EM Plastic & Electric Products Ltd.

Protecting Your Plastics with Coolants

Coolants are typically used when is drilling and parting, or if the surface finish or tolerance are of high importance. Because of the insulative nature of plastics, the heat that is generated from the friction of the cutting tool can lead to isolated melting and/or deformation. By introducing coolants into the process, much of the heat that is generated by the cutting equipment can be carried away from the tool minimizing the chances of the plastic being damaged.

When using coolants, keep the following tips in mind:

1. **Know your material** – In most cases, water-soluble coolants do quite well; however, there are cases in which water-soluble coolants should be avoided. When working with amorphous thermoplastics, water-soluble coolants can be a detriment because of the plastic's susceptibility to environmental stress cracking. If you feel that a coolant is necessary when working with these kinds of plastics, compressed air or pure water should be sufficient to reduce the buildup of heat.

2. **Have a Back-up Plan** – In some cases, the use of water-soluble coolants or general purpose petroleum-based cutting lubricants cannot be avoided. For example, the drilling of large diameters or deep holes in amorphous thermoplastics would require more than just the use of pure water or compressed air to minimize the influence of heat. Be sure to prepare your plastic beforehand by thoroughly cleaning it with isopropyl alcohol to remove any impurities. Once the machining has been completed, be sure to immediately clean the plastic with pure water. Allowing water-soluble coolants to remain on the plastic can increase the risk of stress-cracking.

For more helpful tips, contact your local EM Plastic representative.

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