Ramset®
DRIVING JOBSITE SPEED

PRODUCT & REFERENCE CATALOG

MADE IN AMERICA
Ramset®

Ramset®
DRIVING JOBSITE SPEED

POWDER TRAINING AND CERTIFICATION

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 WWW.RAMSET.COM

Ramset®

Black Claw™

SAMMYS®

RED HEAD®

MADE IN AMERICA Ramset

SELECTION GUIDE

	TOOL	DESCRIPTION	TYPICAL BUILDING TRADE*
GAS POWERED TOOLS	 **T3MAG** ■ 45-Pin Magazine ■ One Step Fuel Injection & Eject ■ Fully Automatic ■ 2 Year Warranty	■ Length: 18-1/2" ■ Height: 15" ■ Weight: 9.2 lbs. ■ Maximum Pin Length: 1"	**WALLS & CEILINGS**
	 **TF1100** ■ 42 Pin Magazine ■ Fully Automatic ■ 2 Year Warranty	■ Length: 17" ■ Height: 15-1/2" ■ Weight: 8.375 lbs. ■ Maximum Pin Length: 1-1/2"	**WALLS & CEILINGS**
	 **T3SS** ■ Single Shot Gas Tool ■ One Step Fuel Injection & Eject ■ 2 Year Warranty	■ Length: 13-1/2" ■ Height: 15" ■ Weight: 7.0 lbs. ■ Maximum Pin Length: 1-1/2"	**ELECTRICAL/MECHANICAL**
	 **GYPFAST** ■ 150 Pin Coil ■ Fully Automatic ■ 2 Year Warranty	■ Length: 16" ■ Height: 13" ■ Weight: 8.9 lbs. (9.7 with nails) ■ Maximum Pin Length: 2-1/2"	**EXTERIOR SHEATHING**
AIR (PNEUMATIC SYSTEMS)	 **GYPFAST (AIR)** ■ 150 Pin Coil ■ Fully Automatic ■ 2 Year Warranty	■ Length: 12" ■ Height: 13" ■ Weight: 5.5 lbs. ■ Maximum Pin Length: 2-1/2"	**EXTERIOR SHEATHING AND FRAMING**
	 **GYPFAST (AIR HD)** ■ 150 Pin Coil ■ Fully Automatic ■ 2 Year Warranty	■ Length: 13.5" ■ Height: 14.5" ■ Weight: 6.0 lbs. ■ Maximum Pin Length: 2-1/2"	**EXTERIOR SHEATHING AND FRAMING**
.22 CAL SINGLE SHOT	 **721** ■ Single Shot ■ 3 Year Warranty	■ Length: 13-1/2" ■ Weight: 4.3 lbs. ■ Muzzle Bushing O.D.: 5/8" ■ Maximum Pin Length: 1-1/2"	**WALLS & CEILINGS**
	 **MasterShot** ■ Single Shot ■ 90 Day Year Warranty	■ Length: 15" ■ Weight: 4.4 lbs. ■ Muzzle Bushing O.D.: 3/4" ■ Maximum Pin Length: 3"	**WOOD FRAMING**

*Building trade shown as suggestions. Tools are not limited to these trades.

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SELECTION GUIDE

		TOOL	DESCRIPTION	TYPICAL BUILDING TRADE*
.25 CAL STRIP		**R25** ■ Semi-Automatic ■ 1 Year Warranty	■ Length: 11.6'" ■ Weight: 4.3 lbs. ■ Muzzle Bushing O.D.: 3/4" ■ Maximum Pin Length: 1-1/2"	WALLS & CEILINGS
.25 CAL DISC TOOLS		**D45A** ■ Automatic Piston Return ■ 3 Year Warranty ■ Length: 15"	■ Weight: 4.5 lbs. ■ Muzzle Bushing O.D.: 5/8" ■ Maximum Pin Length: 2"	WALLS & CEILINGS
		**D60** ■ Semi-Automatic ■ Power Adjustable ■ 3 Year Warranty	■ Length: 12-1/2" ■ Weight: 4.9 lbs. ■ Muzzle Bushing O.D.: 3/4" ■ Maximum Pin Length: 2-3/8" (2-1/2" w/Washer)	ELECTRICAL/MECHANICAL
.27 CAL STRIP TOOLS		**XT540** ■ Automatic Piston Return ■ Power Adjust ■ 3 Year Warranty	■ Length: 19'" ■ Weight: 5.5 lbs. ■ Muzzle Bushing O.D.: 7/8" ■ Maximum Pin Length: 3"	WALLS & CEILINGS
		**SA270** ■ Semi-Automatic ■ Power Adjust ■ 3 Year Warranty	■ Length: 15.3'" ■ Weight: 5.45 lbs. ■ Muzzle Bushing O.D.: 5/8" ■ Maximum Pin Length: 3"	WOOD FRAMING
		**COBRA** ■ Semi-Automatic ■ Economical ■ 1 Year Warranty	■ Length: 13-1/4'" ■ Weight: 4.5 lbs. ■ Muzzle Bushing O.D.: 9/16" ■ Maximum Pin Length: 2-1/2" (3" w/Washer)	WOOD FRAMING
		**VIPER** ■ Automatic Piston Return ■ Designed Specifically for Overhead Applications ■ 3 Year Warranty	■ Length: 17'" ■ Weight: 4.5 lbs. ■ Maximum Pin Length: 1-1/2"	ACOUSTICAL/OVERHEAD

*Building trade shown as suggestions. Tools are not limited to these trades.

TO THIS BASE MATERIAL

FASTEN THIS MATERIAL

	CONCRETE				STEEL BEAM - 3/16" to 1/2" THICK			
	FASTENER LENGTH (inches)	GAS TOOL	POWDER TOOL	POWDER LOAD	FASTENER LENGTH (inches)	GAS TOOL	POWDER TOOL	POWDER LOAD
INTERIOR NON-LOAD BEARING DRYWALL TRACK 25 - 20 GAGE	3/4	TF1100 T3MAG	R25	#3 GRN .25cal STRIP	1/2	TF1100 T3MAG	R25	#4 YEL .25cal STRIP
			D45A	#2 BRN .25cal DISC			D45A	#4 YEL .25cal DISC
			721	#2 BRN .22cal SINGLE			721	#4 YEL .22cal SINGLE
			SA270	#3 GRN .27cal STRIP			SA270	#4 YEL .27cal STRIP
EXTERIOR PERIMETER DRYWALL TRACK 18 -12 GAGE	1-1/4	N.R.	SA270	#4 YEL .27cal STRIP	1/2	N.R.	SA270	#4 YEL .27cal STRIP
			XT540	#4 YEL .27cal STRIP			XT540	#4 YEL .27cal STRIP
			D45A	#4 YEL .25cal DISC			D45A	#4 YEL .25cal DISC
			COBRA	#4 YEL .27cal STRIP			COBRA	#4 YEL .27cal STRIP
CLIPS or BRACKETS for STEEL FRAMING	1-1/4	N.R.	SA270	#4 YEL .27cal STRIP	1/2	N.R.	SA270	#4 YEL .27cal STRIP
			XT540	#4 YEL .27cal STRIP			XT540	#4 YEL .27cal STRIP
			D45A	#4 YEL .25cal DISC			D45A	#4 YEL .25cal DISC
			COBRA	#4 YEL .27cal STRIP			COBRA	#4 YEL .27cal STRIP
2 x 4 , 2 x 6 LUMBER	2-1/2	N.R.	SA270	#4 YEL .27cal STRIP	1-7/8	N.R.	SA270	#4 YEL .27cal STRIP
			XT540	#4 YEL .27cal STRIP			XT540	#4 YEL .27cal STRIP
			COBRA	#5 RED .27cal STRIP			COBRA	#5 RED .27cal STRIP
			MasterShot	#4 YEL .22cal SINGLE			MasterShot	#4 YEL .25cal DISC
1/2" PLYWOOD	1-1/4	N.R.	SA270	#4 YEL .27cal STRIP	1	N.R.	SA270	#4 YEL .27cal STRIP
			COBRA	#4 YEL .27cal STRIP			COBRA	#4 YEL .27cal STRIP
			D45A	#4 YEL .25cal DISC			D45A	#4 YEL .25cal DISC
			XT540	#4 YEL .27cal STRIP			XT540	#4 YEL .27cal STRIP
3/4" PLYWOOD 1 x 4, 1 x 6 WOOD	1-1/2	N.R.	SA270	#4 YEL .27cal STRIP	1-1/4	N.R.	SA270	#4 YEL .27cal STRIP
			COBRA	#4 YEL .27cal STRIP			COBRA	#4 YEL .27cal STRIP
			D45A	#4 YEL .25cal DISC			D45A	#4 YEL .25cal DISC
			XT540	#4 YEL .27cal STRIP			XT540	#4 YEL .27cal STRIP
1/2" or 5/8" GYPSUM SHEATHING	-	N.R.	N.R.		-	N.R.	N.R.	

NOTES:

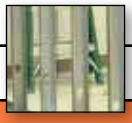
1) This chart is presented as a guide only. Start with the lightest load available. If the fastener does not completely set, use the next higher load and repeat the process.

2) Product suggestions may not be suitable for all types of base materials.

3) N.R. is Not Recommended

POWDER FASTENER & LOAD SELECTION CHART





CONCRETE BLOCK				MORTAR JOINT (horizontal only)				LIGHT GAGE STEEL 18-12gage			
FASTENER LENGTH (inches)	GAS TOOL	POWDER TOOL	POWDER LOAD	FASTENER LENGTH (inches)	GAS TOOL	POWDER TOOL	POWDER LOAD	FASTENER LENGTH (inches)	GAS TOOL	POWDER TOOL	POWDER LOAD
1	TF1100 T3MAG	R25	#3 GRN .25cal STRIP	1	TF1100 T3MAG	R25	#3 GRN .25cal STRIP	-	N.R.	N.R.	
		D45A	#2 BRN .25cal DISC			D45A	#2 BRN .25cal DISC				
		721	#2 BRN .22cal SINGLE			721	#2 BRN .22cal SINGLE				
		SA270	#2 BRN .27cal STRIP			COBRA	#3 GRN .27cal STRIP				
1	TF1100 T3MAG	SA270	#3 GRN .27cal STRIP	1	TF1100 T3MAG	SA270	#3 GRN .27cal STRIP	-	N.R.	N.R.	
		COBRA	#3 GRN .27cal STRIP			COBRA	#3 GRN .27cal STRIP				
		D45A	#2 BRN .25cal DISC			D45A	#2 BRN .25cal DISC				
		R25	#3 GRN .25cal STRIP			R25	#3 GRN .25cal STRIP				
1	TF1100 T3MAG	SA270	#3 GRN .27cal STRIP	1	TF1100 T3MAG	SA270	#3 GRN .27cal STRIP	-	N.R.	N.R.	
		XT540	#3 GRN .27cal STRIP			COBRA	#3 GRN .27cal STRIP				
		D45A	#2 BRN .25cal DISC			D45A	#2 BRN .25cal DISC				
		721	#3 GRN .22cal SINGLE			R25	#3 GRN .25cal STRIP				
2-1/2	N.R.	SA270	#4 YEL .27cal STRIP	2-1/2	N.R.	SA270	#4 YEL .27cal STRIP	-	N.R.	N.R.	
		XT540	#3 GRN .27cal STRIP			XT540	#3 GRN .27cal STRIP				
		COBRA	#4 YEL .27cal STRIP			COBRA	#4 YEL .27cal STRIP				
		MasterShot	#4 YEL .22cal SINGLE			MasterShot	#4 YEL .22cal SINGLE				
1-1/2	TF1100	SA270	#3 GRN .27cal STRIP	1-1/2	TF1100	SA270	#3 GRN .27cal STRIP	1-1/2	TF1100 GYPFAST GYPFAST AIR AIR HD (for 12G)	N.R.	
		COBRA	#3 GRN .27cal STRIP			COBRA	#3 GRN .27cal STRIP				
		D45A	#3 GRN .25cal DISC			D45A	#3 GRN .25cal DISC				
		MasterShot	#3 GRN .22cal SINGLE			MasterShot	#3 GRN .22cal SINGLE				
2	N.R.	SA270	#3 GRN .27cal STRIP	2	N.R.	SA270	#3 GRN .27cal STRIP	1-1/2	TF1100 GYPFAST GYPFAST AIR AIR HD (for 12G)	N.R.	
		COBRA	#3 GRN .27cal STRIP			COBRA	#3 GRN .27cal STRIP				
		D45A	#3 GRN .25cal DISC			D45A	#3 GRN .25cal DISC				
		XT540	#4 YEL .27cal STRIP			MasterShot	#3 GRN .22cal SINGLE				
-	N.R.	N.R.		-	N.R.	N.R.		1-1/2	GYPFAST GYPFAST AIR GYP AIR HD (for 12g)	N.R.	

T3MAG

- Gas Technology
- 45-Pin Magazine
- One Step Fuel Injection
- 2 Year Warranty
- Length: 18-1/2"
- Height: 15"
- Weight: 9.2 lbs.
- Pin Guide O.D.: .590
- Maximum Pin Length: 1"

ADVANTAGES

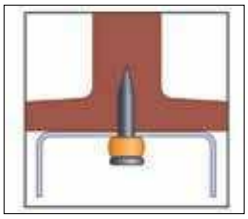
- Higher stick rate
- 25% more power
- Easy push down force
- Deep leg track capacity
- 45-pin magazine capability
- Fitted dust shield
- Battery charger provides constant charging even with low voltage drops
- 2 Year Warranty (6 months on wearable parts)
- No License Required

FEATURES

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.

Settling 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.

FUEL CELL AND BATTERY

T3 fuel cell
Part No. T3FUEL
Replaces conventional powder loads and drives more than 1000 pins

Fuel injection means no additional steps of preparing a fuel cell. Click the fuel cell in place and the tool is ready to go.

Part No. B0092
The 6-volt Ni-Cd battery can drive more than 3000 shots per charge

MOST COMMON FASTENERS

PIN #	DESCRIPTION
T3012	1/2" steel pin with T3 fuel cell
T3012S	1/2" premium steel pin with fuel cell
T3034B	3/4" concrete pin with T3 fuel cell
T3034S	3/4" step shank pin with T3 fuel cell
T3100	1" concrete pin with T3 fuel cell

Fasteners on page 23.

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

APPLICATIONS

The T3 has enough power to fasten into hard concrete and steel and still will not blow through hollow block.

Will not spall hollow block like powder actuated.

Perfect for hat channel applications.

TRAKFAST TF1100

- Gas Technology
- Fully Automatic
- 1-1/2" Pin Capacity
- 42 Pin Magazine Capacity
- 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

ADVANTAGES

- **SPEED**: Three to five times faster than powder tools. 42-pin magazine reduces load 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 required.
- **NO CHANGING LOADS**: TrakFast uses a fuel cell, not a load. No need to inventory different colored loads
- **NARROW NOSE & PROFILE**: Allows tool to reach inside deep leg track (1-5/8" wide x 2" high).
- 2 Year Warranty (6 months on wearable parts).

FEATURES

Still the most revolutionary fastening system in the construction industry!

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!

TrakFast ICC ESR-2579 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.

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.

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!

MOST COMMON FASTENERS

PIN #	PIN LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
FPP012S	1/2	12.7	Track to steel
FPP034B	3/4	19.1	Track to concrete

Fasteners on page 23.

APPLICATIONS

Track to steel

Lath attachment—using one-inch TrakFast discs and magnetic probe adapter

Furring attachment—perfect fastening every time in soft and hard base materials

Plywood attachment—using TrakFast plywood to steel pin

Track to concrete

T3SS

VERSATILE, fastens to solid concrete, hollow block, pan deck and steel.

- Gas Technology
- Single Pin Gas Tool
- Fuel Injection
- Cross Over Technology
- 2 Year Warranty (6 months on wearable parts)
- 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"

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
- Interchange nose

FEATURES

CROSSING OVER FROM POWDER TO GAS

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.

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.

No more fines for unspent loads on the jobsite.

To make the T3SS the most versatile gas tool in the industry, Users can 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.

APPLICATIONS

12HSMP034 clip assembly used to secure conduit

M034 fastener used to hang HVAC Duct Strap

M100 fastener used to attach a junction box

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

FASTENER AND MAGNETIC NOSEPIECE

The optional interchangeable nosepiece (Part Number M150200) is able to shoot a variety of M series fasteners.

POLE TOOL

Part Nos. EPOL6 and EPOL8

MOST COMMON FASTENERS

PIN #	DESCRIPTION
12HSMP034	1/2" One hole strap with 3/4" pin
MP034TH	3/4" Plated pin with top hat
M100	1" Pin with gold domed washer
14THRHMP034	1/4" Threaded rod hanger

Fasteners on page 26.

FUEL CELL AND BATTERY

T3 fuel cell
Part No. T3FUEL
Replaces conventional powder loads and drives more than 1000 pins

Fuel injection means no additional steps of preparing a fuel cell. Click the fuel cell in place and the tool is ready to go.

Part No. B0092
The 6-volt Ni-Cd battery can drive more than 3000 shots per charge

GYPFAST

Fully Automatic Cordless Gas Fastening System for Attaching Exterior Sheathing to Light Gauge Steel Framing

- **Part No.: GYPFAST**
- Fully Automatic
- 2-1/2" Pin Capacity
- Length: 16"
- Height: 13"
- Weight: 8.9 lbs. (9.7 with 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

ADVANTAGES

- 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

FEATURES

- Fully automatic system with 150 nail capacity is 3-5 times faster than screwing.
- Fast set-up and tear down – insert battery, fuel cell and nail coil – 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.
- Woven wire mesh or expanded metal lath to steel framing
- 2 year warranty

Fuel cell
Part No. TFUEL

Battery
Part No. 405176

Magnetic Nose Probe
Part No. 2761910

Plated 1" Lathing Disc
Part No. LD100

Plated 1-1/4" Lathing Disc Part No. LD114

MOST COMMON FASTENERS

Fasteners on page 25.

PIN #	.140" DIA. KNURLED SHANK 5/16" DIA. BUGLE HEAD		MASTER CARTON	APPLICATION
	IN.	(MM)		
GF100	1	25.4	4,800 nails/ctn (48 - 100 ct. coils) 5 fuel cells	Metal to Metal Attachment
GF112	1-1/2	38.1	6,000 nails/ctn (40- 150 ct. coils) 6 fuel cells	Single Layer of Exterior Sheathing, Wood Furring and Blocking
GF200	2	50.8	4,800 nails/ctn (32 - 150 ct. coils) 5 fuel cells	Double Layer of Exterior Gypsum Sheathing, Wood Furring and Blocking
GF212	2-1/2	63.5	2,700 nails/ctn (18 - 150 ct. coils) 3 fuel cells	Multi-Layers of Sheathing, Wood Block-ing, and Dimensional Lumber

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

GYPFAST AIR

- **Part No.: GYPFASTAIR**
- Fully Automatic
- 2-1/2" Pin Capacity
- Length: 12"
- Height: 13"
- Weight: 5.5 lbs.
- 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

ADVANTAGES

- High performance pneumatic fastening system is 3-5 times faster than screws.
- 150 nails in a coil reduces reloading – improves productivity.
- Collation provides smooth, consistent operation with no flagging or breakage.
- Switch from sequential to bump fire.
- Aggressive, patented nail shank design provides high pullout performance.
- Works with the Magnetic Probe (part number 2731910) for lathing discs LD100 & LD114

GYPFAST AIR HD

- **Part No.: GYPFASTAIRHD**
- Fully Automatic
- 2-1/2" Pin Capacity
- Length: 13.5"
- Height: 14.5"
- Weight: 6 lbs
- 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

ADVANTAGES

- High performance pneumatic fastening system is 3-5 times faster than screws.
- 150 nails in a coil reduces reloading – improves productivity.
- Collation provides smooth, consistent operation with no flagging or breakage.
- Switch from sequential to bump fire.
- Aggressive, patented nail shank design provides high pullout performance.
- Works with 12 gauge studs

APPLICATIONS

Exterior Gypsum sheathing to steel framing (20-14 gauge), Plywood and OSB sheathing/flooring, Wood furring to steel framing, Fiber cement panels to steel framing, Woven wire mesh or expanded metal lath to steel framing

OSB and plywood to iSPAN joists

Fasteners on page 25.

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.

ONLINE POWDER TRAINING AND CERTIFICATION

Only properly trained and licensed operators are described in ANSI Standard A 10.3 and/or local regulations may operate powder actuated tools. ITW Ramset distributors offer complete training programs for end users. Contact your local Ramset distributor for complete details.

Ramset has designed and engineered the right powder actuated tool (PAT) for your applications. To ensure you use a PAT 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 ensure safety on the jobsite, OSHA and ANSI require that all PAT 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 can take an online exam. With successful completion of the exam, you can 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.

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.

www.ramset.com




R25

- .25 Caliber Strip Tool
- Semi-Automatic
- .25 Caliber Strip Loads: 3 (Green), 4 (Yellow), 5 (Red)
- Weight: 4.3 lbs.
- Length: 11.6"
- Maximum Pin Length: 1-1/2"
- 1 Year Warranty

ADVANTAGES

- Rugged metal housing
- Rubber cushion grip
- Popular drywall track tool
- 1 Year Warranty

MOST COMMON FASTENERS

PIN #	SHANK LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
1506B	3/4	19.0	Track to concrete
SP58TH	5/8	15.9	Track to steel

Fasteners on pages 29 and 30.

COMMON REPLACEMENT PARTS

- SC325207A Piston Assembly
- SC301011A Shear Clip (Pkg of 3)
- SC306010 Fastener Guide
- SC326009 Front Barrel/Baseplate

MADE IN AMERICA Ramset

XT540

Durable, Reliable, Powerful, Automatic

XT540

The most powerful tool in its class

The Ramset XT540 was specifically designed for the commercial framer for heavy-duty interior & exterior applications. The XT540's combination of high power and durability make it perfect for these applications:

- Driving 1-1/4" embedment for perimeter track
- Fastening track & clips to structural steel
- Track to hard concrete
- Excellent compliment to your Ramset TrakFast program

FEATURES

- .27 Caliber Strip Tool
- Automatic Piston Return
- Power Adjust
- 3" Pin Capacity
- 3 Year Warranty
- .27 Caliber Strip Loads: 3 (Green), 4 (Yellow), 5 (Red)
- Weight: 5.5 lbs.
- Length: 19"
- Muzzle Bushing O.D.: 7/8"

ADVANTAGES

- Very Powerful
- Spring return front end—no manual resetting of the piston
- Power adjust—dial down 2 full load levels
- Rugged soft grip handle
- Trigger lock & hand guard to increase safety
- Low recoil
- Ergonomically balanced
- Works with Magnetic Muzzle (Part# 100227) & Lathing Discs

MOST COMMON FASTENERS

PIN #	SHANK LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
SP58TH	5/8	15.9	Track to steel
SP34	3/4	19.1	Track to concrete
M100BB	1	25.4	Track to concrete
SP114	1-1/4	31.8	Track to concrete

Fasteners on pages 28 and 30.

COMMON REPLACEMENT PARTS

- PA37037 Piston
- 100167 Piston Return Spring

SA270

- .27 Caliber Strip Tool
- Semi-Automatic
- Power Adjust
- .27 caliber 10-shot strip loads: 3 (Green), 4 (Yellow), 5 (Red)
- Weight: 5.45 lbs.
- Length: 15.3"
- Muzzle Bushing O.D.: 5/8"
- Maximum Pin Length: 3" straight pin
- 3 Year Warranty

ADVANTAGES

- Very Powerful
- Excellent balance—easy to use all day long
- Rubber grip on front barrel—eliminates pinched fingers and hands
- Twist lock front end—easy to clean
- Rugged polyamide housing—reduces heat transfer and maximizes operator comfort
- Soft, recoil-absorbing handle—for increased operator comfort

MOST COMMON FASTENERS

PIN #	SHANK LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
1516SDC (washered)	2-1/2	63.5	2" x 4" to concrete
1524SDP(washered)	3	76.2	2" x 4" to concrete
SP58TH	5/8	15.9	Track to steel

Fasteners on pages 29 and 30.

COMMON REPLACEMENT PARTS

- 27833 Piston with Ring

COBRA

- .27 Caliber Strip Tool
- Semi-Automatic
- Economical
- .27 caliber 10-shot strip loads: 3 (Green), 4 (Yellow), 5 (Red)
- Weight: 4.5 lbs.
- Length: 13-1/4"
- Muzzle Bushing O.D.: 9/16"
- Maximum Pin Length: 2-1/2" (3" w/washer)

ADVANTAGES

- Semi-automatic .27-caliber tool — uses strip loads
- Padded recoil-absorbing handle—for greater operator 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 #	SHANK LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
1524SDP (washered)	3	76.2	2" x 4" concrete
1524SDC (washered)	2-1/2	63.5	2" x 4" concrete
1506B	3/4	19.1	Drywall track to concrete

Fasteners on page 29.

COMMON REPLACEMENT PARTS

- SC301200A Piston and Ring
- SC301012 Pawl (stop)

VIPER

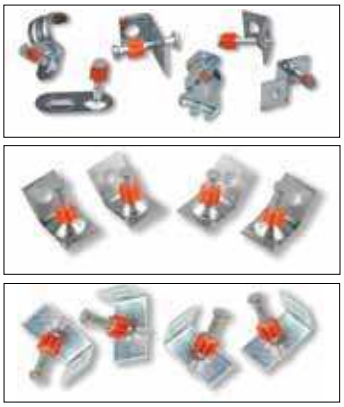
- .27 Caliber Strip Tool
- Semi-Automatic
- Designed Specifically for Overhead Applications
- 3 Year Warranty
- .27 caliber 10-shot strip loads: 3 (Green), 4 (Yellow), 5 (Red)
- Weight: 4.5 lbs.
- Length: 17"
- Maximum Pin Length: 1-1/2"

ADVANTAGES

- Automatic load advance: Load is advanced consistently each time the Viper is fired.
- Automatic Piston return: No time spent manually resetting or cycling the tool. Allows you to work faster.
- Overdrive Protection: Heavy duty buffer system prevents front end damage caused by piston overdrive —especially through sprayed-on insulation.
- Open Front-end design: Completely redesigned open-ended muzzle keeps your tool cleaner longer.
- Simplified Barrel Retention Collar: No tools are required for assembly or disassembly.
- Stable Steel Collar: The Viper screws securely into the end of the extension pole with the steel collar ensuring a more durable and rigid connection.
- Uses existing Viper pole system: Works with the existing family of durable Ramset poles.

FASTENERS

- **ELECTRICAL PIN/CLIP ASSEMBLIES**
  Preassembled Pin & 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 which act as a shim and assure a snug fit between the structural member and the 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.



EXTENSION POLES	
FIXED LENGTH	
LENGTH	PART #
6'	VPOL6
8'	VPOL8

MOST COMMON FASTENERS			
PIN #	SHANK LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
14TRHSS10	1	25.4	Threaded Rod Hanger
SDC125	1-1/4	31.8	Ceiling Clip
SPC114	1-1/4	31.8	Ceiling Clip

Fasteners on pages 28 and 31.

TELESCOPING *(ADJUSTABLE IN 1' INCREMENTS)*	
LENGTH	PART #
6'-12'	TVPOL612
6'-18'	TVPOL618

COMMON REPLACEMENT PARTS

- MVP500AP Advance Lever Assembly
- MVP140 Piston

The Viper screws solidly onto a pole for high reach and secure operation for ceiling applications.

The Viper was engineered specifically for overhead applications.

D45A

3/8" Muzzle Bushing available for limited applications
Part Number 32330038M

- .25 Caliber Disc Tool
- Semi-Automatic
- Automatic Piston Return
- .25 caliber 10-shot disc loads: 2 (Brown), 3 (Green), 4 (Yellow), 5 (Red)
- Weight: 4.5 lbs.
- Length: 15"
- Muzzle Bushing O.D.: 5/8"
- Maximum Pin Length: 2" (2-1/2" w/washer)
- 3 Year Warranty

ADVANTAGES

- Most durable, powerful powder tool—designed for high production use in steel and concrete
- Heavy-duty buffer system—prevents front-end tool damage for longer tool life
- 33% faster than semi-automatic tools—saves time and labor costs
- Ramset Disc Technology—loads only advance after firing—eliminates 10-20% of load waste

MOST COMMON FASTENERS

PIN #	SHANK LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
SP58TH	5/8	15.9	Track to steel
SP12	1/2	12.7	Track to hard steel
1506B	3/4	19.1	Track to concrete

Fasteners on pages 29 and 30.

COMMON REPLACEMENT PARTS

- 323110 Muzzle Bushing Shroud
- 30645 Piston

D60

- .25 Caliber Disc Tool
- Semi-Automatic
- Power Adjustable
- 3 Year Warranty
- .25 caliber 10-shot disc loads: 2 (Brown), 3 (Green), 4 (Yellow)
- Weight: 4.9 lbs.
- Length: 12-1/2"
- Muzzle Bushing O.D.: 3/4"
- Maximum Pin Length: 2-3/8" (2-1/2" w/washer)

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

MOST COMMON FASTENERS

PIN #	SHANK LENGTH		THREAD LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	IN.	MM	
M100BB	1	25.4			Sheet metal to concrete
1643W	1	25.4	3/4	19.1	Electrical box to concrete

Fasteners on pages 28 and 30.

COMMON REPLACEMENT PARTS

- 30691 Piston
- 135220 Pawl Assmebly

721

- .22 Caliber Single Shot Tool
- Single Shot
- 3 Year Warranty
- .22 caliber, single-shot loads: 2 (Brown), 3 (Green), 4 (Yellow)
- Weight: 4.3 lbs.
- Length: 13-1/2"
- Muzzle Bushing O.D.: 5/8"
- Maximum Pin Length: 1-1/2"

ADVANTAGES

- Rugged metal housing—holds up for years
- Low recoil—reduces operator fatigue on large jobs
- Simple to clean—saves on labor costs
- Rubber cushion grip—for maximum operator comfort
- Only two moving parts to clean—easy maintenance; saves time
- Narrow 5/8" muzzle bushing—for easy access in tight fastening areas
- Automatic cartridge ejection system—increases operator speed and productivity

MOST COMMON FASTENERS

PIN #	SHANK LENGTH		MOST COMMON APPLICATION
	IN.	(MM)	
1506B	3/4	19.1	Track to concrete
M100BB	1	25.4	Track to concrete
SP58TH	5/8	15.9	Track to steel

Fasteners on pages 28-30.

COMMON REPLACEMENT PARTS

- 33657 Piston Ring Assembly
- 12258 Barrel Extension

MASTERSHOT

2" x 4" to concrete slab

Track to floor

- .22 Single Shot Tool
- Trigger Operated Powder Actuate Tool
- 90 Day Warranty
- Uses standard .22 caliber single shot powder loads: 2 (Brown), 3 (Green), 4 (Yellow)
- Weight: 4.4 lbs.
- Length: 15"
- Muzzle Bushing O.D.: 3/4"
- Maximum Pin Length: 3"

ADVANTAGES

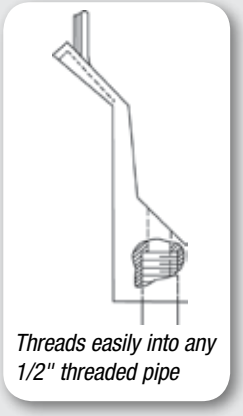
- Designed for frequent use providing professional fastening results in a variety of concrete, masonry or steel applications
- The MasterShot is a traditional trigger operated tool
- Ergonomic design for operator comfort
- Positive barrel and load retention prevents barrel from opening freely, allowing easy horizontal and overhead fastening
- Powder load automatically ejects after each use
- Heavy-duty construction

MOST COMMON FASTENERS

PIN #	SHANK 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
1506B	3/4	19.1	Drywall to concrete

Fasteners on page 29.

J-MASTER TOOL L-1700



Threads easily into any 1/2" threaded pipe

- For Attachment of Hanger Wire Clips J-Clip® (L1701) and Clip-Pur® (L1801)
- A Non-Powder Alternative
- 19 gauge clip

ADVANTAGES

- For strong, reliable attachment of hanger wire from open web bar joists or purlins
- Fast, easy installation from floor level
- No ladders or scaffolding necessary
- Threads easily into any 1/2" threaded pipe
- No hammering, punching holes or wrapping wire
- Two magnetized strips included for use in attachment of Clip-Pur (L1801)

CLIPS FOR USE WITH THE J-MASTER® TOOL

J-CLIP (L1701)

252 lb. Allowance working load (4:1 safety factor)

- Strong, reliable attachment of pre-tied hanger wire
- Use for open web bar joists or purlins
- Each clip fits 1/16"-1/4" flanges

CLIP-PUR (L1801)

217 lb. Allowable working load (4:1 safety factor)

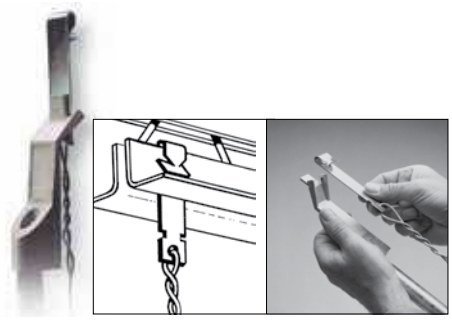
- Fast, easy attachment of pre-tied hanger wire from Z-Purlins
- Disengages from J-Master tool after installation

EASY INSTALLATION

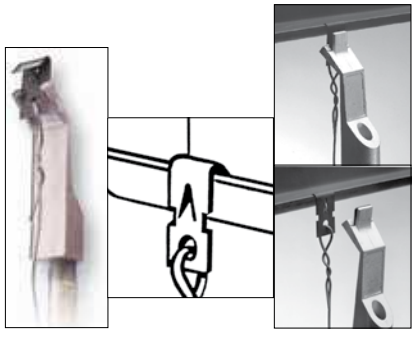
1. Attach a 1/2" pipe extension (dielectric pole available) to the threaded end of a J-Master tool, and place pre-wired J-Clip into tool.
2. Attach a 1/2" pipe extension (dielectric pole available) to the threaded end of a J-Master tool, and place pre-wired J-Clip into tool.
3. Disengage the tool by lifting up and out.

EASY INSTALLATION

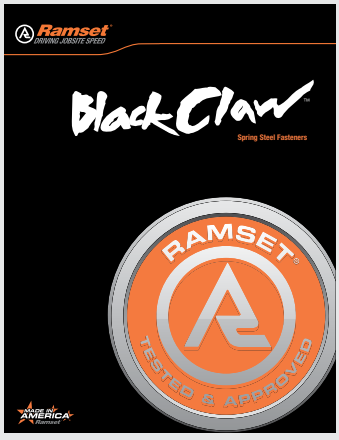
1. Attach J-Master tool to end of threaded 1/2" pipe or dielectric pole. Lay pre-tied Clip-Pur against magnetized strips.
2. Raise the Clip-Pur up to the purlin. Position the clip on the 45° flange and give a downward tug, the clip is now in position.



J-Clip attached to the J-Master Tool



Clip-Pur attached to the J-Master Tool



Ask about our Black Claw Spring Steel Clips

EPOL6 / EPOL8 T3SS 6' AND 8" POLE TOOLS

EPOL6: 6 foot long
EPOL8: 8 foot long

ADVANTAGES

- Easy to operate: Comfortable "motorcycle" grip replaces handbrake mechanisms
- Sturdy design: 25% thicker than similar poles for greater support
- No hose clamps required: Simple to assemble
- Also fits Ramset R150 tools
- Pole weight: 5lbs

Extend Your Reach!

New ergonomic design balances the tool directly over the pole for a lightweight feel

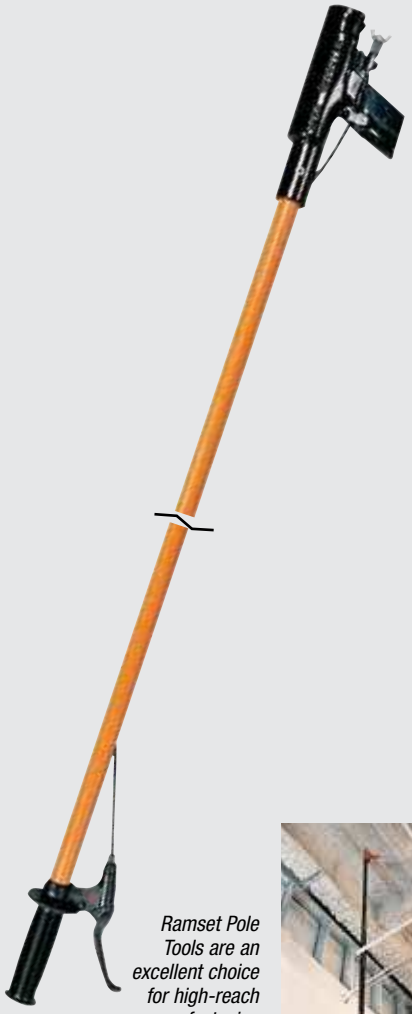
EASY TO ASSEMBLE

Log on to www.ramset.com for a video on attaching the pole tool to the T3SS

COMMON REPLACEMENT PARTS

- 10-24SHCS Screw Package for T3
- T3SPACER Spacer (PKG 4)
- T3TRIGACT Trigger Activator Rod

EXTENSION POLES

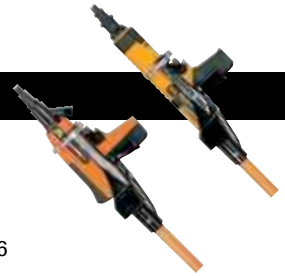


Ramset Pole Tools are an excellent choice for high-reach fastening applications.

Fast, easy installation from floor level eliminates lift baskets, scaffolds and ladders.

ADVANTAGES

- Eliminates scaffolding or ladders
- Uses existing powder tools
- Rubber "motorcycle" grip for operator comfort and to reduce recoil level
- Delrin™ coupler on cable makes pole di-electric
- Nyloc™ nuts keep your adjustment fixed solidly on the trigger bar
- Top-quality hand lever
- Lightweight cast aluminum housing fits tool snugly and provides tool protection
- Trigger bar adjusts easily for individual tools



POLES FOR RAMSET AND HILTI® TOOLS

LENGTH	PART #
6'	PTSEMI6
8'	PTSEMI8

FITS: RAMSET D60, SA270, D45A, Rocket, Cobra, **HILTI** DX36

Hilti® is a registered trademark of Hilti, Corp.

POLES FOR RAMSET VIPER

FIXED LENGTH	
LENGTH	PART #
6'	VPOL6
8'	VPOL8

TELESCOPING *(ADJUSTABLE IN 1' INCREMENTS)*	
LENGTH	PART #
6'-12'	TVPOL612
6'-18'	TVPOL618

6'–12' or 6'–18' Telescoping Extension Pole

Part No. TFUEL
Fuel Cell–TrakFast
Qty: 12

Part No. RFUEL
Fuel Cell–T2, R150, E150 & M150
Qty: 12 (6–2 packs)

Part No. T3FUEL
Fuel Cell–T3SS & T3MAG
Qty: 12 (6–2 packs)

TOOL CLEANING KIT

- Wood Handle Wire Brush
- Round Wire Brushes: Small, medium, large
- Package of 10 Scrubs: Hand and tool cleaners

Part No. PATCK
Cleaning Kit
Qty: 1

Part No. 7505012
Battery–TF1100
Qty: 1

Part No. B0092
Battery–T3SS & T3MAG
Qty: 1

Part No. 334000
Battery–T2 & R150, E150 & M150
Qty: 1

Part No. 405176
Battery–GYPFAST
Qty: 1

Part No. B0022
Battery Charger–TF1100, T3SS & T3MAG
Qty: 1

Part No. 7505142
Battery Charger–T2 & R150, E150 & M150
Qty: 1

Part No. LD100
Plated 1" Lathing Disc 22g
Qty: 1,000 per box
Works with all magnetic probes

Part No. LD114
Plated 1-1/4" Lathing Disc
(GYPFAST)
Qty: 1,000 per box

Part No. 100227
Magnetic Muzzle for XT540
Qty: 1

Part No. 100018
Disc Holding Probe
(for TF1100 One Piece Nose)
Qty: 1

Part No. 7405173
Disc Holding Probe
(for TF1100 Telescoping Nose)
Qty: 1

Part No. M150200
Magnetic nose Piece
(for R150 and T3SS)
Qty: 1

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

Part No. 2761910
Gas Mag Probe
(GYPFAST)
Qty: 1

Part No. 2731910
Gyp Air Probe
(GYPFAST)
Qty: 1

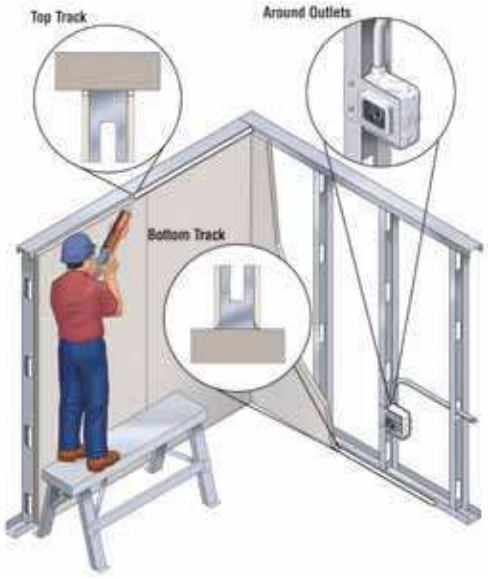
SC200 SOUND CONTROL SEALANT

ADVANTAGES

- Designed to seal drywall gaps and reduce sound transmission in STC rated walls
- Water-based for easy clean up, won't compromise fire-rated walls
- Non-flammable and paintable
- Increases sound absorption up to 128%
- Works on all partition gaps including: top track, around outlets and bottom track

SUGGESTED SPECIFICATIONS

- Meets ASTM E84, ASTM C919, ASTM E90 UL report R25562
- 28 oz tube/12 tubes per carton
- Optimal 0/0 rating for flame spread/smoke developed (UL classified)
- Meets requirements for LEED EQ Credit 4.1
- Ultra Low VOC Contents 24g/L



DA100 DRYWALL ADHESIVE

ADVANTAGES

- Designed to bond gypsum board to wood or steel studs
- Reduces nail pops
- Up to 66% fewer fasteners required
- Hides framing defects up to 3/8"
- 28 oz. tube/12 tubes per carton

** DA100 NOT FOR SALE IN AREAS WITH HEAVY VOC RESTRICTIONS*

RL510 ROTATING LASER

- Fully automatic rotating laser that can be used for leveling, vertical alignment, plumbing and squaring.

APPLICATIONS

- Installing suspended ceilings
- Soffits
- Stud & track layout
- Variety of interior alignment tasks

FEATURES

- Integrated motorized wall mount adjustable by remote control
- Automatic self leveling in both horizontal and vertical modes
- Manual leveling mode for slopes or inclined planes
- Choice of beams: rotating, scanning, chalk line
- Easy field calibration
- 1 year warranty

RL510 Interior Kit includes, rotating laser, integrated motorized wall mount, rechargeable and alkaline battery packs remote control, target card, laser enhancing glasses, and impact esistant carrying case.

RL2+ CROSS/PLUMB LASER

APPLICATIONS

WALLS & CEILINGS

- Soffits
- Drywall track layout
- Trim, windows and door frames
- Suspended ceilings

ELECTRICAL

- Leveling of cable tray
- Plumb Points for coring and overhead lighting positioning
- Outlets
- Setting rack points

FEATURES

- Cross line and plumb points all in one easy to use laser
- Locking mechanism (pendulum lock) increases the durability and preserves calibration
- Locked line mode allows for more complicated layouts; i.e., sloped areas, tile patterns
- Audible out-of-level alert
- Rugged rubber housing protects precision laser components
- Built in 1/4-20 thread for tripod
- 2 year warranty

RL3 3 POINT LASER

APPLICATIONS

WALLS & CEILINGS

- Drywall track layout
- Trim, windows and door frames

ELECTRICAL

- Plumb points for coring and positioning lighting

FEATURES

- Locking mechanism (pendulum lock) increases the durability and preserves calibration
- Audible out-of-level alert
- Built in 1/4-20 thread for tripod
- Rugged rubber housing protects precision laser components
- Third beam can be turned off to increase battery life
- 2 year warranty

REVOLUTIONARY UNIVERSAL STAND

- Integrated laser stand works on studs and floor (patent pending)
- Magnetic: Powerful magnets easily secures to steel stud, even 25 gauge dimpled stud
- Stand height provides easy visual access to chalk lines or plumb point
- Works with 2" deep leg track
- Stand can bump the track to allow for plumb point alignment

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

SELECTION CHART

T3MAG FUEL/PIN PACK

1000 PINS AND 1 FUEL CELL PER BOX

Larger .125 shank diameter offers improved success rate (15 pin strip)

PART NUMBER	PIN LENGTH		DESCRIPTION
	IN.	(MM)	
T3012	1/2	(12.7)	1/2" steel pin with T3 fuel cell
T3012S	1/2	(12.7)	1/2" premium steel pin with T3 fuel cell
T3034B	3/4	(19.1)	3/4" concrete pin with T3 fuel cell
T3034S*	3/4	(19.1)	3/4" step shank pin with T3 fuel cell
T3100	1	(25.4)	1" concrete pin with T3 fuel cell

Shank diameter = .125 **Shank diameter= .104/.125*
Head diameter = .250

TRAKFAST STANDARD FUEL/PIN PACK

1000 PINS AND 1 FUEL CELL PER BOX

For high volume, repetitive fastenings to concrete and steel such as drywall track to concrete

PART NUMBER	PIN LENGTH		DESCRIPTION
	IN.	(MM)	
FPP012	1/2	(12.7)	1/2" Plated steel pin
FPP012S*	1/2	(12.7)	1/2" Premium Plated step shank pin
FPP034B	3/4	(19.1)	3/4" Black pin
FPP034S*	3/4	(19.1)	3/4" Premium Plated step shank pin
FPP100	1	(25.4)	1" Plated pin
FPP114	1-1/4	(31.8)	1-1/4" Plated Pin

Shank diameter = .109 ** Shank diameter = .104/.118*
Head diameter = .250 ** Head diameter = .250*

TRAKFAST BREAKAWAY STRIP FUEL/PIN PACK

1000 PINS AND 1 FUEL CELL PER BOX

Collation designed to breakaway on impact. For high volume, repetitive fastenings to concrete such as wood furring to concrete

PART NUMBER	PIN LENGTH		DESCRIPTION
	IN.	(MM)	
FPP034T	3/4	(19.1)	3/4" Plated pin
FPP100T	1	(25.4)	1" Plated pin
FPP114T	1-1/4	(31.8)	1-1/4" Plated Pin
FPP112T	1-1/2	(38.1)	1-1/2" Plated Pin

Shank diameter = .109
Head diameter = .250

Sold in master cartons of 5000 minimum. Cartons cannot be split.

PLY138 TRAKFAST PLYWOOD PIN

FOR ATTACHING PLYWOOD TO METAL STUDS

1000 pins and 1 fuel cell per box

- Fastener Length: 1-3/8"
- Shank Diameter: .100 dia. (before knurl)
- Head Diameter: .250
- Helical Knurled Shank
- Mechanical Zinc Plated
- Can Be Used With:
  Wood Sheathings: 3/8", 1/2", 5/8", 3/4"
  Steel Stud Gauges: 16, 18, 20

ADVANTAGES

VS SCREWS

- 3 - 5 times faster than screw installation. No worrying about electrical cords.

STRIP

- Collation strip breaks away upon impact, allowing the head of the pin to recess into the wood for a nice, clean look
- 10-pin strips transfer easily from the operator's pouch to the TrakFast tool, eliminating waste

VS AIR SYSTEMS

- No set-up and tear down time. No hassling with compressors or hoses.

PINS

- Hardened steel pin ensures a clean penetration of the fastener — no dimpling of the stud
- Knurled helical shank gives the fastener superior holding values
- Zinc plated for corrosion resistance

GAS TOOL FASTENERS SELECTION CHART

GYPFAST

PART NO.	FASTENER DESCRIPTION .140" DIA. KNURLED SHANK 5/16" DIA. BUGLE HEAD	MASTER CARTON QUANTITY	MASTER CARTON WEIGHT	APPLICATIONS
GF112	1-1/2" (38mm)	6,000 nails/ctn (40- 150 ct. coils) 6 fuel cells	37 lbs.	Single Layer of Exterior Sheathing, Wood Furring and Blocking
GF200	2" (51mm)	4,800 nails/ctn (32 - 150 ct. coils) 5 fuel cells	38 lbs.	Double Layer of Exterior Gypsum Sheathing, Wood Furring and Blocking
GF212	2-1/2" (64mm)	2,700 nails/ctn (18 - 150 ct. coils) 3 fuel cells	26 lbs.	Multi-Layers of Sheathing, Wood Blocking, and Dimensional Lumber

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

AIR TOOL FASTENERS SELECTION CHART

GYPFAST AIR

PART NO.	FASTENER DESCRIPTION .140" DIA. KNURLED SHANK 5/16" DIA. BUGLE HEAD	MASTER CARTON QUANTITY	MASTER CARTON WEIGHT	APPLICATIONS
GF112A	1-1/2" (38mm)	6,000 nails/ctn (40- 150 ct. coils)	36 lbs.	Single Layer of Gypsum Sheathing, Wood Furring and Blocking
GF200A	2" (51mm)	4,800 nails/ctn (32 - 150 ct. coils)	37 lbs.	Double Layer of Gypsum Sheathing, Wood Furring and Blocking
GF212A	2-1/2" (64mm)	2,700 nails/ctn (18 - 150 ct. coils)	26 lbs.	Multi-Layers of Sheathing, Wood Blocking

TOOLS AND TECHNIQUES

- Always read operators manual for instruction on proper use and safety.
- Adjust depth sensitive nosepiece to achieve proper seating of fastener to work surface.
- Consult sheathing manufacturer's guidelines for appropriate fastener and fastening pattern.
- Point of nail must penetrate 1/2" minimum beyond steel.

GAS TOOL FASTENERS

(Pre-assembled, Single-Shot)

The fasteners are designed for use in Ramset Single-Shot Gas Tools (R150, T3SS)

SELECTION CHART

THREADED ROD HANGER

For suspended ceilings, piping and other items using 1/4" or 3/8" threaded rod. Fastener is pre-assembled to a 16 gage threaded rod hanger. 100 per jar.

PART NUMBER	DESCRIPTION
14TRHMP034	1/4" Rod hanger with 3/4" plated pin
38TRHMP034	3/8" Rod hanger with 3/4" plated pin

Shank diameter = .104/.125 Head diameter = .300

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.

PART NUMBER	DESCRIPTION
38HSMP034*	3/8" Hole strap with 3/4" plated pin
12HSMP034	1/2" Hole strap with 3/4" plated pin
34HSMP034	3/4" Hole strap with 3/4" plated pin
10HSMP034	1" Hole strap with 3/4" plated pin

*Shank diameter = .104/.125 Head diameter = .300 *38HSMP034 = 18 gage, 200 per jar*

CONDUIT CLAMP

Used to attach conduit to concrete. Pin pre-assembled to an 18 gage conduit strap. 1/2" 50 per jar and 3/4" 25 per jar.

PART NUMBER	DESCRIPTION
12CCMP034L	1/2" Conduit clamp with 3/4" plated pin
34CCMP034L	3/4" Conduit clamp with 3/4" plated pin

Shank diameter = .104/.125 Head diameter = .300

CEILING CLIP ASSEMBLY

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

PART NUMBER	DESCRIPTION
34CLIP	3/4" wide angle clip w/ 3/4" length pin

Shank diameter = .104/.125 Head diameter = .300

AVAILABLE IN CONVENIENT JARS!

The new durable plastic containers mean less waste on the jobsite, or in the back of a truck. Their wide-mouth design makes it easy to grab what you need.

Each T3ss gas accessory and pin label provides vital holding value information—taking away the guess work.

(Pre-assembled, Single-Shot)

SELECTION CHART

TIE STRAP HOLDER

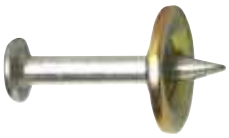
Used to install temporary lighting and secure low voltage cable to concrete, uses a standard cable tie up to 3/8" in width. Fastener is pre-assembled to a 22 gage tie strap holder. 50 per jar.

PART NUMBER	DESCRIPTION
TSHMP034	Tie strap holder with 3/4" plated pin

Shank diameter = .104/.125 Head diameter = .300

MECHANICAL PIN WITH WASHER

Used for the attachment of light gage metal to concrete and steel such as HVAC duct strap to concrete. Plated pin pre-assembled to a 1/2" domed washer. 200 per jar, 1" 100 per jar.



PART NUMBER	DESCRIPTION
M012	1/2" Plated step pin with dome washer
M034	3/4" Plated pin with domed washer
M034BB	3/4" Premium step pin with domed washer
M100	1" Plated pin with domed washer

MUST USE WITH MAGNETIC WORK CONTACT ELEMENT (M150200)

Shank diameter = .125, Step Pin .104/.118 Head diameter = .300 (M012 = .250)
**Will fit R150 & T3SS with optional work contact element, P/N: M150200*

1/4-20 THREADED STUD

Used to attach electrical components to concrete where removability of the component is required. Plated threaded stud. 200 per jar.

PART NUMBER	DESCRIPTION	SHANK LENGTH
14STUD	1/2"	5/8"

NOT MADE IN USA

Shank diameter = .125

TOP HAT PIN

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

PART NUMBER	DESCRIPTION
MP034TH	3/4" Plated pin with top hat

Shank diameter = .125 Head diameter = .300

BRIDLE RING

Pre-Assembled 2" Bridle Ring supports low voltage, data com, signal, and control cables
50 per box.

PART NUMBER	DESCRIPTION
BR2	2" Bridal ring

Shank diameter = .125

POWDER FASTENERS

These Mechanical/Electrical Assemblies are designed to be used in either Gas or Powder Actuated Tools.

The unique fastener design increases fastening success rate while providing outstanding performance.

SELECTION CHART

HYBRID PIN

For general purpose attachments to concrete.
PowerPoint step shank pin pre-assembled to 1/2" washer. 500 per jar.

PART NUMBER	DESCRIPTION	ALL POWDER TOOLS
M100BB	1" PowerPoint step shank pin with 1/2" domed washer & flute	•

Shank diameter = .125/.150 Head diameter = .300

ONE HOLE CONDUIT STRAP

Used to attach conduit or armored cable to concrete.
PowerPoint fastener pre-assembled to a 16 gage conduit strap. 100 per box.

PART NUMBER	DESCRIPTION	ALL POWDER TOOLS
38HSSS10	3/8" Hole strap with w/1 premium pin	•
12HSSS10	1/2" Hole strap with w/1 premium pin	•
34HSSS10	3/4" Hole strap with w/1 premium pin	•
10HSSS10	1" Hole strap with w/1-1/4" premium pin	•

Shank diameter = .125/.150 Head diameter = .300
38HSSS10 = 18 gage

THREADED ROD HANGER

For suspended ceilings, piping, and other items using 1/4" or 3/8" threaded rod.
PowerPoint fastener pre-assembled to a 16 gage threaded rod hanger. 100 per box.

PART NUMBER	DESCRIPTION	ALL POWDER TOOLS
14TRHSS10	1/4" Rod hanger w/1" premium pin	•
38TRHSS10	3/8" Rod hanger w/1" premium pin	•

Shank diameter = .125/.150 Head diameter = .300

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.

FASTENER TERMINOLOGY SUFFIX

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

ADVANTAGES

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. All Ramset fasteners with .300 head will fit into tools with 8mm barrels.

SELECTION CHART

BLACK TRACK PINS

Designed for use in concrete and structural steel applications. Available in 100-pack or 1000-pack per box.

PART NUMBER	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	ROCKET	D60/ D45A	SA270	XT540	COBRA	MASTERSHOT/ RS22
1506B	3/4	(19.1)	•	•	•	•	•	•	•

Shank diameter = .145 *Head diameter = .300*

PLATED PINS

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

PART NUMBER	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	ROCKET	D60/ D45A	SA270	XT540	COBRA	MASTERSHOT/ RS22
1503K	1/2 Knurled	(12.7)	•	•	•	•	•	•	•
1506	3/4	(19.1)	•	•	•	•	•	•	•
1508	1	(25.4)	•	•	•	•	•	•	•
1510	1-1/4	(31.8)	•	•	•	•	•	•	•
1512	1-1/2	(38.1)	•	•	•	•	•	•	•
1514	2	(50.8)		•	•	•	•	•	•
1516	2-1/2	(63.5)				•	•	•	•
1524	3	(76.2)				•	•		•

Shank diameter = .145 *Head diameter = .300*

WASHERED PINS

Washer increases bearing surface against the material to be fastened.
100 per box. 16 gage metal washer. 7/8" diameter washer after 16 gage.

PART NUMBER	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	ROCKET	D60/ D45A	SA270	XT540	COBRA	MASTERSHOT/ RS22
1506SD	3/4	(19.1)	•	•	•	•	•	•	•
1508SD	1	(25.4)	•	•	•	•	•	•	•
1510SD	1-1/4	(31.8)	•	•	•	•	•	•	•
1512SD	1-1/2	(38.1)	•	•	•	•	•	•	•
1514SD	2	(50.8)	•	•	•	•	•	•	•
1516SDC	2-1/2	(63.5)		•	•	•	•	•	•
1524SDP*	3	(76.2)				•	•	•	•

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

SELECTION CHART

POWERPOINT PINS

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

PART NUMBER	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	ROCKET	D60/ D45A	SA270	XT540	COBRA	MASTERSHOT/ RS22
SP12	1/2	(12.7)	•	•	•	•	•	•	•
SP58	5/8	(15.9)	•	•	•	•	•	•	•
SP34	3/4	(19.1)	•	•	•	•	•	•	•

Shank diameter = .150 Head diameter = .300

POWERPOINT STEP SHANK PINS

Used for fastening into harder steel and concrete. Premium steel and hard concrete pin.
Pin for fastening into harder steel and concrete. 100 per box. (M100BB 500 per jar)

PART NUMBER	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	ROCKET	D60/ D45A	SA270	XT540	COBRA	MASTERSHOT/ RS22
M100BB	1	(25.4)	•	•	•	•	•	•	•
SP100	1	(25.4)	•	•	•	•	•	•	•
SP114	1-1/4	(31.8)	•	•	•	•	•	•	•
SP112	1-1/2	(38.1)	•	•	•	•	•	•	•
SP178	1-7/8	(47.6)		•	•	•	•	•	•

Shank diameter = .150/.180 Head diameter = .300
M100BB shank diameter = .125/.150 with 1/2" washer

TOP HAT DRIVE PIN

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

PART NUMBER	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	ROCKET/ D45A	D60	SA270	XT540	COBRA	MASTERSHOT/ RS22
SP58TH	5/8	(15.9)	•	•	•	•	•	•	•
†1906	3/4	(19.1)	•	•		•	•	•	•
†1908	1	(25.4)	•	•		•	•	•	•

Shank diameter = .145 (SP58TH = .150) Head diameter = 8mm (SP58TH = .300)

RAMGUARD PINS

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

PART NUMBER	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	AUTOFAST	D60/D45A	ROCKET/ SA270	XT540	COBRA	MASTERSHOT/ RS22
1516E	2-1/2	(63.5)		•	•	•	•	•	•
1524E	3	(76.2)		•		•	•	•	•
1516SDE	2-1/2	(63.5)		•		•	•	•	•
1524SDE*	3	(76.2)		•	•	•	•	•	•
SP178E	1-7/8	(47.6)		•		•	•	•	

Shank diameter = .145 (SP178E = .150/.180)
*Head diameter = .300 *Square washer indicates 3" pin has been installed*
** 1500 Series Coated with RamGuard*
** SP Series Coated with Triple Zinc*

1/4 - 20 THREADED STUD

For applications the require removability. 100 per box.

PART NUMBER	THREAD LENGTH IN.	THREAD LENGTH (MM)	SHANK LENGTH IN.	SHANK LENGTH (MM)	721/ R25	ROCKET	D60/ D45A	SA270	XT540	COBRA	VIPER	MASTERSHOT/ RS22
†1623WK	3/4	(19.1)	1/2 Knurled	(12.7)	•	•	•	•	•	•	•	•
†1643W	3/4	(19.1)	1	(25.4)		•	•	•	•	•		•

Shank diameter = .145
Use 1623WK for Steel Base Materials Use 1643W for Concrete Base Materials

† NOT MADE IN USA

SELECTION CHART

TRUE EMBEDMENT PIN

The Ramset .157 True Embedment Pin is sized to provide you with True Embedment depths in track up to 14 gauge. You are assured to meet the required embedment depths into concrete or steel without compensating for the track depth. The pin heads are also stamped for easy identification after installation.

Sized a 1/16" longer than nominal length to provide a True Embedment. 100 per box.

PART NUMBER	PIN LENGTH		EMBEDMENT LENGTH		721/ R25	VIPER	D60	ROCKET/ SA270	D45A	COBRA	XT540
	IN.	(MM)	IN.	(MM)							
TE12	0.545	(13.8)	1/2	(25.4)	•	•		•	•	•	•
TE34	13/16	(20.6)	3/4	(31.8)	•	•		•	•	•	•
TE100	1-1/16	(27)	1	(25.4)	•	•		•	•	•	•
TE114	1-5/16	(33.3)	1-1/4	(31.8)	•	•		•	•	•	•
TE112	1-9/16	(39.7)	1-1/2	(38.1)	•	•		•	•	•	•

Shank diameter = .157 Head diameter = .320

Embedment depth is easily identifiable by head stamps.

CEILING CLIP ASSEMBLIES

Designed for suspending ceilings and other overhead applications. Pin preassembled to a 14 gage clip. 1000 per box.

PART NUMBER	PIN LENGTH		721	VIPER	D60	ROCKET/ SA270	D45A	COBRA	XT540
	IN.	(MM)							
SDC100	1	(25.4)	•	•	•	•	•	•	•
SDC125*	1-1/4	(31.8)	•	•	•	•	•	•	•

**Available in 100-Pack (P/N: SDC125C) Shank diameter = .145 Head diameter = .300*

POWERPOINT PINS WITH CEILING CLIPS

Designed for difficult overhead applications. Pin preassembled to a 14 gage angle clip. 1000 per box

PART NUMBER	PIN LENGTH		721	VIPER	D60	ROCKET/ SA270	D45A	COBRA	XT540
	IN.	(MM)							
SPC78	7/8	(22.2)	•	•	•	•	•	•	•
SPC114	1-1/4	(31.8)	•	•	•	•	•	•	•

Shank diameter = .150 (SPC114 = .150/.180) Head diameter = .300

FASTENER ANGLE CLIP

General purpose 3/4" wide angle clip. 14 gage angle clip. 100 clips per box.

PART NUMBER	DESCRIPTION
1202CF	Angle clip (no pin)

Hole diameter: 5/16" & 13/64"

High Quality and Dependability

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 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.

Now Available - LEAD FREE

Advantages Powder Guide

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

SELECTION CHART

RAMSET LOADS FOR LOW VELOCITY TOOLS

PART NUMBER	POWER LEVEL	COLOR	CALIBER/TYPE	PACKAGING	COMPATIBLE TOOLS	
					RAMSET	OTHERS
2D60 3D60 4D60	2 3 4	Brown Green Yellow	.25 Disc .25 Disc .25 Disc	all 10 disc 10 discs/box	D60, D45A and AutoFast	
5D45	5	Red	.25 Disc	10 discs/box	D45A and AutoFast	
3RS25 4RS25 5RS25	3 4 5	Green Yellow Red	.25 Strip .25 Strip .25 Strip	all 10 strip 10 strips/box	R25	DX-35
22CW 32CW 42CW	2 3 4	Brown Green Yellow	.22 Single .22 Single .22 Single	all 100/box	721, M70, RS22, HD22, Mastershot	DXE37, DXE72
3RS27	3	Green	.27 Strip	all 10 strip 10 strips/box	SA270, Cobra, Viper, Rocket and XT540	DX-350, DX-351, DX-36M, DX460
4RS27	4	Yellow	.27 Strip	all 10 strip 10 strips/box		
5RS27	5	Red	.27 Strip	all 10 strip 10 strips/box		DX-350, DX-351, DX-36M, DX-451, DX460
6RS27	6	Purple	.27 Strip	all 10 strip 10 strips/box		DX-451, DX-460
3NL27	3	Green	.27 Strip	all 10 strip 10 strips/box	SA270, Cobra, Viper, Rocket and XT540	DX-350, DX-351, DX-36M, DX-451, DX460
4NL27	4	Yellow	.27 Strip	all 10 strip 10 strips/box		
5NL27	5	Red	.27 Strip	all 10 strip 10 strips/box		

.25 and .27 caliber strips available in 1000 pack

*1000-Pak/100 Strips/Box

Hilti® is a registered trademark of Hilti, Corp.

POWDER LOAD IDENTIFICATION

1	2	3	4	5	6
Grey	Brown	Green	Yellow	Red	Purple

Lower power → Higher power

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.

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 D45A disc tool, or the work horse, nearly maintenance-free 721 single shot PAT. But constant use of these tools can be noisy and overly jarring on the body.

Drywall

Electrical

Mechanical

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

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

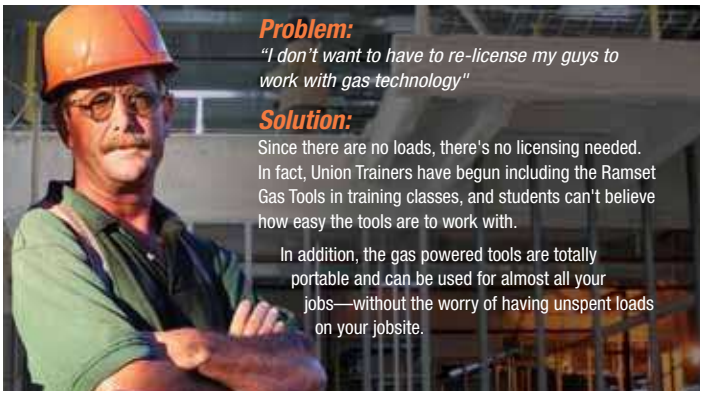
Problem:

"My guys work on block all day long—from electrical boxes to furring. I've tried powder tools and they blow holes in block. What makes the Ramset technology different?"

Solution:

Ramset technology has patented overdrive technology built in to every gas-powered tool. The tool works under the same principal as a combustion engine. A little gas, a little spark and a powerful shot, without the recoil associated with powder.

The industry transitions to gas technology



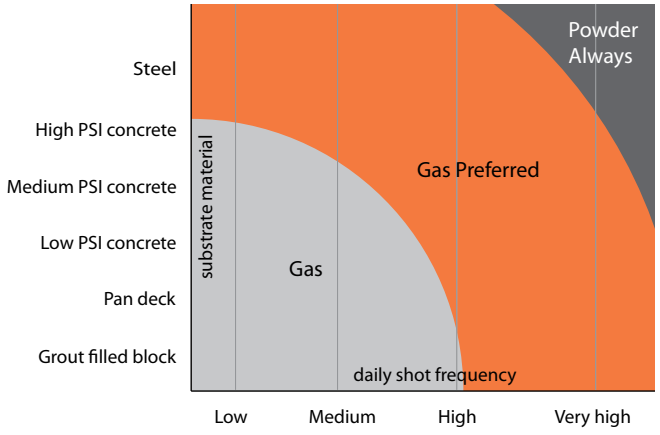
Problem:

"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.

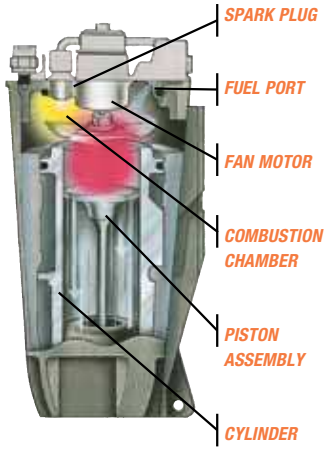


The Inside Story

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

Plywood to Metal Framing or Truss

Part Number PLY138
Fasteners used shall have a 0.100 nominal shank diameter with helical knurl and a length of 1-3/8-inches.

Track or Clip to Steel Beam

Part Number 1503K (pg.29)
Fasteners used shall have a 0.300 head with a 0.145 knurled shank diameter and a length of 1/2-inches.

Part Number SP58TH (pg.30)
Fasteners used shall be designated power point type with a 0.150 nominal shank diameter and a length of 5/8-inches.

Part Number TE12 (pg.31)
Fasteners used shall have a 0.320 head with a 0.157 knurled shank diameter and a length of .545 inches.

Part Number TE100 (pg.31)
Fasteners shall be designated "True Embedment" type with a 0.320 head with a 0.157 shank and length of 1.0625 providing minimum of 1" of embedment in up to 14ga track. Fastener shall have the embedment depth of 1" stamped on head.

Interior Partition Track to Concrete

Part Number T3034B (pg.23)
Fasteners shall be designated T3 Type with a 0.125 nominal shank diameter and a length of 3/4 inch.

Exterior Sheathing to Metal Stud

Part Number GF112 (pg.25)
Fasteners designated "GYPFAST" and have a helical knurled shank with a 1-1/2" Length

Exterior Perimeter Track to Concrete

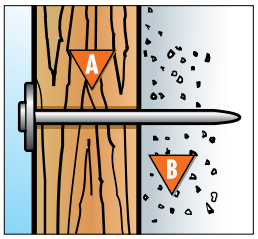
Part Number 1510SD (pg.29)
Fasteners used shall have a 0.145 nominal shank diameter and a length of 1-1/4 inches. The fastener shall have a pre-assembled 7/8-inch washer.

Part Number SP114 (pg.30)
Fasteners used shall be designated PowerPoint type with a 0.150/.180 stepped shank and a length of 1-1/4 inches.

For assistance with specifications and/or substitutions, contact Technical Service at 800-726-7386.

SELECTING THE CORRECT FASTENER LENGTH

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.

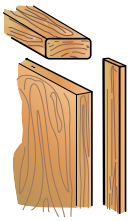
Always start with the lightest load. If the fastener does not set completely, use the next higher load and repeat the process.

2 .. Brown
3 .. Green
4 .. Yellow
5 .. Red

Least Powerful

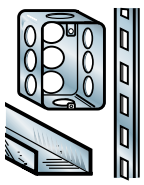
Most Powerful

TYPICAL USES



WOOD ATTACHMENT MATERIAL*	CONCRETE BASE MATERIAL		STRUCTURAL STEEL BASE	
	Commonly Used Fastener	Commonly Used Load	Commonly Used Fastener	Commonly Used Load
2 x 4	1516SDC (2-1/2")	Yellow #4	1514SD (2") SP178 (1-7/8")	Red #5 Red #5
3/4" Plywood for furring strip	1512 (1-1/2")	Yellow #4	1510 (1-1/4")	Yellow #4
1/4" - 1/2"	1510 (1-1/4")	Green #3	SP34 (3/4")	Yellow #4

* Use Ramguard Pin for treated lumber.



THIN GAGE STEEL	CONCRETE BASE MATERIAL		STRUCTURAL STEEL BASE	
	Commonly Used Fastener	Commonly Used Load	Commonly Used Fastener	Commonly Used Load
Electrical Junction Boxes	M100BB (1")	Green #3	SP58TH (5/8")	Yellow #4
Shelf Brackets	M100BB (1")	Green #3	SP34 (3/4")	Yellow #4
Interior Drywall Track	1506B (3/4")	Brown #2	SP12 (1/2")	Yellow #4
Perimeter Track	1510 (1-1/4")	Yellow #4	SP12 (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.

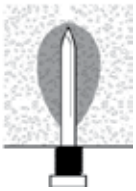
DESCRIPTION

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 snugly and provides tool protection.

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.



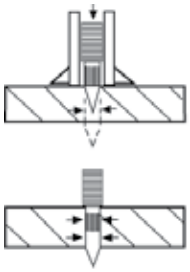
FASTENING PLACEMENT AND PENETRATION

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.

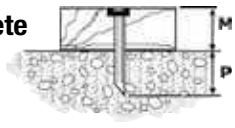
HOW TO SELECT A POWDER ACTUATED FASTENER

- **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



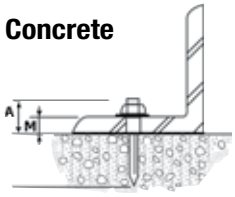
Minimum Shank Length = Thickness of Material (M) + Required Penetration (P)

To Steel

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

Removable Installation

To Concrete

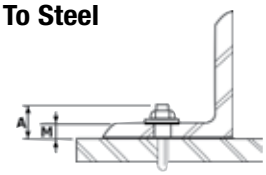


Thread Length (A) = Thickness of Material (M) + Allowance* For Nut & Washer

Shank Length = 1"

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

To Steel

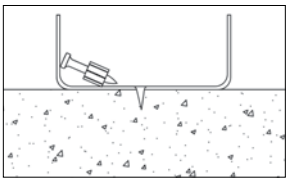


Thread Length (A) = Thickness of Material (M) + Allowance* For Nut & Washer

Shank Length = 1/2"

CONCRETE SYMPTOM

FASTENER DOES NOT HOLD IN BASE MATERIAL OR BASE MATERIAL SPALLS



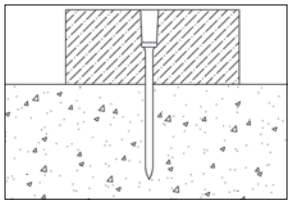
CAUSE

- 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



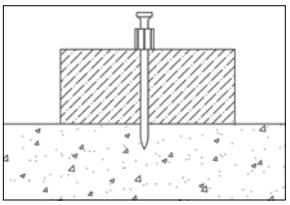
CAUSE

- 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



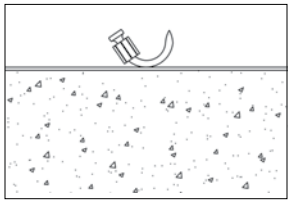
CAUSE

- Fastener too long
- Tool power level too low

ACTION

- Use shorter fastener
- Use a stronger powder load

FASTENER BENDS



CAUSE

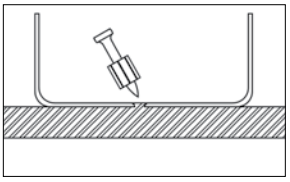
- Fastener hit large aggregate on entry
- Concrete too hard
- Fastener hit rebar just under the surface

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



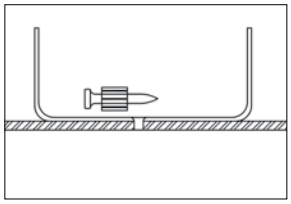
CAUSE

- 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



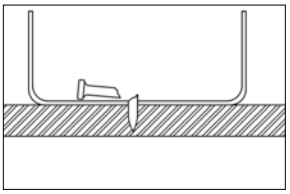
CAUSE

- Steel base material too thin

ACTION

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

FASTENER BREAKS OR BENDS



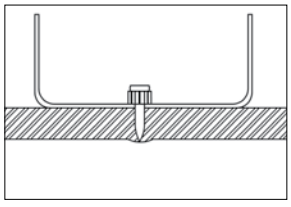
CAUSE

- 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 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
  Ramguard

APPROVALS/LISTINGS

- **ICC Evaluation Service, Inc.**
  #ESR-2579 TrakFast Pins
  #ESR-1955 T3 Fasteners
- **City of Los Angeles**
  #RR-25739 T3 pins
  #RR-25264 TrakFast pins

Collated Gas Fasteners In Concrete (TrakFast, T2 And T3)

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*
FPP - Step Shank	0.104/0.118	3/4	....	....	....	....	**51** *256*	**83** *418*

			2000 PSI		4000 PSI		6000 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*	....	....
T3 Step Shank	0.104/0.125	5/8	....	....	**60** *357*	**117** *587*	**107** *533*	**191** *957*

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN LIGHTWEIGHT CONCRETE / DECK / BLOCK 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*	**100** *756*	**40** *330*	**235** *1248*	....	....
FPP - Step Shank	0.104/0.118	3/4	....	....	....	....	**36** *184*	**58** *290*
T3 Straight Shank	0.125	5/8	**84** *418*	**108** *540*	**72** *361*	**242** *1210*	**20** *243*	**34** *264*
		3/4	**108** *540*	**173** *864*	**93** *470*	**288** *1442*	....	....
T3 Step Shank	0.104/0.125	5/8	....	....	**54** *269*	**230** *1150*	**71** *357*	**123** *613*

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.

Electrical 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 Light weight 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*, M034* M100*, BR2*	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*	**84** *446*
	14STUD	0.125	5/8	**91** *454*	....	**57** *373*	....	....	....	....	....
	M034BB	0.104/.118	3/4	**51** *256*	**83** *418*	....	....	....	....	**36** *184*	**58** *290*
	34 CLIP	0.104/.125	5/8	**62** *310*	....	**106** *528*	....	**44** *220*	....	....	....
	38HSMP034, 12HSMP034 34HSMP034, 10HSMP034 114HSMP034, 14TRHMP034 38TRHMP034, TSHMP034 12CCMP034L, 34CCMP034L	0.104/.125	5/8	**60** *357*	**117** *587*	**107** *533*	**191** *957*	**54** *269*	**230** *1150*	**71** *357*	**123** *613*
POWDER ASSEMBLIES	M100BB, 38HSSS10 12HSSS10, 34HSSS10 10HSSS10, 14TRHSS10, 38TRHSS10	0.125/.150	3/4	**107** *559*	**213** *1067*	**161** *803*	**248** *1240*	**96** *478*	**231** *1156*	**102** *512*	**166** *831*

* 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.

Gas Fasteners in Steel

PART NUMBER	SHANK DIAMETER (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
FPP012	0.109	SMOOTH	**195** *1047*	**292** *1570*	**223** *1220*	**278** *1526*	**181** *1048* [7]	**186** *1076* [7]
M012 FPP012S	0.104/0.118	SMOOTH	....	....	**148** *744*	**157** *787*	**166** *832* [7]	**157** *787* [7]
T3012	0.125	SMOOTH	**63** *676*	**162** *1356*	**239** *1285*	**211** *1417*	**113** *914* [8]	**197** *1327* [8]
T3012S	0.125	TAPER SMOOTH	....	....	**237** *1184*	**356** *1782*	**189** *943* [10]	**392** *1960* [7]
			INSTALLED IN ASTM A 572 GRADE 50 STEEL STEEL THICKNESS INCHES					
T3012	0.125	SMOOTH	**103** *733*	**222** *1682*	**147** *950*	**119** *973*	**147** *856* [9]	**112** *1014* [9]

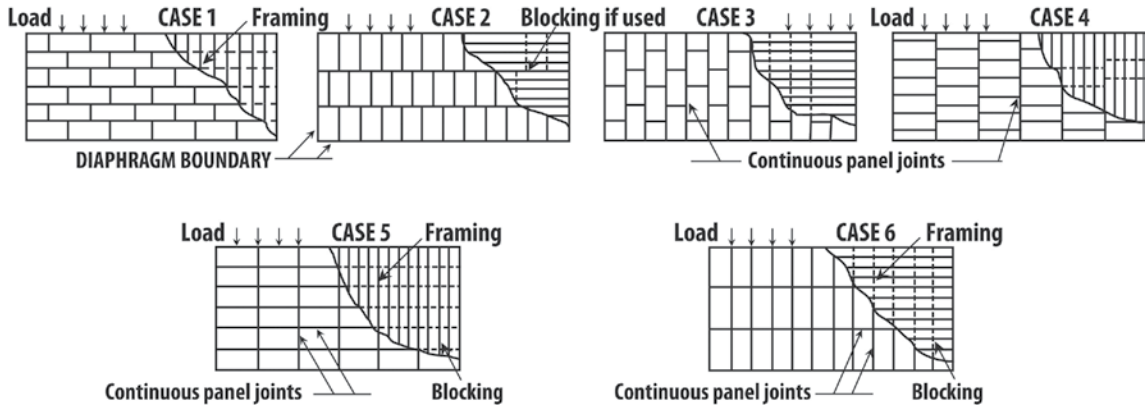
Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Testing conducted in accordance with ICC AC70 & ASTM E1190. **Note 3:** Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will 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

PLY138 TrakFast Plywood to Steel Pin Performance Tables

ALLOWABLE SHEAR FOR WIND OR SEISMIC FORCES IN POUNDS PER FOOT FOR HORIZONTAL PLYWOOD DIAPHRAGMS WITH STEEL FRAMING

PLYWOOD GRADE	MINIMUM STEEL GAGE [4, 6]	MINIMUM PANEL THICKNESS (Inches)	BLOCKED DIAPHRAGM PIN SPACING (Inches) [5, 6] Pin spacing at diaphragm boundaries (all cases), at continuous panel edges parallel to load (cases 3 &4) and at the panel edges (cases 5 & 6) ALLOWABLE LOAD				UNBLOCKED DIAPHRAGM PIN SPACING (Inches) [5, 6] Pins spaced 6 inches max. at supported edges	
			6	4	2-1/2	2	Case 1 (no unblocked edges or continuous joints parallel to load)	All other configurations (cases 2, 3, 4, 5 & 6)
			Pin spacing at other panel edges					
			6	6	4	3		
Structural 1	20 16	7/16 15/32	185 205	280 305	420 460	475 520	185 205	140 150
Grades other than Structural 1	20 16	7/16 15/32	165 185	250 275	380 415	430 470	165 185	125 140

Note 1: These values are for short-time loads due to wind or earthquake and shall be reduced by 25 percent for normal loading. **Note 2:** The pin shall be long enough to penetrate through the thickness of the steel a minimum of 1/4 inch. **Note 3:** Minimum width of framing is 1-1/2 inches. **Note 4:** These shear values also apply to framing made of thicker steel. **Note 5:** Spacing of fasteners along intermediate framing members is 12 inches on center. **Note 6:** The minimum panel edge distance is 3/8 inch. **Note 7:** Values shown reflect a 5:1 safety factor. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa



Note: Framing is permitted to be oriented in either direction for diaphragms, provided sheathing is designed for vertical loading.

ALLOWABLE WITHDRAWAL LOADS IN POUNDS PER FASTENER DUE TO WIND OR SEISMIC FORCES FOR PLYWOOD AND LUMBER ATTACHED TO STEEL FRAMING [1, 2, 3, 4]

PIN DIAMETER (Inches)	MINIMUM STEEL THICKNESS (Gage or Inches)	MINIMUM THICKNESS OF PLYWOOD (Inches) ALLOWABLE LOAD - *Ultimate Load*			
		3/8	7/16	15/32	19/32
0.100	22	15	15	.....	.....
0.100	20	20	25	25	25
0.100	18	30	35	40	40
0.100	16	40	45	60	60

Note 1: Plywood shall be Structural 1 rated. For other grades, values shall be reduced by 10 percent. **Note 2:** These values are for loads due to wind or earthquake and shall be reduced by 25 percent for other applications. **Note 3:** Minimum panel edge distance is 3/8 inch. **Note 4:** The pin shall be long enough to penetrate through the metal a minimum of 1/4 inch. **Note 5:** Values shown reflect a 8:1 safety factor. **Note 6:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

PLY138 TrakFast Plywood to Steel Pin Performance Tables

ALLOWABLE SHEAR FOR WIND FORCES IN POUNDS PER FOOT FOR PLYWOOD SHEAR WALLS WITH STEEL FRAMING

PLYWOOD GRADE	MINIMUM STEEL GAGE [5]	MINIMUM PANEL THICKNESS (Inches)	PIN SPACING, ALL PANEL EDGES (Inches) ALLOWABLE LOAD			
			6	4	3	2
Structural 1	22	3/8 [6]	120	180	240	305
	22	7/16 [6]	130	195	260	330
	22	15/32	145	215	290	365
	20	3/8 [6]	155	235	310	395
	20	7/16 [6]	170	255	340	435
	20	15/32	205	305	410	520
Grades other than Structural 1	22	3/8 [6]	110	165	215	275
	22	7/16 [6]	120	175	235	300
	22	15/32	130	195	260	330
	20	3/8 [6]	140	210	280	360
	20	7/16 [6]	155	230	310	390
	20	15/32	185	275	370	470

Note 1: Values are for loads imposed by wind and shall be reduced by 25 percent for normal loading. **Note 2:** The pin shall be long enough to penetrate through the metal framing a minimum of 1/4 inch. **Note 3:** The minimum panel edge distance for pin placement is 3/8 inch. **Note 4:** Spacing of fasteners along intermediate framing members is 6 inches on center for 3/8 inch and 7/16 inch panels when studs are 24 inches on center and 12 inches on center when studs are 16 inches on center. For other panel thickness, spacing along intermediate framing members is 12 inches from center. **Note 5:** Framing to be spaced 24 inches on center or closer except as provided in Footnote 6. **Note 6:** The values for 3/8-inch and 7/16-inch panels may be increased by 20 percent and 10 percent, respectively, for framing spaced 16 inches on center. **Note 7:** Values shown reflect a 5:1 safety factor. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

ALLOWABLE LATERAL LOADS IN POUNDS PER FASTENER DUE TO WIND OR SEISMIC FORCES FOR STRUCTURAL[1] PLYWOOD AND LUMBER ATTACHED TO STEEL FRAMING[1, 2, 3, 4, 6]

PIN DIAMETER (INCHES)	MINIMUM PANEL THICKNESS (Inches)	MINIMUM THICKNESS OF PLYWOOD (Inches) ALLOWABLE LOAD					
		3/8	7/16	15/32	19/32	23/32	1-1/8
0.100	22	80	80	80	80	80	80
0.100	20	105	105	115	115	115	115
0.100	16	105	105	115	170	170	170

Note 1: Plywood shall be Structural 1 rated. For other grades, values shall be reduced by 10 percent. **Note 2:** These values are for loads due to wind or earthquake and shall be reduced by 25 percent for other applications. **Note 3:** Minimum panel edge distance for placement is 1 inch from the fastener to the sheathing edge measured in the direction of the load and 3/8 inch measured perpendicular to the direction of the load. **Note 4:** The pin shall be long enough to penetrate through the metal a minimum of 1/4 inch. **Note 5:** Values for 16 gage also apply to 14 gage. **Note 6:** The above values apply to groups of at least five fasteners. For fewer fasteners in a group, use one-half of the tabulated value. **Note 7:** Values shown reflect a 5:1 safety factor. **Note 8:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

GypFast fasteners for the attachment of gypsum sheathing to light gage steel framing

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**
  Mechanical zinc plate to a minimum thickness of .0002 meets requirements of ASTM B695
  Climacoat

APPROVALS/LISTINGS

- **ICC Evaluation Service, Inc.**

  #ESR-2174 GypFast Gypsum Sheathing
  #ER-5380 GypFast Plywood Sheathing
- **City of Los Angeles**

  #RR-25638 GypFast

Allowable Negative Loads Using Ramset GypFast Fasteners

SHEATHING TYPE	MINIMUM STEEL STUD GAGE	MAXIMUM STEEL STUD SPACING (IN)	FASTENER SPACING (IN)	ALLOWABLE NEGATIVE LOAD (PSF)
1/2" GP DensGlass Gold Exterior Sheathing	20g to 12g	24	8	6
		16	8	8
5/8" GP DensGlass Gold Fireguard Type X Sheathing	20g to 12g	24	8	24
		16	8	32
1/2" USG Sheetrock Brand Sheathing	20g to 12g	24	8	12
		16	8	16
5/8" USG Sheetrock Brand Fire Code Type X Sheathing	20g to 12g	24	8	18
		16	8	24
1/2" USG Fiberock Brand Aquatough	20g to 12g	24	8	30
		16	8	40
5/8" USG Securock Glass-Mat Sheathing	18g	16	8	35
5/8" CertainTeed GlasRoc Sheathing Type X	18g	24	8	20
5/8" CertainTeed GlasRoc Sheathing Type X	16g	24	8	18
National Gypsum e2XP Extended Exposure Sheathing	18g	16	8	39

Note 1: Tested in accordance with ASTM E330. **Note 2:** Values shown reflect a 3:1 safety factor. **Note 3:** The fasteners must be driven to a depth at which the shank pierces the steel, such that the tip protrudes from the base metal a minimum of 1/2-inch. **Note 4:** Tabulated values do not allow any overdriving of fasteners into sheathing.

CORROSION DATA ASTM B117 SALT SPRAY

GF112		S-12 SELF DRILL SCREW
1560 hours (10% Red Rust)	Driven	
3240 Hours (10% Red Rust)	UnDriven	24 Hours (5% Red Rust)

GypFast Fastener has Climacoat Long Life Polymer Coating; S-12 Screw has .0002" Electrozinc and Clear Chromate.

GypFast fasteners for the attachment of plywood sheathing to light gage steel framing

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**
  Mechanical zinc plate to a minimum thickness of .0002 meets requirements of ASTM B695
  Climacoat

APPROVALS/LISTINGS

- **ICC Evaluation Service, Inc.**

  #ESR-2174 GypFast Gypsum Sheathing
  #ER-5380 GypFast Plywood Sheathing
- **City of Los Angeles**

  #RR-25638 GypFast

Allowable Withdrawl and Lateral Loads For A GypFast Fastener Used to Attach Structural Plywood Panels to Steel Framing Members [1,2,3]

MINIMUM STEEL THICKNESS (gage)[4]	MINIMUM THICKNESS OF STRUCTURAL PANELS				MINIMUM THICKNESS OF STRUCTURAL PANELS			
	3/8 Inch	15/32 Inch	19/32 Inch	23/32 Inch	3/8 Inch	15/32 Inch	19/32 Inch	23/32 Inch
	WITHDRAWL LOADS (POUNDS)				LATERAL LOADS (POUNDS)			
14	90	90	95	120	135	160	190	215
16	90	90	90	110	135	160	165	185
18	90	90	90	90	135	160	160	160
20	70	70	70	70	110	130	130	130
22	50	50	50	50	110	110	110	110

For SI: 1 Inch = 25.4 mm, 1 Pound = 4.448 N.
[1] Tabulated values are for loads due to wind or earthquake, and must be reduced by 25 percent for other applications.
[2] Tabulated values allow for no more than 20 percent of the fasteners to be overdriven more than 1/16 inch.
[3] Minimum edge distance and spacing are 3/8 inch and 3 inches, respectively.
[4] Section 2.2.3 describes minimum base-material thicknesses associated with gages.

Allowable Shear for Wind Forces For Structural Plywood Shear Walls Attached to Light Gage Steel Studs With GypFast Fasteners[1,2,3] (pounds per foot)

PANEL TYPE	MINIMUM PANEL THICKENESS	FRAMING		FASTENER SPACING [4,5] (INCHES ON CENTER)			
		MINIMUN GAGE[6]	SPACING (INCHES ON CENTER)	6	4	3	2
Structural I or Rated Sheathing and Siding	3/8	22	16	180	270	360	459
	3/8		24	144	216	288	367
	15/32		16 or 24	170	255	340	433
	3/8	20	16	180	270	360	459
	3/8		24	144	216	288	367
	15/32		16 or 24	208	313	417	531
	3/8	18	16	214	321	428	546
	3/8		24	171	257	342	437
	15/32		16 or 24	253	380	506	645
	19/32		16 or 24	259	389	518	661
	23/32		16 or 24	259	389	518	661
	19/32	16	16 or 24	266	399	532	679
	23/32		16 or 24	296	445	593	756
	19/32	14	16 or 24	304	456	608	776
	23/32		16 or 24	345	517	690	879

For SI: 1 Inch = 25.4 mm, 1 Pound/Lineral Foot = 0.0146 N/mm.

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
  Ramguard

APPROVALS/LISTINGS

- **ICC Evaluation Service, Inc.**

  #ESR-2690 Sill Plate #ESR-1799 Powder Pins & Clips

- **City of Los Angeles**

  #RR-22668 Powder pins

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*
1900	0.145	3/4	**105** *694*	**71** *458*	**101** *685*	**99** *627*	....	....

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

Fastener 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]

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]

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

Fastener 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*

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


SDC


SPC

Angle Clip In Concrete

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE CONCRETE COMPRESSIVE STRENGTH ALLOWABLE LAOD - *Ultimate Load*					
			4000 PSI			6000 PSI		
			TENSION (LBS)	SHEAR (LBS)	OBLIQUE (LBS)	TENSION (LBS)	SHEAR (LBS)	OBLIQUE (LBS)
SDC100 SDC125	0.145	7/8	**115** *575*	**120** *1014*	**145** *726*	....	....	....
SDC125	0.145	1-1/8	**130** *744*	**167** *1090*	**205** *1032*	....	....	....
SPC78	0.150	3/4	**155** *897*	**188** *1050*	....	**150** *788*	**153** *949*	**140** *769*
SPC114	.150/.180	1-1/8	**127** *811*	**226** *1130*	**181** *904*	**169** *853*	**300** *1500*	**223** *1114*

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 WITH METAL DECKING				
			LOWER FLUTE TENSION (LBS)	LOWER FLUTE SHEAR (LBS)	LOWER FLUTE OBLIQUE (LBS)	UPPER FLUTE TENSION (LBS)	UPPER FLUTE SHEAR (LBS)
SDC100 SDC125	0.145	7/8	**67** *335*	**237** *1186*	**90** *448*	**104** *571*	**310** *1678*
SDC125	0.145	1-1/8	**94** *471*	**276** *1378*	**119** *596*	**106** *528*	**319** *1597*
SPC78	0.150	3/4	**59** *293*	**202** *1109*	**65** *323*	**84** *419*	**324** *1622*
SPC114	.150/.180	1-1/8	**157** *786*	**272** *1358*	**153** *766*	**180** *899*	**334** *1673*

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 clip assembly 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. **Note 9:** Metal deck is 20g.

LADD 652 Angle Clip Assmebly

PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	ALLOWABLE WORKING VALUES INSTALLED IN STONE AGGREGATE CONCRETE CONCRETE COMPRESSIVE STRENGTH ALLOWABLE LOAD - *Ultimate Load*			
			3000 PSI		4000 PSI	
			TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
LADD CEILING SYSTEM	0.152	1-1/8	**211** *1688*	....	**193** *1544*	....

Note 1: ALLOWABLE loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font. **Note 2:** Except as noted, values shown reflect an 8 to 1 safety factor. **Note 3:** Values shown are for concrete at the designed strength and are for the clip system only. **Note 4:** Cyclic, fatigue or 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:** Edge distance is 3 inches unless otherwise approved. **Note 7:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa

What is LEED?

The purpose of Leadership in Energy and Environmental Design (LEED) is to construct buildings in an energy efficient manner and reduce the buildings' energy consumption. As a result, these buildings can help conserve non-renewable energy resources; decrease dependence on foreign oil; and lower greenhouse gas emissions.

Ramset LEED Credit EQ 4.1

EQ 4.1 was developed with the intent to reduce the quality of indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well being of installers and occupants.

Ramset's SC200 sound control sealant meets LEED EQ credit 4.1 for low emitting VOC materials and earns 1 LEED point.

Ramset LEED Credit MR 5.1

MR 5.1 was developed with the intent to increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impact resulting from transportation.

Ramset's pins, sealants, spring steel products, electrical accessories and anchors may meet the requirements for LEED MR 5.1 if your project falls within 500 miles of our manufacturing facilities.

How to calculate LEED MR 5.1

LEED MR Credit 5.1 is calculated on a 500 mile radius from/to distribution points. Use Google Maps to calculate the distance to your project from:

Location	Zip Code	Product
Addison, IL	60101	Spring Steel
Elk Grove Village, IL	60007	EZ Anchor
Itasca, IL	60143	Tapcon/GypFast & Fasteners
Michigan City, IN	46360	Wedge & LDT Anchors
Rockland, MA	02370	Sealant
Paris, KY	40361	Powder & Gas Fasteners

Ramset Recycles

Ramset has always recognized the value of utilizing recycled materials where available.

The raw material sourced for the manufacture of Ramset pins contains approximately 10-20% mill scrap when it is converted to wire material. The plastic and casing material in our loads typically consists of 10% recycled material.

Our packaging also contains post-consumer recycled material. The paper board (inner cartons) containers are typically made from 40% recycled material; corrugated cartons typically contain 30-35% recycled material.

Ramset has also instituted a recycling program at its Glendale Heights facility for the batteries used in its gas powered tools.

Dedicated to American Made Products

The American Recovery and Reinvestment Act of 2009 requires that all construction materials for federal, state and local stimulus projects must be manufactured in the United States.

Ramset is unique in the world of construction tools, fasteners and sealant manufacturing. Overall, 98% of Ramset fasteners and accessories are made in the USA.

Unlike our competitors you know you are buying American made products and supporting the American economy and workers when you buy Ramset. Ramset's parent company, Illinois Tool Works (NYSE: ITW) employees more than 25,000 Americans.

GSA

BUY AMERICAN ACT

SEC. 1605

SEC. 1605—Use of American iron, steel, and manufactured goods.

(a) None of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States.

(b) Subsection (a) shall not apply in any case or category of cases in which the head of the Federal department or agency involved finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron, steel, and manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the head of a Federal department or agency determines that it is necessary to waive the application of subsection (a) based on a finding under subsection (b), the head of the department or agency shall publish in the Federal Register a detailed written justification as to why the provision is being waived.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

*Excerpted from HR 1, "American Recovery and Reinvestment Act of 2009", Division A, Title XVI, Section 1605

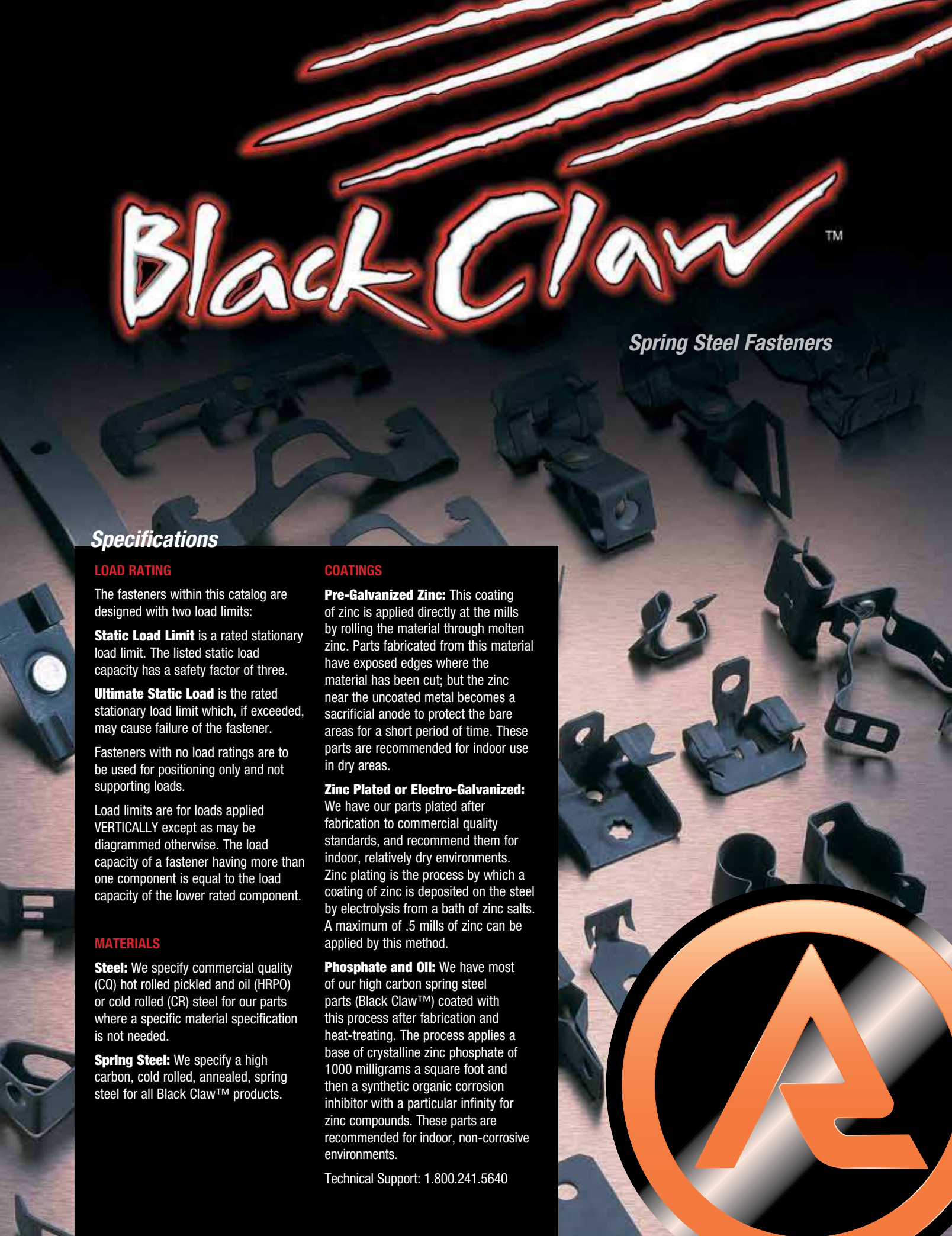
Manufacturer	Tools	Fasteners
Ramset Tools:		
TrakFast	Glendale Heights, IL	Paris, KY
GypFast	Glendale Heights, IL	Paris, KY
T3SS	Glendale Heights, IL	Paris, KY
T3Mag	Glendale Heights, IL	Paris, KY
Rocket	Glendale Heights, IL	Paris, KY
Rocketmag	Glendale Heights, IL	Paris, KY
D45A	Glendale Heights, IL	Paris, KY
Ramset Manufacturing:		
Powder Loads Manufacturing		Oxford, MS
Gas Fuel Cells Production		Pontotoc, MS
Sealant Manufacturing		Rockland, MA
Spring Steel Manufacturing		Addison, IL
Wedge Anchors and LDT Anchors Manufacturing		Michigan City, IN
Tapcon Manufacturing		Itasca, IL
EZ Anchor Manufacturing		Elk Grove Village, IL

The following is a sampling of government projects that have utilized the Buy American Act using Ramset products:

- Aberdeen Proving Grounds Project C4 (9 buildings)
- Fort Belvoir Hospital (6 buildings)
- Fort Bragg
- Fort Detrick Department of Army Vacancies Serviced
- Fort Meade (6 buildings)
- National Maritime Intelligent Center
- Norfolk Naval Base

Black Claw™

Spring Steel Fasteners



Specifications

LOAD RATING

The fasteners within this catalog are designed with two load limits:

Static Load Limit is a rated stationary load limit. The listed static load capacity has a safety factor of three.

Ultimate Static Load is the rated stationary load limit which, if exceeded, may cause failure of the fastener.

Fasteners with no load ratings are to be used for positioning only and not supporting loads.

Load limits are for loads applied VERTICALLY except as may be diagrammed otherwise. The load capacity of a fastener having more than one component is equal to the load capacity of the lower rated component.

MATERIALS

Steel: We specify commercial quality (CQ) hot rolled pickled and oil (HRPO) or cold rolled (CR) steel for our parts where a specific material specification is not needed.

Spring Steel: We specify a high carbon, cold rolled, annealed, spring steel for all Black Claw™ products.

COATINGS

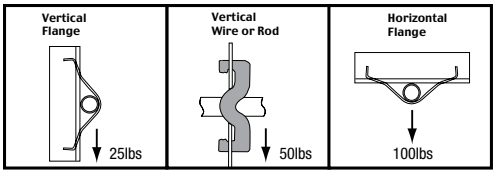
Pre-Galvanized Zinc: This coating of zinc is applied directly at the mills by rolling the material through molten zinc. Parts fabricated from this material have exposed edges where the material has been cut; but the zinc near the uncoated metal becomes a sacrificial anode to protect the bare areas for a short period of time. These parts are recommended for indoor use in dry areas.

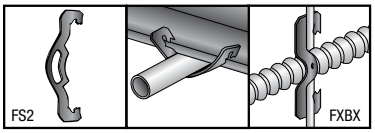
Zinc Plated or Electro-Galvanized: We have our parts plated after fabrication to commercial quality standards, and recommend them for indoor, relatively dry environments. Zinc plating is the process by which a coating of zinc is deposited on the steel by electrolysis from a bath of zinc salts. A maximum of .5 mills of zinc can be applied by this method.

Phosphate and Oil: We have most of our high carbon spring steel parts (Black Claw™) coated with this process after fabrication and heat-treating. The process applies a base of crystalline zinc phosphate of 1000 milligrams a square foot and then a synthetic organic corrosion inhibitor with a particular infinity for zinc compounds. These parts are recommended for indoor, non-corrosive environments.

Technical Support: 1.800.241.5640

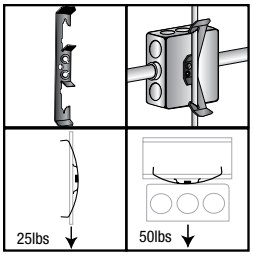
CONDUIT / CABLE SUPPORT





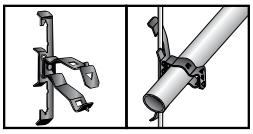
- Supports conduit and all types of cable from rods or flanges
- Note: FSBX bat wings are designed for positioning only; no load rating

Ramset #	Description	Pkg Qty
FSBX	bat wing support clip MC, AC OR BX and #12 to #8 wire	100
FS1	1/2" bat wing (UL)	100
FS2	3/4" bat wing (UL)	100
FS3	1" bat wing	100
FS4	1 1/4" bat wing	100



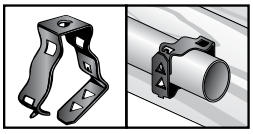
- Attaches conduit or boxes to flanges, wire or rod
- Fits 1/8" to 3/8" flanges; attaches to #12 wire through 3/8" rod; attaches #10–24 or 1/4"–20 Threaded Bridle Rings (position only)

Ramset #	Description	Pkg Qty
APS	fits 1/8" to 3/8" flanges threaded for 1/4"–20 (UL)	100

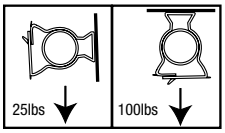


- Attaches conduit to flanges, wire or rod

Ramset #	Description	Pkg Qty
APSKC1234	latching conduit clamp 1/2"–3/4"	100



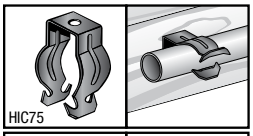
KC1234T

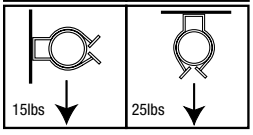


- Available both non-keyholed and keyholed for 1/4"–20 screw
- Ultimate static load limit: 100lbs vertical; 25lbs horizontal
- No fastener required

Ramset #	Description	Pkg Qty
KC38	3/8" conduit clamp with thread impression for 1/4"–20 stud (UL)	100
KC1234	1/2" and 3/4" conduit clamp (UL)	100
KC1234T	1/2" and 3/4" conduit clamp with thread impression for 1/4"–20 stud (UL)	100

Holding values are for accessories and do not include anchoring method.

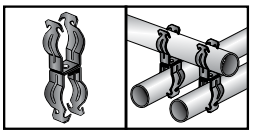




- Available both non-keyholed and keyholed for 1/4"–20 screw
- Ultimate static load limit: 25lbs vertical; 15lbs horizontal

Ramset #	Description	Pkg Qty
HIC50	1/2" snap into place EMT	100
HIC75	3/4" snap into place EMT	100

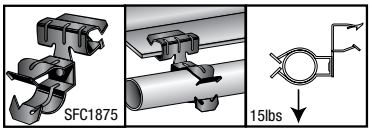
Holding values are for accessories and do not include anchoring method.



- No fastener required
- Designed to quickly secure one conduit run to another
- Ultimate Static Load Limit: 25lbs
- Note: Top conduit to be used for support only, not a raceway

Ramset #	Description	Pkg Qty
HIC7575	3/4" to 3/4" conduit	100

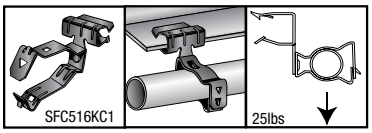
CONDUIT / CABLE SUPPORT



- Suspends conduit from bottom of beam
- Will pivot 360 degrees
- Installs with hammer only

Side Mount Flange Push Clip

Ramset #	Description	Static Load	Pkg Qty
SFC1875	3/4" conduit side mount for 1/8" to 1/4" flange	15lbs	100
SFC18100	1" conduit side mount for 1/8" to 1/4" flange	15lbs	100

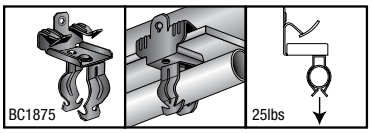


- Suspends conduit from side of beam
- Will pivot 360 degrees
- Installs with hammer only

Side Mount Flange Latch Clip

Ramset #	Description	Static Load	Pkg Qty
SFC18KC1234	1/2" to 3/4" conduit side mount for 1/8" to 1/4" flange (UL)	25lbs	100
SFC18KC1	1" conduit side mount for 1/8" to 1/4" flange (UL)	25lbs	100
SFC18KC114	1 1/4" conduit side mount for 1/8" to 1/4" flange (UL)	25lbs	100
SFC18KC2	2" conduit side mount for 1/8" to 1/4" flange (UL)	25lbs	100
SFC516KC1234	1/2" to 3/4" conduit side mount for 5/16" to 1/2" flange (UL)	25lbs	100
SFC516KC1	1" conduit side mount for 5/16" to 1/2" flange (UL)	25lbs	100
SFC516KC114	1 1/4" conduit side mount for 5/16" to 1/2" flange (UL)	25lbs	100
SFC516KC112	1 1/2" conduit side mount for 5/16" to 1/2" flange (UL)	25lbs	100
SFC916KC38	3/8" conduit side mount for 9/16" to 3/4" flange (UL)	25lbs	100
SFC916KC1234	1/2" to 3/4" conduit side mount for 9/16" to 3/4" flange (UL)	25lbs	100
SFC916KC1	1" conduit side mount for 9/16" to 3/4" flange (UL)	25lbs	100

Holding values are for accessories and do not include anchoring method.

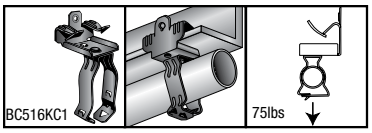


- Suspends conduit from bottom of beam
- Will pivot 360 degrees
- Installs with hammer only

Bottom Flange Push Clip

Ramset #	Description	Static Load	Pkg Qty
BC1850	1/2" conduit bottom mount for 1/8" to 1/4" flange	25lbs	100
BC1875	3/4" conduit bottom mount for 1/8" to 1/4" flange	25lbs	100

Holding values are for accessories and do not include anchoring method.

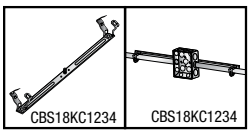


- Suspends conduit from bottom of beam
- Will pivot 360 degrees
- Installs with hammer only

Bottom Flange Latch Clip

Ramset #	Description	Static Load	Pkg Qty
BC18KC38	3/8" conduit bottom mount for 1/8" to 1/4" flange (UL)	75lbs	100
BC18KC1234	1/2" to 3/4" conduit bottom mount for 1/8" to 1/4" flange (UL)	75lbs	100
BC18KC1	1" conduit bottom mount for 1/8" to 1/4" flange (UL)	75lbs	100
BC18KC114	1 1/4" conduit bottom mount for 1/8" to 1/4" flange (UL)	75lbs	100
BC516KC38	3/8" conduit bottom mount for 5/16" to 1/2" flange (UL)	75lbs	100
BC516KC1234	1/2" to 3/4" conduit bottom mount for 5/16" to 1/2" flange (UL)	75lbs	100
BC516KC1	1" conduit bottom mount for 5/16" to 1/2" flange (UL)	75lbs	100
BC516KC114	1 1/4" conduit bottom mount for 5/16" to 1/2" flange (UL)	75lbs	100
BC516KC112	1 1/2" conduit bottom mount for 5/16" to 1/2" flange (UL)	75lbs	100
BC516KC2	2" conduit bottom mount for 5/16" to 1/2" flange (UL)	75lbs	100
BC916KC38	3/8" conduit bottom mount for 9/16" to 3/4" flange (UL)	75lbs	100
BC916KC1234	1/2" to 3/4" conduit bottom mount for 9/16" to 3/4" flange (UL)	75lbs	100

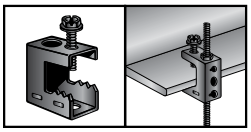
Holding values are for accessories and do not include anchoring method.



- Secures conduit and electrical boxes to most structures
- Provides conduit support on both sides of electrical box
- With hole for screw or threaded rod mount or with 1/4"–20 x 5/8" stud

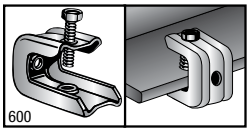
Ramset #	Description	Pkg Qty
CBS18KC1234	conduit box support for 1/2"-3/4" conduit, has "star" hole for 1/4"–20	25
CBS18KC1234ST	conduit box support for 1/2"-3/4" conduit with 1/4"–20 stud	25
CBS18KC38	conduit box support for 3/8" conduit with 1/4"–20 stud	25

BEAM/ PURLIN



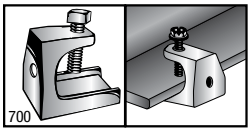
- Fast installation; fits beam flange to 1/2"
- Used with 1/4" and 3/8" threaded rod, "S" hooks, conduit hangers, electrical boxes, and #10–24 or 1/4"-20 bridle rings
- Static load capacity: 100lbs

Ramset #	Description	Pkg Qty
500	beam clamp up to 1/2" flange – 1/4" to 3/8" threaded rod	100



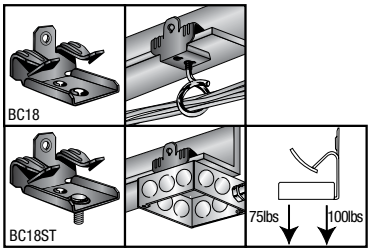
- Used with conduit hangers #0 to #5, bridle rings and threaded rod
- Case hardened steel set screw tapped at an angle, locks on beam
- Zinc plated steel or stainless steel

Ramset #	Description	Pkg Qty
600	1/2" universal beam clamp 1/4"–20	50
602	3/4" universal beam clamp – 3/8" bottom only	25
602B	3/4" universal beam clamp 3/8"–16 flange; 3/8" rod	25



- Used with conduit hangers, bridle rings and drop rods, 3/8" to 1/2"
- Tapped for rods bottom and back on all sizes
- Malleable zinc plated steel

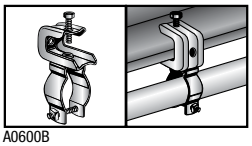
Ramset #	Description	Pkg Qty
700	1/2" flange malleable beam clamp for 1/4"–20; tapped bottom and back	50
701	3/4" flange malleable beam clamp for 5/16"–18	25
702	3/4" flange malleable beam clamp for 3/8"–16	25
703	7/8" flange malleable beam clamp for 1/2"–13	25



- Can be used to suspend boxes, fixtures and bridle rings to beam flanges 1/8" to 3/4" thick
- Beam clamp with 1.4"–20 x 3/8" staked stud used to suspend box from bottom of beam
- Ultimate static load limit: 75lbs or 100lbs
- Note: static load limits cannot be combined

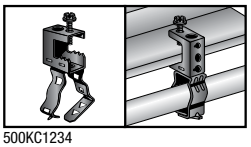
Ramset #	Description	Pkg Qty
BC18	1/8" to 1/4" flange beam clamp with 1/4"–20 thread	100
BC18ST	1/8" to 1/4" flange with 1/4"–20 x 3/8" staked stud	100
BC516	5/16" to 1/2" flange beam clamp with 1/4"–20 thread	100
BC516ST	5/16" to 1/2" flange with 1/4" to 20 x 3/8" staked stud	100
BC916	9/16" to 3/4" flange beam clamp with 1/4"–20 thread	100

Holding values are for accessories and do not include anchoring method.



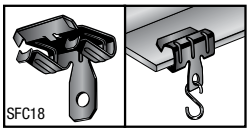
- Offered with or without nut and bolt attached
- Zinc plated steel

Ramset #	Description	Pkg Qty
A0600B	1/2" EMT, 3/8" to 1/2" Rigid, beam clamp to conduit hanger	100
A1600B	3/4" EMT, 3/4" Rigid, beam clamp to conduit hanger	100
A2600B	1" EMT, 1" Rigid, beam clamp to conduit hanger	100



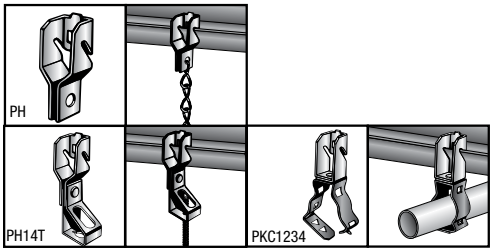
- Static load capacity: 100lbs vertical, 25lbs horizontal

Ramset #	Description	Pkg Qty
500KC1234	1/2" and 3/4" beam clamp to conduit – vertical	100
500KC1234B	1/2" and 3/4" beam clamp to conduit – horizontal	100



- Installed with hammer on bulb tees and beams with static load capacity of 200lbs
- Clearance for 1/4" bolt in tab

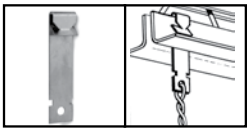
Ramset #	Description	Pkg Qty
SFC18	1/8" to 1/4" flange beam clamp	100
SFC516	5/16" to 1/2" flange beam clamp	100
SFC916	9/16" to 3/4" flange beam clamp	100



- Installed without power tools
- Compensates for angle of purlin
- Static load capacity: 100lbs

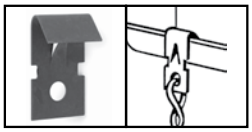
Ramset #	Description	Pkg Qty
PH	Z-Purlin with 1/4" bottom hole	100
PH14T	Z-Purlin for 1/4" threaded rod	100
PH38T	Z-Purlin for 3/8" threaded rod	100
PKC1234	1/2" or 3/4" conduit to Z-Purlin	100

BEAM/ PURLIN



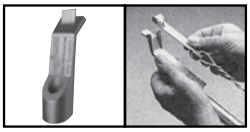
- Fits 1/16" to 1/4" vertical flanges
- Accommodates tooling for floor installations

Ramset #	Description	Pkg Qty
L1701 (J-Clip)	1/16" to 1/4" for vertical flange	100



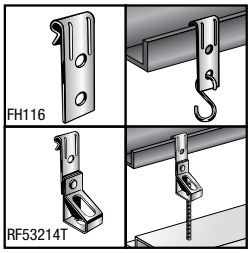
- Fast easy attachment of pre-tied hanger wire from Z-Purlins
- Fits 1/16" to 1/4" thick Z-Purlin
- 217lbs allowable working load

Ramset #	Description	Pkg Qty
L1801 (Clip-Pur)	1/16" to 1/4" angled Z-Purlin	300



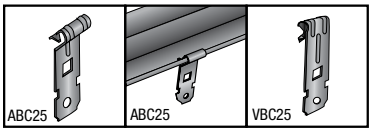
- Works with L1701 and L1801
- For strong, reliable attachment of hanger wire from open web bar joists or purlins
- Threads easily into any 1/2" threaded pipe— no hammering, punching holes or wrapping wire
- Two magnetized strips included
- Fast, easy installation from floor level, no ladders or scaffolding necessary

Ramset #	Description	Pkg Qty
L-1700	J-Master installation tool	1



- Suspends #12, #10, #9 or #8 wire, 1/4" or 3/8" plain or threaded rod from vertical flanges (FH)
- Suspends 1/4" or 3/8" threaded rod from vertical flanges 1/16" to 1/4" thick (RF)
- Static load capacity: 160lbs (RF)

Ramset #	Description	Pkg Qty
FH116	1/16" to 5/16" vertical flange	100
FH532	5/32" to 1/4" vertical flange	100
RF53214T	5/32" to 1/4" vertical flange for #8 wire or 1/4" threaded rod	100
RF53238T	5/32" to 1/4 vertical flange for 3/8" threaded rod	100

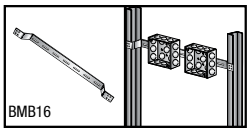


- Fits 1/16" to 1/4" thick Z-Purlin (ABC25) or vertical flanges (VBC25)
- Accommodates tooling for floor installations

Ramset #	Description	Pkg Qty
ABC25	1/16"-1/4" for angled flange (Z purlin) for S-hooks, perf. strap & wire	100
VBC25	1/16-1/4" for vert flange for S-hooks, perforated strap & wire	100

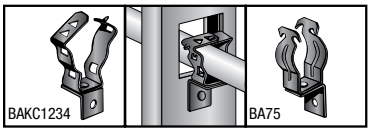
Works with CADDY® VAFT or Ramset L1700 installation tools.

METAL STUD SUPPORT



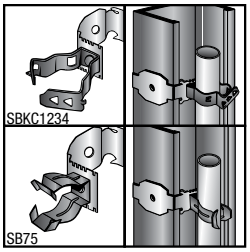
- Supports electrical boxes located between studs on 16" or 24" centers; boxes attach using self-tapping screws
- Made from pre-galvanized steel

Ramset #	Description	Pkg Qty
BMB16	1 1/2" box mounting bracket – 16" centers	50
BMB16D	2 1/2" box mounting bracket – 16" centers	50
BMB24	1 1/2" box mounting bracket – 24" centers	50
BMB24D	2 1/2" box mounting bracket – 24" centers	50



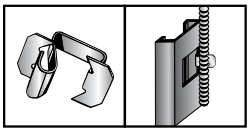
- Designed to secure horizontal runs of Rigid, IMT, AC, MC, BX, or PVC through metal studs

Ramset #	Description	Pkg Qty
BAKC1234	1/2", 3/4" latching conduit support thru metal studs	100
BA75	1/2", 3/4" push conduit support thru metal studs	100



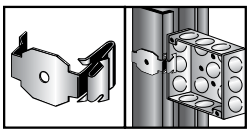
- Conduit to stud fastener
- Designed to quickly secure horizontal runs of Rigid, EMT, AC, MC, BX, or PVC to metal studs

Ramset #	Description	Pkg Qty
SBKC1234	1/2" or 3/4" conduit to metal stud	100
SBKC1	1" conduit to metal stud	100
SB75	3/4" conduit, 1/2" rigid to metal stud	100
SB100	1" conduit, 3/4" rigid to metal stud	100



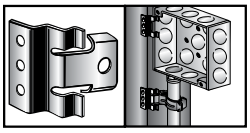
- Flexible conduit/cable fastener
- Push clip attaches BX, MC or AC cable to metal studs

Ramset #	Description	Pkg Qty
BXC	MC, AC, or BX to metal stud	100



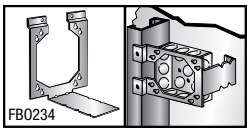
- Installed using a hammer only
- Secures boxes to most metal studs

Ramset #	Description	Pkg Qty
S1900	hammer-on electrical box support to stud	100



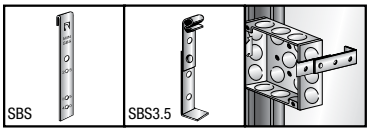
- Screw attached support for box and conduit
- For use with either metal or wood studs

Ramset #	Description	Pkg Qty
SS	4" box stud support clip used with self-tapping screws	100



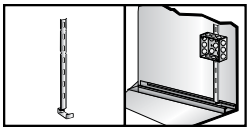
- Screw attached support for electrical boxes
- Made from pre-galvanized steel

Ramset #	Description	Pkg Qty
FBO23	box support for 2 1/2" and 3 1/2" studs	100
FBO234	box support for 4" studs	100
FBO6	box support for 6" studs	100



- Clips on electrical boxes for additional support

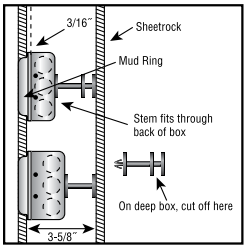
Ramset #	Description	Pkg Qty
SBS	2 1/2" to 4" box support premarked: bendable	100
SBS3.5	3 1/2" far side box support	100
SBS6	6" far side box support	100

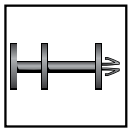


- Bracket supports electrical boxes from floor or channels
- Can be used at three heights
- Made from pre-galvanized steel

Ramset #	Description	Pkg Qty
BS18	floor mounted - box support	50

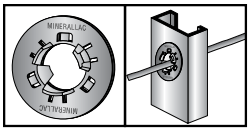
METAL STUD SUPPORT





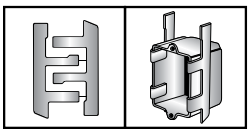
- No tools required
- Mounts quickly in the back of the box–just push in and snap tight
- Designed for 3 5/8" steel studs
- May be used on standard 1 1/2" or 2 1/8" deep boxes

Ramset #	Description	Pkg Qty
DLS1	push-in far side box support – for various stud wall depths	100



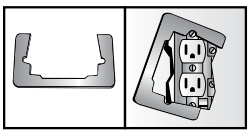
- Protects wires from damage by metal studs
- All pieces are the same shape, eliminating the hassle of stocking right and left grommet parts
- Easy to install. No tools required
- Complies with 2002 NEC Article 300.4(1)

Ramset #	Description	Pkg Qty
G100	grommets for metal studs	100 pr



- Quick installation
- One-piece break-away design
- Box is supported by drywall—no stud is necessary
- Prevents box from pulling out of drywall
- Made from pre-galvanized steel

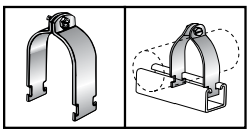
Ramset #	Description	Pkg Qty
BST	secures electrical box to finished drywall	100 sets



- Mounts standard outlets and wall switches in oversize openings, lending stability and preventing broken cover plates
- Made from pre-galvanized steel

Ramset #	Description	Pkg Qty
OR	mounts standard outlets in oversize openings	100

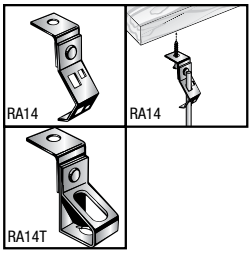
STRUT CLAMPS



- Universal pipe clamp
- Same pipe fits EMT, GRC/IMC & standard piping
- Parts are made on punch press dies from hot rolled, pickled and oiled steel which conforms to the ASTMA-366, A-575 and A-576 standards
- Parts are zinc plated after fabrication
- Zinc plated nut and bolt included with each part

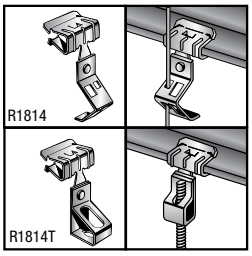
Ramset #	Description	Pkg Qty
MSU050EG	1/2" universal pipe clamp	100
MSU075EG	3/4" universal pipe clamp	100
MSU100EG	1" universal pipe clamp	100
MSU125EG	1 1/4" universal pipe clamp	100
MSU150EG	1 1/2" universal pipe clamp	50
MSU200EG	2" universal pipe clamp	50
MSU250EG	2 1/2" universal pipe clamp	50
MSU300EG	3" universal pipe clamp	50
MSU350EG	3 1/2" universal pipe clamp	25
MSU400EG	4" universal pipe clamp	25

ROD HANGERS



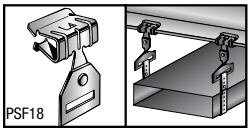
- Suspends #8 wire, 1/4" and 3/8" plain or threaded rod from overhead mountings with a clearance hole for 1/4" bolt
- Static load capacity: not to exceed 160lbs
- Hangers made from high carbon steel; zinc phosphate and oil finish; angle bracket made from pre-galvanized steel

Ramset #	Description	Pkg Qty
RO14	#8 wire or 1/4" plain rod – side mount	100
RA38	3/8" plain rod	100
RA14	#8 wire or 1/4" plain rod – bottom mount	100
RA38T	3/8" threaded rod with thread impression – bottom mount	100
RA14T	1/4" threaded rod with thread impression – bottom mount	100



- Suspends #8 wire (RA14 only), 1/4" and 3/8" plain rod from overhead mountings with a clearance hole for 1/4" bolt
- Static load capacity: not to exceed 160lbs
- Static Load Capacity for R51614 & R91614 not to exceed 200lbs
- No nut required

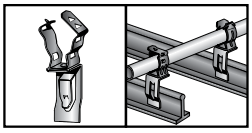
Ramset #	Description	Pkg Qty
R1814	1/8" to 1/4" flange for #8 wire or 1/4" plain rod	100
R51614	5/16" to 1/2" flange for 1/4" plain rod	100
R91614	9/16" to 3/4" flange for 1/4" plain rod	100
R1814T	1/8" to 1/4" flange for 1/4" threaded rod	100
R1838T	1/8" to 1/4" flange for 3/8" threaded rod	100
R51614T	5/16" to 1/2" flange for 1/4" threaded rod	100
R51638T	5/16" to 1/2" flange for 3/8" threaded rod	100



- Suspends strapping thru 1" wide from beam flanges 1/8" to 3/4" thick, parallel or at right angles to beam
- Static load capacity: 200lbs

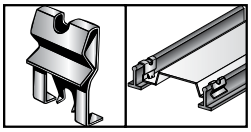
Ramset #	Description	Pkg Qty
PSF18	1/8" to 1/4" strap hanger (UL)	100
PSF516	5/16" to 1/2" strap hanger (UL)	100
PSF916	9/16" to 3/4" strap hanger (UL)	100
PSF18R	1/8" to 1/4" twisted strap hanger (UL)	100
PSF516R	5/16" to 1/2" twisted strap hanger (UL)	100
PSF916R	9/16" to 3/4" twisted strap hanger (UL)	100

ACOUSTICAL



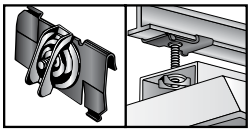
- Top mounted acoustical T-bar fastener
- Riveted assembly fits 3/8" to 1" conduit
- Supports boxes and conduit above T-bar

Ramset #	Description	Pkg Qty
TBKC1234	1/2", 3/4" T-bar fastener conduit clamp – top	100



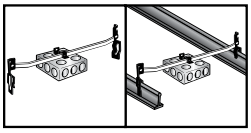
- Clip-on positive support for troffers and lay-in fixtures
- Complies with NEC Article 410-16 means of support
- Fits round or rectangular head T-bars

Ramset #	Description	Pkg Qty
FT	lay in and troffer light fixture support clips for acoustical support (UL)	100



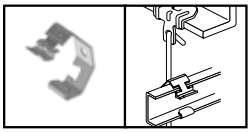
- Supports electrical fixtures to T-bar 15/16" wide
- Assembled with 1" OD wing nut washer
- 1/4"–20 stud 5/8" long

Ramset #	Description	Pkg Qty
SCT3	twist-on T-Bar hanger with 1/4"–20 x 5/8" stud with washer (UL)	100



- Box to T-Bar fastener • Works with BBC
- Snap-on 24" span box hanger with dual height adjustment allows flush or 3/4" offset mount
- Zinc plated steel with Black Claw™ spring steel hardware included

Ramset #	Description	Pkg Qty
TBAR	box to T-Bar snap-on fixture with 24" span (UL)	50

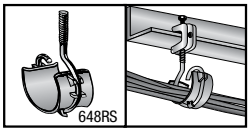


- Attaches 1-1/2" lathers channel to #8 wire and 1/4" plain rod
- No installation tools required

Ramset #	Description	Pkg Qty
LC112	lathers channel hanger (UL)	50

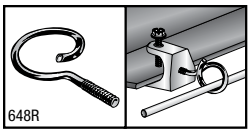
Not for use in plaster applications

LOW-VOLTAGE



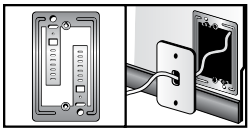
- Cost effective alternative to cable tray
- Wide surface saddle provides support without stress for category 5, fiber-optic, and other sensitive voice/datacom cables
- Available as assembled units or saddle only for retrofit
- Saddle molded onto 4" bridle ring

Ramset #	Description	Pkg Qty
646RS	1 1/2" bridle ring with 1/4"–20 thread with saddle (UL)	50
648RS	2" bridle ring with 1/4"–20 thread with saddle (UL)	50
654RS	4" bridle ring with 1/4"–20 thread with saddle (UL)	50



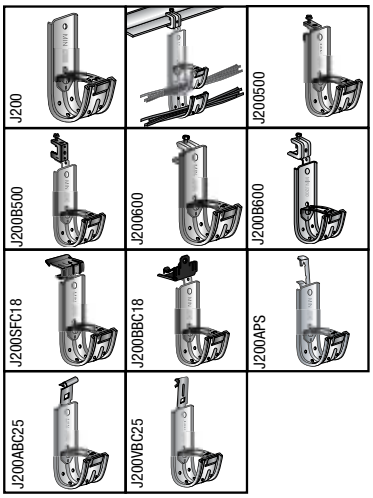
- Supports communications cable and other low voltage uses
- Used with beam clamps
- Zinc plated steel

Ramset #	Description	Pkg Qty
646R	1 1/2" bridle ring with 1/4"–20 thread (UL)	100
648R	2" bridle ring with 1/4"–20 thread (UL)	100



- Provides base for securing communications lines without use of electrical box
- Mounts standard plate
- Hardware included
- Made from pre-galvanized steel

Ramset #	Description	Pkg Qty
WBF1	low voltage mounting bracket	100

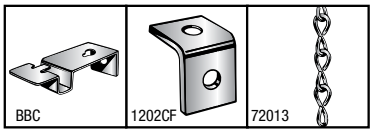


- Holds up to 80 category 5E and 50 category 6 strands
- Cost effective alternative to expensive cable tray
- Accommodates category 5, fiber-optic and interduct
- Provides support without stress to sensitive voice/data cables
- Continuous wide-base radius supports natural curve of cable, eliminating kinking and bending
- Cable wire retainer is supplied with every part
- Unique design eliminates the need for attachment plate when stacking

Ramset #	Description	Pkg Qty
J200	2" J-Hook	50
J200500	2" J-Hook	50
J200B500	2" J-Hook	50
J200600	2" J-Hook	50
J200B600	2" J-Hook	50
J200SFC18	2" J-Hook	50
J200BBC18	2" J-Hook	50
J200APS	2" J-Hook	50
J200ABC25	2" J-Hook	50
J200VBC25	2" J-Hook	50

The versatile J-Hook System can come pre-assembled with Beam Clamps, Bat Wings, Hammer-On Flange and Purlin Clips.

HARDWARE ACCESSORIES



- Box to bar fastener (BBC)
- T-Bar mounting and retaining clips (BBC)
- Zinc plated steel (BA)

Ramset #	Description	Pkg Qty
BBC	T-bar box mounting clip with screw (UL)	100
1202CF	angle bracket 1/4" mounting hole	100
72013	#12 Jack Chain – per 100'	1

B-Line → Ramset

Alpha-numeric according to B-line part numbers

B-LINE #	RAMSET #	B-LINE #	RAMSET #	B-LINE #	RAMSET #
BA12	TBAR	BG24E58	SFC516KC112	BH7	1202CF
BA15	FT	BG24U58	BC516KC112	BH9	72013
BA416	SCT3	BG32E58	SFC18KC2	BH912	PSF916
BB1	SS	BG6	KC38	BH912R	PSF916R
BB10	WBF1	BG6E912	SFC916KC38	BL1400C442	A0600B
BB116D	BMB16D	BG6S18	CBS18KC38	BL1410C442	A1600B
BB18	BS18	BG6U24	BC18KC38	BL1420C442	A2600B
BB18	BS18	BG6U58	BC516KC38	BM1	G100
BB216	BMB16	BG6U912	BC916KC38	BP12	HIC75
BB224	BMB24	BG812	KC1234	BP12B5	SB75
BB224D	BMB24D	BG8124T	KC1234T	BP12E24	SFC1875
BB27	BBC	BG812A6	TBKC1234	BP12H7	BA75
BB32	OR	BG812B5	SBKC1234	BP12P12	HIC7575
BB33	BST	BG812C1	500KC1234B	BP12U24	BC1875
BB423	FBO23	BG812C2	500KC1234	BP16B5	SB100
BB44	FBO234	BG812E24	SFC18KC1234	BP16E24	SFC18100
BB46	FBO6	BG812E58	SFC516KC1234	BP8	HIC50
BB7	DLS1	BG812E58	SFC916KC1234	BP8U24	BC1850
BB7	SBS	BG812F13	PKC1234	BPC12	MSU075EG
BB9	S1900	BG812H7	BAKC1234	BPC16	MSU100EG
BC1	500	BG812S18	CBS18KC1234	BPC20	MSU125EG
BC442	600	BG812S18S	CBS18KC1234ST	BPC24	MSU150EG
BC4426	602	BG812U24	BC18KC1234	BPC32	MSU200EG
BC4426	602B	BG812U58	BC516KC1234	BPC40	MSU250EG
BCH32	J200	BG812U912	BC916KC1234	BPC48	MSU300EG
BE24	SFC18	BG812W2	APSKC1234	BPC56	MSU350EG
BE58	SFC516	BGU3258	BC516KC2	BPC64	MSU400EG
BE912	SFC916	BH1E24	R1814	BPC8	MSU050EG
BF1	FH116	BH1E58	R51614	BR204T	646R
BF12	PH	BH1E912	R91614	BR324T	648R
BF156	SBS3.5	BH1H7	RA14	BR32A	648RS
BF196	SBS6	BH1H8	RO14	BRS32	BR2S
BF2	FH532	BH24	PSF18	BRS64A	654RS
BF3	L1701**	BH24R	PSF18R	BU24	BC18
BF3	VBC25*	BH2H7	RA38	BU24S	BC18ST
BF4	ABC25*	BH4E24	R1814T	BU58	BC516
BF4	L1801**	BH4E58	R51614T	BU58S	BC516ST
BG16B5	SBKC1	BH4F12	PH14T	BU912	BC916
BG16E24	SFC18KC1	BH4F2	RF53214T	BW12	FS2
BG16E58	SFC516KC1	BH4H7	RA14T	BW16	FS3
BG16E912	SFC916KC1	BH58	PSF516	BW2	APS
BG16U24	BC18KC1	BH58R	PSF516R	BW20	FS4
BG16U58	BC516KC1	BH6E24	R1838T	BW4	FSBX
BG20E24	SFC18KC114	BH6E58	R51638T	BW8	FS1
BG20E58	SFC516KC114	BH6EH7	RA38T	BX9	BXC
BG20U24	BC18KC114	BH6F12	PH38T		
BG20U58	BC516KC114	BH6F2	RF53238T		

* Works with CADDY® VAFT or Ramset L1700 **Works with Ramset L1700

Black Claw™ PART NUMBER REFERENCE

MADE IN AMERICA Ramset

CADDY® → Ramset

Black Claw

PART NUMBER REFERENCE

Alpha-numeric according to CADDY® part numbers

CADDY® #	RAMSET #	CADDY® #	RAMSET #	CADDY® #	RAMSET #
122	PH	6MB18A	CBS18KC38	H4	FBO234
1224TI	PH14T	6TI24	R1838T	H6	FBO6
1226TI	PH38T	6TI58	R51638T	J1A35	SBS
123812M	PKC1234	6TIB	RA38T	J1A6	SBS6
12P	HIC75	70824	R1814	K12	FS2
12P12P	HIC7575	70858	R51614	K16	FS3
12P24	BC1875	708912	R91614	K20	FS4
12P24SM	SFC1875	708AB	RA14	K8	FS1
12PF	SB75	708AO	RO14	KX	FSBX
16M24	BC18KC1	766	SBS3.5	M24	BC18
16M24SM	SFC18KC1	766A	DLS1	M24S	BC18ST
16M58	BC516KC1	770	72013	M58	BC516
16M58SM	SFC516KC1	812M	KC1234	M58S	BC516ST
16M912SM	SFC916KC1	812M24	BC18KC1234	M912	BC916
16MF	SBKC1	812M24SM	SFC18KC1234	MPLS	WBF1
16P24SM	SFC18100	812M4I	KC1234T	MSF	S1900
16PF	SB100	812M58	BC516KC1234	MSR24	PSF18R
20M24	BC18KC114	812M58SM	SFC516KC1234	MSR58	PSF516R
20M24SM	SFC18KC114	812M912	BC916KC1234	MSR912	PSF916R
20M58	BC516KC114	812M912SM	SFC916KC1234	MSS24	PSF18
20M58SM	SFC516KC114	812MATA	TBKC1234	MSS58	PSF516
24M58	BC516KC112	812MB18A	CBS18KC1234	MSS912	PSF916
24M58SM	SFC516KC112	812MB18S	CBS18KC1234ST	RLC	OR
32M24SM	SFC18KC2	812MF	SBKC1234	SGB16A	BMB16
32M58	BC516KC2	8P	HIC50	SGB16A	BMB16D
350	SS	8P24	BC1850	SGB24A	BMB24
449	BXC	AB	1202CF	SGB24A	BMB24D
4BRT20	646R	AF14	ABC25*	SK125I	MSU075EG
4BRT32	648R	AF14	L1801**	SK165I	MSU100EG
4BRT32WS	648RS	BC	500	SK205I	MSU125EG
4G8, 4G16	SCT3	BC200	600	SK245I	MSU150EG
4H24	SFC18	BC200 CD0B	A0600B	SK325I	MSU200EG
4H58	SFC516	BC200 CD1B	A1600B	SK405I	MSU250EG
4H912	SFC916	BC200 CD2B	A2600B	SK485I	MSU300EG
4TI24	R1814T	BC400	602B	SK565I	MSU350EG
4TI58	R51614T	BC812M	500KC1234	SK645I	MSU400EG
4TIB	RA14T	BC812MSM	500KC1234B	SK85I	MSU050EG
4Z34	APS	BHC	BBC	VAFT	L1700
4Z34812M	APSKC1234	CAT32	J200	VF14	FH116
512	TBAR	DS12A	BST	VF14	FH532
515(A)	FT	ESG1	G100	VF14	L1701**
6AB	RA38	FB12P	BA75	VF14	VBC25*
6M	KC38	FB812M	BAKC1234	VF144T1	RF53214T
6M24	BC18KC38	FBS12	BS18	VF146T1	RF53238T
6M58	BC516KC38	FBS16	BS18		
6M912	BC916KC38	FBS18	BS18		
6M912SM	SFC916KC38	H23	FBO23		

* Works with CADDY® VAFT or Ramset L1700 **Works with Ramset L1700

MADE IN AMERICA Ramset

SAMMYS®

Suspended Anchoring Systems

Specifications

Engineering Note
In 1996, the anchors listed by UL were tested in plate steel that measured .188" and .118". Subsequent testing was done for z-purlin applications in May 1997 using (.037") or 20 gauge steel. Most recently in 2008, testing with the new Sammy X-Press® was completed using (.030") or 22 gauge steel metal deck.

Sammys® Nut Drivers
Special nut drivers were designed to be used with Sammys. When the appropriate nut drivers are used for installation, the driver spins freely on the screw after installation is complete and eliminates the expected wrist snap, reduces over-torque, and prevents screw failure.

Metric Products
Metric versions of the Sammy anchors are available at www.itwbuildex.com

Sammys for Seismic
Please visit www.itwbuildex.com for our current Seismic product offering.

Vibratory Environments
For attaching or anchoring in high vibratory environments, special care should be taken not just for building attachments but also for the hangers or assemblies being supported. Consult local code authorities for accepted anchoring devices.

Composite Joist/Truss
Truss manufacturers vary installation recommendations for composite joist. UL testing was completed to validate that Sammys and Sidewinders SWG 20 and SWG 25-380 can be installed into the top cord of a truss. Sammy GST 20 can be installed into the center of the lower cord of a composite joist. Penetration of the upright center web is permitted by some joist manufacturers. Consult truss manufacturer for recommended installation point.

Pre-drilling may be required by joist manufacturers. If so, pre-drill pilot hole 1/8" smaller than root diameter of fastener.

Consult the table below:

Model	Root Diameter	Hole Size
GST 20	.182	1/8"
GST 25-380	.280	7/32"
SWG 20	.182	1/8"
SWG 25-380	.280	7/32"

To increase efficiency of the installation process, sleeve tools, bit receivers, and wood bits are available for pre-drilling.

NFPA/NEC Standards
All UL and FM testing complies with NFPA 13 and NEC standards. Check with your local (AHJ) Authority Having Jurisdiction to confirm application and usage.

UL Listings / FM Approvals
UL and FM reports are available at www.itwbuildex.com

c UL us
LISTED
PIPE HANGER
ALSO LISTED AS CONDUIT AND CABLE HARDWARE
ALSO LISTED AS ANCHOR FOR LUMINAIRE
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FM
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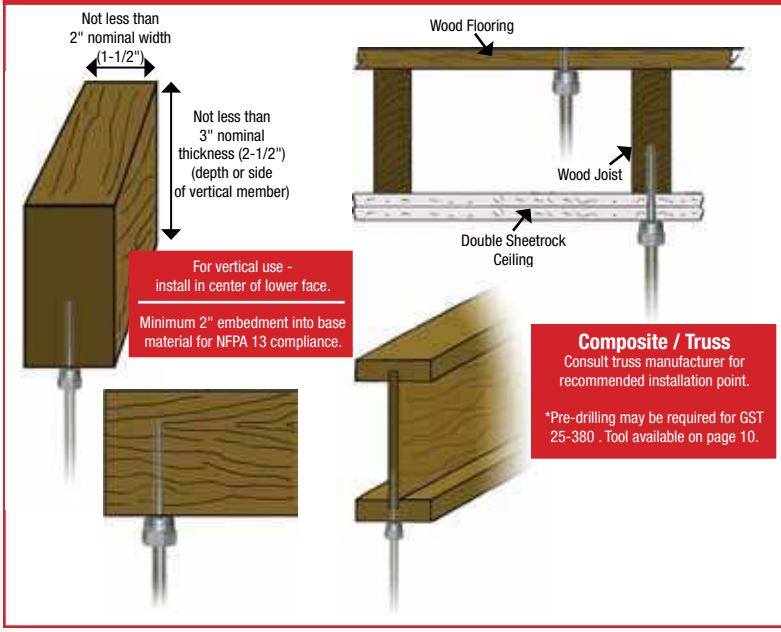
Warranty • Disclaimer of Warranty
Proper fastener connection design takes into account where and how fasteners are used. Allowance for special characteristics in materials, differences in materials, differences in types of materials being joined, unique or unusual environmental service or installation conditions and the safety factors required by anticipating normal or short term loading conditions must be considered. Due to possible differences in specifications, applications, and interpretation of results, purchasers and specifiers must make their own evaluation of the products, to determine the suitability of these products for intended use. All warranties of Buildex products will be honored through Ramset. All warranties of Buildex products, expressed or implied, including the warranties of merchantability and fitness for particular purposes are specifically excluded except for the following: Buildex will repair or replace any product which, within twelve months after sale by Buildex or its distributors, is found by Buildex to be defective in material or workmanship - normal wear and tear accepted. This is the sole warranty of Buildex and the sole remedy available to distributor or buyer. Buildex shall not be liable for any injury, loss or damage, direct, indirect, or consequential, arising out of the use of, or the inability to use, any Buildex product.

SAMMYS® for Wood

Installs VERTICALLY into the bottom of wood structures easily and quickly!



Product Features

- No pre-drilling required.
- Quick to install using the Sammy Nut Driver with an 18V cordless drill/driver.
- Saves time from traditional methods.
- Reduces installation cost.
- Made in the U.S.A.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
1/4"	GST 100	1" SAMMY for WOOD 1/4" ROD	210 (7/16" OSB) 670 (3/4" Ply)	125	#14 Black
1/4"	GST 200	2" SAMMY for WOOD 1/4" ROD	1760 (Fir)	125	#14 Black
3/8"	GST 20	2" SAMMY for WOOD 3/8" ROD	1760 (Fir)	125	#14 Black
1/2"	GST 3	3" SAMMY for WOOD 1/2" ROD	2275 (Fir)	125	#14SW Red

SAMMY Swivel Head® for Wood

Installs VERTICALLY and swivels up to 17° in wood structure

Product Features

- Eliminates distortion of threaded rod.
- Accommodates up to 3 ½" x 12 pitch roof.
- Allows 17° deflection from vertical.
- Saves time from traditional methods.
- Reduces installation cost.
- Made in the U.S.A.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
3/8"	SH-GST 20	2" SWIVEL HEAD for WOOD 3/8" ROD	1257 (Fir)	125	#14 Black
3/8"	SH-GST 30	3" SWIVEL HEAD for WOOD 3/8" ROD	1720 (Fir)	125	#14 Black

SPECIAL NUT DRIVER SYSTEM

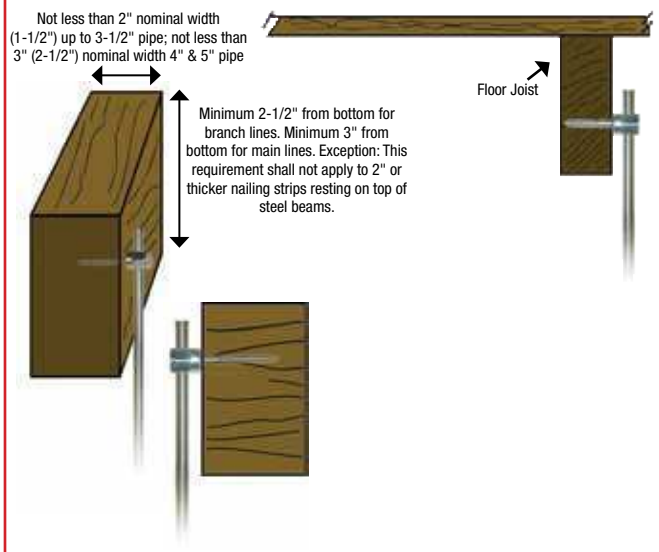
The nut drivers were designed with a unique spin-off feature which provides a fast and safe installation each time. When the face of the driver comes into contact with the material you are installing into, continue drilling until nut driver spins free. Installation is then complete. Warranty requires the use of the appropriate nut driver for installations.

#14 Black
Nut Driver
Part # 8113910

#14 SW Red
Nut Driver
Part # 8114910

SIDEWINDERS® for Wood

Installs HORIZONTALLY into the side of wood structures easily and quickly!



Product Features

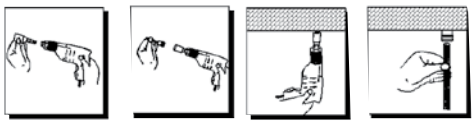
- No pre-drilling required.
- Quick to install using the Sammy Nut Driver with an 18V cordless drill/driver.
- Saves time from traditional methods.
- Reduces installation cost.
- Made in the U.S.A.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
1/4"	SWG 100	1" SIDEWINDER for WOOD 1/4" ROD	622 (Fir)	125	#14SW Red
1/4"	SWG 200	2" SIDEWINDER for WOOD 1/4" ROD	1725 (Fir)	125	#14SW Red
3/8"	SWG 20	2" SIDEWINDER for WOOD 3/8" ROD	1725 (Fir)	125	#14SW Red

INSTALLATION STEPS - VERTICAL INTO WOOD & STEEL:

1. Insert the appropriate nut driver into a 3/8" or 1/2" portable drill.
2. Insert the SAMMYS into the #14 (black) nut driver (p/n 8113910). Drill should be in a vertical position.
3. Push the face of the nut driver tight to the member. When the nut driver spins freely on the SAMMYS, stop drill and remove.
4. The SAMMYS is now ready to receive 1/4", 3/8", 1/2" or metric all thread rod, bolt stock. (The 1/2" requires the #14SW red nut driver)

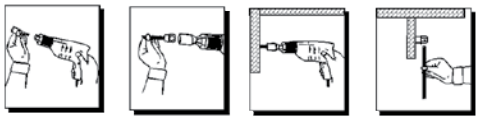
Note: When installing DSTR, follow the above instructions, then add retainer nut and torque to 20 foot lbs. for maximum pullout in purlin steel.



INSTALLATION STEPS - HORIZONTAL INTO WOOD & STEEL:

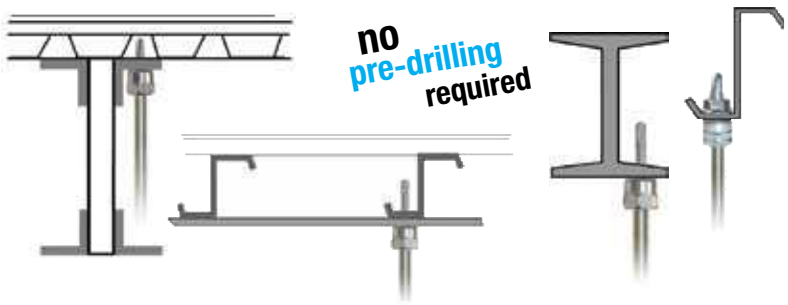
1. Insert the appropriate nut driver into a 3/8" or 1/2" portable drill.
2. Insert the SAMMYS into the #14SW (red) nut driver (p/n 8114910). With drill unit in a horizontal position and at a right angle to the structural member, begin installation.
3. When the nut driver spins free on the SAMMYS, stop the drill and remove.
4. The unit is now ready to receive 1/4", 3/8" or metric all thread rod or bolt stock.

Note: When installing SWDR, follow the above instructions, then add retainer nut and torque to 20 foot lbs. for maximum pullout in purlin steel.



SAMMYS® for Steel

Installs VERTICALLY into the bottom of steel structures easily and quickly!



Product Features

- Made with Teks® self-drilling fasteners no pre-drilling required.
- Install into steel range from 22 gauge – 1/2" thicknesses.
- Saves time from traditional methods.
- Reduces installation cost.
- Quick to install using the Sammy Nut Driver with an 18V cordless drill/driver.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
1/4"	DSTR 100	1" SAMMY for STEEL 1/4" ROD	1510 (20 ga.)	125	#14 Black
1/4"	DST 150	1-1/2" SAMMY for STEEL 1/4" ROD	970 (16 ga.)	125	#14 Black
1/4"	DST 200	2" SAMMY for STEEL 1/4" ROD	446 (20 ga.)	125	#14 Black
1/4"	TEK 500	1-1/2" SAMMY for STEEL 1/4" ROD	3125 (3/16")	125	#14 Black
3/8"	DSTR 1	1" SAMMY for STEEL 3/8" ROD W/NUT	1510 (20 ga.)	125	#14 Black
3/8"	DSTR 1-1/2	1-1/2" SAMMY for STEEL 3/8" ROD	1510 (3/16")	125	#14 Black
3/8"	DSTR 516	1-1/4" SAMMY for STEEL 3/8" ROD W/NUT	2200 (20 ga.)	125	
3/8"	DST 10	1" SAMMY for STEEL 3/8" ROD	446 (20 ga.) 970 (16 ga.)	125	#14 Black
3/8"	DST 25	2-1/2" SAMMY for STEEL 3/8" ROD	446 (20 ga.) 970 (16 ga.)	125	#14 Black
3/8"	TEK 50	1-1/2" SAMMY for STEEL 3/8" ROD	3125 (3/16")	125	#14 Black
1/2"	DST 2.0	2" 2-1/2" SAMMY for STEEL 1/2" ROD	446 (20 ga.) 970 (16 ga.)	125	#14SW Red

SAMMY Swivel Head® for Steel

Installs VERTICALLY and swivels up to 17° in steel structure

Product Features

- Eliminates distortion of threaded rod in sloped roof applications.
- Accommodates 3-1/2 x 12 pitch.
- Installs into angled Z-Purlin; Allows threaded rod to hang plumb.
- Allows 17° deflection from vertical.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
3/8"	SH-DSTR 1	1" SWIVEL HEAD for STEEL 3/8" ROD	3220 (3/16")	125	#14 Black

SPECIAL NUT DRIVER SYSTEM

The nut drivers were designed with a unique spin-off feature which provides a fast and safe installation each time. When the face of the driver comes into contact with the material you are installing into, continue drilling until nut driver spins free. Installation is then complete. Warranty requires the use of the appropriate nut driver for installations.

#14 Black Nut Driver Part # 8113910

#14 SW Red Nut Driver Part # 8114910

SIDEWINDERS® for Steel

Installs HORIZONTALLY into the side of steel structures easily and quickly!

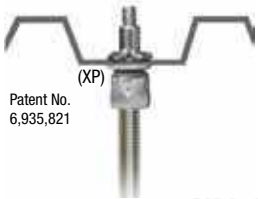
no pre-drilling required

Product Features

- Made with Teks® self-drilling fasteners - no pre-drilling required.
- Install into steel range from 22 gauge – 1/2" thicknesses.
- Saves time from traditional methods.
- Reduces installation cost.
- Quick to install using the Sammy Nut Driver with an 18V cordless drill/driver.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
1/4"	SWD 100	1" SIDEWINDER for STEEL 1/4" ROD	1477 (16ga.)	125	#14SW Red
3/8"	SWD 15	1-1/2" SIDEWINDER for STEEL 3/8" ROD	1477 (16ga.)	125	#14SW Red
3/8"	SWDR 516	1-1/4" SIDEWINDER for STEEL 3/8" ROD W/NUT	2480 (20ga.)	125	#14SW Red

SAMMY X-Press® *Installs into Metal Deck, Purlin, or Tubular Steel*

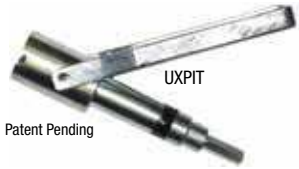


Product Features

- The Sammy X-Press expands to provide direct vertical attachment in:
  - Metal Deck (22-16 gauge)
  - Z-Purlin (18-16 gauge)
- The Sammy X-Press Swivel allows you to hang plumb in extreme roof pitches:
  - 89° in Z-Purlin
  - 45° in metal deck for 12/12 pitch
- The Sammy X-Press Sidewinder expands to provide horizontal attachment in:
  - 16 ga - 3/16" steel - purlin, tubular steel.
- Installs in seconds, saving time & installation costs.
- Use in applications where access to the back of the installed fastener is prohibited. ie. metal roof deck, tubular steel, or vapor barrier fabric.
- Less jobsite material needed.
- No retaining nut required.
- Provides design flexibility.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty
Vertical Mount				
1/4"	XP 200	X-Press for METAL DECK 1/4" ROD	1146 (22 ga)	125
3/8"	XP 20	X-Press for METAL DECK 3/8" ROD	1146 (22 ga)	125
3/8"	XP 35	X-Press for PURLIN 3/8" ROD	1783 (16 ga)	125
3/8"	SXP 20	Swivel X-Press	1061 (22 ga Vertical) 829 (45° Off Vertical)	125
3/8"	SXP 35	Swivel X-Press	1675 (16 ga Vertical) 1558 (89° Off Vertical)	125
Horizontal Mount				
3/8"	SWXP 35	Sidewinder X-Press for PURLIN 3/8" ROD	1798 (16 ga)	125

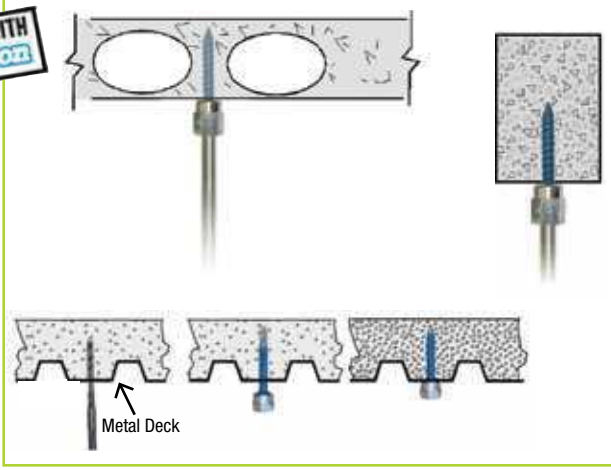
SAMMY X-Press It® Installation Tool



Part Number	Description	Each Qty
UXPIT	X-Press Universal Installation Tool	1
XPDB	25/64" X-Press Drill Bit	1

SAMMYS® for Concrete *Installs VERTICALLY into the bottom of concrete structures easily and quickly!*

SAMMYS® SWIVELHEAD for Concrete



Product Features

- Easy two step process (Drill hole & drive Sammy concrete anchor).
- ¼" pre-drilled pilot hole required.
- Concrete Installation Tool available for a one tool installation process.

Product Features - Swivelhead

- Installs vertically and swivels up to 89° in wood & concrete structures.
- Eliminates distortion of threaded rod.
- 1/4" pre-drilled pilot hole required.
- Concrete installation tool available for a one piece installation process.
- Made in the U.S.A.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
1/4"	CST 200	1-3/4" SAMMY for CONCRETE 1/4" ROD	2400	125	#14 Black
3/8"	CST 20	1-3/4" SAMMY for CONCRETE 3/8" ROD	2400	125	#14 Black
3/8"	CST 20-SS	1-3/4" SAMMY for CONCRETE 3/8" ROD	2400	125	#14 Black
1/2"	CST 2	1-3/4" SAMMY for CONCRETE 1/2" ROD	2400	125	#14SW Red
3/8"	SH-CST20	1-3/4" SWIVEL HEAD for CONCRETE 3/8" ROD	2537	125	#14 Orange
1/2"	SH-CST30	1-3/4" SWIVEL HEAD for CONCRETE 1/2" ROD	2537	125	#14 Orange

SIDEWINDERS® for Concrete *Installs HORIZONTALLY into side of concrete structures easily & quickly!*

Product Features

- Easy two step process (Drill hole & drive Sammy concrete anchor).
- ¼" pre-drilled pilot hole required.
- Concrete Installation Tool available for a one tool installation process.

Rod Size	Part Number	Description	Ultimate Pullout (lbs)	Qty	Nut Driver
1/4"	SWC 200	1-3/4" SIDEWINDER for CONCRETE 1/4" ROD	2450	125	#14SW Red
3/8" FM	SWC 20	1-3/4" SIDEWINDER for CONCRETE 3/8" ROD	2450	125	#14SW Red

SPECIAL NUT DRIVER SYSTEM

The nut drivers were designed with a unique spin-off feature which provides a fast and safe installation each time. When the face of the driver comes into contact with the material you are installing into, continue drilling until nut driver spins free. Installation is then complete. Warranty requires the use of the appropriate nut driver for installations.

#14 Black Nut Driver Part # 8113910

#14 SW Red Nut Driver Part # 8114910

#14 SH Orange Nut Driver Part # 8273910

Concrete / Wood Installation Kit

The only tool needed to install SAMMYS & SIDEWINDERS

(a)

Part Number	Description	Each Qty
8122910	Concrete Installation Kit (a)	
	Kit includes the following items:	
8113910	#14 Black Nut Driver (b)	1
8114910	#14 SW Red Nut Driver (c)	1
8116910	#250 Bit (1/4") (d)	1
8117910	SDS Bit (1/4") (e)	1
HEX 250	HEX 250 Bit Receiver (1/4") (g)	1
SDS B250	SDS B250 Bit Receiver (1/4")*	1

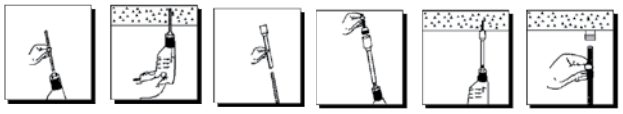
*Only sold separately - not included in kit.

INSTALLATION STEPS - VERTICAL INTO CONCRETE:

1. Using an SDS 250 carbide tip bit or a HEX RECEIVER with a #250 carbide tip bit, pre-drill the concrete member to a depth of 2" with an electric impact/drill set on impact mode.
2. After pre-drilling has been completed, install the SLEEVE TOOL over the bit (the bit should remain in the drill), and insert the #14 (black) nut driver (p/n 8113910) into the opposite end (see Vertical Installation note above).
3. Insert the concrete screw into the nut driver.
4. Place tip of screw into the pre-drilled hole, turn impact/drill unit to drill mode and begin insertion. When the nut driver spins free on the screw, installation is complete. Stop and remove drill.
5. The concrete screw is ready to receive 1/4", 3/8", 1/2", or metric all thread rod or bolt stock. (#14SW red nut driver used with 1/2" screw)

NOTE: Use a 1200 maximum RPM drill for installation.

NOTE: Do not install concrete screws while the drill unit is in impact mode — doing so will destroy the pullout factor of the screw.

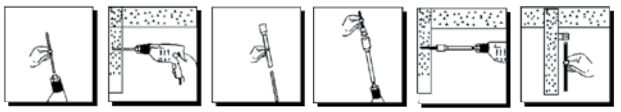


INSTALLATION STEPS - HORIZONTAL INTO CONCRETE:

1. Using an SDS 250 carbide tip bit or a HEX RECEIVER with a #250 carbide tip bit, predrill the concrete member to a depth of 2" with an impact/drill set on impact mode.
2. After pre-drilling has been completed, install the SLEEVE TOOL over the bit (the bit should remain in the drill), and insert the #14SW (red) nut driver (p/n 8114910) into the opposite end.
3. Install the SWC screw into the nut driver.
4. Place tip of screw into the pre-drilled hole, turn impact/drill unit to drill mode and begin insertion. When the nut driver spins free on the SWC screw, installation is complete. Stop and remove drill.
5. The SWC screw is ready to receive 1/4", 3/8" or metric all thread rod or bolt stock.

NOTE: Use a 1200 maximum RPM drill for installation.

NOTE: Do not install concrete screws while the drill unit is in impact mode — doing so will destroy the pullout factor of the fastener.



APPROVALS

SAMMYS® FOR WOOD Pipe Hanger

Part No.	Model	Rod Size	Mount Direction	UL Max Pipe Size	UL Test Load (lbs)	UL Min Wood Thickness	FM Max Pipe Size	FM Test Load (lbs)	FM Min Wood Thickness
8007957	GST 10	3/8"	Vertical	CPVC 1-1/2"	300	1-1/2"			
8020957	SWG 10	3/8"	Horizontal	CPVC 1-1/2"	300	1-1/2"			
8008957	GST 20	3/8"	Vertical	2-1/2"	850	1-1/2"	4"	1475	1-1/2"
8068925	GST 20-SS	3/8"	Vertical	2-1/2"	850	1-1/2"			
8010957	GST 30	3/8"	Vertical	4"	1500	1-1/2"	4"	1475	1-1/2"
8009925	GST 25-380	3/8"	Vertical	4"	1500	1-1/2"			
8022925	SWG 25-380	3/8"	Horizontal	3-1/2" - 4"*	1500	1-1/2"			
8021957	SWG 20	3/8"	Horizontal	2-1/2" - 3"**	1050	1-1/2"			
8073925	SWG 20-SS	3/8"	Horizontal	2-1/2"	850	1-1/2"			
8139957	SH-GST 20	3/8"	17° Angle off Vertical	3"	1050	1-1/2"	4"	1475	1-1/2"
8141957	SH-GST 30	3/8"	17° Angle off Vertical	4"	1500	1-1/2"	4"	1475	1-1/2"

SAMMYS® FOR STEEL Pipe Hanger

Part No.	Model	Rod Size	Mount Direction	UL Max Pipe Size	UL Test Load (lbs)	UL Min. Steel Thickness	FM Max Pipe Size	FM Test Load (lbs)	FM Min. Steel Thickness
8038957	DSTR 1	3/8"	Vertical	4"	1500	.035"	4"	1475	.105"
8037957	DSTR 1-1/2	3/8"	Vertical	4"	1500	.035"	4"	1475	.105"
8039957	DSTR 516	3/8"	Vertical	4"	1500	.037"	4"	1475	.105"
8045957	DST 516	3/8"	Vertical	4"	1500	.188"	4"	1475	.188"
8046957	TEK 50	3/8"	Vertical	4"	1500	.250"	4"	1475	.188"
8055957	SWDR 1	3/8"	Horizontal	4"	1500	.037"	4"	1475	.060"
8056957	SWDR 516	3/8"	Horizontal	4"	1500	.037"	4"	1475	.060"
8054957	SWDR 1-1/2	3/8"	Horizontal	4"	1500	.037"	4"	1475	.060"
8137957	SH-DSTR 1	3/8"	17° Angle off Vertical	4"	1500	.035"	4"	1475	.105"
8150922	XP 20	3/8"	Vertical	2-1/2"	850	.027"	2" 4"	940 1475	.029" .105"
8153922	XP 35	3/8"	Vertical	4"	1500	.060"	2" 4"	940 1475	.029" .105"
8294922	SXP 20	3/8"	Vertical or up to 45°	2"	750	.027"	2"	635	.029"
8295922	SXP 35	3/8"	Vertical or up to 89°	3-1/2"	1250	.060"	2"	635	.029"
8293957	SWXP 35	3/8"	Horizontal	3-1/2"	1250	.060"			

SAMMYS® FOR CONCRETE Pipe Hanger

Part No.	Model	Rod Size	Mount Direction	UL Max Pipe Size	UL Test Load (lbs)	UL Min PSI	FM Max Pipe Size	FM Test Load (lbs)	FM Min PSI
8059957	CST 20	3/8"	Vertical				4"	1475	3000
8061957	SWC 20	3/8"	Horizontal				4"	1475	3000
8150922	XP 20	3/8"	Vertical	2-1/2"	850	Pre-Pour Structural @ 3000psi			
8150922	XP 20	3/8"	Vertical	2-1/2"	850	Post-Pour Range II LWC ≤ 35 PCF (lbs/ft^3)			

*SWG 25-380 Maximum pipe size in composite wood joist allowed by UL is 3-1/2"
*SWG 25-380 Maximum pipe size in wood timber or joist allowed by UL is 4"
**SWG 20 Maximum pipe size in composite wood joist allowed by UL is 2-1/2"
**SWG 20 Maximum pipe size in wood timber or joist allowed by UL is 3"

UL compliance with NEC Standards.
UL and FM tests were performed in compliance with NFPA 13 Standards.
Fastening requirement: 5 times weight of water-filled schedule 40 pipe plus 250 pounds.

c UL us LISTED
PIPE HANGER
ALSO LISTED AS CONDUIT AND CABLE HARDWARE
ALSO LISTED AS ANCHOR FOR LUMINAIRE
9R21

FM APPROVED

APPROVALS

SAMMYS® FOR STEEL

Luminaire Fitting

Part No.	Model	Rod Size	Mount Direction	UL Load Rating (lbs)	UL Min Steel Thickness
8150922	XP 20	3/8"	Vertical	185 250	.027" .035"
8153922	XP 35	3/8"	Vertical	185 250	.027" .035"
8181922	XP 200	1/4"	Vertical	185 250	.027" .035"
8294922	SXP 20	3/8"	Vertical 45°	170 80	.027" .027"
8295922	SXP 35	3/8"	Vertical 90°	250 80	.060" .060"
8293957	SWXP 35	3/8"	Horizontal	80	.060"

SAMMYS® FOR STEEL

Conduit, Tubing, and Cable

Part No.	Model	Rod Size	Mount Direction	UL Load Rating (lbs)	UL Min. Steel Thickness	Listed Application
8150922	XP 20	3/8"	Vertical	283	.027"	Max 4 trade size EMT, RMC, and IMC & 5 trade size rigid PVC conduit
8153922	XP 35	3/8"	Vertical	500	.060"	Max 4 trade size EMT & 6 trade sze RMC, IMC, and rigid PVC conduit
8294922	SXP 20	3/8"	Vertical	283	.027"	Max 4 trade size EMT, RMC, and IMC & 5 trade size rigid PVC conduit
8295922	SXP 35	3/8"	Vertical	500	.060"	Max 4 trade size EMT & 6 trade sze RMC, IMC, and rigid PVC conduit
8293957	SWXP 35	3/8"	Horizontal	500	.060"	Max 4 trade size EMT & 6 trade sze RMC, IMC, and rigid PVC conduit
8149957	CZ2000	1/4" or 3/8"	Onto Vertical Rod			UL Listed 4S16 - Cable Hanger, Cat. No. C-Z2000 Plenum Rated, Complies w/ NEC Standards

Sheet Steel Sizes

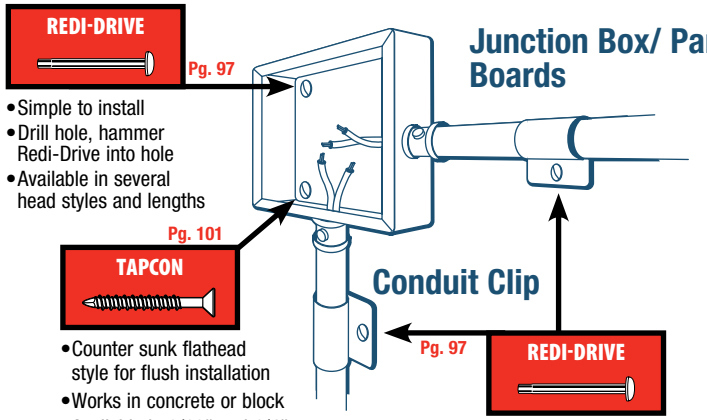
Sheet Steel Gauges								
Gauge No.	22 ga.	20 ga.	18 ga.	16 ga.	14 ga.	12 ga.	3/16"	1/4"
Nominal Decimal Equivalent	.030"	.036"	.048"	.060"	.075"	.105"	.188"	.250"

RED HEAD®

Anchoring Systems

Electrical Contractor Applications

Junction Box/ Panel Boards



REDI-DRIVE Pg. 97

- Simple to install
- Drill hole, hammer Redi-Drive into hole
- Available in several head styles and lengths

TAPCON Pg. 101

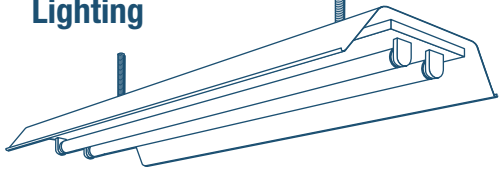
- Counter sunk flathead style for flush installation
- Works in concrete or block
- Available in 3/16" and 1/4" diameters

Conduit Clip

REDI-DRIVE Pg. 97

- Simple to install
- Drill hole, hammer Redi-Drive into hole
- Available in several head styles and lengths

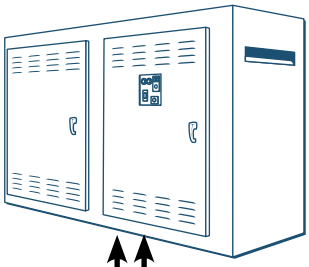
Suspended Lighting



MULTI-SET Pg. 86

- Available in special 3/8" version for precast planks
- Available in sizes 1/4" thru 3/4" internal thread diameters

Transformers Switch Gear Electrical Enclosures



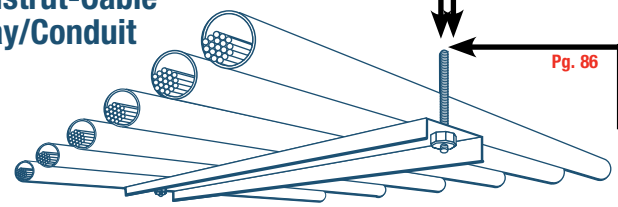
TRUBOLT Pg. 72

- Available in carbon, hot dipped galvanized, 304 and 316 stainless steel

TRUBOLT + Pg. 72

- 2006 IBC & 2009 IBC Compliant
- All seismic zone and cracked concrete approved
- Thru fixture fastening

Unistrut-Cable Tray/Conduit



TRUBOLT Pg. 72

- Used with rod coupler
- 1/4" to 1" diameters

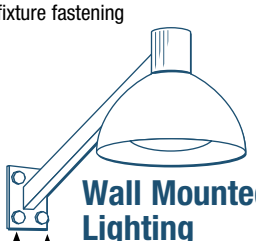
TRUBOLT + Pg. 72

- 2006 IBC & 2009 IBC Compliant
- All seismic zone and cracked concrete approved
- Thru fixture fastening

MULTI-SET Pg. 86

- Available in special 3/8" version for precast planks
- Available in sizes 1/4" thru 3/4" internal thread diameters

Wall Mounted Lighting



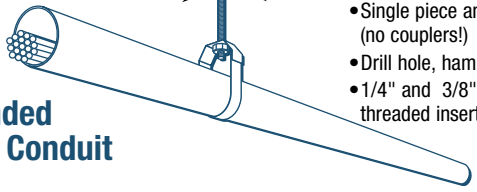
DYNABOLT Pg. 91

- Counter sunk and threshold head styles also available
- Works in concrete, block and brick

LDT Pg. 80

- Works in solid concrete, hollow block and brick
- Cuts a thread into the mounted surface
- Finished head appearance

Suspended Pipe or Conduit



MULTI-SET Pg. 86

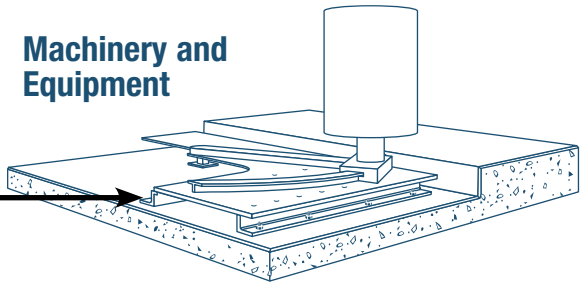
- Available in special 3/8" version for precast planks
- Available in sizes 1/4" thru 3/4" internal thread diameters

PIPE DRIVE

- Single piece anchors (no couplers!)
- Drill hole, hammer in
- 1/4" and 3/8" internally threaded inserts

Mechanical Contractor Applications

Machinery and Equipment



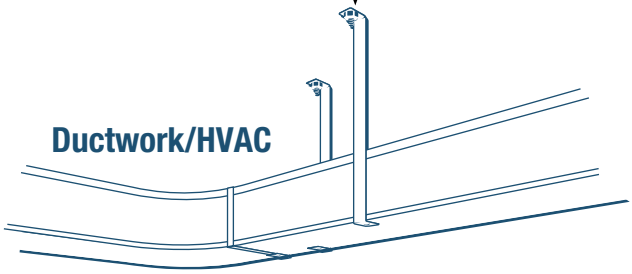
LDT Pg. 80

- Vibration resistant
- Removable

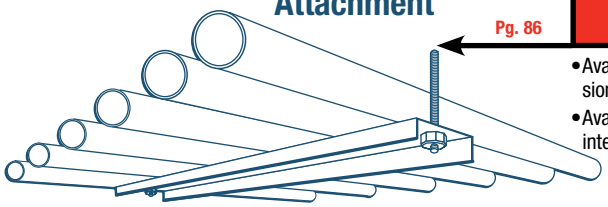
- Simple to install–drill hole and hammer in
- Fire resistant

REDI-DRIVE Pg. 97

Ductwork/HVAC



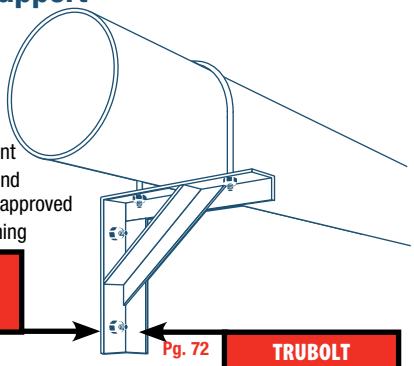
Pipe/Strut Attachment



MULTI-SET Pg. 86

- Available in special 3/8" version for prestressed concrete
- Available in 1/4" thru 3/4" internal thread diameters

Heavy-Duty Pipe Support



- 2006 IBC & 2009 IBC Compliant
- All seismic zone and cracked concrete approved
- Thru fixture fastening

TRUBOLT + Pg. 72

TRUBOLT Pg. 72

- Carbon, hot dipped galvanized, 304 and 316 stainless steel
- 1/4" to 1" diameters

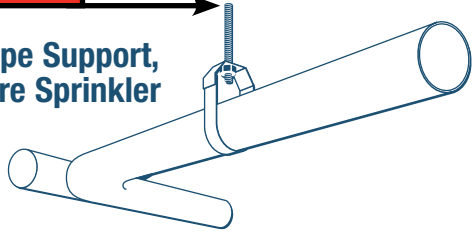
- Available in special 3/8" version for prestressed concrete
- Available in 1/4" thru 3/4" internal thread diameters

MULTI-SET Pg. 86

PIPE DRIVE

- 1-piece design (no couplers!)
- Drill hole, hammer in
- 1/4" and 3/8" internal threads

Pipe Support, Fire Sprinkler



TRUBOLT® WEDGE ANCHORS

Wedge Type Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE

Trubolt Wedge anchors feature a stainless steel expansion clip, threaded stud body, nut and washer. Anchor bodies are made of plated carbon steel, hot-dipped galvanized carbon steel, type 304 stainless steel or type 316 stainless steel as identified in the drawings or other notations.

The exposed end of the anchor is stamped to identify anchor length. Stampings should be preserved during installation for any subsequent embedment verification.

Use carbide tipped hammer drill bits made in accordance with ANSI B212.15-1994 to install anchors.

Anchors are tested to ACI 355.2 and ICC-ES AC193. Anchors are listed by the following agencies as required by the local building code: ICC-ES, UL, FM, City of Los Angeles, California State Fire Marshal and Caltrans.

Trubolt® Wedge Anchors

Trubolt®+ Seismic Wedge Anchors

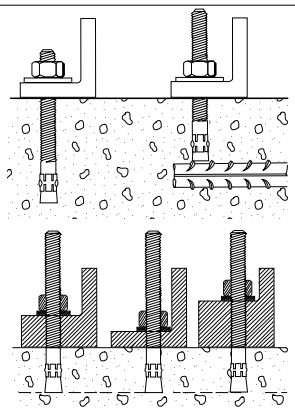
ADVANTAGES

- 2006 International Building Code (IBC) Compliant
- Versatile fully threaded design is standard on sizes up to 3/4" diameter and 10" length
- Anchor diameter equals hole diameter
- Standard carbon and stainless steel anchors
- 360° contact with concrete assures full expansion for reliable working loads
- Non bottom-bearing, may be used in hole depth exceeding anchor length
- Can be installed through the work fixture, eliminating hole spotting
- Inspectable torque values, indicating proper installation

Fully Threaded Advantage

Trubolt's fully threaded feature eliminates subsurface obstruction problems.

Fully threaded design accommodates various material thicknesses at the same embedment. One anchor length saves time and money.



APPLICATIONS

Anchoring machinery and conveyors is a common wedge anchor application. The Trubolt is fully threaded to allow a large range of embedment and fixture thickness.

Seismic Wedge Anchor cracked concrete approval controls tension & shear simultaneously.

LENGTH INDICATION CODE*

CODE	LENGTH OF ANCHOR	CODE	LENGTH OF ANCHOR
A	1-1/2 < 2 (38.1 < 50.8)	K	6-1/2 < 7 (165.1 < 177.8)
B	2 < 2-1/2 (50.8 < 63.5)	L	7 < 7-1/2 (177.8 < 190.5)
C	2-1/2 < 3 (63.5 < 76.2)	M	7-1/2 < 8 (190.5 < 203.2)
D	3 < 3-1/2 (76.2 < 88.9)	N	8 < 8-1/2 (203.2 < 215.9)
E	3-1/2 < 4 (88.9 < 101.6)	O	8-1/2 < 9 (215.9 < 228.6)
F	4 < 4-1/2 (101.6 < 114.3)	P	9 < 9-1/2 (228.6 < 241.3)
G	4-1/2 < 5 (114.3 < 127.0)	Q	9-1/2 < 10 (241.3 < 254.0)
H	5 < 5-1/2 (127.0 < 139.7)	R	10 < 11 (254.0 < 279.4)
I	5-1/2 < 6 (139.7 < 152.4)	S	11 < 12 (279.4 < 304.8)
J	6 < 6-1/2 (152.4 < 165.1)	T	12 < 13 (304.8 < 330.2)

*Located on top of anchor for easy inspection.

TRUBOLT® WEDGE ANCHORS

APPROVALS / LISTINGS

Trubolt® Wedge Anchors

ICC Evaluation Service, Inc. # ESR-2251
- – Category 1 performance rating
- – 2006 IBC compliant
- – Meets ACI 318 ductility requirements
- – Tested in accordance with ACI 355.2 and ICC-ES AC193
- – For use in seismic zones A & B
- – 1/4", 3/8" & 1/2" diameter anchors listed in ESR-2251

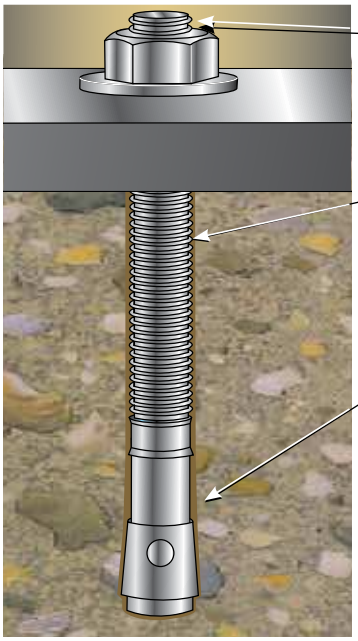
Underwriters Laboratories
Factory Mutual
City of Los Angeles - #RR2748
California State Fire Marshall
Caltrans
Meets or exceeds U.S. Government G.S.A. Specification A-A-1923A Type 4 (formerly GSA: FF-S-325 Group II, Type 4, Class 1)

Trubolt®+ Seismic Wedge Anchors

ICC Evaluation Service, Inc. # ESR-2427
- -Category 1 performance rating
- -2006 IBC and 2009 IBC compliant
- -Meets ACI 318 ductility requirements
- -Tested in accordance with ACI 355.2 and ICC-ES AC193
- -Listed for use in seismic zones A, B, C, D, E, & F
- -3/8", 1/2", 5/8" and 3/4" diameter anchors listed in ESR-2427

City of Los Angeles - #RR25867

FEATURES



TRUBOLT® WEDGE ANCHOR

Length ID Head Stamp—provides for embedment inspection after installation

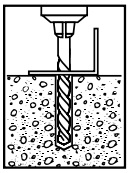
Fully Threaded Design

Cold-Formed—manufacturing process adds strength

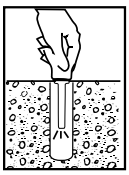
Stainless steel split expansion ring

Anchor Body—available in zinc-plated steel, hot-dipped galvanized steel, 304 stainless steel and 316 stainless steel

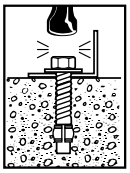
INSTALLATION STEPS



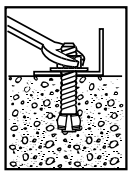
1. Select a carbide drill bit with a diameter equal to the anchor diameter. Drill hole to any depth exceeding the desired embedment. See chart for minimum recommended embedment.



2. Clean hole or continue drilling additional depth to accommodate drill fines.



3. Assemble washer and nut, leaving nut flush with end of anchor to protect threads. Drive anchor through material to be fastened until washer is flush to surface of material.



4. Expand anchor by tightening nut 3-5 turns past the hand tight position, or to the specified torque requirement.

TRUBOLT® WEDGE ANCHORS

Trubolt+ Seismic Wedge Anchors CARBON STEEL WITH ZINC PLATING

PART NUMBER	THREAD LENGTH In. (mm)	ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH IN. (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
CWS-3830	1-5/8 (41.3)	3/8" - 16	3 (76.2)	5/8 (15.9)	50/ 5.3	400/ 42
CWS-3836	2-3/8 (60.3)	3/8" - 16	3-3/4 (95.3)	1-3/8 (34.9)	50/ 5.9	300/ 35
CWS-3850	3-5/8 (92.1)	3/8" - 16	5 (127.0)	2-5/8 (66.7)	50/ 7.3	250/ 37
CWS-1236	2-1/8 (54.0)	1/2" - 13	3-3/4 (95.3)	3/4 (19.1)	25/ 5.7	150/ 34
CWS-1244	2-7/8 (73.0)	1/2" - 13	4-1/2 (114.3)	1-1/2 (38.1)	25/ 7.0	150/ 40
CWS-1254	3-7/8 (98.4)	1/2" - 13	5-1/2 (139.7)	2-1/2 (63.5)	25/ 8.0	150/ 49
CWS-1270	5-3/8 (136.5)	1/2" - 13	7 (177.8)	4 (101.6)	25/ 9.2	150/ 55
CWS-5850	3-3/16 (81.0)	5/8" - 11	5 (127.0)	1-1/8 (28.6)	10/ 4.7	100/ 48
CWS-5860	4-3/16 (106.4)	5/8" - 11	6 (152.4)	2-1/8 (54.0)	10/ 5.4	50/ 28
CWS-5870	5-3/16 (131.8)	5/8" - 11	7 (177.8)	3-1/8 (79.4)	10/ 6.2	30/ 19
CWS-5884	5-3/4 (146.0)	5/8" - 11	8-1/2 (215.9)	4-5/8 (117.5)	10/ 8.0	30/ 25
CWS-3454	3-5/8 (92.1)	3/4" - 10	5-1/2 (139.7)	1-1/2 (38.1)	50/ 7.6	30/ 38
CWS-3462	4-3/8 (111.1)	3/4" - 10	6-1/4 (158.8)	2-1/4 (57.2)	10/ 8.5	30/ 26
CWS-3470	5-1/8 (130.2)	3/4" - 10	7 (177.8)	3 (76.2)	10/ 9.0	30/ 27
CWS-3484	5-3/4 (146.0)	3/4" - 10	8-1/2 (215.9)	4-1/2 (114.3)	10/ 10.5	30/ 32
CWS-34100	5-3/4 (146.0)	3/4" - 10	10 (254.0)	6 (152.4)	10/ 11.9	30/ 36

Meets ASTM B633 SC1, Type III specifications for electroplating of 5um = .0002" thickness. This coating is well suited for non-corrosive environments.

TRUBOLT® CARBON STEEL WITH HOT-DIPPED GALVANIZING

PART NUMBER	THREAD LENGTH In. (mm)	ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH IN. (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
WS-1226G	1-1/4 (31.8)	1/2" - 13	2-3/4 (69.9)	1/8 (3.2)	25/ 4.8	200/ 39
WS-1242G	2-3/4 (69.9)		4-1/4 (108.0)	1-1/2 (38.1)	25/ 6.7	150/ 41
WS-1254G	4 (101.6)		5-1/2 (139.7)	2-3/4 (69.9)	25/ 8.0	150/ 49
WS-1270G	5-1/2 (139.7)		7 (177.8)	4-1/4 (108.0)	25/ 9.7	150/ 59
WS-5834G	1-3/4 (44.5)	5/8" - 11	3-1/2 (88.9)	1/8 (3.2)	10/ 3.7	100/ 38
WS-5860G	4-1/4 (107.9)		6 (152.4)	2-5/8 (66.7)	10/ 5.6	50/ 29
WS-3446G	2-7/8 (73.0)	3/4" - 10	4-3/4 (120.7)	3/4 (19.1)	10/ 7.5	60/ 46
WS-3454G	3-5/8 (92.1)		5-1/2 (139.7)	1-1/2 (38.1)	10/ 8.4	50/ 42
WS-3484G	5-3/4 (146.0)		8-1/2 (215.9)	4-1/2 (114.3)	10/ 12.5	30/ 38

Meets ASTM A153 Class specifications for hot-dipped galvanizing > 45um = .002". It is highly recommended for damp, humid environments near coastal regions. Hot-dipped galvanized Trubolts have a coating thickness of zinc that is almost 10 times as thick as electroplating. This creates greater corrosion resistance at a minimal cost.

Typical Applications—Railings, Signage, Awnings, etc.
Environment—Rural/Suburban (exterior environment—essentially unpolluted areas)
Level of Corrosion—Low to Medium

TRUBOLT® WEDGE ANCHORS

TRUBOLT® CARBON STEEL WITH ZINC PLATING

PART NUMBER	THREAD LENGTH In. (mm)	ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH IN. (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
WS-1416	3/4 (19.1)	1/4" - 20	1-3/4 (44.5)	3/8 (9.5)	100/ 3.1	1000/ 32
WS-1422	1-1/4 (31.8)		2-1/4 (57.2)	7/8 (22.2)	100/ 3.6	1000/ 37
WS-1432	2-1/4 (57.2)		3-1/4 (82.6)	1-7/8 (47.6)	100/ 4.7	800/ 39
WS-3822	1-1/8 (28.6)	3/8" - 16	2-1/4 (57.2)	3/8 (9.5)	50/ 4.1	500/ 41
WS-3826	1-5/8 (41.3)		2-3/4 (69.9)	7/8 (22.2)	50/ 4.7	400/ 39
WS-3830	1-3/4 (44.5)		3 (76.2)	1-1/8 (28.6)	50/ 5.0	400/ 41
WS-3836	2-1/2 (63.5)		3-3/4 (95.3)	1-7/8 (47.6)	50/ 5.9	300/ 36
WS-3850	3-3/4 (95.2)		5 (127.0)	3-1/8 (79.4)	50/ 7.4	250/ 38
WS-3870	3-7/8 (98.4)		7 (177.8)	5-1/8 (130.2)	50/ 10.4	250/ 53
WS-1226	1-1/4 (31.8)	1/2" - 13	2-3/4 (69.9)	1/8 (3.2)	25/ 4.6	200/ 38
WS-1236	2-1/4 (57.2)		3-3/4 (95.3)	1 (25.4)	25/ 5.7	150/ 35
WS-1242	2-3/4 (69.9)		4-1/4 (108.0)	1-1/2 (38.1)	25/ 6.2	150/ 38
WS-1244	3 (76.2)		4-1/2 (114.3)	1-3/4 (44.5)	25/ 6.5	150/ 39
WS-1254	4 (101.6)		5-1/2 (139.7)	2-3/4 (69.9)	25/ 7.7	150/ 47
WS-1270	5-1/2 (139.7)		7 (177.8)	4-1/4 (108.0)	25/ 9.3	150/ 57
WS-5834	1-3/4 (44.5)	5/8" - 11	3-1/2 (88.9)	1/8 (3.2)	10/ 3.6	100/ 37
WS-5842	2-1/2 (63.5)		4-1/4 (108.0)	7/8 (22.2)	10/ 4.1	100/ 42
WS-5850	3-1/4 (82.6)		5 (127.0)	1-5/8 (41.3)	10/ 4.7	100/ 48
WS-5860	4-1/4 (107.9)		6 (152.4)	2-5/8 (66.7)	10/ 5.4	50/ 28
WS-5870	5-1/4 (133.4)		7 (177.8)	3-5/8 (92.1)	10/ 6.2	30/ 19
WS-5884	5-3/4 (146.0)		8-1/2 (215.9)	5-1/8 (130.2)	10/ 8.0	30/ 25
WS-58100	5-3/4 (146.0)		10 (254.0)	6-5/8 (168.3)	10/ 9.4	30/ 29
WS-3442	2-3/8 (60.3)	3/4" - 10	4-1/4 (108.0)	1/4 (31.8)	10/ 6.8	60/ 42
WS-3446	2-7/8 (73.0)		4-3/4 (120.7)	3/4 (19.1)	10/ 7.4	60/ 45
WS-3454	3-5/8 (92.1)		5-1/2 (139.7)	1-1/2 (38.1)	10/ 8.1	50/ 41
WS-3462	4-3/8 (111.1)		6-1/4 (158.8)	2-1/4 (57.2)	10/ 9.1	30/ 28
WS-3470	5-1/8 (130.2)		7 (177.8)	3 (76.2)	10/ 9.7	30/ 30
WS-3484	5-3/4 (146.0)		8-1/2 (215.9)	4-1/2 (114.3)	10/ 12.3	30/ 38
WS-34100	5-3/4 (146.0)		10 (254.0)	6 (152.4)	10/ 14.0	30/ 43
WS-34120	1-3/4 (44.5)		12 (304.8)	8 (203.2)	10/ 16.6	30/ 51
WS-7860	2-1/2 (63.5)	7/8" - 9	6 (152.4)	1-3/8 (34.9)	5/ 6.3	25/ 32
WS-7880	2-1/2 (63.5)		8 (203.2)	3-3/8 (85.7)	5/ 8.1	15/ 25
WS-78100	2-1/2 (63.5)		10 (254.0)	5-3/8 (136.5)	5/ 9.8	15/ 30
WS-10060	2-1/2 (63.5)	1" - 8	6 (152.4)	1/2 (12.7)	5/ 8.3	25/ 43
WS-10090	2-1/2 (63.5)		9 (228.6)	3-1/2 (88.9)	5/ 11.6	15/ 36
WS-100120	2-1/2 (63.5)		12 (304.8)	6-1/2 (165.1)	5/ 15.0	15/ 46
TIE WIRE						
TW-1400	N/A	1/4"	2-1/8 (54.0)	9/32-hole (7.1)	100/ 3.6	1000/ 36
TW-1400 K	N/A		2-1/8 (54.0)	9/32-hole (7.1)	BULK	BULK

Meets ASTM B633 SC1, Type III specifications for electroplating of 5um = .0002" thickness.
This material is well suited for non-corrosive environments.

Typical Applications—Structural Columns, Machinery, Equipment, etc.
Environment—Interior (non-corrosive)
Level of Corrosion—Low

TRUBOLT® WEDGE ANCHORS

TRUBOLT® TYPE 304 STAINLESS STEEL

PART NUMBER	THREAD LENGTH In. (mm)	ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH IN. (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
WW-1416	3/4 (19.1)	1/4" - 20	1-3/4 (44.5)	3/8 (9.5)	100/ 3.2	1000/ 32
WW-1422	1-1/4 (31.8)		2-1/4 (57.2)	7/8 (22.2)	100/ 3.7	1000/ 37
WW-1432	2-1/4 (57.2)		3-1/4 (82.6)	1-7/8 (47.6)	100/ 4.8	800/ 39
WW-3822	1-1/8 (28.6)	3/8" - 16	2-1/4 (57.2)	3/8 (9.5)	50/ 4.1	500/ 41
WW-3826	1-5/8 (41.3)		2-3/4 (69.9)	7/8 (22.2)	50/ 4.8	400/ 39
WW-3830	1-3/4 (44.5)		3 (76.2)	1-1/8 (28.6)	50/ 5.1	400/ 42
WW-3836	2-1/2 (63.5)		3-3/4 (95.3)	1-7/8 (47.6)	50/ 6.0	300/ 37
WW-3850	3-3/4 (95.3)		5 (127.0)	3-1/8 (79.4)	50/ 7.5	250/ 39
WW-1226	1-1/4 (31.8)	1/2" - 13	2-3/4 (69.9)	1/8 (3.2)	25/ 4.7	200/ 38
WW-1236	2-1/4 (57.2)		3-3/4 (95.3)	1 (25.4)	25/ 5.8	150/ 36
WW-1242	2-3/4 (69.9)		4-1/4 (108.0)	1-1/2 (38.1)	25/ 6.3	150/ 39
WW-1254	3 (76.2)		5-1/2 (139.7)	2-3/4 (69.9)	25/ 7.7	150/ 47
WW-1270	3-1/2 (88.9)		7 (177.8)	4-1/4 (108.0)	25/ 9.4	150/ 57
WW-5834	1-3/4 (44.5)	5/8" - 11	3-1/2 (88.9)	1/8 (3.2)	10/ 3.6	100/ 37
WW-5842	2-1/2 (63.5)		4-1/4 (108.0)	7/8 (22.2)	10/ 4.2	100/ 43
WW-5850	3-1/4 (82.6)		5 (127.0)	1-5/8 (41.3)	10/ 4.8	100/ 49
WW-5860	4-1/4 (107.9)		6 (152.4)	2-5/8 (66.7)	10/ 5.5	50/ 28
WW-5870	3-1/2 (88.9)		7 (177.8)	3-5/8 (92.1)	10/ 6.2	30/ 20
WW-5884	3-1/2 (88.9)		8-1/2 (215.9)	5-1/8 (130.2)	10/ 8.0	30/ 25
WW-3442	2-3/8 (60.3)	3/4" - 10	4-1/4 (108.0)	1/4 (1.6)	10/ 6.8	60/ 42
WW-3446	2-7/8 (73.0)		4-3/4 (120.7)	3/4 (19.1)	10/ 6.7	60/ 41
WW-3454	3-5/8 (92.1)		5-1/2 (139.7)	1-1/2 (38.1)	10/ 7.5	50/ 38
WW-3470	3-1/2 (88.9)		7 (177.8)	3 (76.2)	10/ 9.2	30/ 28
WW-3484	3-1/2 (88.9)		8-1/2 (215.9)	4-1/2 (114.3)	10/ 12.3	30/ 38
WW-34100	1-3/4 (44.5)		10 (254.0)	6 (152.4)	10/ 13.5	30/ 42
WW-10060	2-1/2 (63.5)	1" - 8	6 (152.4)	1/2 (12.7)	5/ 8.3	25/ 43
WW-10090	2-1/2 (63.5)		9 (228.6)	3-1/2 (88.9)	5/ 11.4	15/ 35

* For continuous extreme low temperature applications, use stainless steel.

Serves many applications well. It withstands rusting in architectural and food processing environments and resists organic chemicals, dye stuffs and many inorganic chemicals.

Typical Applications—Cladding, Stadium Seating, etc.
Environment—Urban (slight to moderate degree of pollution)
Level of Corrosion—Medium

TRUBOLT® WEDGE ANCHORS

TRUBOLT® TYPE 316 STAINLESS STEEL

PART NUMBER	THREAD LENGTH In. (mm)	ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH IN. (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
SWW-1422	1-1/4 (31.8)	1/4" - 20	2-1/4 (57.2)	7/8 (22.2)	100/ 3.7	1000/ 37
SWW-1432	2-1/4 (57.2)		3-1/4 (82.6)	1-1/8 (28.6)	100/ 4.8	1000/ 39
SWW-3822	1-1/8 (28.6)	3/8" - 16	2-1/4 (57.2)	3/8 (9.5)	50/ 4.1	500/ 41
SWW-3826	1-5/8 (41.3)		2-3/4 (69.9)	7/8 (22.2)	50/ 4.8	400/ 39
SWW-3830	1-3/4 (44.5)		3 (76.2)	1-1/8 (28.6)	50/ 5.2	400/ 42
SWW-3836	2-1/2 (63.5)		3-3/4 (95.5)	1-7/8 (47.6)	50/ 6.0	300/ 37
SWW-3850	3-3/4 (95.3)		5 (127.0)	3-1/8 (79.4)	50/ 7.5	250/ 39
SWW-1226	1-1/4 (31.8)	1/2" - 13	2-3/4 (69.9)	1/8 (3.2)	25/ 4.7	200/ 39
SWW-1236	2-1/4 (57.2)		3-3/4 (95.3)	1 (25.4)	25/ 5.8	150/ 36
SWW-1242	2-3/4 (69.9)		4-1/4 (108.0)	1-1/2 (38.1)	25/ 6.5	150/ 40
SWW-1254	3 (76.2)		5-1/2 (139.7)	2-3/4 (69.9)	25/ 7.8	150/ 48
SWW-5842	2-1/2 (63.5)	5/8" - 11	4-1/4 (108.0)	7/8 (22.2)	10/ 4.2	100/ 43
SWW-5850	3-1/4 (82.6)		5 (127.0)	1-5/8 (41.3)	10/ 4.8	100/ 49
SWW-5870	3-1/2 (88.9)		7 (177.8)	3-5/8 (92.1)	10/ 6.7	30/ 21
SWW-3446	2-1/4 (57.2)	3/4" - 10	4-3/4 (120.7)	3/4 (19.1)	10/ 6.8	60/ 41
SWW-3454	3 (76.2)		5-1/2 (139.7)	1-1/2 (38.1)	10/ 8.1	50/ 41

* For continuous extreme low temperature applications, use stainless steel.

Contains more nickel and chromium than Type 304, and 2%-3% molybdenum, which gives it better corrosion resistance. It is especially more effective in chloride environments that tend to cause pitting.

Typical Applications—Pumps, Diffusers, Gates, Weir Plates, etc.
Environment—Industrial (moderate to heavy atmospheric pollution)
Level of Corrosion—Medium to High

Typical Applications—Tunnels, Dams, Tiles, Lighting Fixtures, etc.
Environment—Marine (heavy atmospheric pollution)
Level of Corrosion—High

Combined Tension and Shear Loading—for Trubolt Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation:

$$(Ps/Pt)^{5/3} + (Vs/Vt)^{5/3} \leq 1$$

Ps = Applied tension load
Vs = Applied shear load
Pt = Allowable tension load
Vt = Allowable shear load

TRUBOLT® WEDGE ANCHORS

PERFORMANCE TABLES

Ultimate Tension and Shear Values (Lbs/kN) in Concrete*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE Ft.Lbs. (Nm)	DEPTH OF EMBEDMENT In. (mm)	ANCHOR TYPE	f'c = 2000 PSI (13.8 MPa)		f'c = 4000 PSI (27.6 MPa)		f'c = 6000 PSI (41.4 MPa)	
				TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	4 (5.4)	1-1/8 (28.6)		1,180 (5.2)	1,400 (6.2)	1,780 (7.9)	1,400 (6.2)	1,900 (8.5)	1,400 (6.2)
		1-15/16 (49.2)		2,100 (9.3)	1,680 (7.5)	3,300 (14.7)	1,680 (7.5)	3,300 (14.7)	1,680 (7.5)
		2-1/8 (54.0)		2,260 (10.1)	1,680 (7.5)	3,300 (14.7)	1,680 (7.5)	3,300 (14.7)	1,680 (7.5)
3/8 (9.5)	25 (33.9)	1-1/2 (38.1)		1,680 (7.5)	2,320 (10.3)	2,240 (10.0)	2,620 (11.7)	2,840 (12.6)	3,160 (14.1)
		3 (76.2)	WS-Carbon or WS-G Hot-Dipped Galvanized or WW-304 S.S. or SWW-316 S.S.	3,480 (15.5)	4,000 (17.8)	5,940 (26.4)	4,140 (18.4)	6,120 (27.2)	4,500 (20.0)
		4 (101.6)		4,800 (21.4)	4,000 (17.8)	5,940 (26.4)	4,140 (18.4)	6,120 (27.2)	4,500 (20.0)
1/2 (12.7)	55 (74.6)	2-1/4 (57.2)		4,660 (20.7)	4,760 (21.2)	5,100 (22.7)	4,760 (21.2)	7,040 (31.3)	7,040 (31.3)
		4-1/8 (104.8)		4,660 (20.7)	7,240 (32.2)	9,640 (42.9)	7,240 (32.2)	10,820 (48.1)	8,160 (36.3)
		6 (152.4)		5,340 (23.8)	7,240 (32.2)	9,640 (42.9)	7,240 (32.2)	10,820 (48.1)	8,160 (36.3)
5/8 (15.9)	90 (122.0)	2-3/4 (69.9)		6,580 (29.3)	7,120 (31.7)	7,180 (31.9)	7,120 (31.7)	9,720 (43.2)	9,616 (42.8
		5-1/8 (130.2)		6,580 (29.3)	9,600 (42.7)	14,920 (66.4)	11,900 (52.9)	16,380 (72.9)	12,520 (55.7)
		7-1/2 (190.5)		7,060 (31.4)	9,600 (42.7)	15,020 (66.8)	11,900 (52.9)	16,380 (72.9)	12,520 (55.7)
3/4 (19.1)	110 (149.2)	3-1/4 (82.6)		7,120 (31.7)	10,120 (45.0)	10,840 (48.2)	13,720 (61.0)	13,300 (59.2)	15,980 (71.1)
		6-5/8 (168.3)		10,980 (48.8)	20,320 (90.4)	17,700 (78.7)	23,740 (105.6)	20,260 (90.1)	23,740 (105.6)
		10 (254.0)		10,980 (48.8)	20,320 (90.4)	17,880 (79.5)	23,740 (105.6)	23,580 (104.9)	23,740 (105.6)
7/8 (22.2)	250 (339.0)	3-3/4 (95.3)		9,520 (42.3)	13,160 (58.5)	14,740 (65.6)	16,580 (73.8)	17,420 (77.5)	19,160 (85.2)
		6-1/4 (158.8)		14,660 (65.2)	20,880 (92.9)	20,940 (93.1)	28,800 (128.1)	24,360 (108.4)	28,800 (128.1)
		8 (203.2)		14,660 (65.2)	20,880 (92.9)	20,940 (93.1)	28,800 (128.1)	24,360 (108.4)	28,800 (128.1)
1 (25.4)	300 (406.7)	4-1/2 (114.3)		13,940 (62.0)	16,080 (71.5)	20,180 (89.8)	22,820 (101.5)	21,180 (94.2)	24,480 (108.9)
		7-3/8 (187.3)		14,600 (64.9)	28,680 (127.6)	23,980 (106.7)	37,940 (168.8)	33,260 (148.0)	38,080 (169.4)
		9-1/2 (241.3)		18,700 (83.2)	28,680 (127.6)	26,540 (118.1)	37,940 (168.8)	33,260 (148.0)	38,080 (169.4)

* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.
* For Tie-Wire Wedge Anchor, TW-1400, use tension data from 1/4" diameter with 1-1/8" embedment.
* For continuous extreme low temperature applications, use stainless steel.

Ultimate Tension and Shear Values (Lbs/kN) in Lightweight Concrete*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE Ft.Lbs. (Nm)	DEPTH OF EMBEDMENT In. (mm)	ANCHOR TYPE	LIGHTWEIGHT CONCRETE f'c = 3000 PSI (20.7 MPa)		LOWER FLUTE OF STEEL DECK WITH LIGHTWEIGHT CONCRETE FILL f'c = 3000 PSI (20.7 MPa)	
				TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	25 (33.9)	1-1/2 (38.1)		1,175 (5.2)	1,480 (6.6)	1,900 (8.5)	3,160 (14.1)
		3 (76.2)		2,825 (12.6)	2,440 (10.9)	2,840 (12.6)	4,000 (17.8)
1/2 (12.7)	55 (74.6)	2-1/4 (57.2)		2,925 (13.0)	2,855 (12.7)	3,400 (15.1)	5,380 (23.9)
		3 (76.2)		3,470 (15.4)	3,450 (15.3)	4,480 (19.9)	6,620 (29.4)
		4 (10 1.6)		4,290 (19.1)	3,450 (15.3)	4,800 (21.4)	6,440 (28.6)
5/8 (15.9)	90 (122.0)	3 (76.2)		4,375 (19.5)	4,360 (19.4)	4,720 (21.0)	5,500 (24.5)
		5 (127.0)		6,350 (28.2)	6,335 (28.2)	6,580 (29.3)	9,140 (40.7)
3/4 (19.1)	110 (149.2)	3-1/4 (82.6)		5,390 (24.0)	7,150 (31.8)	5,840 (26.0)	8,880 (39.5)
		5-1/4 (133.4)		7,295 (32.5)	10,750 (47.8)	7,040 (31.3)	N/A

* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

TRUBOLT® WEDGE ANCHORS

PERFORMANCE TABLES

Recommended Edge and Spacing Distance Requirements for Shear Loads*

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	ANCHOR TYPE	EDGE DISTANCE REQUIRED TO OBTAIN MAX WORKING LOAD In. (mm)	MIN. EDGE DISTANCE AT WHICH THE LOAD FACTOR APPLIED = .60 In. (mm)	MIN. EDGE DISTANCE AT WHICH THE LOAD FACTOR APPLIED = .20 In. (mm)	SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. ALLOWABLE SPACING BETWEEN ANCHORS In. (mm) LOAD FACTOR APPLIED = .40
1/4 (6.4)	1-1/8 (28.6)		2 (50.8)	1-5/16 (33.3)	N/A	3-15/16 (100.0)	2 (50.8)
	1-15/16 (49.2)		1-15/16 (49.2)	1 (25.4)	N/A	3-7/8 (98.4)	1-15/16 (49.2)
3/8 (9.5)	1-1/2 (38.1)		2-5/8 (66.7)	1-3/4 (44.5)	N/A	5-1/4 (133.4)	2-5/8 (66.7)
	3 (76.2)		3-3/4 (95.3)	3 (76.2)	1-1/2 (38.1)	6 (152.4)	3 (76.2)
1/2 (12.7)	2-1/4 (57.2)	WS-Carbon or WS-G Hot-Dipped Galvanized or WW-304 S.S. or SWW-316 S.S.	3-15/16 (100.0)	2-9/16 (65.1)	N/A	7-7/8 (200.0)	3-15/16 (100.0)
	4-1/8 (104.8)		5-3/16 (131.8)	3-1/8 (79.4)	1-9/16 (39.7)	6-3/16 (157.2)	3-1/8 (79.4)
5/8 (15.9)	2-3/4 (69.9)		4-13/16 (122.2)	3-1/8 (79.4)	N/A	9-5/8 (244.5)	4-13/16 (122.2)
	5-1/8 (130.2)		6-7/16 (163.5)	3-7/8 (98.4)	1-15/16 (49.2)	7-11/16 (195.3)	3-7/8 (98.4)
3/4 (19.1)	3-1/4 (82.6)		5-11/16 (144.5)	3-3/4 (95.3)	N/A	11-3/8 (288.9)	5-11/16 (144.5)
	6-5/8 (168.3)		6-5/16 (160.3)	5 (127.0)	2-1/2 (63.5)	9-15/16 (252.4)	5 (127.0)
7/8 (22.2)	3-3/4 (95.3)		6-9/16 (166.7)	4-5/16 (109.5)	N/A	13-1/8 (333.4)	6-9/16 (166.7)
	6-1/4 (158.8)		8-1/2 (215.9)	6-1/4 (158.8)	3-1/8 (79.4)	12-1/2 (317.5)	6-1/4 (158.8)
1 (25.4)	4-1/4 (108.0)		7-7/8 (200.0)	5-1/8 (130.2)	N/A	15-3/4 (400.1)	7-7/8 (200.0)
	7-3/8 (187.3)		10-1/16 (255.6)	7-3/8 (187.3)	3-11/16 (93.7)	14-3/4 (374.7)	7-3/8 (187.3)

* Spacing and edge distances shall be divided by 0.75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

Recommended Edge and Spacing Distance Requirements for Tension Loads*

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	ANCHOR TYPE	EDGE DISTANCE REQUIRED TO OBTAIN MAX WORKING LOAD In. (mm)	MIN. EDGE DISTANCE AT WHICH THE LOAD FACTOR APPLIED = .65 In. (mm)	SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. ALLOWABLE SPACING BETWEEN ANCHORS In. (mm) LOAD FACTOR APPLIED = .70
1/4 (6.4)	1-1/8 (28.6)		2 (50.8)	1 (25.4)	3-15/16 (100.0)	2 (50.8)
	1-15/16 (49.2)		1-15/16 (49.2)	1 (25.4)	3-7/8 (98.4)	1-15/16 (49.2)
	2-1/8 (54.0)		1-5/8 (41.3)	13/16 (20.6)	3-3/16 (81.0)	1-5/8 (41.3)
3/8 (9.5)	1-1/2 (38.1)		2-5/8 (66.7)	1-5/16 (33.3)	5-1/4 (133.4)	2-5/8 (66.7)
	3 (76.2)		3 (76.2)	1-1/2 (38.1)	6 (152.4)	3 (76.2)
	4 (101.6)		3 (76.2)	1-1/2 (38.1)	6 (152.4)	3 (76.2)
1/2 (12.7)	2-1/4 (57.2)		3-15/16 (100.0)	2 (50.8)	7-7/8 (200.0)	3-15/16 (100.0)
	4-1/8 (104.8)	WS-Carbon or WS-G Hot-Dipped Galvanized or WW-304 S.S. or SWW-316 S.S.	3-1/8 (79.4)	1-9/16 (39.7)	6-3/16 (157.2)	3-1/8 (79.4)
	6 (152.4)		4-1/2 (114.3)	2-1/4 (57.2)	9 (228.6)	4-1/2 (114.3)
5/8 (15.9)	2-3/4 (69.9)		4-13/16 (122.2)	2-7/16 (61.9)	9-5/8 (244.5)	4-13/16 (122.2)
	5-1/8 (130.2)		3-7/8 (98.4)	1-15/16 (49.2)	7-1/16 (195.3)	3-7/8 (98.4)
	7-1/2 (190.5)		5-5/8 (142.9)	2-13/16 (71.4)	11-1/4 (285.8)	5-5/8 (142.9)
3/4 (19.1)	3-1/4 (82.6)		5-11/16 (144.5)	2-7/8 (73.0)	11-3/8 (288.9)	5-11/16 (144.5)
	6-5/8 (168.3)		5 (127.0)	2-1/2 (63.5)	9-15/16 (252.4)	5 (127.0)
	10 (254.0)		7-1/2 (190.5)	3-3/4 (95.3)	15 (381.0)	7-1/2 (190.5)
7/8 (22.2)	3-3/4 (95.3)		6-9/16 (166.7)	3-5/16 (84.1)	13-1/8 (333.4)	6-9/16 (166.7)
	6-1/4 (158.8)		6-1/4 (158.8)	3-1/8 (79.4)	12-1/2 (317.5)	6-1/4 (158.8)
	8 (203.2)		6 (152.4)	3 (76.2)	12 (304.8)	6 (152.4)
1 (25.4)	4-1/2 (114.3)		7-7/8 (200.0)	3-15/16 (100.0)	15-3/4 (400.1)	7-7/8 (200.0)
	7-3/8 (187.3)		7-3/8 (187.3)	3-11/16 (93.7)	14-3/4 (374.7)	7-3/8 (187.3)
	9-1/2 (241.3)		7-1/8 (181.0)	3-9/16 (90.5)	14-1/4 (362.0)	7-1/8 (181.0)

* Spacing and edge distances shall be divided by 0.75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

LARGE DIAMETER TAPCON (LDT) ANCHORS

LDT ANCHOR

Self-Threading Anchors

SPECIFIED FOR ANCHORAGE INTO CONCRETE


LDT Self-threading Anchor

The LDT anchor is a high performance anchor that cuts its own threads into concrete.

Anchor bodies are made of hardened carbon steel and zinc plated, Grade 5.

The anchors shall have a finished hex washer head with anti-rotation serrations to prevent anchor back-out. The head of the anchor is stamped with a length identification code for easy inspection.

The anchor shall be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994.

ADVANTAGES

SAVE TIME

EASILY INSTALLED

- Installs in less than half the time of wedge anchors or adhesive anchors
- Simply drill a pilot hole and drive the LDT anchor by hand or impact

EASILY REMOVED

- No torching or grinding required to remove anchors

SAVE MONEY

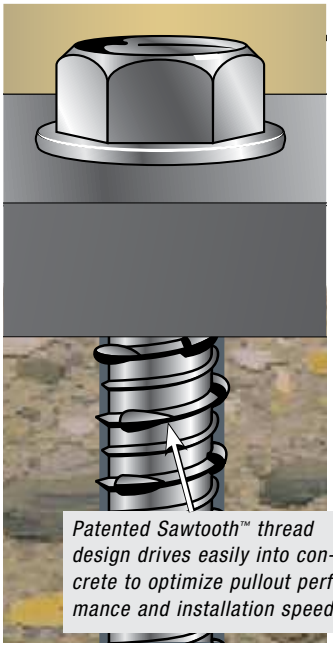
LOWER DRILL BIT COSTS

- Use standard ANSI bits instead of proprietary bits
- Single piece design, no nut and washer to assemble

USE STANDARD ANSI BITS

- No special proprietary bits to purchase or lose
- Reduce chances for anchor failure due to incorrect bit usage

Sawtooth Threads™, now available on 5/8" and 3/4"


Patented Sawtooth™ thread design drives easily into concrete to optimize pullout performance and installation speed

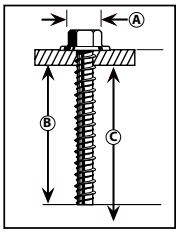
IMPROVED PERFORMANCE IN LARGE DIAMETER HOLES

- Superior performance to wedge anchor
- Higher loads in shallow embedments
- Closer edge/spacing distance than mechanical anchors
- More threads for better thread engagement and higher pullout resistance
- Durable induction-hardened tip

EASY INSTALLATION

- Easy 2-step installation, simply drill a pilot hole and drive
- Installs in less than half the time of a wedge anchor
- Efficient thread cutting
- Use standard drill bit sizes
- Single piece design—no nut and washer assembly
- Easily removed

LDT SIZE	ANSI STANDARD DRILL BIT DIAMETER	Ⓐ ANCHOR HEAD (SOCKET SIZE) DIAMETER	WASHER DIAMETER	Ⓑ MINIMUM EMBEDMENT	Ⓒ HOLE DEPTH	USE IN		
						CONCRETE	CMU	
							HOLLOW	GROUT-FILLED
LDT 3/8"	5/16"	9/16"	13/16"	1-1/2"	2-1/2"	YES	YES	YES
LDT 1/2"	7/16"	3/4"	1"	2-1/2"	3-1/2"	YES	NO	YES
LDT 5/8"	1/2"	13/16"	1-3/16"	2-3/4"	3-3/4"	YES	NO	YES
LDT 3/4"	5/8"	15/16"	1-5/16"	3-1/4"	4-1/4"	YES	NO	YES

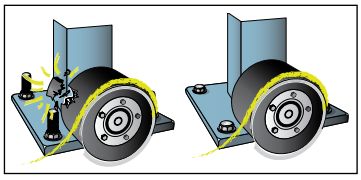


LARGE DIAMETER TAPCON (LDT) ANCHORS

APPLICATIONS

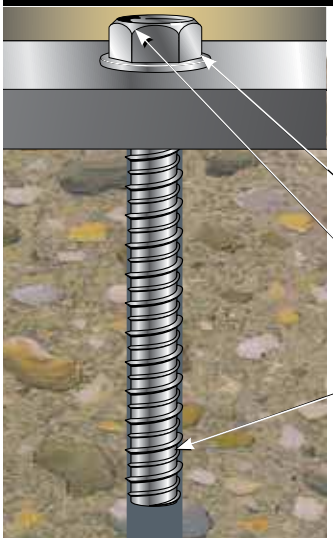
Racking, shelving and conveyors are just a few high volume applications ideal for Large Diameter Tapcon (LDT™). The ease and speed of installation of the LDT can reduce installation time to less than half the time of typical systems used today.

For installation speed, high performance and easy removability, LDT is the anchor of choice.



The LDT's finished head and lack of exposed threads virtually eliminates tire damage on fork lift trucks.

FEATURES



Easy Installation
Installs into concrete by hand or impact wrench

Anti-rotation Serrated Washer
Prevents anchor back-out

Extra Large Hex Washer Head
With increased bearing surface

Length Identification Head Stamp
For embedment inspection after installation

Hi-Lo Threads
Cuts its own threads into concrete for greater pull-out resistance

LDT 3/8" and 1/2" are available with EnvireX™ coating

1,000 hours salt spray ASTM B117. Approved for use in ACQ and MCQ lumber*

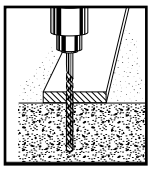
*Excessive content of copper in the ACQ and MCQ lumber may affect the anchor finish.

APPROVALS/LISTINGS

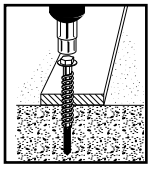
Miami-Dade County – #04-1025.08
Florida Building Code

INSTALLATION STEPS

Installation Steps for Concrete, Lightweight Concrete and Metal Deck

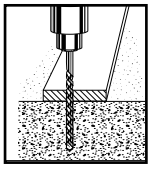


1. Using the proper size carbide bit (see chart) drill a pilot hole at least 1" deeper than anchor embedment.

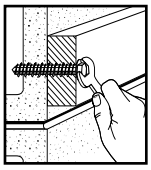


2. Using an **electric impact wrench**, or socket wrench (hand install) insert anchor into hole and tighten anchor until fully seated. (see chart for socket size) (do not over tighten).

Installation Steps for Hollow or Grout-Filled CMU (3/8" and 1/2" diameter)



1. Using a 5/16" (for 3/8" LDT) or 7/16" (for 1/2" LDT) carbide tipped bit, drill a pilot hole at least 1" deeper than anchor embedment.



2. Using a socket wrench insert anchor into hole and hand tighten anchor until fully seated. (9/16" socket for 3/8" and 3/4" socket for 1/2") (do not over tighten).

LDT's can be installed by hand or with an impact wrench
Installation by hand—is easy, simply using a socket wrench

Installation by impact wrench—is recommended for faster installations or for high volume projects. Installation with impact wrench—is ***not*** recommended for hollow block.

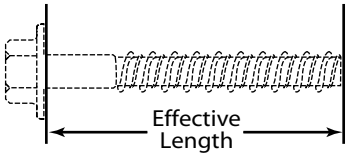
LARGE DIAMETER TAPCON (LDT) ANCHORS

LDT CARBON AND STAINLESS STEEL

PART NUMBER CARBON STEEL ZINC PLATED	PART NUMBER CARBON STEEL EnvireX COATING	PART NUMBER FOR 410 STAINLESS STEEL	ANCHOR DIA. In. (mm)	DRILL BIT DIA. In. (mm)	EFFECTIVE LENGTH In. (mm) (see detail)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
LDT-3816	——	SLDT-3816	3/8 (9.5)	5/16 (7.9)	1-3/4 (44.5)	1/4 (6.4)	50/ 3.0	400/ 24.0
LDT-3824	——	SLDT-3824	3/8 (9.5)	5/16 (7.9)	2-1/2 (63.5)	1 (25.4)	50/ 4.5	400/ 34.0
LDT-3830	LDT-3830 X	SLDT-3830	3/8 (9.5)	5/16 (7.9)	3 (76.2)	1-1/2 (38.1)	50/ 5.0	400/ 40.0
LDT-3840	LDT-3840 X	SLDT-3840	3/8 (9.5)	5/16 (7.9)	4 (101.6)	2-1/2 (63.5)	50/ 6.5	400/ 52.0
LDT-3850	LDT-3850 X	SLDT-3850	3/8 (9.5)	5/16 (7.9)	5 (127.0)	3-1/2 (89.0)	40/ 7.5	320/ 60.0
LDT-1230	LDT-1230 X	SLDT-1230	1/2 (12.7)	7/16 (11.1)	3 (76.2)	1/2 (12.7)	25/ 4.5	150/ 27.0
LDT-1240	LDT-1240 X	SLDT-1240	1/2 (12.7)	7/16 (11.1)	4 (101.6)	1-1/2 (38.1)	25/ 6.0	150/ 36.6
LDT-1250	LDT-1250 X	SLDT-1250	1/2 (12.7)	7/16 (11.1)	5 (127.0)	2-1/2 (63.5)	25/ 7.6	150/ 45.6
LDT-1260	——	——	1/2 (12.7)	7/16 (11.1)	6 (152.4)	4 (101.6)	20/ 9.0	120/ 54.0
LDT-5830	——	——	5/8 (15.9)	1/2 (12.7)	3 (76.2)	1/4 (6.4)	10 / 3.5	100 / 35.0
LDT-5840	——	——	5/8 (15.9)	1/2 (12.7)	4 (101.6)	1-1/4 (31.8)	10 / 4.0	100 / 40.0
LDT-5850	——	——	5/8 (15.9)	1/2 (12.7)	5 (127.0)	2-1/4 (57.1)	10 / 4.7	100 / 47.0
LDT-5860	——	——	5/8 (15.9)	1/2 (12.7)	6 (152.4)	3-1/4 (82.6)	10 / 5.4	50 / 27.0
LDT-3444	——	——	3/4 (19.1)	5/8 (15.9)	4-1/2 (114.3)	1-1/4 (31.8)	10 / 7.4	50 / 37.0
LDT-3454	——	——	3/4 (19.1)	5/8 (15.9)	5-1/2 (139.7)	2-1/4 (57.1)	10 / 8.1	50 / 40.5
LDT-3462	——	——	3/4 (19.1)	5/8 (15.9)	6-1/4 (158.8)	3 (76.2)	10 / 9.1	30 / 27.3

* The stainless steel LDT's will be gold in color in order to differentiate them from the carbon steel anchors.

Carbon Steel with Zinc Plating: Meets ASTM B695 and B633 specifications for zinc plating of 5um = .0002" thickness. This coating is well suited for non-corrosive interior environments. Carbon Steel with EnvireX Coating: Provides additional corrosion protection for outdoor applications.



LENGTH INDICATION CODE*

X denotes available with EnvireX™ coating

CODE	LENGTH OF ANCHOR In. (mm)
A	1-1/2 < 2 (38.1 < 50.8)
B	2 < 2-1/2 (50.8 < 63.5)
C	2-1/2 < 3 (63.5 < 76.2)
D	3 < 3-1/2 (76.2 < 88.9)
E	3-1/2 < 4 (88.9 < 101.6)
F	4 < 4-1/2 (101.6 < 114.3)
G	4-1/2 < 5 (114.3 < 127.0)
H	5 < 5-1/2 (127.0 < 139.7)
I	5-1/2 < 6 (139.7 < 152.4)
J	6 < 6-1/2 (152.4 < 165.1)

* Located on top of anchor for easy inspection.

DESIGN GUIDE

For proper selection of anchor diameters based upon predrilled holes in base plates and fixtures.

HOLE DIAMETER IN FIXTURE In. (mm)	SUGGESTED LDT DIAMETER In. (mm)
7/16 (11.1)	3/8 (9.5)
1/2 (12.7)	3/8 (9.5)
9/16 (14.3)	1/2 (12.7)
5/8 (15.9)	1/2 (12.7)
3/4 (19.1)	5/8 (15.9)
7/8 (22.2)	3/4 (19.1)

LARGE DIAMETER TAPCON (LDT) ANCHORS

PERFORMANCE TABLES

Ultimate Tension and Shear Values (Lbs/kN) in Concrete

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	f'c = 2000 PSI (13.8 MPa)		f'c = 3000 PSI (20.7 MPa)		f'c = 4000 PSI (27.6 MPa)	
		TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	1-1/2 (38.1)	1,336 (5.9)	2,108 (9.4)	1,652 (7.3)	2,764 (12.3)	1,968 (8.8)	3,416 (15.2)
	2 (50.8)	1,492 (6.6)	3,036 (13.5)	2,024 (9.0)	3,228 (14.4)	2,552 (11.4)	3,420 (15.2)
	2-1/2 (63.5)	3,732 (16.6)	3,312 (14.7)	3,748 (16.7)	3,364 (15.0)	3,760 (16.7)	3,424 (15.2)
	3-1/2 (88.9)	5,396 (24.0)	3,312 (14.7)	6,624 (29.5)	3,368 (15.0)	7,852 (34.9)	3,428 (15.2)
1/2 (12.7)	2 (50.8)	3,580 (15.9)	5,644 (25.1)	3,908 (17.4)	6,512 (29.0)	4,236 (18.8)	7,380 (32.8)
	3-1/2 (88.9)	7,252 (32.3)	6,436 (28.6)	8,044 (35.8)	7,288 (32.4)	8,836 (39.3)	8,140 (36.2)
	4-1/2 (114.3)	10,176 (45.3)	7,384 (32.8)	10,332 (46.0)	7,968 (35.4)	10,488 (46.7)	8,552 (38.0)
5/8 (15.9)	2-3/4 (69.9)	5,276 (23.5)	8,656 (38.5)	6,560 (29.2)	11,064 (49.2)	7,844 (34.8)	13,476 (59.9)
	3-1/2 (88.9)	7,972 (35.5)	10,224 (45.5)	9,848 (43.8)	12,144 (54.0)	11,724 (52.2)	14,060 (62.5)
	4-1/2 (114.3)	11,568 (51.5)	12,316 (54.8)	13,432 (59.8)	13,580 (60.4)	16,892 (75.1)	14,840 (66.0)
3/4 (19.1)	3-1/4 (82.6)	6,876 (30.6)	7,140 (31.8)	9,756 (43.4)	10,728 (47.7)	12,636 (56.2)	14,316 (63.6)
	4-1/2 (114.3)	10,304 (45.8)	13,120 (58.4)	14,424 (64.2)	16,868 (75.0)	18,540 (82.5)	20,612 (91.7)
	5-1/2 (139.7)	13,048 (58.0)	17,908 (79.7)	18,156 (80.8)	21,718 (96.9)	23,268 (130.5)	25,652 (114.1)

Allowable Tension and Shear Values (Lbs/kN) in Concrete Carbon and Stainless Steel

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	f'c = 2000 PSI (13.8 MPa)		f'c = 3000 PSI (20.7 MPa)		f'c = 4000 PSI (27.6 MPa)	
		TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	1-1/2 (38.1)	334 (1.5)	527 (2.3)	413 (1.8)	691 (3.1)	492 (2.1)	854 (3.8)
	2 (50.8)	373 (1.7)	759 (3.4)	506 (2.2)	807 (3.6)	638 (2.8)	855 (3.8)
	2-1/2 (63.5)	933 (4.2)	828 (3.7)	937 (4.2)	841 (3.7)	940 (4.2)	856 (3.8)
	3-1/2 (88.9)	1,349 (6.0)	828 (3.7)	1,656 (7.4)	842 (3.7)	1,963 (8.7)	857 (3.8)
1/2 (12.7)	2 (50.8)	895 (4.0)	1,411 (6.3)	977 (4.3)	1,628 (7.2)	1,059 (4.7)	1,845 (8.2)
	3-1/2 (88.9)	1,813 (8.0)	1,609 (7.2)	2,011 (8.9)	1,822 (8.1)	2,209 (9.8)	2,035 (9.0)
	4-1/2 (114.3)	2,544 (11.3)	1,846 (8.2)	2,583 (11.5)	1,992 (8.9)	2,622 (11.7)	2,138 (9.5)
5/8 (15.9)	2-3/4 (69.9)	1,319 (5.9)	2,164 (9.7)	1,640 (7.3)	2,766 (12.3)	1,961 (8.7)	3,369 (15.0)
	3-1/2 (88.9)	1,993 (8.9)	2,556 (11.4)	2,462 (10.9)	3,036 (13.5)	2,931 (13.0)	3,515 (15.6)
	4-1/2 (114.3)	2,892 (12.9)	3,079 (13.7)	3,358 (14.9)	3,395 (15.1)	4,223 (18.8)	3,710 (16.5)
3/4 (19.1)	3-1/4 (82.6)	1,719 (7.6)	1,785 (7.9)	2,439 (10.8)	2,682 (11.9)	3,159 (14.0)	3,579 (15.9)
	4-1/2 (114.3)	2,576 (11.5)	3,280 (14.6)	3,606 (16.0)	4,217 (18.7)	4,635 (20.6)	5,153 (22.9)
	5-1/2 (139.7)	3,262 (14.5)	4,477 (19.9)	4,539 (20.2)	5,445 (24.2)	5,817 (25.9)	6,413 (28.5)

* Allowable values are based upon a 4 to 1 safety factor. (Ultimate/4)

LARGE DIAMETER TAPCON (LDT) ANCHORS

PERFORMANCE TABLES

Recommended Edge and Spacing Distance Requirements for Tension Loads* Carbon and Stainless Steel

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	EDGE DISTANCE REQUIRED TO OBTAIN MAX WORKING LOAD In. (mm)	LOAD FACTOR APPLIED AT MIN. EDGE DISTANCE 1-3/4 Inches (44mm)	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 3 Inches (76mm)
3/8 (9.5)	1-1/2 (38.1)	2 (50.8)	70%	6 (152.4)	44%
	2 (50.8)	2 (50.8)	70%	6 (152.4)	44%
	2-1/2 (63.5)	3 (76.2)	70%	6 (152.4)	44%
	3-1/2 (88.9)	4 (101.6)	70%	6 (152.4)	44%
1/2 (12.7)	2 (50.8)	2-1/4 (57.2)	65%	8 (203.2)	27%
	3-1/2 (88.9)	3 (76.2)	65%	8 (203.2)	27%
	4-1/2 (114.3)	4 (101.6)	65%	8 (203.2)	27%

* Edge and spacing distance shall be divided by .75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

For 5/8" and 3/4" LDT Anchors, the critical edge distance for these anchors is 10 times the anchor diameter. The edge distance of these anchors may be reduced to 1-3/4" provided a 0.65 load factor is used for tension loads, a 0.15 load factor is used for shear loads applied perpendicular to the edge, or a 0.60 load factor is used for shear loads applied parallel to the edge. Linear interpolation may be used for intermediate edge distances.

Recommended Edge and Spacing Distance Requirements for Shear Loads* Carbon and Stainless Steel

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	EDGE DISTANCE REQUIRED TO OBTAIN MAX WORKING LOAD In. (mm)	LOAD FACTOR APPLIED AT MIN. EDGE DISTANCE 1-3/4 Inches (44mm)	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 3 Inches (76mm)
3/8 (9.5)	1-1/2 (38.1)	3 (76.2)	25%	6 (152.4)	57%
	2 (50.8)	4 (101.6)	25%	6 (152.4)	57%
	2-1/2 (63.5)	5 (127.0)	25%	6 (152.4)	57%
	3-1/2 (88.9)	5 (127.0)	25%	6 (152.4)	57%
1/2 (12.7)	2 (50.8)	5 (127.0)	25%	8 (203.2)	60%
	3-1/2 (88.9)	5 (127.0)	25%	8 (203.2)	60%
	4-1/2 (114.3)	5-1/2 (139.7)	25%	8 (203.2)	60%

* Edge and spacing distances shall be divided by .75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

Ulitmate Tension Load (Lbs/kN) in Concrete Block

Anchors should be installed by hand in hollow block

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	HOLLOW CONCRETE BLOCK				GROUT FILLED CONCRETE BLOCK			
		TENSION Lbs. (kN)		SHEAR Lbs. (kN)		TENSION Lbs. (kN)		SHEAR Lbs. (kN)	
3/8 (9.5)	1-1/2 (38.1)	916	(4.1)	3,176	(14.1)	1,592	(7.1)	3,900	(17.3)
1/2 (12.7)	2-1/2 (63.5)	N/A		N/A		5,924	(26.4)	6,680	(29.7)

LARGE DIAMETER TAPCON (LDT) ANCHORS

PERFORMANCE TABLES

Allowable Tension and Shear* (Lbs/kN) in Concrete Block

Anchors should be installed by hand in hollow block

ANCHOR DIA. In. (mm)	DEPTH OF EMBEDMENT In. (mm)	HOLLOW CONCRETE BLOCK		GROUT FILLED CONCRETE BLOCK	
		TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	1-1/2 (38.1)	229 (1.0)	794 (3.5)	398 (1.8)	975 (4.3)
1/2 (12.7)	2-1/2 (63.5)	N/A	N/A	1,481 (6.6)	1,670 (7.4)

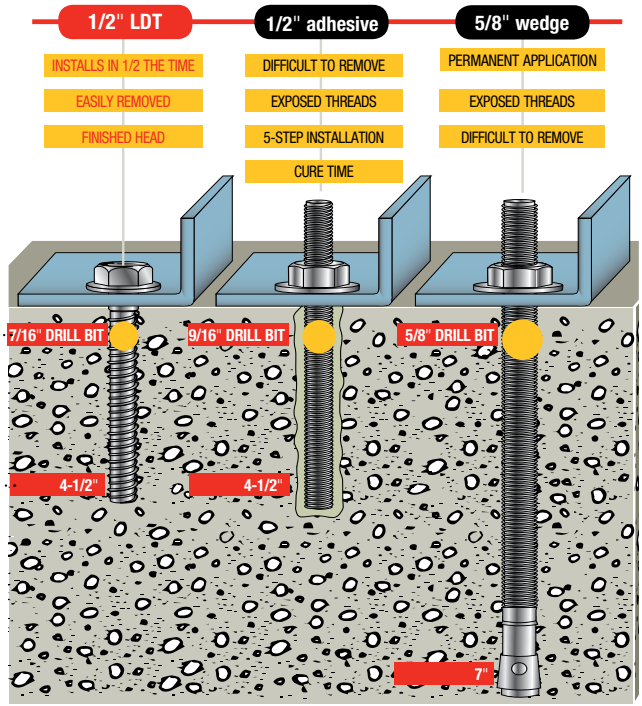
* Allowable values are based upon a 4 to 1 safety factor. (Ultimate/4)

Anchoring Overhead in 3000 PSI Lightweight Concrete On Metal Deck

ANCHOR	DRILL HOLE DIAMETER In. (mm)	EMBEDMENT In. (mm)	3000 PSI (20.7 MPa) CONCRETE	
			ULTIMATE TENSION LOAD Lbs. (kN)	ALLOWABLE WORKING LOAD Lbs. (kN)
3/8" LDT	5/16" (7.9)	1-1/2 (38.1)	Upper Flute 2,889 (12.9)	722 (3.2)
			Lower Flute 1,862 (8.3)	465 (2.1)

The Easy, Fast, High Performing, Removable Tapcon Anchor, Now Available in 3/8" and 1/2" Diameter

For use in concrete and concrete block



DRILL BIT SIZE REQUIRED

LDT anchors specify a smaller & less expensive drill bit than those required with the 1/2" adhesive threaded rod or the 5/8" wedge.

HOLE DEPTH REQUIRED

At 4-1/2" embedment the LDT anchor will give you performance (2000 PSI concrete) similar to 1/2" adhesive anchor of the same depth or 5/8" wedge anchors at 7" deep. (2000 PSI concrete)

MULTI-SET II DROP-IN ANCHORS

MULTI-SET II INTERNALLY THREADED HEAVY-DUTY ANCHORING SYSTEMS

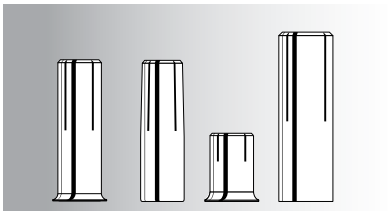
Drop-In, Shell-Type Anchors

SPECIFIED FOR ANCHORAGE INTO CONCRETE

Drop-In, shell-type anchors feature an internally threaded, all-steel shell with expansion cone insert and flush embedment lip. Anchors are manufactured from zinc-plated carbon steel, 18-8 stainless steel and 316 stainless steel.

Anchors should be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994 specifications.

Anchors should be tested to ASTM E488 criteria and listed by ICC-ES. Anchors should also be listed by the following agencies as required by the local building code: UL, FM, City of Los Angeles, California State Fire Marshal and Caltrans.



Multi-Set II Drop-In Anchors

ADVANTAGES

Depth Charge Stop Drill and RX Drop-In Anchors

Ideal for Hollow-Core, Pre-Cast Plank and Post Tension Slabs

DepthCharge™ Stop Drill

- Optimized for use in hollow-core, pre-cast plank and post-tension slabs
- Lip keeps anchor flush during installation
- Shallow drilling—fast installation

RX Drop-In Anchor

See page 88 for kits

RM Drop-In Anchor

- Lipped anchor body keeps anchor flush
- Easy installation
- Keeps all rods same length
- Easy inspection
- Available in carbon steel, 18-8 and 316 stainless steel

RL Drop-In Anchor

- Below surface setting for easy patch work
- Higher performance potential with deep embedment setting

Coil Thread Anchor

- Quick thread attachment — ideal for 1 sided forming
- Use coil rod on job
- 2 diameters (1/2" and 3/4")

MULTI-SET II DROP-IN ANCHORS

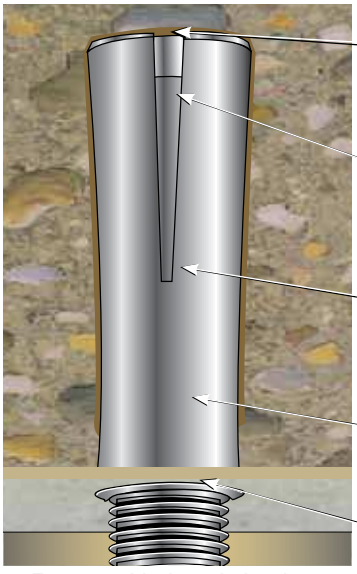
APPLICATIONS

Pumps and heavy piping are common applications for larger diameter Multi-Set Drop-In Anchors.

Cable tray and strut suspended from concrete ceilings are ideal Multi-Set applications. In post-tension or hollow-core slabs use the RX-38.

The Multi-Set Anchor is the standard for pipe-hanging. The RM version has a retainer lip to keep all anchors flush at the surface, keeping all your threaded rod the same length.

FEATURES



Expander Slots—allow for easy setting and superior performance

Cone Insert—that expands the anchor when driven with setting tool and hammer

Body—available in zinc-plated steel, 18-8 stainless steel, and 316 stainless steel

Easy Depth Inspection—keeps threaded rod drop lengths consistent

Retainer Lip—to keep anchor flush with surface

For use with threaded rods or headed bolts
(supplied by contractor)

APPROVALS / LISTINGS

Meets or exceeds U.S. Government G.S.A. Specification A-A-55614 Type 1 (Formerly GSA: FF-S-325 Group VIII)

Underwriters Laboratories

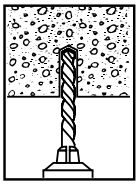
Factory Mutual

City of Los Angeles – #RR2748

California State Fire Marshal

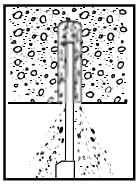
Caltrans

INSTALLATION STEPS

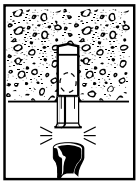


To set anchor flush with surface:

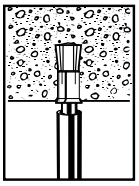
1. Drill hole to required embedment (see Table on page XX).



2. Clean hole with pressurized air.



3. Drive anchor flush with surface of concrete.



4. Expand anchor with setting tool provided (see chart on page XX). Anchor is properly expanded when shoulder of setting tool is flush with top of anchor.

To set anchor below surface:

Drill hole deeper than anchor length. Thread bolt into anchor. Hammer anchor into hole until bolt head is at desired depth. Remove bolt and set anchor with setting tool.

Multi-Set II Depth Charge Bits

PART NUMBER	DESCRIPTION	DRILLING DEPTH
DCX-138	3/8" Depth Charge Stop Drill	3/4"
DCX-112	1/2" Depth Charge Stop Drill	1"

DepthCharge™ Stop Drill

- Shoulder prevents over drilling
- Less likely to hit reinforcing steel or post-tension cable in concrete
- No lost time or energy drilling farther than necessary
- Anchor is set at a specified depth, does not drop too far into hole

MULTI-SET II DROP-IN ANCHORS

PART NUMBER RT-138
1 setting tool per master carton

PART NUMBER RTX-138
For use with RX-38 only.

PART NUMBER RTX-112
For use with RX-12 only.

Multi-Set II Drop-In Anchors

USER/TYPE APPLICATION	BASE MATERIAL	CORROSION RESISTANCE LEVEL	DROP-IN ANCHOR TYPE	PART NUMBER	SETTING TOOL PART NUMBER*	BOLT SIZE THREADS PER INCH	DRILL BIT DIA. In. (mm)	THREAD DEPTH In. (mm)	EMBEDMENT MIN. HOLE DEPTH In. (mm)	QTY/WT PER BOX Lbs.	QTY/WT PER MASTER CTN Lbs.*
HVAC/Fire Sprinkler Plumber (Pipe-fitter)	Solid concrete/ lightweight fill deck	Low	RM	RM-14	RT-114	1/4" - 20	3/8 (9.5)	3/8 (9.5)	1 (25.4)	100/ 2.6	1000/ 28
				RM-38	RT-138	3/8" - 16	1/2 (12.7)	1/2 (12.7)	1-5/8 (41.3)	50/ 3.4	500/ 36
				RM-12	RT-112	1/2" - 13	5/8 (15.9)	3/4 (19.1)	2 (50.8)	50/ 5.8	400/ 49
				RM-58	RT-158	5/8" - 11	7/8 (22.2)	1 (25.4)	2-1/2 (63.5)	25/ 7.8	125/ 41
				RM-34	RT-134	3/4" - 10	1 (25.4)	1-1/4 (31.8)	3-3/16 (81.0)	25/ 11.9	100/ 49
	Hollow-core pre-cast or Post-tension	Low	RX	RX-38	RTX-138	3/8" - 16	1/2 (12.7)	3/8 (9.5)	3/4 (19.1)	100/ 3.5	1000/ 36
				RX-12	RTX-112	1/2" - 13	5/8 (15.9)	1/2 (12.7)	1 (25.4)	50/ 3.0	500/ 31
	Solid concrete/ lightweight fill deck	Medium	SRM	SRM-14	RT-114	1/4" - 20	3/8 (9.5)	3/8 (9.5)	1 (25.4)	100/ 2.7	1000/ 28
				SRM-38	RT-138	3/8" - 16	1/2 (12.7)	1/2 (12.7)	1-5/8 (41.3)	50/ 3.4	500/ 36
				SRM-12	RT-112	1/2" - 13	5/8 (15.9)	3/4 (19.1)	2 (50.8)	50/ 6.0	400/ 50
				SRM-58	RT-158	5/8" - 11	7/8 (22.2)	1 (25.4)	2-1/2 (63.5)	25/ 18.0	125/ 42
				SRM-34	RT-134	3/4" - 10	1 (25.4)	1-1/4 (31.8)	3-3/16 (81.0)	25/ 12.0	100/ 50
	Solid concrete	High	SSRM** 316 S.S.	SSRM-38	RT-138	3/8" - 16	1/2 (12.7)	1/2 (12.7)	1-5/8 (41.3)	50/ 3.4	500/ 36
				SSRM-12	RT-112	1/2" - 13	5/8 (15.9)	3/4 (19.1)	2 (50.8)	50/ 6.0	400/ 50
Concrete Contractor, General COntractor, Highway	Solid concrete	Low	CL-Coil Threaded	CL-12	RT-112	1/2" - 6	5/8 (15.9)	3/4 (19.1)	2 (50.8)	50/ 5.7	400/ 47
				CL-34	RT-134	3/4" - 4.5	1 (25.4)	1-1/4 (31.8)	3-3/16 (81.0)	25/ 11.9	100/ 49
Concrete Cutting/ Sawing Contractor/ Misc. Metal	Solid concrete/ lightweight fill deck	Low	RL (w/o lip)	RL-14	RT-114	1/4" - 20	3/8 (9.5)	3/8 (9.5)	1 (25.4)	100/ 2.6	1000/ 28
				RL-38	RT-138	3/8" - 16	1/2 (12.7)	1/2 (12.7)	1-5/8 (41.3)	50/ 3.4	500/ 36
				RL-12	RT-112	1/2" - 13	5/8 (15.9)	3/4 (19.1)	2 (50.8)	50/ 5.8	400/ 49
				RL-58	RT-158	5/8" - 11	7/8 (22.2)	1 (25.4)	2-1/2 (63.5)	25/ 7.8	125/ 41
				RL-34	RT-134	3/4" - 10	1 (25.4)	1-1/4 (31.8)	3-3/16 (81.0)	25/ 11.9	100/ 49

* 1 setting tool per master carton. ** For continuous extreme low temperature, use stainless steel.

Combined Tension and Shear Loading for Multi-Set Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation:

$$(Ps/Pt)^{5/3} + (Vs/Vt)^{5/3} \leq 1$$

Ps = Applied tension load
Vs = Applied shear load
Pt = Allowable tension load
Vt = Allowable shear load

Multi-Set II RX Drop-In Kits

PART NUMBER	DESCRIPTION
RX-38	3/8" drop-in using 1/2" drill bit
RTX-138	Setting Tool
DCX-138	Depth Charge Stop Drill
RX-38KIT	Contains: 1,000 RX-38 Anchors, 5 RTX-138 Setting Tools and 2 DCX-138 Depth Charge Stop Drills
RX-12	1/2" drop-in using 5/8" drill bit
RTX-112	Setting Tool
DCX-112	Depth Charge Stop Drill
RX-12KIT	Contains: 500 RX-12 Anchors, 3 RTX-112 Setting Tools and 1 DCX-112 Depth Charge Stop Drill

MULTI-SET II DROP-IN ANCHORS

PERFORMANCE TABLES

Ultimate Tension and Shear Values (Lbs/kN) in Concrete*

BOLT DIA. In. (mm)	ANCHOR DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE	TENSION		SHEAR Lbs. (kN)	
				f'c = 2000 PSI (13.8 MPa)	f'c = 4000 PSI (27.6 MPa)	f'c = 6000 PSI (41.4 MPa)	f'c ≥ 2000 PSI (13.8 MPa)
1/4 (6.4)	3/8 (9.5)	1 (25.4)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM-316 S.S.	1,680 (7.5)	2,360 (10.5)	2,980 (13.3)	1,080 (4.8)
3/8 (9.5)	1/2 (12.7)	1-5/8 (41.3)		2,980 (13.3)	3,800 (16.9)	6,240 (27.8)	3,160 (14.1)
1/2 (12.7)	5/8 (15.9)	2 (50.8)		3,300 (14.7)	5,840 (26.0)	8,300 (36.9)	4,580 (20.4)
5/8 (15.9)	7/8 (22.2)	2-1/2 (63.5)		5,500 (24.5)	8,640 (38.4)	11,020 (49.0)	7,440 (33.1)
3/4 (19.1)	1 (25.4)	3-3/16 (81.0)		8,280 (36.8)	9,480 (42.2)	12,260 (54.5)	10,480 (46.6)

* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.
* For continuous extreme low temperature applications, use stainless steel.

Ultimate Tension and Shear Values (Lbs/kN) in Lightweight Concrete*

BOLT DIA. In. (mm)	ANCHOR DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE	LIGHTWEIGHT CONCRETE f'c = 3000 PSI (20.7 MPa)		LOWER FLUTE OF STEEL DECK WITH LIGHTWEIGHT CONCRETE FILL f'c = 3000 PSI (20.7 MPa)	
				TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	1/2 (12.7)	1-5/8 (39.7)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM-316 S.S.	2,035 (9.1)	1,895 (8.4)	3,340 (14.9)	4,420 (19.6)
1/2 (12.7)	5/8 (15.9)	2 (50.8)		2,740 (12.2)	2,750 (12.2)	3,200 (14.2)	4,940 (22.0)
5/8 (15.9)	7/8 (22.2)	2-1/2 (63.5)		4,240 (18.9)	4,465 (19.9)	5,960 (26.5)	5,840 (26.0)
3/4 (19.1)	1 (25.4)	3-3/16 (81.0)		5,330 (23.7)	6,290 (28.0)	8,180 (36.4)	9,120 (40.6)

* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

Recommended Edge and Spacing Distance Requirements*

BOLT DIA. In.(mm)	DRILL BIT SIZE In. (mm)	EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. EDGE DISTANCE AT WHICH LOAD FACTOR APPLIED =.80 FOR TENSION =.70 FOR SHEAR In. (mm)	SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. ALLOWABLE SPACING BETWEEN ANCHORS LOAD FACTOR APPLIED = .80 FOR TENSION =.70 FOR SHEAR In. (mm)
1/4 (6.4)	3/8 (9.5)	1 (25.4)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM-316 S.S.	1-3/4 (44.5)	7/8 (22.2)	3-1/2 (88.9)	1-3/4 (44.5)
3/8 (9.5)	1/2 (12.7)	1-5/8 (41.3)		2-7/8 (73.0)	1-7/16 (36.5)	5-11/16 (144.5)	2-7/8 (73.0)
1/2 (12.7)	5/8 (15.9)	2 (50.8)		3-1/2 (88.9)	1-3/4 (44.5)	7 (177.8)	3-1/2 (88.9)
5/8 (15.9)	7/8 (22.2)	2-1/2 (63.5)		4-3/8 (111.1)	2-3/16 (55.6)	8-3/4 (222.3)	4-3/8 (111.1)
3/4 (19.1)	1 (25.4)	3-3/16 (81.0)		5-5/8 (142.9)	2-13/16 (71.4)	11-3/16 (284.2)	5-5/8 (142.9)

* Spacing and edge distances shall be divided by 0.75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

MULTI-SET II DROP-IN ANCHORS

PERFORMANCE TABLES

Ultimate Tension and Shear Values (Lbs/kN) in Concrete

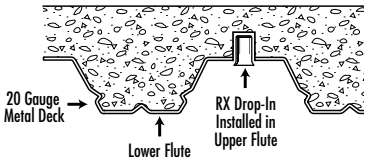
BOLT DIA. In. (mm)	DRILL BIT SIZE In. (mm)	EMBEDMENT In. (mm)	2500 PSI (17.2 MPa) CONCRETE				4000 PSI (27.6 MPa) CONCRETE				HOLLOW CORE			
			TENSION Lbs. (kN)		SHEAR Lbs. (kN)		TENSION Lbs. (kN)		SHEAR Lbs. (kN)		TENSION Lbs. (kN)		SHEAR Lbs. (kN)	
3/8 (9.5)	1/2 (12.7)	3/4 (19.1)	1,571	(7.0)	2,295	(10.2)	1,987	(8.8)	2,903	(12.9)	1,908	(8.5)	2,401	(10.7)
1/2 (12.7)	5/8 (15.9)	1 (25.4)	2,113	(9.4)	2,585	(11.5)	2,673	(11.9)	3,270	(14.5)	2,462	(11.0)	2,401	(10.7)

* The tabulated values are for RX anchors installed at a minimum of 12 diameters on center and minimum edge distance of 6 diameters for 100 percent anchor efficiency. Spacing and edge distance may be reduced to 6 diameters spacing and 3 diameter edge distance provided the values are reduced 50 percent. Linear Interpolation may be used for intermediate spacings and edge margins.

Anchoring Overhead in 3000 PSI Lightweight Concrete On Metal Deck

ANCHOR	DRILL HOLE DIAMETER In. (mm)	EMBEDMENT In. (mm)	3000 PSI (20.7 MPa) CONCRETE			
			ULTIMATE TENSION LOAD Lbs. (kN)		ALLOWABLE WORKING LOAD Lbs. (kN)	
RX-38 Drop-In	1/2 (12.7)	3/4 (19.1)	Upper Flute	1,410 (6.3)	353	(1.6)
			Lower Flute	1,206 (5.4)	301	(1.3)

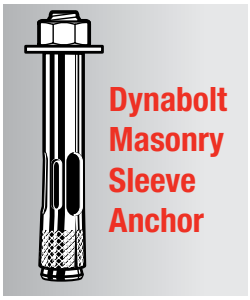
* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.



DYNABOLT® SLEEVE ANCHORS

Sleeve Type Anchors

SPECIFIED FOR ANCHORAGE INTO CONCRETE, GROUT-FILLED CONCRETE BLOCK

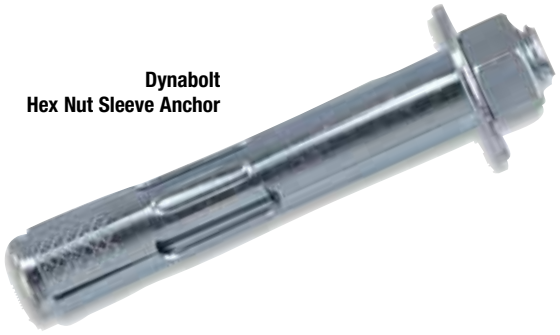


Dynabolt Masonry Sleeve Anchor

Sleeve type anchors feature a split expansion sleeve over a threaded stud bolt body and integral expander, nut and washer.

Anchors are made of Plated Carbon Steel, or Type 18-8 Stainless Steel.

Anchors should be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994



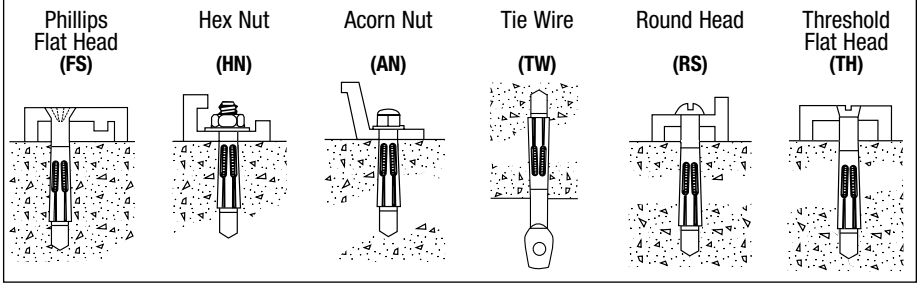
Dynabolt Hex Nut Sleeve Anchor

ADVANTAGES

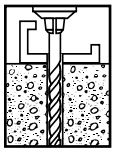
- Anchor diameter equals hole diameter
- Available in hex head and six other head styles
- Available 1/4 - 3/4" diameter up to 6-1/4" length
- Zinc plated carbon steel and 304 stainless steel
- Provides full 360° hole contact over large area and reduces concrete stress
- Heavy-loading capacity
- Preassembled for faster, easier installations
- Dynabolt can be installed through object to be fastened
- Sleeve design improves holding power
- No pre-spotting of holes necessary

Available Head Styles

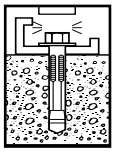
Full range of head style, corrosion protection, and sizes makes the Dynabolt Sleeve the right product for almost any application.



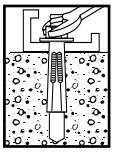
INSTALLATION STEPS



1. Use a bit with a diameter equal to the anchor. See selection chart to determine proper size bit for anchor used. Drill hole to any depth exceeding minimum embedment. Clean hole.



2. Insert assembled anchor into hole, so that washer or head is flush with materials to be fastened.



3. Expand anchor by tightening nut or head 2 to 3 turns.

APPROVALS / LISTINGS

Meets or exceeds U.S. Government G.S.A. Specification A-A-1922A (Formerly GSA: FF-S-325 Group II, Type 3, Class 3)

Factory Mutual

California State Fire Marshal

APPLICATIONS

Electrical junction boxes are common applications for the Dynabolt Sleeve anchor because it works well in solid concrete, concrete block, and brick. It is also available in several finished head styles.

The Dynabolt Sleeve anchor works well in hollow materials like brick and block. It is available in zinc-plated carbon steel and 304 stainless steel.

Door and window frames are commonly attached to the structure with Dynabolt Sleeve anchors because of their finished & threshold head styles and performance in block & brick.

DYNABOLT® SLEEVE ANCHORS

DYNABOLT CARBON STEEL WITH ZINC PLATING

HEAD STYLE	PART NUMBER	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH* In. (mm)	BOLT DIA./ THREADS PER INCH	MIN. EMBEDMENT In, (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
ACORN NUT	AN-1405	1/4"	5/8 (15.9)	3/16" /24	1/2 (12.7)	1/8 (3.2)	100/ 1.9	1000/ 20
	AN-1413		1-3/8 (34.9)	3/16" /24	1-1/8 (28.6)	1/4 (6.4)	100/ 2.6	1000/ 27
	AN-1422		2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 3.7	1000/ 38
HEX NUT	HN-1413	1/4"	1-3/8 (34.9)	3/16" /24	1-1/8 (28.6)	1/4 (6.4)	100/ 2.3	1000/ 24
	HN-1422		2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 3.4	1000/ 35
	HN-1614	5/16"	1-1/2 (38.1)	1/4" /20	1-1/4 (31.8)	1/4 (6.4)	100/ 4.0	1000/ 41
	HN-1624		2-1/2 (63.5)	1/4" /20	1-1/4 (31.8)	1-1/4 (31.8)	100/ 5.9	800/ 47
	HN-3817	3/8"	1-7/8 (47.6)	5/16" /18	1-1/2 (38.1)	3/8 (9.5)	50/ 3.5	500/ 36
	HN-3830		3 (76.2)	5/16" /18	1-1/2 (38.1)	1-1/2 (38.1)	50/ 4.9	400/ 40
	HN-1222	1/2"	2-1/4 (57.2)	3/8" /16	1-7/8 (47.6)	3/8 (9.5)	25/ 3.3	250/ 34
	HN-1230		3 (76.2)	3/8" /16	1-7/8 (47.6)	1-1/8 (28.6)	25/ 4.0	200/ 33
	HN-1240		4 (101.6)	3/8" /16	1-7/8 (47.6)	2-1/8 (54.0)	25/ 5.3	200/ 44
	HN-5822	5/8"	2-1/4 (57.2)	1/2" /13	2 (50.8)	1/4 (6.4)	25/ 6.3	150/ 38
	HN-5830		3 (76.2)	1/2" /13	2 (50.8)	1 (25.4)	25/ 7.0	150/ 46
	HN-5842		4-1/4 (108.0)	1/2" /13	2 (50.8)	2-1/4 (57.2)	10/ 3.9	100/ 41
	HN-5860		6 (152.4)	1/2" /13	2 (50.8)	4 (101.6)	10/ 4.9	50/ 25
	HN-3424	3/4"	2-1/2 (63.5)	5/8" /11	2-1/4 (57.2)	1/4 (6.4)	10/ 4.7	50/ 25
	HN-3440		4 (101.6)	5/8" /11	2-1/4 (57.2)	1-3/4 (44.5)	5/ 3.2	50/ 33
	HN-3462		6-1/4 (158.8)	5/8" /11	2-1/4 (57.2)	4 (101.6)	5/ 4.3	50/ 44
PHILLIPS FLAT HEAD*	FS-1411	1/4" (head dia. .477)	1-1/2 (38.1)	3/16" /24	1-1/8 (28.6)	3/8 (9.5)	100/ 1.9	1000/ 21
	FS-1420		2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 2.7	1000/ 28
	FS-1430		3-1/8 (79.4)	3/16" /24	1-1/8 (28.6)	2 (50.8)	100/ 3.8	1000/ 38
	FS-1440		4 (101.6)	3/16" /24	1-1/8 (28.6)	2-7/8 (73.0)	100/ 4.7	1000/ 48
	FS-3826	3/8" (head dia. .722)	2-7/8 (73.0)	5/16" /18	1-1/2 (38.1)	1-3/8 (34.9)	50/ 3.8	500/ 40
	FS-3840		4 (101.6)	5/16" /18	1-1/2 (38.1)	2-1/2 (63.5)	50/ 5.3	400/ 44
	FS-3850		5 (127.0)	5/16" /18	1-1/2 (38.1)	3-1/2 (88.9)	50/ 5.6	300/ 40
	FS-3860		6 (152.4)	5/16" /18	1-1/2 (38.1)	4-1/2 (114.3)	50/ 8.0	300/ 48
THRESHOLD HEAD	TH-1420	1/4" (head dia. .385)	2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 2.5	1000/ 25
ROUND HEAD	RS-1426	1/4"	2-7/8 (73.0)	3/16" /24	1-1/8 (28.6)	1-3/4 (44.5)	100/ 3.7	1000/ 38
TIE WIRE	TW-1614	5/16"	1-1/2 (38.1)	1/4" /20	1-1/2 (38.1)	9/32 (7.1)	100/ hole 4.9	1000/ 50

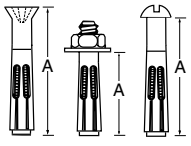
* Phillips flat head uses a standard 80°– 82° counter sink.

Typical Applications—Shelf ledgers, electrical boxes, conduit

Environment—Interior (non-corrosive)

Level of Corrosion—Low

*** Effective Anchor Length**



(FS) (HN) (RS)

DYNABOLT® SLEEVE ANCHORS

DYNABOLT TYPE 304 STAINLESS STEEL

HEAD STYLE	PART NUMBER	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH* In. (mm)	BOLT DIA./ THREADS PER INCH	MIN. EMBEDMENT In, (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
HEX NUT	SHN-1413	1/4"	1-3/8 (34.9)	3/16" /24	1-1/8 (28.6)	1/4 (6.4)	100/ 2.3	1000/ 24
	SHN-3817	3/8"	1-7/8 (47.6)	5/16" /18	1-1/2 (38.1)	3/8 (9.5)	50/ 3.5	500/ 36
	SHN-3830		3 (76.2)	5/16" /18	1-1/2 (38.1)	1-1/2 (38.1)	50/ 4.9	400/ 40
	SHN-1222	1/2"	2-1/4 (57.2)	3/8" /16	1-7/8 (47.6)	3/8 (9.5)	25/ 3.3	250/ 34
	SHN-1230		3 (76.2)	3/8" /16	1-7/8 (47.6)	1-1/8 (28.6)	25/ 4.0	200/ 33
	SHN-1240		4 (101.6)	3/8" /16	1-7/8 (47.6)	2-1/8 (54.0)	25/ 5.3	200/ 44
	SHN-5842	5/8"	4-1/4 (108.0)	1/2" /13	2 (50.8)	2-1/4 (57.2)	10/ 3.9	100/ 41
PHILLIPS FLAT HEAD*	SFS-1420	1/4"	2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 2.7	1000/ 28
	SFS-1430		3-1/8 (79.4)	3/16" /24	1-1/8 (28.6)	3 (76.2)	100/ 3.8	1000/ 38
	SFS-3826	3/8"	2-7/8 (73.0)	5/16" /18	1-1/2 (38.1)	1-3/8 (34.9)	50/ 3.8	500/ 40
	SFS-3840		4 (101.6)	5/16" /18	1-1/2 (38.1)	2-1/2 (63.5)	50/ 5.3	400/ 44
ROUND HEAD	SRS-1420	1/4"	2 (50.8)	3/16" /24	1-1/8 (28.6)	7/8 (22.2)	100/ 2.7	1000/ 28

* Flat head uses a standard 80°–82° counter sink. For continuous extreme low temperature applications, use stainless steel.

PERFORMANCE TABLES

Ultimate Tension and Shear Values in Concrete (Lbs/kN)*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE FT. Lbs. (Nm)	BOLT DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE (STEEL)	2000 PSI (13.8 MPa)		3000 PSI (20.7 MPa)		4000 PSI (27.6 MPa)	
					TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	3/16 (4.8)	1-1/8 (28.6)	Carbon or Stainless	1,200 (5.3)	1,620 (7.2)	1,600 (7.1)	1,620 (7.2)	2,100 (9.3)	1,620 (7.2)
5/16 (7.9)	8 (10.8)	1/4 (6.4)	1-1/4 (31.8)		1,400 (6.2)	2,040 (9.1)	1,920 (8.5)	2,220 (9.9)	2,600 (11.6)	2,400 (10.7)
3/8 (9.5)	14 (19.0)	5/16 (7.9)	1-1/2 (38.1)		1,620 (7.2)	2,560 (11.4)	2,240 (10.0)	2,800 (12.5)	3,100 (13.8)	3,040 (13.5)
1/2 (12.7)	20 (27.1)	3/8 (9.5)	1-7/8 (47.6)		2,220 (9.9)	4,000 (17.8)	3,140 (14.0)	4,500 (20.0)	4,400 (19.6)	5,000 (22.2)
5/8 (15.9)	48 (65.1)	1/2 (12.7)	2 (50.8)		3,080 (13.7)	6,440 (28.6)	4,400 (19.6)	7,240 (32.2)	6,120 (27.2)	8,080 (35.9)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/4 (57.2)		4,200 (18.7)	10,200 (45.4)	6,060 (27.0)	11,600 (51.6)	8,900 (39.6)	13,100 (58.3)

Ultimate Tension and Shear Values in Lightweight Concrete (Lbs/kN)*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE FT. Lbs. (Nm)	BOLT DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE (STEEL)	f'c = 4000 PSI (27.6 MPa)		f'c = 6000 PSI (41.4 MPa)	
					TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	3/16 (4.8)	1-1/8 (28.6)	Carbon or Stainless	1,080 (4.8)	1,160 (5.2)	1,220 (5.4)	1,940 (8.6)
5/16 (7.9)	8 (10.8)	1/4 (6.4)	1-1/4 (31.8)		1,260 (5.6)	1,680 (7.5)	1,440 (6.4)	2,220 (9.9)
3/8 (9.5)	14 (19.0)	5/16 (7.9)	1-1/2 (38.1)		1,620 (7.2)	2,300 (10.2)	2,240 (10.0)	2,800 (12.5)
1/2 (12.7)	20 (27.1)	3/8 (9.5)	1-7/8 (47.6)		2,600 (11.6)	3,920 (17.4)	3,160 (14.1)	4,840 (21.5)
5/8 (15.9)	48 (65.1)	1/2 (12.7)	2 (50.8)		3,240 (14.4)	5,600 (24.9)	4,300 (19.1)	7,840 (34.9)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/4 (57.2)		3,640 (16.2)	8,640 (38.4)	5,800 (25.8)	12,480 (55.5)

DYNABOLT® SLEEVE ANCHORS

PERFORMANCE TABLES

Ultimate Tension and Shear Values in Concrete Masonry Units (Lbs/kN)*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE Ft. Lbs. (Nm)	BOLT. DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE (STEEL)	LIGHTWEIGHT				MEDIUM WEIGHT			
					HOLLOW CORE		GROUT FILLED		HOLLOW CORE		GROUT FILLED	
					TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	3/16 (4.8)	1-1/8 (28.6)	Carbon	1,120 (5.0)	1,360 (6.0)	1,120 (5.0)	1,360 (6.0)	1,120 (5.0)	1,620 (7.2)	1,120 (5.0)	1,360 (6.0
				Stainless	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)
3/8 (9.5)	15 (20.3)	5/16 (7.9)	1-1/2 (38.1)	Carbon	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)
				Stainless	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)
1/2 (12.7)	25 (33.9)	3/8 (9.5)	1-7/8 (47.6)	Carbon			2,220 (9.9)	4,000 (17.8)			2,220 (9.9)	4,000 (17.8)
				Stainless			2,100 (9.3)	4,000 (17.8)			2,100 (9.3)	4,000 (17.8)
5/8 (15.9)	55 (74.6)	1/2 (12.7)	2 (50.8)	Carbon			3,080 (13.7)	6,440 (28.6)			3,080 (13.7)	6,440 (28.6)
				Stainless			3,080 (13.7)	6,440 (28.6)			2,820 (12.5)	6,440 (28.6)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/2 (63.5)	Carbon			4,200 (18.7)	10,200 (45.4)			4,200 (18.7)	10,200 (45.4)

* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values. The tabulated values are for anchors installed in a minimum of 12 diameters on center and a minimum edge distance of 6 diameters for 100 percent anchor efficiency. Spacing and edge distance may be reduced to 6 diameter spacing and 3 diameter edge distance, provided the values are reduced 50 percent. Linear interpolation may be used for intermediate spacings and edge distances.

Combined Tension and Shear Loading—for Dynabolt Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation:

$$(Ps/Pt) + (Vs/Vt) \leq 1$$

Ps = Applied tension load **Vs = Applied shear load** **Pt = Allowable tension load** **Vt = Allowable shear load**

STUD ANCHORS

Stud Type Anchors

SPECIFIED FOR ANCHORAGE INTO CONCRETE


Stud Anchor

Stud Anchors feature a bolt body and pre-assembled expander plug. Anchors should be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994.

Anchors are tested to ASTM E488 criteria. Anchors are listed by the following agencies as required: UL and FM.

Bottom-Bearing, Hammer-Driven Anchors

ADVANTAGES

- Fast and easy to install
- Same drill size as anchor size
- Bottom-bearing design is ideal for jacking and leveling applications
- Install anchor directly through fixture
- Hammer-driven expansion design eliminates torque requirements, for dependable holding capacity

FEATURES

External Threads for easy equipment setting

Stamped part number on body

Pre-assembled expander plug—easy anchor to set—drill and hammer in—anchor is bottom bearing

APPROVALS / LISTINGS

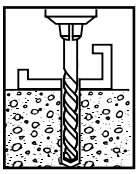
Meets or exceeds U.S. Government G.S.A. specification A-A-55614 Type 2 (Formerly GSA: FF-S-325 Group VIII, Type 2)

Factory Mutual

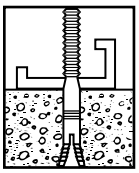
California State Fire Marshal

Underwriters Laboratories

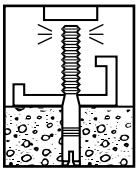
INSTALLATION STEPS



1. Drill hole same diameter as anchor to embedment specified in chart. Clean hole.



2. Drive anchor with expander plug in bottom, through material to be fastened.



3. Expand anchor by driving anchor over plug with hammer.

Note: Recommended thickness of concrete for bottom-bearing anchors = embedment depth + three times anchor diameter

STUD ANCHORS

PART NUMBER	HOLE OR BIT SIZE (THREADS) In. (mm)	OVERALL LENGTH In. (mm)	STUD LENGTH In. (mm)	THREAD LENGTH In. (mm)	MIN. EMBEDMENT In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
JS-14C	1/4" - 20	1-3/4 (44.5)	3/4 (19.1)	5/8 (15.9)	1-3/8 (34.9)	100/ 2.6	1000/ 26
JS-14H		2-1/4 (57.2)	1-1/8 (28.6)	7/8 (22.2)	1-3/8 (34.9)	100/ 3.1	1000/ 31
JS-14M		3-1/4 (82.6)	2-1/8 (54.0)	7/8 (22.2)	1-3/8 (34.9)	100/ 4.5	1000/ 45
JS-38C	3/8" - 16	2-1/4 (57.2)	1 (25.4)	3/4 (19.1)	1-5/8 (41.3)	50/ 3.6	500/ 36
JS-38H		3 (76.2)	1-5/8 (41.3)	1-1/4 (31.8)	1-5/8 (41.3)	50/ 4.5	500/ 45
JS-38M		3-3/4 (95.3)	2-1/4 (57.2)	1-1/4 (31.8)	1-5/8 (41.3)	50/ 5.7	500/ 57
JS-12C	1/2" - 13	2-3/4 (69.9)	1-1/8 (28.6)	7/8 (22.2)	1-7/8 (47.6)	25/ 3.9	250/ 39
JS-12H		4-1/4 (108.0)	2-1/2 (63.5)	2 (50.8)	1-7/8 (47.6)	25/ 5.6	250/ 56
JS-12M		5-1/4 (133.4)	3-5/8 (92.1)	2 (50.8)	1-7/8 (47.6)	25/ 7.0	250/ 70
JS-58H	5/8" - 11	5 (127.0)	3 (76.2)	2-1/4 (57.2)	2-3/8 (60.3)	10/ 4.1	100/ 42
JS-34H	3/4" - 10	6-1/4 (158.8)	3-3/4 (95.3)	2-1/2 (63.5)	2-7/8 (73.0)	10/ 7.6	50/ 59

PERFORMANCE TABLES

Ultimate Tension and Shear Values in Concrete (Lbs/kN)*

ANCHOR DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	f'c = 2000 PSI (13.8 MPa)		f'c = 4000 PSI (27.6 MPa)	
		TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	1-3/8 (34.9)	1,120 (5.0)	580 (2.6)	1,500 (6.7)	1,640 (7.3)
3/8 (9.5)	1-5/8 (41.3)	1,740 (7.7)	2,280 (10.1)	3,160 (14.1)	3,360 (14.9)
1/2 (12.7)	1-7/8 (47.6)	2,680 (11.9)	5,320 (23.7)	4,020 (17.9)	5,100 (22.7)
5/8 (15.9)	2-3/8 (60.3)	3,200 (14.2)	5,460 (24.3)	5,520 (24.6)	6,820 (30.3)
3/4 (19.1)	2-7/8 (73.0)	4,020 (17.9)	8,100 (36.0)	7,520 (33.5)	8,560 (38.1)

Allowable loads are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

Recommended Edge and Spacing Distance Requirements

ANCHOR DIA. In. (mm)	MIN. EMBEDMENT DEPTH In. (mm)	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. EDGE DISTANCE AT WHICH LOAD FACTOR APPLIED = .90 FOR TENSION =.65 FOR SHEAR In. (mm)	SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	MIN. ALLOWABLE SPACING BETWEEN ANCHORS LOAD FACTOR APPLIED =.90 FOR TENSION =.50 FOR SHEAR In. (mm)
1/4 (6.4)	1-3/8 (34.9)	2-7/16 (61.9)	1-1/4 (31.8)	4-13/16 (122.2)	2-7/16 (61.9)
3/8 (9.5)	1-5/8 (41.3)	2-7/8 (73.0)	1-7/16 (36.5)	5-11/16 (144.5)	2-7/8 (73.0)
1/2 (12.7)	1-7/8 (47.6)	3-5/16 (84.1)	1-11/16 (42.9)	6-9/16 (166.7)	3-5/16 (84.1)
5/8 (15.9)	2-3/8 (60.3)	4-3/16 (106.4)	2-1/8 (54.0)	8-5/16 (211.1)	4-3/16 (106.4)
3/4 (19.1)	2-7/8 (73.0)	5-1/16 (128.6)	2-9/16 (65.1)	10-1/16 (255.6)	5-1/16 (128.6)

* Linear interpolation may be used for intermediate spacing and edge distances.

REDI-DRIVE ANCHORS

Light-Duty Hammer-Drive Masonry Anchors

SPECIFIED FOR ANCHORAGE INTO CONCRETE, BLOCK AND BRICK

High Performance Without Torquing

The Redi-Drive is a high performance small diameter one-piece hammer-drive anchor. The anchor holds based on a friction principle—the shank diameter is larger than the drill hole size. Anchors shall be installed with carbide-tipped hammer drill bits made in accordance to ANSI B212.15-1994.

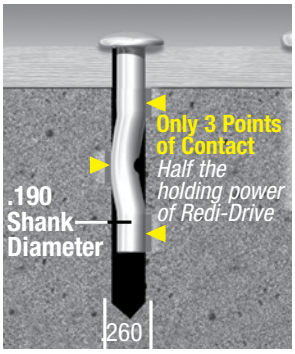
Redi-Drive High Performance Hammer-Drive Anchor

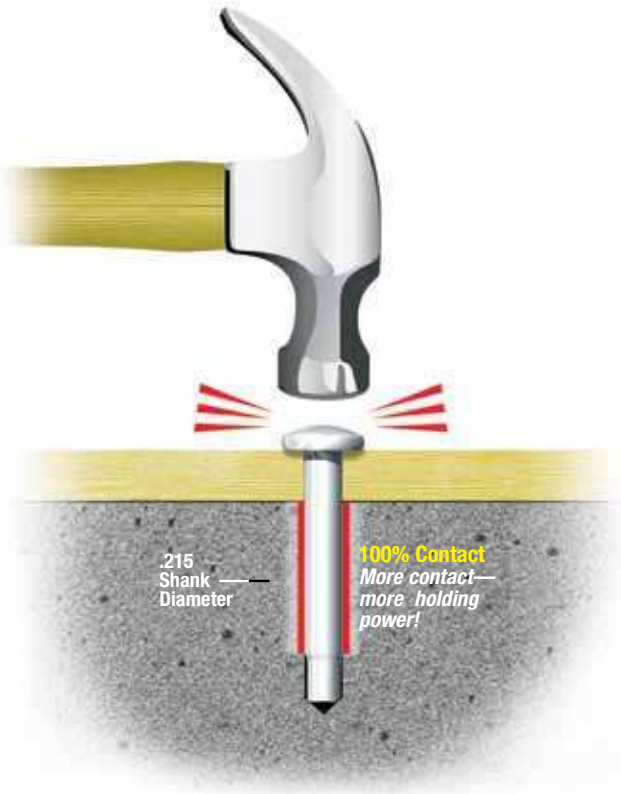
The Redi-Drive is available in four types…mushroom head, pipe-hanging (1/4" & 3/8") FM approved (on 3/8"), Tie-Wire, and double-head forming versions. Anchor performance in solid concrete at one inch embedment shall exceed 400 lbs. allowable tension load and 750 lbs. allowable shear load.

ADVANTAGES

- High performance provides superior holding values in concrete and other masonry materials
- Fire resistant
- Tamper resistant
- Standard 3/16" drill hole size—cheaper bit and faster installation
- Available in 3/4", 1-1/8", 1-5/8", 2", 2-1/2", and 3" lengths
- Most economical steel anchor available
- Provides fast, high performance drive-type fastening without torquing or need for special setting equipment

As simple as using a nail. Drive into predrilled holes for tremendous holding strength in concrete. **Compressive strength is created by forcing a larger diameter fastener into a smaller size hole.The greater the degree of contact the greater the holding power.**





REDI-DRIVE ANCHORS

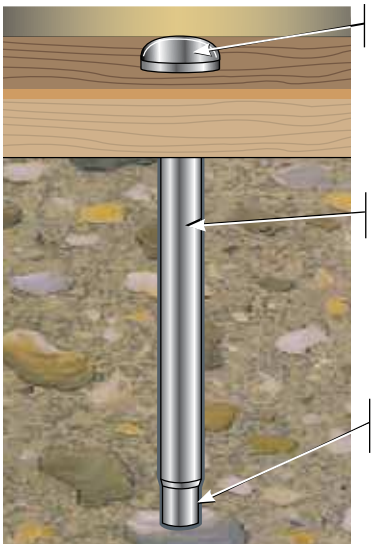
APPLICATIONS

Signage and other light duty metal products are common applications for the Redi-Drive. It has superior performance in block, brick and solid concrete, and is tamper-proof.

Wood attachments to concrete are common Redi-Drive applications, whether permanent or temporary.

Electrical boxes and conduit clips that need permanent attachment are ideal applications for the Redi-Drive. It works well in all base materials and is fast and economical.

FEATURES



Tamper-Proof—mushroom head

100% Hole Contact—.215 shank in .198 hole

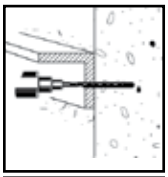
Dog-Point—for easy insertion and installation

APPROVALS / LISTINGS

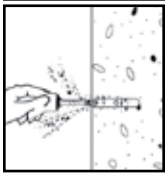
Meets or exceeds U.S. Government G.S.A. Specification FF-S-325 Group VI

Factory Mutual (3/8" pipe-drive)

INSTALLATION STEPS FOR REDI-DRIVE & FORMING ANCHORS

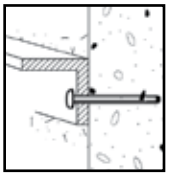


1. Drill a proper-sized diameter hole at a minimum depth (see chart on page 84, ANSI B212.15–1994).

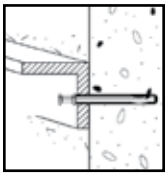


2. Clean hole.Please note hole is 3/16" but diameter of Redi -Drive is 1/4" (except for PD8-134 and FD8-234)

3. Insert anchor through material to be fastened (insert tie-wire or pipe version Redi-Drive anchors into drilled holes) and drive anchor with a 3-lb. hammer until the head is flush with surface or desired embedment.



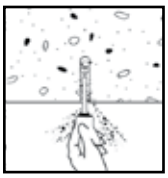
Anchor is now set for Redi-Drive Anchor.



Anchor is now set for Forming Anchor.

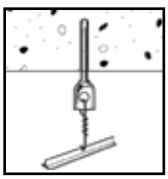
INSTALLATION STEPS FOR REDI-DRIVE TIE-WIRE ANCHORS

1. Drill a proper-sized diameter hole at a minimum depth (see chart on page 78, ANSI B212.15–1994).



2. Clean hole.Please note hole is 3/16" but diameter of Redi -Drive is 1/4" (except for PD8-134 and FD8-234)

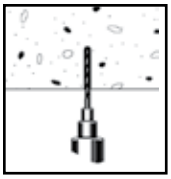
3. Insert anchor through material to be fastened (insert tie-wire or pipe version Redi-Drive anchors into drilled holes) and drive anchor with a 3-lb. hammer until the head is flush with surface or desired embedment.



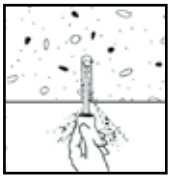
Anchor is now set.

REDI-DRIVE ANCHORS

INSTALLATION STEPS FOR REDI-PIPE-DRIVE ANCHORS

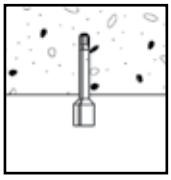


1. Drill a proper-sized diameter hole at a minimum depth (see chart on page 84, ANSI B212.15–1994).



2. Clean hole.

3. Insert anchor through material to be fastened (insert tie-wire or pipe version Redi-Drive anchors into drilled holes) and drive anchor with a 3-lb. hammer until the head is flush with surface or desired embedment.



Anchor is now set.

REDI-DRIVE ANCHORS

PART NUMBER	HEAD DIA. In. (mm)	DRILL BIT SIZE In. (mm)	TOTAL LENGTH In. (mm)	MIN. EMBEDMENT In. (mm)	MAX. FIXTURE THICKNESS In. (mm)	CLEARANCE HOLE SIZE In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
RD4-034	7/16 (11.1)	3/16 (4.8)	3/4 (19.1)	11/16 (17.5)	1/16 (1.6)	1/4 (6.4)	100/ 1.4	1000/ 15
RD4-118	7/16 (11.1)	3/16 (4.8)	1-1/8 (28.6)	3/4 (19.1)	3/8 (9.5)	1/4 (6.4)	100/ 1.6	1000/ 17
RD4-158	7/16 (11.1)	3/16 (4.8)	1-5/8 (41.3)	3/4 (19.1)	7/8 (22.2)	1/4 (6.4)	100/ 2.2	1000/ 23
RD4-200	7/16 (11.1)	3/16 (4.8)	2 (50.8)	3/4 (19.1)	1-1/4 (31.8)	1/4 (6.4)	100/ 2.6	1000/ 26
RD4-212	7/16 (11.1)	3/16 (4.8)	2-1/2 (63.5)	3/4 (19.1)	1-3/4 (44.5)	1/4 (6.4)	100/ 3.2	1000/ 33
RD4-300	7/16 (11.1)	3/16 (4.8)	3 (76.2)	3/4 (19.1)	2-1/4 (57.2)	1/4 (6.4)	100/ 3.7	1000/ 37

Typical Applications—Electrical boxes, conduit clips, and duct work

PART NUMBER	HEAD SIZE O.D. In. (mm)	DRILL BIT SIZE In. (mm)	TOTAL LENGTH In. (mm)	MIN. EMBEDMENT In. (mm)	HEAD HEIGHT In. (mm)	HEAD SIZE In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
TD4-112	3/16 (4.8)	3/16 (4.8)	2-1/8 (54.0)	1-1/4 (31.8)	5/8 (15.9)	9/32" hole	100/ 3.5	1000/ 35

Tie Wire Typical Applications—Acoustical ceilings, suspended electrical fixture, pencil rod

PART NUMBER	INTERNAL THREAD SIZE I. D.	DRILL BIT SIZE In. (mm)	TOTAL LENGTH In. (mm)	MIN. EMBEDMENT In. (mm)	HEAD HEIGHT In. (mm)	INTERNAL THREADED DIA. O.D, In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
PD4-112	1/4 - 20"	3/16 (4.8)	2-1/8 (54.0)	1-1/4 (31.8)	5/8 (15.9)	13/32 (10.3)	100/ 3.0	1000/ 30
PD8-134	3/8 - 16"	1/4 (6.4)	2-1/2 (63.5)	1-3/4 (44.5)	3/4 (19.1)	9/16 (14.3)	100/ 6.0	1000/ 61

Pipe Hanging Typical Applications—Fire sprinkler, water lines, steam/gas, cable tray, electrical conduits

PART NUMBER	HEAD SIZE O.D. In. (mm)	DRILL BIT SIZE In. (mm)	TOTAL LENGTH In. (mm)	MIN. EMBEDMENT In. (mm)	HEAD HEIGHT In. (mm)	HEAD SIZE In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
FD6-234	7/16 (11.1)	3/16 (4.8)	2-3/4 (69.9)	1-1/4 (31.8)			100/ 3.1	1000/ 31
FD8-234	7/16 (11.1)	1/4 (6.4)	2-3/4 (69.9)	1-1/4 (31.8)			100/ 5.6	1000/ 56

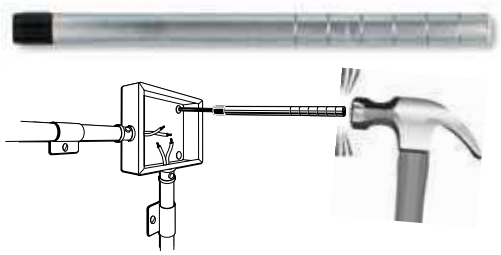
Forming Wood attachments to concrete are common Redi-Drive applications, whether permanent or temporary

* NOT MADE IN USA

REDI-DRIVE ANCHORS

REDI-DRIVE SETTING TOOL

PART NUMBER	DESCRIPTION	QTY/WT PER BOX	QTY/WT PER MASTER CARTON
RDST	REDI-DRIVE SETTING TOOL	1/1	1/1



Installs Redi-Drive anchors in tight and hard to access areas—easily and quickly. Just place anchor in rubber "holding cap," place against work surface and hammer in anchors.

PERFORMANCE TABLES

Anchoring Overhead in 3000 PSI Lightweight Concrete On Metal Deck

ANCHOR	DRILL HOLE DIA. In. (mm)		EMBEDMENT In. (mm)		3000 PSI (20.7 MPa) CONCRETE				
					ULTIMATE TENSION LOAD Lbs. (kN)			ALLOWABLE WORKING LOAD Lbs. (kN)	
3/8" Pipe Drive	1/4	(6.4)	1-1/2	(38.1)	Upper Flute	1,099	(4.9)	275	(1.2)
					Lower Flute	994	(4.4)	249	(1.1)

Safe working loads for single installations under static loading conditions should not exceed 25% of the ultimate capacity.

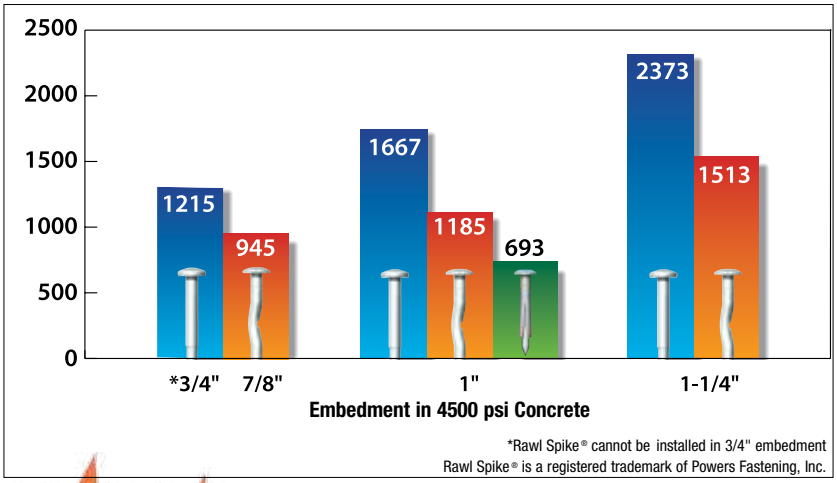
Ultimate Tension and Shear Values (Lbs/kN) in Concrete, Hollow Block and Grout Filled

SHANK DIA. ANCHOR	EMBEDMENT In. (mm)		4500 PSI (31.0 MPa)				CMU (HOLLOW BLOCK) PSI (MPa)				CMU (GROUT FILLED) PSI (MPa)			
			TENSION Lbs. (kN)		SHEAR Lbs. (kN)		TENSION Lbs. (kN)		SHEAR Lbs. (kN)		TENSION Lbs. (kN)		SHEAR Lbs. (kN)	
Redi-Drive	3/4	(19.1)	1,215	(5.4)	1,857	(8.3)	382	(1.7)	683	(3.0)	731	(3.3)	1,614	(7.2)
	1	(25.4)	1,667	(7.4)	3,112	(13.8)	392	(1.7)	987	(4.4)	870	(3.9)	1,766	(7.9)
	1-1/4	(31.8)	2,373	(10.6)	3,355	(14.9)	398	(1.8)	1,381	(6.1)	1,543	(6.9)	2,778	(12.4)
* Tie-Drive or1/4" Pipe-Drive	1-1/4	(31.8)	2,372	(10.6)										
3/8" Pipe-Drive	1-1/2	(38.1)	2,090	(9.3)										

Safe working loads for single installations under static loading conditions should not exceed 25% of the ultimate capacity.

The tabulated values are for anchors installed in a minimum of 12 diameters on center and a minimum edge distance of 10 diameters for 100 percent anchor efficiency.Space and edge distance may be reduced to six diameters spacing and five diameter edge distance provided values are reduced 50%. Linear interpolation may be used for intermediate spacing and edge

The Redi-Drive is the most versatile of all of these products. It can be used at all these embedment depths and is superior in pull-out performance to these competitive anchors.



*Rawl Spike® cannot be installed in 3/4" embedment
Rawl Spike® is a registered trademark of Powers Fastening, Inc.

* NOT MADE IN USA

TAPCON® CONDRIVE 1000 TOOL KIT

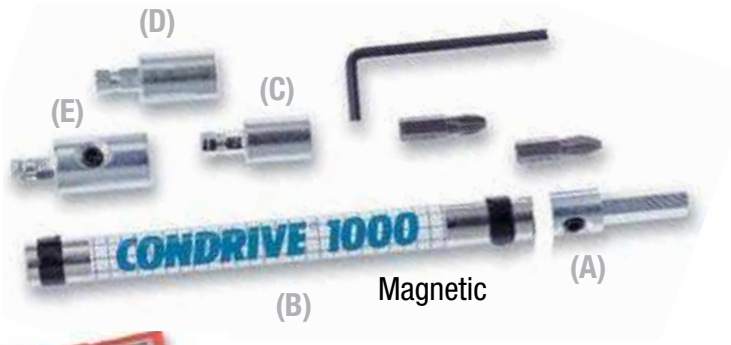
Condrive 1000 Installation Tool

SPECIFIED FOR ANCHORAGE INTO CONCRETE, BRICK OR BLOCK

The key to Tapcon's fast and easy installation is the multi-purpose Condrive Installation Tool. The drive sleeve, along with the hex head and phillips sockets provide the installer with the flexibility necessary for the complete variety of Tapcon applications (tool does not include drill bit).

Condrive® 1000 - A multi-purpose tool designed for installation of Tapcon hex head and Phillips flat head anchors up to 3-3/4" long. If driving hex head Tapcon, driver will automatically disengage. The Condrive 1000 has a reusable plastic case.

Condrive Tools are designed to specifically install Tapcon Anchors and to fit standard hammer drills.



Part No. C1000
(Does not include drill bit)

ADVANTAGES

- Fast change from drilling to driving
- Eliminates need to change out chucks and bits
- Eliminates need for two tools
- Special nut driver is recessed for torque control to reduce head breakage
- Includes bits for all sizes hex and Phillips head

APPLICATIONS

The picture shows the Condrive 1000 Installation Kit in action. The kit makes for fast and easy change over from drill bit to driver and controls the driving torque to prevent thread stripping and head snapping in hard base materials.

Condrive 1000 Spare Parts

PART NO.	DESCRIPTION	QTY/WT
(A) 7901001	Drill Adapter	1/.06
(B) 7901002	Sleeve	1/.01
7901003	Black Band	1/.02
7901004	5/32" Ball Bearing	1/.02
(C) 7901006	3/16" Socket	1/.04
(D) 7901007	1/4" Socket	1/.05
7901008	#2 Phillips bit for 3/16" anchor	1/.10
7901009	#3 Phillips bit for 1/4" anchor	1/.12
(E) 7901010	Phillips Socket	1/.44
7902006	Set Screw	1/.02
7902008	1/16" Ball Bearing	1/.02
7902010	1/8" Hex Key	1/.10

Tapcon® Starter Kit

Part Number: 7904050
Kit Contains:
1 Box HW4-114 (includes 1 drill bit)
1 Box HW4-134 (includes 1 drill bit)
1 Condrive 1000

TAPCON® ANCHORS

Blue Climaseal™

TAPCON® ANCHORS WITH BLUE CLIMASEAL™ (THE "ORIGINAL" TAPCON)

FIXTURE THICKNESS INCHES	RECOMMENDED TAPCON LENGTH In. (mm)	PART NO. 3/16" HEX HEAD	PART NO. 1/4" HEX HEAD	PART NO. 3/16" FLAT HEAD	PART NO. 1/4" FLAT HEAD	BIT LENGTH In. (mm)	STRAIGHT SHANK BITS FOR 3/16" TAPCON PART NO.	STRAIGHT SHANK BITS FOR 1/4" TAPCON PART NO.
0" – 1/4"	1-1/4 (31.8)	HW3-114	HW4-114	PF3-114	PF4-114	3-1/2 (88.9)	7900814	7901014
1/4" – 3/4"	1-3/4 (44.5)	HW3-134	HW4-134	PF3-134	PF4-134	3-1/2 (88.9)	7900814	7901014
3/4" – 1-1/4"	2-1/4 (57.2)	HW3-214	HW4-214	PF3-214	PF4-214	4-1/2 (114.3)	7900818	7901018
1-1/4 " – 1-3/4"	2-3/4 (69.9)	HW3-234	HW4-234	PF3-234	PF4-234	4-1/2 (114.3)	7900818	7901018
1-3/4" – 2-1/4"	3-1/4 (82.6)	HW3-314	HW4-314	PF3-314	PF4-314	5-1/2 (139.7)	7900822	7901022
2-1/2" – 3"	4 (101.6)	HW3-400	HW4-400	PF3-400	PF4-400	5-1/2 (139.7)	7900822	7901022

Diameter: 3/16" and 1/4"
Point Type: Nail
Thread Form: Advanced Threadform Technology™
Finish: Blue Climaseal™
All boxes of ITW Tapcon come packaged with matching carbide-tipped bit. Tapcon is packaged 100 pieces per box and 500 pieces per master carton except HW4-600 and PF4-600 (400 in master carton).

Stainless Steel

TAPCON® STAINLESS STEEL ANCHORS

FIXTURE THICKNESS INCHES	RECOMMENDED TAPCON LENGTH In. (mm)	PART NO. 1/4" HEX HEAD	PART NO. 3/16" FLAT HEAD	PART NO. 1/4" FLAT HEAD	BIT LENGTH In. (mm)	STRAIGHT SHANK BITS FOR 3/16" TAPCON PART NO.	STRAIGHT SHANK BITS FOR 1/4" TAPCON PART NO.
0" – 1/4"	1-1/4 (31.8)	SHW4-114	3434907	SPF4-114	3-1/2 (88.9)	7900814	7901014
1/4" – 3/4"	1-3/4 (44.5)	SHW4-134	3418907	SPF4-134	3-1/2 (88.9)	7900814	7901014
3/4" – 1-1/4"	2-1/4 (57.2)	SHW4-214	3419907	SPF4-214	4-1/2 (114.3)	7900818	7901018
1-1/4 – 1-3/4"	2-3/4 (69.9)	SHW4-234	3420907	SPF4-234	4-1/2 (114.3)	7900818	7901018
1-3/4" – 2-1/4"	3-1/4 (82.6)	SHW4-314	3421907	SPF4-314	5-1/2 (139.7)	7900822	7901022
2-1/4" – 2-3/4"	3-3/4 (95.3)	SHW4-334	3322907	SPF4-334	5-1/2 (139.7)	7900822	7901022

Diameter: 3/16" and 1/4"
Point Type: Nail
Thread Form: Original Notched Hi-Lo™
Finish: 410 Stainless Steel with Silver Climaseal™
All boxes of ITW Tapcon come packaged with matching carbide-tipped bit. Tapcon is packaged 100 pieces per box and 500 pieces per master carton except 3461907 (400 in master carton).

TAPCON® ANCHORS

PERFORMANCE TABLE

Ultimate Tension and Shear Values (Lbs/kN) in Concrete

ANCHOR DIA. In. (mm)	MIN. DEPTH OF EMBEDMENT In. (mm)	f'c = 2000 PSI (13.8 MPa)		f'c = 3000 PSI (20.7 MPa)		f'c = 4000 PSI (27.6 MPa)		f'c = 5000 PSI (34.5 MPa)	
		TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/16 (4.8)	1 (25.4)	600 (2.7)	720 (3.2)	625 (2.8)	720 (3.2)	650 (2.9)	720 (3.2)	800 (3.6)	860 (3.8)
	1-1/4 (31.8)	845 (3.7)	720 (3.2)	858 (3.8)	720 (3.2)	870 (3.9)	720 (3.2)	1,010 (4.5)	860 (3.8)
	1-1/2 (38.1)	1,090 (4.8)	860 (3.8)	1,090 (4.8)	860 (3.8)	1,090 (4.8)	860 (3.8)	1,220 (5.4)	860 (3.8)
	1-3/4 (44.5)	1,450 (6.5)	870 (3.9)	1,455 (6.5)	870 (3.9)	1,460 (6.5)	990 (4.4)	1,730 (7.7)	990 (4.4)
1/4 (6.4)	1 (25.4)	750 (3.3)	900 (4.0)	775 (3.4)	900 (4.0)	800 (3.6)	1,360 (6.1)	950 (4.2)	1,440 (6.4)
	1-1/4 (31.8)	1,050 (4.7)	900 (4.0)	1,160 (5.2)	900 (4.0)	1,270 (5.6)	1,360 (6.1)	1,515 (6.7)	1,440 (6.4)
	1-1/2 (38.1)	1,380 (6.1)	1,200 (5.3)	1,600 (7.2)	1,200 (5.3)	1,820 (8.1)	1,380 (6.1)	2,170 (9.7)	1,670 (7.4)
	1-3/4 (44.5)	2,020 (9.0)	1,670 (7.4)	2,200 (9.8)	1,670 (7.4)	2,380 (10.6)	1,670 (7.4)	2,770 (12.3)	1,670 (7.4)

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

Ultimate Tension and Shear Values (Lbs/kN) in Hollow Block

ANCHOR DIA. In. (mm)	ANCHOR EMBEDMENT In. (mm)	LIGHTWEIGHT BLOCK		MEDIUM WEIGHT BLOCK	
		TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/16 (4.8)	1 (25.4)	220 (1.0)	400 (1.8)	340 (1.5)	730 (3.2)
1/4 (6.4)	1 (25.4)	250 (1.1)	620 (2.8)	500 (2.2)	1,000 (4.4)

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.
NOTE: 3/16" Tapcon requires 5/32" bit, 1/4" Tapcon requires 3/16" bit.

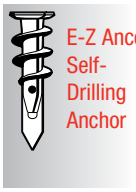
Tapcon® SDS Bits

PART NUMBER	DESCRIPTION
7900814	5/32 X 3-1/2 BIT TAPCON
7900818	5/32 X 4-1/2 BIT TAPCON
7900822	5/32 X 5-1/2 BIT TAPCON
790059	5/32 X 7 SDS BIT TAPCON
7901014	3/16 X 3-1/2 BIT TAPCON
7901018	3/16 X 4-1/2 BIT TAPCON
7901022	3/16 X 5-1/2 BIT TAPCON
7901026	3/16 X 6-1/2 BIT TAPCON
7901030	3/16 X 7-1/2 BIT TAPCON
7901060	5" SDS BIT TAPCON
7901059	7" SDS BIT TAPCON

E-Z ANCOR®

E-Z ANCOR® THE ORIGNINAL SELF-DRILLING DRYWALL ANCHOR

SPECIFIED FOR ANCHORAGE INTO GYPSUM WALLBOARD



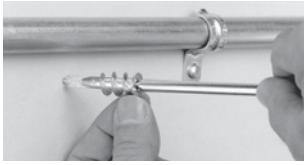
The E-Z Ancor is a one-piece self-drilling anchor designed for optimal holding performance in gypsum wallboard. Available in zinc or high strength engineered plastic (non-conductive). Ideal anchor for 3/8", 1/2" and 5/8" gypsum wallboard.

PART NUMBER	DESCRIPTION	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
EZ100	SELF THDNG ZINC DRYWALL ANCHOR	100/ 1.6	1000/17.0
EZPPL100	SELF THDNG PLASTIC DRYWALL ANCHOR	100/ 0.1	1000/ 4.2
EZP25	EZ ANCOR KIT PLASTIC	1/ 0.9	10/ xx
EZ25	EZ ANCOR KIT	1/ 0.9	10/ 10
EZT-50	EX TOGGLE		

ADVANTAGES

- Fast—no pre-drilling
- Easy—just use #2 phillips bit
- Clean and neat—tri-cut point drills a small hole and seats flush
- Corrosion resistance
- Removable—easily backed out of wallboard
- Breakaway point for easy usage when cavity is shallow

APPLICATIONS



- Electrical fixtures
- HVAC fixtures
- Bathroom accessories
- Shelving
- Closet organizers
- Curtain rods
- Signage

E-Z Ancor® Kits

Starter Kit
Part Number: EZ25
Kit Contains:
25 Zinc Anchors
25 Screws

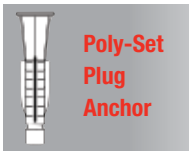
PERFORMANCE TABLE

MAXIMUM FIXTURE THICKNESS	ULTIMATE PULLOUT LBS. GYPSUM BOARD THICKNESS			ULTIMATE SHEAR LBS. GYPSUM BOARD THICKNESS		
	3/8"	1/2"	5/8"	3/8"	1/2"	5/8"
3/4"	40	50	75	135	150	200

POLY-SET ANCHORS

Plug Anchors

SPECIFIED FOR ANCHORAGE INTO ALL BASE MATERIALS



The Poly-Set is a polyethylene expansion anchor designed for fastening into drywall, hollow block, brick and solid concrete.


PS-0608SP


1012SP

The Truly Versatile Plug Anchor

ADVANTAGES

- Unique twisting action provides superior holding over standard plug anchors
- Resistant to moisture, chemicals or atmospheric conditions—can be used anywhere
- Pre-packaged in kits with matching screws and carbide-tipped drill bit
- Works well in all base materials

INSTALLATION STEPS

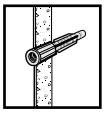
For Solid Concrete

1. Drill hole at least 1/4" deeper than anchor length and insert anchor until flange is flush.

2. Fasten fixture by inserting sheet metal screw through fixture and into anchor.

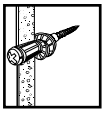
3. Tighten screw.

For Hollow Material



1. Drill hole and insert anchor until flange is flush.

2. Fasten fixture by inserting sheet metal screw through fixture and into anchor.



3. Expand anchor after screw head is against fixture, tighten screw the number of additional turns indicated on the chart to the right.

DRYWALL THICKNESS	PS-0608S	PS-1012S
3/8"	7-9 Turns	
1/2"	5-7 Turns	8-9 Turns
5/8"	3-4 Turns	6-7 Turns
3/4"	1-2 Turns	4-5 Turns

Approximate number of additional turns after screw head is against fixture for indicated thickness of hollow wall.

POLY-SET ANCHORS

PART NUMBER	DRILL BIT SIZE	ANCHOR LENGTH	SCREW SIZE	GRIP RANGE	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
PS-0608SP	3/16	1-1/4	#6 - 8	3/8 - 3/4	100/ 0.9	1000/ 2
PS-1012SP	9/32	1-7/16	#10-12	1/2 - 1	100/ 1.8	1000/ 4

PERFORMANCE TABLE

Average Ultimate Tension Load in Various Base Materials

PART NUMBER	DRYWALL (1/2")	CONCRETE (200PSI)	CONCRETE (4000PSI)	HOLLOW BLOCK (CMU)
PS-0608SP	110 lbs.	225 lbs.	265 lbs.	235 lbs
PS-1012SP	145 lbs.	355 lbs.	390 lbs.	385 lbs

Poly-Set Kits

PART NUMBER	DRILL BIT SIZE	KIT CONTAINS	GRIP RANGE	QTY/WT PER BOX	QTY/WT PER MASTER CARTON
PS-0608SKP	3/16	100 1-1/4" ANCHORS/ 100 #8 SCREWS	3/8-3/4	1/1.0	10.11
PS-1012SKP	9/32	50 1-7/16" ANCHORS/ 50 #12 SCREWS	1/2-1	1/1.2	12/12

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www.ramsetrepair.com:
Tools can be sent direct to the factory service center by logging onto www.ramsetrepair.com

Operator Training, Test and License Available on the Internet

Only properly trained and licensed operators as described in ANSI Standard A 10.3 and/or local regulations may operate powder actuated tools. ITW Ramset distributors offer complete training programs for end users. Contact your local Ramset distributor for complete details.

A Ramset powder actuated tool Operator's Training, Test and License program is also available at www.ramset.com.

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PLC-02/11