

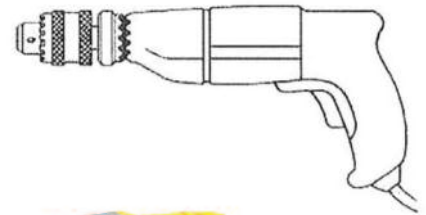
# Drilling Guide

Correct drilling techniques are essential to ensure efficacy of the remedial wall tie, and to minimise aesthetic and structural damage to the property under repair.

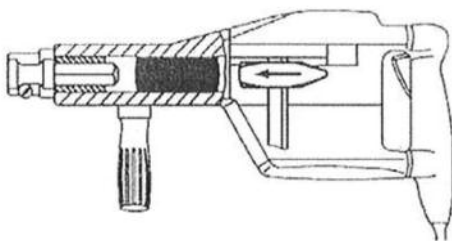
The use of Rotary Percussion Drills should be used wherever possible for drilling pilot/clearance holes to ensure accuracy and keep disruption to the masonry to a minimum. Damage caused to the masonry by incorrect drilling and any spalling of the brick/block rear may reduce the effectiveness of the wall ties installed.

## Rotary Percussion Drill (3-jaw chuck type)

This type of electric hammer drill uses a 3-jaw rotating chuck to clamp and rotate straight-shanked drill bits. It is designed to provide a rotary drilling action, which may be amplified by a light ‘tapping’ action. This light percussion improves the drilling rate but is gentle and permits fragile masonry substrates such as brick, terracotta, mortar and hollow concrete block to be drilled with minimal damage, particularly when the drill breaks through the material into a void or cavity. This kind of drill will commonly have a chuck speed up to 2,500 rpm with 10-40,000 percussive ‘taps’ per minute.



Example: DeWalt Percussion DWD525KS



## Rotary Hammer Drill (SDS chuck type)

The rotary hammer drill, SDS type, is for drilling blind holes in very hard and dense materials such as reinforced concrete and sometimes hard masonry or hard natural stone where rotary percussion drilling may not be practical. SDS-shanked drill bits are required to fit the chuck.

A lightweight SDS type rotary hammer drill, fitted with an appropriate Helifix SDS support tool attachment, is required to set all Helifix “drive-in ties” (e.g. DryFix Ties, RetroTies and StarTies) into position.

Suitable lightweight SDS type rotary hammers have a small motor (approx. 800W) and a chuck speed range of 600-800 r.p.m. with approximately 4,000 hammer blows per minute. There are a wide variety of lightweight tools available.



Example: Bosch Rotary 2-28 DFV

Note: A 3-jaw-chuck adaptor fitted to an SDS machine must NEVER be used in place of a Rotary Percussion drill. Fitting a 3-jaw chuck attachment to a Rotary Hammer drill does NOT alter its performance – it remains an SDS type drill.

# Remedial Wall Tie Testing & Spacing

## Proof Testing

Proof testing of obtainable pull-out loads can be conducted on site using the Helifix Load Test Unit. The Load Test Unit allows tensile proof loading to a maximum of 3kN. On-site assessment should inform specific engineering design and be conducted during the course of the repair work to suit the requirements of the specifying engineer.



1. Install tie into inner or outer leaf masonry



2. Fit the appropriate sized Load Test Key (LTK) at least 50mm (normally one full turn) over the end of the tie. Remove the cross pin, if fitted



3. Slide the Load Test Unit (LTU) over the LTK and replace the cross pin, engaging it in the castellation on the top of the centre stud



4. Place the cross pin through the LTK and take up the slack on the central nut



5. Turn the Tommy bar slowly until the proof or maximum load is achieved. DO NOT enter the red zone and DO NOT OVERLOAD



6. Note the reading and then release the tension on the tested wall tie



Refer to the Product Information Sheet for the Load Test Unit for further details

## Tie Spacing

Wall ties should be spaced to suit site conditions and locations and in accordance with the relevant Standards and Building Code requirements (NCC, AS4773, AS3700). Relevant design variables include the wind and seismic conditions that are expected to act on the wall, its material condition and composition.

Remedial wall ties may be retrofitted to buildings built in different eras and to earlier building standards, and comprise materials or construction methods that do not comply with the current standards. Specific engineering design will be needed when performance comparable with current standards is required.