



Adhesive Workholding FAQs

Workholding Products FAQs

Below is a list of frequently asked questions about Blue Photon's workholding products.

What is the Blue Photon system?

The Blue Photon system is a revolutionary workholding product that utilizes BlueGrip workholding adhesives and UV light to bond and grip almost any part for machining without clamping.

What makes it unique?

It provides the most versatile method of fixturing of complex geometries while at the same time providing more cutting tool access than any other workholding product on the market.

What types of machining can I do using the Blue Photon system?

The Blue Photon system is strong enough to withstand heavy milling, turning, grinding, electrical discharge machining (EDM), electro-chemical machining (ECM), 3D printing/additive manufacturing and more.

What is BlueGrip™ workholding adhesive?

BlueGrip workholding adhesive is classified as an acrylate. It's not an epoxy resin!

How long does it take to cure the BlueGrip workholding adhesive?

The adhesives are typically cured in 60 seconds. The exception to this is when Blue Photon's right angle adapter is utilized, in which case the recommended cure time is 90 seconds.

How thick can the adhesive gap be?

The gap between the workpiece and the gripper can range from .020 to .120". The ideal gap is .020" for small grippers and .040" for medium and large grippers. Learn more about the adhesive and adhesive joint in our technical data resources.

What is the holding strength of the bond?

Small Head-In Gripper: 150 lbs axial

Medium Head-In Gripper and Head-Out Gripper: 400 lbs axial – 330 lbs shear min.

Large Head-In Gripper and Head-Out Gripper: 605 lbs axial – 480 lbs shear min.

Testing done under controlled conditions.

Will the adhesive hold up to cutting fluids and EDM oil?

The adhesive can be used in water and most cutting fluids.

What kind of shrinkage do you see with the adhesive?

3-5% repeatable adhesive shrinkage.

How hot can the part get?

Blue Photon recommends that the adhesive joint temperature remains below 80° F in order to achieve maximum holding strength. It is the temperature of the adhesive joint itself, not the part, that affects the holding strength.



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How many grippers do I need?

There are several factors involved when deciding on the number of grippers to use. The forces applied to the part during machining are generally unknown by most users. Your regional sales representative can help you engineer a solution for your unique application.

How do I release the part?

The part is released from the fixture by simply twisting the grippers to break the workholding bond. The part can also be released by using hot water.

How do I clean off the cured adhesive?

Heat ($\geq 200^\circ$), hot water, steam, hot water spray or dry ice blasting along with peeling will remove the adhesive from the part and the grippers. Blue Photon offers a variety of soak tanks, pressure washers and cleaning tools that can be used in a CNC machining center to automatically remove the adhesive from the grippers.

What materials will the adhesive hold?

The BlueGrip workholding adhesive will hold steel, titanium, aluminum, composites, glass, ceramics, plastics and many other materials, for more material examples, see below:

Ferrous & Non-Ferrous Metals	Superalloys	Composites/Ceramics	Plastics
Brass	Rene	Ceramic Matrix Composite (CMC)	Nylon
Manganese Bronze	Inconel	Polymer Matrix Composite (PMC)	Black Delrin 150
Bronze	Hastelloy	Sintered Ceramics	Ultem 2300
Copper		Silicon Carbide (SiC)	Ultem 1000
Aluminum		Glass	30% GF Peek
Steel		Quartz	Bearing Grade Peek
Stainless Steel			Black ABS
Titanium			Radel

Blue Photon has a national and international network of technical sales representatives ready to show you the Blue Photon solution.

For additional information on specifications and other technical data, visit our website at www.BluePhotonGrip.com or feel free to contact your regional sales representative for assistance and a comprehensive, hands-on demo or call at [855-777-2040](tel:855-777-2040).



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