

SPECIALTY

Compression Riveters

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Principles of Operation

Air powered compression riveters deliver a squeezing action, which drives the rivet by “flowing” the rivet metal with compressed forces. Squeezing action is obtained by coupling an air cylinder and piston to a wedge or cam, thus multiplying the original force to extreme ratios. High compressive forces are obtained from a relatively compact unit having small diameter cylinders and using very little compressed air.

The advantage of squeeze riveting is simple sounds of air exhaust and forward piston movement developing tremendous pressures being exerted at the work point.

Optimum control may be obtained in compression riveting. The rivet head is formed by a steady, uniform squeeze action. The set plunger and dolly are an integral part of the squeezer itself.

Length of the return stroke may be adjusted that the plunger itself does not have to travel its full length.

Consistently applied pressure makes for a better appearance of the finished product as well as giving the ultimate in structural efficiency.

Classification of Squeezers:

Alligator: The squeezing action of the jaws are similar to the movement of an Alligators jaws.

‘C’ Type: The rivet is squeezed between the two ends of the ‘C’.

Type of Rivet:

Rivet material.

Rivet body diameter.

Rivet length before and after compression.

Force required to compress rivet.

Riveter Selection Guide:

What material is the rivet made from?

What size is the rivet?

What is the form of the head?

What components are being assembled?

Are there any clearance problems?

Is Alligator or ‘C’ type yoke required?

How is the application being done now?

Are there any special considerations?

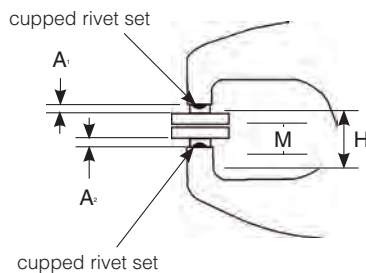
COMPRESSION RIVETERS

For maximum power the combined length of the two rivet sets must be of the correct length.

Determine the correct lengths as follows:

1) When two cupped rivet sets are used:

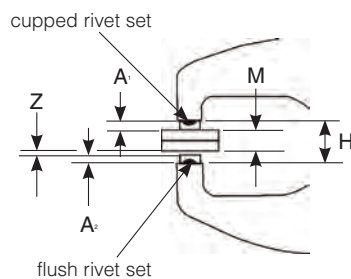
The length of the body dimensions of the two rivet sets (A1, A2) should equal the closed height dimension of the yoke (H) minus the total thickness of material being riveted together.



$$A_1 + A_2 = H - M$$

2) When one cupped set and one flush set are used:

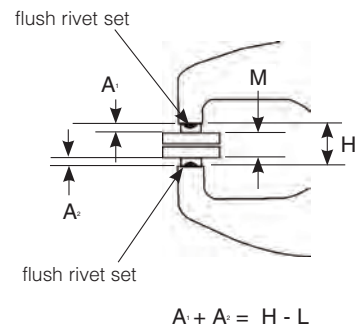
The length of the body dimensions of the two rivet sets (A1, A2) should equal the closed height dimension of the yoke H minus the total thickness of material being riveted (M) and the height of the finished rivet head (Z) compressed by the flush set (A).



$$A_1 + A_2 = H - M - Z$$

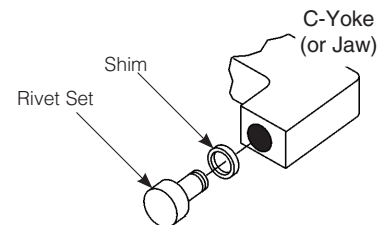
3) When two flush sets are used:

The length of the body dimensions of the two rivet sets (A1, A2) should equal the closed height dimension of the yoke (H) minus the overall length of the rivet (M) after it is compressed.



$$A_1 + A_2 = H - L$$

If necessary, select rivet sets a little short and shim to the correct length using spacer shims.



COMPRESSION RIVETERS

Features:

- Single, Tandem, and Triple Cylinder Options
- Riveting Capacity:
 - 1/8" (3 mm) (Single Cylinder)
 - 3/16" (5 mm) (Tandem Cylinder)
 - 1/4" (6 mm) (Triple Cylinder)
- Safety Throttle



SZEA5030



SZEA7030



SZEA9030

Compression Riveters

Model Number	Rivet Set Shank Diameter		Cap Cold Rivet Diameter				Standard Alligator Yoke Dimension				Max Force at 90 psi		Moving Jaw				Net Weight w/ Yoke		Overall Length	
			Steel		Alum		Reach		Closed Ht				Max Travel		Stroke at Max Force					
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	in	mm
CR-1 – Single Cylinder																				
SZEA5000	NA	NA	3/32	2	1/8	3	NA	NA	NA	NA	3000	13.4	5/8	16	final 1/16	2	2-1/4	1	7-11/16	195
SZEA5015	3/16	5	3/32	2	1/8	3	1-1/2	38	7/8	22	3000	13.4	5/8	16	final 1/16	2	3.75	1.7	9-3/16	233
SZEA5022	3/16	5	3/32	2	3/32	2	2-1/4	57	7/8	22	2200	9.8	7/8	22	final 3/32	2	4.25	1.9	10-1/8	257
SZEA5030	3/16	5	3/32	2	3/32	2	3	76	7/8	22	1800	8	1-1/4	32	final 1/8	3	4.75	2.2	10-7/8	276
CR-1 – Tandem Cylinder																				
SZEA7000	NA	NA	5/32	4	3/16	5	NA	NA	NA	NA	6000	26.7	5/8	16	final 1/16	2	4	1.8	10-1/2	267
SZEA7015	3/16	5	5/32	4	3/16	5	1-1/2	38	7/8	22	6000	26.7	5/8	16	final 1/16	2	5.5	2.5	12	305
SZEA7022	3/16	5	1/8	3	5/32	4	2-1/4	57	7/8	22	4300	19.1	7/8	22	final 3/32	2	6	2.7	13	330
SZEA7030	3/16	5	3/32	2	1/8	3	3	76	7/8	22	3400	15.1	1-1/4	32	final 1/8	3	6.25	2.8	13.75	349
CR-1 – Triple Cylinder																				
SZEA9000	NA	NA	3/16	5	1/4	6	NA	NA	NA	NA	9000	40.1	5/8	16	final 1/16	2	5.5	2.5	14.5	368
SZEA9015	3/16	5	3/16	5	1/4	6	1-1/2	38	7/8	22	9000	40.1	5/8	16	final 1/16	2	7	3.2	16	406
SZEA9022	3/16	5	5/32	4	3/16	5	2-1/4	57	7/8	22	7000	31.2	7/8	22	final 3/32	2	7.5	93.4	16.75	426
SZEA9030	3/16	5	5/32	4	3/16	5	3	76	7/8	22	5200	23.1	1-1/4	32	final 1/8	3	8	3.6	17.5	445

General:

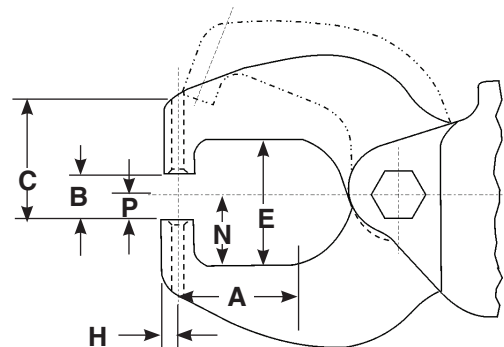
Air Inlet Size: 1/4" NPT • Recommended Hose Size: 3/8" (10 mm) • Performance rated @ 90 psig (6.2 bar) air pressure

Standard Equipment:

Parts List • Safety and Instruction Manual • Safety throttle action

Alligator Yoke Nomenclature

- A Reach
- B Closed Height
- C Total
- E Gap
- H Lowest Offset
- N Depth from centerline to Stationary Jaw Gap
- P Depth from centerline to Stationary Jaw set hole surface



A		B		C		E		H		N		P	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1-1/2	38	7/8	22	1-1/2	38	1-5/8	41	7/32	6	1.0	1	5/8	16
2-1/4	57	7/8	22	1-7/8	48	2-1/8	54	7/32	6	1-1/4	32	5/8	16
3	76	7/8	22	2-1/8	54	2-1/8	54	7/32	6	1-1/4	32	5/8	16

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SAFETY PRECAUTION: Read and follow all safety and operating instructions.
WARNING: Face & eye protection must be worn while operating power tools, per ANSI B186.1

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- Safety Throttle



SZE3015



SZE6015



SZE8015

Compression Riveters

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			Steel		Alum		Reach		Gap													
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kN	in	mm	lb	kg	in	mm
CR-1 – Single Cylinder																						
SZE3000	N/A	N/A	3/32	2	1/8	3	N/A	N/A	N/A	N/A	N/A	N/A	9/16	14	3000	13.4	f-1/16	2	3-1/2	1.6	8-1/2	216
SZE3015	3/16	5	3/32	2	1/8	3	1-1/2	38	1-1/4	32	11/16	78	9/16	14	3000	13.4	f-1/16	2	4-1/2	2	10-1/4	262
CR-1 – Tandem Cylinder																						
SZE6000	N/A	N/A	5/32	4	3/16	5	N/A	N/A	N/A	N/A	N/A	N/A	9/16	14	6000	26.7	f-1/16	2	4-1/2	2	11-1/4	287
SZE6015	3/16	5	5/32	4	3/16	5	1-1/2	38	1-1/4	32	11/16	78	9/16	14	6000	26.7	f-1/16	2	5-1/2	2.5	14	356
CR-1 – Triple Cylinder																						
SZE8000	N/A	N/A	5/32	4	1/4	6	N/A	N/A	N/A	N/A	N/A	N/A	9/16	14	9000	40.1	f-1/16	2	7-1/2	3.4	16	406
SZE8015	3/16	5	3/16	5	1/4	6	1-1/2	38	1-1/4	32	11/16	78	9/16	14	9000	40.1	f-1/16	2	8-1/2	3.9	18-3/4	476

Due to a variety of jobs and applications, Squeeze Riveters are not supplied with rivet sets. Please contact Sioux Tools, Inc. or your local distributor for rivet set information.

General:

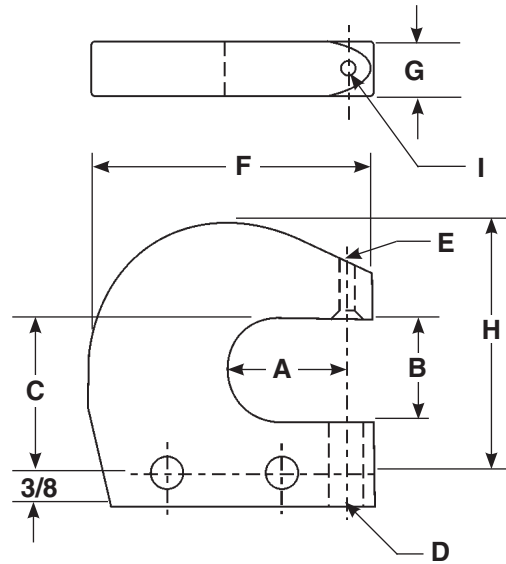
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C-Yoke Nomenclature

- A** Reach
- B** Gap
- C** Height from yoke hole to center to top of yoke gap
- D** Bottom set hole diameter CR-1 or CR-2
- E** Top set hole diameter CR-1 or CR-2
- F** Width of yoke set hole center to top of yoke
- G** Thickness of yoke
- H** Height of yoke from bolt hole center to top of yoke
- I** Radius from set hole center



A		B		C		D		E		F		G		H		I	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1-1/2	38	1-1/4	32	1-7/8	48	3/8	10	3/16	5	2-7/8	73	9/16	14	3	76	1/4	6
						7/16	11	1/4	6								

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