

# YAMAHA WV Hull Repair (Methods and procedure)

## Repaired units



FX1800 SHO



VX1100

The reason of occurrence of defects - transport damages



# YAMAHA WV Hull Repair (Methods and procedure)



Big damage of hull



Damage of painting surface  
(deep scratches)

VX1100.

Damages inside package.

Result of moving (Insufficiently strong fastening of unit in packing).

Through damage of the case and damage of the painted surface.

The same damages are possible in a current of normal use (on water)

# YAMAHA WV Hull Repair (Methods and procedure)



VX1100

Other small damages of the top part of the hull.  
Paint scratch and cracks. All damages can be repaired.



FX1800

# YAMAHA WV Hull Repair (Methods and procedure)

## Equipment and tool

### General equipment:

1. Lifting equipment (electrical winch and spider (for boats))
1. Stands and support for convenient installation of a boat and WV for repair



### Tool:

1. Protection
2. Lights
3. Ventilation



# YAMAHA WV Hull Repair (Methods and procedure)

## Tool and Materials

Electrical heater



Air drill machine



Sand paper (3M)



Electrical tool for polishing and cutter



Black powder  
(indicator for non polishing surface)



Tool for lamination procedure and polishing



# YAMAHA WV Hull Repair (Methods and procedure)

## First step of repair

### Installation and preparation for repair



Need remove all parts, near repaired place (fender, transom plates, plastic parts).  
Installation after repair.



Fixed unit on suitable position for normal repair and observing damaged places.  
Strong fixation is important.  
VX1100 is two stroke model. This installation type is acceptable.

# YAMAHA WV Hull Repair (Methods and procedure)

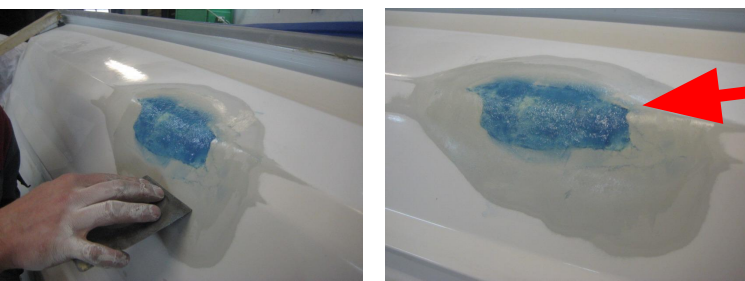
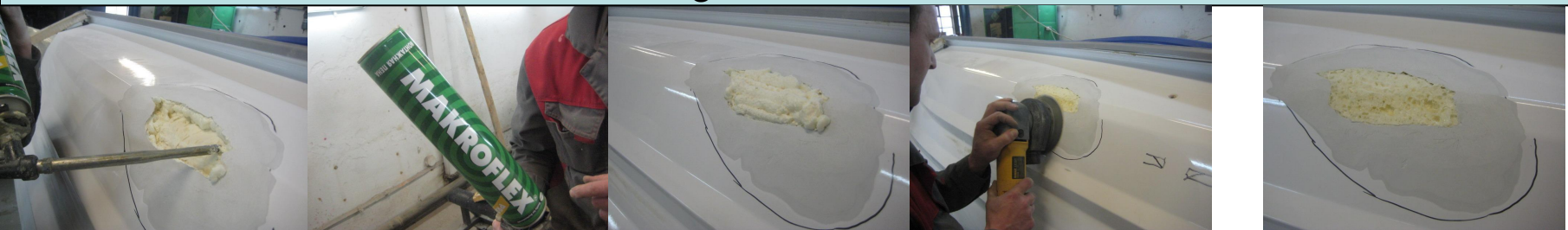
## Second step of repair

Damage area preparation for lamination.  
Drilling, cutting and polishing area around damage.



Finally result

Add foam-plastic and prepare for lamination, cutting, polishing and gluing for good adhesive.

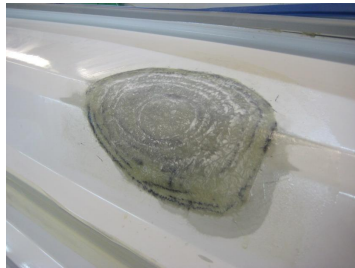
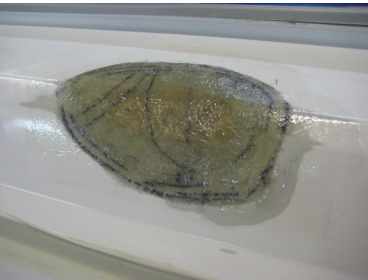


Finally result

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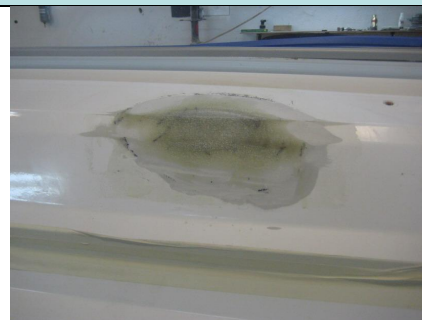
## Third step of repair

### Lamination process and polishing



Finally result

Time for waiting – 24 hours. After this time – polishing.  
**(Warning!!!! Procedure is Very dirty and dusty. Protection very important!!!!)**

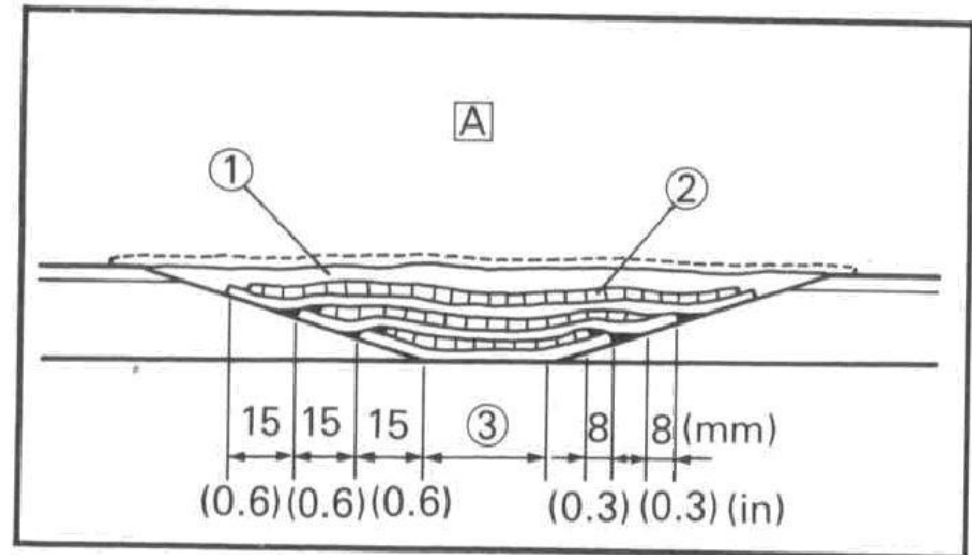
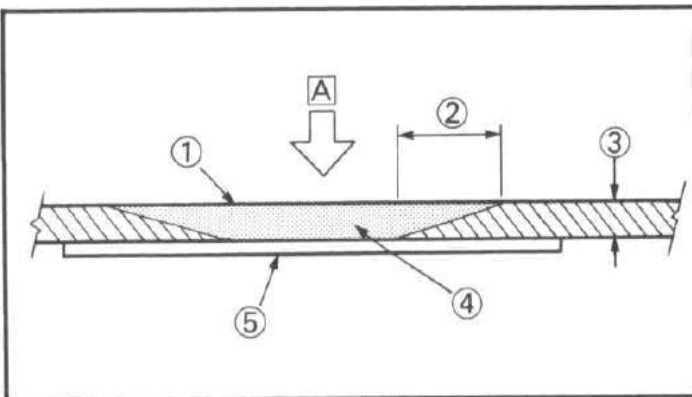
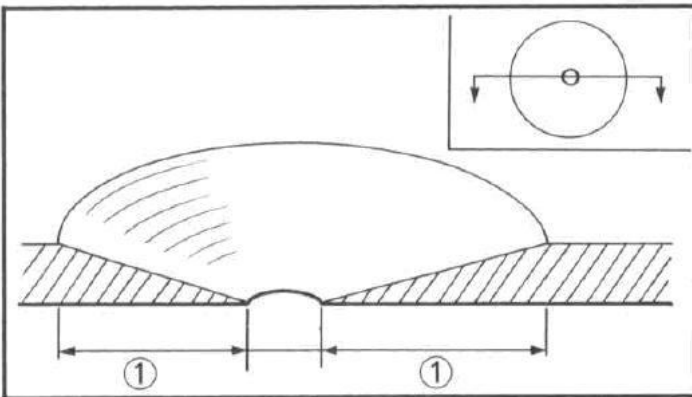


Finally result



# YAMAHA WV Hull Repair (Methods and procedure)

Information from FRP Repair Service Manual



1. Preparation for lamination

2. Lamination process with Roving cloth and Chopped strand mat.

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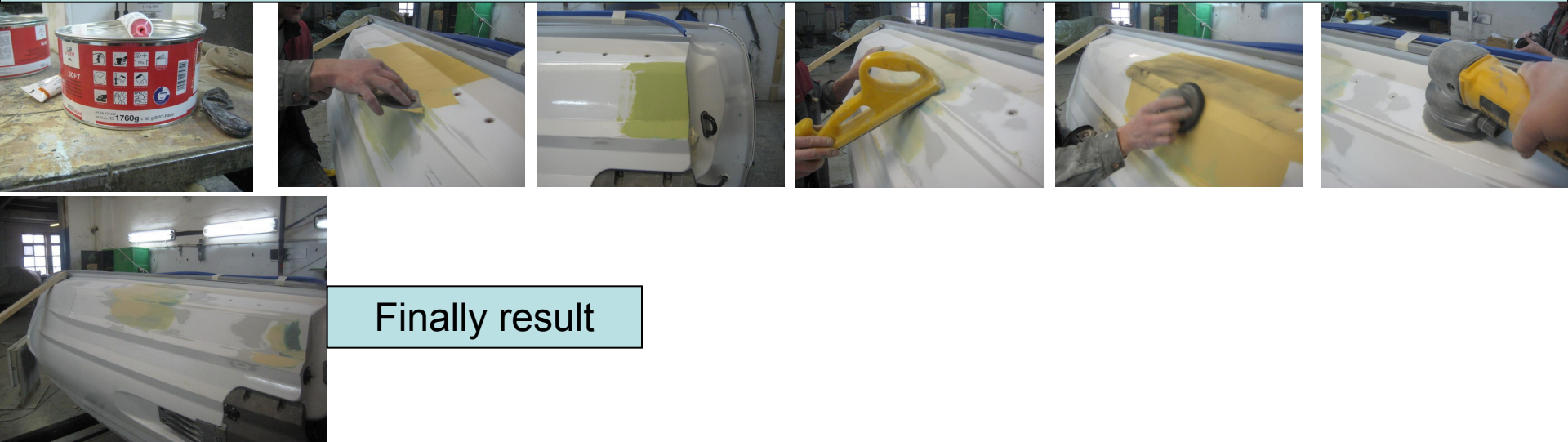
## Fourth step of repair

Preparation of surface for paint base. Putty and polishing. First time – glass putty

Two components putty. Sandpaper – (3M) P80. 3 – 5 steps



Preparation of surface for paint. Putty and polishing. Second time – soft putty  
Two components putty. Sandpaper – (3M) - P120 and final – P240 (for paint base)



# YAMAHA WV Hull Repair (Methods and procedure)

## Fifth step of repair

Paint base and preparation for painting

Important – need cover all hull (without painted area). Only on repaired place need put base.

Thickness of base – 0,1 – 0,15 mm



After dry of base, Polishing. First time – polishing of repaired area (need equal surface with hull) .

Second time – need polish all surface of hull (matt surface for good adhesive of paint)



# YAMAHA WV Hull Repair (Methods and procedure)

## Sixth step of repair

Painting and polish.

Important: Good lights. Need cover area around painting area.  
Good ventilation. Clean area (no dust). Need remove dust and fat  
(don't use strong acid – you can damage old paint)



Paint – TIKKURILA – TEMADUR 90. Water resistant (two components) paint.  
Painting procedure – need practice and skill.

# YAMAHA WV Hull Repair (Methods and procedure)

## Sixth step of repair



This paint have good fluidity.  
After painting, paint  
create smooth surface.



After painting, before polish

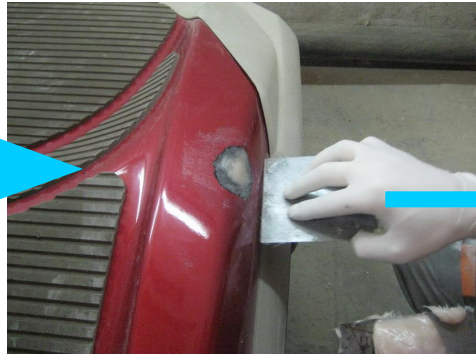
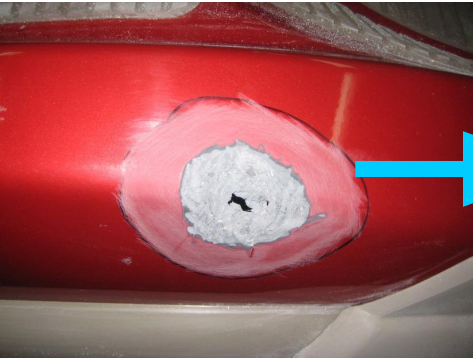
After polish



Compound and  
tool for polishing.

# YAMAHA WV Hull Repair (Methods and procedure)

FX upper side damage



Use soft putty

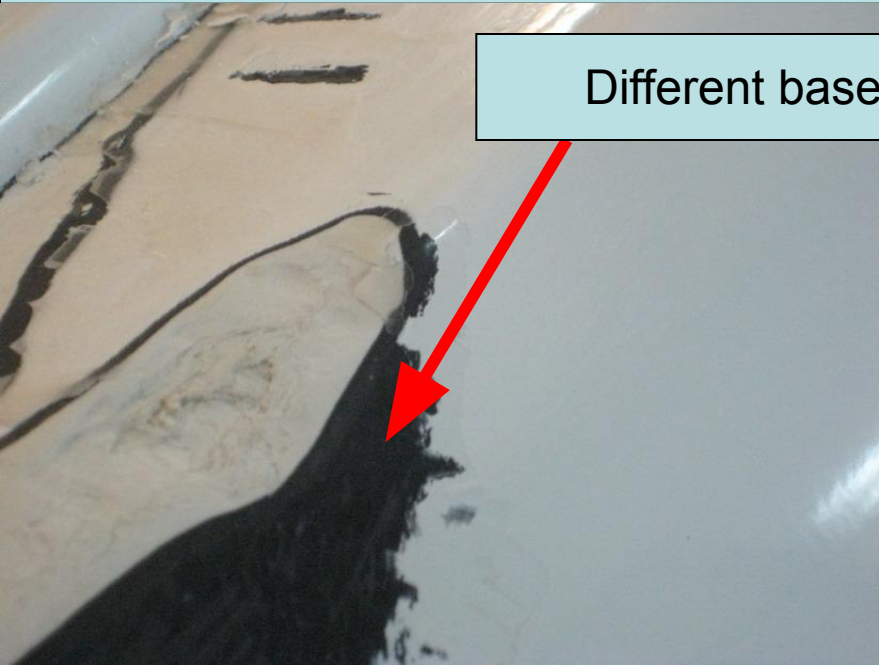


Painting and polish

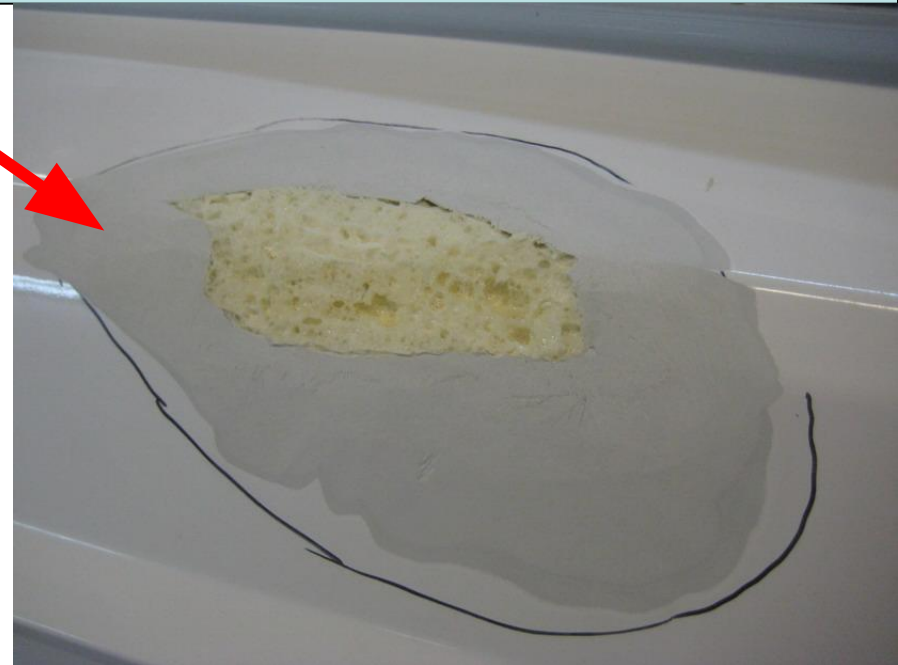
# YAMAHA WV Hull Repair (Methods and procedure)

Upper side and lower side WV repair

Different paint base for lower and upper side of WV's hull.  
Different paint and surface processing. The Metallic paint is applied sometimes.  
In this case the extra time and expenses for a choice of a paint and after-treatment is required.



Different base



# YAMAHA WV Hull Repair (Methods and procedure)

## YAMARIN Boats and YAMAHA WV Hull repair difference

YAMARIN Boat

Material – FRP

Color – gelcoat

Method of forming – Female mold with resin

Big size of Hull, big size of Female.

It is difficult to organize  
automatic forming process of hull.

YAMAHA WV

Material – SMC

Color – Base and paint

Method of forming – Closed mold method

The method is specially necessary

for factory production of Hull

(with identical quality and  
the identical geometrical sizes)

Competitor – BOMBARDIER

Material – FRP

Color – gelcoat

Method of forming – Female mold with resin.

Automatic forming with hand made.

Add gelcoat and FRP material with resin automatically on the female.

After that - manual handling (defoaming by rollers)



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