Blue Photon Technology & Workholding Systems can help you simplify workholding for difficult to hold or delicate parts while reducing variations, increasing part access, reducing scrap and eliminating extra processes.

Warranty
Blue Photon is proud to offer a 3-year warranty on all Blue Photon Grippers. Our Grippers are warrantied against manufacturer’s defects when used exclusively with BlueGrip Adhesive.

All other Blue Photon equipment is warrantied for a period of one year from the date of delivery against manufacturing defects that affect the performance of the Blue Photon System. Equipment and supplies not manufactured by Blue Photon may have different manufactures warranties.

Consult the information provided with the equipment or contact the Blue Photon sales team for additional information.

FAILURE TO USE BLUEGRIP ADHESIVES AND BLUE PHOTON APPROVED EQUIPMENT WILL VOID ALL WARRANTIES AND MAY SUBJECT THE USER TO UNSAFE CONDITIONS.

Design Considerations
The user guide provides general operating procedures. Your specific application will have special considerations in setup, function and use. There are several design considerations that must be addressed before implementing Blue Photon workholding. Review these considerations with your design and engineering teams, including the number and position of grippers, adhesive joint temperature, adhesive cure time, amount of adhesive, setting the part on applied adhesive, and part and gripper cleaning.

Safety Considerations
The user guide as well as additional manuals provide a description of the function, application and safety considerations of the Blue Photon system. These manuals must be read and understood before any attempt is made to install or use this system. Improper use could result in damage to the product or unsafe conditions for the user. Follow these safeguards to prevent serious injury or property damage.

Before you begin, refer to our user guide and read the manual carefully. In particular, pay attention to the warnings and cautions that appear in the safety and design sections at the front of the manual. For more information, visit our website for the most up-to-date product and safety information: www.BluePhotonGrip.com.

Sales and Engineering Support
Blue Photon Technology & Workholding Systems LLC
1002 Industrial Park Dr., Shelby, MI 49455
855-777-2040 • sales@BluePhotonGrip.com
Blue Photon Markets

Blue Photon’s innovative workholding system is solving problems for manufacturers throughout many different industries. From machining food processing equipment to powering jet propulsion, Blue Photon is unlike any workholding system in the world. Ask us how to put Blue Photon to work for you in your application.

The Blue Photon Difference

What makes Blue Photon unique?

The Grippers and BlueGrip™ Adhesive create a versatile and simplified workholding system that can give you:

- Less scrap
- Less damage
- No or reduced part distortion
- Fewer operations
- Lower cost
- Higher efficiency
- Improved part access
- Improved accuracy
- Simplified fixture design

The Blue Photon workholding system:

- Holds ceramic
- Holds composite and laminate materials
- Holds plastics
- Holds irregular and complex shaped parts
- Stands up to oils and cutting fluids
- Stands up to heavy machining
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Unique workholding grippers that allow for complete photo-activated adhesive curing.

Blue Photon’s workholding grippers are a patented, load bearing and light transmitting fixture component. The grippers are inserted into a fixture. The workpiece is secured to the grippers with BlueGrip™ workholding adhesive, which is cured with UV light transmitted through the core of the gripper.

**Head-In Gripper**
- Insert into fixture from the backside
- Can be retracted during workplace loading
- Debonds with 1/4 turn twist or hot water soak

**Head-Out Gripper**
- Insert into fixture from the topside
- Cannot be retracted during workplace loading
- Debonds with hot water soak or twisting

**Small Head-In Gripper**
Part #: 11130
**Features**
- To hold small size workpieces for lighter duty machining
- Average tensile holding power with BlueGrip S2 workholding adhesive is 200 lbs.*

**Medium Head-In Gripper**
Part #: 12130 & 12131
**Features**
- To hold small to medium size workpieces
- Use P/N 12131 where deionized water is used
- Average tensile holding power with BlueGrip S2 workholding adhesive is 400 lbs.*

**Large Head-In Gripper**
Part #: 13160
**Features**
- To hold medium to large size workpieces
- Offers more surface area on gripper head for stronger holding power
- Average tensile holding power with BlueGrip S2 workholding adhesive is 605 lbs.*

**Medium Head-Out Gripper**
Part #: 12230
**Features**
- To hold small to medium size workpieces to apply added stand-off to .55”
- Use in applications for simplified fixture design
- Average tensile holding power with BlueGrip S2 workholding adhesive is 400 lbs.*

*Testing done under controlled conditions.*
Gripper Insert
Part #: 22100 & 23100
Features
- Use gripper inserts to protect aluminum fixtures from thread galling
- Made from hardened steel with a black oxide finish
- Install with thread locker
- Screws in from the bottom

Gripper Insert Assembly
Part #: 22200 & 23200
Features
- Includes the gripper insert and insert nut
- Use to increase standoff from the fixture and/or to protect aluminum fixtures from thread galling
- Inserts allow for additional flexibility for exact gripper height positioning
- Made from hardened steel with a black oxide finish
- Screws in from the top

Ratchet and Sockets
Grippers debond with 1/4 turn twist of ratchet.
Part #: 50200 - 3/8 drive ratchet use with sockets 53595 and 54595
Part #: 53595 - 3/8 drive 9/16 thin wall socket use with gripper inserts 23100 or 23200
Part #: 54595 - 3/8 drive 12 mm thin wall socket use with gripper inserts 22100 or 22200
BlueGrip™ Workholding Adhesives
BlueGrip workholding adhesive is designed specifically and exclusively for Blue Photon’s workholding system. The gel-like adhesive fills the gap between the surface of the gripper and the surface of the workpiece for outstanding holding power. Joint thickness can range from .020” to .120”.

Features
- Works on ferrous and non-ferrous metals, ceramic, composite materials and most plastics
- Cures in 60 seconds
- Impervious to cutting fluids and oils
- Removable with steam or hot water
- Available with a fluorescent dye

BlueGrip™ S2 Workholding Adhesive
Specifically formulated for Blue Photon’s photo-activated adhesive workholding.
Part #: 43200 - 30 cc syringe
Part #: 46200 - 1L cartridge
Part #: 48200 - 40 lb pail

Features
- 30 cc syringes are for manual and pneumatic dispensing
- 1L cartridges and 40 lb pails for automated dispensing
- Impervious to most cutting fluids and oils
- Easily removable with CNC machine mounted cleaning tool, hot water, steam or hot water spray
- Fills gaps between the gripper and workpiece of .020” to .120”

BlueGrip™ S2-F Fluorescent Workholding Adhesive
Specifically formulated with a dye that fluoresces under black light for easy identification of residual adhesive on workpieces and grippers.
Part #: 43210 - 30 cc syringe
Part #: 46210 - 1L cartridge
Part #: 48210 - 40 lb pail

Features
- 30 cc syringes are for manual and pneumatic dispensing
- 1L cartridges and 40 lb pails for automated dispensing
- Impervious to most cutting fluids and oils
- Easily removable with CNC machine mounted cleaning tool, hot water, steam or hot water spray
- Fills gaps between the gripper and workpiece of .020” to .120”
ADHESIVE ACCESSORIES

**Syringe Barrel**
UV blocking barrels block UV light, while allowing fluid levels to be monitored.
Part #: 43402

**Features**
- 30 cc amber syringe barrel
- Includes piston and labels
- 20 per box

**Tip Cap**
Tip caps protect assembly fluids with unique vents that are engineered to actually prevent air from being introduced into the syringe during installation.
Part #: 43700

**Features**
- Use to cap 30 cc amber syringe barrel
- 20 per box

**End Cap**
End caps fit securely over syringe tabs and feature a center push button that makes it easy to create a snug, airtight seal.
Part #: 43800

**Features**
- Use to cap 30 cc amber syringe barrel
- 20 per box

**Barrel Loader**
Barrel-filling system for BlueGrip workholding adhesive.
Part #: 46600

**Features**
- 1L cartridge reservoir
- Includes stand with retainer block
- Use to fill 30 cc syringes from a 1L cartridge
Manual or automated adhesive dispensers for our workholding system.

From a simple, manual plunger to sophisticated, automated and precise delivery, Blue Photon offers a range of adhesive dispensers compatible with our groundbreaking photo-active adhesive workholding system. Options include pneumatic dispenser, digital pneumatic dispenser and a high precision dispenser.

Contact us for help selecting the best adhesive dispensing equipment for your application.

### Pneumatic Dispenser

**Pneumatic adhesive dispensing unit with digital time/pressure display.**

**Part #: 71900**

**Features**

- Digital time/pressure display
- Timed or steady modes of operation
- Vacuum control keeps thin fluids from dripping between cycles
- Optional electric finger switch - use P/N 75490

### Digital Pneumatic Dispenser

**Fully digital adhesive dispenser with all-digital, multi-function display and 16 memory settings.**

**Part #: 72000**

**Features**

- Foot-operated adhesive dispenser
- All-digital, multi-function display
- Multilingual display
- Operator security lockout
- 16 memory settings and a 4-decimal time setting
- High-speed solenoid for highly accurate deposits
- Universal power supply
High Precision Dispenser

Includes controls and settings to electronically change/adjust dispensing time, pressure and vacuum. Consists of an auto-increment feature to adjust dispensing parameters after a certain number of shots or a specific lapsed time and auto-sequence mode that allows deposit patterns to be repeated automatically.

Part #: 73000

Features

- 400 individual memory storage cells
- Scroll or select cells via front panel keypad or external PC/PLC control
- Switch between steady, timed and teach modes
- Front panel manual cycle key
- Teach function
- Multi-level operator lockout
- Alarm indicators
- End of cycle feedback loop
- Soft button data input 0-9 keypad
- Operator control of LCD display brightness
- Easy up/down arrow key navigation
- External PC interface for data input
- Display cycle counter
- RS-232 communication capability
- ESD safe via connection with external ESD
- 0-100 psi (0-6.9) bar air regulation range
- D-sub I/O (15-pin) and communication (9-pin) connections
- Alarm I/O signals

Manual Plunger

Plunger fits into 30 cc adhesive tubes for dispensing by hand.

Part #: 74000

5 Gallon Pail Dispenser

Dispenser to fill and load cartridges and barrels with BlueGrip workholding adhesive.

Part #: 77700

Features

- Use to fill 30 cc syringes and 1L cartridge
- Cartridge filling - use P/N 75850 1/4 NPT male adapter
- Barrel loading - use P/N 75840 luer-lock adapter
UV lightsource to quickly cure BlueGrip™ workholding adhesive.

Curing the adhesive is a “60-second” proposition with our patented system, and we supply UV LED controllers, UV LED light heads and cables to do so. The controller is capable of operating multiple UV LED light heads and is available up to 4 channel configurations. We also supply handheld radiometers, long and short UV LED heads, extension cables and right angle adapters for various sized grippers.

UV LED Controller

LX500 spot curing system has been uniquely designed with proprietary Intelli-Lamp® technology that monitors LED head temperature, lifetime data and automatically maintains optical stability +/- 5%.

Part #: 65530 - UV LED controller, 2 channel
Part #: 65540 - UV LED controller, 4 channel

Features
- 1-4 individual UV LED heads, interchangeable to any channel
- 2.4” full color display with main control, input configurations, system maintenance, LED information, calibration and micro SD log information
- 4-way membrane mode control for system display and programming
- Start/stop – control start or stop of the LED emission
- Alarm icon on screen in the event of an error or fault
- External control via optional foot pedal, PLC or PC through USB communication

Extension Cable

Provides extra cable length from the UV LED controller to the UV LED head where the UV curing process is farther away from the controller.

Part #: 50907 - 3 ft length
Part #: 50908 - 6 ft length
Part #: 50909 - 10 ft length

Features
- Cable type - USB
- Cable characteristic - extension cable
- Color - black

UV LED Head

UV LED head cures BlueGrip workholding adhesive through grippers.

Part #: 56811 - 125 mm length
Part #: 59811 - 55 mm length
LED CONTROLLER & ACCESSORIES

Handheld Radiometer

Measures stray UV light output in the range of 280 to 400 nM.
Part #: 62020
Features
- Measuring Range - 1 to 1999 uW/cm², 0.01 to 40 mW/cm²
- Accuracy +/-4% +/- 1 Digit
- Display - Backlit 4 Digit LCD
- Data Hold
- Min./Max. Memory
- Memory - 20 Point
- Battery Type - 9V
- Cord Length - 46"
- Calibration Certificate - NIST

UV LED Light Sensor

Measures UV light output from LED head.
Part #: 62600
Features
- Accuracy +/- 10%
- Calibration Cycle - One Year
- Operating Temperature Range - Ambient to 40° Centigrade
- Certification - Complies with IEC, Canadian and US Standards, RoHS compliant
- Traceability - NIST and NRC Compliant
- Sensor Dimension (LxWxH) - 75 mm x 25 mm x 11.95 mm
- Use with P/N 66700

Right Angle Adapter

Attaches to the UV LED head when clearance issues arise.
Part #: 64850 - standard adapter use with head-in gripper 12130 or 12131
Part #: 64860 - extended adapter use with gripper insert 22100 or 22200
Part #: 64950 - standard adapter use with head-in gripper 13160
Part #: 64960 - extended adapter use with gripper insert 23100 or 23200

Beam Positioning Kit

Centers the LED head over the UV sensor.
Part #: 66700
Features
- Consistent measurements by accurately positioning the beam on the detector sensor
- Use with P/N 62600
Debonding and clean up is simple with Blue Photon.

Blue Photon offers a variety of soak tanks, pressure washers and cleaning tools to efficiently debond the workpiece and remove any cured, residual adhesive. Contact us for more information about our cleaning equipment and methods.

**Scraper**
The scraper is used to clean parts and grippers of cured adhesive after heating.
Part #: 80030
Features
- 5" aluminum handle knife
- Heavyweight adhesive removing blade

**Hot Water Spray Washer**
The hot water spray washer is designed with a pressurized hot water spray chamber for part and gripper cleaning.
Part #: 81100
Features
- Temperature control
- All wetted parts made of stainless steel
- Ergonomic design
- Adjustable height
- Foot switch operation for pressurized spray

Product Specifications*
- Model No. - PW-3
- Voltage - 120VAC
- Phase - 1
- Supply Current - 20A
- Largest Load Current - 14.5A
- Max Water Capacity - 15-18 gallons
* This washer can be custom fabricated to accommodate any size part.

**CNC Spindle Mounted Cleaning Tool**
The spindle mounted gripper cleaning tool loads in a CNC machine to remove cured adhesive from grippers.
Part #: 82400 - Gripper Cleaning Tool Assembly
Part #: 82500 - Replacement Head
Features
- Mounts in any 3/4 diameter collet or end mill holder
- Replaceable head for P/N 82400 tool assembly

**Handheld Pressurized Steamer**
The handheld steamer provides pressurized steam for easy removal of residual cured adhesive from grippers and workpieces. Economical solution for prototypes or low-volume parts.
Part #: 84750
Features
- 8 x 5.2 x 10.7 inches
- 3 lbs
- 6 oz water capacity
- Emits steam continuously for 10 minutes
- 15 ft power cord
- 900W
- 200°F steam temperature
Soak and Spray Washer

This washer is designed with a hot water soak tub for part debonding and a pressurized hot water spray chamber for part and gripper cleaning.

Part #: 81110

Features
- Temperature control
- Soak timer with “Soak Finished” indicator light
- “Lower Tray” and “Raise Tray” functions
- Safety features
- Foot pedal operation for pressurized spray

Product Specifications*
- Power - 480V 3ph
- Max full load amps - 16.8
- Empty weight - approximately 1,200 lbs
- Full weight - approximately 1,600 lbs
- Max part size - 13" x 14" x 20"
- Max part weight - 50 lbs
- Max water capacity - 48.5 US gallons
- Max outside dimensions - 66W x 40D x 67H
- Thermostat control
- Water temperature - 100-190˚F
- Pressure output (variable) - 100-1000 psi
- Signal timer
- LED signal light
- Part blow off
- Adjustable height from floor to arm holes - 43.5"-58.5"

*This washer can be custom fabricated to accommodate any size part. Contact us for pricing and specifications.

Soak Debond Tank

The soak debond tank allows for debonding the part from the grippers without twisting. This method is preferred in applications where twist debonding could cause delamination or other damage to the workpiece.

Part #: 81300

Features*
- Stainless steel construction
- Electric heat
- Programmable temperature control/sensor
- Simple push button cycle operation
- Easy access for clearing and maintenance
- High performance insulation to avoid heat loss
- Thermal insulation
- Easy fill and drain tank
- Low energy consumption
- Emergency stop button
- Dipping time timer
- Manual or automatic operation
- No water alarm light
- Interlock casters

Product Specifications
- Maximum product height - 10 inches (255 mm)
- Immersion platform size - 23 x 14 inches (584 x 355mm)
- Immersion depth - 12 inches (305 mm)
- Cycle time - up to 15/min.
- Volume of water - 100 liters
- Electrical - 220V / 60 Hz / 3 Ø, 10 amps
- Machine size - 27 L x 33.5 W x 57.25 H inches (673 x 1016 x 1454mm) with cover up (63 H inches (1600mm)
- Weight - 394 lb (179 kg)

*All external walls of the unit are insulated to help protect from hot surface contact. All specifications subject to change.
Heavy Duty Steamers

Cured Adhesive Steam Cleaners

These heavy duty steamers produce 60 PSI to unlimited hours of continuous steam pressure, and reaches temperatures up to 221°F at the tip. These steamers are ideally suited for cleaning away cured adhesive on grippers.

Part #: 84870 - Approx. 6 hours of continuous steam

Features
- 110V/120V 1200W element
- 1.25 gallon, 4.5 L water capacity
- Low water light indicator
- 61 PSI, 4.1 bar operating pressure
- Pressure/safety switch
- 30A heavy-duty contactor
- 12-gauge heavy-duty wiring
- Stainless steel tank and outer casing
- Carrying handle
- 15-20 minute heat up time

Part #: 84880 - Minimum 8 hours of continuous steam

Features
- 110V/120V
- 2.37 gallon, 9 L water capacity
- 1200W heating element
- Visual water level indicator
- Low water light indicator
- Regular tap water
- Ranco pressure control
- 12-gauge heavy-duty wiring
- Stainless steel tank and outer casing
- 2 incoloy heating elements (1-spare)
- Carrying handle
- 30-40 minute heat up time

Part #: 84890 - Full-time steam

Features
- 110V/120V
- Automatic shut-off of pump in case water supply is interrupted
- Boiler thermostat reset switch
- Heavy-duty adjustable feet
- Low water light indicator
- Regular tap water
- Ranco pressure control
- 12-gauge heavy-duty wiring
- 1 incoloy heating elements
- Stainless steel tank and outer casing
- Blow down valve
- 20-30 minute heat up time
- 20-amp plug required
- Direct connection to a water line
Workholding Kit

The workholding kit includes everything you need to start using the Blue Photon workholding solution for manufacturing. Actual unit may vary from one shown.

Part Number Configurator
Select your kit based on the configuration below:

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<th>Gripper</th>
<th>Controller</th>
<th>UV LED Head</th>
<th>UV LED Head Qty.</th>
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<tbody>
<tr>
<td></td>
<td>2 - Med. Head-In Gripper*</td>
<td>1 - 2 Channel</td>
<td>1 - 55 mm length</td>
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</tr>
<tr>
<td>3</td>
<td>3 - Lg. Head-In Gripper*</td>
<td>2 - 4 Channel</td>
<td>2 - 125 mm length</td>
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<tr>
<td></td>
<td>4 - Med. Head-Out Gripper*</td>
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</tbody>
</table>

In addition to your selections above, each kit contains:
- BlueGrip™ S2 Workholding Adhesive
- Manual Plunger
- Scraper
- Handheld Steamer

*6 grippers included within each kit.
Universal Fixture Kit

This kit allows the user to very simply and immediately get started using Blue Photon workholding technology. The collection of included inserts, pins and articulating arms can be set up to hold a workpiece for 5- and even 6-sided tool access.

Part #: 91100

Each kit includes these components:

<table>
<thead>
<tr>
<th>P/N</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>91101-000</td>
<td>3</td>
<td>Z Locator Assembly</td>
</tr>
<tr>
<td>91102-000</td>
<td>3</td>
<td>XY Locator Assembly</td>
</tr>
<tr>
<td>91103-200</td>
<td>2</td>
<td>2&quot; Vertical Gripper Arm Assembly</td>
</tr>
<tr>
<td>91103-300</td>
<td>4</td>
<td>3&quot; Vertical Gripper Arm Assembly</td>
</tr>
<tr>
<td>91103-400</td>
<td>2</td>
<td>Horizontal Gripper Arm Assembly</td>
</tr>
<tr>
<td>91104-000</td>
<td>2</td>
<td>Pivoting Gripper Assembly</td>
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<tr>
<td>91105-000</td>
<td>1</td>
<td>12&quot; x 12&quot; Base Plate*</td>
</tr>
<tr>
<td>91109-110</td>
<td>9</td>
<td>Shaft Foot</td>
</tr>
<tr>
<td>91109-420</td>
<td>2</td>
<td>1&quot; dia Shaft, 2&quot; length</td>
</tr>
<tr>
<td>91109-440</td>
<td>4</td>
<td>1&quot; dia Shaft, 4&quot; length</td>
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<tr>
<td>91109-460</td>
<td>3</td>
<td>1&quot; dia Shaft, 6&quot; length</td>
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<tr>
<td>12130</td>
<td>6</td>
<td>Medium Head-In Gripper</td>
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<td>22200</td>
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<td>Gripper Insert Assembly</td>
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<td>64860</td>
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<td>Right Angle Adapter, extended</td>
</tr>
</tbody>
</table>

* Custom sizes available upon request.
UNIVERSAL FIXTURE KIT COMPONENTS

Part #: 91101-000
Z Locator Assembly

Part #: 91102-000
XY Locator Assembly

Part #: 91103-200
2” Vertical Gripper Arm Assembly

Part #: 91103-300
3” Vertical Gripper Arm Assembly

Part #: 91103-400
Horizontal Gripper Arm Assembly

Part #: 91104-000
Pivoting Gripper Assembly

Part #: 91105-000
12” x 12” Base Plate

Part #: 91109-110
Shaft Foot

Part #: 91109-420
1” dia Shaft, 2” length

Part #: 91109-440
1” dia Shaft, 4” length

Part #: 91109-460
1” dia Shaft, 6” length

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