

Chapter 4: Painting and Labeling

It's now time to prepare the housing for powder coating. The first step is to mask all areas that are to remain free of paint. Of particular importance are the surfaces that will be in contact with an O-ring and need to remain smooth and free of any textured paint or chips, which could let water leak in. Custom made reusable masks are used for the standard holes such as push buttons, bulkhead connectors and control shafts. For surfaces such as the various window ports and the rear main sealing surface, which are different on every housing, a specialized masking tape is used and precisely trimmed with a sharp blade. The masking material is a unique material made to resist the brutal heat that it will be confronted later on in the painting oven.



Masking requires patience and the attention to detail that is beyond the scope of yours truly and it is one part of the job I am gladly exempt from. Since we are a small company, every staff member is called upon to lend a hand in most tasks, whether it's for deburring, assembling or packing and shipping -- that is unless one sucks at a specific task, and I unfortunately do at masking.



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Once prepped up the housings are transferred to the paint shop. For a layer of protection we use a powder-coated treatment. This coating is a highly resistant finish that is applied through an electrostatic process and then baked.

Essentially, this method uses a powder that does not require a solvent, as standard paint does, to keep the binder and filler working together. Instead it is applied by spraying on the parts to be treated, which are charged with electrical current and then cured in a high temperature oven that creates a tough resilient skin.





This skin has a much harder finish than the conventional method of painting and is exactly what the salt water environment requires. Ok, so now you got me, in the beginning I stated that housings did not come out of an oven; well they do at some point!







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Once the housings have cooled down, they are brought back to the assembly room. The masking material is removed in preparation for the attaching and painting of the different logos and operational labels. Aside from the company logo that is attached with a waterproof bonding material, all other symbols or text on the housing are pad printed with a highly resistant paint. It was found that applying stick-on labels just did not last long enough in the harsh underwater environment.



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We are now down to the wire. While all the previous steps were being taken care of, the multiple shafts, lever and miscellaneous parts involved were machined and finally migrated to the assembly room.

Up to this point, everything else could be done with the virtual 3D camera rendering, but for the next stage, the fine-tuning, an actual camera body needs to be installed in the housing.