1、Surface Treatment before Painting

1.1 Before painting we need to level the surface, remove surface dirt, grease, welding slag, debris, oxide layer, rust and spatter, after clearing the surface should show the true metal color.

a. Welding parts should remove the welding tumor, spatter, Welding slag, grind and patch the arc burn, arc plate spot welding mark.

b. Castings, processing need to grind the sharp angle, the burrs and such uneven parts.

c. The screw parts of Aluminum casting processing (such as flange, Insulator Blocks etc.) need to be sealed by hard yellow glycerol.

1.2 After surface cleaning, steel structural parts and spare parts (except castings) should be treated by acid pickling (or phosphating treatment), during the acid pickling we need to control the concentration, temperature of the liquor and the operate time, after acid pickling should be neutralized by lye, then rinsed in the hot water. Aluminum and Aluminum alloy parts should use chemical treatment, after the treatment should be dried (should adopt the drying chamber or hot air drying), the separate Aluminum alloy castings should be put in temperature of 150℃－200℃ for 1-2 hours after being rinsed, in order to remove the lubricant oil and moisture and other impurities which seep into the air blister, then paint with primer as soon as possible. The black film which is formed after the caustic washing could be rinsed by mixture of nitric acid 65％, hydrofluoric acid 25％, water 10％ (weight percentage), also could use
surfactants or organic solvents to remove the oil.

2. Paint the primer

2.1 The primer should be painted in time after the surface treatment to prevent rust again and oxidation stain. The surface treatment must be processed on the thoroughly clean surface which shows the true metal color.

2.2 Steel structural parts and spare parts should choose iron oxide red epoxy primer, pure phenol aldehyde iron oxide red primer or other corresponding primers. Aluminum and Aluminum alloy parts should choose phospating primer, the mixing process of phospating primer should be operated in the acid-resistant container, and should be used up in the set time (within 12 hours) after being diluted and mixed, after painting the phospating primer then paint the Zinc yellow epoxy primer.

2.3 Primer layer should be painted thin and evenly, phospating spray painting should be operated in the dryer environment to prevent the paint film become white, the thickness is about 12μ (the dosage is about 80g/m²), avoid holiday painting and 挂涂 phenomenon.

2.4 Primer must be dried before net procedure, at 25℃ the drying time for phospating primer must not less than 3 hours, other primers is not less than 24 hours, in different environment the drying time could extent or shorten according to the circumstances.
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3. Paint the Putty

3.1 After painting the primer, should use putty to fill the depression unfairness and crack defects of the work piece (cover and cover of the cabinet) surface, to make it even, the shape is like an circle, use the epoxy putty.

3.2 After drying the partially painting with putty, should use coarse sand cloth to grind, and remove the powder. How many times to paint the putty wholly need to be decided according to the flatness of the spare parts surface (the cabinet need to be paint with the putty wholly). Each coating of putty should be as thin as possible, the thickest should not more than 0.3mm. After drying, grinding, removing the dust then could start the next painting. After grinding the putty then could paint the prime again, the second prime uses iron oxide red primer (Aluminum surface use Zinc yellow epoxy primer).

4. Paint the second primer

4.1 After wholly painting with putty and drying, grinding, removing the dust then we start to paint the second primer, the second primer uses opexy primer, requires good adhesion with the putty and two coatings.

4.2 After second times drying, then start the top-coat painting
5. Top-coat Painting
   5.1 Top-coat should be spray painted with nitro-epoxy enamel painting, and choose according to the customers’ requirements.
   5.2 Top-coat painting should be operated in the environment which relative humidity < 70%, when the relative humidity > 70%, need to adopt blanching measures, for example to add anti-blushing agent then allowed to operate.
   5.3 When painting need to keep the field clean, and need the good air drafting equipment, the temperature should keep above 14℃.
   5.4 Before painting, should stir the paint fully, dilute to the appropriate viscosity, (at 25℃ the viscosity of H04-2 nitro-epoxy enamel is 17－18(second) measured by viscosity gage, the dilution solvent is X－1nitro-paint thinner), use sieve with 120-180 mesh to filtrate, compressed air used in the painting process is not allowed to contain moisture and oil, must use oil-water separator to remove the moisture and oil in the air, and need to check the reliability of the oil-water separator often.
   5.5 Generally speaking, the surface coating layer is 1-2 layers, each layer of the paint should completely dry before coating the second layer, the total layers of primer and top-coating should be not less than 3, the total thickness should be 70－100μm, the painting of the outdoor products should be not less than 100μm.

6. The requirements of the finished paint coating
   6.1 The finished paint coating should be strong, beautiful, generous, with level and smooth appearance and uniform color.
   6.2 Decorative coating, the paint film appearance is not allowed to have sag, bubble, pinhole, whitishness, loss of light, significant orange-peel, scar, scar spot, other coating should have no sag, bubble, pinhole, whitishness, loss of light and significant orange-peel.
6.3 Paint film surface must be clean, not allowed to have any adhesions and sand, debris and such things.

6.4 The same set of products and matching products, color and luster, should use the same paint film comparison standard sample board which size is 100×200 (mm).

6.5 When painting the spare parts, in the range which is apart from welding seam 100mm is not allowed to paint.

6.6 After the paint dried, the painted products and parts should be stored in the dry and clean place, and should far from the heat source (heating, stove), pay more attention to protect during the transporting and packing process to avoid the scratching and damages on the paint film surface.

7. Acceptance Inspection

7.1 After the paint dried, need to be inspected by QA department in sunny circumstances according item 6.1-6.6, only qualified products could be packed. When inspecting, the light intensity should not less than 300 lux (which is equal to the fluorescent illumination that 500 mm distance from the 40 watts daylight lamp).

7.2 The color and luster inspection of the finished painting layer should be carried out by comparing with the standard test board.

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