' 2"
Inside Width	D	0.90 m	3'
Tube Diameter	E	0.50 m	20"
Passengers (maximum)		6/8/10	6/8/10
Payload, Roll-up Floor (ALU)		1,000 kg	2,205 lbs
Payload, Hard Deck (ALU floorboard)		1,300 kg	2,866 lbs
Horsepower (max.), Roll-up Floor (ALU)	40 hp, short shaft		40 hp, short shaft
Horsepower (max.), Hard Deck (ALU floorboards)	65 hp, short shaft		65 hp, short shaft
Horsepower (max.), Twin Engines (ALU floorboards)	2 x 35 hp, short shaft		2 x 35 hp, short shaft
Weight, boat with roll-up floor		146 kg	322 lbs
Weight, compressed gas bottle (indicative)		20 kg	45 lbs
Boat Volume (air)		1,896 l. cu.	67.0 cu. ft.
Folded Dimensions, with roll-up floor (approx.)		480 mm x 990 mm	1' 7" x 3' 3"
Number of Airtight Chambers		5 MBT + 2 LBT + 1 KBT	Total 8

**Tolerances of Weights and Measures: +/- 5%**

**All engines must be through-bolted through the transom.**

**When lifting personnel in a boat, only certified lifting slings should be used and should be recertified yearly.**

## F470 TACOM - Serie 0341



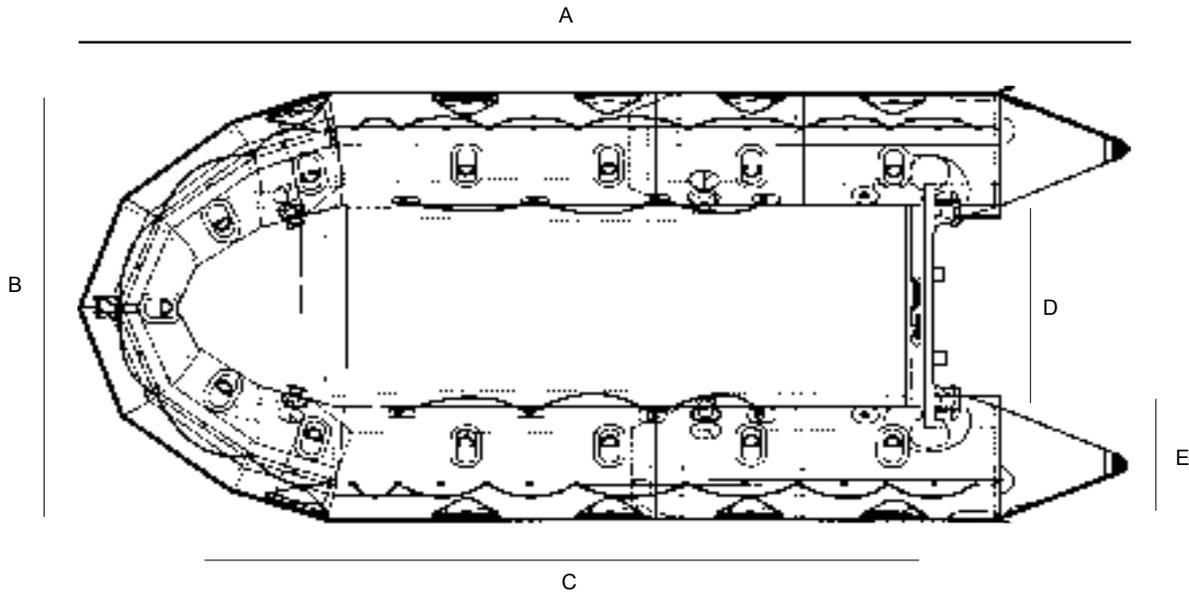
## Specifications F470 TACOM - Serie 0341

Overall Length	A	4.70 m	15' 5"
Overall Width	B	1.90 m	6' 3"
Inside Length	C	3.40 m	11' 2"
Inside Width	D	0.90 m	3'
Tube Diameter	E	0.50 m	20"
Passengers (maximum)		6/8/10	6/8/10
Payload, Roll-up Floor (ALU)		1,000 kg	2,205 lbs
Payload, Hard Deck (ALU floorboard)		1,300 kg	2,866 lbs
Horsepower (max.), Roll-up Floor (ALU)	40 hp, short shaft		40 hp, short shaft
Horsepower (max.), Hard Deck (ALU floorboards)	65 hp, short shaft		65 hp, short shaft
Horsepower (max.), Twin Engines (ALU floorboards)	2 x 35 hp, short shaft		2 x 35 hp, short shaft
Weight, boat with roll-up floor		155 kg	342 lbs
Weight, compressed gas bottle (indicative)		20 kg	45 lbs
Boat Volume (air)		1,896 l. cu.	67.0 cu. ft.
Folded Dimensions, with roll-up floor (approx.)		480 mm x 990 mm	1' 7" x 3' 3"
Number of Airtight Chambers		5 MBT + 2 LBT + 1 KBT	Total 8

**Tolerances of Weights and Measures: +/- 5%**

**All engines must be through-bolted through the transom.**

**When lifting personnel in a boat, only certified lifting slings should be used and should be recertified yearly.**



**Specifications F470 BARE - Serie 03011 [Definition: Skin Only]**

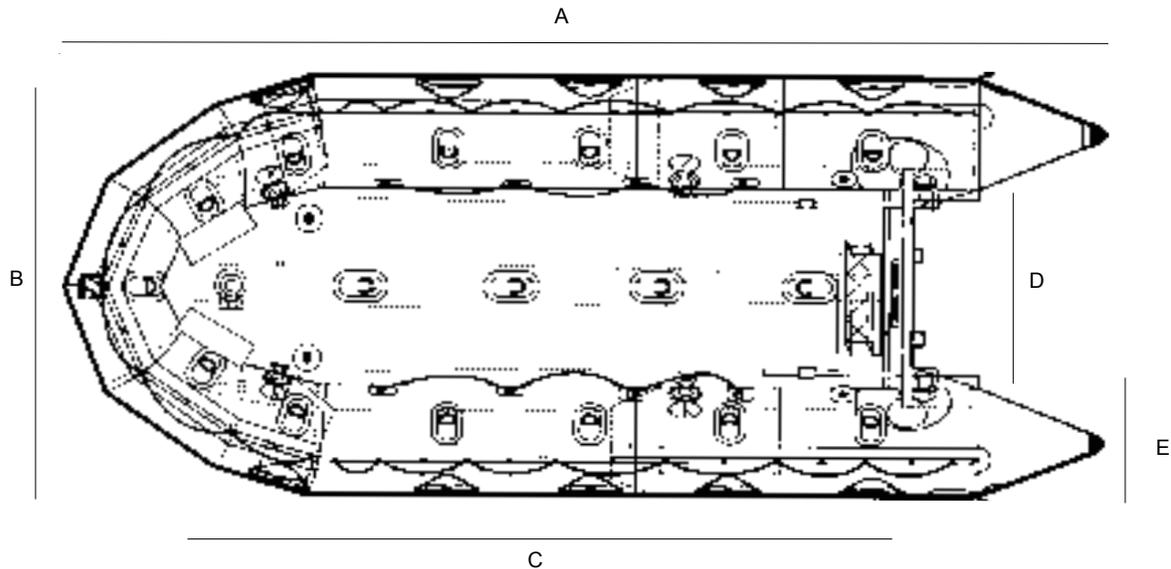
Overall Length	A	4.70 m	15' 5"
Overall Width	B	1.90 m	6' 3"
Inside Length	C	3.40 m	11' 2"
Inside Width	D	0.90 m	3'
Tube Diameter	E	0.50 m	20"
Passengers (maximum)		N/A	(bare boat)
Payload, Roll-up Floor (ALU)		N/A	(bare boat)
Payload, Hard Deck (ALU floorboard)		N/A	(bare boat)
Horsepower (max.), Roll-up Floor (ALU)	N/A		(bare boat)
Horsepower (max.), Hard Deck (ALU floorboards)	N/A		(bare boat)
Horsepower (max.), Twin Engines (ALU floorboards)	N/A		(bare boat)
Weight, boat without roll-up floor		92 kg	203 lbs
Weight, compressed gas bottle (indicative)		N/A	(bare boat)
Boat Volume (air)		1,896 cu. l.	67.0 cu. ft.
Folded Dimensions, without roll-up floor (approx.)		500 mm x 1400 mm	1' 8" x 4' 7"
Number of Airtight Chambers		5 MBT + 2 LBT + 1 KBT	Total 8

**Tolerances of Weights and Measures: +/- 5%**

**All engines must be through-bolted through the transom.**

**When lifting personnel in a boat, only certified lifting slings should be used and should be recertified yearly.**

**F470 ALL-UP - Serie 03012 [1940-01-459-1333]**



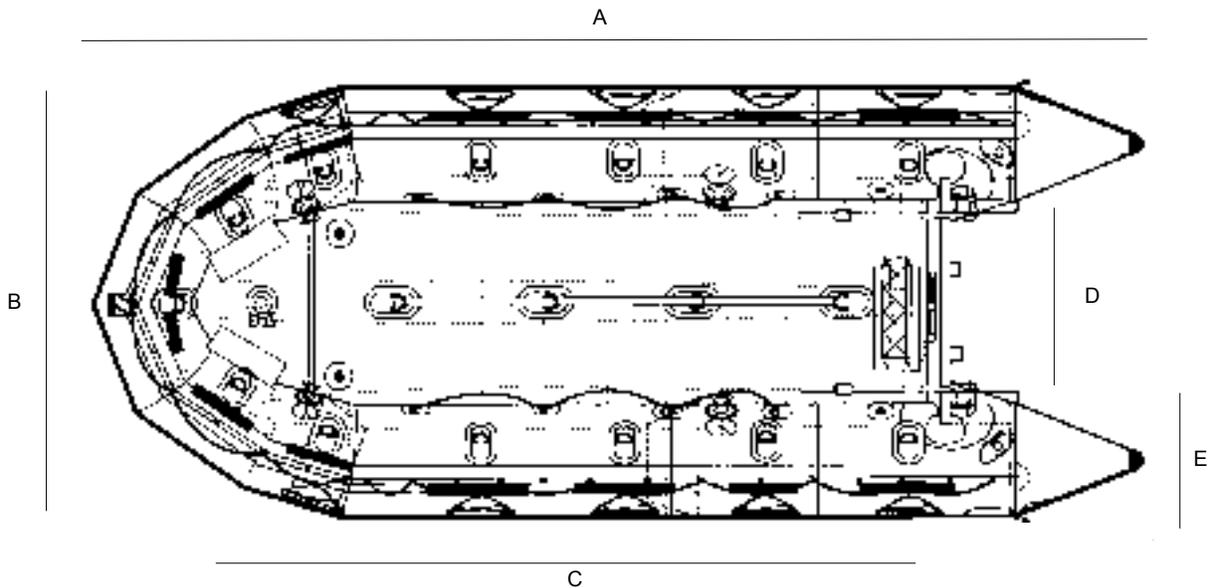
**Specifications F470 ALL-UP - Serie 03012 [Definition: Boat Complete]**

Overall Length	A	4.70 m	15' 5"
Overall Width	B	1.90 m	6' 3"
Inside Length	C	3.40 m	11' 2"
Inside Width	D	0.90 m	3'
Tube Diameter	E	0.50 m	20"
Passengers (maximum)		6/8/10	6/8/10
Payload, Roll-up Floor (ALU)		1,000 kg	2,205 lbs
Payload, Hard Deck (ALU floorboard)		1,300 kg	2,866 lbs
Horsepower (max.), Roll-up Floor (ALU)	40 hp, long shaft		40 hp, long shaft
Horsepower (max.), Hard Deck (ALU floorboards)	65 hp, long shaft		65 hp, long shaft
Horsepower (max.), Twin Engines (ALU floorboards)	2 x 35 hp, long shaft		2 x 35 hp, long shaft
Weight, boat with roll-up floor		134 kg	295 lbs
Weight, compressed gas bottle (indicative)		20 kg	45 lbs
Boat Volume (air)		1,896 l. cu.	67.0 cu. ft.
Folded Dimensions, with roll-up floor (approx.)		0.85 m x 1.50 m	2' 9-1/2" x 4' 11"
Number of Airtight Chambers		5 MBT + 2 LBT + 1 KBT	Total 8

**Tolerances of Weights and Measures: +/- 5%**

**All engines must be through-bolted through the transom.**

**When lifting personnel in a boat, only certified lifting slings should be used and should be recertified yearly.**



**Specifications F470 AZTEC - Serie 03014**

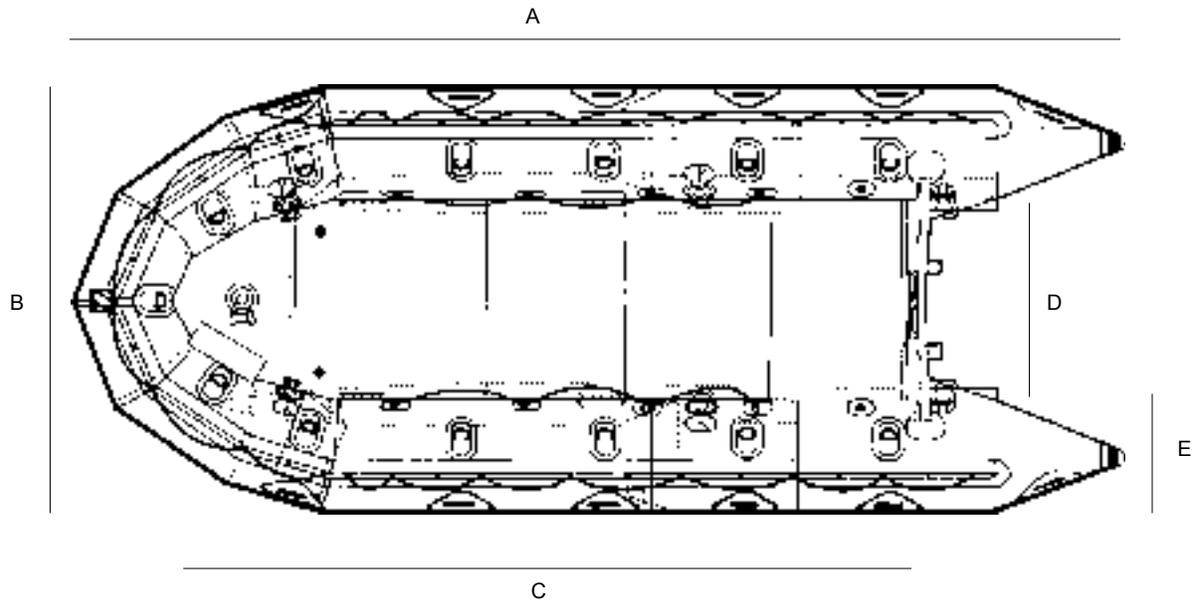
Overall Length	A	4.70 m	15' 5"
Overall Width	B	1.90 m	6' 3"
Inside Length	C	3.40 m	11' 2"
Inside Width	D	0.90 m	3'
Tube Diameter	E	0.50 m	20"
Passengers (maximum)		6/8/10	6/8/10
Payload, Roll-up Floor (ALU)		1,000 kg	2,205 lbs
Payload, Hard Deck (ALU floorboard)		1,300 kg	2,866 lbs
Horsepower (max.), Roll-up Floor (ALU)	40 hp, long shaft		40 hp, long shaft
Horsepower (max.), Hard Deck (ALU floorboards)	65 hp, long shaft		65 hp, long shaft
Horsepower (max.), Twin Engines (ALU floorboards)	2 x 35 hp, long shaft		2 x 35 hp, long shaft
Weight, boat with roll-up floor		176 kg	388 lbs
Weight, compressed gas bottle (indicative)		20 kg	45 lbs
Boat Volume (air)		1,896 l. cu.	67.0 cu. ft.
Folded Dimensions, with roll-up floor (approx.)		0.85 m x 1.50 m	2' 9-1/2" x 4' 11"
Number of Airtight Chambers		5 MBT + 2 LBT + 1 KBT	Total 8

**Tolerances of Weights and Measures: +/- 5%**

**All engines must be through-bolted through the transom.**

**When lifting personnel in a boat, only certified lifting slings should be used and should be recertified yearly.**

**F530 TACOM IAB - Serie 0309 [NSN 1940-01-445-9692]**



**Specifications F530 TACOM IAB - Serie 0309**

Overall Length	A	5.30 m	17' 5"
Overall Width	B	2.14 m	7'
Inside Length	C	3.74 m	12' 3"
Inside Width	D	1.04 m	3' 5"
Tube Diameter	E	0.55 m	22"
Passengers (maximum)		8/10/12	8/10/12
Payload, Roll-up Floor (ALU)		1,200 kg	2,646 lbs
Payload, Hard Deck (ALU floorboard)		1,560 kg	3,440 lbs
Horsepower (max.), Roll-up Floor (ALU)		55 hp, long shaft	55 hp, long shaft
Horsepower (max.), Hard Deck (ALU floorboards)		80 hp, long shaft	80 hp, long shaft
Horsepower (max.), Twin Engines (ALU floorboards)		2 x 40 hp, long shaft	2 x 40 hp, long shaft
Weight, boat with rigid floor		196 kg	432 lbs
Weight, compressed gas bottles (indicative) (2 each)		40 kg	88 lbs
Boat Volume (air)		2,633.48 cu. l.	93 cu. ft.
Folded Dimensions, with roll-up floor (approx.)		0.53 x 0.89 x 1.65 m	21" x 65"
Number of Airtight Chambers		5 MBT + 2 LBT + 1 KBT	Total 8

**Tolerances of Weights and Measures: +/- 5%**

**All engines must be through-bolted through the transom.**

**When lifting personnel in a boat, only certified lifting slings should be used and should be recertified yearly.**