



Operating Instructions and Parts Manual

Pneumatic Shear

Model SH-5216A



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2.0 Safety Instructions

⚠ WARNING

FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. Only trained and qualified personnel can operate this machine.
2. Make sure guards are in place and in proper working order before operating machinery.
3. Remove any adjusting tools. Before operating the machine, make sure any adjusting tools have been removed.
4. Keep work area clean. Cluttered areas invite injuries.
5. Overloading machine. By overloading the machine you may cause injury from flying parts. DO NOT exceed the specified machine capacities.
6. Dressing material edges. Always chamfer and deburr all sharp edges.
7. Do not force tool. Your machine will do a better and safer job if used as intended. DO NOT use inappropriate attachments in an attempt to exceed the machines rated capacity.
8. Use the right tool for the job. DO NOT attempt to force a small tool or attachment to do the work of a large industrial tool. DO NOT use a tool for a purpose for which it was not intended.
9. Dress appropriate. DO NOT wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
10. Use eye and ear protection. Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
11. Do not overreach. Maintain proper footing and balance at all times. DO NOT reach over or across a running machine.
12. Stay alert. Watch what you are doing and use common sense. DO NOT operate any tool or machine when you are tired.
13. Check for damaged parts. Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
14. Observe work area conditions. DO NOT use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted.
15. Blade adjustments and maintenance. Always keep blades sharp and properly adjusted for optimum performance.
16. Keep children away. Children must never be allowed in the work area. DO NOT let them handle machines, tools, or extension cords.
17. Store idle equipment. When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
18. DO NOT operate machine if under the influence of alcohol or drugs. Read warning labels on prescriptions. If there is any doubt, DO NOT operate the machine.
19. DO NOT bypass or defeat any safety interlock systems.
20. Keep visitors a safe distance from the work area.

2.1 Hazard Signs



Figure 2-1

Familiarize yourself with the following safety notices used in this manual:

⚠ CAUTION

This means that if precautions are not heeded, it may result in minor injury and/or machine damage.

⚠ WARNING

This means that if precautions are not heeded, it may result in serious, or fatal, injury.

⚠ DANGER

This means that if precautions are not heeded, it will result in serious or fatal, injury.

Save the Instructions

3.0 About This Manual

This manual is provided by Baileigh Industrial, covering the safe operation and maintenance procedures for a Baileigh Model SH-5216A Hydraulic Shear. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

Technical Support handles questions on setup, operation, schematics, warranty issues, and individual parts needed. Our Technical Support department can be reached at 920-684-4990.

If there are questions or comments, please contact your local supplier or Baileigh Industrial. We can also be reached at our web site: www.baileigh.com.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

WARNING

Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

Register your product online -

<https://baileigh.com/product-registration>



4.0 Product Identification



Figure 4-1

Table 4-1

Item	Description	Function
A	Material support arm	Supports larger sheets of material
B	Air Control Unit	Controls main air supply to the shear
C	Footswitch pedestal	Houses footswitch
D	Lifting brackets	Used for lifting machine
E	Shear table	For sliding material into shear blades

Item	Description	Function
F	Side gauge	Keeps material perpendicular to blade
G	Front gauge	Provides a stop for material entering blades
H	Hold down cover	Covers hold downs and upper blade travel
I	Oiling cap	Access to oiling the top blade slide
J	Back gauge	Adjustable angle for stopping material

4.1 Manual Back gauge

The back gauge adjusts the setting of the back gauge dimension to control the size of the pieces dropping behind the blades.

The manual back gauge assembly will need to be attached to the back end of the shear. There are two blocks with holes in them for this purpose. Remove the two bolts and washers and move the back gauge into position using a suitable lifting device. Slide the shafts into the blocks until they bottom out. If necessary, gently tap them in from side to side. Once in place, secure with the bolts and washers that were removed previously. To use the back gauge, loosen the two adjustable handles which are attached to the guide blocks. By turning the hand wheel you will now be able to move the stop angle into position. The scale and indicator allow you to keep track of that position. Secure with the adjustable handles.

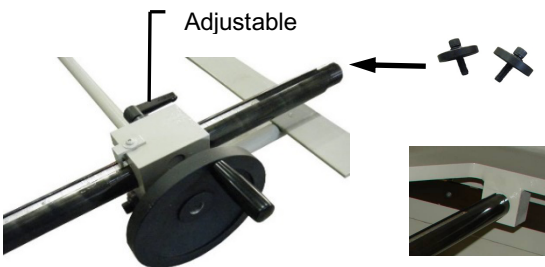


Figure 4-2

4.2 Material Support Arm

⚠ CAUTION

When handling large piece parts, you may require assistance in handling the piece as it exits the blades. Failure to adequately support the piece part may result in the piece falling and causing bodily injury.

The two material support arms (A) attach to the front of the shear. Remove the capscrews and washers. Position each arm and secure with the washer and capscrow. (Make sure the arms are centered to the table slots and are flush with the top of the table.) The front gauge (H) can now be inserted in the arm slots.



Figure 4-3

4.3 Miter Angle Guide

To use the miter angle guide:

- Loosen the wing nut.
- Lay your piece part against the straight edge.
- Position the miter guide at the angle and distance you required from the shear blades.
- Make the cut.



Figure 4-4

4.4 Overall Dimensions

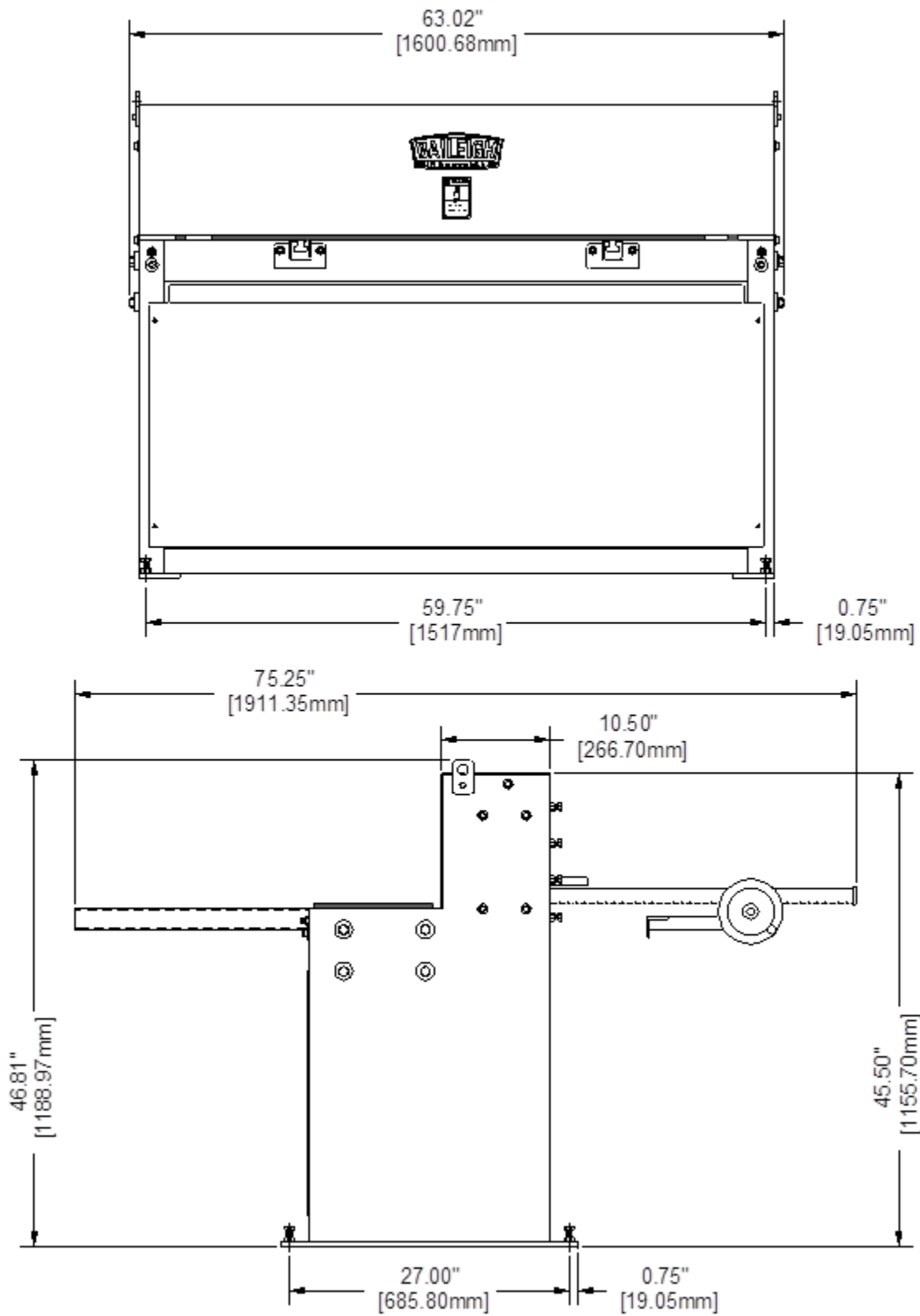


Figure 4-5

5.0 Specifications

Table 5-1

Model number	SH-5216A
Stock number	BA9-1007163
Motor and Electrical	
Power Requirements	Pneumatic
General Specifications	
Maximum Shear Length	52" (1321mm)
Maximum Material Thickness	16ga. (1.52mm) mild steel* 20ga. (.912mm) stainless steel**
Minimum Material Thickness	24ga. (0.607mm)
Strokes/Minute	20
Front Gate Length	24" (610mm)
Back Gate Length	24" (610mm)
Blade Angle	1°
Weights and Dimensions	
Shipping Dimensions (L x W x H)	75" x 36" x 53" (1905 x 914 x 1346mm)
Shipping Weight	1588 lbs. (720 kg)

Based on a material tensile strength of *64000 PSI – mild steel

**100000 PSI – stainless steel

⚠ WARNING

Read and understand the entire contents of this manual before attempting assembly or operation. Failure to comply may cause serious injury.

6.0 Setup and Assembly

6.1 Unpacking and Checking Contents

⚠ WARNING

SUFFOCATION HAZARD! Immediately discard any plastic bags and packing materials to eliminate choking and suffocation hazards to children and animals.

⚠ WARNING

If any parts are missing, do not plug in the power cable, or turn the power switch on until the missing parts are obtained and installed correctly.

Your Baileigh machine is shipped complete in one crate. Separate all parts from the packing material and check each item carefully. Make certain all items are accounted for before discarding any packing material.

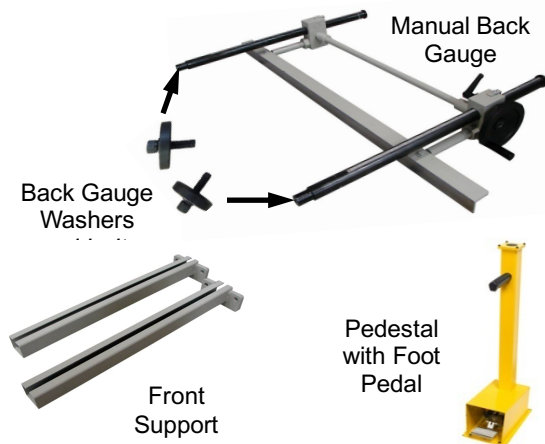


Figure 6-1

6.2 Cleanup

⚠ WARNING

DO NOT USE gasoline or other petroleum products to clean the machine. They have low flash points and can explode or cause fire.

⚠ CAUTION

When using cleaning solvents work in a well-ventilated area. Many cleaning solvents are toxic if inhaled.

Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. For a more thorough cleaning, some parts will occasionally have to be removed. **DO NOT USE** acetone or brake cleaner as they may damage painted surfaces.

Follow manufacturer's label instructions when using any type of cleaning product. After cleaning, wipe unpainted metal surfaces with a light coating of quality oil or grease for protection.

IMPORTANT: This waxy coating is **NOT** a lubricant and will cause the machine to stick and lose performance as the coating continues to dry.

6.3 Transporting and Lifting

⚠ CAUTION

Lifting and carrying operations should be carried out by skilled workers, such as a truck operator, crane operator, etc. If a crane is used to lift the machine, attach the lifting chain carefully, making sure the machine is well balanced. Choose a location that will keep the machine free from vibration and dust from other machinery. Keep in mind that having a large clearance area around the machine is important for safe and efficient working conditions.

Follow these guidelines when lifting:

- Always lift and carry the machine with the lifting holes provided at the top of the machine.
- Use lift equipment such as straps, chains, capable of lifting 1.5 to 2 times the weight of the machine.
- Take proper precautions for handling and lifting.
- Check if the load is properly balanced by lifting it an inch or two.
- Lift the machine, avoiding sudden accelerations or quick changes of direction.
- Locate the machine where it is to be installed, and lower slowly until it touches the floor.



Figure 6-2

- The lift truck must be able to lift at least 1.5 – 2 times the machines gross weight.
- Make sure the machine is balanced. While transporting, avoid rough or jerky motion, and maintain a safe clearance zone around the transport area.
- Use a fork lift with sufficient lifting capacity and forks that are long enough to reach the complete width of the machine.
- Remove the securing bolts that attach the machine to the pallet.
- Approaching the machine from the side, lift the machine on the frame taking care that there are no cables or pipes in the area of the forks.
- Move the machine to the required position and lower gently to the floor.
- Level the machine so that all the supporting feet are taking the weight of the machine and no rocking is taking place.

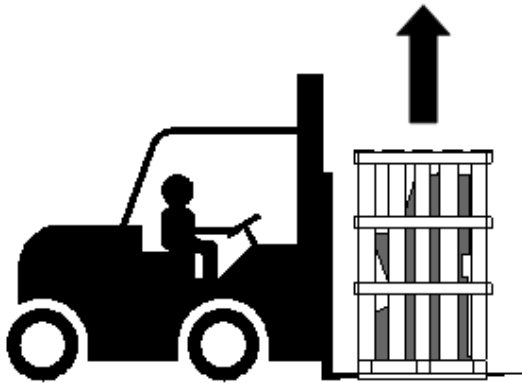


Figure 6-3

6.4 Installation

IMPORTANT:

Consider the following when looking for a suitable location to place the machine:

- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles.
- Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Keep the floor free of oil and make sure it is not slippery.
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.

- **LEVELING:** The machine should be sited on a level, concrete floor. Provisions for securing it should be in position prior to placing the machine. The accuracy of any machine depends on the precise placement of it to the mounting surface.
- **FLOOR:** This tool distributes a large amount of weight over a small area. Make certain that the floor is capable of supporting the weight of the machine, work stock, and the operator. The floor should also be a level surface. If the unit wobbles or rocks once in place, be sure to eliminate by using shims.
- **WORKING CLEARANCES:** Take into consideration the size of the material to be processed. Make sure that you allow enough space for you to operate the machine freely.

6.4.1 Anchoring the Machine

- Once positioned, anchor the machine to the floor, as shown in the diagram, using bolts and expansion plugs or sunken tie rods that connect through holes in the base of the stand.

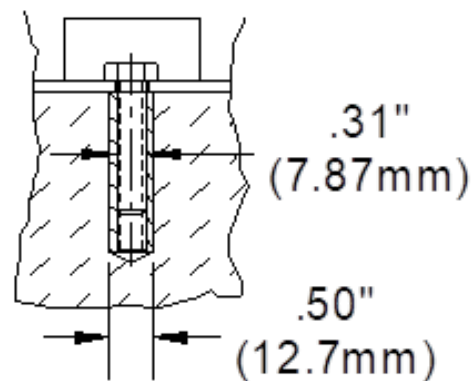


Figure 6-4

6.4.2 Connecting Air Supply

WARNING

Never connect to an air source capable of exceeding 120 PSI. Over pressurizing the tool may cause bursting, breakage, or serious personal injury.

- To perform reliably, pneumatic tools require a continuous source of clean, water-free air at adequate pressure.
- Never operate this tool using a bottled air source. Bottled air sources do not provide consistent operating pressure and could result in air pressures that exceed the maximum allowed for the tool.

Connect an air hose with at least a 3/8" I.D. with a quick-connect coupler to the inlet of the air control unit. The air hose should not be longer than 10 feet (3.1m). If the air hose is longer than 10 feet (3.1m),

it is recommended to run piping to within 10 feet (3.1m) of the machine. Place a cut-off valve ahead of the filter for use when cleaning the filter or replenishing the lubricator.

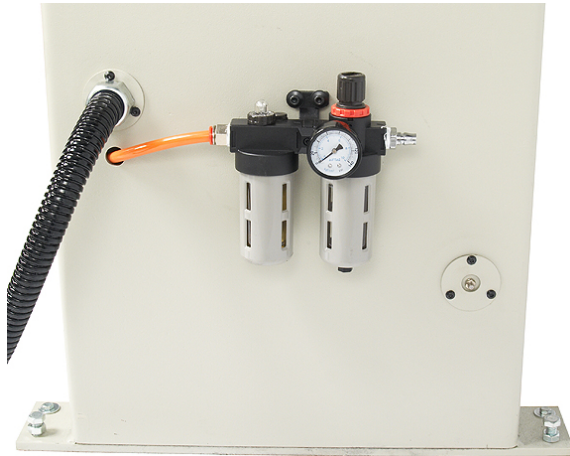


Figure 6-5

7.0 Adjustments

7.1 Raw Ways Adjustments

The ram ways are adjustable to compensate for wear which can be expected after years of service. Premature wear can occur if the machine is not properly leveled which causes a twisting action.

The proper running clearance should be from 0.001" - 0.002" (0.038 - 0.050mm). This clearance should be checked periodically and maintained to extend blade life and to hold accuracy of the shear.

7.2 Adjustment Procedure

1. Shut down and lockout power to the machine.
 2. Loosen the jam nuts on all four hex bolts.
 3. Turn in the two center hex bolts clockwise (**cw**) to take up any excess play.
 4. Turn in the top and bottom hex bolts clockwise (**cw**) until they strike the wear plate, and then back off 1/16 of a turn counterclockwise (**ccw**).
 5. Back-off on the two center hex bolts until they come in line with the top and bottom hex bolts.
 6. Tighten all four jam nuts.
 7. Using a feeler gauge between the wear plate and the ram guide check for a clearance of 0.001" - 0.002" (0.038 - 0.050mm). Adjust if necessary.
 8. Repeat this procedure for the opposite side of the shear.
- #### Height and Angle Adjustment



Figure 7-1

7.3 Finger Guard

⚠ WARNING

DO NOT remove the clear plastic finger guards under any circumstances. They are provided to keep your fingers away from the blades. **NEVER** put any part of your body under or behind this guard and in the path of the hold downs which can crush.

8.0 Operation

8.1 Shearing Operation

⚠ WARNING

Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

The shearing blade poses an amputation hazard.

Make sure no body part or clothing is near the specific hazard.

Failure to follow this warning could result in severed or crushed fingers.

1. Pull up on the adjustor knob and set the air pressure to 6kc/cm².
2. When planning your cut, either scribes a line on the material or use the side scale which measures the distance to the blade.
3. The scale is graduated in both inches and millimeters.
4. If you have a scribed line, use the slot indicated (slot) to sight the line to the edge of the blade.

5. In both instances, use the side guide to square the material to the blade.
6. After the material is lined up, step on the foot pedal to make the cut.
7. If you are making multiple pieces of the same length, set the rear stop to the length needed.
8. If the material exceeds the length of the extension arms, be sure and provide additional support.



Figure 8-1

8.2 Shearing Tips

- To achieve the best results, never shear a piece narrower than 8 times the thickness of the material. An example would be a 1/2" (12.7mm) strip of 16ga. (.059") (1.5mm) mild steel.
- Keep the blade gap as narrow as possible. The blade gap is the space between the blades passing each other during a stroke. Tighter blade gaps cut material without rolling it over. Using a blade gap too narrow for thicker material prevents the material from moving between the blades and stalls the cut. On the other hand, a gap too wide will cause the material to fold over. The wide gap for thinner material does not set the blades close enough to cleanly cut the material

9.0 Material Selection

⚠ CAUTION

It must be determined by the customer that materials being processed through the machine are NOT potentially hazardous to operator or personnel working nearby.

When selecting materials keep these instructions in mind:

- Material must be clean and dry. (without oil)
- Material should have a smooth surface so it processes easily.

- Dimensional properties of material must be consistent and not exceed the machine capacity.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same vendor when possible.

10.0 Maintenance

⚠ WARNING

Make sure the electrical disconnect is OFF before working on the machine.

⚠ WARNING

Maintenance should be performed on a regular basis by qualified personnel.

⚠ WARNING

Always follow proper safety precautions when working on or around any machinery.

10.1 Initial Start Up

- Check for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- Connect the shear to the proper air supply.
- Test run the shear for proper motor rotation.

10.2 Daily Maintenance

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- Inspect the power plug and cord.
- Check the foot switch cable for any loosening or damage.
- Keep area around machine clear of debris.

10.3 Weekly Maintenance

- Check air hoses and fittings for leakage.
- Make sure grease fitting locations are kept lubricated.
- Check back gauge components for lubrication.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.

Note: Proper maintenance can increase the life expectancy of your machine.

10.4 Lubrication Locations

Located at each end on the top of the shear are two oil fill caps. Keep filled with oil such as Mobil Vactra #2-way oil (or equivalent). The wick inside the fitting helps to slowly distribute the oil to the slide ways.

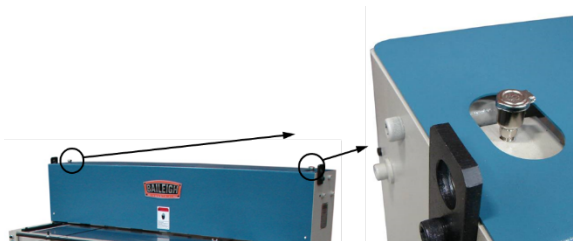


Figure 10-1

A grease fitting as shown in the figure at right, is located at both ends of the shear. They provide grease for lubricating the shaft which rotates as the slide goes up and down.



(Shown with panel removed)

Figure 10-2



Figure 10-3

Grease the trunnion which is located at the end of the rod on each cylinder.



Figure 10-4

10.5 Air Control Unit

The arrow on the lubricator's top surface must point in the direction of air flow. For proper operation, oil must drop through the lubricator sight glass at a rate of 1 to 4 drops per minute. This rate is checked while the air tool is running free. Only 20% of this oil is actually delivered to the tool. The remaining oil drops back into the oil reservoir. The unit is factory set and should require no adjustment. If an adjustment is required, the adjusting screw on top of the lubricator may be turned as marked to reduce or increase the flow of oil.

Clean the air control unit with warm dish soap and water as needed.



Figure 10-5

10.6 Replacing the Shear Blades

The blades on this shear have multiple usable edges. If you have not already used both cutting edges on the top blade you can rotate it end for end to expose a sharp edge. The bottom blade has four usable edges. After all edges have been used, the blade can be reground or replaced.

Contact Baileigh Industrial for replacement blades.

To Rotate or Replace the Top Blade

1. Raise the top blade to the up position.
2. Shut down and lockout power to the machine.

⚠ CAUTION

Always wear leather gloves when handling the blade.

3. Remove the capscrews and washers that hold the blade in place.
4. Turn the blade end for end if the other side is sharp, or replace the blade.
5. When the blade is in position, secure with the bolts and washers that were removed in step 3.

6. Using the Blade Gap Chart, set the gap making sure the blades are parallel along the entire length.
7. The blade gap adjustment screws (Y) were preset at the factory. ADJUST ONLY IF ABSOLUTELY NECESSARY. To adjust, loosen the hex nut and turn the setscrew clockwise (cw) to close the blade gap and counterclockwise (ccw) to open the gap. After adjustment re-tighten the hex nut.

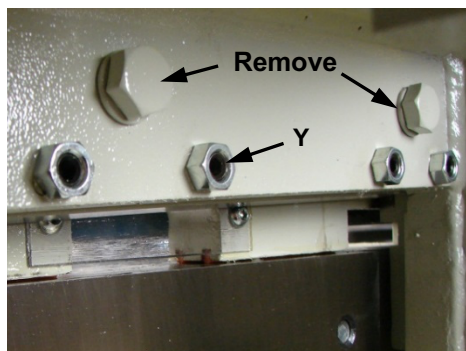


Figure 10-6

8. Blade clearances can also be adjusted by moving the table IN or OUT. To push the table IN (closing the blade gap), loosen the socket bolt (Z). Loosen the nut on socket screw (AA) and turn the setscrew clockwise (cw). To pull the table back (opening the blade gap), back-off setscrew (AA) and turn socket bolt (Z) clockwise (cw).

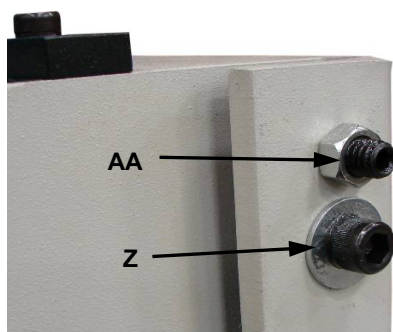


Figure 10-7

9. Check clearances after tightening the table bolts.

To Rotate or Replace the Bottom Blade

! WARNING

Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

The shearing blade poses an amputation hazard.

Make sure no body part or clothing is near the specific hazard.

Failure to follow this warning could result in severed or crushed fingers.

1. Raise the top blade to the up position.
2. Shut down and lockout power to the machine.
3. Remove the front panel of the machine.
4. To remove the blade, take out the (nine) hex bolts (AB) and washers as shown below.

! CAUTION

Make sure there is someone on the back side of the machine to handle the blade so it does not fall and get damaged.

5. Turn the blade if you have not already used all four cutting edges, or replace the blade with a new one.
6. When in position, secure the blade with the bolts and washers. The bottom blade has no adjustment.
7. Using the Blade Gap Chart, set the gap making sure the blades are parallel along the entire length.
8. The blade gap adjustment screws (Y) were preset at the factory. ADJUST ONLY IF ABSOLUTELY NECESSARY. To adjust, loosen the hex nut and turn the setscrew clockwise (cw) to close the blade gap and counterclockwise (ccw) to open the gap. After adjustment re-tighten the hex nut.
9. Blade clearances can also be adjusted by moving the table IN or OUT. To push the table IN (closing the blade gap), loosen the socket bolt (Z). Loosen the nut on socket screw (AA) and turn the setscrew clockwise (cw). To pull the table back (opening the blade gap), back-off setscrew (AA) and turn socket bolt (Z) clockwise (cw).
10. Check clearances after tightening the table bolts.

10.7 Blade Care

The blades are made from High Carbon / High-Chrome Alloy tool steel. The multiple shearing edges available will prolong blade life considerably. NEVER allow the blades to contact one another. Lubricate the blade with a light oil when shearing stainless steel or galvanized material. Brush oil on the lower blade as the upper blade will pick up oil during the shearing cycle. It is very important to keep the blades sharp. Turn or change the blades when you begin to notice a burr on the sheared piece part. It is a good idea to keep a spare set of blades on hand so as not to hold up your operation.

11.0 Troubleshooting

WARNING

Make sure the electrical disconnect is OFF before working on the machine.

Table 11-1

Fault	Probable Cause	Remedy
BURR ON SHEARED EDGE	Dull blades.	Turn or sharpen blades.
	Excessive blade clearance.	Adjust blade gap.
	Excessive clearance in ram ways.	Make adjustment to reduce clearance.
	Poor grade of material.	Select vendor with better quality material that is consistent.
BLADE CAMBER, TWIST, and BOW	Bottom blade not level with table.	Adjust blade with shims after grinding.
	Not enough hold down pressure.	Check springs and hold down pads.
	Dull blade.	Turn or change blade.
KICK BACK of PIECE PART	Bottom blade not level with table.	Adjust blade with shims after grinding.
	Not enough hold down pressure.	Check springs and hold down pads.
	Dull blade.	Turn or change blade.

12.0 Blade Gap Chart

The blade gap on the shear was set at the factory. At this setting it will shear mild steel up to 16ga. (1.52mm) and stainless steel up to 20ga. (.912mm). To measure the blade gap, gradually lower the top blade and measure the gap going from left to right while facing the rear of the machine. The gap should be .002" (.05mm) with the blades perfectly parallel all the way across the cutting edges.

Table 12-1

Gauge	Standard Steel Thickness	Aluminum Thickness	Knife Blade Clearance
3	0.2391 (6.073mm)	0.2294 (5.827mm)	.010"-.018" (.25-.45mm)
4	0.2242 (5.695mm)	0.2043 (5.189mm)	.009"-.013" (.23-.33mm)
5	0.2092 (5.314mm)	0.1819 (4.620mm)	.009"-.013" (.23-.33mm)
6	0.1943 (4.935mm)	0.162 (4.115mm)	.009"-.013" (.23-.33mm)
7	0.1793 (4.554mm)	0.1443 (3.665mm)	.008"-.011" (.20-.28mm)
8	0.1644 (4.176mm)	0.1285 (3.264mm)	.007"-.010" (.17-.25mm)
9	0.1495 (3.797mm)	0.1144 (2.906mm)	.006"-.009" (.15-.23mm)
10	0.1345 (3.416mm)	0.1019 (2.588mm)	.006"-.009" (.15-.23mm)
11	0.1196 (3.038mm)	0.0907 (2.304mm)	.004"-.008" (.10-.20mm)
12	0.1046 (2.657mm)	0.0808 (2.052mm)	.004"-.008" (.10-.20mm)
13	0.0897 (2.278mm)	0.072 (1.829mm)	.003"-.006" (.076-.152mm)
14	0.0747 (1.897mm)	0.0641 (1.628mm)	.003"-.006" (.076-.152mm)
15	0.0673 (1.709mm)	0.0571 (1.450mm)	.003"-.006" (.076-.152mm)
16	0.0598 (1.519mm)	0.0508 (1.290mm)	.002"-.005" (.05-.127mm)
17	0.0538 (1.367mm)	0.0453 (1.151mm)	.002"-.005" (.05-.127mm)
18	0.0478 (1.214mm)	0.0403 (1.024mm)	.002"-.004" (.05-.10mm)
19	0.0418 (1.062mm)	0.0359 (0.912mm)	.002"-.004" (.05-.10mm)
20	0.0359 (0.912mm)	0.032 (0.813mm)	.002"-.004" (.05-.10mm)
21	0.0329 (0.836mm)	0.0285 (0.724mm)	.002"-.004" (.05-.10mm)
22	0.0299 (0.759mm)	0.0253 (0.643mm)	.002"-.004" (.05-.10mm)
23	0.0269 (0.683mm)	0.0226 (0.574mm)	.001"-.003" (.025-.076mm)
24	0.0239 (0.607mm)	0.0201 (0.511mm)	.001"-.003" (.025-.076mm)

Under no circumstances do you want the blades making contact with each other as this can cause blade breakage as well as premature dulling of the cutting edges.

Note: This is a general guide for setting the blade gap. Your specific settings may change based upon several factors regarding specific material and other machine settings and conditions. This is based upon a general guideline of blade gap is equal to 6.5%-7% of material thickness.

13.0 Shearing Strength of Materials

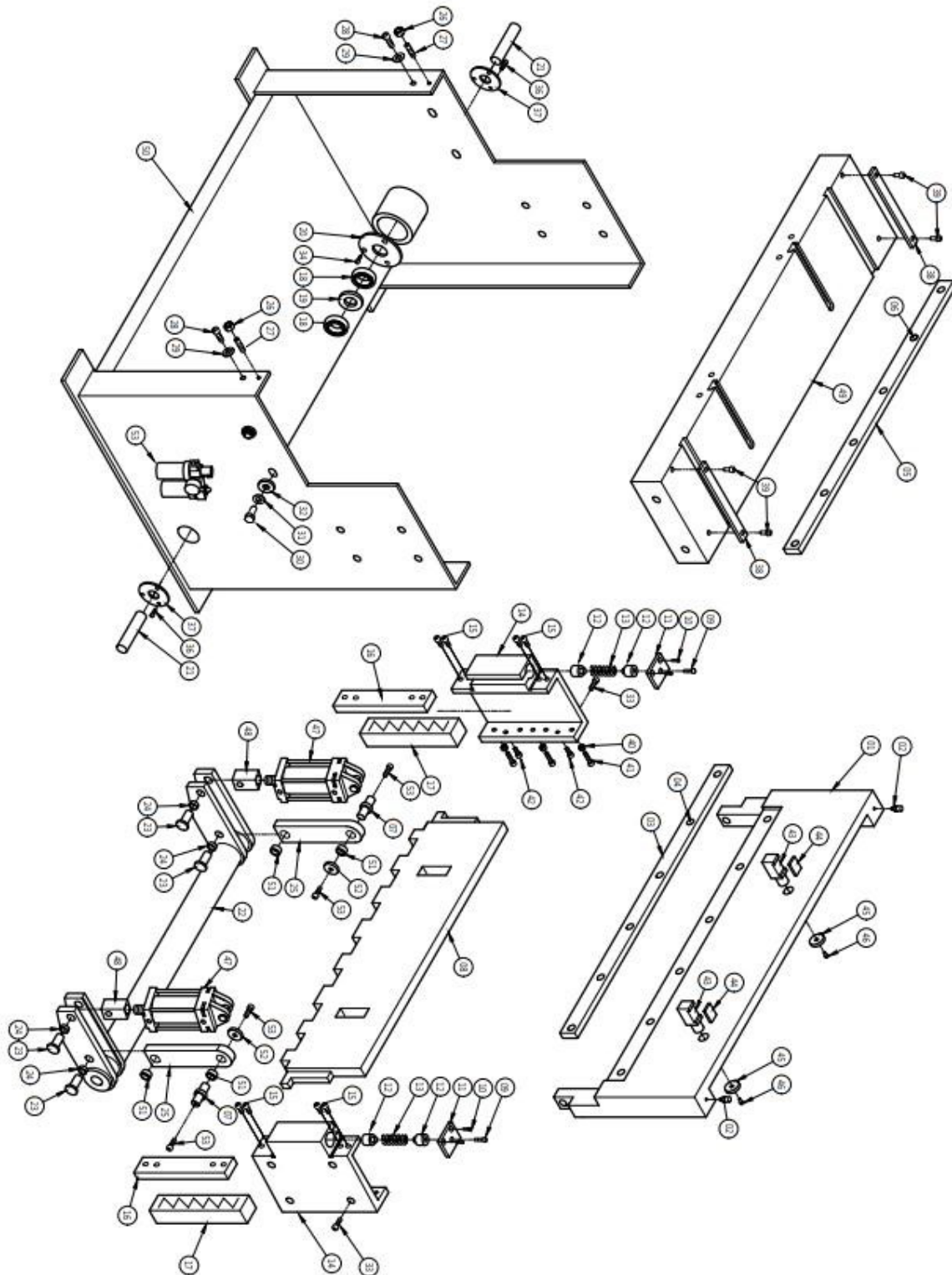
- How to use this table: The shear is rated 16ga. (.0598") in mild steel. What thickness can it cut of other materials? (.0598) x (material factor) = materials thickness.

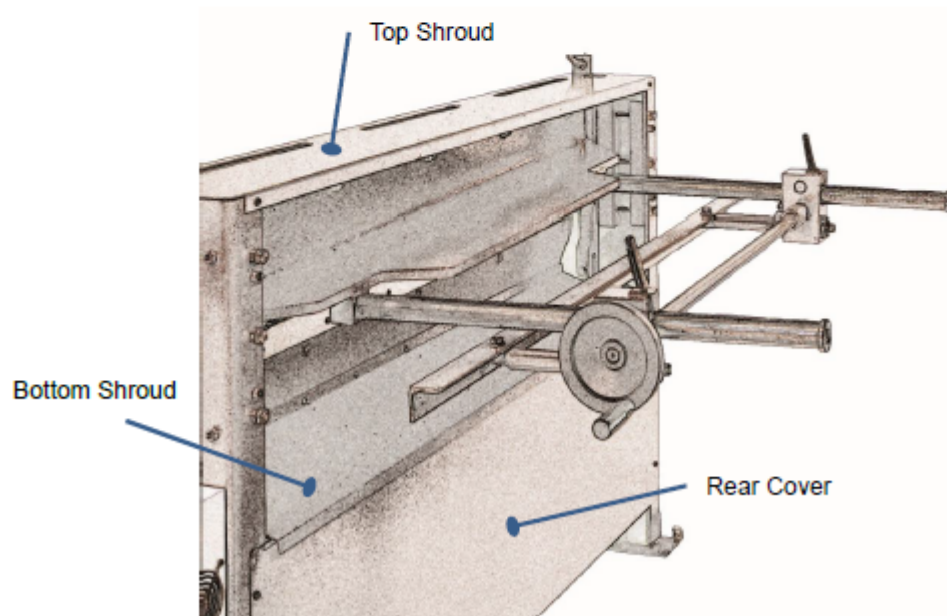
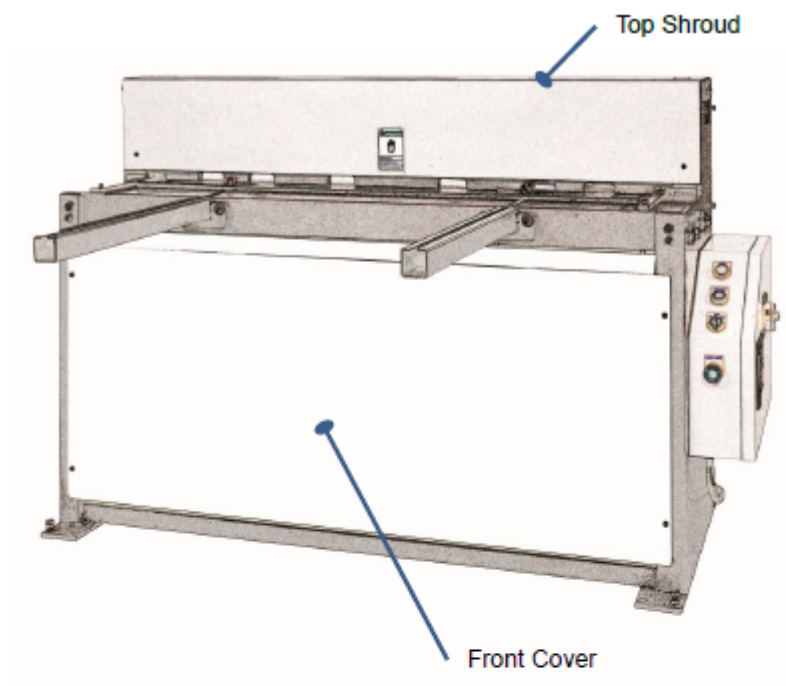
Table 13-1

Material	Tons/Sq. In.	Factor
Mild Steel (.25 Carbon)	25	1.00
Mild Steel (.50 Carbon)	30	0.83
Stainless Steel	38	0.65
Boiler Plate	30	0.83
Spring Steel (1.99 Carbon)	42	0.60
Tool Steel - Not Tempered (1.20 Carbon)	45	0.56
Tool Steel - Tempered (1.20 Carbon)	95	0.26
Nickel Steel (0.5% Nickel)	41	0.61
Aluminum Sheet	10	2.50
Brass	13	1.92
Copper	12.5	2.00
Lead	1.5	16.67
Tin - Coated Sheet Steel	25	1.00
Zinc	8.5	2.94
Galvanized Steel Sheet	25	1.00

14.0 Replacement Parts

14.1.1 Basic Units Assembly – Exploded View



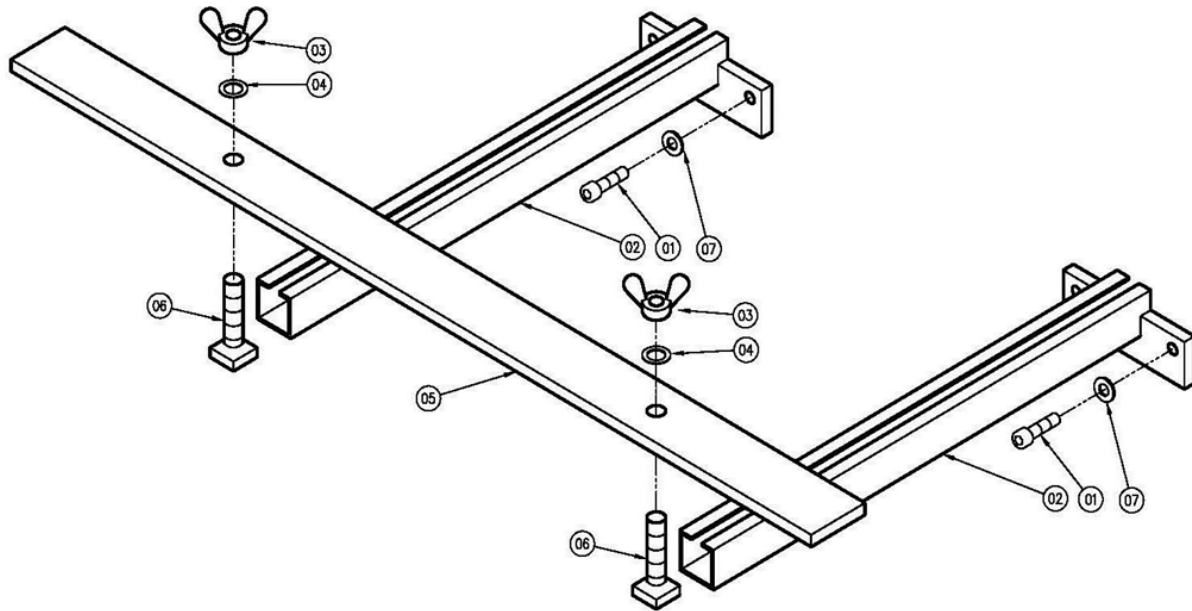


14.1.2 Basic Units Assembly - Parts List

Index No.	Part No.	Description	Size	Qty
1	**	Upper Beam Assy.		1
2	SH5216A-A2	Oil Cup		2
3	BA9-1018247	Upper Knife		1
4	**	1/2" Hhcs - Upper Knife	1/2"HHCS	
5	**	Lower Knife		1
6	**	1/2" Hhcs - Lower Knife		
7	**	Pin		2
8	**	Hold Down		1
9	**	Spring Adjusting Screw		2
10	**	Screw	M6	4
11	**	Cover		2
12	BA9-1010295	Spring Positioning Bushing		4
13	BA9-1010296	Spring		2
14	BA9-1231928	Slide Housing		2
15	BA9-1019758	Screw		8
16	**	Slide Block		2
17	**	Slide Block		2
18	**	Bearing		2
19	**	Spacer		1
20	**	Cover		1
21	**	Pin		2
22	**	Bottom Balance Bar		1
23	BA9-1226033	Pin		4
24	**	Bushing		4
25	**	Link Plate		2
26	**	Nut	1/2"	2
27	**	Screw	1/2"	2
28	**	Screw	1/2"	2
29	**	Washer 1/2"	1/2"	2
30	**	Screw	5/8"	1
31	**	Washer		1
32	**	Spacer		1
33	**	Screw	3/8"	4
34	**	Screw		4
36	**	Screw		6
37	**	Cover - Off Side		2
38	**	Plate Shear Guide		2
39	**	Screw		4
40	**	Nut		
41	**	Adjusting Screw		
42	**	Screw		
	BA9-1007166	F.R.L. – Combination (not shown)		1
43	**	Hold Down Supporting Pillow		2
44	**	Urethane		2
45	**	Shaft Filler Washer		2
46	**	Screw		2
47	**	Air Cylinder		2
48	**	Connector Block		2
49	**	Table Platen		1
	BA9-1230555	Quick Blow Off Valve unit (not shown)		2
50	**	Bottom Base Assy		1
51	**	Bushing		2
52	**	Washer		2
53	**	Quick Blow Off Valve Unit		4
##		Top Shroud		1
##		Front Cover		1
##		Bottom Shroud		1
##		Rear Cover		1

** These parts are shown for reference only and are not available for order individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.3 Front Gauge Assembly – Exploded View

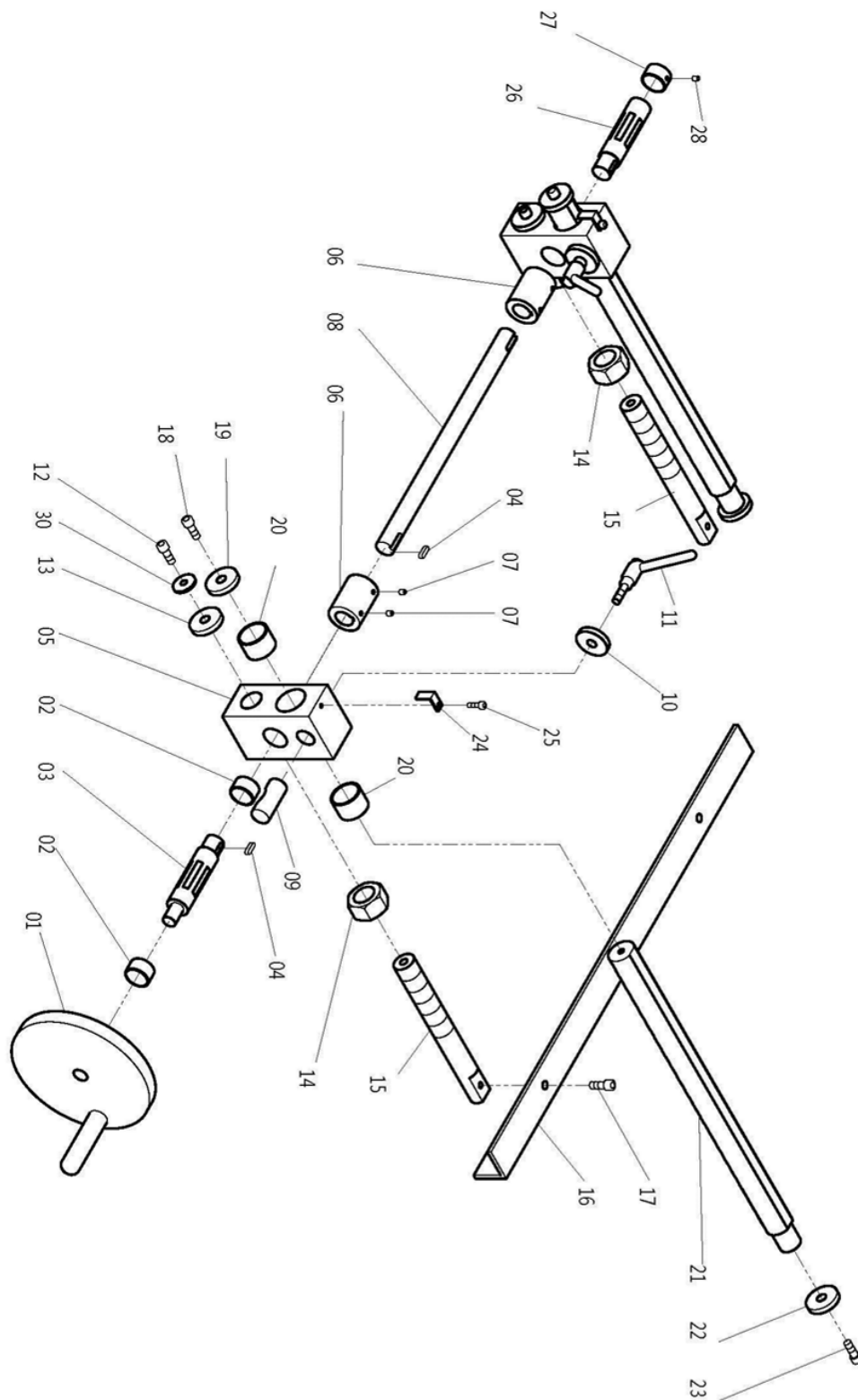


14.1.4 Front Gauge Assembly - Parts List

Index No.	Part No.	Description	Size	Qty
1	**	Screw.....		2
2	**	Work Piece Support.....		2
3	**	Wing Nut.....		2
4	**	Washer		2
5	**	Position Gage		1
6	**	"T" Screw		2
7	**	Washer		2

** These parts are shown for reference only and are not available for order individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.5 Back Gauge Assembly C – Exploded View



14.1.6 Back Gauge Assembly C - Parts list

Index No.	Part No.	Description	Size	Qty
C1	BA9-1018281	Hand Wheel		1
C2	BA9-1018282	Bushing		2
C3	BA9-1018283	Rack Wheel - Right Side		1
C4	BA9-1018284	Key		2
C5	BA9-1018285	Rack Block		2
C6	BA9-1018286	Connecting Sleeve		2
C7	BA9-1018287	Set Screw		2
C8	BA9-1018288	Coupling Rod		1
C9	BA9-1018289	Locking Shaft		2
C10	BA9-1018290	Washer		2
C11	BA9-1018291	Plastic Handle		2
C12	**	Screw		2
C13	**	Shaft Filler Washer		2
C14	BA9-1018292	Nut		2
C15	BA9-1018293	Adjusting Rod		2
C16	**	Angle Stoppers		1
C17	**	Screw		2
C18	**	Screw		2
C19	**	Shaft Filler Washer		2
C20	BA9-1018294	Bushing		4
C21	**	Rack Rod		2
C22	**	Shaft Filler Washer		2
C23	**	Screw		2
C24	**	Dial Indicator		2
C25	**	Screw		2
C26	**	Rack Wheel - Left Side		1
C27	**	Collar		1
C28	**	Screw		1
C30	**	Washer		
	BA9-1013826	Complete Manual Back Gauge		

** These parts are shown for reference only and are not available for order individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.7 Air Control Parts Identification D – Exploded view

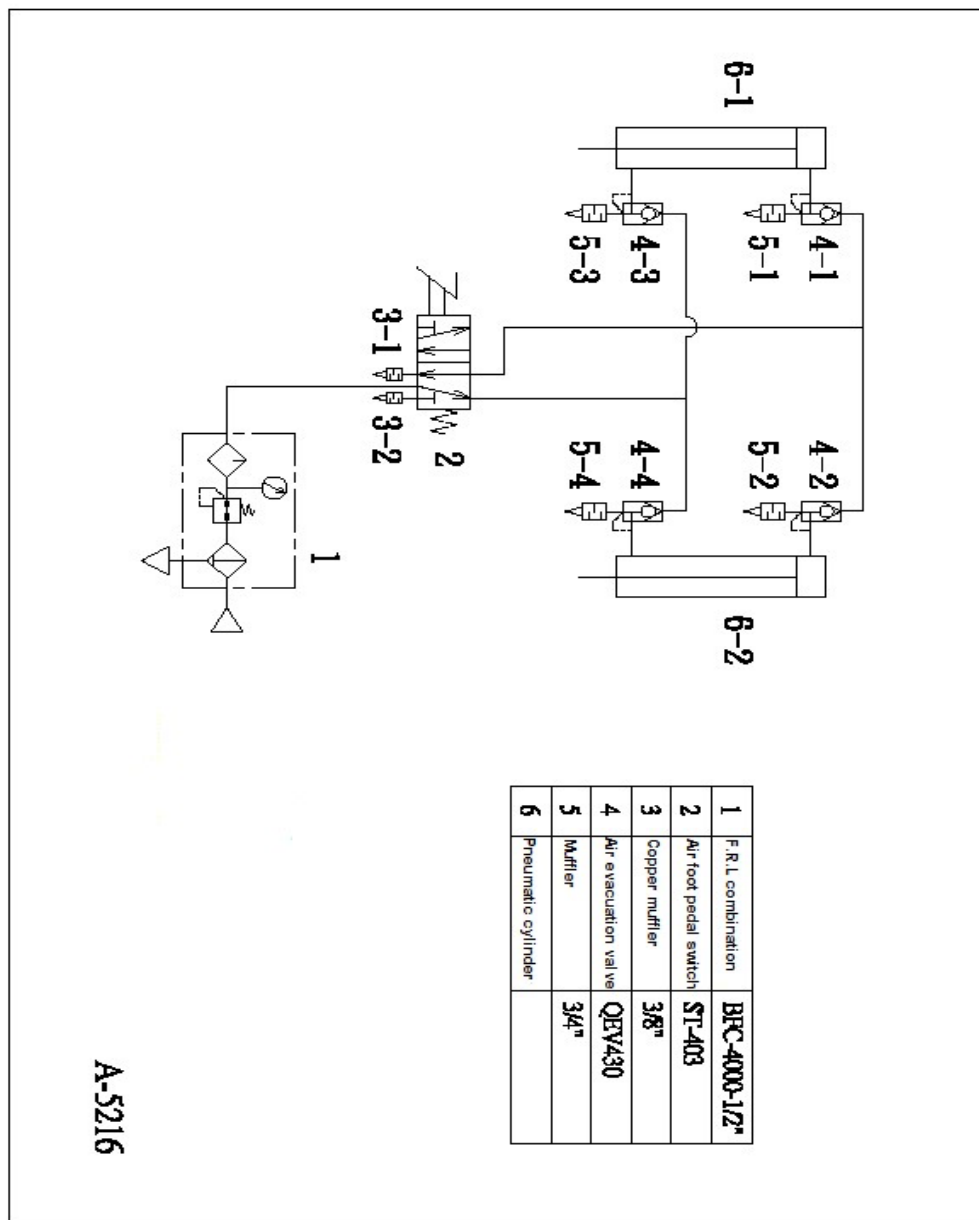


14.1.8 Air Control Parts Identification D – Parts List

Index No.	Part No.	Description	Size	Qty
D1.....	**	Oil Volume Adjust Ring.....		1
D2.....	**	Pressure Adjust		1
D3.....	**	Press Gauge.....		1
D4.....	**	Quick Joint.....		1
D5.....	**	Water Filter Cup		1
D6.....	**	Oil Cup.....		1
D7.....	**	Connector		1
.....	BA9-1225136	Air Foot Pedal Set (not shown).....		

** These parts are shown for reference only and are not available for order individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

14.1.9 Pneumatic Diagram



14.1.10 Pneumatic Parts List

Index No.	Part No.	Description	Size	Qty
1	**	F.R.L combination	BFC-4000-1/2"	1
2	**	Air foot pedal switch	ST-403	1
3	BA9-1017404	Copper muffler	3/8"	2
4	**	Air evacuation valve	QEV430	4
5	BA9-1015476	Muffler	3/4"	4
6	**	Pneumatic cylinder		2

** These parts are shown for reference only and are not available for order individually. Non-proprietary parts, such as fasteners, can usually be found at local hardware stores.

15.0 Warranty and Service

Thank you for your purchase of a machine from Baileigh Industrial. We hope that you find it productive and useful to you for a long time to come.

Inspection & Acceptance. Buyer shall inspect all Goods within ten (10) days after receipt thereof. Buyer's payment shall constitute final acceptance of the Goods and shall act as a waiver of the Buyer's rights to inspect or reject the Goods unless otherwise agreed. If Buyer rejects any merchandise, Buyer must first obtain a Returned Goods Authorization ("RGA") number before returning any Goods to Seller. Goods returned without an RGA will be refused. Seller will not be responsible for any freight costs, damages to Goods, or any other costs or liabilities pertaining to Goods returned without an RGA. Seller shall have the right to substitute a conforming tender. Buyer will be responsible for all freight costs to and from Buyer and repackaging costs, if any, if Buyer refuses to accept shipment. If Goods are returned in unsalable condition, Buyer shall be responsible for full value of the Goods. Buyer may not return any special-order Goods. Any Goods returned hereunder shall be subject to a restocking fee equal to 30% of the invoice price.

Specifications. Seller may, at its option, make changes in the designs, **specifications**, or components of the Goods to improve the safety of such Goods, or if in Seller's judgment, such changes will be beneficial to their operation or use. Buyer may not make any changes in the specifications for the Goods unless Seller approves of such changes in writing, in which event Seller may impose additional charges to implement such changes.

Limited Warranty. Seller warrants to the original end-user that the Goods manufactured or provided by Seller under this Agreement shall be free of defects in material or workmanship for a period of twelve (12) months from the date of purchase, provided that the Goods are installed, used, and maintained in accordance with any instruction manual or technical guidelines provided by the Seller or supplied with the Goods, if applicable. The original end-user must give written notice to Seller of any suspected defect in the Goods prior to the expiration of the warranty period. The original end-user must also obtain an RGA from Seller prior to returning any Goods to Seller for warranty service under this paragraph. Seller will not accept any responsibility for Goods returned without an RGA. The original end-user shall be responsible for all costs and expenses associated with returning the Goods to Seller for warranty service. In the event of a defect, Seller, at its sole option, shall repair or replace the defective Goods or refund to the original end-user the purchase price for such defective Goods. Goods are not eligible for replacement or return after a period of 10 days from date of receipt. The foregoing warranty is Seller's sole obligation, and the original end-user's exclusive remedy, with regard to any defective Goods. This limited warranty does not apply to: (a) die sets, tooling, and saw blades; (b) periodic or routine maintenance and setup, (c) repair or replacement of the Goods due to normal wear and tear, (d) defects or damage to the Goods resulting from misuse, abuse, neglect, or accidents, (f) defects or damage to the Goods resulting from improper or unauthorized alterations, modifications, or changes; and (f) any Goods that has not been installed and/or maintained in accordance with the instruction manual or technical guidelines provided by Seller.

EXCLUSION OF OTHER WARRANTIES. THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ANY AND ALL OTHER EXPRESS, STATUTORY, OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. NO WARRANTY IS MADE WHICH EXTENDS BEYOND THAT WHICH IS EXPRESSLY CONTAINED HEREIN.

Limitation of Liability. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR DOWN TIME) ARISING FROM OR IN MANNER CONNECTED WITH THE GOODS, ANY BREACH BY SELLER OR ITS AGENTS OF THIS AGREEMENT, OR ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY. BUYER'S REMEDY WITH RESPECT TO ANY CLAIM ARISING UNDER THIS AGREEMENT IS STRICTLY LIMITED TO NO MORE THAN THE AMOUNT PAID BY THE BUYER FOR THE GOODS.

Force Majeure. Seller shall not be responsible for any delay in the delivery of, or failure to deliver, Goods due to causes beyond Seller's reasonable control including, without limitation, acts of God, acts of war or terrorism, enemy actions, hostilities, strikes, labor difficulties, embargoes, non-delivery or late delivery of materials, parts and equipment or transportation delays not caused by the fault of Seller, delays caused by civil authorities, governmental regulations or orders, fire, lightning, natural disasters or any other cause beyond Seller's reasonable control. In the event of any such delay, performance will be postponed by such length of time as may be reasonably necessary to compensate for the delay.

Installation. If Buyer purchases any Goods that require installation, Buyer shall, at its expense, make all arrangements and connections necessary to install and operate the Goods. Buyer shall install the Goods in accordance with any Seller instructions and shall indemnify Seller against any and all damages, demands, suits, causes of action, claims and expenses (including actual attorneys' fees and costs) arising directly or indirectly out of Buyer's failure to properly install the Goods.

Work By Others; Safety Devices. Unless agreed to in writing by Seller, Seller has no responsibility for labor or work performed by Buyer or others, of any nature, relating to design, manufacture, fabrication, use, installation, or provision of Goods. Buyer is solely responsible for furnishing and requiring its employees and customers to use all safety devices, guards and safe operating procedures required by law and/or as set forth in manuals and instruction sheets furnished by Seller. Buyer is responsible for consulting all operator manuals, ANSI or comparable safety standards, OSHA regulations and other sources of safety standards and regulations applicable to the use and operation of the Goods.

Remedies. Each of the rights and remedies of Seller under this Agreement is cumulative and in addition to any other or further remedies provided under this Agreement or at law or equity.

Attorney's Fees. In the event legal action is necessary to recover monies due from Buyer or to enforce any provision of this Agreement, Buyer shall be liable to Seller for all costs and expenses associated therewith, including Seller's actual attorney fees and costs.

Governing Law/Venue. This Agreement shall be construed and governed under the laws of the State of Wisconsin, without application of conflict of law principles. Each party agrees that all actions or proceedings arising out of or in connection with this Agreement shall be commenced, tried, and litigated only in the state courts sitting in Manitowoc County, Wisconsin or the U.S. Federal Court for the Eastern District of Wisconsin. Each party waives any right it may have to assert the doctrine of "forum non conveniens" or to object to venue to the extent that any proceeding is brought in accordance with this section. Each party consents to and waives any objection to the exercise of personal jurisdiction over it by courts described in this section. Each party waives to the fullest extent permitted by applicable law the right to a trial by jury.

Summary of Return Policy:

- 10 Day acceptance period from date of delivery. Damage claims and order discrepancies will not be accepted after this time.
- You must obtain a Baileigh Industrial issued RGA number PRIOR to returning any materials.
- Returned materials must be received at Baileigh Industrial in new condition and in original packaging.
- Altered items are not eligible for return.
- Buyer is responsible for all shipping charges.
- A 30% re-stocking fee applies to all returns.

Baileigh Industrial makes every effort to ensure that our posted specifications, images, pricing, and product availability are as correct and timely as possible. We apologize for any discrepancies that may occur. Baileigh Industrial reserves the right to make any and all changes deemed necessary in the course of business including but not limited to pricing, product specifications, quantities, and product availability.

For Customer Service & Technical Support:

Please contact one of our knowledgeable Sales and Service team members at:
(920) 684-4990 or e-mail us at Baileigh-Service@jpwindustries.com



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