

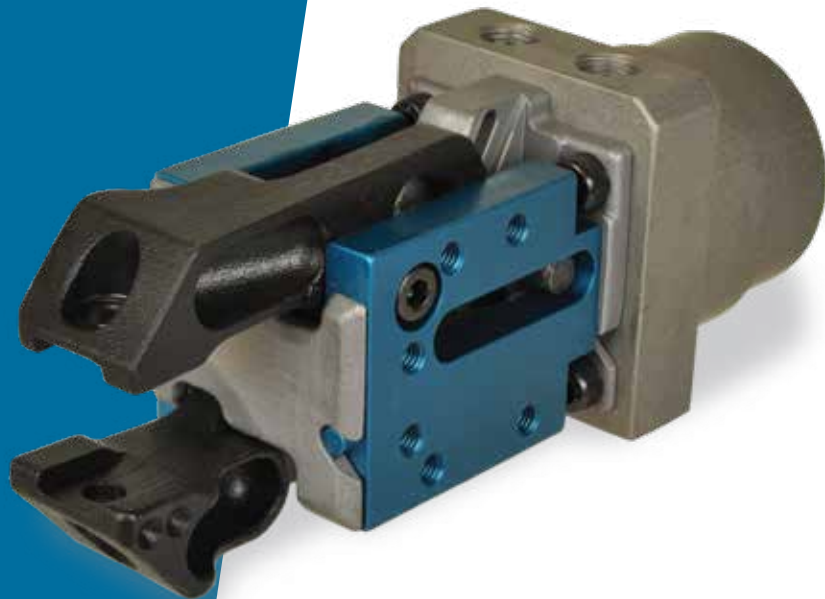


BPGS PNEUMATIC GRIPPER SYSTEM

BPGS10 and BPGS11

User Manual

We make things MOVE®





SCOPE OF THIS MANUAL

This instruction manual supports Bimba standard components only. If special components, including but not limited to serial hubs, power supplies, and drivers, are included based on a customer's specifications or special request, it is the customer's responsibility to consult support materials and technical support specific to these special components provided by the third party manufacturers. Bimba assumes no liability for misuse, misapplication, or support for components that are not the Bimba brand.

WARNING

Using the equipment in a manner not specified in this manual can impair the safety of the equipment.

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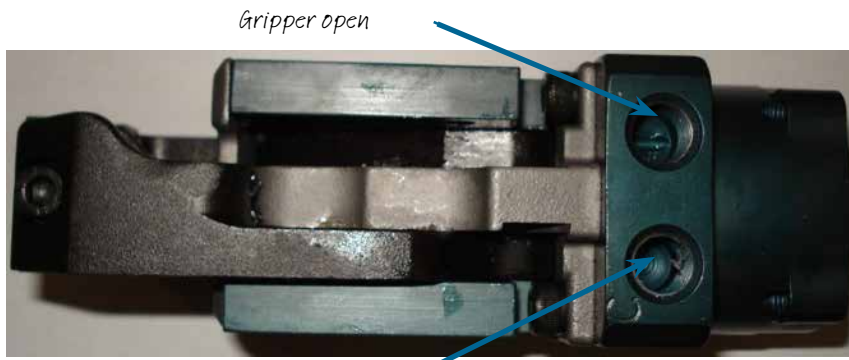


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PORT SIZE AND OPERATION

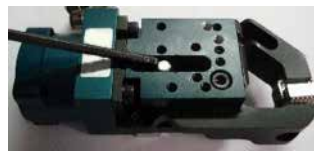
1. Ports are available in 1/8" NPS or 1/8 Rc.



Gripper close letter "C" to identify part

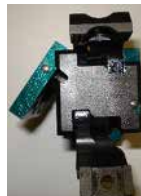
GRIPPER UNLOCK

1. Release jaw by using a hex key or flat screwdriver and pushing on drive pin through slot in side plate



JAW REMOVAL

1. Unlock gripper as shown in step above and remove pad(s) from existing jaws. Set a side for reassembly.
2. Top jaw should always be removed first. Remove Socket Head Cap Screw (SHCS) from side plate or indirect sensor. Rotate side plate/sensor up to about 45° and remove side plate/sensor from gripper. Set SHCS and Side Plate/Sensor aside for re-assembly. Remove bumper from gripper.



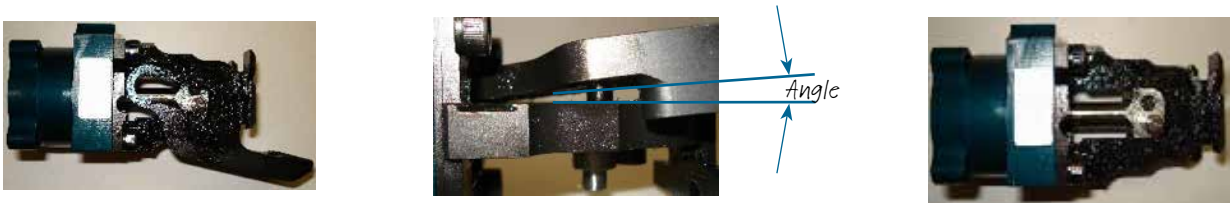
3. Remove jaw from gripper and flip gripper over to remove other jaw



- Remove SHCS from side plate/sensor. Rotate side plate/sensor up to about 45° angle and remove from gripper. Set SHCS and Side Plate/Sensor aside for re-assembly.



- Remove bushing from lower jaw using a small flat screwdriver or hex key and set aside for re-assembly. Lower jaw should be rotated completely down before removal. Lift up on front of jaw by pad so there is an angle between jaw and frame. Remove lower jaw from gripper.



JAW REPLACEMENT

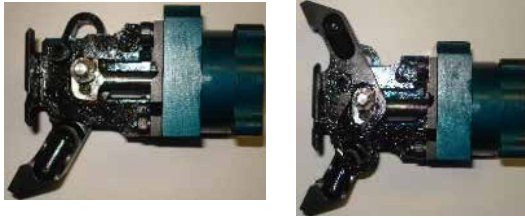
- For lower jaws (B10151, B11105, B11105-01, B11105-02, B11106, B11106-01, B11106-02, B11103, B12978, B12978-01, B12978-02, B12985, B12985-01, B12985-02): Apply grease to cam and inside of jaw. Angle new jaw so that tail of jaw goes in pocket of frame. Align pivot hole with boss and drive pin with the bottom side of the cam slot. Carefully slide jaw over boss and onto gripper. Replace bushing over pin and into cam. Apply grease to outside of jaw.



- Refer to steps for "Installing a Side Plate or Indirect Sensor"
- Flip gripper over for top jaw installation



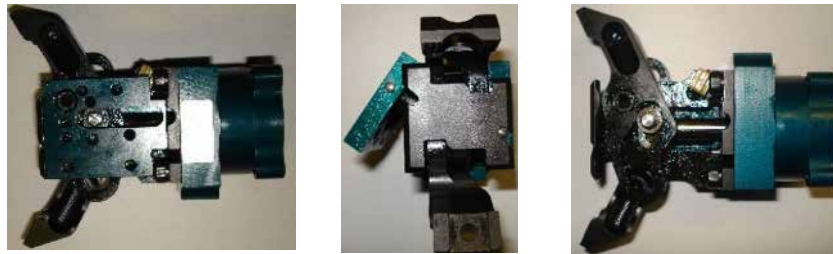
4. For upper jaws: Apply grease to cam and inside of jaw. Replace bushing over drive pin and onto gripper. Align hole in jaw with boss on frame and cam with bushing. Slide jaw over boss and drive pin so that jaw rests on gripper. Apply grease to outside of jaw.



5. Refer to "Setting Jaw Open Angle" step 2 to set bumper position. Refer to "Gripper Unlock" for installing a Side Plate or Indirect Sensor.

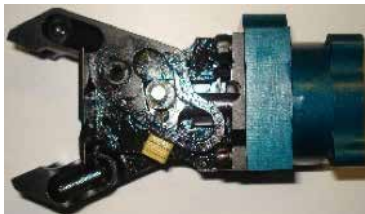
SETTING JAW OPEN ANGLE

1. Look for bumper which should be on the upper jaw side. Remove M5X12mm SHCS from side plate. If indirect sensor is in place of side plate remove M5X30mm from indirect sensor. Rotate side plate/sensor up to about a 45° and remove from gripper. Set SHCS and Side Plate/Sensor aside for re-assembly. Remove bumper from gripper.

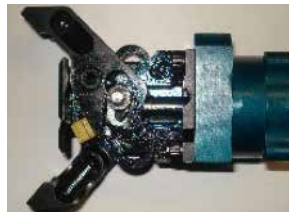


2. Insert bumper into new position, based on required open jaw angle. Bumpers should only be on the top jaw side of gripper. Jaws do not need to be removed to change bumper position. Insert bumper into frame and insure bumper is seated properly.

22° Open Jaw Angle



45° Open Jaw Angle

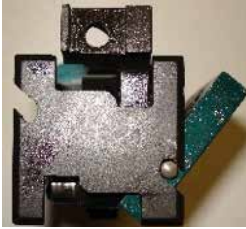


70° Open Jaw Angle



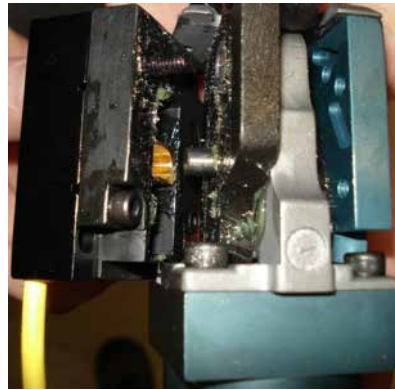
INSTALLING A SIDE PLATE OR INDIRECT SENSOR

1. With the Side Plate at 45°, align pins of side plate with slots of frame. Slide pins into slot. When pins are fully seated, rotate side plate and slide down onto frame.



2. If an Indirect Sensor is to be installed, move brass bushing in sensor to align with drive pin in gripper. This must be done to correctly install sensor. Align dowel pins with slots of frame. Once pins are fully into slots, rotate sensor down onto frame. As rotation begins make sure bushing and drive pin are still aligned.

Note: Whenever any part of the gripper is replaced including pads the sensor will need to be recalibrated, see "Calibrating In-Direct Sensor".



3. Clean and apply Loctite 262 or equivalent to M5 X 12mm SHCS for side plate or M5 X 30mm SHCS for sensor. Insert through side plate/sensor and into frame. Tighten M5 SHCS to 72in-lb.



Side Plate



Indirect Sensor



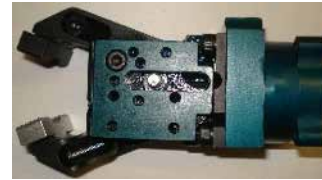
PAD REPLACEMENT

1. Unlock jaws on gripper & open jaws to get access to pads. Side plates/sensor DO NOT need to be removed. Refer to Gripper Unlock.
2. Remove M5X8mm SHCS from jaw.

3.



3. Apply Loctite 262 to M5 X 8mm SHCS and insert into one of the jaws. Take replacement pads and insert it into the opposite side of the jaw with SHCS sticking out. Thread SHCS into pad and tighten to 72in-lb. Repeat step for other jaw. Chisel jaws only require one pad

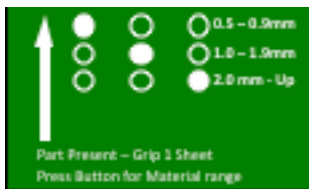


CALIBRATING IN-DIRECT SENSOR

Sensor must be calibrated whenever any part of the gripper is replaced including pads.

1. Part Present

- a.) To program the sensor for a particular material thickness, apply air to the gripper and grip on the material thickness which is to be used for the particular job. With an object such as a small Allen wrench, press the button until the Red LED corresponding to the material range of the job lights as shown on the label.



b.) Verify calibration:

- (1) Close the gripper with no material between the pads. The LED should be off.
- (2) Close the gripper on a single blank of material. The Red LED corresponding to your material range should be on.

2. Double Blank

- 1) To program the sensor for a particular material thickness, apply air to the gripper and grip on the material thickness which is to be used for the particular job. With an object such as a small Allen wrench, press the button until the Red LED(s) corresponding to the material range of the job lights as shown on the label.

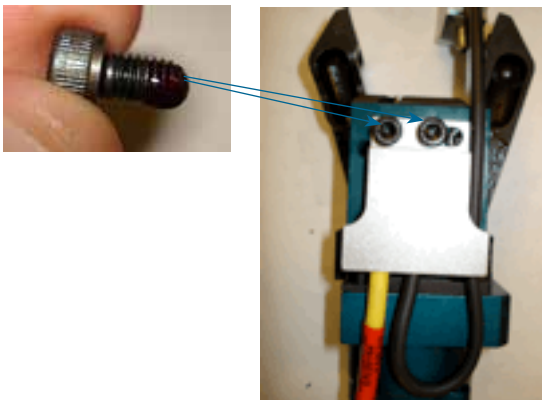


- 2) Verify calibration:

- (a.) Close the gripper with no material between the pads. The LED(s) should be off.
- (b.) Close the gripper on a single blank of material. The Red LED(s) corresponding to you material range should be on.

INSTALLING AN IN-PAD SENSOR

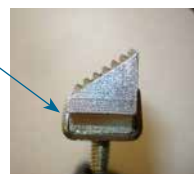
1. If an In-Pad Sensor is to be installed, it goes on top of the side plate assembly. Wrap sensor cable through holder and align holes on side plate. Clean and apply Red Loctite 262 or equivalent to 2X M5 X 10mm SHCS and thread thru sensor into side plate. Tighten both SHCS to 36in-lb.



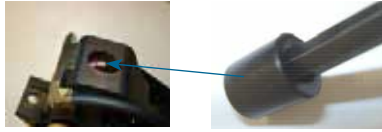
2. Shim is only used for part numbers listed. If a shim is to be used on an angle pad, smaller tabs go on the narrow side of the pads.

- BPGS10RXXXXX1XXX
- BPGS10FXXXXX1XXX
- BPGS10CXXXXX1XXX
- BPGS10DXXXXX4XXX
- BPGS10EXXXXX7XXX
- BPGS10SXXXXX1XXX
- BPGS10TXXXXX4XXX
- BPGS10UXXXXX7XXX
- BPGS10VXXXXX1XXX
- BPGS10WXXXXX4XXX
- BPGS10YXXXXX7XXX

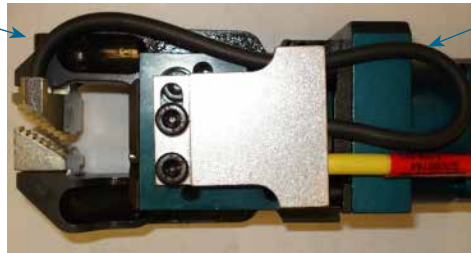
Small Tabs



3. Apply Red Loctite 262 or equivalent to sensor stud, place thru jaw and tighten sensor nut to 72in.-lb.



Cable should follow the contour of the gripper jaw



Cable storage loop can be adjusted with a push/pull motion to provide more or less cable slack in gripper jaw area

CLEANING AND MAINTENANCE

- 1) Remove excess grease from outer surfaces of gripper.
- 2) No required maintenance.

QUALITY ASSURANCE REQUIREMENTS

- 1) Verify that jaws shall open freely. Look for any irregular movement, binding, or interference.

SPECIFICATIONS

Gripper	Throat Depth Inch (mm)	Flange Height Inch (mm)	Working Pressure	Double Sided Grip Force Up To	Actuation Time
BPGS10C	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10D	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10E	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10F	.92 23.4	1.21 (30.6mm)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10R	.75 19	1.03 (26.3mm)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10S	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10T	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10U	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10V	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10W	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open
BPGS10Y	.76 19.3	1.27 (32.3)	60 psi (413kPa) Min. – 100 psi (689 kPa) Max.	450lbs (200kgf) @ 80 psi (551kPa)	.050±.010 sec close / <.090 sec open



Single blank thickness	Chisel jaw / shovel		Regular / flange jaw	
	Movable jaw pad color	Opposing fixed jaw color	Moveable jaw pad color	Opposing jaw pad color
0.50mm to 2.0mm	Black (note 1)	Black	Black	Black
2.01mm to 3.5mm	Silver	Black	Silver	Silver
3.51mm to 5.0mm	Black (note 1)	Silver	Gold	Silver
5.01mm to 6.5mm	Silver	Silver	n/a	n/a
6.51mm to 8.0mm	Black (note 1)	Gold	n/a	n/a
8.01mm to 9.5mm	Silver	Gold	n/a	n/a

Note: A shim is required under a black pad when it is installed on a chisel jaw gripper. This shim is included in all black replacement pad kits for the chisel jaw gripper.



TECHNICAL DOCUMENTS

Visit the Bimba website for additional models, drawings, and further documentation.
www.bimba.com

SUPPLIER CONTACT

To purchase electric motion products, accessories, or receive further information,
contact your local Bimba distributor or contact Bimba directly.

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