



Ramset™

FrameBoss™

Instruction Manual



IMPORTANT

Before operating any Ramset™ Low Velocity Powder Actuated Tool, Ramset™ strongly recommends that, in addition to reading and understanding this instruction booklet, all users obtain personal instruction and training from a Ramset™ representative. Powder Actuated Tools are sometimes subject to control by Government Regulations. Check the regulations in your State, Territory and local government area before using the tool as a license or specific training may be required. Your Ramset™ supplier can advise you on this matter. Except as required by statute, the manufacturer disclaims all responsibility for any incidents which may result from the disregard of these operation procedures and maintenance instructions, or the disregard of any local or statutory authority regulations pertaining to the use of Powder Actuated Tools. Ramset™ Low Velocity Powder Actuated Tools should never be used for any other purpose other than the applications described in this instruction booklet.

PAT003: FrameBoss™ Powder Actuated Tool





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The Ramset™ Powder Actuated (P.A.) Fastening System

The Ramset™ Powder Actuated (P.A.) Fastening System, also known as the explosive powered tool system, is an innovative approach to fastening construction materials to concrete, steel or brick. By using a controlled power load to deliver the fastener directly to the materials, it eliminates the need for drilling, plugging and bolting etc.

The latest Ramset™ P.A. tools - FrameBoss™, FormMaster™, FrameMaster™ (TS750P), JobMaster™, TyMaster™, FixMaster™ (TS60P), Rocket, InsulFast™ and DekMaster™ - use the new low velocity indirect acting system to deliver a powerful strike on the fastener.

The low velocity indirect acting system allows more control over the power supplied to the fastener as the driving action stops when all the energy is consumed in fastening, or when the piston reaches the end of its stroke. This limits the potential free-flight (projectile) velocity of the fastener. This is one of the ways in which the Ramset™ indirect acting P.A. system is designed to limit the risk of injury provided that the tool is operated correctly.



Useful Words

Power Load:

A cased cartridge of explosive charge designed specifically for Powder Actuated Tools. Also known as the Power Load. These may be individual, in the case of the JobMaster™ or fed to the tool in strip form, as in other tools.

Cycling:

Returning the piston to the rear of the barrel in preparation for firing.

Drive Pin:

A special purpose fastener designed to be driven into, against or through a substrate by a P.A. tool.

Indexing:

The process of bringing the next Power Load contained within a strip into position ready for firing.

Misfire:

When the trigger is pulled after the tool has been depressed against the work surface and the tool does not fire. Refer to page 5 for instructions to follow in the event of a misfire.

Powder Actuated (P.A.):

Simply means the energy to drive the fastener is provided by a cased cartridge in the form of a Power Load. (Also referred to as explosive powered).

Spalling:

Cracking or breaking of concrete at a fixing point. Refer to page 6 for precautions for fastening near spalled concrete.

Threaded Stud:

A type of drive pin which has a thread. A nut and washer are attached and tightened after the stud has been fastened. Refer to page 7.

TwistLok™:

The patented design for ease of tool assembly.

Tool Jam:

When the barrel of the tool is closed around the Power Load and is not free to move forward when released from the work surface. Refer to page 5 for instructions to follow in the event of a tool jam.

Safety

Safety should always be the first priority when using the Ramset™ Powder Actuated (P.A.) system. Because an explosive charge is involved, the whole work area must be made safe before work is begun.

General Safety

The tool should never be available to unauthorised users. When not in use it should be kept in a lockable container. As a precaution, people who are less than 18 years old should not operate powder actuated tools.

To minimise the risk of unintentional firing:

- Never place a hand or any other part of the body over the fastener guide, whether the tool is loaded or unloaded.
- Never point the tool at anything other than the materials to be fastened.
- Only load the tool at the place where it will be used and when it is ready for immediate use
- Always unload the tool before it is moved
- Always unload the tool before it is laid down.
- Always point the barrel at the ground until firing,

Always display a suitable warning notice, in a clearly visible location, showing Powder Actuated (P.A.) Tools will be used in the area. This notice should conform to relevant government regulations. Available from Ramset™. (Part No. PAWS8 "CAUTION - EXPLOSIVE POWERED TOOL IN USE").

Always wear suitable hearing and eye protection to Australian Standards as listed in AS1873. Any other people nearby must also be wearing hearing and eye protection.

Keep other people away from the immediate vicinity of the firing place, (6 metres).



WARNING:
**NEVER PLACE
HAND OVER
FASTENER
GUIDE**

ALWAYS WEAR HEARING AND EYE PROTECTION

Always check the barrel is free of obstructions before loading.

ALWAYS CALL "FIRING" IMMEDIATELY BEFORE FIRING A TOOL, TO ALERT PEOPLE NEARBY.

Keep the Power Loads away from all other metal objects, (do not carry pins and Power Loads in the same container or packet) excessive heat and other explosive materials.

The Power Loads are designed for use in Ramset™ Powder Actuated (P.A.) tools. Power Loads must never be used in firearms. Any attempts to do so may cause injury.

Never place your hand over the fastener guide, even without a fastener, when the tool is actuated the piston may extend out of the barrel by up to 15mm. Even without a piston in the tool the high pressure gases can be dangerous.

ALWAYS UNLOAD A Powder Actuated (P.A.) TOOL WHEN NOT IN USE

Make sure the tool is at right-angles (90°) in both directions, to the working surface. If used at the incorrect angle, the fired fastener may unintentionally ricochet off the work surface. To avoid a risk of injury to yourself or to others, Powder Actuated (P.A.) tools must never be fired at any angle other than 90° to the work surface.

Always have your body directly behind the tool, to make sure it is correctly aligned, and never use the tool with extended reach.

Do not depress the tool in any manner except against the work surface, even when inserting a drive pin or threaded stud into the fastener guide of a Powder Actuated (P.A.) Tool.

NEVER DEPRESS THE FASTENER GUIDE OF A TOOL WITH YOUR HAND

ONLY EVER DEPRESS THE FASTENER GUIDE OF A P.A. TOOL AGAINST THE WORK SURFACE



What to do if a P.A. Tool Misfires

IF A TOOL MISFIRES, CONTINUE TO HOLD THE TOOL AGAINST THE WORK SURFACE FOR A MINIMUM OF 10 SECONDS.

(Regulations in the UK require that the tool be held against the work surface for a minimum of 30 seconds). After this time release the tool from the work surface but continue to point the fastener guide towards the work surface. Remove the power load or power load strip as per normal operation. If the power load strip can be removed normally without any unusual effort or force; return the power load or entire power load strip to supplier/Ramset™ in a safe manner. If the power load cannot be extracted from the tool in the usual manner return the entire tool and power load/s in an enclosed metal container. If a tool misfires repeatedly over consecutive power load strips, then the tool should be returned for service with the power load strip immediately.

What to do if the strip is not indexing consistently

Return tool to Ramset™ immediately for inspection/service.

In these circumstances NEVER send these items through the post.

What to do if a P.A. Tool Jams

In the event that a tool becomes jammed, (which can be identified by the barrel remaining in the most rearward position even when the tool is removed from the work surface). This situation is also evident by the fastener guide not protruding from the front of the tool. The following steps should be taken.

If the power load enclosed by the barrel has been detonated then an attempt may be made to release the barrel as described in the section of this booklet entitled "Tool Maintenance". If this is not successful then the tool should be returned to Ramset™ in the manner stipulated below.

If the power load enclosed by the barrel has NOT been detonated then it is important that no attempt be made to cycle the tool. Extreme care should be taken where the tool is pointing and hands should be kept well clear of the front section of the tool. Return the entire tool and power load/s in an enclosed metal container to supplier/Ramset™.

In these circumstances NEVER send these items through the post.

Operational Safety

Ramset™ Low Velocity Powder Actuated (P.A.) Tools are designed for the following applications:

1. Setting drive pins through material (wood, light gauge metal, hardboard, insulation etc) into masonry materials or steel greater than 4 millimetres thick.
2. Setting threaded studs into masonry materials or steel greater than 4 millimetres thick, for the attachment of pre-drilled material (wood, metal, plastics, insulation etc) with a nut and washer.

Never use a Powder Actuated (P.A.) Tool:

- In the presence of any explosive or flammable gas, dust, or vapour. Do not use a P.A. Tool in these circumstances.
- In a compressed atmosphere such as a pressurised vessel. Do not use a P.A. Tool in these circumstances.
- Where the charge may be made dangerous by the presence of excessive heat, (temperatures above 50°C). Do not use a P.A. Tool in these circumstances.

Fasteners should not be driven into BRICK, CONCRETE etc:

- Closer than 75mm to an edge or hole
- If the material is less than 100mm thick, or less than three times the shank penetration into the base material, whichever is the lesser.
- Closer than 150mm to a failed fastener.
- Closer than 75mm to another fastener.

Fasteners should not be driven into STEEL:

- Closer than 13mm to an edge.
- Closer than 25mm to another fastener.
- Closer than 100mm to a heat affected zone such as a weld.
- If the steel is less than 4mm thick, unless for fastening into thinner steel, the shank diameter of the fastener is less than the thickness of the steel.
- Never use wood, fibreboard, plaster or any soft material, including mortar, as the base material, unless the material is backed by steel

Never fire fasteners:

- Into brittle or hard materials such as glazed brick, tile, terracotta, marble, granite, slate or glass
- Into hardened steel, high-tensile steel, cast iron, heat-treated steel
- Into pressurised vessels such as gas bottles or compressed air cylinders
- Into a spalled area in masonry where a fastener has failed, or
- Into an existing hole unless the tool has been fitted with a Ramset™ alignment device.

Spall Shield

A spall shield is available and can be easily attached when required to prevent small fragments of concrete being propelled towards the user.

Test for Suitability of Base Material

If there is a doubt as to the suitability of a base material, the following simple test should be performed prior to any fixings being attempted with the Ramset™ tool. (This test is particularly useful when fixing into steel of an unknown hardness/composition).

1. Using a Ramset™ Powder Actuated fastener as a centre punch with a standard hammer attempt to make a mark on the base material.
2. Inspect the point of the powder actuated fastener for damage.
3. If the base material has dulled/flattened the point of the Powder Actuated fastener then NO attempt should be made to fire the Ramset™ tool into the base material. If the fastener remains intact and has made an impression in the base material then a trial fixing may be attempted.



Fastener Selection

Drive pins and threaded studs are the fasteners used in Ramset™ Powder Actuated (P.A.) tools.

Drive pins are best suited to general fastening and the length of the pin that should be used is an important factor.

Threaded studs are best used when additional fixtures will be attached to the surface and may need to be removable. The length of the thread is an important consideration as well as the length of the stud.

It is unsafe to use any other fasteners than those that are recommended for use in a particular tool.

The selection of the correct fastener depends on the material the fixture is being fastened to and the thickness of the fixture.

Attaching fixtures to steel

It is important for the drive pin or threaded stud to fully penetrate the steel to provide maximum holding strength for a pull-out load.

THE GUIDE FOR FIXING TO STEEL IS:

For steels of 4mm to 8mm, the required length is calculated by adding together the fixture thickness, the thickness of the steel, and adding 6mm (to allow for full penetration).

For steel over 8mm, the required length is calculated by adding 12mm to the fixture thickness.

Attaching fixtures to concrete

It is important for the drive pin or threaded stud to become sufficiently embedded in the concrete for the attachment to be successful. The depth of embedment required is calculated by multiplying the diameter of the shank of the pin or stud by a factor of 6 to 8 times. The depth of embedment is generally 22mm to 30mm for standard Ramset™ LDU (3.8mm shank) pins.

The required length for a drive pin or threaded stud is calculated as the thickness of the fixture plus the depth of embedment.

THE GUIDE FOR FIXING TO CONCRETE IS:

- **fixture thickness + 25mm,**
- **then select the closest size which is equal or longer.**

Fastening through a disc

On occasions a disc, or washer, is used to give the fastener a larger head to increase its effectiveness on softer materials such as wood, light gauge metals and non-metals. It may also be used to give a larger clamping area.

They are also used when fixing to concrete to reduce the spall area, cover what spall area is left and eliminate spall fragments.

Using a washer greatly increases the life of the piston in a Low Velocity Tool.

Power Load Selection

The Ramset™ power loads that are suitable for use in standard Ramset™ Low Velocity Powder Actuated (P.A.) Tools are listed below. They are graded according to the strength of the power they provide.

WEAK (green) - can be used with all Ramset™ Powder Actuated (P.A.) tools

MEDIUM (yellow) - can be used with all Ramset™ Powder Actuated (P.A.) tools

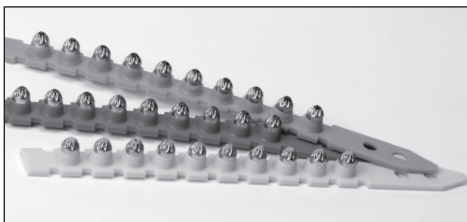
STRONG (red) - can be used with all Ramset™ Powder Actuated (P.A.) tools

NOTE: For special applications; other charges may be available on request

The FrameBoss™, Rocket, TwistLok™, FormMaster™ and TyMaster™ tools use a strip of power loads while the JobMaster™ uses individual power loads.

To find the most appropriate power load for the job, use the green/weakest power load and set the power adjustment, if applicable, to the minimum setting. Gradually increase power and load strength as required to obtain a suitable fixing.

Part No.	Colour	Strength	Pack Qty
PLSGR22	Green	Weak	100
PLSYW22	Yellow	Medium	100
PLSRD22	Red	Strong	100



Other Power Controls

The FrameBoss™, Rocket, FormMaster™ (TS750P), FixMaster™ (TS60P) and FormMaster™ tools also have the feature of variable power adjustment. This provides the operator with more control over the power delivered to the fastener.



Variable power adjustment on the FormMaster™ and TwistLok™ tools.



The FrameBoss™ variable power adjustment.

Power Level Adjustment

- Precise control of driving power is provided by the use of the power adjustment.
- Before use always set the power adjustment to the minimum setting. (A)
- Select the required power setting by advancing the power indicator to the '+' symbol by rotating the adjuster wheel anti clockwise. (B)

The colour coding of the charges is industry standard. As such, people who are colour blind and/or cannot distinguish between the different power load strengths/colours should not operate powder actuated tools.



Fastener Setting

For flush timber fixing (i.e. no washer), the fastener is correctly set when the head of the fastener is flush with the surface of the timber.

When fixing to thinner materials the fastener is correctly set when the under side of the fastener head is in contact with the material surface with only minor deformation of the material.

The fastener is over driven if:

- the head is excessively embedded into the fixing material, or
- the shank of the fastener is damaged or broken during driving.

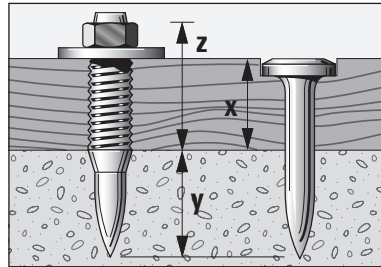
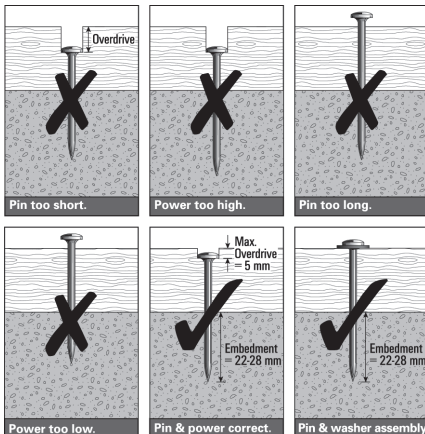
If the fastener is over driven, reduce power by selecting a lower strength power load or adjusting the power setting (if applicable).

If the fastener is under driven by a tool with power adjustment, increase the power by increasing the power setting until a suitable fixing is achieved. If the maximum setting is reached, move the wheel back to the minimum position and use the next strength power load and repeat the process.

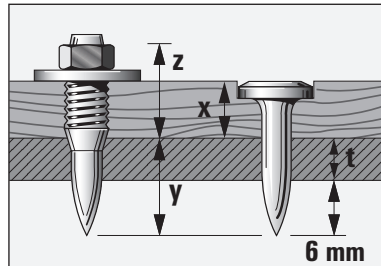
If the fastener is under driven by tools without power adjustment, increase the power by using the next strength power load.

Pin selection and correct setting

The correct selection and setting of the drive pin is critical with all low velocity tools to ensure a secure fixing and long tool life.



This illustration shows a threaded stud and a drive pin holding timber to concrete.



This illustration shows a threaded stud and a drive pin holding timber to steel.

Standard Operating Procedure

Note: Refer to safety precautions before attempting to operate the tool.



1. Select and insert the fastener.

Select the correct fastener for the application (see Fastener Selection, page 7). Point the tool down and away from yourself and any other person.

1a. Tool fitted with single shot fastener guide.

Insert a fastener, HEAD FIRST into the fastener guide at the front end of the tool, making sure the fastener guide stays in the forward position.



2. Insert the power load.

With the tool in the closed position insert a power load strip into the cavity in the base of the rubber handle and push it in until the flat of your finger tip is firmly against the handle recess. The first power load is now aligned with the chamber prior to cocking.

Note: Always use the lowest strength power load and lowest power setting first, for a firing test, then adjust the power to suit the job.

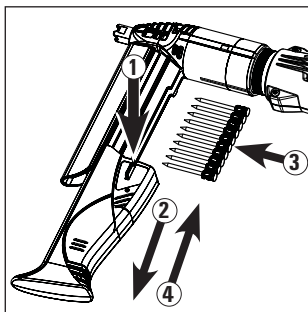


4. Fire the tool.

Press the fastener guide firmly against the work surface, Call 'FIRING' to alert those nearby, and pull the trigger.

5. Check the fastener has been correctly set.

(See Fastener Setting, page 9)



1b. Tool fitted with fastener magazine.

- 1 - Press the magazine release button.
- 2 - Slide the magazine cover down.
- 3 - Insert Ramset™ collated drive pins.
- 4 - Push the magazine cover back into the closed position.



3. Take up the correct firing stance.

Make sure the tool is at right angles (90°) in both directions to the work surface. Your body should be directly behind the tool in a balanced posture.



6. Adjust the power, if necessary.



Increase power by increasing power setting. When maximum setting is reached, move wheel back to minimum position and insert next strength power load.

7. Repeat steps 1,3,4,5 and 6 for the next fixing point.

8. Repeat step 2 after every 10 fixings.

Trouble Shooting

Most commonly, problems are caused by over driving due to poor fastener or charge selection. It is wise to consider these two factors as the first options in trouble shooting.

PROBLEM	LIKELY CAUSE(S)	ACTION
Fastener over driven 	Too much power	Use a low strength power load or use the power adjustment feature if applicable
	Fastener too short	Select the correct fastener
Fastener under driven 	Too little power	Use a higher strength power load or use the power adjustment feature if applicable
	Fastener too long	Select the correct fastener
Rough action	Excessive carbon build up	Pull down, clean and lightly oil tool
Reduction or loss of power	Piston not returning to position	Check the length of the piston Return Spring (Refer to page 13)
	Faulty piston circlip	Remove piston. Replace piston circlip
	Build up of dirt in tool	Clean tool parts
	Broken piston	Replace piston
Tool misfire Do not remove the tool from the work surface for at least 10 seconds	Failure of tool to depress completely	Disassemble tool and check all parts for correct assembly after first removing the power loads
	Cartridge strip damaged	Remove and replace with new cartridge strip
	Problem with tool, or faulty charge / power load	Refer to page 5
Tool Jam	Damage to power load chamber	Refer to page 5
Cartridge strip does not index in tool	Cartridge strip damaged	Refer to page 5
	Strip index mechanism damaged	Refer to page 5
Cartridge strip melts	Tool overheated - fastening rate too high "Hot" tool compressed for too long	Allow the tool to cool. Disassemble tool to increase rate of cooling. (p13)
Cartridge falls out of the strip		Reduce fastening rate Compress tool for a shorter period of time

Drive Pin / Fastener Removal

If a fastening is no longer required, it may be necessary to remove the protruding section of a fastened drive pin.

As P.A. drive pins are manufactured with high tensile steel, when they are subjected to excessive stress they may break in a violent manner.

When a drive pin is broken it is possible for a fragment of the drive pin to separate from the remainder of the drive pin at high velocity

If P.A. drive pins need to be removed after they have been fastened to solid material, Ramset™ recommends that they should be removed / broken with a Ramset™ Pin Breaking Tool. (Part Number: PBT) The use of a Ramset™ Pin

Breaking Tool ensures that all fragments of a drive pin are contained within the tool during the removal process.

NEVER USE A HAMMER OR OTHER SIMILAR TOOL TO REMOVE P.A. DRIVE PINS.

ALWAYS WEAR EYE PROTECTION WHEN REMOVING P.A. DRIVE PINS.



1. Ensure that eye protection is being worn by everyone in the vicinity where the drive pin is to be broken / removed.



2. Place the Ramset™ Pin Breaking Tool over the pin that is protruding from the work surface.



3. Using the Pin Breaking Tool bend the pin back and forth until the drive pin breaks.



Inspection / Tool Maintenance

It is important to clean a P.A. Tool weekly. The carbon build up from the explosive material can decrease the effectiveness of the tool and if not removed, cause long term damage to the tool.

The Australian Standard AS1873 states that all Powder Actuated (P.A.) Tools “be returned to the manufacturer or its authorised agent for a complete overhaul at least once in every 12 month period.”

CAUTION: The tool may become hot during operation. Tool maintenance should be performed when the tool has cooled down to avoid the possibility of receiving burns to hands.

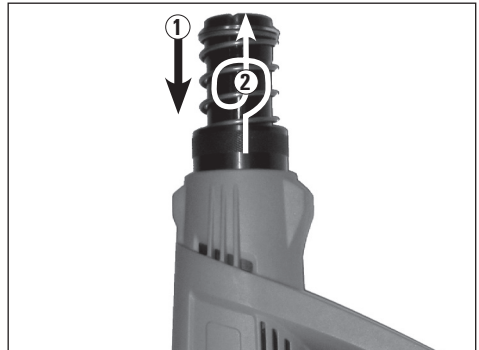
1. Ensure that no power loads are loaded in the tool. Remove the power load strip by pulling it upwards out of the tool.



2. Hold the tool vertical with the fastener guide / magazine pointing upwards. Unscrew the fastener guide / magazine. If this is too difficult by hand, use multigrips.
3. Take out the piston assembly (piston, piston

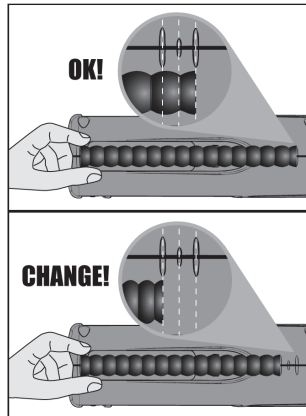


- return spring and buffer).
4. Push the barrel downwards and unscrew the



collar surrounding the barrel. Remove the barrel assembly.

5. Check the length of the return spring using the



measuring points located on the top of the tool housing. This check should be made every 3,000 fixings.

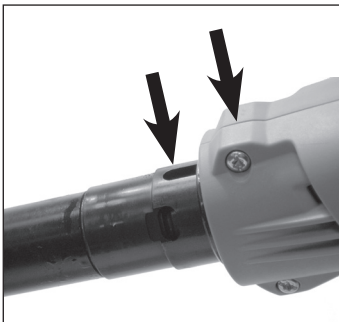
6. CHECK:

- The piston tip - replace if it is damaged

- The straightness of the piston - if it is not straight, replace it.
 - The piston buffer - replace if it is worn or less than 4mm thick.
7. Using the supplied wire brushes, thoroughly clean all internal and external steel surfaces of any carbon buildup.
 8. Lightly oil the internal steel components with Ramset™ P.A. lubricant (PA9316) and then wipe off any excess oil.

Re-assembly is the reverse of disassembly

1. Position the barrel's groove at the top.



2. Insert the barrel's assembly into the main housing and screw the knurled collar by hand. (Do not over tighten).
3. After re-assembly check that the barrel slides properly in the handle.
4. Slide the buffer onto the piston
5. Slide the piston return spring onto the piston.
6. Insert the piston assembly into the barrel.
7. Screw the magazine or the fastener guide onto the barrel.
8. Without any power loads or fasteners, test the tool for correct function by cocking the tool and depressing the trigger. If this test does not work, do no attempt to use the tool.

Site Preparation

- Ensure tool is ready for use.
- Clear people from local area.
- Erect warning signs.
- Check the area is safe for the use of P.A. Tools, i.e. free from inflammable gases, explosive materials etc.
- Check that the material to be fixed into is suitable for use with a P.A. Tool.
- Make sure the correct Personal Protective Equipment (PPE) is being worn by all those close by.

Tool Inspection

Every Powder Actuated (P.A.) hand-held fastening tool should be dismantled and examined for defects by an authorised operator prior to use.



FrameBoss™ Tool Kit

Order No: FRAMEBOSS

FrameBoss™ tool, carry case, safety glasses, maintenance kit and instruction manual.



Tool Kit Contents

- _____ Piston Return Spring (x1)
- _____ Piston Buffer (x1)
- _____ Safety Glasses
- _____ Fastener Guide Assembly
- _____ P.A. Tool Lubricating Oil
- _____ Maintenance Kit
- _____ Spall Guard

Technical Data - FrameBoss™

Weight	3.0kg (3.2kg with magazine)
Impact force	380J
Fixing capacity:	
Timber to concrete	50mm
Timber to steel	50mm
Metal to concrete	3mm
Metal to steel	3mm
Pin capacity	75mm (60mm collated)
Overall length	490mm (495mm with magazine)

Technical Data - FrameBoss™75

Weight	3.0kg (3.99kg with magazine)
Impact force	380J
Fixing capacity:	
Timber to concrete	75mm
Timber to steel	50mm
Metal to concrete	3mm
Metal to steel	3mm
Pin capacity	100mm (75mm collated)
Overall length	525mm (530mm with magazine)

Ramset™ tools, fasteners, charges and other components of the Ramset™ Fastening System are designed and manufactured as a complete system. They provide the greatest ease, convenience, all year round performance and safety when used together. It is important that you insist on genuine Ramset™ products for utmost satisfaction and to ensure validity of your warranty.



Product Range - Accessories

Part No	Description	Pack Qty
Refer pg 18	Piston	1
Refer pg 18	Piston Buffer (x2)	1
Refer pg 18	Piston Return Spring (x2)	1
Refer pg 18	Fastener Guide Assembly	1
Refer pg 18	Magazine Assembly	1
Refer pg 18	Spall Guard	1
PA9316	P.A. Lubricating and Release Oil	1
PBT	Drive Pin Removal Tool	1
PA1613	Safety Glasses	1
PAWS8	Explosive Tool in Use - Safety Warning Sign	1

Product Range - Power load strips

Part No	Colour	Strength	Pack Qty
PLSGR22	Green	Weak	100
PLSYW22	Yellow	Medium	100
PLSRD22	Red	Strong	100

Product Range - Collated Drive Pins for concrete masonry and steel

Part No	Drive Pin Length	Max Fixture (thickness to steel)	Max Fixture (thickness to concrete)	Pack Qty
C925C	25mm	12mm	2mm*	500
C930C	30mm	20mm	7mm	500
C940C	40mm	25mm	12mm	300
C950C	50mm	35mm	25mm	300
C960C	60mm	45mm	35mm	300
C975C	75mm	50mm	45mm	300

Product Range - Standard Drive Pins for concrete, masonry and steel

Part No	Drive Pin Length	Max Fixture (thickness to steel)	Max Fixture (thickness to concrete)	Pack Qty
LDU25	25mm	12mm	2mm*	100
LDU32	32mm	20mm	7mm	100
LDU38	38mm	25mm	12mm	100
LDU42	42mm	30mm	20mm	100
LDU50	50mm	35mm	25mm	100
LDU57	57mm	45mm	35mm	100
LDU65	65mm	50mm	45mm	100
LDU75	75mm	N/A	50mm	100
LDU90	90mm	N/A	65mm	100
LDU99	100mm	N/A	75mm	100

* Denotes steel fixture only

**Product Range - Drive Pins for Structural Steel**

Part No	Description	Drive Pin Length	Timber Thickness	Pack Qty
SC950	Timber to Structural Steel Pin	50mm	35mm	100
SC950W	Frame & Truss Washered Pin	50mm	35mm	100
SC960	Timber to Structural Steel Pin	60mm	45mm	100
SC960W	Frame & Truss Washered Pin	60mm	45mm	100

Product Range - Washered Drive Pins for fixing to Steel of any thickness of 4mm or more (Sacrificial Steel Formwork)

Part No	Washer Diameter	Drive Pin Length	Pack Qty
SBR9	14mm	22mm	100

Product Range - Timber Formwork Pins for concrete for easy pin removal

Part No	Drive Pin Length	Max Timber Thickness	Pack Qty
LDU60F	60mm	35mm	200
LDU75F	75mm	50mm	200
LDU99F	100mm	75mm	200

Product Range - Drive Pins for fixing thin steel to steel

Part No	Description	Drive Pin Length	Pack Qty
SP12	Heavy Duty Pin	13mm	100

Product Range - Washered Drive Pins for Concrete / Masonry

Part No	Washer Diameter	Drive Pin Length	Max Fixture (thickness to concrete)	Pack Qty
LWU25	16mm	25mm	2mm*	100
LWU32	16mm	32mm	7mm	100
LWU75	16mm	75mm	50mm	100

* Denotes steel fixture only

Product Range - Angle Bracket Assemblies / Catenary Wire Brackets

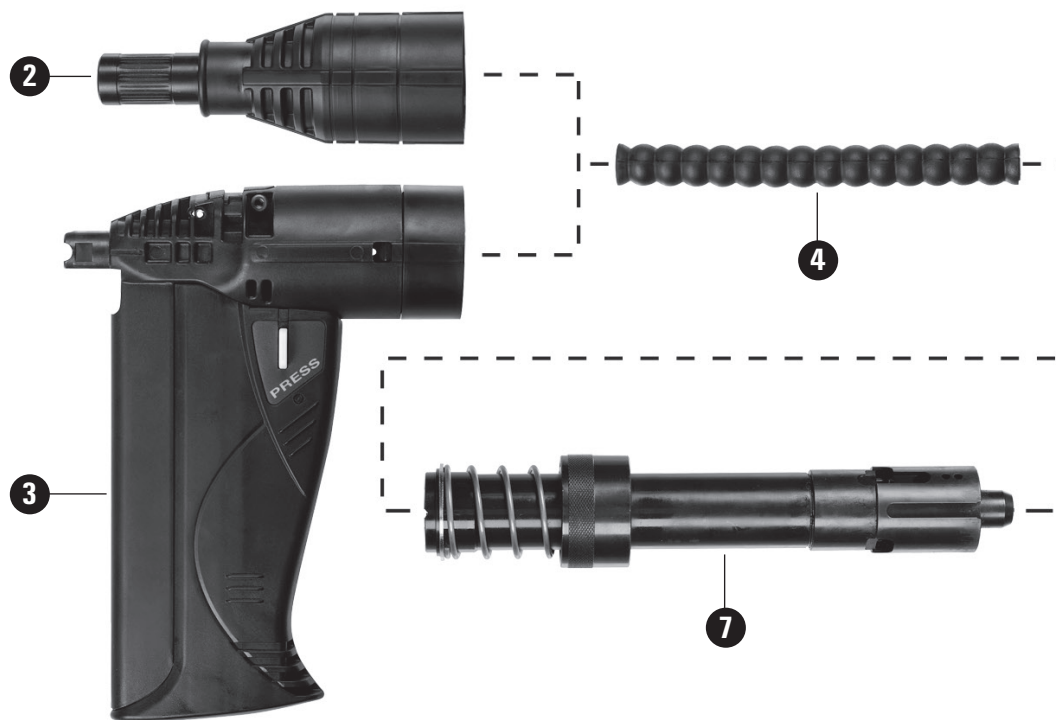
Part No	Description	Drive Pin Length	Pack Qty
LAU25	Standard Duty	25mm	100
LAU30H	Heavy Duty	30mm	100

Product Range - Collated Drive Pins for structural steel and hard concrete

Part No	Drive Pin Length	Max Fixture (thickness to steel)	Max Fixture (thickness to concrete)	Pack Qty
S925C	25mm	12mm	2mm*	500
S930C	30mm	20mm	7mm	500
S940C	40mm	25mm	12mm	300
S950C	50mm	35mm	25mm	300
S960C	60mm	45mm	35mm	300

APPENDIX A - TOOL IDENTIFICATION

FrameBoss™

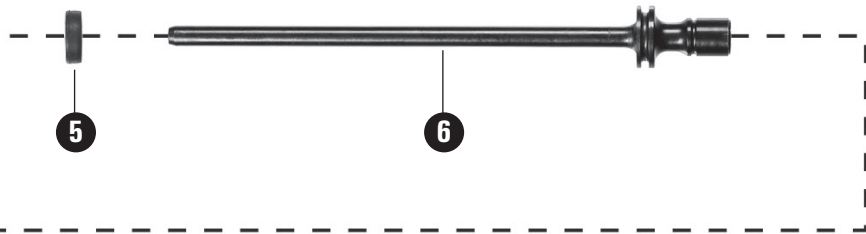


FrameBoss™

Item No.	Spare Part No.	
1	PA37023	Spall Guard (Not Shown)
2	PA37040	Fastener Guide Assembly
3	PA37038	Magazine Assembly
4	010982	Piston Return Spring (x1)
5	010983	Piston Buffer (x2)
6	PA37037	Piston
7	PA37007	Barrel Assembly
8	N/A	Rear Tool Assembly

FrameBoss™75

Item No.	Spare Part No.	
1	PA37023	Spall Guard (Not Shown)
2	PA37063	Fastener Guide Assembly
3	PA37049	Magazine Assembly
4	011483	Piston Return Spring (x2)
5	010983	Piston Buffer (x2)
6	PA37041	Piston
7	PA37054	Barrel Assembly
8	N/A	Rear Tool Assembly





APPENDIX B - TOOL USE ASSESSMENT

Practical Knowledge

There are two parts to the assessment process:

1. Practical Knowledge Questions - These questions are designed to test your knowledge of using Ramset™ Powder Actuated (P.A.) Tools. They will be given to you on the day of instruction. Your responses will be used as evidence of your knowledge and understanding.
2. Skill Demonstration - Your performance in the operation and maintenance of a Ramset™ Powder Actuated (P.A.) Tool will be viewed and evaluated by your Ramset™ instructor.

SKILL DEMONSTRATION

Firing a Powder Actuated (P.A.) tool

When demonstrating the correct use of a P.A. Tool, the instructor will be looking for the following key skills:

- Preparation, including erecting/checking warning signs
- Clear the area of hazards
- Check the tool operation
- Correct personal protective equipment
- Correct fastener selection
- Correct power load selection
- Correct stance and body position
- Correct tool position
- Firing call
- Demonstration of correct misfire procedure

Cleaning a Powder Actuated (P.A.) tool

When demonstrating the cleaning of a P.A. Tool, the instructor will be looking for the following key skills:

- Correct dis-assembly of tool
- Component identification
 - Retractor
 - Barrel
 - Piston
 - Buffer
- Clean all parts
- Oil parts
- Clear excess oil
- Reassemble correctly



PAT003 - ASSESSMENT

ASSESSMENT QUESTIONS

1. When and where should a P.A. tool be loaded and unloaded?
2. Explain why a P.A. tool must not be fired at an angle other than 90° to the work surface.
3. Why should you **NEVER** hold the tool with your hand over the muzzle/fastener guide?
4. Why should you **NEVER** depress the fastener guide, even when loading a fastener, with anything other than the work surface?
5. What **MUST** be done in the event of a misfire?
6. What **MUST** be done in the event of repeated misfires by the same tool?
7. What **MUST** be done in the event of a tool jam?
8. What **MUST** you do in the event that the tool does not advance the charge strip correctly?
9. How far should a P.A. Tool be from the edge of the working surface before it can be safely fired?
 - a) When fixing into steel,
 - b) When fixing into masonry/concrete.
10. What base materials can be fastened into, using a P.A. tool?
11. According to the Australian Standard AS1873, how often **MUST** a tool be serviced?



FrameBoss™ Tool Service Log Records

Model Number: _____

Purchased from: _____ Date: _____

Serial Number: _____

Purchaser's Name: _____

Company Name: _____

Address: _____

Signature: _____ Trade: _____



FrameBoss™ Tool Service Log Records (con't.)

Date	Type of Service	Hours Used	Details of service <small>Show components replaced</small>	Status	Signature



FrameBoss™ Tool Service Log Records (con't.)

Date	Type of Service	Hours Used	Details of service Show components replaced	Status	Signature



RAMSET™ POWDER ACTUATED (P.A.) TOOLS

Return this Warranty Registration Card to Ramset™

Model Number: _____

Serial Number: _____ Purchased from: _____ Date: _____

I agree that the terms set out in the Warranty shall apply to the sale and purchase of the product described above.

Purchaser's Name: _____ Phone/Fax: _____

Company Name: _____ Email: _____

Address: _____

Signature: _____ Trade: _____

To ensure correct processing, please fill out all fields.



WARRANTY

Model Number

Serial Number

Purchased from

Invoice Number

Date

Ramset™ will repair or replace this product free of charge if it shall be found to be defective under normal use within a period of 5 years from the date of purchase due to faulty materials or workmanship.

Defects which are due to normal wear and tear, overload or misuse are not covered by this warranty.

The above warranty is additional to and not in substitution for any rights of the purchaser arising under the Trade Practices Act 1974 or any relevant legislation for any States and Territories of the Commonwealth of Australia providing that where so permitted by such legislation liability thereunder shall be limited to the replacement or repair of the goods or the cost of replacing or repairing the goods as the case may require. Subject thereto all conditions and warranties which might be implied by law are hereby expressly negated and excluded so far as same may be legally done.

To obtain the benefit of this warranty, the purchaser must sign and return the attached registration card to Ramset™ within 10 days of the date of purchase. Claims under the guarantee may be made by delivering the product undismantled to the seller from whom it was purchased or by making a claim to such a seller in writing, in either case within 7 days of the defect becoming apparent.

Your Ramset™ Powder Actuated Fastening Tool has a warranty against materials or workmanship for a period of 5 years from date of purchase, providing the tool has been operated by a qualified operator strictly in accordance with these instructions and Local or Government regulations, using only the genuine Ramset™ fasteners, charges and accessories or compatible consumables.

For genuine authorised service and repair, telephone 1300 780 063 Australia wide.

RETAIN THIS WARRANTY FOR YOUR OWN RECORDS



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