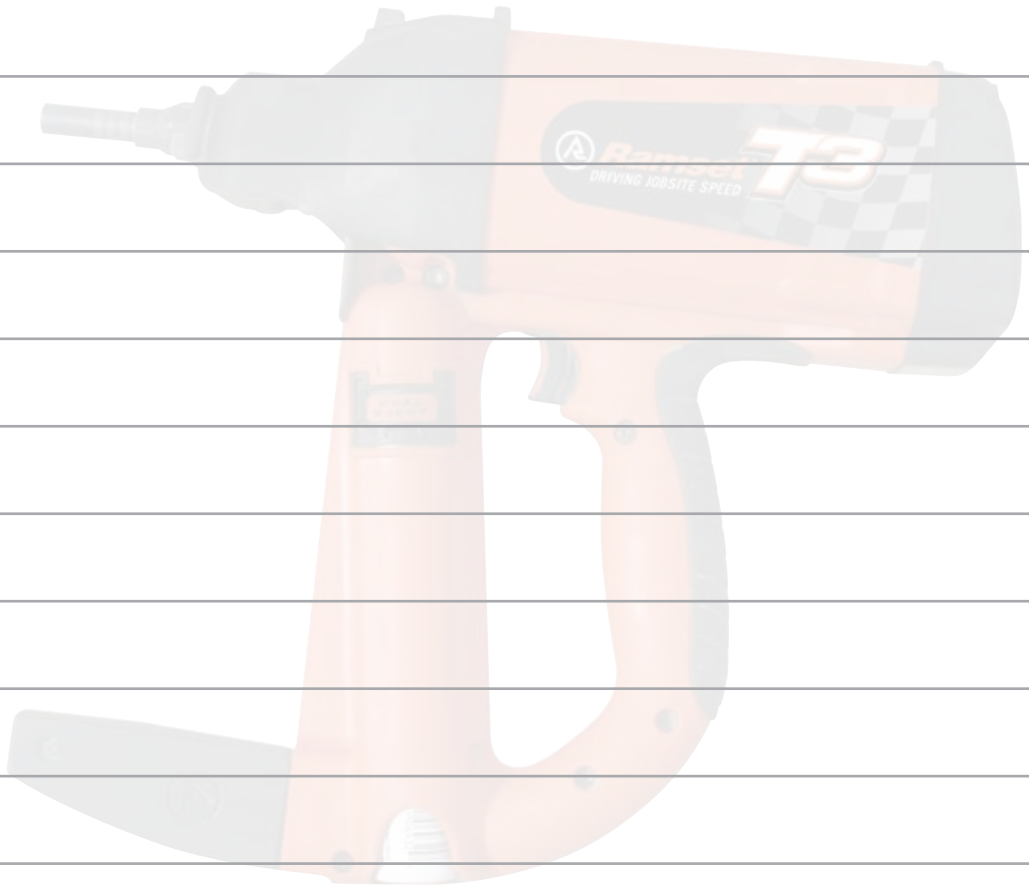

Ramset®
DRIVING JOBSITE SPEED

Notes



Ramset
DRIVING JOBSITE SPEED

TF1200 IMPROVED
RELIABILITY AND DURABILITY

TABLE OF CONTENTS

Ramset
DRIVING JOBSITE SPEED

Tools at a Glance

GAS POWERED TOOLS

	TOOL	DESCRIPTION	TYPICAL BUILDING TRADE
 (see page R 8)	**T3MAG** **45-Pin Magazine** **One Step Fuel Injection** **Cross Over Technology** **2 Year Warranty**	Length: 18-1/2" Height: 15" Weight: 9.2 lbs. Maximum Pin Length: 1"	**WALLS & CEILINGS**
 (see page R 10)	**TF1200** **Fully Automatic** **42-Pin Magazine** **1-1/2" Pin Capacity** **2 Year Warranty**	Length: 17" Height: 15-1/2" Weight: 8.375 lbs. Maximum Pin Length: 1-1/2"	**WATERPROOFING** **WALLS & CEILINGS**
 (see page R 14)	**T3IGT-6** **Automatic Power Adjustment** **Single Pin Gas Tool** **Fuel Injection** **2 Year Warranty**	Length: 14" Height: 18-1/2" Weight: 7.9 lbs. Maximum Installation Thickness: 6"	**WALLS & CEILINGS** **FOUNDATION & WATER PROOFING**
 (see page R 18)	**T3SS** **Single Pin Gas Tool** **Fuel Injection** **Cross Over Technology** **2 Year Warranty**	Length: 13-1/2" Height: 15" Weight: 7.0 lbs. Maximum Pin Length: 1-1/2"	**ELECTRICAL/MECHANICAL**
 (see page R 22)	**GYPFAST** **Fully Automatic** **2 Year Warranty**	Length: 16" Height: 13" Weight: 8.9 lbs. Maximum Pin Length: 2-1/2"	**SHEATING/FLOORING**

	TOOL	DESCRIPTION	TYPICAL BUILDING TRADE
.27 CAL STRIP TOOL	 (see page R 26)	**COBRA+** **Semi-Automatic** **Economical** **1 Year Warranty**	**Part No. COBRA+** Length: 15" Weight: 5.25 lbs. Muzzle Bushing O.D.: 9/16" Maximum Pin Length: 2-1/2" (3" w/Washer)	**WALLS & CEILINGS**
.25 CAL DISC TOOL	 (see page R 27)	**SPIT P370** **Semi-Automatic** **Power Adjustable** **3 Year Warranty**	**Part No. P370** Length: 18" Weight: 6.1 lbs. Muzzle Bushing O.D.: 3/8" Maximum Thickness Insulation: 2-3/4"	**WALLS & CEILINGS** **ELECTRICAL/MECHANICAL**

.22 CAL SINGLE SHOT TOOLS

Hammer Shot

Part No. 45000

Application: Basement renovations
Maximum Pin Length: 2-1/2"
.22 caliber single shot loads: 2, 3, 4

(see page R 28)

Trigger Shot

Part No. 45200

Application: Basement renovations
Maximum Pin Length: 2-1/2"
.22 caliber single shot loads: 2, 3, 4

(see page R 28)

Master Shot

Part No. 45100

Application: Basement renovations applications in concrete and steel
Maximum Pin Length: 2-1/2" (3" w/washer)
.22 caliber single shot loads: 2, 3, 4

(see page R 28)

Ramset®
DRIVING JOBSITE SPEED

Intro to Gas Technology

ITW saw a challenge: how to create a portable tool that delivered the power of pneumatic tools without the hoses and compressors. In 1991, ITW Paslode conquered the challenge with the revolution of gas-powered technology. The cordless Impulse Finish Nailer delivered the power of pneumatic tools without cluttering job sites.

With the thought of Driving Jobsite Speed while creating a safer work environment, ITW Ramset built upon the Paslode technology and in 1992 introduced the TrakFast to the drywall trade. It forever changed the way the world worked. In 2003, ITW Ramset followed up on the success of the TrakFast with the T3SS which is setting the standard for electrical and mechanical contractors.

Drywall

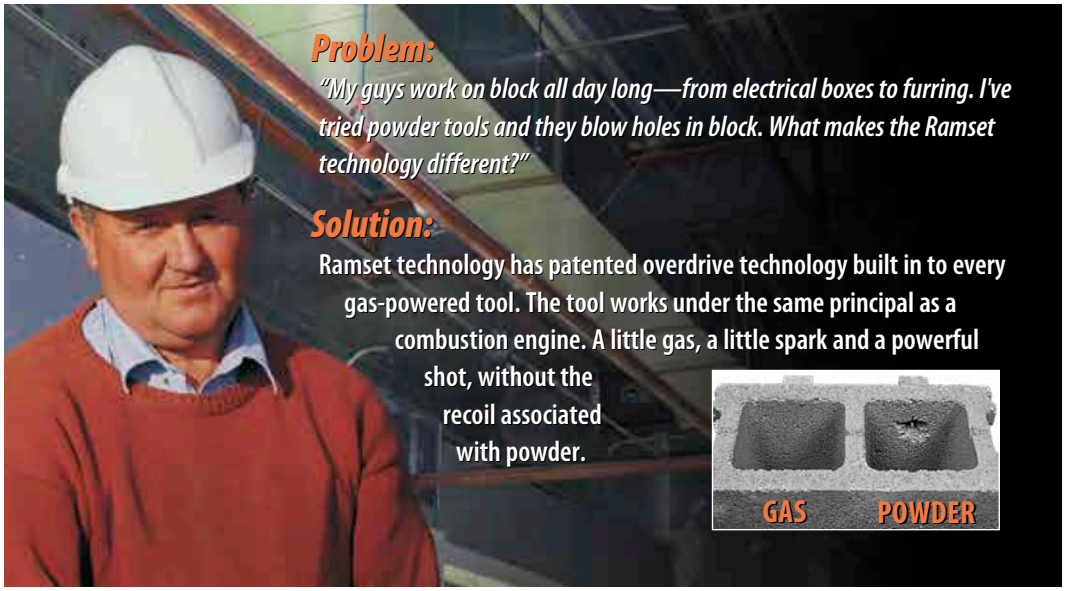
Electrical

Mechanical

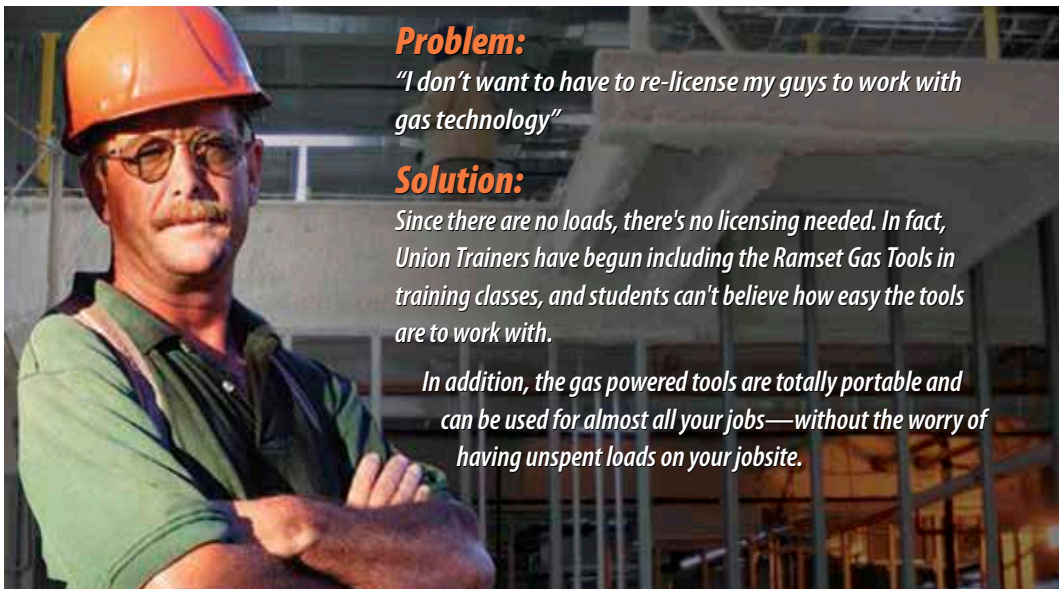
- No Licensing Required
- Fast and Easy to Use
- Quiet—No Recoil
- No Cords or Hoses
- Long Fuel Cell & Battery Life

Gas significantly lowers cost-in-place, reduces stress on the employee, and it's much quieter to use than drilling or powder actuated tools (PATs), so you can work in occupied buildings. There are times when you need the power and accuracy of our PATs—like the speed of our P370 disc tool, or the work horse, nearly maintenance-free Cobra+ single shot PAT. But constant use of these tools can be noisy and overly jarring on the body.

When the conditions are right, gas is the right choice.



The industry transitions to gas technology



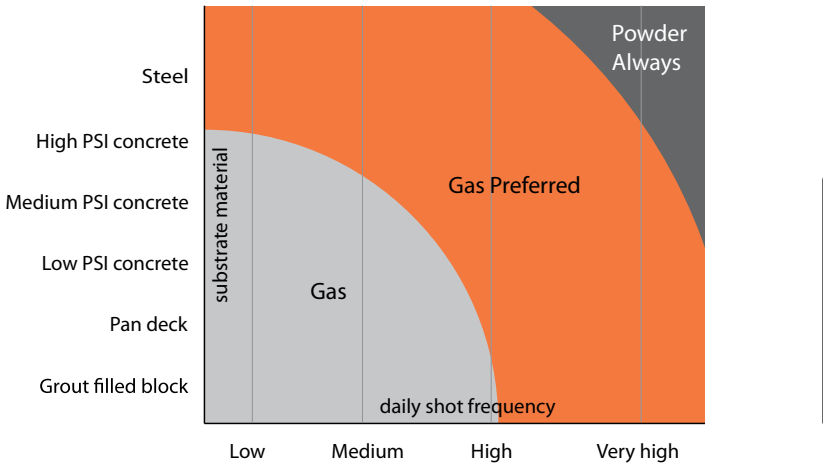
Problem:

"I don't want to have to re-license my guys to work with gas technology"

Solution:

Since there are no loads, there's no licensing needed. In fact, Union Trainers have begun including the Ramset Gas Tools in training classes, and students can't believe how easy the tools are to work with.

In addition, the gas powered tools are totally portable and can be used for almost all your jobs—without the worry of having unspent loads on your jobsite.

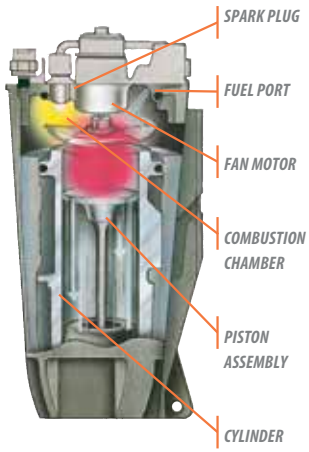


The Inside Story

The patented Ramset technology delivers precisely balanced power eliminating the damage caused by overdrive in PATs.

How it works: As the nosepiece is depressed, a rechargeable battery turns on the fan motor. In less than a second: a precise amount of fuel is injected into the combustion chamber. When the trigger is pulled, a spark creates an explosion that drives the piston into the fastener, and the fastener in the work surface. The action creates a vacuum that pulls the piston back to the start position.

In fact the technology is so precise it won't blow through a pop can.



Ramset
DRIVING JOBSITE SPEED

T3MAG
Gas Powered Tool

Gas Technology

45 Pin Magazine

One Step Fuel Injection

SPECIFICATIONS

Part No. T3MAG

Length: 18-1/2"

Height: 15"

Weight: 9.2 lbs.

Pin Guide O.D.: 590

Fuel cell: 1000 shots

Battery (charged): 3000 shots

DESCRIPTION/SUGGESTED SPECIFICATIONS

Automatic Fastening System—

THE PREMIER FASTENING SYSTEM FOR THE COMMERCIAL DRYWALL CONTRACTOR

The nose of the T3 has been specifically engineered to allow the tool to easily reach into 1-5/8" x 2" deep track at any angle. The newly designed nosepiece, point collation, and patented pin-feed mechanism allows for easy fastening without jamming.

Point Collation virtually eliminates jams.

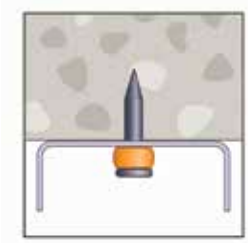
The T3 is ergonomically balanced for less operator fatigue. No more fumbling to get the tool into position with the "grip it & flip it" design.

ADVANTAGES

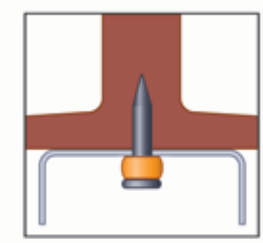
- Higher stick rate (.125 diameter)
- 25% more power
- Easy push down force
- Deep leg track capability
- 45-pin magazine capability
- Newly designed fitted dust shield
- Battery charger provides constant charging even with low voltage drops
- 2 Year Warranty (6 months on wearable parts).

T3MAG Increase Your Range with Overhead Power

The Power of the T3MAG allows you to consistently shoot where no other gas tool has gone before. The .125 diameter pin is specifically engineered to work in the toughest concrete and steel where other pins cannot perform. The new T3MAG system delivers power that rivals other gas and powder systems.



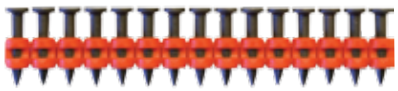
Setting aggregate is the biggest reason for overhead pin failure.



With the T3's 1/2 steel pin you can even shoot into the web of steel.

SELECTION CHART

T3MAG Fuel/Pin Pack



1,000 PINS AND 1 FUEL CELL PER BOX.

PART NUMBER	SHANK LENGTH IN.	(mm)	DESCRIPTION (comes with T3 fuel cell)
T3012S	1/2	(12.7)	1/2" Plated premium steel pin
T3034B	3/4	(19.1)	3/4" Black concrete pin
T3034S*	3/4	(19.1)	3/4" Plated step shank pin
T3100	1	(25.4)	1" Plated concrete pin=

Shank diameter = .125
Head diameter = .250

*Shank diameter = .104 / .125

APPLICATIONS

Perfect for top track and deep leg track applications.

Shoot directly into the web of steel effortlessly.

Even though the T3 has enough power to fasten into hard concrete and steel it still will not blow through hollow block.

Perfect for hat channel applications.

APPROVALS/LISTING

ICC ESR 1955 - Fasteners

COLA RR-22668 - Fasteners

TOOL ACCESSORIES

Part No. T3FUEL
Fuel Cell–T3SS
Qty: 12 (6–2 packs)

Part No. B0092
Battery–T3SS
Qty: 1

Part No. B0237
Magnetic Disc Probe (T3MAG)
Qty: 1

Part No. B0022
Battery Charger–T3SS
Qty: 1

PERFORMANCE TABLE

Gas Fasteners in Steel

PART NUMBER	SHANK DIA. (INCH)	TYPE OF SHANK	INSTALLED IN A36 STRUCTURAL STEEL – STEEL THICKNESS INCHES **ALLOWABLE LOAD** – *Ultimate Load*					
			3/16 (.1875)		1/4 (.250)		3/8 (.375)	
			TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
T3012S	0.125	TAPER SMOOTH	----- -----	----- -----	**237** *1184*	**356** *1782*	**189** *943* [10]	**392** *1960* [7]

Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Cyclic, fatigue, shock loads and other design criteria may require a different safety factor. **Note 5:** Job site testing may be required to determine actual job site values. **Note 6:** Values shown are for fastenings that have the entire pointed end of the fastener driven through the steel plate; except as noted below. **Note 7:** Fastener penetration is .31" minimum. **Note 8:** Fastener penetration is .29" minimum. **Note 9:** Fastener penetration is .27" minimum. **Note 10:** Fastener penetration is .25" minimum. **Note 11:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

Collated Gas Fasteners in Concrete

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE – CONCRETE COMPRESSIVE STRENGTH **ALLOWABLE LOAD** – *Ultimate Load*									
			2000 PSI				3000 PSI				4000 PSI	
			TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)	SHEAR (LBS)
T3 Straight Shank	0.125	5/8	**83** *414*		**109** *611*		----- -----		----- -----		**78** *426*	**80** *574*
		3/4	**107** *541*		**156** *855*		----- -----		----- -----		**104** *593*	**195** *977*
PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE – CONCRETE COMPRESSIVE STRENGTH **ALLOWABLE LOAD** – *Ultimate Load*									
			3000 PSI LIGHT WEIGHT CONCRETE				3000 PSI LIGHT WEIGHT CONCRETE WITH METAL DECK				HOLLOW CONCRETE MASONRY UNITS (CMU) ANY LOCATION	
			TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)	SHEAR (LBS)
T3 Straight Shank	0.125	5/8	**84** *418*		**108** *540*		**72** *361*		**242** *1210*		**20** [9] *243*	**34** *264*
		3/4	**108** *540*		**173** *864*		**93** *470*		**288** *1442*		----- -----	----- -----

Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Values shown in concrete are for the fastener only. Connected members must be investigated separately. **Note 5:** Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor. **Note 6:** Job site testing may be required to determine actual job site values. **Note 7:** Minimum edge distance in concrete is 3 inches unless otherwise approved. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa. **Note 9:** T3 straight shank allowable tension value in face shell of hollow CMU is 133 lbs.

Ramset
DRIVING JOBSITE SPEED

TrakFast
TF1200 Gas Powered Tool

Fully Automatic

1-1/2" Pin Capacity

42 Pin Magazine Capacity

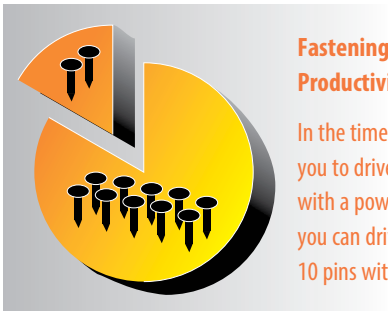
TF1200 IMPROVED RELIABILITY AND DURABILITY

DESCRIPTION/SUGGESTED SPECIFICATIONS

Automatic Fastening System—

THE MOST REVOLUTIONARY FASTENING SYSTEM IN THE CONSTRUCTION INDUSTRY JUST GOT BETTER!

Since its introduction in 1991, TrakFast has been the tool of choice for both interior and exterior contractors. The TrakFast Automatic Fastening System fastens all types of track, from standard track to hat channel, deep leg, Z, and J channel. Contractors continue to report tremendous savings when using TrakFast for high production fastening. They have learned that TrakFast's actual cost in place beats all other systems. The increased speed and productivity of TrakFast allows the contractor to bid more competitively, complete the job sooner and move on to the next job. Anyone can use TrakFast—just load the pins and fire. It's that easy!



Fastening System Productivity

In the time it takes you to drive two pins with a powder tool, you can drive up to 10 pins with TrakFast!

ADVANTAGES

- **SPEED** Three to five times faster than powder tools. 42-pin magazine reduces loading time.
- **EASY TO USE** Tool automatically resets piston. No recoil, tool absorbs shock resulting in less operator fatigue.
- **NO LICENSING REQUIRED** Unlike powder-actuated tools, no licensing is needed.
- **NO CHANGING LOADS** TrakFast uses a fuel cell, not a load. No need to inventory different colored loads.
- **NARROW NOSE AND PROFILE** Allows tool to reach inside deep leg track (1-5/8" wide x 2" high).
- 2 Year Warranty (6 months on wearable parts).

TrakFast's power comes from the battery and fuel cell

The 6-volt rechargeable Ni-CD battery can drive approximately 3000 shots per charge. The clean burning fuel cell can drive over 1000 pins and keeps the tool cleaner than powder actuated tools.

IMPROVED BATTERY SYSTEM

MOST COMMON FASTENERS

PIN #	PIN LENGTH		MOST COMMON APPLICATION
	IN.	MM	
FPPSP916	9/16	14.3	Track to steel
FPP034B	3/4	19.1	Track to concrete
FPP114	1-1/4	31.8	Membering to concrete

See page R 12 for all fasteners.

APPLICATIONS

Waterproofing to concrete

Track to concrete

Track to steel

SPECIFICATIONS

Part No. TF1200

Length: 17"

Height: 15-1/2"

Weight: 8.375 lbs.

Maximum Capacity: 42 pins

Maximum cycles/second: 2

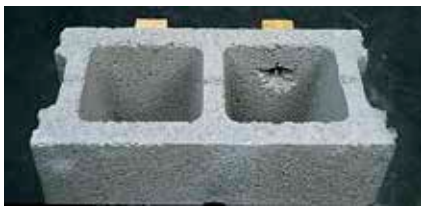
Fuel cell: 1000 shots

Battery (charged): 3000 shots

APPROVALS/LISTING

ICC ESR-2579 - TrakFast Fasteners (Note: This report replaces ER-5001)

COLA RR-25264 - TrakFast Fasteners (City of LA)



TrakFast ICC (ICBO) ER-5001 is the only approval that allows you to fasten into any location on a hollow block wall and won't blow away block like a powder tool.

TOOL ACCESSORIES

Part No. 4821
Fuel Cell–TrakFast

Part No. B0092
Battery–T3SS
Qty: 1

Part No. LD100
Plated 1" Lathing Disc 22g
Qty: 1,000 per box

SLIP-OVER CUP
Part No. 7405161
For Cosella Dorken (DELTA-MS) Plugs
Qty: 1

SLIP-OVER CUP
Part No. 7505161
For Big-0 System Platon Plugs
Qty: 1

Part No. 100041LA
Disc Holding Probe
(for TF1200 Telescoping Nose)
Qty: 1

Part No. B0022
Battery Charger–TF1200
Qty: 1

TRAKFAST GAS TOOL FASTENERS

Ramset collated Gas Tool Fasteners are specifically engineered for optimal performance in Ramset Gas Power Tools using fastener magazines

SELECTION CHART

TrakFast Standard Fuel /Pin Pack

For high volume, repetitive fastenings to concrete and steel such as drywall track to concrete. 1,000 pins and 1 fuel cell per box.

STRAIGHT SHANK

PART NUMBER	SHANK LENGTH IN.	(mm)	DESCRIPTION
FPP034B	3/4	(19.1)	3/4" Black pin
FPP114	1-1/4	(31.8)	1-1/4" Plated pin

Shank diameter = .109 Head diameter = .250

TrakFast Premium Fuel /Pin Pack

For high volume, repetitive fastenings to hard concrete and hard steel such as drywall track to hard concrete and steel. 1,000 pins and 1 fuel cell per box.

STEP SHANK

PART NUMBER	SHANK LENGTH IN.	(mm)	DESCRIPTION
FPPSP916	9/16	(14.3)	9/16" Gold pin

Shank diameter = .104 / .118 Head diameter = .250

Trakfast Breakaway Strip Fuel/Pin

For high volume, repetitive fastenings to concrete such as wood furring to concrete. 1,000 pins and 1 fuel cell per box.

STRAIGHT SHANK

PART NUMBER	SHANK LENGTH IN.	(mm)	DESCRIPTION
FPP112T	1-1/2	(38.1)	1-1/2" Plated pin

Shank diameter = .109 Head diameter = .250

TRAKFAST PERFORMANCE/SUBMITTAL

Ramset fasteners may be specified by their type or catalog number to satisfy fastening requirements.

PIN SPECIFICATIONS

Made from AISI 1060-1065 steel. Austempered to a core hardness of 52-56 Rc
Typical tensile strength: 270,000 psi
Typical shear strength: 162,000 psi
Standard finishes
- Proprietary black
- Mechanical zinc plate to a minimum thickness of .0002 meets requirements of ASTM B695
- Electroplated zinc with yellow chromate

APPROVALS/LISTING

ICC Evaluation Service, Inc.

#ESR-2579 TrakFast Pins

City of Los Angeles

#RR-25264 TrakFast pins

PERFORMANCE TABLES

Collated Gas Fasteners in Concrete

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE – CONCRETE COMPRESSIVE STRENGTH **ALLOWABLE LOAD** – *Ultimate Load*									
			2000 PSI				3000 PSI				4000 PSI	
			TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)	SHEAR (LBS)
FPP - Straight Shank	0.109	5/8	**60**	*434*	**55**	*546*	**55**	*453*	**75**	*615*	**55** *472*	**95** *685*
		3/4	**60**	*595*	**80**	*650*	**55**	*583*	**95**	*699*	**55** *571*	**115** *749*
FPPSP - Step Shank	0.104/0.118	3/4	-----	-----	-----	-----	-----	-----	-----	-----	**51** *256*	**83** *418*

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE – CONCRETE COMPRESSIVE STRENGTH **ALLOWABLE LOAD** – *Ultimate Load*									
			3000 PSI LIGHT WEIGHT CONCRETE				3000 PSI LIGHT WEIGHT CONCRETE WITH METAL DECK				HOLLOW CONCRETE MASONRY UNITS (CMU) ANY LOCATION	
			TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)	SHEAR (LBS)
FPP - Straight Shank	0.109	5/8	**35**	*234*	**55**	*403*	**30**	*239*	**205**	*1025*	**35** *347*	**50** *435*
		3/4	**80**	*630*	**115**	*756*	**40**	*330*	**235**	*1284*	----- -----	----- -----
FPPSP - Step Shank	0.104/0.118	3/4	-----	-----	-----	-----	-----	-----	-----	-----	**36** *184*	**58** *290*

Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Values shown in concrete are for the fastener only. Connected members must be investigated separately. **Note 5:** Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor. **Note 6:** Job site testing may be required to determine actual job site values. **Note 7:** Minimum edge distance in concrete is 3 inches unless otherwise approved. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa.

Gas Fasteners in Steel

PART NUMBER	SHANK DIA. (INCH)	TYPE OF SHANK	INSTALLED IN A36 STRUCTURAL STEEL – STEEL THICKNESS INCHES **ALLOWABLE LOAD** – *Ultimate Load*									
			3/16 (.1875)				1/4 (.250)				3/8 (.375)	
			TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)	SHEAR (LBS)
FPPSP916	0.104/.118	SMOOTH	-----	-----	-----	-----	**148**	*744*	**157**	*787*	**166** *832* [7]	**157** *787* [7]

Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Cyclic, fatigue, shock loads and other design criteria may require a different safety factor. **Note 5:** Job site testing may be required to determine actual job site values. **Note 6:** Values shown are for fastenings that have the entire pointed end of the fastener driven through the steel plate; except as noted below. **Note 7:** Fastener penetration is .31" minimum. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

Ramset
DRIVING JOBSITE SPEED

InsulFast Insulation Fastening System

4x Faster than using Stick Pin Insulation Fasteners

8" Insulation Pin Capacity Automatic Power Adjustment

DESCRIPTION/SUGGESTED SPECIFICATIONS

Insulation Fastening System—

MOST COMMON APPLICATION IS FASTENING INSULATION TO CONCRETE

The T3 ***InsulFast*** System is 4 times faster than the traditional installation method. It allows the installer to attach insulation in one simple step without the use of adhesives or cutting spindle insulation anchors anymore.

ADVANTAGES

- 4 times faster than traditional insulation fastening method saving time and labor costs.
- Fasten the insulation directly to the concrete no need to glue and cut spindle insulation anchors anymore.
- The tool allows you to fasten the insulation in tight spaces through pipes and sprinkler systems.
- The T3FUEL can shoot more than 1000 shots before it needs to be replaced.
- The T3 ***InsulFast*** System allows you to install the insulation directly onto the concrete making you less dependent on the baker scaffold.
- The fastening is consistent and clean looking.

PIN SPECIFICATIONS

CONCRETE PIN SPECIFICATIONS:

- Material: Heat treated carbon steel
- Finish: Mechanical Zinc Plated
- The fastening is consistent and clean looking
- Suitable for fastening to concrete and steel

FASTENER BODY SPECIFICATIONS:

- Material: High Density Polyethylene (HDPE)
- 2-3/8" Holding Diameter
- Textured surface on fastener face for rendering applications
- The fastener assembly is clearly branded Ramset along with the length of the fastener assembly

INSULFAST FASTENERS

FASTENERS FOR STEEL STUDS

PART NUMBER	DESCRIPTION	INSULATION THICKNESS	BOX QTY
IG625S	1" Insulation Fastener w/fuel	1" (25 mm)	500
IG638S	1-1/2" Insulation Fastener w/fuel	1-1/2" (38 mm)	500
IG650S	2" Insulation Fastener w/fuel	2" (50 mm)	500
IG663S	2-1/2" Insulation Fastener w/fuel	2-1/2" (63 mm)	500
IG675S	3" Insulation Fastener w/fuel	3" (75 mm)	500
IG689S	3-1/2" Insulation Fastener w/fuel	3-1/2" (89 mm)	500
IG6100S	4" Insulation Fastener w/fuel	4" (100 mm)	500
IG6125S	5" Insulation Fastener w/fuel	5" (125 mm)	500
IG6150S	6" Insulation Fastener w/fuel	6" (150 mm)	400
IG6178s	7" Insulation Fastener w/ Fuel	7" (175 mm)	250
T3IGT-6	T3 ***InsulFast***™ Tool (6" Capacity)		1

FASTENERS FOR CONCRETE AND CMU

PART NUMBER	DESCRIPTION	INSULATION THICKNESS	BOX QTY
IG625	1" Insulation Fastener w/fuel	1" (25 mm)	500
IG638	1-1/2" Insulation Fastener w/fuel	1-1/2" (38 mm)	500
IG650	2" Insulation Fastener w/fuel	2" (50 mm)	500
IG663	2-1/2" Insulation Fastener w/fuel	2-1/2" (63 mm)	500
IG675	3" Insulation Fastener w/fuel	3" (75 mm)	500
IG689	3-1/2" Insulation Fastener w/fuel	3-1/2" (89 mm)	500
IG6100	4" Insulation Fastener w/fuel	4" (100 mm)	500
IG6114	4-1/2" Insulation Fastener w/fuel	4-1/2" (114 mm)	500
IG6125	5" Insulation Fastener w/fuel	5" (125 mm)	500
IG6150	6" Insulation Fastener w/fuel	6" (150 mm)	400
IG6178	7" Insulation Fastener w/ Fuel	7" (175 mm)	250
IG6200	8" Insulation Fastener w/ Fuel	8" (200 mm)	250
T3IGT-6	T3 ***InsulFast***™ Tool (6" Capacity)		1
T3IGT-8	T3 ***InsulFast***™ Tool (8" Capacity)		1

PERFORMANCE TABLE

CONCRETE

FASTENERS	CONCRETE STRENGTH PSI (Mpa)	ALLOWABLE/ULTIMATE TENSION LOADS Lbs (kN)
IG625 - IG6200	3600-6500 (25-45)	35/211 (0.15/0.94)

HOLLOW CONCRETE BLOCK

FASTENERS	ALLOWABLE/ULTIMATE TENSION LOADS Lbs (kN)
IG625 - IG6200	35/184 (0.15/0.82)

STEEL STUDS

FASTENERS	ALLOWABLE/UILTIMATE PULLOUT LOAD LBS (kN)			
Steel Gauge	22GA	20GA	18GA	16GA
IG625S - IG6200S	20/120 (0.09/0.53)	33/200 (0.15/0.89)	46/280 (0.20/1.25)	60/360 (0.27/1.60)

STRUCTURAL STEEL

FASTENERS	ALLOWABLE/ULTIMATE TENSION LOADS Lbs (kN)
IG625 - IG6200	336/1120 (5.0/1.5)

The ***InsulFast***™ will not spall the hollow block like powder actuated fasteners.

Damaged insulation by wind loads using stick pin fasteners. ***InsulFast***™ fasteners eliminate this problem.

APPROVALS/LISTING

ICC ESR 1955 - Fasteners

COLA RR-22668 - Fasteners (City of LA)

TOOL ACCESSORIES

Part No. T3FUEL
Fuel Cell–T3SS
Qty: 12 (6–2 packs)

Part No. B0092
Battery–T3SS
Qty: 1

Part No. B0022
Battery Charger–T3SS
Qty: 1

T3 InsulFast Insulation Fastening System

FASTEN INSULATION IN ONE STEP

The T3 ***InsulFast***™ System is 4 times faster than the traditional stick pin installation method. It allows the installer to attach insulation in one simple step without the use of adhesives or cutting spindle insulation anchors anymore.

ADVANTAGES

- Saves days over the traditional insulation fastening method saving time and labor costs.
- Fasten the insulation directly to concrete, hollow block, and steel studs. No need to glue and stick pin insulation anchors anymore.
- The fastening is consistent and clean looking.
- The tool allows you to fasten the insulation in tight spaces through pipes and sprinkler systems.
- The T3FUEL can shoot more than 1000 shots before it needs to be replaced.
- The system can be used year round: Unlike stick pins you won't be restricted by cold temperature or wet surfaces
- Lower operator fatigue
- Thermal bridging: 99.5% efficiency
- 1"-8" insulation pin capacity
- Automatic power adjustment

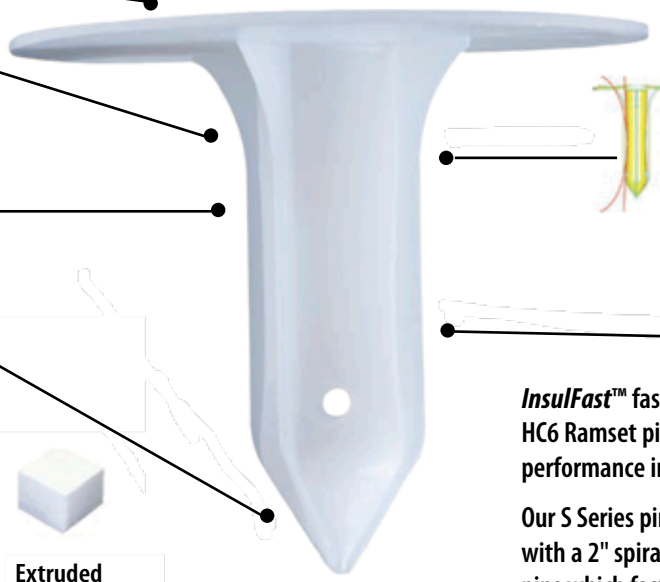
INSULFAST™ FASTENERS

INTEGRATED CAP
For improved thermal efficiency and esthetics

FLANGES to ensure the insulation remains perfectly in place, the insulation panel won't flip around during the fastening process

SPECIALLY SHAPED SHAFT – Reduces friction and force required to insert fastener into insulation

POINT designed to pierce most difficult insulation material with little effort



Fasten provides 211 lbs. of ultimate tension capacity

Engineered curved design limits insulation compression which enables full thermal efficiency


Rockwool / Fiberglass


Expanded Polystyrene

Extruded Polystyrene

InsulFast™ fasteners are equipped with the HC6 Ramset pin which provides exceptional performance in the hardest concrete

Our S Series pin is equipped with a 2" spiral steel stud pins which fastens insulation through exterior gypsum sheathing to exterior steel studs in one simple action.

APPLICATIONS

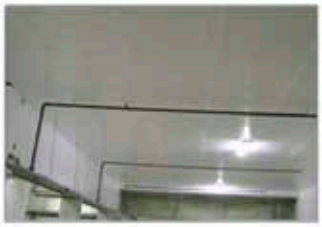
MOST COMMON APPLICATION IS FASTENING INSULATION TO CONCRETE, HOLLOW BLOCK, AND STEEL STUDS


Exterior walls – Insulation to concrete


Exterior walls – Insulations to steel stud


Foundation walls


Parking garages


Parking garages


Ceiling acoustical insulation


Tunnel insulation


Balcony insulation


Block walls

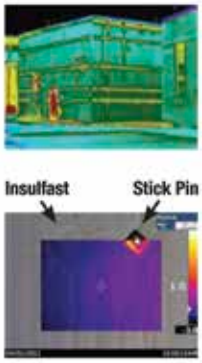

Heated floors

THERMO BRIDGING

Thermal Performance of Building Envelope Assemblies

In buildings, when insulating material is interrupted by a highly conductive material, thermal bridging takes place. Examples of thermal bridges include steel pins that interrupt the continuity of batt insulation and go through heavily insulated exterior walls. Simply put, thermal bridges occur where differences in material thermal conductivities result in significant lateral heat flow; e.g., heat flowing along the surface of a wall and then flowing through the wall via a steel pins.

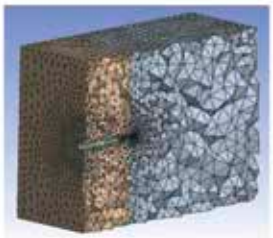
The infrared image to the right shows heat loss (i.e. yellow/red areas) through fasteners. The infrared camera doesn't reveal any heating transfer for the InsulFast™ (at -3˚C) rather it highlights a high thermal bridging for the steel pin with a 21˚C temperature.

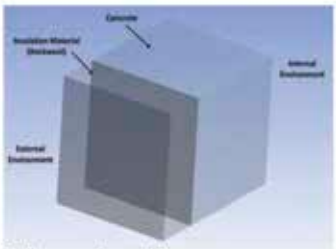


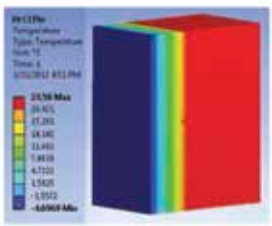
The Calculations performed by the Advanced Thermal/Fluids Optimization, Modelling and Simulation (ATOMS) Laboratory, Department of Mechanical & Industrial Engineering, University of Toronto show that the InsulFast™ is over 99% efficient whereas the stick pins can downgrade the efficiency by more than 10%.

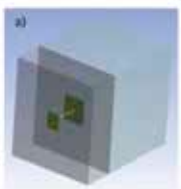
Suggested Specification

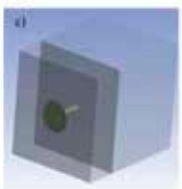
The fastener used to attach Insulation (Rockwool, Expanded Polystyrene, and Extruded Polystyrene) in to Solid Masonry, Hollow Concrete Block, and Steel Studs shall be Ramset InsulFast™ Fastener. The Ramset InsulFast™ Fastener shall be fastened using the Ramset T3IGT Gas Tool. The Ramset InsulFast™ Fastener must be made from High Density Polyethylene (HDPE) plastic and has a holding diameter of 2-3/8" (60 mm) with the Ramset logo marking.











		Insulation Thickness					
		1 in	**2 in**	**3 in**	**4 in**	**5 in**	**6 in**
Reference	U – Factor (W/m2 °C)	1.1786	0.7122	0.5103	0.3976	0.3257	0.2758
	Efficiency (%)	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Stick Pin	U – Factor (W/m2 °C)	1.2422	0.7706	0.5597	0.4397	0.3621	0.3078
	Efficiency (%)	**94.88%**	**92.42%**	**91.17%**	**90.43%**	**89.94%**	**89.59%**
InsulFast™	U – Factor (W/m2 °C)	1.1845	0.7162	0.5132	0.3999	0.3276	0.2773
	Efficiency (%)	**99.50%**	**99.45%**	**99.44%**	**99.43%**	**99.42%**	**99.42%**

These thermal bridges contribute to a multitude of problems, including, but not limited to:

- added energy use during heating and cooling seasons
- interior surface condensation which leads to:
  - high humidity levels that can lead to unusual concentrations of airborne contaminants and microbial growth
  - rusting issues that can damage the structure

Over used stick pin installation. This increases the thermal bridge and reduces thermal efficiency.

Ramset
DRIVING JOBSITE SPEED

T3 Single Shot Gas Powered Tool

Gas Technology

Single Pin Gas Tool

Fuel Injection

Cross Over Technology

DESCRIPTION/SUGGESTED SPECIFICATIONS

Crossing Over from Powder to Gas—

THE PREMIER FASTENING SYSTEM FOR THE ELECTRICAL CONTRACTOR

Ramset is serious when it comes to driving job speed by creating the T3SS—the single shot tool that will help move/contractors from powder to gas.

Easy battery loading.

Battery rest position allows you to turn off the tool without fully removing the battery.

The T3SS provides the benefits of shooting a gas tool, including reduced installation time and operator fatigue for the contractor who normally shoots a muzzle loaded powder tool.

To make the T3SS the most versatile gas tool in the industry, Ramset uses the newly developed Cross Over technology that allows users to change out nosepieces to accommodate any fastening need. From metal-to-concrete, hard concrete or steel, pan deck, block and just about surface you can think of the T3SS works for you.

ADVANTAGES

- Sets the standard for single shot applications
- 5 times faster than traditional drill and anchor methods
- Replaces the need for tools like the DX35
- Reduced operator fatigue
- Reduced installation costs—up to 75%
- Quiet enough to work in tenant occupied buildings
- Removable rear foot
- 2 Year Warranty (6 months on wearable parts).

Versatile! Safe! Fast! Quiet!

Safety Managers recommend the T3 because there's no licensing required.

- Lower Recoil Reduces Operator Fatigue
- Quieter than Drilling & Anchoring or Powder
- Eliminates Exposure to Concrete Dust (Silicosis)

No more fines for unspent loads on the jobsite.

MOST COMMON FASTENERS

PIN #	MOST COMMON APPLICATION
12HSMP034	1/2" One hole strap with 3/4" pin
MP034TH	3/4" Plated pin with top hat

See pages R 20 for all fasteners.

APPLICATIONS

12HSMP034 clip assembly used to secure conduit

MP034TH fastener used to attach a junction box

APPROVALS/LISTING

ICC ESR-1799 - Fasteners

COLA RR-22668 - Fasteners

TOOL ACCESSORIES

Part No. T3FUEL
Fuel Cell–T3SS
Qty: 12 (6–2 packs)

Part No. B0092
Battery–T3SS
Qty: 1

Part No. M150200
Magnetic nose Piece
Qty: 1

Part No. B0022
Battery Charger–T3SS
Qty: 1

SPECIFICATIONS

Part No. T3SS

Length: 13-1/2"

Height: 15"

Weight: 7.0 lbs.

Pin Guide O.D.: 1/2" Standard, 7/8" Magnetic

Maximum Pin Length: 1-1/2"

Fuel cell: 1000 shots

Battery (charged): 3000 shots

T3SS GAS TOOL FASTENERS

The pre-assembled fasteners are designed for use in Ramset single shot gas tools.

SELECTION CHART

One Hole Strap

Used to attach conduit or armored cable to concrete. Fastener pre-assembled to a 16 gage conduit strap. 100 per jar, 3/8" 200 per jar and 1-1/4" 25 per jar.

PART NUMBER	SHANK DIAMETER	HEAD DIAMETER	DESCRIPTION
38HSMP034	.104/.125	.300	3/8" Hole strap with 3/4" plated pin
12HSMP034	.104/.125	.300	1/2" Hole strap with 3/4" plated pin
34HSMP034	.104/.125	.300	3/4" Hole strap with 3/4" plated pin

Ceiling Clip Assembly

Pre-assembled Ceiling Clip. Plated 14 gage clip. 100 per jar.

PART NUMBER	SHANK DIAMETER	HEAD DIAMETER	DESCRIPTION
34CLIP	.104/.125	.300	3/4" Ceiling Clip Assembly

Tie Strap Holder

Used to install temporary lighting and secure low voltage cable to concrete, uses a standard cable tie up to 3/8" in width. Fastener pre-assembled to an 22 gage tie strap holder. 50 per jar.

PART NUMBER	SHANK DIAMETER	HEAD DIAMETER	DESCRIPTION
TSHMP034	.104/.125	.300	Tie strap holder with 3/4" plated pin

Top Hat Pin

Used for general purpose fastening to concrete. Plated pin with top hat. 200 per jar.

PART NUMBER	SHANK DIAMETER	HEAD DIAMETER	DESCRIPTION
MP034TH	.125	.300	3/4" Plated pin with top hap

T3SS PERFORMANCE/SUBMITTAL

Ramset fasteners may be specified by their type or catalog number to satisfy fastening requirements.

PIN SPECIFICATIONS

Made from AISI 1060-1065 steel. Austempered to a core hardness of 52-56 Rc
Typical tensile strength: 270,000 psi
Typical shear strength: 162,000 psi
Standard finish
- Proprietary black
- Mechanical zinc plate to a minimum thickness of .0002 meets requirements of ASTM B695
- Electroplated zinc with yellow chromate

APPROVALS/LISTING

ICC Evaluation Service, Inc.

#ESR-1955 T3 Fasteners

Fasteners in Concrete

	FASTENER PART NUMBER	SHANK DIA. (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE CONCRETE COMPRESSIVE STRENGTH **ALLOWABLE LOAD** – *Ultimate Load*						HOLLOW BLOCK Grade N, Type 1	
				4000 PSI		6000 PSI		3000 PSI Lightweight LOWER FLUTE		FACE SHELL Min 1-1/4" face thickness	
				TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
GAS ASSEMBLIES	MP034TH*	0.125	5/8	**78** *426*	**80** *574*	**62** *308*	---- ----	**72** *361*	**242** *1210*	**133** *691*	---- ----
			3/4	**104** *593*	**195** *977*	**132** *658*	**206** *1057*	**93** *470*	**288** *1442*	**84** *444*	**87** *446*
	34CLIP	0.104/ .125	5/8	**62** *310*	---- ----	**106** *528*	---- ----	**44** *220*	---- ----	---- ----	---- ----
	38HSMP034, 12HSMP034 34HSMP034, TSHMP034	0.104/ .125	5/8	**60** *357*	**117** *587*	**107** *533*	**191** *957*	**54** *269*	**230** *1150*	**71** *357*	**123** *613*

***** ESR-1955 pin data applies. **Note 1: ALLOWABLE** loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190 **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Values shown in concrete are for fastener only. Connected members must be investigated separately. **Note 5:** Cyclic, fatigue, shock loads and other design criteria may require a different safety factor. **Note 6:** Job-site testing may be required to determine actual job site values. **Note 7:** Minimum edge distance is 3 inches unless otherwise approved. In hollow block applications, no more than one fastener per cell. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa.

Ramset
DRIVING JOBSITE SPEED

GypFast
Gas Powered Tool

Fully Automatic Cordless Gas Fastening System

GYPFAST

DESCRIPTION/SUGGESTED SPECIFICATIONS

Automatic Fastening System—

FULLY AUTOMATIC CORDLESS GAS FASTENING SYSTEM FOR ATTACHING EXTERIOR SHEATHING TO LIGHT GAUGE STEEL FRAMING

ADVANTAGES

- Fully automatic system with 150 nail capacity is 3-5 times faster than screws.
- Fast set-up and tear down... insert battery, fuel cell and nail coil.
- Easy to use... self-contained power source eliminates need for extension cord, hoses and compressors.
- Aggressive, patented nail shank design provides high pullout performance.
- Contoured bugle head style provides high pullover (wind) resistance.
- Long life Climacoat™ finish is 10 times more corrosion resistant than electro-zinc plating.

Corrosion Resistance:

Climacoat Long Life Polymer

- Salt Spray Results (ASTM B117)
  Driven: 1560 hours, 10% or less red rust
  UnDriven: 3240 hours, 10% or less red rust

SELECTION CHART

GypFast Gas Tool and Nails

PART NUMBER	FASTENER DESCRIPTION .140 DIA. KNURLED SHANK 5/16" DIA. BUGLE HEAD	MASTER CARTON QUANTITY	APPLICATIONS
GF112	1-1/2 (38 mm)	6,000 nails/ctn (40 - 150 ct. coils) 6 fuel cells	Single Layer of Exterior Sheathing, Wood Furring and Blocking
GF200	2 (51 mm)	4,800 nails/ctn (32 - 150 ct. coils) 5 fuel cells	Double Layer of Exterior Gypsum Sheathing, Wood Furring and Blocking
GYPFAST	GypFa st Cordless Coil Nailer 7.5 with Battery (1) Tool; (1) Safety Goggles; (1) Operators Manual; (2) Batteries		

APPLICATIONS

Exterior Gypsum sheathing to steel framing

Plywood and OSB sheathing/flooring

Fiber cement panel attachment

Blocking

Exterior walls

Windows/door bucks

Specialty exterior sheathing attachment

Woven wire mesh or expanded metal lath to steel framing

OSB and plywood to iSPAN joists

SPECIFICATIONS

Part No. GYPFAST

Length: 16"

Height: 13"

Weight: 8.9 lbs. (9.7 with nails)

Nails:

Lengths: 1", 1-1/2", 2" and 2-1/2"

Diameter: .140" Nominal

Head Style: 5/16" dia. bugle head

Finish: Climacoat Long Life Polymer

Fuel Cell: Liquid Hydrocarbon (1 cell/1,000 nails)

APPROVALS/LISTING

ICBO ER 5380 (Plywood diaphragm)

ICBO ER 6070 (Gypsum sheathing)

3rd Party Independent Testing

- Nail Withdrawl/Tensile Tests - Hardiplank® Report #3051160
- Withdrawl Test - Report #3014672
- Negative Wind Load Test - Report #J20044629-231-02

Georgia Pacific Recognition Letter

UL Fire Resistance Ratings

- ANSI/UL 263
- BX UV.V458

TOOL ACCESSORIES

Part No. TFUEL
Fuel Cell

Part No. B0092
Battery
Qty: 1

Part No. LD100
Plated 1" Lathing Disc 22g
Qty: 1,000 per box

Part No. 100342
Lath Disc Magnetic Nose Piece
Qty: 1

Part No. B0022
Battery Charger
Qty: 1

PERFORMANCE TABLE

ASTM E330 Negative Wind Load Results

FASTENER	BOARD TYPE	ORIENTATION	GAUGE	STUD SPACING	STUD/ FASTENER
GypFast	5/8" Dens-Glass® Gold	Vertical	18	24"/8"	70.9
GypFast	5/8" Exterior Gypsum	Vertical	18	24"/8"	63.5

Fastener Comparison/ Performance

FASTENER	PULLOUT STEEL GAUGE				AVG. LBS. ULTIMATE TENSILE	AVG. LBS. ULTIMATE SHEAR
	20 (.036)	18 (.048)	16 (.060)	14 (.075)		
GypFast	285	393	574	659	2,041	1,385
S-12 self-drilling screws	194	327	437	930	750	1,430

Values are in average, ultimate pounds.

Ramset
DRIVING JOBSITE SPEED

Intro to Powder Fastening Systems

Over a half century of leadership in powder actuated tools and fasteners

The first powder actuated tools (PATs) were used for repairing damaged ship hulls during World War I. This application continued through World War II, when the son of the original inventor, Stanley Temple, developed and implemented the technology for commercial use. In 1947, the "Tempotool" was introduced to the construction industry.

Ramset Fasteners was founded in 1948 to handle distribution and sales for the construction trades. In 1949, Ramset's accredited Operator Program was officially launched. Today this highly successful training program has instructed over 1,000,000 trades people in the safe use of PATs.

Today, Ramset continues to bring the industry the products, service and innovation that they have come to expect from the leader in powder fastening. All geared to help contractors do their job faster, more safely and more productively.

Ramset
DRIVING JOBSITE SPEED

Training and Certification

DESCRIPTION

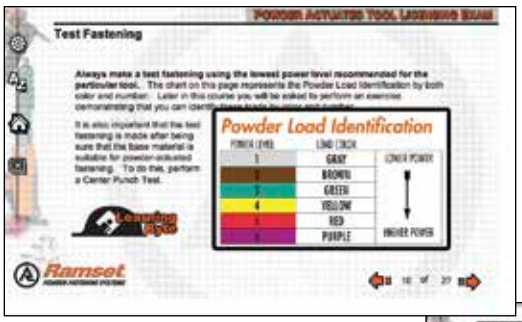
Ramset has designed and engineered the right powder actuated tool for your applications. To ensure you use a powder actuated tool correctly, please take the time to review the Operator's Safety and Operating Instruction Manual packaged with each tool. These manuals are also available for download on the Ramset website.

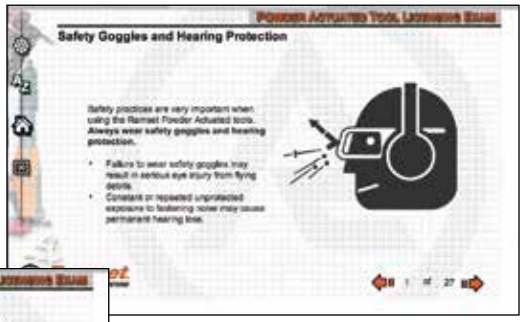
To assure safety on the jobsite, OSHA and ANSI require that all powder actuated tool users become trained and certified for the particular tool being used. One way Ramset enables you to receive this training is through our website training program. This innovative approach to education combines interactive web-based training techniques and online testing with immediate feedback to provide you a rich learning environment.

The course consists of approximately 30 pages of usage, safety and troubleshooting material.

Upon completion of this brief course you will have the opportunity to take an online exam. Instructions for taking these exams are provided at the end of the course. With successful completion of the exam, you have the opportunity to print a certification card.

As an industry leader in powder actuated fastening systems, Ramset continues to provide the most effective and comprehensive instructor and operator training programs available.



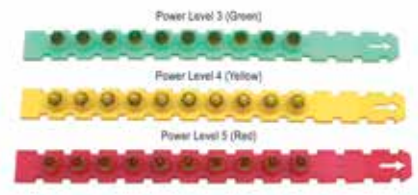


Visit ramset.ca for online PAT licensing

Ramset
DRIVING JOBSITE SPEED

Cobra+

.27 Caliber Strip Tool
Semi-Automatic
2-1/2" Pin Capacity
(3" w/washer)



DESCRIPTION/SUGGESTED SPECIFICATIONS

Semi-Automatic Strip Tool—

MOST COMMON APPLICATION DRYWALL TRACK TO CONCRETE!

The Cobra+ can be used in different applications, a few are electrical junction boxes to steel or concrete, door and window frames to concrete, HVAC duct straps and forming work.

ADVANTAGES

- Semi-automatic .27-caliber tool —uses strip loads
- Padded recoil-absorbing handle—for greater operator comfort
- Power adjustable for maximum efficiency
- Silencer that reduces noises by 30%
- Ergonomic handle maximizes user comfort
- Fastens up to 3" standard Ramset drive pins and threaded studs—ideal for general construction applications
- Full one-year warranty

MOST COMMON FASTENERS

PIN #	PIN LENGTH		MOST COMMON APPLICATION
	IN.	MM	
1524SDP (washered)	3	76.2	2" x 4" to concrete
1516SDC (washered)	2-1/2	63.5	2" x 4" to concrete
1506	3/4	19.1	Drywall track to concrete

See pages R 33 - R 34 for all fasteners.

SPECIFICATIONS

Part No. COBRA+

.27 caliber 10-shot strip loads 2, 3, 4, 5

Weight: 5.25 pounds

Length: 15"

Muzzle Bushing O.D.: 9/16"

Maximum Pin Length: 3"

POWER LEVEL GUIDE FOR LOADS

All loads are color coded and load level numbered. As the number increases, the power level increases.

Always start with the lightest load. If the fastener does not set completely, use the next higher load and repeat the process.

3 ....Green
4 ....Yellow
5 ....Red

Least Powerful
Most Powerful

Ramset
DRIVING JOBSITE SPEED

SPITFIRE P370

.25 Caliber Disc Tool
Semi-Automatic
Power Adjustable
2-3/4" Pin Capacity

DESCRIPTION/SUGGESTED SPECIFICATIONS

Semi-Automatic Disc Tool—

MOST COMMON APPLICATION IS INSULATION TO CONCRETE

The P370 has a quick power adjustment giving different levels of power with only one load level. The disc load eliminates 10% to 20% waste compared to strip loads. The load advances only after firing.

ADVANTAGES

- Quick power adjustment—gives eight levels of power with only one load level for a variety of applications
- Rugged polyamide housing—reduces heat transfer and maximizes operator comfort
- Soft, recoil-absorbing handle—for increased operator comfort
- Ramset Disc Technology—loads only advance after firing—eliminates 10-20% of load waste
- 3 Year Warranty

MOST COMMON FASTENERS

PIN #	DESCRIPTION		MOST COMMON APPLICATION
	IN.	MM	
1508	1	25.4	Sheet metal to concrete

See pages R 33 - R 34 for all fasteners.

APPLICATIONS

The disc load tool eliminates 10% to 20% waste. The load advances only after firing

Track Installation

Brick Tie, Formstop, Waterproofing

Ceiling clip for hanging with wires

Permanent attachment with pin of boxes, conduit, strut, panels

SPECIFICATIONS

Part No. P370

.25 caliber 10-shot strip loads 2, 3, 4

Weight: 5.9 pounds

Length: 17-3/4"

Maximum Pin Length: 2-3/4"

POWER LEVEL GUIDE FOR LOADS

All loads are color coded and load level numbered. As the number increases, the power level increases.

Always start with the lightest load. If the fastener does not set completely, use the next higher load and repeat the process.

3 ....Green

4 ....Yellow

5 ....Red

Least Powerful

Most Powerful

Ramset
DRIVING JOBSITE SPEED

.22 Cal Single Shot Tools

Hammer Shot 22 Cal

DESCRIPTION/SUGGESTED SPECIFICATIONS

Single Shot - Hammer Activation Tool—

The Ramset Hammer Shot .22 Caliber Single Shot Tool is a hammer-actuated tool utilizing .22 caliber loads. This tool is great for small DIY projects. The Hammer Shot can easily fasten up to 2-1/2 in. drive pins.

ADVANTAGES

- For small DIY projects, such as fastening two by fours and furring strips to concrete in basements or room additions
- Hammer-actuated tool with a barrel design that allows for easy horizontal and overhead fastening, up to 2-1/2 in. drive pins

SPECIFICATIONS

Part No. 45000

.22 caliber single shot loads 2,3,4

Actuated Tool Type: Load/Booster

TriggerShot 22 Cal

DESCRIPTION/SUGGESTED SPECIFICATIONS

Single Shot - Trigger Activation —

For small DIY projects, such as fastening two by fours and furring strips to concrete in basements or room additions.

ADVANTAGES

- Trigger Actuated, No Hammer Required!
- For fastening to concrete, masonry or steel

SPECIFICATIONS

Part No. 45200

.22 caliber single shot loads 2,3,4

Weight: 3.7 pounds

Maximum Pin Length: 2-1/2" (3" w/washer)

Master Shot 22 Cal

DESCRIPTION/SUGGESTED SPECIFICATIONS

Single Shot Tool - Sound Suppression Technology

CAN FASTEN UP TO 3 INCH DRIVE PINS WITH WASHER

Designed for frequent use providing fastening results in a variety of concrete, masonry or steel applications.

- Noise-reducing design up to 30% quieter
- Powder load automatically ejects after each use.

ADVANTAGES

- For light and medium duty applications in concrete and steel
- Ideal for attaching 2 x 4s, furring strips and electrical boxes
- 90 Day Warranty
- Heavy-duty all-steel construction

SPECIFICATIONS

Part No. 45100

.22 caliber single shot loads 2,3,4

Weight: 4.1 pounds

Maximum Pin Length: 2-1/2" (3" w/washer)

FASTENERS – HOW THEY WORK

DESCRIPTION

FASTENING TO CONCRETE

As the fastener enters the concrete, extreme pressures and heat are 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

1. **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.
2. **Recommended minimum fastener spacing.** Setting fasteners too close together can cause the concrete to crack. The recommended MINIMUM DISTANCE between fastening is three (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.
3. **Concrete thickness.** It is important that the concrete be at least three (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

1. **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.
2. **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.
3. **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.

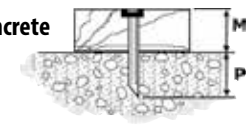
HOW TO SELECT A POWDER ACTUATED FASTENER

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 type or catalog number to satisfy fastening requirements.

Permanent Installation

To Concrete



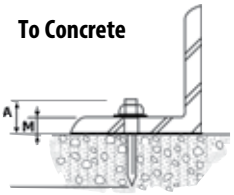
Minimum Shank Length = Thickness of Material (M) + Required Penetration (P)

To Steel

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

Removable Installation

To Concrete

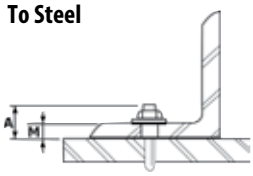


Thread Length (A) = Thickness of Material (M) + Allowance* For Nut & Washer

Shank Length = 1"

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

To Steel

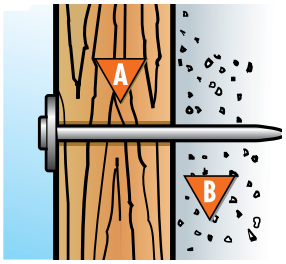


Thread Length (A) = Thickness of Material (M) + Allowance* For Nut & Washer

Shank Length = 1/2"

Fasteners – How They Work

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 assure 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.

POWER LEVEL GUIDE FOR LOADS

All loads are color coded and load level numbered. As the number increases, the power level increases.

Always start with the lightest load. If the fastener does not set completely, use the next higher load and repeat the process.

3 ....Green

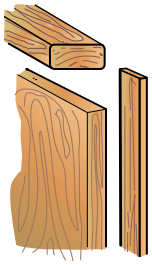
4 ....Yellow

5 ....Red

Least Powerful

Most Powerful

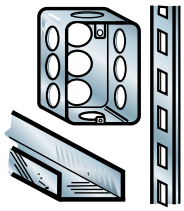
TYPICAL USES



WOOD ATTACHMENT*	CONCRETE BASE MATERIAL			STRUCTURAL STEEL BASE MATERIAL		
	COMMONLY USED FASTENER		COMMONLY USED LOAD	COMMONLY USED FASTENER		COMMONLY USED LOAD
2 X 4	1516	(2-1/2")	YELLOW #4	1514 SD SP178	(2") (1-7/8")	RED #5 RED #5
3/4" Plywood for furring strip	1512	(1-1/2")	GREEN #3	1510	(1-1/4")	YELLOW #4
1/4" – 1/2" Plywood	1512	(1-1/2")	GREEN #3	1506	(3/4")	YELLOW #4

*** USE RAMGUARD PIN FOR TREATED LUMBER. SEE PAGE 32.**

THIN GAGE STEEL



Electrical Junction Boxes	1508	(1")	GREEN #3	SP58TH	(5/8")	YELLOW #4
Shelf Brackets	1508	(1")	GREEN #3	1506	(3/4")	YELLOW #4
Interior Drywall Track	1506	(3/4")	BROWN #2	1503K	(1/2")	YELLOW #4
Perimeter Track	1510	(1-1/4")	YELLOW #4	1503K	(1/2")	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.

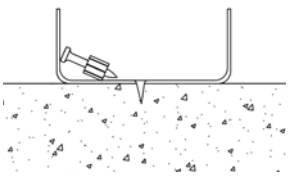
Ramset
DRIVING JOBSITE SPEED

Troubleshooting

CONCRETE

SYMPTOM

FASTENER DOES NOT HOLD IN BASE MATERIAL OR BASE MATERIAL SPALLS



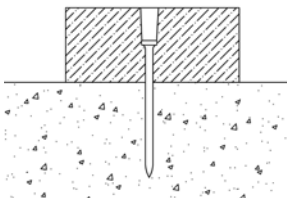
CAUSE

- High strength concrete
- Hard or large aggregate in concrete

ACTION

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

FASTENER PENETRATES TOO DEEP



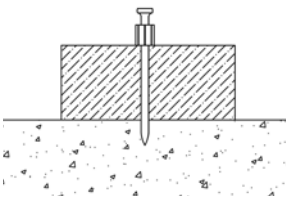
CAUSE

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

ACTION

- Use longer fastener
- Use a lighter powder load

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

FASTENER BENDS

CAUSE

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

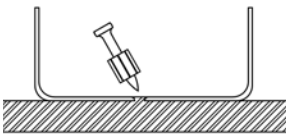
ACTION

- 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



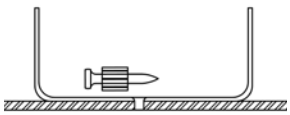
CAUSE

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

ACTION

- Increase powder load level
- Use PowerPoint pin

FASTENER DOES NOT HOLD IN BASE MATERIAL



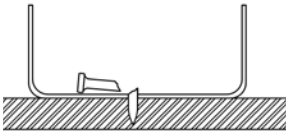
CAUSE

- Steel base material is too thin

ACTION

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

FASTENER BREAKS OR BENDS



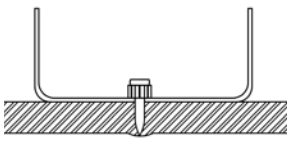
CAUSE

- 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

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

Ramset
DRIVING JOBSITE SPEED

Problem Solving Pins

PowerPoint Pins for Hard Concrete & Steel Fastening

DESCRIPTION/SUGGESTED SPECIFICATIONS

Use Ramset's exclusive PowerPoint pins for your advanced fastening applications. They provide easier penetration into hard steel and concrete. That means reduced pin failures and increased holding values to make your jobs more productive.

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. According to the steel industry's accepted Rockwell Hardness Scale (Rb), steel strength can vary from a relatively soft 54 Rb to an extremely hard 88 Rb or higher. Standard pins typically begin to fail in the upper 70s Rb. Tests, however, have proven that PowerPoint consistently performs, even as steel approaches 90 Rb!

AVERAGE IN PLACE FASTENER COSTS

$0.92 PowerPoint

$2.10 Drill & Tap

Notice in the photographs below how typical manufacturing processes can cause inconsistency in a pin's finish, increasing its likelihood of failure. And see the difference with Ramset's process! Which pin would you want to use?

Ramset's unique manufacturing process 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 pin

SELECTION CHART

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
3/4" Plywood	SP114	SP114	SP114	SP114	SP114
2' x 4' Plate	SP178	SP178	SP178	SP178	SP178
10 Ga. to 12 Ga.		SP34	SP34		
13 Ga. to 17 Ga.	SP12		SP34	SP34	
18 Ga. to 25 Ga.	SP12		SP34	SP34	

See page R 34 for fastener selection.

Ramguard™ Drive Pins for ACQ Pressure Treated Lumber!

As many of you know, there have been changes to the regulations affecting pressure treated lumber. The industry standard CCA treated wood is no longer being produced for residential use. Most new pressure treated wood is utilizing Alkaline Copper Quaternary (ACQ) treatment. It has been confirmed that ACQ corrodes steel 2 to 4 times faster than the old CCA treated lumber. This means that our standard drive pins are not recommended for use in ACQ treated lumber.

Ramset has developed a coating called Ramguard™ for use in all pressure treated wood including the new ACQ treated wood. The Ramguard coating offers excellent corrosion resistance that rivals hot dipped galvanized and stainless steel. Washered versions of these pins utilize a Ramguard coated pin and a washer with a G185 coating. This combination was developed to withstand the increased corrosion rate that sometimes occurs when using fasteners in the new treated lumber.

Ramset
DRIVING JOBSITE SPEED

POWDER FASTENERS

DESCRIPTION

We maintain only the highest standards in the materials, production techniques and quality control measures used to manufacture our fasteners, assuring consistent, optimum quality in every fastener.

ADVANTAGES

BLACK PINS

The special black coating improves pin penetration into difficult base material (i.e. hard concrete). We offer this black coating on all of our fasteners manufactured for the attachment of drywall track and channel to concrete and steel.

PINS

ITW Ramset powder actuated fasteners are specifically fabricated to meet the exacting requirements of toughness and durability that enable them to penetrate dense concrete and structural quality steel.

FASTENER TERMINOLOGY SUFFIX

K = Knurled
B = Black
E = Ramguard
X = Collated
SD = Washer
C = 100 count
M = 1000 count

Plated Drive Pins

Designed for use in concrete and structural steel applications. 100 per box.

PART NUMBER	SHANK LENGTH IN. (MM)	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
1503K	1/2 Knurled (12.7)	50	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1506	3/4 (19.1)	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1508	1 (25.4)	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1510	1-1/4 (31.8)	10	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1512	1-1/2 (38.1)	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1514	2 (50.8)	8	■	■	■	■	■	■		■		■	■	■		■		■
1516	2-1/2 (63.5)	8		■	■	■				■		■	■	■		■		■
1524	3 (76.2)	6		■	■					■								

Shank diameter = .145 Head diameter = .300

Plated Drive Pins (25 Packs)

Designed for use in concrete and structural steel applications.

PART NUMBER	SHANK LENGTH IN. (MM)	BOX QTY	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
R50120	1 (25.4)	25	125	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
R50122	1-1/2 (38.1)	25	125	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
R50124	2 (50.8)	25	125	■	■	■	■	■	■		■		■	■	■		■		■
R50126	2-1/2 (63.5)	25	125		■	■	■				■		■	■	■		■		■
R50128	Multi Pack	200	1,000																

Shank diameter = .145 Head diameter = .300

Plated Drive Pins with 7/8" Washer

Washer increases bearing surface against the material to be fastened. 100 per box. 16 gage metal washer.

PART NUMBER	SHANK LENGTH IN. (MM)	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
1508SD	1 (25.4)	1,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1510SD	1-1/4 (31.8)	1,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1512SD	1-1/2 (38.1)	1,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1514SD	2 (50.8)	1,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1516SDC	2-1/2 (63.5)	600	■	■	■	■	■	■		■		■	■	■		■		■
1524SDP*	3 (76.2)	600		■	■	■				■				■		■		■

Shank diameter = .145 Head diameter = .300 * Square washer indicates 3" pin has been installed.

Powder Fasteners

PowerPoint Pins

Used for fastening into hard concrete and steel. Premium hard concrete and steel pin. 100 per box.

PART NUMBER	SHANK LENGTH IN. (MM)	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
SP12	1/2 (12.7)	1,200	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SP34	3/4 (19.1)	1,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Shank diameter = .145 Head diameter = .300

PowerPoint Step Shank Pins

Used for fastening into hard concrete and steel. Premium hard concrete and steel pin. 100 per box.

PART NUMBER	SHANK LENGTH IN. (MM)	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
SP100	1 (25.4)	5,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SP114	1-1/4 (31.8)	1,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SP178	1-7/8 (47.6)	1,000	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■

Shank diameter = .150/.180 Head diameter = .300

Top Hat Drive Pins

Increases bearing surface against material to be fastened for improved attachment to inconsistent base materials. 100 per box.

PART NUMBER	SHANK LENGTH IN. (MM)	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
SP58TH	5/8 (15.9)	5,000	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Shank diameter SP58TH and SP34TH = .150 1906 and 1908 = .145 Head diameter = .300

Ramguard Pins

Coated to improve corrosion resistance in treated lumber and other applications. 100 per box.

PART NUMBER	SHANK LENGTH IN. (MM)	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
1516E	2-1/2 (63.5)	800		■	■	■				■		■	■	■		■		■
1524SDE*	3 (76.2)	600		■	■	■				■				■		■		■

Shank diameter = .145 * .150/.180 Head diameter = .300

Ceiling Clip Assemblies

Designed for suspended ceilings and other overhead applications. Pin pre-assembled to a 14 gage angle clip. 100 per box.

PART NUMBER	SHANK LENGTH IN. (MM)	MASTER CASE QTY	ROCKET	XT540	SA270/ TS750P	COBRA	D45/ D45A	D60	721	RS22/ HD22	DX 351	DX 36	DX 350	DX 460	DX A40	DX A41	DX 35	DX E72
SD125C	1-1/4 (31.8)	100	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Shank diameter = .145 Head diameter = .300

Fastener Ceiling Clips

14 gage angle clip. 100 clips per box.

PART NUMBER	DESCRIPTION
1202CF	Angle clip (no pin)

Hole diameter: 5/16" & 14/64"

Ramset
DRIVING JOBSITE SPEED

Powder Loads

High Quality and Dependability

DESCRIPTION/SUGGESTED SPECIFICATIONS

ITW Ramset powder loads and tools match tolerances to provide optimum power within recognized national velocity standards. Available in color-coded 10-load discs, 10-load strips and 100-load boxes.

Caution: Always test-fasten with the lowest power level for your tool. If more power is necessary, use the next highest power level until proper level and fastening is achieved. Refer to the operator's manual for more specific details. Observe all safety reminders. Tool operators must be trained and qualified as required by federal law. Failure to use properly can result in serious injury or death to users or bystanders.

Advantages Powder Guide

Power level is designated by the load level number marked on each box and by the color of the box and each powder load. As the number increases, the power level increases.

POWER LEVEL GUIDE FOR LOADS

All loads are color coded and load level numbered. As the number increases, the power level increases.

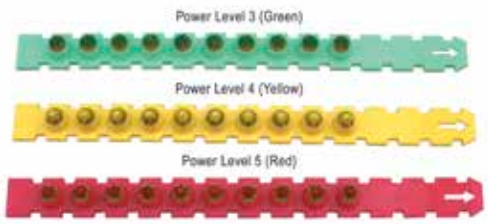
Always start with the lightest load. If the fastener does not set completely, use the next higher load and repeat the process.

3....Green
4....Yellow
5....Red

Least Powerful
Most Powerful

CW Series

Disc Series



SELECTION CHART

0.22 CALIBER, SINGLE SHOT LOAD

PART NUMBER	POWER LEVEL-COLOR	721	M70	HD22 RS22	DXE37	DXE72	BOX QTY WT (LBS)	CASE QTY WT (LBS)
C22CW	2 - Brown	■	■	■	■	■	100/0.2	1,200/2.4
C32CW	3 - Green	■	■	■	■	■	100/0.2	1,200/2.4
C42CW	4 - Yellow	■	■	■	■	■	100/0.2	1,200/2.4

0.22 CALIBER, SINGLE SHOT LOAD (25 PACKS)

PART NUMBER	POWER LEVEL-COLOR	721	M70	HD22 RS22	DXE37	DXE72	BOX QTY WT	CASE QTY WT
R50114	2 - Brown	■	■	■	■	■	25	125
R50116	3 - Green	■	■	■	■	■	25	125
R50118	4 - Yellow	■	■	■	■	■	25	125

10-SHOT, 0.25 CALIBER, DISC LOAD

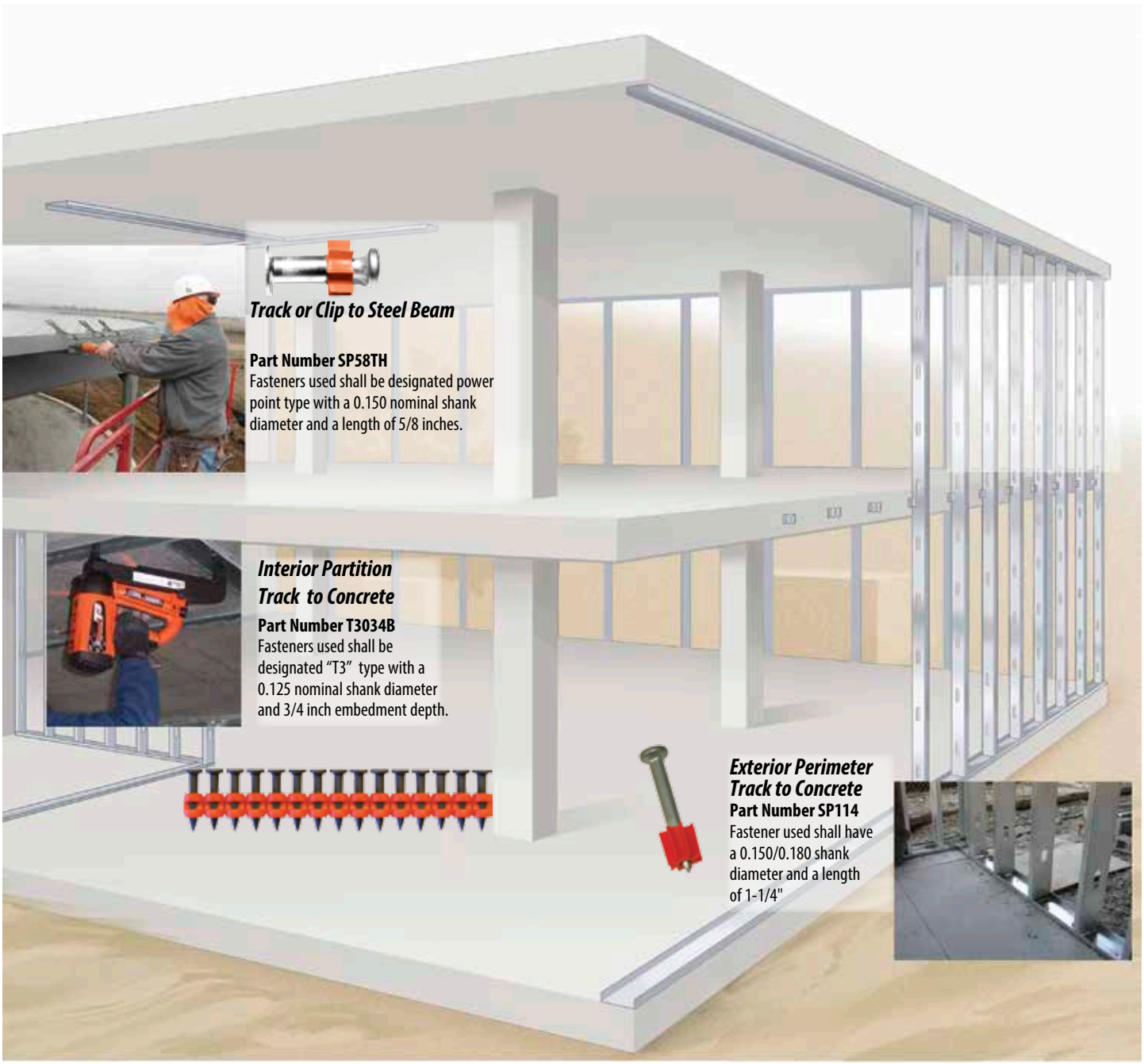
PART NUMBER	POWER LEVEL-COLOR	P370	D45/ A	D60	D200	BOX QTY WT (LBS)	CASE QTY WT (LBS)
3D60	3 - Green	■	■	■	■	100/0.3	10,000/30
D621	4 - Yellow	■	■	■	■	100/0.3	10,000/30
5D60	5 - Red		■		■	100/0.3	10,000/30

10-SHOT, 0.27 CALIBER, STRIP LOAD

PART NUMBER	POWER LEVEL-COLOR	ROCKET	COBRA III	SA270 TS750P	XT540	DX 36M	DX 350	DX 351	DX 450	DX460	DX A40	DX A41	BOX QTY WT (LBS)	CASE QTY WT (LBS)
C3RS27	3 - Green	■	■	■	■	■	■	■		■	■	■	100/0.3	600/1.8
C4RS27	4 - Yellow	■	■	■	■	■	■	■		■	■	■	100/0.3	600/1.8
C5RS27	5 - Red	■	■	■	■	■	■	■	■	■	■	■	100/0.3	600/1.8

SUGGESTED SPECIFICATIONS

Ramset provides the architect and engineer, the following suggested language and helpful information for the purpose of fastening specifications.



Track or Clip to Steel Beam

Part Number SP58TH
Fasteners used shall be designated power point type with a 0.150 nominal shank diameter and a length of 5/8 inches.

Interior Partition Track to Concrete

Part Number T3034B
Fasteners used shall be designated "T3" type with a 0.125 nominal shank diameter and 3/4 inch embedment depth.

Exterior Perimeter Track to Concrete

Part Number SP114
Fastener used shall have a 0.150/0.180 shank diameter and a length of 1-1/4"

For assistance with specifications and/or substitutions, contact Technical Service at 800-387-9692.

Ramset
DRIVING JOBSITE SPEED

POWDER PERFORMANCE/SUBMITTAL

Ramset fasteners may be specified by their type or catalog number to satisfy fastening requirements.

PIN SPECIFICATIONS

Made from AISI 1060-1065 steel. Austempered to a core hardness of 52-56 Rc
Typical tensile strength: 270,000 psi
Typical shear strength: 162,000 psi
Standard finishe
- Proprietary black
- Mechanical zinc plate to a minimum thickness of .0002 meets requirements of ASTM B695

APPROVALS/LISTING

ICC Evaluation Service, Inc.

#ER-1147 Sill Plate
#ESR-1799 Powder Pins & Clips

City of Los Angeles

#RR-22668 Powder pins

PERFORMANCE TABLES

Fasteners in Normal Weight Concrete

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE CONCRETE COMPRESSIVE STRENGTH **ALLOWABLE LOAD** – *Ultimate Load*											
			2000 PSI				4000 PSI				6000 PSI			
			TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)		SHEAR (LBS)		TENSION (LBS)		SHEAR (LBS)	
1500/ 1600 SERIES	0.145	3/4	**50**	*655*	**66**	*739*	**100**	*511*	**104**	*552*	-----	-----	-----	-----
		1	**152**	*943*	**166**	*1229*	**157**	*937*	**182**	*1342*	-----	-----	-----	-----
		1-1/4	**159**	*1078*	**265**	*1665*	**179**	*1043*	**267**	*1538*	-----	-----	-----	-----
		1-1/2	**154**	*1450*	**340**	*2027*	**209**	*1357*	**342**	*1712*	-----	-----	-----	-----
SP	0.150	3/4	-----	-----	-----	-----	**150**	*803*	**105**	*786*	**81**	*493*	**82**	*454*
SP SERIES	.150/.180	1	**154**	*1043*	**200**	*1173*	**243**	*1307*	**175**	*1037*	**189**	*1125*	**210**	*1177*
		1-1/4	**207**	*1553*	**230**	*1636*	**298**	*1749*	**218**	*1471*	**213**	*1568*	**305**	*1780*
		1-1/2	-----	-----	-----	-----	**384**	*2126*	**391**	*1957*	**239**	*1886*	**594**	*2968*
3300 SERIES	0.180	1	**196**	*1084*	**100**	*1328*	**255**	*1504*	**284**	*1557*	-----	-----	-----	-----
		1-1/4	**241**	*1207*	**329**	*1710*	**294**	*1574*	**373**	*2104*	-----	-----	-----	-----
		1-1/2	**254**	*1601*	**379**	*1971*	**419**	*2239*	**501**	*2505*	-----	-----	-----	-----
1900	0.145	3/4	**105**	*694*	**71**	*458*	**101**	*685*	**99**	*627*	-----	-----	-----	-----
9100 STUD	0.205	1	**187**	*988*	**212**	*1385*	**186**	*1070*	**303**	*1618*	-----	-----	-----	-----
		1-1/4	**262**	*1450*	**304**	*1674*	**335**	*2161*	**400**	*2000*	-----	-----	-----	-----

Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Values shown in concrete are for the fastener only. Connected members must be investigated separately. **Note 5:** Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor. **Note 6:** Job site testing may be required to determine actual job site values. **Note 7:** Minimum edge distance is 3 inches unless otherwise approved. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

Powder-Actuated Pin Performance

PART NUMBER	ALLOWABLE LOADS IN NORMAL WEIGHT CONCRETE - 4000 PSI 1" EMBEDMENT	
	TENSION	SHEAR
RAMSET TE	**228**	**241**
HILTI X-U	170	225

PERFORMANCE TABLES

Fasteners in Steel

PART NUMBER SERIES	SHANK DIA. (INCH)	TYPE OF SHANK	INSTALLED IN A36 STRUCTURAL STEEL–STEEL THICKNESS (INCHES) **ALLOWABLE LOAD** – *Ultimate Load*									
			3/16		1/4		3/8		1/2		3/4	
			TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
1500/ 1600	0.145	SMOOTH	**81** *790*	**373** *2039*	**181** *1269*	**273** *1642*	**397** *2169*	**489** *2771*	**243** *1328*[8]	**277** *1514*[8]	---- ----	---- ----
		KNURLED	**296** *1633*	**636** *3516*	**584** *3384*	**659** *3822*	**680** *3755*	**730** *4030*	**253** *1459*[8]	**293** *1632*[8]	---- ----	---- ----
SP	0.150	SMOOTH	**385** *2107*	**662** *3618*	**445** *2549*	**477** *2736*	**393** *2145*	**574** *3137*	**948** *5180*	**597** *3500*	**234** *1244*[8]	**356** *1895*[8]
3300	0.180	SMOOTH	**281** *1536*	**580** *3169*	**385** *2212*	**507** *2931*	**460** *2631*	**644** *3518*	**641** *3499*	**684** *3739*	---- ----	---- ----
9100	0.205	KNURLED	**160** *1469*	**931** *5084*	**350** *3115*	**617** *3542*	**843** *4605*	**803** *4391*	**565** *3086*[9]	**547** *3373*[9]	---- ----	---- ----

PART NUMBER SERIES	SHANK DIA. (INCH)	TYPE OF SHANK	INSTALLED IN A572 GRADE 50 STRUCTURAL STEEL–STEEL THICKNESS (INCHES) **ALLOWABLE LOAD** – *Ultimate Load*									
			3/16		1/4		3/8		1/2		3/4	
			TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
1500/ 1600	0.145	SMOOTH	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----
		KNURLED	**260** *1609*	**499** *3182*	**579** *3411*	**725** *4272*	**383** *2216*[7]	**595** *3431*[7]	---- ----	---- ----	---- ----	---- ----
SP	0.150	SMOOTH	**356** *2123*	**569** *3394*	**554** *3232*	**637** *3710*	**604** *3447*	**602** *3437*	**814** *4473*[9]	**820** *4503*[9]	**243** *1362*[8]	**381** *2141*[8]
3300	0.180	SMOOTH	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----	---- ----
9100	0.205	KNURLED	**365** *2175*	**903** *5385*	**697** *4061*	**907** *5285*	**155** *842*[7]	**376** *2143*[7]	---- ----	---- ----	---- ----	---- ----

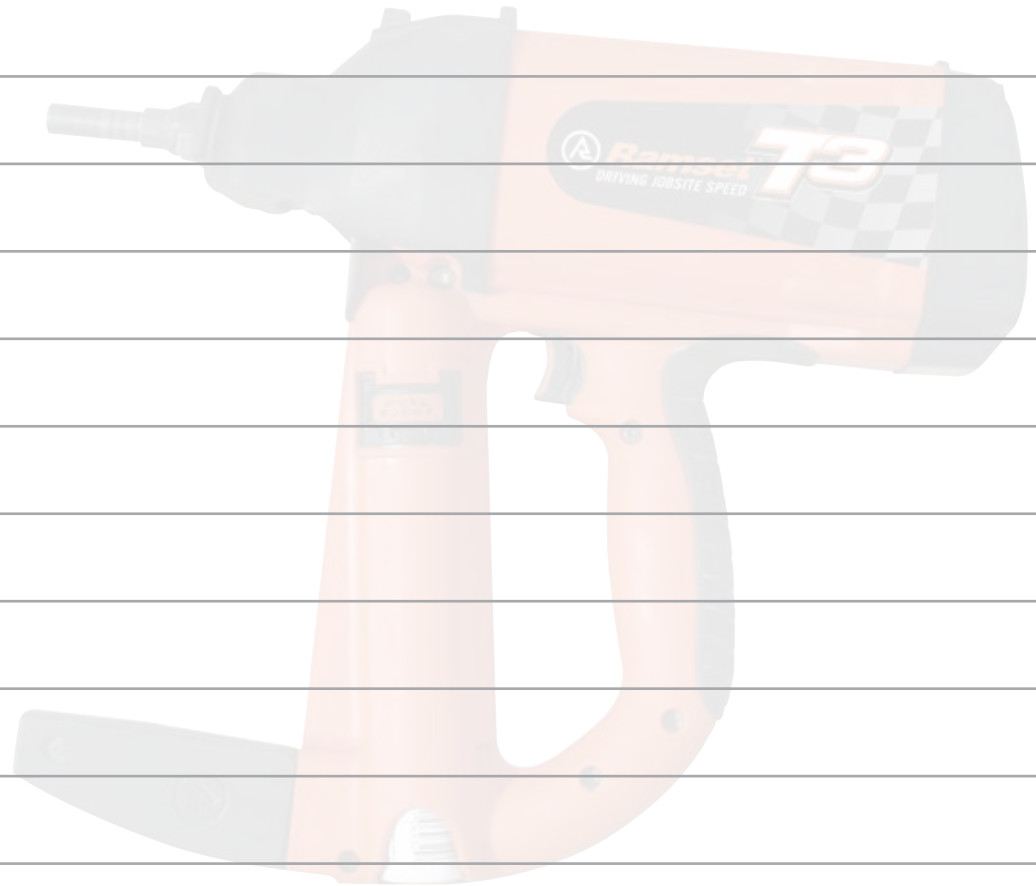
Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor. **Note 5:** Job site testing may be required to determine actual job site values. **Note 6:** Values shown are for fastenings that have the entire pointed end of the fastener driven through the steel plate; except as noted below. **Note 7:** Fastener penetration is 3/8" minimum. **Note 8:** Fastener penetration is 7/16" minimum. **Note 9:** Fastener penetration is 1/2" minimum **Note 10:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

Fasteners in Lightweight Concrete

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	ALLOWABLE WORKING VALUES INSTALLED IN 3000 PSI LIGHTWEIGHT CONCRETE **ALLOWABLE LOAD** – *Ultimate Load*					
			3000 PSI LIGHTWEIGHT W/DECKING				3000 PSI LIGHTWEIGHT	
			LOWER FLUTE TENSION		LOWER FLUTE SHEAR		TENSION	SHEAR
1500 SERIES	0.145	3/4	**76** *395*		**260** *1409*		**167** *837*	**179** *894*
		1	**134** *668*		**265** *1505*		**200** *998*	**228** *1141*
		1-1/4	**157** *784*		**269** *1344*		**333** *1664*	**400** *2090*
		1-1/2	**233** *1163*		**346** *1728*		**391** *1957*	**410** *2050*
SP SERIES	.150/.180	1	**119** *593*		**336** *1679*		**226** *1129*	**250** *1249*
		1-1/4	**175** *957*		**372** *1860*		**329** *1644*	**377** *1885*
		1-1/2	**179** *1055*		**426** *2128*		**406** *2030*	**380** *1900*
9100 SERIES	0.205	3/4	**70** *351*		**277** *1386*		----- -----	----- -----
		1	**112** *559*		**378** *1891*		----- -----	----- -----
		1-1/4	**118** *689*		----- -----		----- -----	----- -----

Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5. **Note 4:** Values shown in concrete are for the fastener only. Connected members must be investigated separately. **Note 5:** Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor. **Note 6:** Job site testing may be required to determine actual job site values. **Note 7:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

Notes



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