

Today Ramset continues to bring the products, service and innovation that it has come to expect from the leader in powder fastening. All of our products are geared to help contractors do their jobs faster, safer and more productively.



## FASTENERS

### ELECTRICAL PIN/CLIP ASSEMBLIES

Preassembled pin and clips for some of the most common electrical applications increase jobsite speed for the electrician.

### STANDARD PIN/CLIP ASSEMBLIES

SDC fasteners are designed with special dimples on the angle clips that act as a shim and assure a snug fit between the structural member and clip.

### POWERPOINT® PIN/CLIP ASSEMBLIES

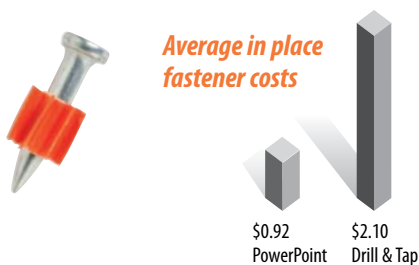
SPC fasteners are assembled with the patented technology of PowerPoint pins for penetration in hard concrete and steel. The uniform shape and finish of the engineered tip results in more consistent performance in your toughest situations.



POWDER ACTUATED FASTENING

## POWERPOINT PINS FOR HARD CONCRETE AND STEEL FASTENING

### SAVE MONEY



### SELECTION CHARTS

MATERIAL	BASE STEEL THICKNESS				
	3/16"	1/4"	3/8"	1/2"	3/4"
3/8" Plywood		SP34			
1/2" Plywood	SP100	SP100	SP100	SP100	SP100
10 Ga. to 12 Ga.		SP34	SP34		
13 Ga. to 17 Ga.			SP34	SP34	
18 Ga. to 25 Ga.			SP34	SP34	

SEE PAGE 17 FOR PRODUCT SELECTION

### ADVANTAGES

#### CONSISTENT PERFORMANCE IN HARD STEEL AND HARD CONCRETE

Standard powder actuated pins fasten inconsistently in steel. Frequently the steel is just too hard for conventional pins. Steel is also inconsistent because hardness varies. Tests, however, have proven that PowerPoint consistently performs, even as steel approaches 90 Rb!\*

#### PIN FINISHING TECHNIQUES FAVOR THE POWERPOINT



Ramset's unique manufacturing process for the PowerPoint pin results in uniform shape and finish for more consistent performance.



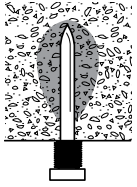
Typical cut-point finish resulting from manufacturing process will increase pin failure.



Typical swage-ballistic point finish results in potential failure of the pin.

\* According to the steel industry's accepted Rockwell Hardness Scale.





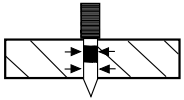
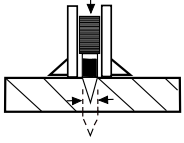
## DESCRIPTION

### FASTENING TO CONCRETE

As the fastener enters the concrete, extreme pressure and heat is created. This creates a bond that provides high loading strength in concrete.

### FASTENING TO STEEL

The resilience of steel provides a clamping effect to the fastener. This, combined with the tremendous heat that is created, provides a welding and clamping effect to give maximum holding power.



## FASTENING PLACEMENT AND PENETRATION

The following represents the minimum edge and spacing requirements, plus base material thickness requirements:

### CONCRETE

- Edge distance.** Do not fasten closer than 3 inches from the edge of concrete. If the concrete cracks, the fastener may not hold and may allow the fastener to ricochet, causing serious injury or death to the operator or bystanders.
- Recommended minimum fastener spacing.** Setting fasteners too close together can cause the concrete to crack. The recommended MINIMUM DISTANCE between fastening is 3 inches. Never attempt a fastener application too close to another previously inserted

fastener to prevent the second fastener from ricocheting off the previously installed fastener. A ricochet can result in serious injury or death to the operator or bystanders.

- Concrete thickness.** It is important that the concrete be at least 3 times as thick as the fastener penetration. If the concrete is too thin, the compressive forces forming at the fastener's point can cause the free face of the concrete to break away. This creates a dangerous condition from flying concrete and/or the fastener and also results in a reduction of fastener holding power.

### STEEL

- Edge distance.** The recommended edge distance for a fastener to the edge of steel is 1/2 inch. Never fire the tool within 1/2 inch of the edge of a steel base material because the steel may bend or break off, allowing the fastener to ricochet, causing serious injury or death to the operator or bystanders.
- Recommended minimum fastener spacing.** The recommended minimum distance between fastening is 1 inch. Never attempt a fastening application too close to another previously inserted fastener to prevent the second fastener from ricocheting off the previously installed fastener. A ricochet can result in serious injury or death to the operator or bystanders.
- Steel thickness.** Do not fasten into steel base material thinner than the fastener shank diameter. Holding power will be reduced and the fastener may be over-driven, creating a dangerous situation to the operator or bystanders due to a free-flying fastener.

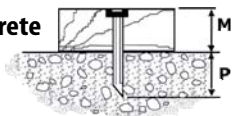
## HOW TO SELECT A POWDER ACTUATED FASTENER

**Drive pins** are used to directly fasten an object (permanent installation). **Threaded studs** are used where the object fastened is to be removed or where shimming is required. The following shows how to determine shank and thread length. Required penetration is determined by load requirement (illustrated in the following examples).

Ramset fasteners may be specified by their types or catalog numbers to satisfy fastening requirements.

### Permanent Installation

#### To Concrete



$$\text{Minimum Shank Length} = \text{Thickness of Material (M)} + \text{Required Penetration (P)}$$

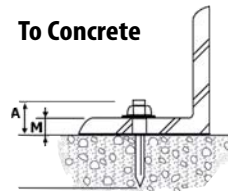
#### To Steel



$$\text{Minimum Shank Length} = \text{Thickness of Material (M)} + \text{Thickness of Steel (T)} + \text{1/4 Min. Point Allowance}$$

### Removable Installation

#### To Concrete

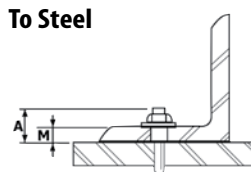


$$\text{Thread Length (A)} = \text{Thickness of Material (M)} + \text{Allowance* For Nut and Washer}$$

Shank Length = 1"

\*Allowance for thickness of nut and washer = thread size (i.e. allow 1/4" for 1/4-20 thread, etc.)

#### To Steel

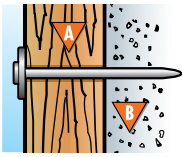


$$\text{Thread Length (A)} = \text{Thickness of Material (M)} + \text{Allowance* For Nut and Washer}$$

Shank Length = 1/2"



## SELECTING THE CORRECT FASTENER LENGTH



High quality fasteners provide consistent and reliable performance in concrete, block, masonry and steel applications. Choosing the correct fastener for the job will ensure professional results.

- A** Determine thickness of material being attached.
- B** Fastener must be long enough to drive approximately 1" into concrete, cement block or penetrate thickness of steel.

## TYPICAL USES

### THIN GAUGE STEEL



Electrical  
Junction Boxes  
Shelf Brackets

### CONCRETE BASE MATERIAL

Commonly Used  
Fastener

1508 (1")

Commonly Used  
Load

Green #3  
Green #3

### STRUCTURAL STEEL BASE MATERIAL

Commonly Used  
Fastener

SP58TH (5/8")  
1506 (3/4")

Commonly Used  
Load

Yellow #4  
Yellow #4

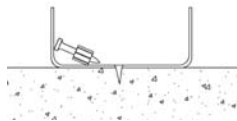
**NOTE:** This chart is presented as a guide only. Start with the lightest load. If the fastener does not set completely, use the next higher load and repeat the process. Product suggestions may not be suitable for all types of base materials. Contact Technical Services if you have further questions. For specific pin and load information, see pages 16-18.

## POWDER FASTENING TROUBLESHOOTING

### CONCRETE

SYMPTOM

#### FASTENER DOES NOT HOLD IN BASE MATERIAL OR BASE MATERIAL SPALLS



#### CAUSE

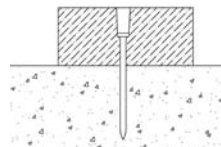
- | High strength concrete
- | Hard or large aggregate in concrete

#### ACTION

- | Use shorter fastener
- | Use PowerPoint pin
- | Use load with a different power level

SYMPTOM

#### FASTENER PENETRATES TOO DEEP



#### CAUSE

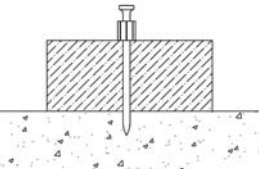
- | Fastener too short for application
- | Tool power level too high

#### ACTION

- | Use longer fastener
- | Use a lighter powder load

SYMPTOM

#### FASTENER DOES NOT PENETRATE DEEP ENOUGH



#### CAUSE

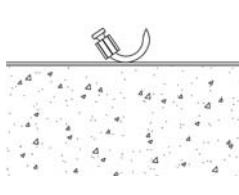
- | Fastener too long
- | Tool power level too low

#### ACTION

- | Use a shorter fastener
- | Use a stronger powder load

SYMPTOM

#### FASTENER BENDS



#### CAUSE

- | Fastener hit large aggregate on entry
- | Concrete too hard
- | Fastener hit rebar just under the surface

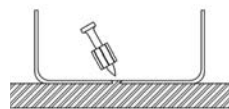
#### ACTION

- | Use shorter fastener
- | Use PowerPoint pin
- | Make sure tool is perpendicular to the work surface
- | Move over 3 inches, try to fasten again

### STEEL

SYMPTOM

#### FASTENER DOES NOT PENETRATE THE SURFACE



#### CAUSE

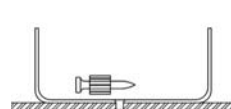
- | Driving power too low
- | Material may be too hard for forced entry fastener

#### ACTION

- | Increase powder load level
- | Use PowerPoint pin

SYMPTOM

#### FASTENER DOES NOT HOLD IN BASE MATERIAL



#### CAUSE

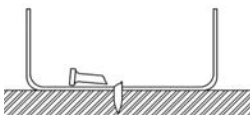
- | Steel base material is too thin

#### ACTION

- | Use gas system tools with smaller Shank pin or Tek pin

SYMPTOM

#### FASTENER BREAKS OR BENDS



#### CAUSE

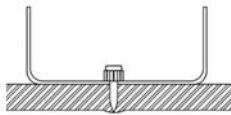
- | Driving power is too low
- | Fastener is too long
- | Material may be too hard for forced entry fastener

#### ACTION

- | Increase powder load level
- | Reduce fastener length

SYMPTOM

#### FASTENER DOES NOT FULLY PENETRATE STEEL



#### CAUSE

- | Driving power too low
- | Steel base material too thick
- | Application limit may have been reached

#### ACTION

- | Increase powder load level
- | Use PowerPoint pin

