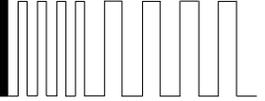


Heavy Duty Tool Positioning System

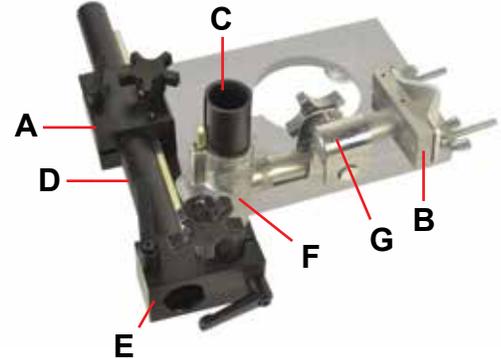


The **HEAVY DUTY RACK SYSTEM** is a series of components designed to hold welding guns, cutting torches and other process tools. The system consists of tube-racks, blocks and clamps which are very rigid and compact. Individual components are also available for custom configurations. (Refer to page 4)

The **BUG-5275 H.D. WELDING GROUP** is designed to carry a welding gun and provides horizontal and vertical adjustment. It will mount on any standard BUG-O carriage or any existing fixture. It consists of the following items:

BUG-5275 H.D. Welding Group

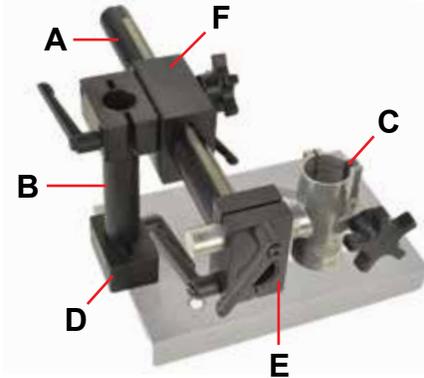
- | | | |
|----------|--------------------|-----------------------------|
| A | BGV-1165 | Clamp Block |
| B | BUG-2708 | Clamp |
| C | BUG-3320-8 | H.D. Tube Rack 8" (203 mm) |
| D | BUG-3320-15 | H.D. Tube Rack 15" (381 mm) |
| E | BUG-5186 | Right Angle Clamp |
| F | BUG-5188 | Torch Holder Assembly |
| G | CON-1020 | Swivel Clamp Assembly |



The **BUG-5185 H.D. ALL POSITION CUTTING GROUP** is designed to carry a machine barrel torch and allows independent adjustment for 360° x 360° setting of the torch. It will mount on any standard BUG-O carriage or any existing fixture. It consists of the following items:

BUG-5185 H.D. All Position Cutting Group

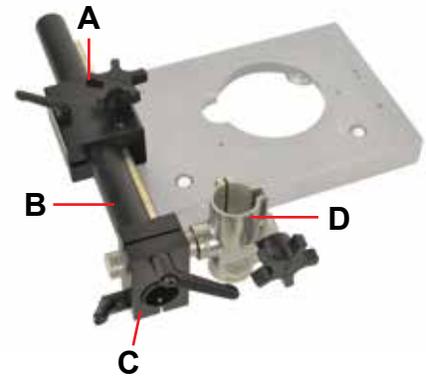
- | | | |
|----------|--------------------|-----------------------------|
| A | BUG-3320-15 | H.D. Tube Rack 15" (381 mm) |
| B | BUG-3310-8 | H.D. Tube Without Rack |
| C | BUG-5188 | Torch Holder Assembly |
| D | BUG-5184 | Tube Clamp Assembly |
| E | BUG-5182 | Right Angle Clamp |
| F | BUG-5280 | Tube Mounted Rackholder |



The **BUG-5285 H.D. CUTTING GROUP** is designed to carry a machine barrel torch and provides horizontal adjustment. It will mount on any standard BUG-O carriage or any existing fixture. It consists of the following items:

BUG-5285 H.D. Cutting Group

- | | | |
|----------|--------------------|-----------------------------|
| A | BGV-1165 | Clamp Block |
| B | BUG-3320-15 | H.D. Tube Rack 15" (381 mm) |
| C | BUG-5182 | Right Angle Clamp |
| D | BUG-5188 | Torch Holder Assembly |



Bug-O Systems is committed to empowering our customers by providing operator controlled mechanized solutions for their welding, cutting and custom applications.



BUG-O SYSTEMS
A DIVISION OF WELD TOOLING CORPORATION



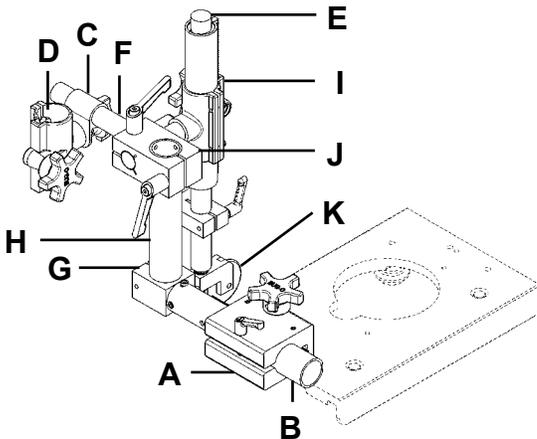


HEAVY DUTY TOOL POSITIONING SYSTEM - PANOGRAPHS

HEAVY DUTY PANOGRAPHS are designed to carry a cutting torch or welding gun along an irregular or wavy surface and maintain nozzle-to-work distance. They will mount on any standard BUG-O carriage.

PAN-1160 H.D. CUTTING PANOGRAPH

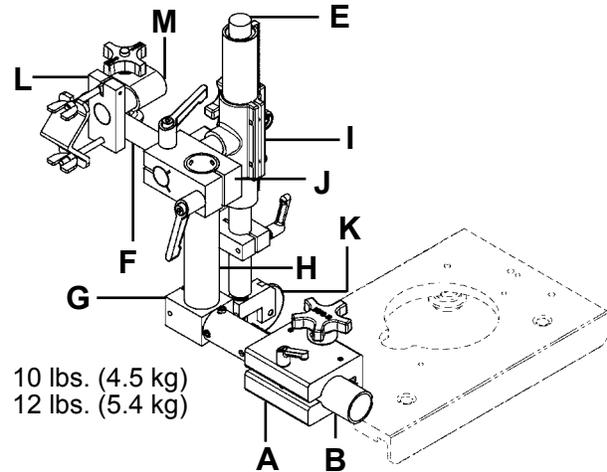
- A BGV-1165 Clamp Block Assembly 3" (74 mm)
- B BUG-3320-8 H.D. Tube Rack
- C PAN-1033 Rod Clamp
- D BUG-2915 Torchholder Assembly
- E PAN-1140 H.D. Spring Tube Assembly
- F PAN-1170 Mounting Arm Assembly
- G BGV-1180 Clamp Assembly



Net Wt: 10 lbs. (4.5 kg)
Shipping Wt: 12 lbs. (5.4 kg)

PAN-1150 H.D. WELDING PANOGRAPH

- H BUG-3310-8 H.D. Tube Without Rack
- I BUG-5188 Torchholder Assembly
- J BUG-5182 Right Angle Clamp
- K PAN-1145 Swivel Wheel Assembly
- L BUG-2708 Clamp
- M CON-1020 Swivel Clamp Assembly

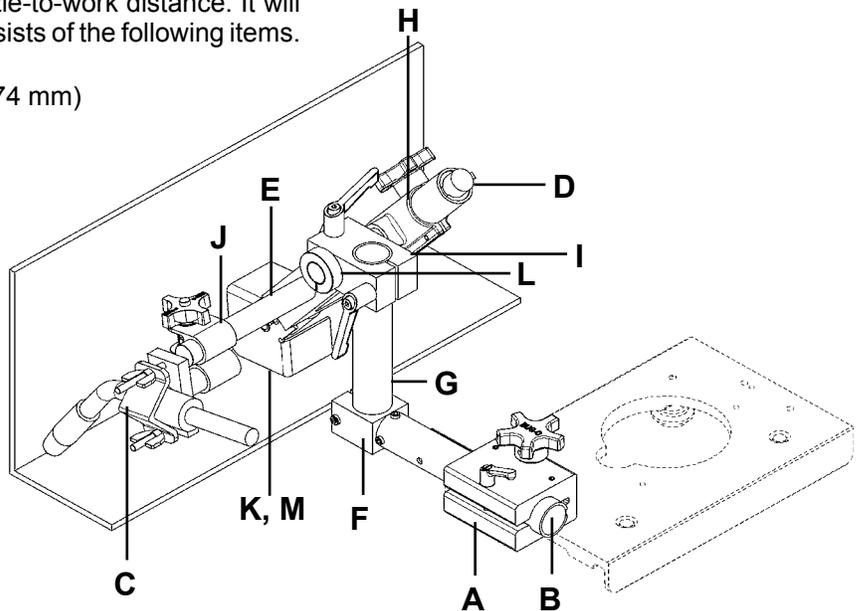


Net Wt: 10 lbs. (4.5 kg)
Shipping Wt: 12 lbs. (5.4 kg)

BUG-3340 CORNER FOLLOWER

The **BUG-3340 CORNER FOLLOWER** is designed to carry a welding gun centered along a corner joint to maintain nozzle-to-work distance. It will mount on any standard BUG-O carriage. It consists of the following items.

- A BGV-1165 Clamp Block Assembly 3" (74 mm)
- B BUG-3320-8 H.D. Tube Rack
- C BUG-2708 Clamp
- D PAN-1140 H.D. Spring Tube Assembly
- E PAN-1170 Mounting Arm Assembly
- F BGV-1180 Clamp Assembly
- G BUG-3310-8 H.D. Tube Without Rack
- H BUG-5188 Torchholder Assembly
- I BUG-5182 Right Angle Clamp
- J CON-1020 Swivel Clamp Assembly
- K BUG-3265 Spatter Guard Assembly
- L MUG-1515 Collar 7/8" (22.2m)
- M BUG-5274 "V" Wheel Assembly



Net Wt: 11 lbs. (5.0 kg)
Shipping Wt: 13 lbs. (5.9 kg)



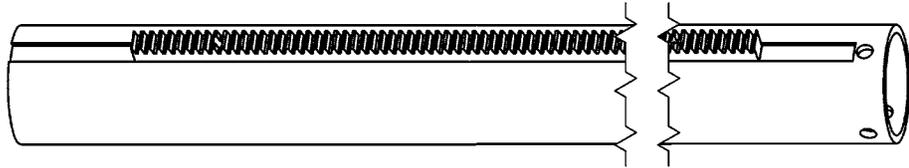
HEAVY DUTY TOOL POSITIONING SYSTEM - COMPONENTS

For those who wish to build their own Heavy Duty Rack System, the following parts are available:

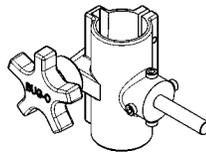
BUG-3320-_" (Specify Length) H.D. Tube Rack

At the heart of the Heavy Duty Rack System is the BUG-3320-_" **HEAVY DUTY TUBE RACK**. This rack consists of a 1-3/8" (35 mm) diameter aluminum tube that has a steel 32 pitch rack secured into a machined groove. Choose the length that best suits your application.

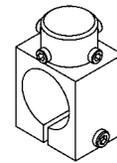
- Standard Lengths Available
(Specify Length)
- 8" (203 mm)
 - 15" (381 mm)
 - 24" (609 mm)
 - 30" (760 mm)
 - 44" (1120 mm)



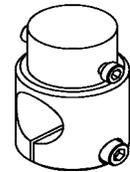
At one end of the **Heavy Duty Tube Rack** are four mounting holes. These holes are used for mounting Heavy Duty Racker Clamp Assemblies onto the end of the rack. Three different types are available as shown to the left.



BUG-5179
Clamp
Assembly



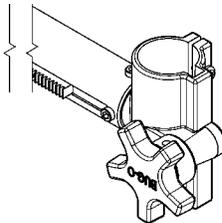
BGV-1180
Clamp
Assembly



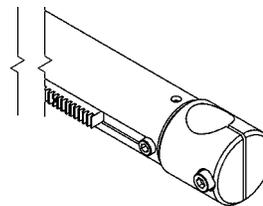
BUG-5164
Clamp
Assembly

You can order the above components separately or already assembled using the part numbers below (please specify rack length when ordering).

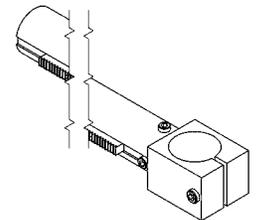
- Standard Lengths Available
(Specify Length)
- 8" (203 mm)
 - 15" (381 mm)
 - 24" (609 mm)
 - 30" (760 mm)
 - 44" (1120 mm)



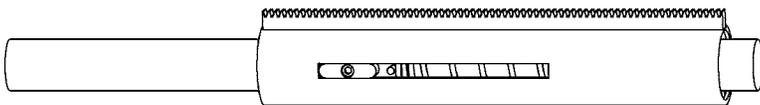
BUG-5169-_"
(Specify Length)
Rack w/Torchholder



BUG-5166-_"
(Specify Length)
Rack w/Clamp

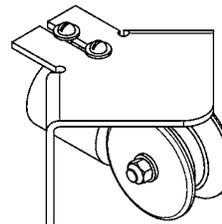


BUG-5138-_"
(Specify Length)
Rack w/Clamp

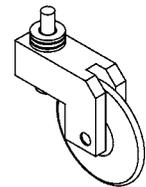


PAN-1140
H.D. Spring Tube Assembly

The **PAN-1140 HEAVY DUTY SPRING TUBE ASSEMBLY** is a 1-3/8" (35 mm) diameter spring-loaded tube that has a 7/8" (22 mm) diameter shaft running through it. A pin in the shaft presses against the spring, which keeps constant pressure on the shaft and allows up to 2" (50 mm) of movement. This accessory is designed to be used when a constant torch-to-work distance must be maintained; i.e. for cutting or welding over an irregular work surface (cutting and welding panographs are shown on page 2 of this brochure).



BUG-5274
"V" Wheel
Assembly

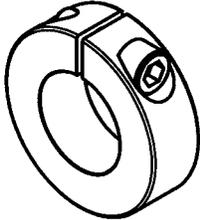
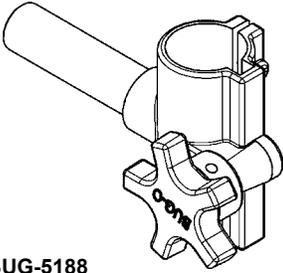
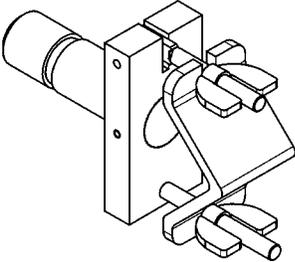
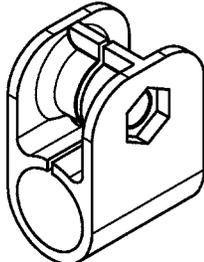
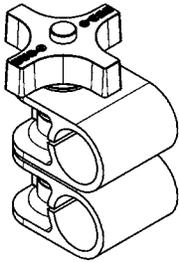
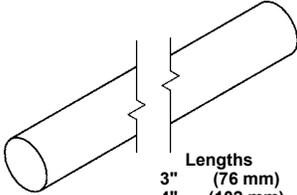
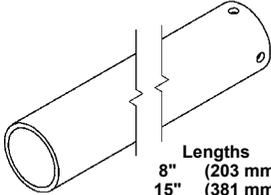
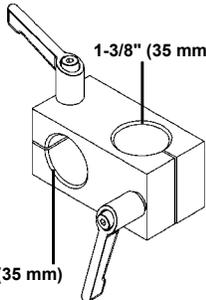
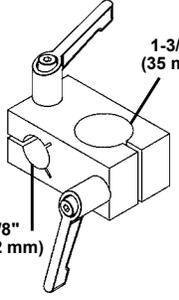
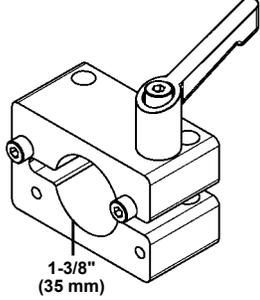
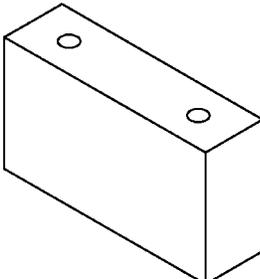
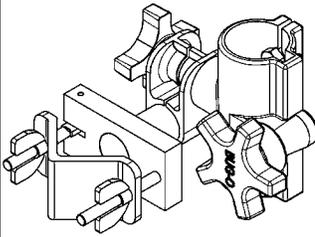
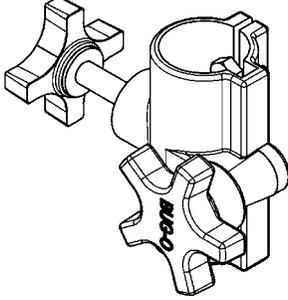
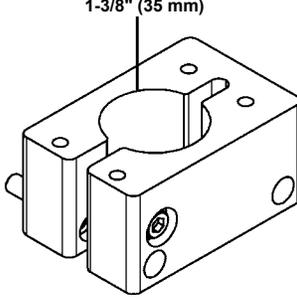
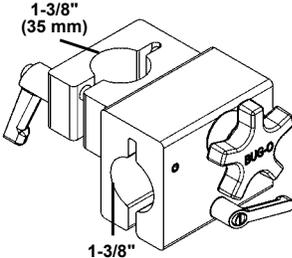
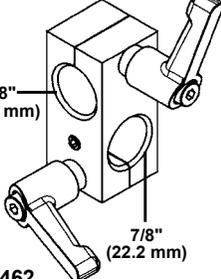


PAN-1145
Swivel Wheel
Assembly

HEAVY DUTY FOLLOWER ASSEMBLIES mount onto the end of the PAN-1140 and ride on the work surface. The BUG-5274 is for following corners and the PAN-1145 is designed for flat surfaces.



HEAVY DUTY TOOL POSITIONING SYSTEM - ACCESSORIES

 <p>MUG-1515 Collar 7/8" (22.2 mm)</p>	 <p>BUG-5188 Torchholder Assembly w/7/8" (22.2 mm) Rod</p>	 <p>BUG-2708 Clamp w/7/8" (22.2 mm) Rod</p>	 <p>PAN-1033 Rod Clamp [7/8" (22.2 mm) Rod]</p>
 <p>CON-1020 Swivel Clamp Assembly [for 7/8" (22.2 mm) rod]</p>	 <p>BUG-9180 7/8" (22.2 mm) Rod (Specify Length) Additional lengths available.</p> <p>Lengths 3" (76 mm) 4" (102 mm) 8" (203 mm) 10" (254 mm) 18" (457 mm)</p>	 <p>BUG-3310 1-3/8" (35 mm) H.D. Tube w/o rack. (Specify Length) Additional lengths available.</p> <p>Lengths 8" (203 mm) 15" (381 mm) 24" (609 mm) 30" (769 mm) 44" (1120 mm)</p>	 <p>BUG-5186 Right Angle Clamp</p>
 <p>BUG-5182 Right Angle Clamp</p>	 <p>BUG-5184 Tube Clamp Assembly</p>	 <p>PAN-1164 Spacer Block (used w/ limit switch)</p>	 <p>BUG-5245 Welding Gun Mounting Assembly</p>
 <p>BUG-2915 Torch holder</p>	 <p>BUG-5189 Clamp Block Assembly</p>	 <p>BUG-5280 Tube Mounting Rackholder</p>	 <p>BUG-5462 Right Angle Clamp Assembly [for 7/8" (22.2 mm) Rods]</p>

The **BGV-1165 Clamp Block** is made from extruded aluminum with a steel pinion that allows for manually operated positioning of the BUG-3320- Heavy Duty Tube Rack. The clamp block also features a ratcheting lock-down lever for quick, easy tightening of the tube rack. It can be bolted to a fixture or any BUG-O SYSTEMS carriage.

BGV-1165
Clamp Block Assembly
3.5" (89 mm)

