Compression Riveter Information

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 stoke 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?

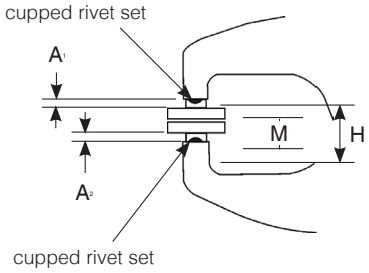
COMPRESSION RIVETERS

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:

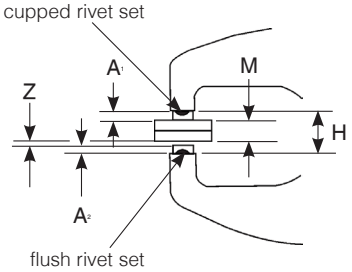
The length of the body dimensions of the two rivet sets (A1, A2) should equal the closed height dimension of the yoke (H) minus the total thickness of material being riveted together.



$A_1 + A_2 = H - M$

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

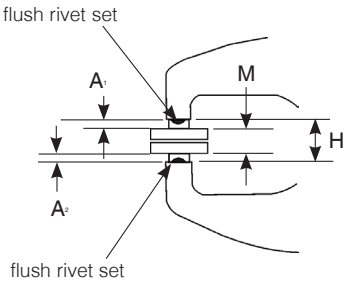
The length of the body dimensions of the two rivet sets (A1, A2) should equal the closed height dimension of the yoke H minus the total thickness of material being riveted (M) and the height of the finished rivet head (Z) compressed by the flush set (A).



$A_1 + A_2 = H - M - Z$

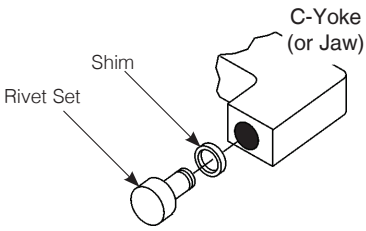
3) When two flush sets are used:

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.



$A_1 + A_2 = H - L$

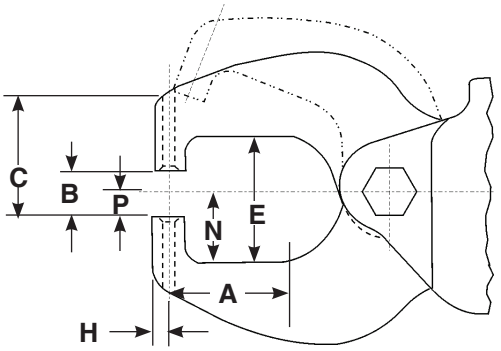
If necessary, select rivet sets a little short and shim to the correct length using spacer shims.



Yoke Nomenclature

Alligator Yoke Nomenclature

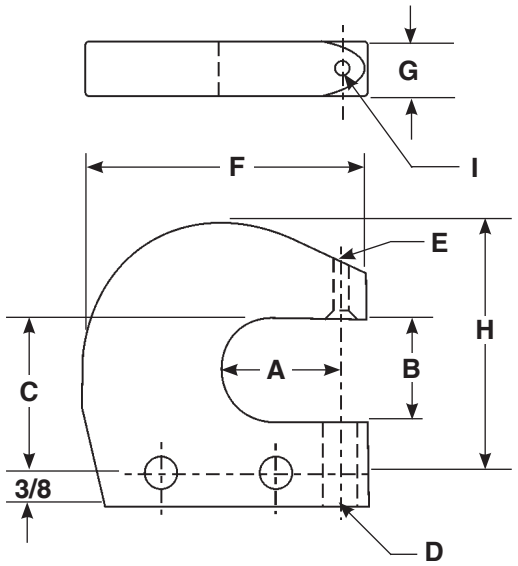
A Reach
B Closed Height
C Total
E Gap
H Lowest Offset
N Depth from centerline to Stationary Jaw Gap
P Depth from centerline to Stationary Jaw set hole surface



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

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								