



LASER PROCESS HEADS • CRASH PROTECTION • ADJUSTABLE MOUNTS • BEAM EXPANDERS/COLLIMATORS • TRANSLATION MOUNTS
• KINEMATIC BEAM BENDERS • BEAM SWITCHING UNIT • KINEMATIC BEAM SPLITTER • BEAM SHUTTER/DIODE POINTER • BEAM
COMBINER/DIODE POINTER • SHUTTER INTERLOCK UNITS • POLARIZER HOUSINGS & WAVEPLATES • DELIVERY TUBES • LOCKING
RINGS • BEAM TUBES • ARTICULATED ARMS • COUPLERS • ACCESSORIES • BEZEL ADAPTERS • CO2 LASER NECESSITIES

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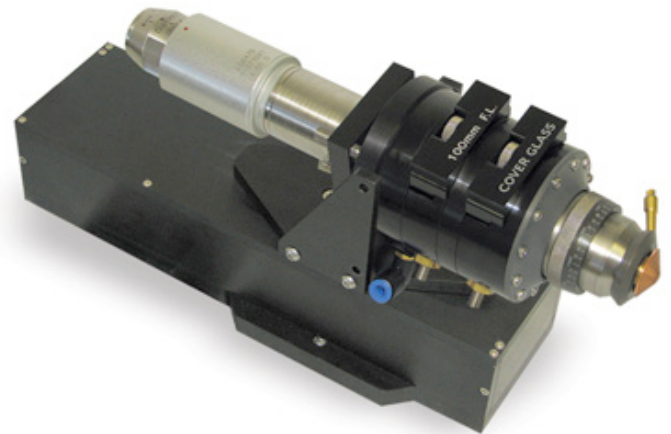
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38mm Series Fiber Laser Process Head System

FIBER LASER PROCESS HEAD SYSTEM:

The 38mm c.a. fiber laser process head system is designed for 1KW-10KW Fiber Laser cutting and welding applications. The robust industrial modular design permits custom configurations utilizing standard components. Several collimation and focus lens configurations are available to suit all fiber laser makes and models. Additional CCD viewing, capacitive non-contact height sensing with linear Z axis and pneumatic crash sensors are just some of the additional features available.

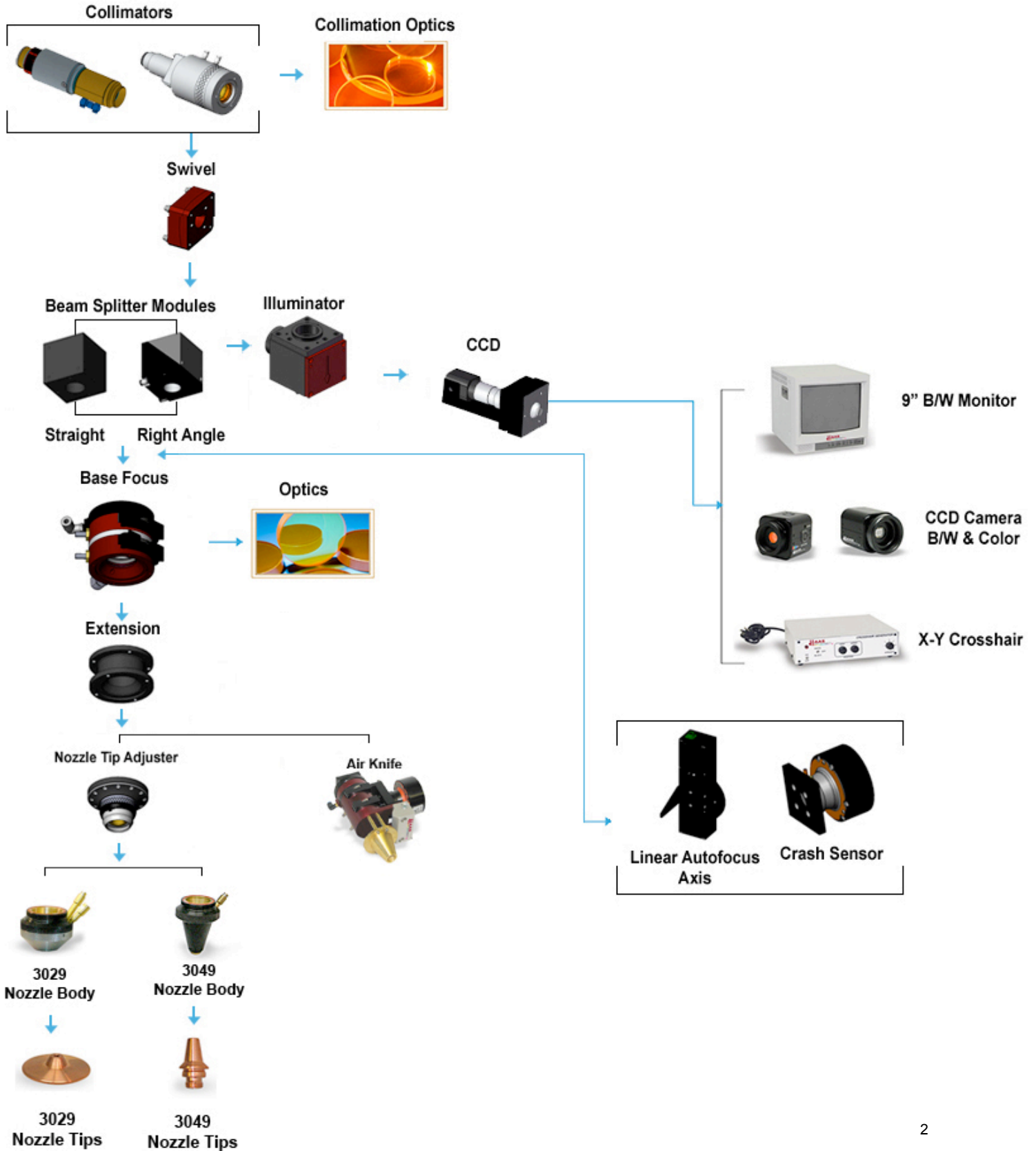


38mm Fiber Laser Head Shown with LZA-50-1G-10KG

Specifications:

- 35.5mm Clear Aperture for 1KW-10KW Fiber Laser Cutting and Welding Applications
- Water-Cooled Optics
- Multiple Optic Options
- Robust Modular Industrial Design for Custom Configurations
- Crash Detection and Protection Options
- X-Y Adjustable Optic Cartridge Design
- Calibrated Nozzle Tip Stand-off Adjustment
- Gas Jet Manifold Rated to 31 Bar (450PSI)
- Several air knife and cover glass options available.
- All Metric Stainless Steel Hardware
- Anodized Aluminum, Brass, and Stainless Steel Construction
- Accessory and Optic Cleaning Kit Available

CLICK IMAGES INSIDE DIAGRAMS TO SEE FULL PRODUCT DETAILS!
38mm Micromachining Building Tree



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38mm Laser Heads

PHW Reflective Mirror Focus Head

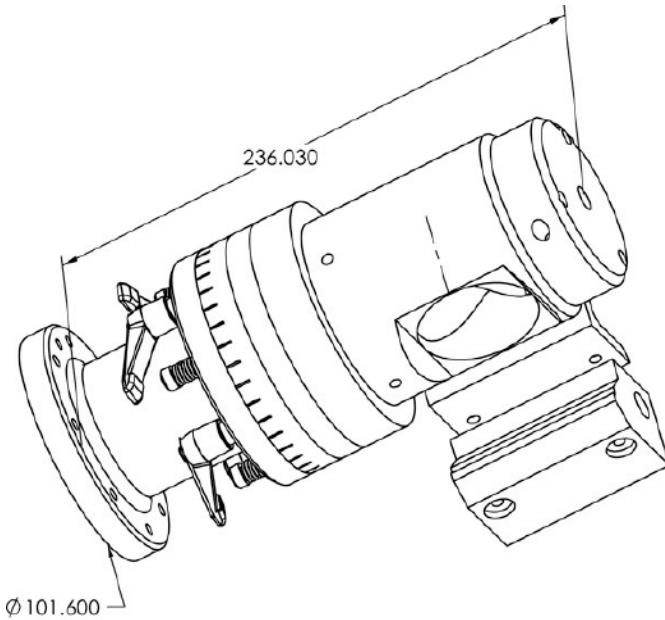
Reflective Mirror Focus Heads are specifically designed for high-power welding applications. An internal copper parabolic mirror focuses the laser beam.

PHW Specifications:

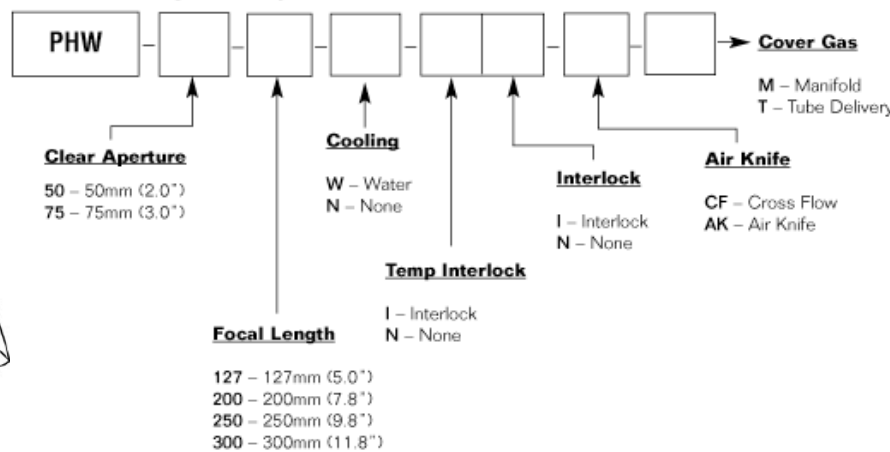
- 38mm, 50mm, and 75mm clear aperture options
- Modular Design
- Several focal length options available
- Dual-Spot Option
- Water-Cooled
- Temperature Interlock option
- Mirror Interlock Option
- Several Air Knife Options
- Several Cover Gas Delivery Options
- Robust Industrial Design
- Custom Configurations Available



PHW-50 Shown w/ RAM-50



Part Numbering Anatomy



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38mm G5 "Series" Laser Process Head

LASER PROCESS HEAD part#: G5-38

The G5 Series Laser Process Head is designed for High-Speed Multi-Kilowatt Cutting Applications. The G5 Series provides additional Z-Axis adjustment of the focus lens cell to compensate for varying High-Pressure Optic Thickness. Internal water passage reduces outside cooling lines on multiple focal length configurations.

G5-38 Shown on the right.



G5-38 Features:

- X-Y-Z Adjustable Optic Cartridge Design
- Up to +/- 5mm Z Optic Cartridge adjustment for different optic thickness
- Internal Cooling of Multiple Optic Configurations
- Crash Detection and Protection Options
- Calibrated Nozzle Tip Stand-off Adjustment
- Water-Cooled Optics
- Gas Jet Manifold
- Multiple Optic Options
- Available for a Wide Variety of Optics
- Modular Design for Custom Configurations
- All Metric Stainless Steel Hardware

G5-38 Specifications:

- 34.8mm Clear Aperture
- Uses Standard 1.5" dia. Optics
- Rated up to 6KW
- Gas Jet Pressure Rated to 25 Bar (365PSI)
- Anodized Aluminum, Brass, and Stainless Steel Construction
- Acceleration Stability up to 2G
- Robust Design

Click Pictures to Enlarge



CRASH PROTECTION & DETECTION DEVICES:

38-XYZ-S:

2-Stage X-Y-Z Crash Detection/Protection Unit (Short Design). Stage 1 permits Up to +/- 10 deg. of deflection. Three Internal, Series Wired Switches Detect and Report the Crash Condition. Stage 2 incorporates a Magnetic Break-away of the Entire Laser Head to Protect the Unit from Damage. Internal Hardened Steel Locating Pads allow the unit to be Precisely relocated back into place. A protective Bellows seals the unit while acting as a tether to support the unit from falling upon a crash break-away condition.

38-XYZ-L:

2-Stage X-Y-Z Crash Detection/Protection Unit (Long Design). Stage 1 permits Up to +/- 10 deg. of deflection. Three Internal, Series Wired Switches Detect and Report the Crash Condition. Stage 2 incorporates a Magnetic Break-away of the Entire Laser Head to Protect the Unit from Damage. Internal Hardened Steel Locating Pads allow the unit to be Precisely relocated back into place. A protective Bellows seals the unit while acting as a tether to support the unit from falling upon a crash break-away condition.

38-XYZ-BA:

Disposable Break-Away Crash Protection. The unit is designed to allow the break-away of the laser process head from a crash condition.



WATER-COOLED SPACERS:

38-SW: Water-Cooled Optic Spacer. For use on top of each Optic Cartridge (G4-D-50W) Retainer. Accepts BSPT Water Fittings.



OPTIC CARTRIDGE RETAINERS:

38-CR-Z: Optic Cartridge Retainer for all G5" Series" Optic Cartridges. 1/4-80 pitch X-Y Optic Cartridge Adjustment Screws.

38-CR-Z-TS: Optic Cartridge Retainer for all G5" Series" Optic Cartridges. 1/4-80 pitch X-Y Optic Cartridge Adjustment Thumb Screws.



OPTIC CARTRIDGES:

38-CZ-2.5: Optic Cartridge for 1.5" dia. x 2.5" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Internal +/- 2mm Z Adjustment for Optic Focal Length Correction, Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

38-CZ-3.5: Optic Cartridge for 1.5" dia. x 3.5" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Internal +/- 2mm Z Adjustment for Optic Focal Length Correction, Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.



38-CZ-5.0: Optic Cartridge for 1.5" dia. x 5.0" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Internal +/- 4mm Z Adjustment for Optic Focal Length Correction, Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

38-CZ-7.5: Optic Cartridge for 1.5" dia. x 7.5" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Internal +/- 5mm Z Adjustment for Optic Focal Length Correction, Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

38-CZ-10: Optic Cartridge for 1.5" dia. x 10" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Internal +/- 5mm Z Adjustment for Optic Focal Length Correction, Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

38-CZ-12: Optic Cartridge for 1.5" dia. x 12" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Internal +/- 5mm Z Adjustment for Optic Focal Length Correction, Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

NZL-3029-M8-FSX: Dummy Cartridge. Used for multiple focal length configurations to seal unused optic slots.



OPTIC CARTRIDGE RETAINERS WITH GAS JET MANIFOLDS:

38-CR-Z-GJ: Optic Cartridge Retainer with Gas Jet Manifold for all G5" Series" Optic Cartridges. Gas Jet is rated at 25 Bar (365PSI). Accepts BSPT Air Fitting. 1/4-80 pitch X-Y Optic Cartridge Adjustment Screws.

38-CR-Z-GJ-TS: Optic Cartridge Retainer with Gas Jet Manifold for all G5" Series" Optic Cartridges. Gas Jet is rated at 25 Bar (365PSI). Accepts BSPT Air Fitting. 1/4-80 pitch X-Y Optic Cartridge Adjustment Thumb Screws.



NOZZLE TIP STAND-OFF ADJUSTERS:

38-TSA-20-433: Nozzle Tip Stand-off Adjuster Long. Rated at 25 Bar (365PSI). Laser-Marked Calibrated Rotary Barrel Adjustment. Adjustable zero-point setting. -5mm and +15mm Travel. Robust Stainless Steel, Brass, and Anodized Aluminum Design. (For Focal Lengths 5.0" and longer)

38-TSA-10-300: Nozzle Tip Stand-off Adjuster Short. Rated at 25 Bar (365PSI). Laser-Marked Calibrated Rotary Barrel Adjustment. Adjustable zero-point setting. -5mm and +5mm Travel. Robust Stainless Steel, Brass, and Anodized Aluminum Design. (For Focal Lengths shorter than 5.0")



NOZZLE TIP HOLDERS:

NZL-3029-625-XXX: Standard Non Capacitive Nozzle Tip. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a 625 thread laser nozzle.

NZL-3029-M8-XXX: Standard Non Capacitive Nozzle Tip. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle.

NZL-3029-625-AMX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a 625 thread laser nozzle. MCX Connector.

NZL-3029-625-ASX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a 625 thread laser nozzle. SMA Connector.

NZL-3029-M8-AMX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. MCX Connector.

NZL-3029-M8-ASX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. SMA Connector.

NZL-3029-M8-FMX: Forced Air-Cooled Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. MCX Connector.

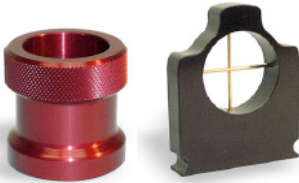
NZL-3029-M8-FSX: Forced Air-Cooled Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. SMA Connector.

NOZZLE TIPS:



See "[FLAT SHEET CUTTING NOZZLE TIPS](#)" sheet in Accessories & Related Products

ACCESSORIES:



CT-G5-38: Cartridge Crosshair Target

OW-38: Optic Wrench

OW-38Z: Nozzle Extension for 80mm Focus Lens

G5 ASSEMBLY: G5-38-C:



G5-38-C:

34.8mm Clear Aperture G5 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridges for 1.5" Dia. X 5.0" and 7.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of -15mm +5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.

G5 ASSEMBLY: G5-38-L:

G5-38-L:

34.8mm Clear Aperture G5 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridges for 1.5" Dia. X 5.0" and 2.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.

G5 ASSEMBLY: G5-38-H:

G5-38-H:

34.8mm Clear Aperture G5 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridges for 1.5" Dia. X 5.0" and 3.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.

G5 ASSEMBLY: G5-38-G:

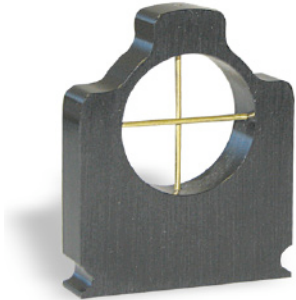
G5-38-G:

34.8mm Clear Aperture G5 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridge for 1.5" Dia. X 3.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.

G5 ASSEMBLY: G5-38-J:

G5-38-J:

34.8mm Clear Aperture G5 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridge for 1.5" Dia. X 5.0" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.



G5 TARGET:

TGT-G5:

Target for G5 "Series" Laser Process Heads.

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38mm G4 "Series" Laser Head

LASER PROCESS HEAD

Item#- G4-38

The G4 Series Laser Process Head is designed for High-Speed Multi-Kilowatt Cutting Applications. Available with multiple focal length configurations.

One of many pre-assembled configurations available.



G4-38-C shown above

G4-38 Specifications:

- X-Y Adjustable Optic Cartridge Design
- Crash Detection and Protection Options
- Calibrated Nozzle Tip Stand-off Adjustment
- Water-Cooled Optics
- Gas Jet Manifold
- Multiple Optic Options
- Available for a Wide Variety of Optics
- Modular Design for Custom Configurations
- All Metric Stainless Steel Hardware
- Many Pre-Assembled Configurations Available



G4-38 Features:

- 34.8mm Clear Aperture
- Uses Standard 1.5" Dia. Optics
- Gas Jet Pressure Rated to 25 Bar (365PSI)
- Anodized Aluminum, Brass & Stainless Steel Construction
- Acceleration Stability up to 2G
- Robust Design



G4 ASSEMBLY: G4-38-C:

G4-38-C:

34.8mm Clear Aperture G4 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridges for 1.5" Dia. X 5.0" and 7.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of -15mm +5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.



G4 ASSEMBLY: G4-38-L:

G4-38-L:
34.8mm Clear Aperture G4 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridges for 1.5" Dia. X 5.0" and 2.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +-5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.



G4 ASSEMBLY: G4-38-H:

G4-38-H:
34.8mm Clear Aperture G4 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridges for 1.5" Dia. X 5.0" and 3.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +-5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.



G4 ASSEMBLY: G4-38-G:

G4-38-G:
34.8mm Clear Aperture G4 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridge for 1.5" Dia. X 3.5" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +-5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.



G4 ASSEMBLY: G4-38-J:

G4-38-J:
34.8mm Clear Aperture G4 "Series" Laser Process Head Assembly w/ 3-Axis (XYZ axis) Crash Detection with Micro-Switch Reporting, Magnetic Break-Away with Micro-Switch Reporting, Gas Jet Manifold rated at 25 barr, Assist Gas Optic Cooling, X-Y Adjustable Optic Cartridge for 1.5" Dia. X 5.0" Focus Lens with 1/4"-80 Adjustment Screws, Water-Cooled, Calibrated High-Pressure Stainless Steel Nozzle Tip Stand-Off Assembly with 0.025mm Resolution and Travel of +-5mm -5mm, Capacitive Height Sensing Body w/ Air-Cooling Option, Replaceable Copper Nozzle Tip. Stainless Steel and Anodized Aluminum Construction. All Metric Stainless Steel Hardware.

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CRASH PROTECTION & DETECTION DEVICES:



38-XYZ-S:
2-Stage X-Y-Z Crash Detection/Protection Unit (Compact Design). Stage 1 permits Up to +/- 10 deg. of deflection. Three Internal, Series Wired Switches Detect and Report the Crash Condition. Stage 2 incorporates a Magnetic Break-away of the Entire Laser Head to Protect the Unit from Damage. Internal Hardened Steel Locating Pads allow the unit to be Precisely relocated back into place. A protective Bellows seals the unit while acting as a tether to support the unit from falling upon a crash break-away condition.

38-XYZ-L:
2-Stage X-Y-Z Crash Detection/Protection Unit (Extended Design). Stage 1 permits Up to +/- 10 deg. of deflection. Three Internal, Series Wired Switches Detect and Report the Crash Condition. Stage 2 incorporates a Magnetic Break-away of the Entire Laser Head to Protect the Unit from Damage. Internal Hardened Steel Locating Pads allow the unit to be Precisely relocated back into place. A protective Bellows seals the unit while acting as a tether to support the unit from falling upon a crash break-away condition.

38-XYZ-BA:
Disposable Break-Away Crash Protection. The unit is designed to allow the break-away of the laser process head from a crash condition.



WATER-COOLED SPACERS:

38-SW: Water-Cooled Optic Spacer. For use on top of each Optic Cartridge (G4-D-50W) Retainer. Accepts BSPT Water Fittings.



38-CR: Optic Cartridge Retainer for all G4" Series" Optic Cartridges. 1/4-80 pitch X-Y Optic Cartridge Adjustment Screws.

38-CR-TS: Optic Cartridge Retainer for all G4" Series" Optic Cartridges. 1/4-80 pitch X-Y Optic Cartridge Adjustment Thumb Screws.

OPTIC CARTRIDGES:



38-C-2.5: Optic Cartridge for 1.5" dia. x 2.5" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.



38-C-3.5: Optic Cartridge for 1.5" dia. x 3.5" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.



38-C-5.0: Optic Cartridge for 1.5" dia. x 5.0" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

38-C-7.5: Optic Cartridge for 1.5" dia. x 7.5" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

38-C-10: Optic Cartridge for 1.5" dia. x 10" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

38-C-12: Optic Cartridge for 1.5" dia. x 12" F.L. Focus Lens. Includes reusable Indium "C" Seal and Optic Retainer Lock Ring. Upper and Lower Seals permit X-Y Cartridge Adjustment while sealing the beam path from contamination. Hardened Steel inserts provide precise relocation of cartridge. A Stainless Steel Thumbscrew locks the cartridge in place.

NZL-3029-M8-FSX: Dummy Cartridge. Used for multiple focal length configurations to seal unused optic slots.

OPTIC CARTRIDGE RETAINERS WITH GAS JET MANIFOLDS:



38-CR-GJ: Optic Cartridge Retainer with Gas Jet Manifold for all G4" Series" Optic Cartridges. Gas Jet is rated at 25 Bar (365PSI). Accepts BSPT Air Fitting. 1/4-80 pitch X-Y Optic Cartridge Adjustment Screws.

38-CR-GJ-TS: Optic Cartridge Retainer with Gas Jet Manifold for all G4" Series" Optic Cartridges. Gas Jet is rated at 25 Bar (365PSI). Accepts BSPT Air Fitting. 1/4-80 pitch X-Y Optic Cartridge Adjustment Thumb Screws.

NOZZLE TIP STAND-OFF ADJUSTERS:



38-TSA-20-433: Nozzle Tip Stand-off Adjuster Long. Rated at 25 Bar (365PSI). Laser- Marked Calibrated Rotary Barrel Adjustment. Adjustable zero-point setting. -5mm and +15mm Travel. Robust Stainless Steel, Brass, and Anodized Aluminum Design. (For Focal Lengths 5.0" and longer)

38-TSA-10-300: Nozzle Tip Stand-off Adjuster Short. Rated at 25 Bar (365PSI). Laser-Marked Calibrated Rotary Barrel Adjustment. Adjustable zero-point setting. -5mm and +5mm Travel. Robust Stainless Steel, Brass, and Anodized Aluminum Design. (For Focal Lengths shorter than 5.0")

NOZZLE TIP HOLDERS:



NZL-3029-625-XXX: Standard Non Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a 625 thread laser nozzle.

NZL-3029-M8-XXX: Standard Non Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle.

NZL-3029-625-AMX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a 625 thread laser nozzle. MCX Connector.

NZL-3029-625-ASX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a 625 thread laser nozzle. SMA Connector.

NZL-3029-M8-AMX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. MCX Connector.

NZL-3029-M8-ASX: Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. SMA Connector.

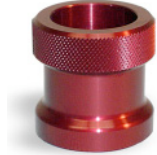
NZL-3029-M8-FMX: Forced Air-Cooled Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. MCX Connector.

NZL-3029-M8-FSX: Forced Air-Cooled Capacitive Nozzle Tip Holder. Screws directly into the Nozzle Tip Stand-off Adjuster. Accepts a M8 thread laser nozzle. SMA Connector.



NOZZLE TIPS:

See ["FLAT SHEET CUTTING NOZZLE TIPS"](#) sheet in Accessories & Related Products



ACCESSORIES:

TGT-G4-38: Cartridge Crosshair Target
OW-38: Optic Wrench



Search:

[sitemap](#)

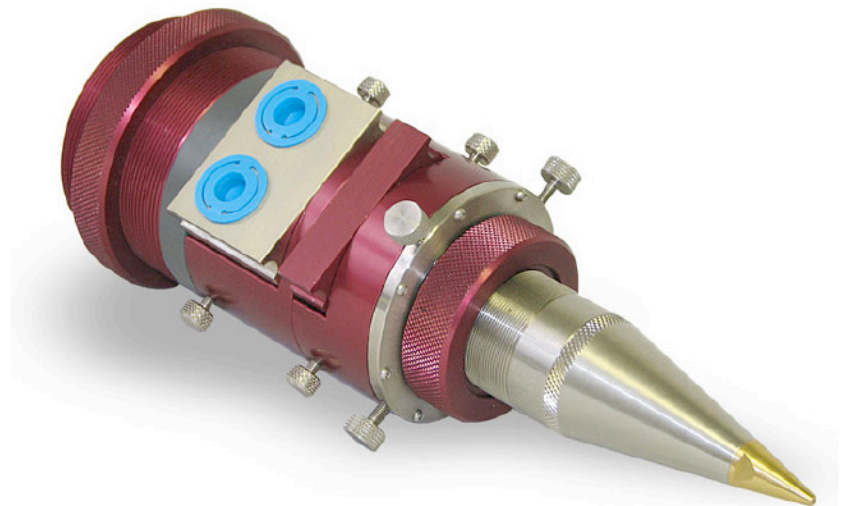
38mm G2 "Series" Laser Process Head

G2 "Series" 38mm Clear Aperture Laser Process Head & Components

The G2 "Series" laser process head is designed for cutting and welding applications. Its modular design allows assembly of custom configurations for specific applications. The G2 "Series" laser process head is available for all wavelengths.

Micromachining Fine Cut Head Specifications:

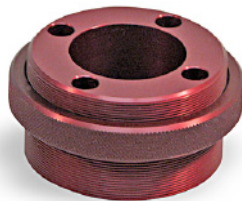
- 34.8mm Clear Aperture
- Available for a Wide Variety of Optics
- Gas Jet Manifold Pressure Rated to 8.8 Bar (120psi)
- Anodized Aluminum & Stainless Steel Construction
- Multiple Optic Options
- Modular Design
- All Metric Stainless Steel Hardware



The design shown above is only one of several available configurations

Scroll down for components and accessories for the 38mm G2 Series Laser Process Head

LASER PROCESS HEAD SCREW MOUNT:



- G2-38-A80E:
- Male Thread
 - Retaining Jam Ring
 - English or Metric Thread Option
 - High Grade Anodized Aluminum

- Part Number:
- English Thread: G2-38-A80E, 2 1/2-20 Thread
 - Metric Thread: G2-38-A80M, M65 x 1.0 Thread

[Click here for drawing](#)

LASER PROCESS HEAD PLATE MOUNT:



- G2-38-A75:
- 12.7mm (0.5") Thick
 - Four Bolt Mounting Pattern
 - High Grade Anodized Aluminum
 - Clearance Mounting Holes for M6.

- Bolt Pattern:
-G2 Series: 82.55mm (3.25") Bolt Square

[Click here for drawing](#)



ISOLATOR ADAPTER / CRASH PROTECTION:

G2-38-B60:

- Adapts Mating Bolt Patterns
- Electrically Isolates Laser Process Head
- Use with Capacitive Auto-Focus Systems
- Breaks Away Upon Crash

[Click here for drawing](#)

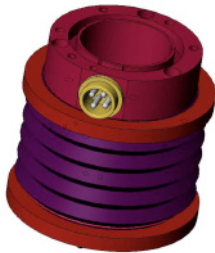


MAGNETIC CRASH DETECTION UNIT:

G2-38-C70:

- Provides X,Y Axis Crash Protection
- Resets to 25µm (0.001")
- Hardened Steel Locating Pins
- Sealed Beam Delivery Path
- High Grade Anodized Aluminum & Stainless Steel

[Click here for drawing](#)



CRASH DETECTION UNIT:

G2-38-C65:

- Provides X, Y & Z Axis Protection
- Self Resetting Feature
- Resets to 25µm (0.001")
- Custom Tooling Balls and Hardened Steel Locating Pads
- 3 (three) Micro-Switches Report Crash Detection
- Electrical Socket & Jack Provide Interfacing
- Various Spring Rate Options Available
- Bellows Seal Beam Delivery Path
- High Grade Anodized Aluminum

[Click here for drawing](#)

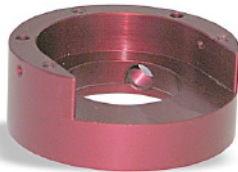


UPPER OPTIC CARTRIDGE CONTAINER:

G2-38-D40:

- Retainer for 11.4mm (0.45") Optic Cartridges
- 2 (two) Set Screws Secure Optic Cartridge
- May be Stacked Together
- High Grade Anodized Aluminum

[Click here for drawing](#)

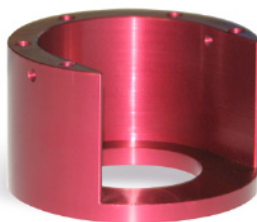


BOTTOM OPTIC CARTRIDGE CONTAINER:

G2-38-D35:

- Retainer for 11.4mm (0.45") Optic Cartridges
- 2 (two) Set Screws Secure Optic Cartridge
- Bottom Accepts Nozzle Holder Mount
- Assist Gas Inlet. 1/8" NPT Fitting
- High Grade Anodized Aluminum

[Click here for drawing](#)



OPTIC CARTRIDGE CONTAINER - For water cooled cartridges:

G2-38-40W:

- Retainer for 33mm (1.3") Optic Cartridges
 - 2 (two) Set Screws Secure Optic Cartridge
 - Bottom Accepts Nozzle Holder Mount
 - Assist Gas Inlet. 1/8" NPT Fitting
 - High Grade Anodized Aluminum
-

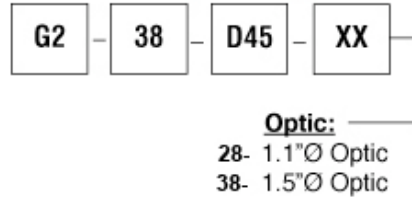
FOCUS LENS - OPTIC CARTRIDGE:



G2-38-D45-XX:

- Mounting Assembly for the Following Focus Lens Diameters: 27.9mm (1.1") and 38.1mm (1.5")
- Reusable Indium "C" - Spring Seal
- Spring-Loaded Teflon Assist Gas Seal
- Optic Retaining Lock Ring
- Removable Cartridge Design
- For use with D-35 & D-40 Optic Cartridge Retainers
- High Grade Anodized Aluminum

Part Numbering Anatomy



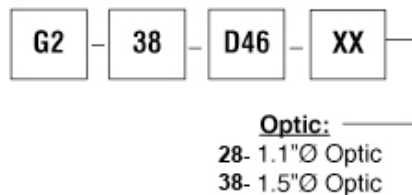
COVER GLASS - OPTIC CARTRIDGE:



G2-38-D46-XX:

- Mounting Assembly for the Following Cover Glass Diameters: 27.9mm (1.1") and 38.1mm (1.5")
- Reusable Indium "C" - Spring Seal
- Spring-Loaded Teflon Assist Gas Seal
- Teflon Top Seal
- Pressure Equalizing Bleed Holes
- Optic Retaining Lock Ring
- Removable Cartridge Design
- For use with D-35 & D-40 Optic Cartridge Retainers
- High Grade Anodized Aluminum

Part Numbering Anatomy



OPTIC SPACERS:



G2-38-D41:

- Provides 12.7mm (0.5") Spacing to Accommodate Various Focal Length Lens Combinations
- May be Stacked Together
- High Grade Anodized Aluminum

OPTIC SPACERS:



G2-38-D42:

- Provides 25.4mm (1.0") Spacing to Accommodate Various Focal Length Lens Combinations
- May be Stacked Together
- High Grade Anodized Aluminum

OPTIC SPACERS:



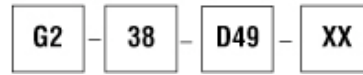
G2-38-D43:

- Provides 38.0mm (1.5") Spacing to Accommodate Various Focal Length Lens Combinations
- May be Stacked Together
- High Grade Anodized Aluminum

NOZZLE EXTENSION HOLDERS:

- High Grade Anodized Aluminum

Part Numbering Anatomy



Optic:

28- 1.1" (27.9mm) Ø Optic
38- 1.5" (38.1mm) Ø Optic

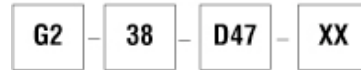


OPTIC CARTRIDGE:

G2-38-D47-XX:

- Mounting Assembly for the following Focus Lens Diameters:
27.9mm (1.1") & 38.1mm (1.5")
- Water Cooled Design. 1/8" NPT Fitting
- Spring Loaded Teflon Assist Gas Seal
- Removable Cartridge Design
- For use with D-36 Optic Cartridge Retainer
- Brass Construction

Part Numbering Anatomy



Optic:

28- 1.1" (27.9mm) Ø Optic
38- 1.5" (38.1mm) Ø Optic

NOZZLE EXTENSIONS:



PART NUMBER:

OVERALL LENGTH:

19.0mm (.750")	G2-F-0750
25.4mm (1.0")	G2-F-1000
31.75mm (1.250")	G2-F-1250
38.1mm (1.5")	G2-F-1500
50.8mm (2.0")	G2-F-2000
63.5mm (2.5")	G2-F-2500
76.2mm (3.0")	G2-F-3000
101.6mm (4.0")	G2-F-4000
127.0mm (5.0")	G2-F-5000
152.4mm (6.0")	G2-F-6000
177.8mm (7.0")	G2-F-7000
203.2mm (8.0")	G2-F-8000

* All of the above part numbers have 1 1/8-32 ID Threads and 1 1/4-32 OD Threads.



LOCKING RING:

- G2-38-LR:
- 1 1/4"-32 ID Thread
 - Aluminum



LOCKING COLLET:

- G2-38-LC:
- 1 1/4" ID Thread
 - Stainless Steel

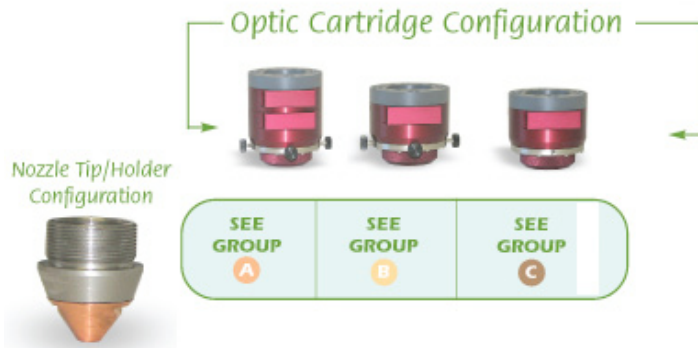


G2 "SERIES" Nozzle Tip Holder

Part#:
G2-38-G10-625

- Specifications:**
- Brass Construction
 - Use with 5/8" - 32 Nozzle Tips
 - 1 1/8"-32 OD Thread

[CLICK HERE FOR NOZZLES & NOZZLE TIPS](#)



[CLICK HERE FOR NOZZLES & NOZZLE TIPS](#)

How to use Configuration Diagram:

- 1) Select "optic cartridge configuration" & "nozzle tip/holder configuration".
- 2) Select focal length & nozzle extension from individual group to locate the nozzle extension you will need.



[CLICK HERE FOR NOZZLES & NOZZLE TIPS](#)

"G2" Series Laser Process Heads

Focal Length (mm)	Group/Nozzle Extension Part Number		
	A	B	C
63.5mm (2.5")	G2-F-1000	N/A	N/A
76.2mm (3.0")	G2-F-1000	N/A	N/A
88.9mm (3.5")	G2-F-2000	N/A	N/A
95.2mm (3.75")	G2-F-2000	N/A	N/A
101.6mm (4.0")	G2-F-2000	N/A	N/A
127.0mm (5.0")	G2-F-3000	G2-F-1000	N/A
152.4mm (6.0")	G2-F-4000	G2-F-2000	G2-F-1000
177.8mm (7.0")	G2-F-5000	G2-F-3000	G2-F-2000
190.5mm (7.5")	G2-F-6000	G2-F-3000	G2-F-2000
203.2mm (8.0")	G2-F-6000	G2-F-4000	G2-F-3000
228.6mm (9.0")	G2-F-7000	G2-F-5000	G2-F-4000
254.0mm (10.0")	G2-F-8000	G2-F-6000	G2-F-5000
279.4mm (11.0")	G2-F-9000	G2-F-7000	G2-F-6000
304.8mm (12.0")	G2-F-10000	G2-F-8000	G2-F-7000

All "G2" Series Nozzle Extensions use G2-38-LC Locking Collet and G2-38-LR Locking Ring



Part #	Overall Length
G2-F-0750	19.0mm (.750")
G2-F-1000	25.4mm (1.0")
G2-F-1250	31.75mm (1.250")
G2-F-1500	38.1mm (1.5")
G2-F-2000	50.8mm (2.0")
G2-F-2500	63.5mm (2.5")
G2-F-3000	76.2mm (3.0")
G2-F-4000	101.6mm (4.0")
G2-F-5000	127.0mm (5.0")
G2-F-6000	152.4mm (6.0")
G2-F-7000	177.8mm (7.0")
G2-F-8000	203.2mm (8.0")

— Nozzle Extension Locking Rings —



G2-38-LR

LOCKING RING:

- 1 1/4"-32 ID Thread
- Aluminum



G2-38-LC

LOCKING COLLET:

- 1 1/4"-32 ID Thread
- Stainless Steel



**[CLICK HERE FOR NOZZLES
& NOZZLE TIPS](#)**

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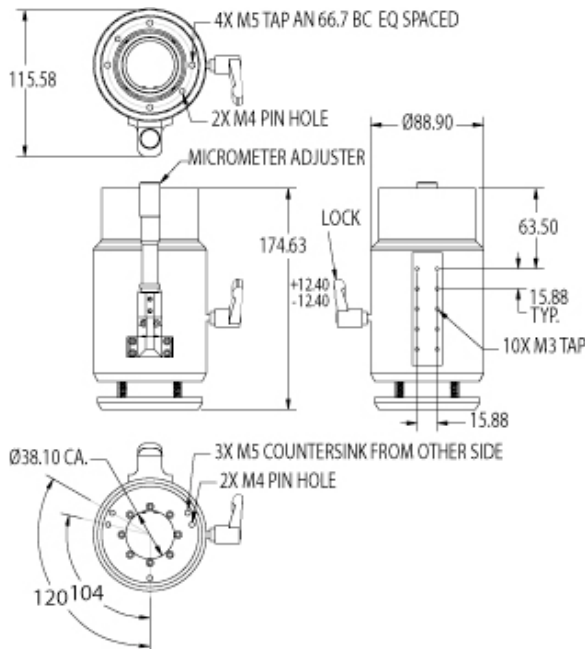
38mm Beam Directing & Positioning

LINEAR ADJUSTABLE MOUNT Part#: LAM-38

Linear adjustable mounts are typically attached to a process head for fine adjustment of the laser focus spot relative to the workpiece.

The sealed design prevents contaminants from entering the beam path. A micrometer head allows for precision linear adjustments. The standard 25mm stroke design allows for retraction of lower mount under compressive loads. This mount also incorporates a linear crash protection.

LAM-38-25-VE-L shown to the right.



LAM-38 Specifications:

- .001" (0.25mm) Adjustment Accuracy
- Choice of Micrometer Style
- Adjustable Slide Mount
- Can be used Horizontally
- Retraction Under Compressive Loads
- Z-Axis Crash Protection
- Sealed Design
- Anodized Aluminum Construction
- 38mm Clear Aperture

Part Numbering Anatomy



Travel
25 - 25mm (1.0")
50 - 50mm (2.0")

Micrometer Type
VE - Vernier, English
VM - Vernier, Metric

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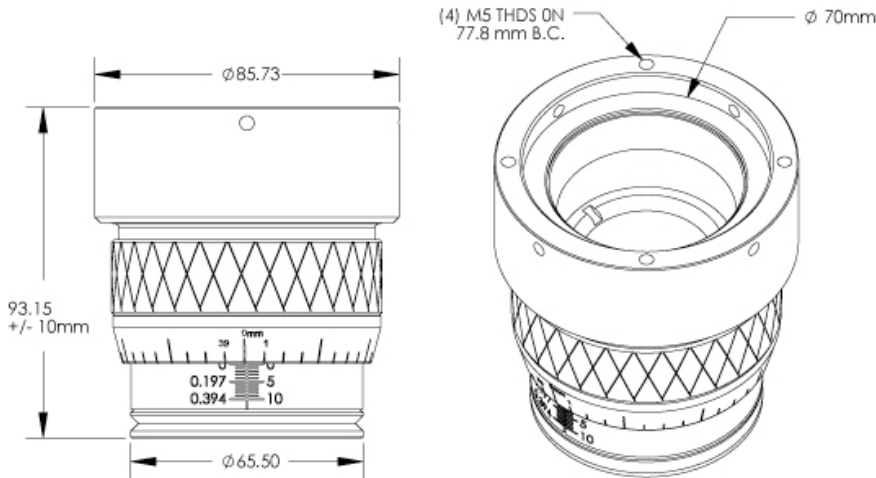
38mm Beam Directing & Positioning

LINEAR ADJUSTABLE ROTARY MOUNTS Part #: LMR-38 Series

Linear Adjustable Mounts are typically attached to a process head for fine adjustment of the laser focus spot relative to the workpiece.

A sealed design prevents contaminants from entering the beam path. The laser marked rotary barrel allows for precision linear adjustments.

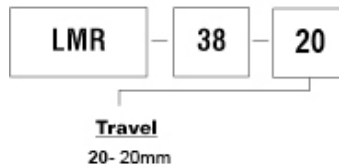
LMR-38-25-VM Shown to the right.



LMR-38 Series Features:

- .001" (0.25mm) Adjustment Accuracy
- Can Be Used Horizontally
- Sealed Design
- 38mm Clear Aperture

Part Numbering Anatomy



Search:

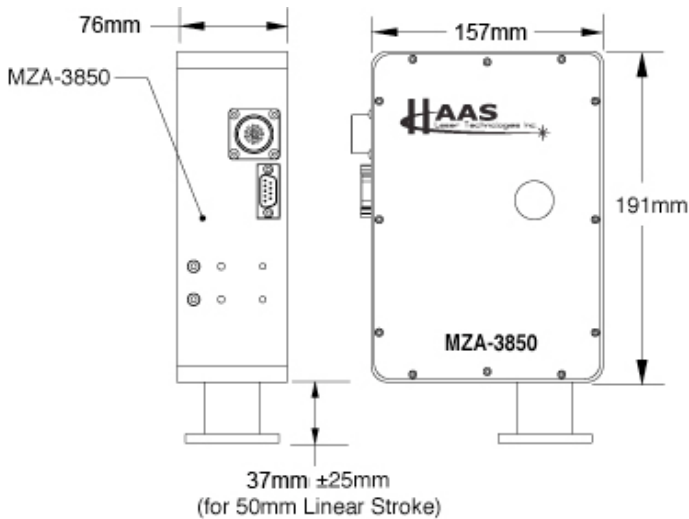
[sitemap](#)

38mm Beam Directing & Positioning

MOTORIZED Z-AXIS UNIT Part Number: MZA-3850

Motorized Z-Axis Units from this series are fabricated from high-grade anodized aluminum and stainless steel to provide high speed linear positioning of various autofocus and/or laser process head designs. A high torque DC servo motor, belt drive, and precision ball screw provide trouble free operation. The linear stage is guided via (4) miniature recirculating ball trucks. Stage over-travel limits are sensed by non-contact proximity sensors.

All precision components are enclosed within a lightweight, internally sealed enclosure. Optional features include an encoder for use as a CNC controlled Z-Axis. Motorized Z-Axis units are available in 25mm (1.0"), 38mm (1.5") and 50mm (2.0") clear apertures, with linear strokes of 25mm (1.0"), 50mm (2.0") and 100mm (4.0").



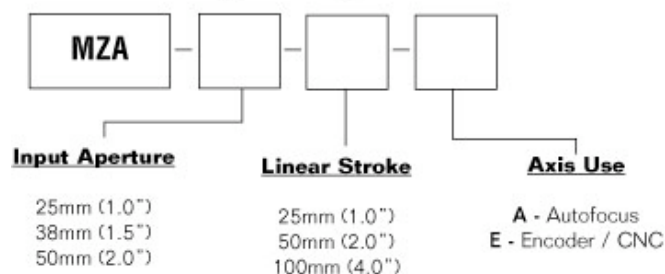
MZA Specifications: **ELECTRICAL**

- Servo Motor:.....High Speed DC
- Motor Supply Voltage:.....For CHS 24VDC
- Connectors:.....Male 15 Pin Canon
.....Male 9 Pin Sub D
- Optional Encoder:.....500 Line
- Limit Sensors:.....Proximity Switch

MZA Specifications: **MECHANICAL**

- Drive:.....Fine Pitch Ball Screw
- Motion:.....Recirculating Ball Trucks
- Velocity:.....100mm (3.94") Per Second
- Encoder Resolution:.....1.9µm and 0.078µm

Part Numbering Anatomy



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38mm Beam Directing & Positioning

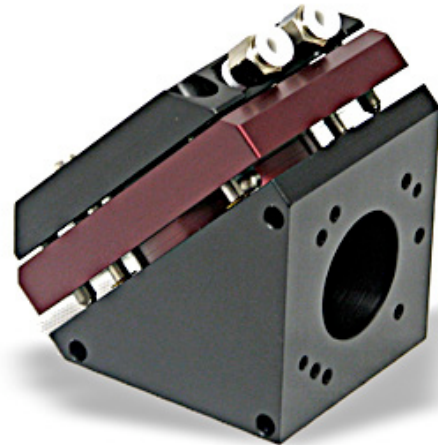
KINEMATIC BEAM BENDERS

Part #: BBK-38

The BBK-38 series kinematic laser beam benders provide a 90° beam displacement with a 38mm clear aperture.

Independent orthogonal mirror correction with 80 pitch adjustment screws provides precise, repeatable alignment. Optic removal and replacement can be accomplished without affecting alignment. Several mirror diameters and thicknesses can be accommodated. All cative hardware.

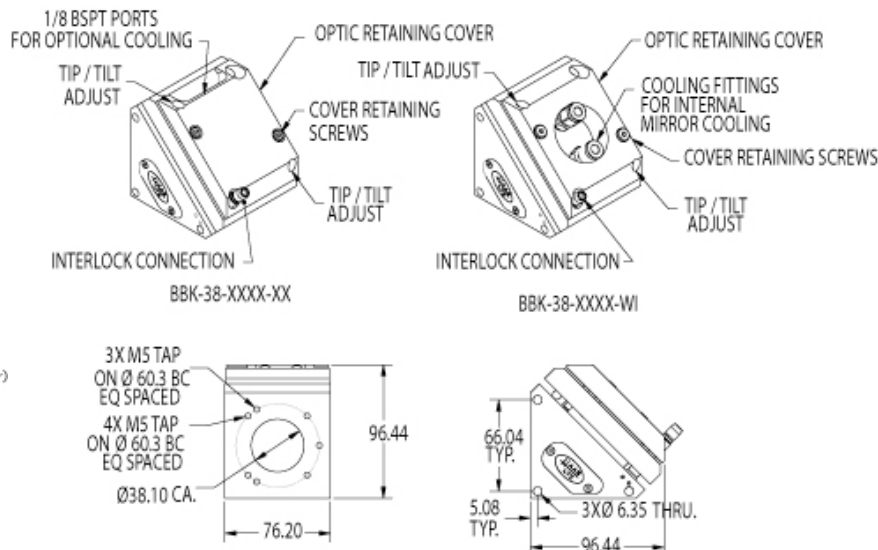
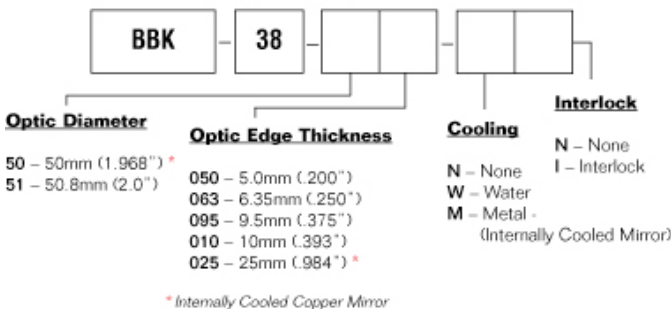
BBK-38-500630-WI Shown



BBK-38 Series Features:

- ±2° Independent Orthogonal Mirror Adjustment
- 80 Pitch Adjustment Screws
- Accommodates 50mm (1.968") & 50.8mm (2.0") Diameter Mirrors (other diameters available)
- Face & Side Mounting Holes
- Available for All Wavelengths
- Sealed Design
- Anodized Aluminum Construction
- 38mm Clear Aperture
- Water Cooling & Interlock Options
- Internally Cooled Copper Mirror Option

Part Numbering Anatomy



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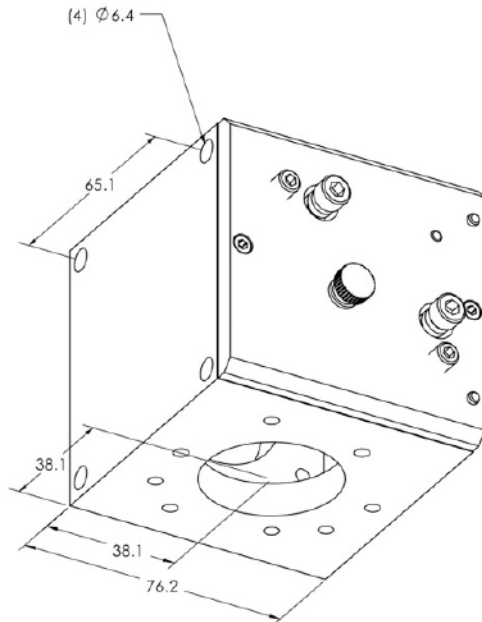
38mm Beam Directing & Positioning Components

KINEMATIC BEAM SPLITTER BSK-38

The BSK-38 Series kinematic laser beam splitters provide a 90° angular beam displacement of reflected beam with minimal lateral beam displacement of transmitted beams (lateral displacement is determined by optic thickness). Several laser beam split options are also available.

Independent angular orthogonal mirror correction with eighty pitch adjustment screws provides precise, repeatable alignment. Optic removal & replacement can be accomplished without affecting alignment. Several mirror diameters and thicknesses can be accommodated.

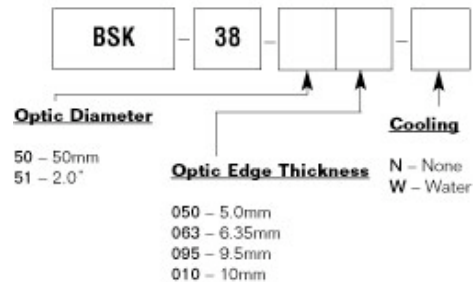
BSK-38-28040-NN shown to the right.



BSK-38 Specifications:

- ±2° Independent Orthogonal Mirror Adjustment
- 80 Pitch Adjustment Screws
- Accommodates Standard 50mm Diameter Mirror (Other Diameters Available)
- Face & Side Mounting Holes
- Available for All Wavelengths
- Sealed Design
- Anodized Aluminum Construction
- 38mm Clear Aperture

Part Numbering Anatomy



Search:

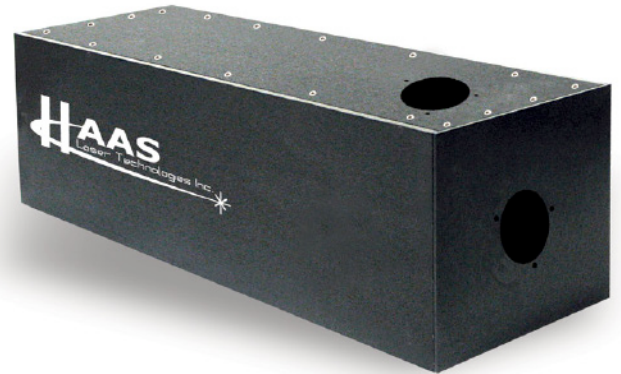
[sitemap](#)

38mm Beam Directing & Positioning

BEAM SWITCHING UNIT Part #: BSU-38

The Beam Switching Unit contains an internal BBK-38 beam bender mounted on precision linear bearings and can be translated in and out of the beam path. The kinematic laser beam bender provides a 90° beam displacement with a 38mm clear aperture. Independent orthogonal mirror correction with 80 pitch adjustment screws provides precise, repeatable alignment. The BSU-38 provides a method to "Time-Share" or redirect the laser beam.

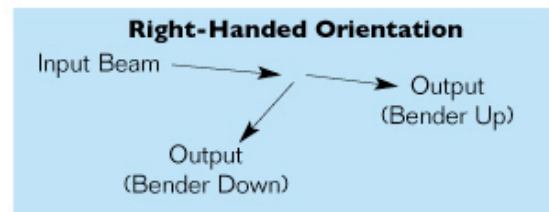
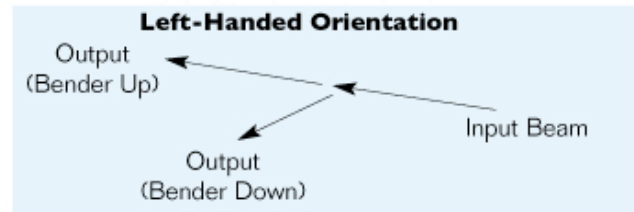
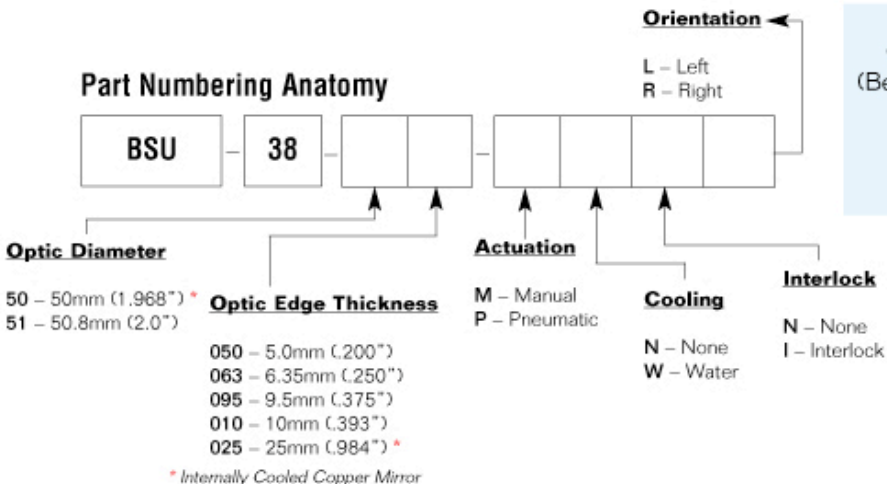
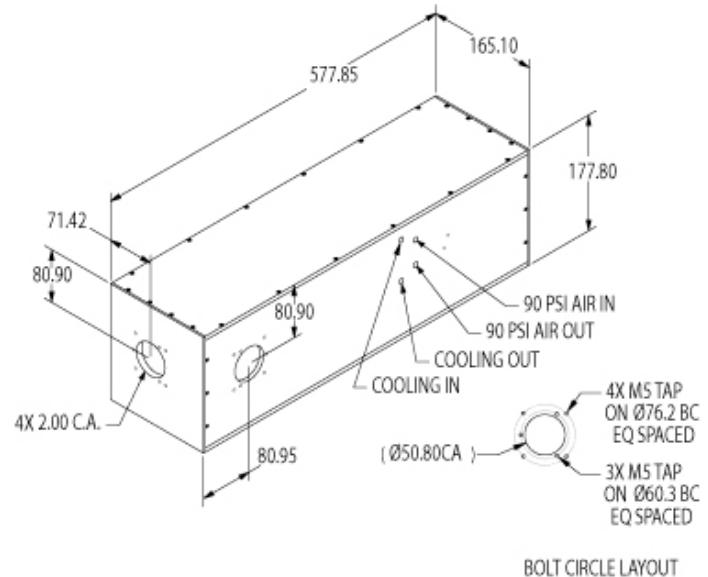
Optic removal and replacement can be accomplished without affecting alignment. Several mirror diameters and thicknesses can be accommodated.



BSU-38-50064-PWIL Shown

BSU-38 Series Features:

- Pneumatic or Manual Configuration
- ±2° Independent Orthogonal Mirror Adjustment
- 80 Pitch Adjustment Screws
- Accommodates 50mm (1.968") & 50.8mm (2.0") Dia. Mirrors (Other Diameters Available)
- Available Interlock Output
- Available for All Wavelengths
- Anodized Aluminum Construction
- 38mm Clear Aperture
- Limit Switches for Mirror Position Verification
- Reversible Left or Right Beam Input Position
- Water Cooling Option Available
- Precision Linear Rails & Bearing Trucks

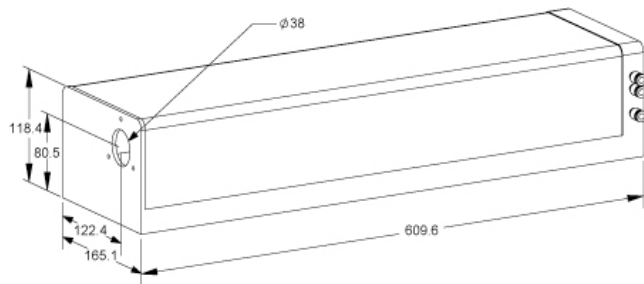


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38mm Beam Enhancement Components

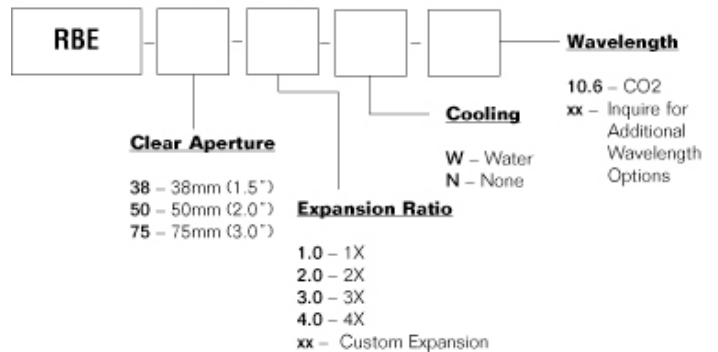
REFLECTIVE BEAM EXPANDER/COLLIMATOR Part #: RBE



Series Features:

- Interlocked Housing
- Easy removal of optics without re-alignment
- Provides a method of enlarging, reducing, or collimating a laser beam's diameter
- May be used as a beam expander to increase the laser beam diameter on the focus lens which produces smaller spotsizes on the workpiece. Larger beam diameters also decrease power density on internal optics
- May be used as a beam reducer to reduce the laser beam's diameter on the focus lens which produces larger spotsizes on the workpiece. Smaller beam diameters also allow the laser beam to pass through smaller clear apertures
- May be used as a collimator to correct any excessive divergence that may occur over long distances
- Variable beam expansion & reduction options
- Standard mount & enclosure enables all beam expansion or reduction options to be implemented without reconfiguring existing beam delivery system
- Removable cover allows quick access for alignment without disassembly of beam delivery system
- All internally direct cooled reflective optics
- 2 Gimbal & 1 Linear Mirror mounts provide easy alignment
- Optical rail configuration
- water cooling option
- Modular design
- Z-Fold optical configuration
- 15kw power handling capability

Part Numbering Anatomy



38mm Beam Enhancement Components

MOTORIZED VARIABLE BEAM EXPANDER Part#: MVBE Series

Motorized Variable Beam expanders collimators can be used to either expand or reduce the laser beam diameter. The MVBE has a variable 2X-8X or 1X-4X expansion range providing precise beam expansion control via RS232 interface. A proprietary 5 lens-element design with 3 lens groups is used to reduce the internal focusing effects for high power applications.

- Diffraction-limited design
- 5 Element design reduces internal focus
- Continuous zoom and focus control
- Designed to minimize beam wander
- RS232 Serial Interface
- One Motor Control Unit
- Default Expansion settings pre-programmed
- User-controlled focus adjustment
- Users can define custom expansion settings
- Compact 50mm OD Design
- Windows compatible
- Developed in Labview TM
- GUI (.DLL) can be addressed from C++ or other languages



MVBE Shown Above.

Design:

Other beam expanders contain 4 lenses consisting of 3 lens groups, the first being positive followed by a negative group then a positive group for collimation. This design causes a focus into the second lens group, consequently increasing the possibility of damage to the system.

- Diffraction-limited design
- 5 element design reduces internal focus
- Mechanical design minimizes beam wander
- Continuous zoom and focus adjustments

At Haas Laser Technologies, Inc., we employ a proprietary 5 lens-element design with 3 lens groups to reduce the internal focus. Also, we use fused silica lenses on the two input groups. As a result, our zoom beam expanders tolerate a very high damage threshold.

Damage Threshold:

Standard

248nm - 1600nm: 100MW/cm² for 10ns pulse width, 1 cm beam dia @ 10Hz
9800nm - 10600nm: 20KW/cm² pulsed, 1KW/cm² CW

High Power

248nm - 1600nm: 500MW/cm²
9800nm - 10600nm: 100MW/cm²

Features:

- Default expansion settings pre-programmed
- Users can define custom expansion settings
- User-controlled focus adjustment
- Windows compatible
- RS232 Serial Interface
- Compact 2" outside diameter
- GUI (.DLL) can be addressed from C++ or other languages.

Specifications:

Expansion Range: 2X-8X Continuous or 1X-4X Continuous
Input Aperture: 10mm Max
Output Aperture: 30mm
Beam Wander: 0.15mrad
Wavefront Distortion: <1/4 Wave @633nm
Wavelength: see below
Field of View: +/- 0.5 deg.
Transmission: 95% to 97%
Expansion Change Time: < 10 sec.
Temperature range: -10 to +50 C

Part Number	Clear Aperture	Damage	Expansion	Wavelength
MVBE-30-2-8X-248-425	30mm	Standard	2X-8X	248nm-425nm
MVBE-30-1-4X-249-425		High	1X-4X	248nm-425nm
MVBE-30-2-8X-450-765	30mm	Standard	2X-8X	450nm-675nm
MVBE-30-1-4X-450-765		High	1X-4X	450nm-675nm
MVBE-30-2-8X-600-900	30mm	Standard	2X-8X	600nm-900nm
MVBE-30-1-4X-600-900		High	1X-4X	600nm-900nm
MVBE-30-2-8X-600-901	30mm	Standard	2X-8X	800nm-1200nm
MVBE-30-1-4X-600-901		High	1X-4X	800nm-1200nm
MVBE-30-2-8X-600-902	30mm	Standard	2X-8X	1100nm-1600nm
MVBE-30-1-4X-600-902		High	1X-4X	1100nm-1600nm
MVBE-30-2-10X-9.3	30mm	Standard	2X-10X	9300nm
MVBE-30-1-5X-9.3		High	1X-5X	9300nm
MVBE-30-2-10X-10.6	30mm	Standard	2X-10X	10600nm
MVBE-30-1-5X-10.6		High	1X-5X	10600nm

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38mm Beam Enhancement Components

INDUSTRIAL BEAM EXPANDER/COLLIMATOR BEC-38

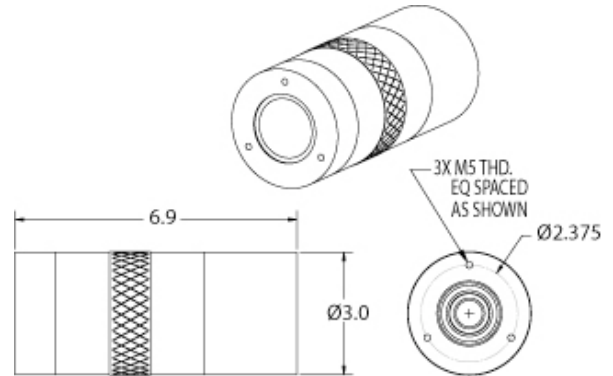
Beam expanders/collimators can be used to either expand or reduce the laser beam diameter. The BEC-38 has a sealed design with easily removable optics. The adjustment ring allows for precise control of beam divergence, without rotating the optic or changing the overall length of the expander.



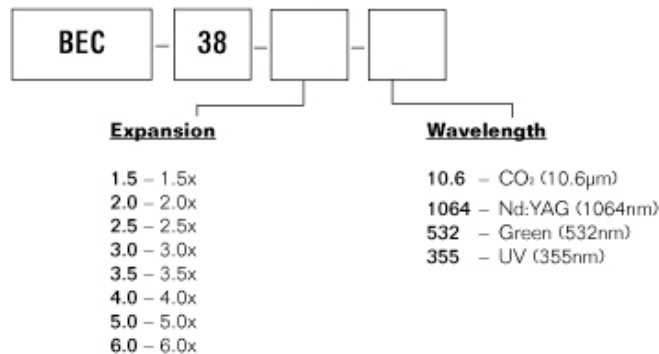
BEC-38-2.0-10.6 Shown.

BEC-38 Specifications:

- Machined from Aluminum, Brass & Stainless Steel
- Fixed Overall Length for Easy Mounting
- Sealed Design
- Galilean Telescope Design Ensures Minimum Aberration
- Easily Removable Optics for Cleaning & Expansion Changes
- Available for All Wavelengths
- Optics are AR Coated for Specific Wavelength
- Custom Expansion Ratios
- Max. Output Aperture (Positive Expander) - 32.5mm
- Optics Included



Part Numbering Anatomy



Standard CO₂ Expanders:

Expansion	Max. Input Aperture	Exit Aperture
1.5	15.0mm	32.5mm
2.0	15.0mm	32.5mm
2.5	13.0mm	32.5mm
3.5	9.3mm	32.5mm
4.0	8.1mm	32.5mm
5.0	6.5mm	32.5mm

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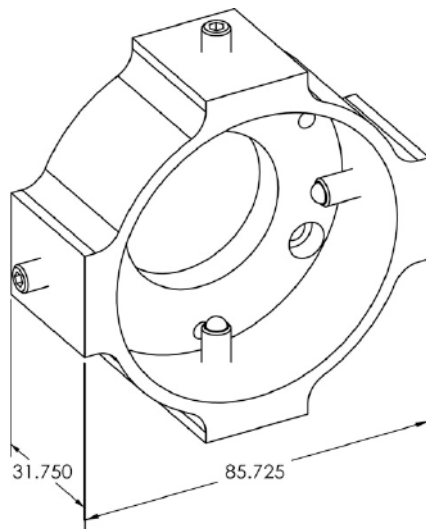
38mm Beam Enhancement Components

TRANSLATION MOUNT FOR BEAM EXPANDER/COLLIMATOR part#- TM-38

Translation Mounts are designed for the critical alignment of transmissive optics, such as placing a beam collimator within a pre-existing beam path.

When two mounts are used on each end of a component, translational and angular corrections can be made. The internal, sealed stage is adjusted via four ultra fine 1/4"-80 pitch screws within a ± 2 mm range. A self-aligning joint allows for the placement & removal of a component without affecting the beam path.

TM-38-S-C shown with BEC-19 Collimator. Shown on the Right.



TM-38 Specifications:

- Machined From Stainless Steel & Anodized Aluminum
- Sealed Design
- "Quick-Connect" Self-Aligning Joint
- 1/4"-80 Pitch Adjustment Screws
- ± 2 mm Adjustment Range
- 38mm Clear Aperture

Part Numbering Anatomy



Adjustment

- S – Four Fine Pitch Screws
- P – Screws/Spring Plungers

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[sitemap](#)

38mm Beam Enhancement Components

CIRCULAR POLARIZER SYSTEM CPU-38

The Beam Circular Polarizer System is designed to convert the laser beam from a linearly polarized beam to a circularly polarized beam.

CPU-38 Shown to the right.

CPU-38 Specifications:

- Designed for CO2 Lasers (10.6 μ m)
- All Mirrors Included
- Liquid Cooled Mirrors - 1/8 BSPT Fittings
- Anodized Aluminum Construction
- 38mm Clear Aperture
- Mounts for any Input/Output Configuration



Search:

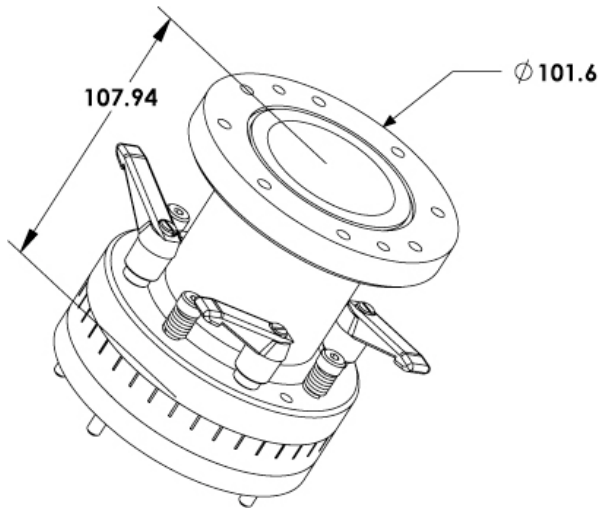
[sitemap](#)

**38mm
 Beam Directing & Positioning**

**ADJUSTABLE ROTARY MOUNT
 RAM-38**

- Provides Adjustable Rotary Coupling of Beam Components
- 0-360° Rotation with 3 Manual Locking Screws
- Built-In Calibrated Scale
- Double Viton O-Ring Sealed Design
- 38mm (1.0") Clear Aperture
- High-Grade Anodized Aluminum & Stainless Steel Construction

RAM-38 shown to the right.



Part Numbering Anatomy



Search:

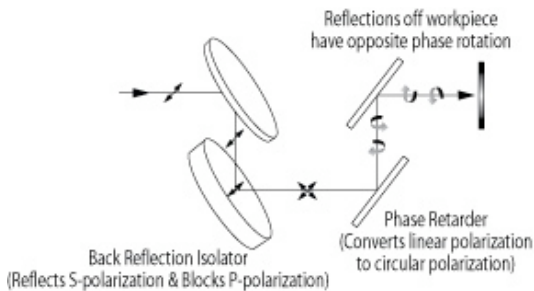
[sitemap](#)

38mm Beam Enhancement Components

BEAM QUALITY ENHANCEMENT SYSTEM BQE-38

The Beam Quality Enhancement System is designed to prevent back reflections from the laser process from re-entering the laser cavity. The system preserves the laser's intra-cavity conditions, mode quality, and power stability. In addition, the laser beam is converted from a linearly polarized beam to a circularly polarized beam.

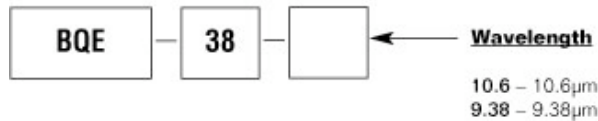
BQE-38 shown on the right.



BQE-38 Specifications:

- Designed for CO2 Lasers (10.6µm)
- All Mirrors Included
- Liquid Cooled Mirrors - 1/8 BSPT Fittings
- Anodized Aluminum Construction
- 38mm Clear Aperture
- Mounts for any Input/Output Configuration

Part Numbering Anatomy



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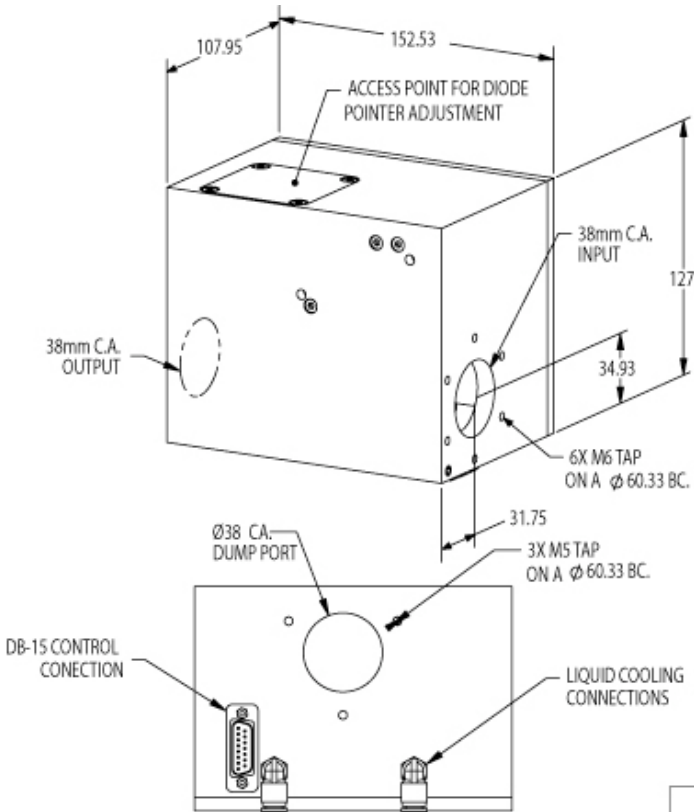
38mm Beam Directing & Positioning

SAFETY SHUTTER with DIODE POINTER - SSDP-38 Series

The SSDP-38 safety shutters are fail-safe shutters with a gold plated liquid-cooled reflecting shutter blade.

The blade is designed for fail-safe operation and is closed when power is off. When the shutter is closed, the laser beam is reflected off the shutter blade into the water-cooled beam dump. The replaceable beam dump surface can be ordered in several styles. The diode pointer option utilizes a 650nm diode laser with 1/4"-80 pitch adjustment screws. An independent, isolated mirror injects the diode pointing laser into the beam path when the shutter is closed.

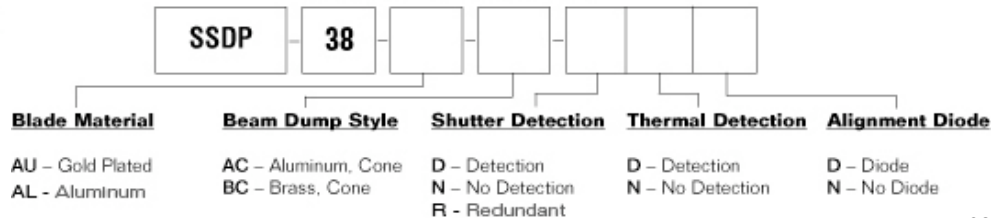
SSDP-38-AU-BC-DDD Show to the right.



SSDP-38 Specifications:

- 24VDC
- Standard Gold Plated Blade
- Optional Shutter Open Detection
- Optional Thermal Detection
- Liquid Cooled (50PSI Max)
- Replaceable Beam Dump Surface
- Optional Alignment Diode
- DB15 Connection for I/O
- Anodized Aluminum Construction
- 38mm Clear Aperture
- For use with SIU-100 Shutter Interlock Unit

Part Numbering Anatomy



Search:

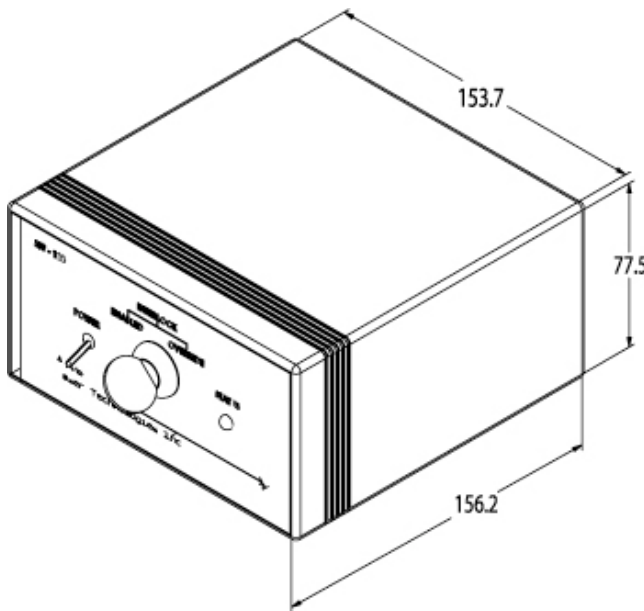
[sitemap](#)

**38mm
 Beam Positioning Viewing Components**

**SHUTTER INTERLOCK UNIT
 Part#: SIU-100**

The SIU-100 Shutter Interlock Unit provides the source of electrical power to open and close Haas Laser Technologies shutters. The high peak power circuitry is designed to deliver the shortest open/close times. The unit provides safety interlock circuitry for enclosure doors, panels, beam delivery, etc...

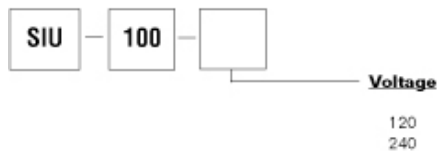
SIU-100-120 Shown to the Right.



SIU-100 Specifications:

- Provides the Electronic Circuitry Needed for Rotary Solenoid Shutters
- Provides High Peak Power at Beginning of Rotary Stroke and then Reduces the Wattage to hold the Solenoid in the Energized Position for 100% Duty Cycle Operation
- Power-On Switch
- Removable Keyswitch (Enabled Only) for Interlock Override
- Shutter Status Bi-Color LED, Red (Closed)/Green (Open)
- 120/240 VAC
- DB-9 External Interface Connection
- For use with Haas LTI 24VDC Shutters

Part Numbering Anatomy



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38mm Beam Directing & Positioning

CCD Camera System: Part#: CAM-1000

CAM-1000 Series Features:

The CAM-1000 CCD Camera System permits coaxial viewing of the focal position through the high-power laser optics for set-up and process monitoring. The CAM-1000 system can be used in conjunction with a beam splitter module ([BSK](#)) for real-time process monitoring. It can also be used in high-power applications with a Beam Switching Unit. ([BSU](#))

The CAM-1000 System is a modular design which can be configured in many ways. Typical systems include zoom optics, wavelength compensator optics, X-Y and Tip/Tilt adjustments and KG3 filter. Unit features a standard C-Mount for camera. Magnifications can range from 2X-160X. Magnification is dependant on wavelength, focus lens focal length and distance placed from focus lens.

Use with Monitor ([MON](#)), Cross Hair Generator ([XHR](#)) and CCD Camera ([CAM](#)).

Please contact Haas Laser Technologies, Inc. for fitment to your specific application.



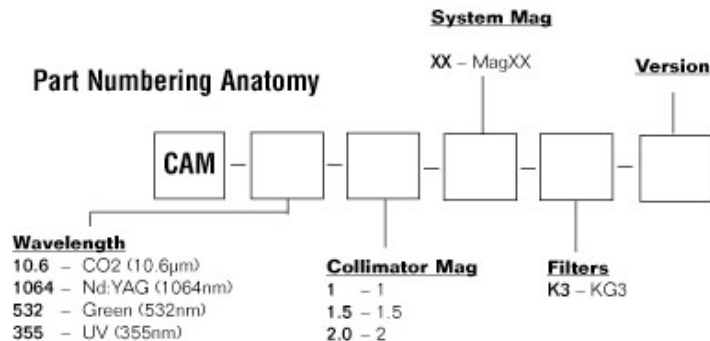
[Monitor \(MON\)](#)
[Click here](#)



[Cross Hair Generator \(XHR\)](#)
[Click here](#)



[CCD Camera \(CAM\)](#)
[Click Here](#)



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38mm Beam Positioning Viewing:

CCD Camera:
Part # CAM

CAM Series Features:

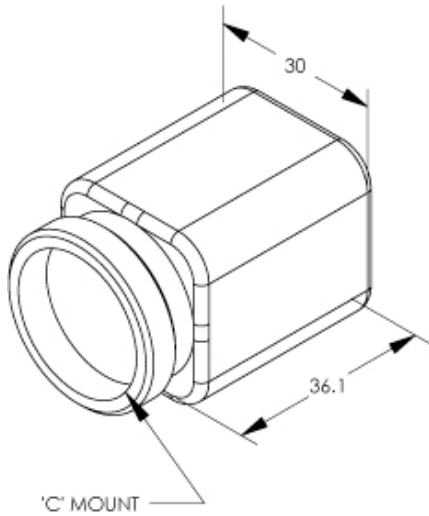
- Provides coaxial viewing of laser position through the focus lens when used with BSK series
- Ultra low-light viewing capability
- High/Low sensitivity switch
- 12VDC from supplied 24/12, 120/12 or 220/12 Converter
- Compact design



Black & White Camera:
Part # CAM-B-117 Shown



Color Camera:
Part # CAM-C-117 Shown



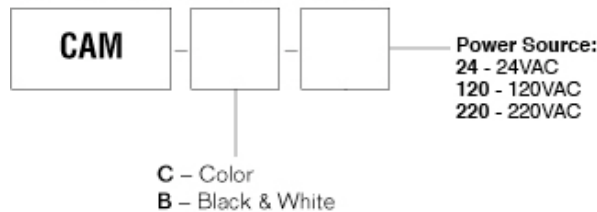
CAM B/W Specifications:

- **Output Signal:** NTSC Compatible
- **Video Output:** BNC F
- **Illumination:** 0.0003 Lux
- **Power Source:** 12VDC
- **Dimensions:**
 Length: 58mm
 Width: 34mm
 Height: 34mm
 Weight: 90gms

CAM COLOR Specifications:

- **Output Signal:** NTSC Compatible
- **Video Output:** BNC Female
- **Illumination:** 0.1 Lux
- **Power Source:** 12VDC
- **Dimensions:**
 Length: 64.5mm
 Width: 42mm
 Height: 42mm
 Weight: 160gms
- Power Supply Included - 120VAC/12VDC

Part Numbering Anatomy



38mm Beam Positioning Viewing Components



XHR-100 Shown Above

X-Y CROSSHAIR GENERATOR Part #: XHR-100 / XHR-200

The X-Y Crosshair Generator creates X & Y axis crosshairs on any color or black and white TV and/or video system.

XHR Series Specifications:

- **Input:** Composite Video 0.7-1.4V p-p/75 ohms
- **Output:** Composite Video 1.4V p-p/75 ohms
- **Bandwidth:** Greater than 12MHz
- **Controls:** Power, On-Off, White-Off-Black, Vertical Positioning, Horizontal Positioning, Intensity
- **Input/Output:** BNC Male
- **Line Movement:** 100% of screen in each axis
- **Power Source:** 120 VAC, 60Hz or 220 VAC, 50Hz
- **Power Consumption:** 10 Watts
- **Dimensions:**
Length: 266mm (10.5")
Width: 216mm (8.5")
Height: 57mm (2.25")
Weight: 1.8Kg (4Lbs)

XHR Series Features:

- Creates X & Y axis crosshairs on any color or black and white tv/video system
- Fully moveable vertical & horizontal crosshairs
- Black or white crosshair feature
- All front panel controls
- Panel-mounted fuse and "U"-Ground convenience plug on back panel

Part #: XHR-100 **Power Source:** 120 VAC, 60Hz

Part #: XHR-200 **Power Source:** 220 VAC, 50Hz

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38mm
Adapters, Clamps, Mounts, Beam Tubes, Etc...

BEAM DELIVERY TUBE

Part#: B-38

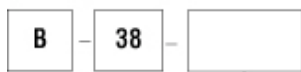
Specifications:

- Provides Sealed Containment of Laser Beam Path
- May be Cut to Desired Length
- Available in up to 180cm (6ft.) lengths
- 38mm (1.5") Clear Aperture
- High-Grade Anodized Aluminum Construction



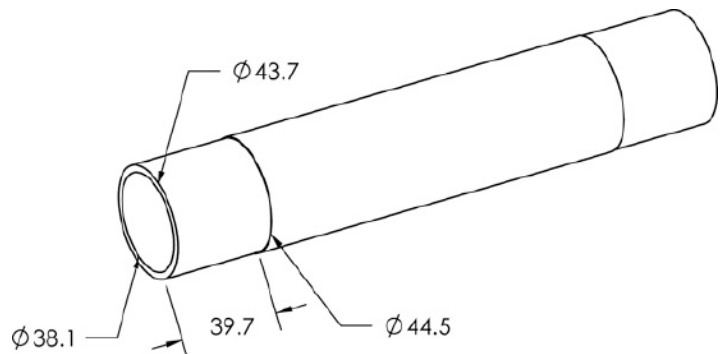
Use with BC-38 Beam Tube Coupler

Part Numbering Anatomy



Specify Tube Length:

Ex: 0327 = 327mm



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38mm
Adapters, Clamps, Mounts, Beam Tubes, Etc...

BEAM DELIVERY TUBE COUPLER

Part#: BC-38

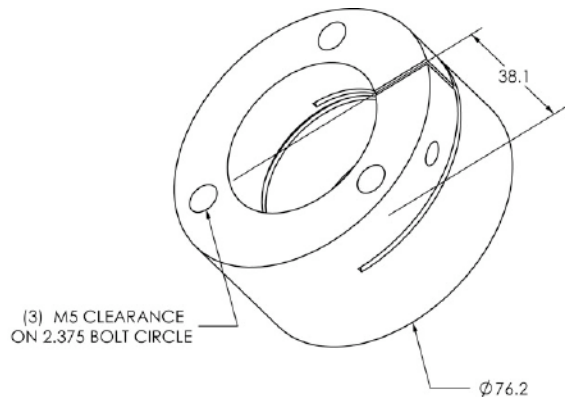
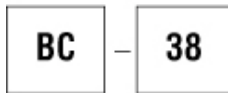
Specifications:

- Provides Coupling of Beam Delivery Tubes to Various Beam Delivery Components
- Clamp-Mount Ensures Easy Coupling for Any Beam Delivery Tube Length
- Double Viton O-Ring Sealed Design
- 38mm (1.5") Clear Aperture Beam Delivery Tubes
- High-Grade Anodized Aluminum Construction



Use with B-38 Beam Delivery Tubes

Part Numbering Anatomy



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38mm Adapters, Clamps, Mounts, Beam Tubes, Etc...

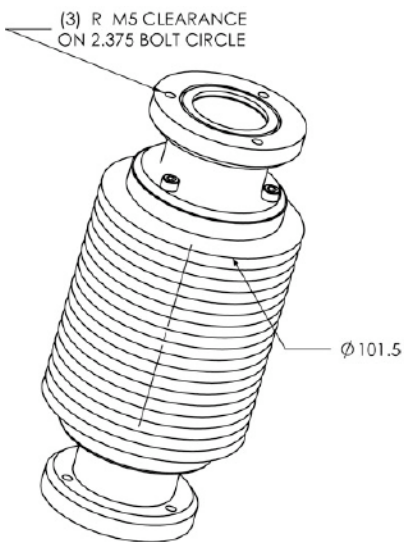
TELESCOPIC BELLOW BEAM TUBES part#- BTT-38

Telescopic Beam Tubes are typically used when a part of the delivery system is attached to a translating axis. The BTT-38 has an internal spring seal and an external bellows seal.

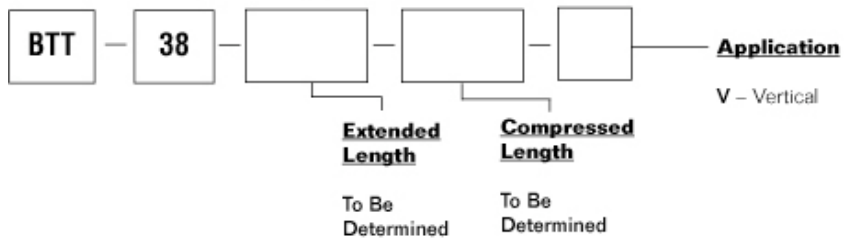
BTT-38 Shown to the right.

BTT-38 Specifications:

- High-Grade Anodized Aluminum
- Internal Spring Seals
- Neoprene or Gortex® Bellows (optional)
- Standard 44.5mm (1.75") O.D. Mount
- 38mm Clear Aperture
- Custom Lengths & Strokes



Part Numbering Anatomy



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38mm Adapters, Clamps, Mounts, Beam Tubes, Etc...

TELESCOPIC BELLOW BEAM TUBES part#- BTB-38

Telescopic Bellow Beam Tubes are typically used when a part of the delivery system is attached to a translating axis. Use the BTB-38 Bellow tubes to ensure protection from misaligned beams.



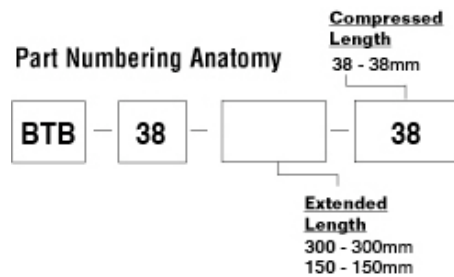
BTB-38-F Flange Shown



BTB-38-F38-300-38 Shown

BTB-38 Specifications:

- High-Grade Anodized Aluminum
- Internal Non-Metallic Seals (Optional)
- Neoprene or Gortex® Bellows (Optional)
- Standard 1"-32 Mounting Thread (C-Mount)
- Custom Lengths & Strokes
- Extended Length=300mm
- Compressed Length=38mm
- Modular Design. Combine to obtain required length



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Additional Components:

Haas Laser Technologies, Inc. offers one of the largest selections of laser beam delivery components available worldwide. Although we try to show you the most common components, we have an extensive inventory of additional and custom designed components now shown. If you do not find exactly what you need, please give us a call. Chances are that we have already built a component that will meet your specific requirement.

