

DESIGN GUIDE

# **CONNECTORS & TIE-DOWN CONNECTORS**

**2022**

# CONNECTORS & TIE-DOWN CONNECTORS - DESIGN GUIDE

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Product Information Updates

Information contained in this product guide is subject to change.

The latest updates are available from [www.pryda.com.au](http://www.pryda.com.au).

# ESSENTIAL NOTES

## Introduction

The information in this Product Guide is provided for use in Australia by architects, engineers, building designers, builders and others. It is based upon the following criteria:

- 1. No Substitution:** The products covered by or recommended in this guide must not be substituted with other products.
- 2. Design Capacity Basis:** See Codes & Standards following.
- 3. Supporting Constructions:** Constructions using Pryda products must be built in accordance with the NCC (BCA) or an appropriate Australian Standard. *Note: This includes appropriate corrosion protection- See Corrosion Protection following.*
- 4. Correct Installation:** Installation of Pryda products must be strictly in accordance with the instructions in this guide.
- 5. Current Guide Version Used:** The current version of this guide, including any amendments or additions, must be used. Users are advised to check the Pryda website, [www.pryda.com.au](http://www.pryda.com.au), on a regular basis for the most current design guides.

## Codes & Standards

Product design capacities in this guide have been derived from:

- Results of laboratory tests carried out by or for Pryda Australia
- Engineering computations in accordance with the relevant Australian Standards, ie:
  - AS1720.1-2010 Timber Structures. Part 1: Design Methods.
  - AS/NZS1170 series Structural Design Actions.
  - AS4055-2006 Wind Loads for Housing.

Design capacities tabulated in this guide apply directly for **Category 1** joints. For all other joints, reduce design capacities by using the factors as specified in *General Notes (if applicable)*. Design capacities are related to the **Joint Group** of the timber as defined in AS1720 and AS1684. If the Joint Group of timber members joined together varies, the lower group must be assumed for design, for example, JD5 is lower than JD4.

## Definitions

Special terms used in this guide are as defined in Australian Standards, including:

**Design Capacity:** The maximum Limit State Design load (aka "action") which the product can safely support under the specified load condition, eg, 1.2G + 1.5Q (dead+roof live). *See General Notes for details (if applicable).*

**Joint Group:** Classification of a timber according to its fastener-holding capacity. *See General Notes for details (if applicable).*

## Corrosion Protection

Most Pryda products are manufactured using Z275 light-gauge steel, having zinc coating of 275 gsm (total weight). This protection is adequate only for INTERNAL applications in most corrosive environments, except areas that are classified as heavy industrial or those subject to high humidity (eg, enclosed swimming pools). Under these circumstances, seek advice from experts as special protection will be required. *Note: INTERNAL areas are those within the building envelope that are kept permanently dry.*

**AS1684.2-2010 and AS1684.3-2010, Australian Standards for Residential Timber Frame Construction stipulate a minimum Z275 steel for all sheet metal products used in an internal environment.**

In areas outside the building envelope that are exposed to repeated wetting (EXTERNAL areas), Pryda's stainless steel products or equivalent should be considered. Some alternatives include hot dip galvanised or powder coated steel, which are not supplied by Pryda. For more detailed information, read Pryda's Technical Update on *Corrosion Resistance of Pryda Products* or contact a Pryda office.

## Product Certification

Pryda Australia warrants:

- Products in this guide are free from defects in the material and manufacturing
- Design capacities are in accordance with test results or current, relevant Australian Standards and the Building Code of Australia.
- Pryda products are structurally adequate provided they are designed, installed and used completely in accordance with this guide.

This warranty applies only to:

- Products in this guide.
- Products used in the specified applications and not damaged after manufacture and supply.
- Joints free from wood splitting, decay or other timber defects at the joint or within 150 mm of the joint.

## Instructions for Installation

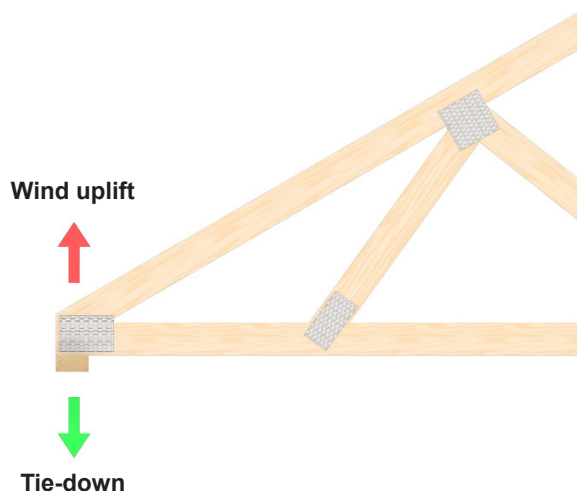
These notes are provided to ensure proper installation.

- All fasteners used must be manufactured by reputable companies and be of structural quality.
- Connectors must not be installed on timber which is split before or during installation. If the timber is likely to split as fasteners are driven, fastener holes must be pre-drilled.
- Do not overload the joints during construction or in service.
- Hole diameter for bolts in seasoned timber must not be more than 1.0 mm larger than the bolt diameter to achieve a snug-tight connection. Specified washers must be installed against the timber face.
- Use proper safety equipment and due care in installing these connectors.
- Any gaps in joints between the timber members must not exceed 3 mm.
- Do not over-tighten screws.

# GENERAL NOTES

## SELECTION GUIDE

### Selection guide for use with AS1684 Residential Timber-framed Construction



### Introduction

AS1684-2010 Residential Timber-framed Construction requires that some frame members be tied-down against wind uplift load. Section 9 of Parts 2 and 3 of the code includes tables of the Uplift Force (kN) to be resisted at joints in frames. To assist designers and builders to meet these requirements, this selection guide provides tables of design loads and capacities for **Pryda Connectors & Tie-down Connectors**.

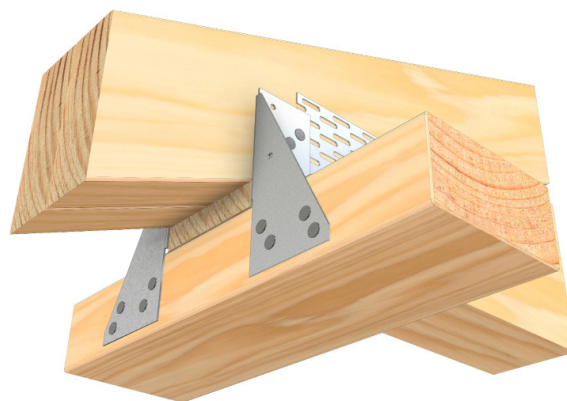
### How to Select a Suitable Connector

To use this guide follow these steps:

1. Determine the Joint Group of the timber. Joint groups are tabulated in Pryda's Timber Data (see table in this page) or in AS 1720.1:2010.
2. Read off the Design Uplift Force from AS 1684 Residential Timber-framed Construction or other reference.
3. Select the appropriate connector for the type of joint required

CONNECTOR	JOINT TYPE
Joist Strap (GJS) Unitie (UT90)	Roof battens or purlins to trusses, rafters or beams
Cyclone Straps (QHS9, QHS9/2) Multigrip (MPMG) Triple grip (TG)	Roof trusses, rafters or beams to supports
Stud Ties (ST3, ST4, STS3, MPSST)	Wall plates to studs

4. In the selected table, chose a Pryda Bracket or Strap with sufficient design capacity for the joint group and design load. For higher design loads, some Pryda connectors can be "doubled up" (ie: two connectors used) to provide twice the capacity. These connectors are: Cyclone Straps, Joist Straps, Multigrips, Triple Grips, Purlin Cleats, Hold-down brackets, Cyclonic Grips, CPB brackets and Uni-Ties.



### Doubled Up Connector

5. Order the Pryda Bracket or Strap, preferably by its code as tabulated in the following tables.

### Timber Joint Groups

Joint groups for some common timber are tabulated below. For further information refer Table H2.3 and H2.4 in Australian Standards AS1720.1:2010 — Timber Structures Part 1.

TIMBERS	STRENGTH GROUP		JOINT GROUP	
	DRY	GREEN	DRY	GREEN
Oregon (Douglas fir) America	SD5	S5	JD4	J4
Oregon from elsewhere	SD6	S6	JD5	J5
Radiata pine, heart-excluded	SD6	NA	JD4	NA
Radiata pine, heart-in	SD6	NA	JD5	NA
Slash pine	SD5	S5	JD3	J3
Ash type hardwoods from Vic, NSW highlands & Tas	SD4	S4	JD3	J3
Non-Ash type hardwoods from Qld & NSW	SD3	S3	JD2	J2

*Note on Engineered Timbers: Most standard LVLs are assigned a JD4 joint group, and some JD3. Seek advice from the relevant LVL manufacturer for confirmation.*



# GENERAL NOTES

## Tie-down Design Loads & Capacities

The tabulated capacities in Tables 1 to 4 are for Category 1 joints. For all other joints, i.e Category 2 or 3 joints as per AS1720.1:2010), multiply these capacities by 0.94 or 0.88 respectively. *Note: Category 1 joints are defined in Table 2.2 AS1720.1:2010 as structural joints for houses for which failure would be unlikely to affect an area of 25 sqm OR joints for secondary elements in structures other than houses.*

## Lower Design Loads

Where the required design load is much less than the tabulated design load, and the bracket or strap is fixed with more than two **Pryda Timber Connector Nails**, it is permissible to use proportionally fewer nails. For example, for half the design load, use half the tabulated number of nails;

## Design Load Cases

Following is a description of the combined load cases adopted in this design guide in compliance with AS/NZS1170.0:2002 – Structural design actions Part 0: General principles.

LOAD CASE	DESCRIPTION
1.35G	Permanent Action (or Dead Load) only
1.2G+1.5Qr	Permanent and Roof Imposed Actions (or Dead & Roof Live)
1.2G+1.5Qf	Permanent and Floor Imposed Actions (or Dead & Floor Live)
1.2G+Wd	Permanent and Wind Down Actions (or Dead & Wind down)
Wind Uplift (0.9G – Wup)	Permanent and Wind Up Actions (or Dead & Wind up)

## Fixing into Steel Supporting Structure

Pryda products can be fixed into steel using Buildex Tek<sup>TM</sup> screws or similar.

Information on fixing Pryda tie-down connectors to steel framing is available in the publication titled Design Guide – Pryda Connectors for Steel Framing.

## Machine Driven Nail Use

32x2.3 mm Duo-Fast C SHEG (ie: screw hardened electro galvanized) machine driven nails (code D40810) or equivalent may be used instead of the specified 35x3.15 mm Pryda Timber Connector Nails to fix selected Pryda connectors provided that the following requirements are strictly adhered to:

- Design capacities shall be reduced by 20% using the same number of nails as specified for the connectors and
- Nails shall be driven at nail spacings and edge distances similar to the hole pattern, ensuring that these nails are not driven into the holes or located not closer than 5mm from the edge of a hole.

**Extreme care must be taken when using machine driven nails as the prevailing installation practices tend to inhibit compliance with the above requirements.**

*Note: the use of machine driven nails for fixing Pryda Multigrips or Triple Grips is not acceptable in the state of Queensland.*

Some of other Pneumatic Coil screw hardened nails considered equivalent to D40810 are Paslode 32x 2.5mm (B25110), Duo-Fast 32 x 2.5mm (D41060) and Duo-Fast 40 x 2.6mm (D42360)

# RAMSET™ ANCHORSCREWS™ & WASHERS

Fasteners for fixing timber bottom plates to a concrete slab floor.

## Specification

Product Codes	AS12100H and AS12150H	
Dimensions	AS12100H = M12 x 100 AS12150H = M12 x 150	
Materials	Galvanised steel	
Packing	50 per carton	

## Washer Specifications

SQUARE WASHER SIZE (MM)	ROUND WASHER SIZE (MM)	WASHER TYPE & PRYDA CODE	CAPACITY (ΦNJ) (KN) FOR JOINT GROUP:	
			JD5	JD4
50 x 50 x 3.0	55 dia x 3.0	Standard OW12/56S	8.4	10.5
65 x 65 x 5.0	75 dia x 5.0	Heavy Duty OW12/65S	20.8	26.1

## Design Capacities of Ramset™ AnkaScrews™

Ramset™ AnkaScrews™ through 35mm thick bottom plates

PART CODE	ANCHOR SIZE	EFFECTIVEANCHOR DEPTH FOR 35MM BOTTOM PLATE	UPLIFT CAPACITY (ΦNJ) (KN)			MINIMUM CONCRETE THICKNESS (MM)
			EXTERNAL WALLS		INTERNAL WALLS	
			70 MM	90 MM		
AS12100H	M12 x 100	60	5.2	5.8	10.4	85
AS12150H	M12 x 150	110	13.1	14.3	26.1	135

Ramset™ AnkaScrews™ through 45mm thick bottom plates

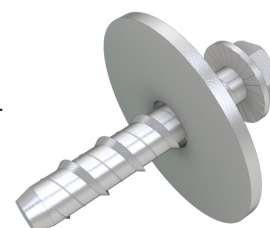
PART CODE	ANCHOR SIZE	EFFECTIVE ANCHOR DEPTH FOR 35MM BOTTOM PLATE	UPLIFT CAPACITY (ΦNJ) (KN)			MINIMUM CONCRETE THICKNESS (MM)
			EXTERNAL WALLS		INTERNAL WALLS	
			70 MM	90 MM		
AS12100H	M12 x 100	50	3.9	4.3	7.8	75
AS12150H	M12 x 150	100	11.3	12.5	22.6	125

Installation of AnkaScrews™ is quick and easy. See the Ramset installation instructions on their web site: [www.ramset.com.au](http://www.ramset.com.au) or contact Ramset.

## Washers

It is important to use an appropriate washer with the Anchorscrew to achieve the desired capacity.

The tie-down capacity is the minimum of the design values given here for the selected washer and the Anchorscrew.



## CYCLONE STRAPS

### FEATURES AND BENEFITS

**SIMPLE:** Quick and easy to install.

**VERSATILE:** Multiple lengths, thicknesses and can be doubled up for even more capacity.

**DURABLE:** Made from G300 Z275 steel.

### SPECIFICATIONS

STEEL	G300
THICKNESS	1.0 to 1.2mm
CORROSION RESISTANCE	Z275
LENGTHS	400, 588 and 880mm

### FASTENER REQUIRED

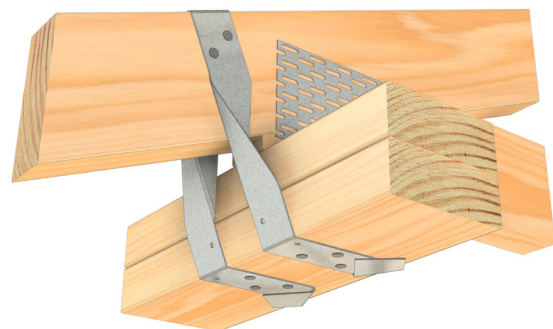
NAILS	<p>Pryda Timber Connector Nails 35 x 3.15mm</p> <p>Product code – OSG</p> <p><b>For machine driven nails, refer to the note on the last page. Pryda's unpunched QHS6U and QHS9U straps are designed specifically for machine driven nails.</b></p>
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Strong tie down suitable for tying purlins to roof trusses or roof trusses to the wall frame.

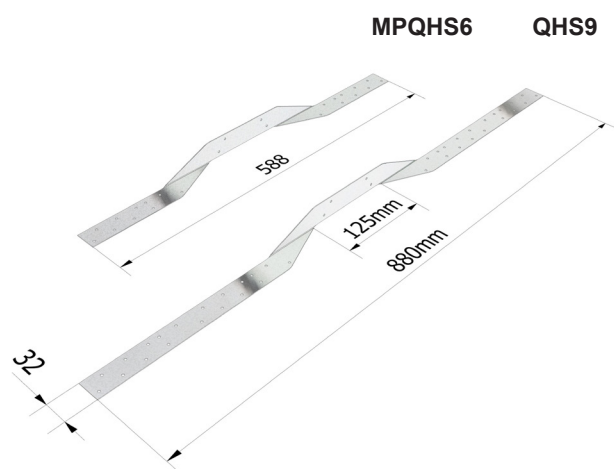


### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel



QHS6 shown



## CYCLONE STRAPS

PRODUCT CODE	MATERIAL	THICKNESS (MM)	LENGTH (MM)	QUANTITY
MPQHS6 (Merchant Pack - Individually barcoded product)	G300 Z275 Galvanised Steel	1	588	80
QHS6U (Unpunched - For machine nailing)			588	80
QHS9			880	25
QHS9U (Unpunched - For machine nailing)			880	25
QHS9/2		1.2	880	25

## PRYDA TIMBER CONNECTOR NAILS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNGB	Galvanised Steel	Flat Head	35 x 3.15mm	500g cardboard packs x 10	5kg
OSNG				1kg cardboard packs x 10	10kg
TPOSNG				5kg Trade pack x 1	5kg

## DESIGN CAPACITIES

NAILS PER LEG	DESIGN CAPACITY (ΦNJ) (KN) FOR TIMBER JOINT GROUP USING ANY CYCLONE STRAP					
	J3	J2	JD5	JD4	JD3	JD2
2	3.8	5.3	3.2	3.8	5.3	6.8
3	5	6.9	4.4	5.3	7.4	9.4
4	6.3	8.9	5.8	6.9	9.7	12.3
6 <sup>(4)</sup>	8.9	12.4 <sup>(2)</sup>	8.4	10.1	12.4 <sup>(2)</sup>	12.4 <sup>(2)</sup>
INCREASED CAPACITIES FOR STRAPS THAT ARE WRAPPED AROUND; MINIMUM 4 NAILS PER LEG (SEE NOTE 4)						
MPQHS6 QHS9	12.4	12.4	12.4	12.4	12.4	12.4
QHS9/2	15	15	15	15	15	15

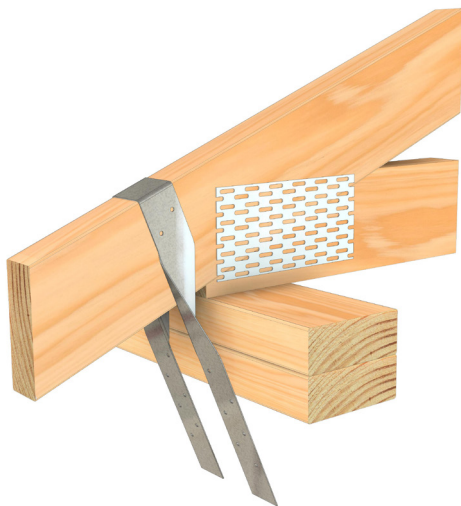
### Notes:

- These design capacities apply to Pryda Cyclone Straps fixed at both ends with 35x3.15 mm galvanised Pryda Timber Connector Nails or equivalent. For machine driven nails, refer to section "Fastening Cyclone Straps"
- The 12.4kN value may be increased to 15.0kN for QHS9/2 cyclone strap.
- When the strap is wrapped around the wall plate or other timber member and fixed with 4 nails per leg driven into the underside of the top plate, the capacity is limited by the steel. Tests have proven that bending the legs of Cyclone Straps around the timber increases the ultimate load the strap can carry.
- Joint groups for timbers are specified in AS1720, and explained in our Connectors and Tie Downs Design Guide.

## INSTALLATION

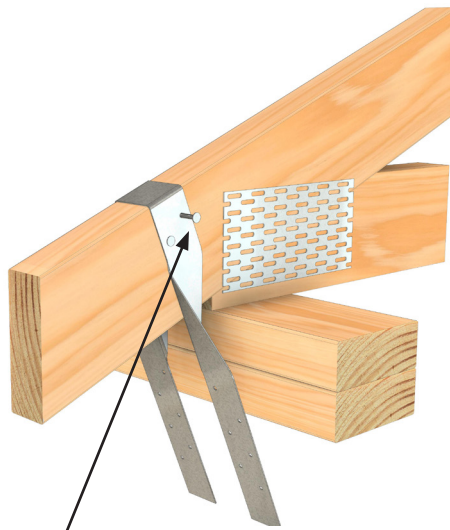
### CYCLONE STRAPS FOR TRUSS TIE DOWN TO TOP PLATE

#### STEP 1



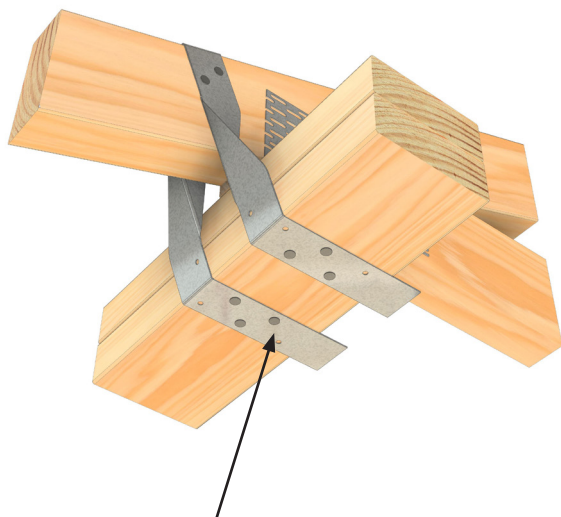
- Position the centre of the Cyclone Strap over the Truss and bend each side down at the same time, ensuring each leg is equal length.

#### STEP 2



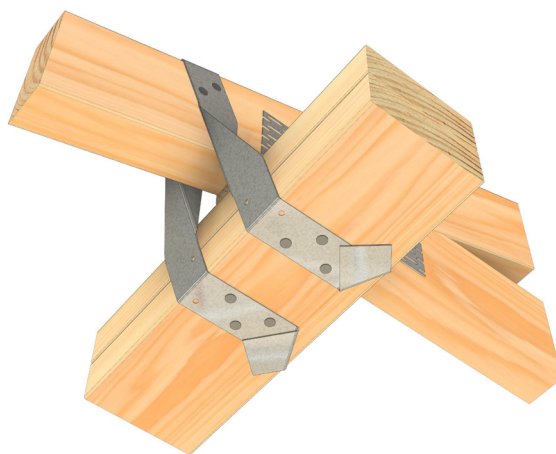
- Put 2 Pryda Timber Connector nails into each leg on both sides of the Truss

#### STEP 3



- Wrap the two legs under the top plate and fix off with Pryda Timber connector nails per leg to suit QHS selection length and tie down requirement. MPQHS6 shown above using three Pryda Connector nails to each leg. Higher capacities can be achieved if four nails are used (MPQHS6, QHS9, QHS9/2).

#### STEP 4



- Fold overhanging legs over itself and flatten. Do not leave overhanging legs pass frame.

#### IMPORTANT:

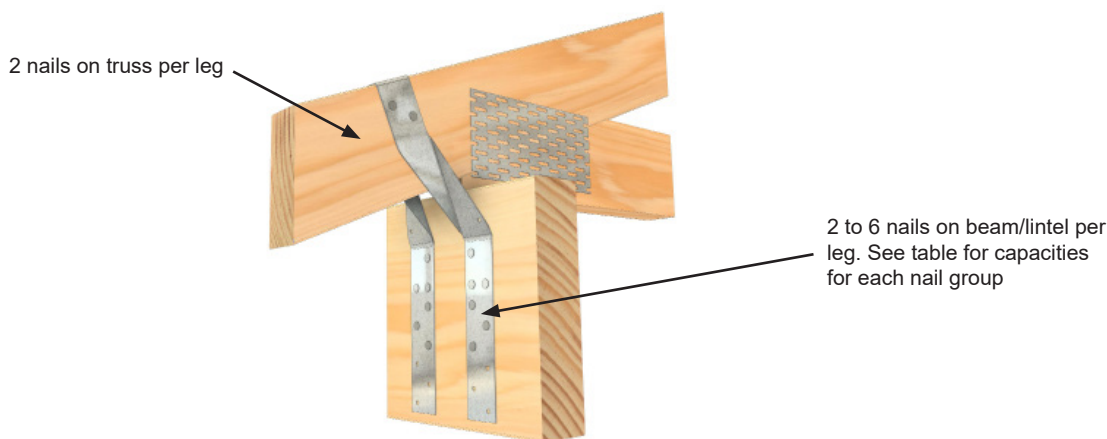
READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

## INSTALLATION

### CYCLONE STRAPS FOR TRUSS TIE DOWN TO BEAM/LINTEL

Fixing to a beam or lintel is the same as above however instead of wrapping under the top plate, the cyclone strap legs are fastened to the face of the beam as shown below.

Note this is not as strong a connection as wrapping under the top plate and the number of nails into the face of the beam will dictate the capacity as shown in the design capacity table.



## FASTENING CYCLONE STRAPS

### BUILD WITH CONFIDENCE

#### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

### USING PASLODE MACHINE DRIVEN NAILS WITH UN-PUNCHED QHS6U AND QHS9U

32x2.3 mm Duo-Fast C SHEG (ie: screw hardened electro galvanized) machine driven nails (code D40810) or equivalent may be used instead of the specified 35x3.15 mm Pryda Timber Connector Nails to fix selected Pryda connectors provided that the following requirements are strictly adhered to:

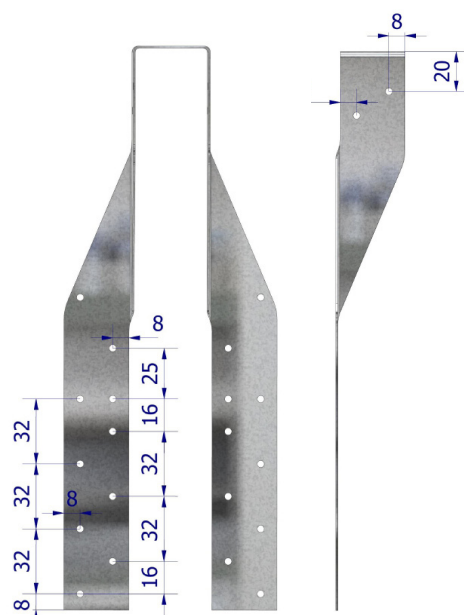
- Design capacities shall be reduced by 20% using the same number of nails as specified for the connectors and
- Nails shall be driven at nail spacings and edge distances closely following the dimple pattern on un-punched QHS6U and QHS9U.

Extreme care must be taken when using machine driven nails as the prevailing installation practices tend to inhibit compliance with the above requirements.

Screw hardened, electro galvanised Paslode nails that are appropriate include:

- Duo-Fast C SHEG 32 x 2.3 (D40810)
- Paslode 32 x 2.5 mm (B25110)
- Duo-Fast 32 x 2.5 mm (D41060)
- Pas Coil 32 x 2.5 SHEG 2 Pack (B25250)
- Impulse 32 x 2.5 SHEG (B40020)

Note: MPQHS6 shown. Typical hole spacing and edge distance.





## JOIST STRAP

### FEATURES AND BENEFITS

**EASY:** Includes a built-in nail for easy and quick install.

**FAST:** Only requires 2 nails per side.

**VERSATILE:** Can be used for a variety of right angle connections such as floor joists to bearers, hanging beams to ceiling joists, rafters to beams, purlins to rafters or trusses.

### SPECIFICATIONS

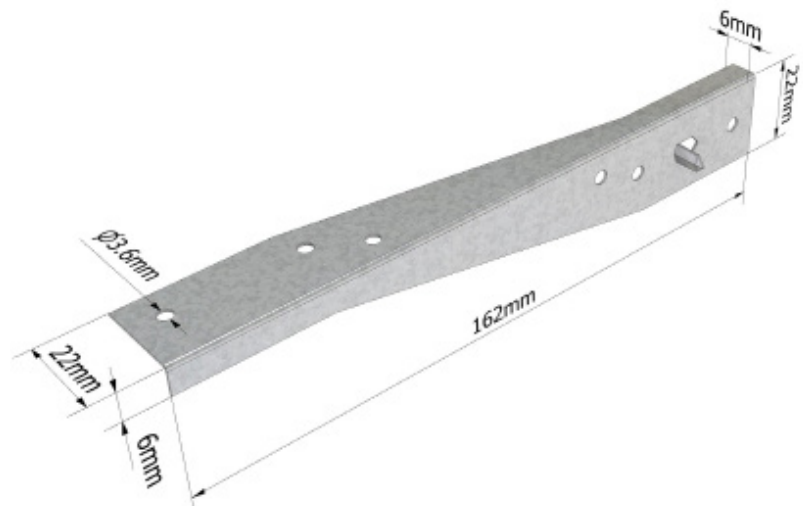
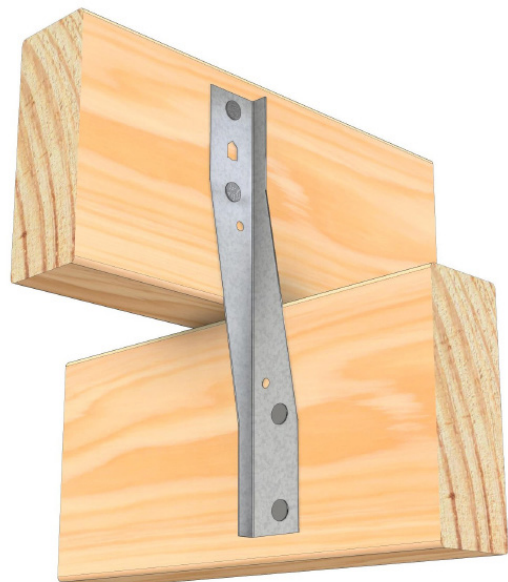
PRODUCT CODE	GJS
STEEL	G300
QUANTITY	150
THICKNESS	0.6mm
CORROSION RESISTANCE	Z275
FASTENERS	Pryda Timber Connector Nails 35 x 3.15mm

A simple, light duty joist strap with a variety of uses in building.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel



## DESIGN CAPACITIES

Limit State Design capacities per Pryda Joist Strap fixed with 2 nails each end are as tabulated below:

LOAD CASE	DESIGN CAPACITY (ΦNJ) (KN) FOR JOINT GROUP						
	J4	J3	J2	JD5	JD4	JD3	JD2
1.35G	0.7	0.9	1.3	0.8	0.9	1.3	1.7
1.2G+1.5Qf	0.8	1.1	1.6	1.0	1.1	1.6	2.0
1.2G+1.5Qr	0.9	1.3	1.8	1.1	1.3	1.8	2.3
1.2G+Wd or Wind Uplift	1.3	1.8	2.6	1.6	1.8	2.6	3.3

Note:

1. The above capacities apply directly to all Category 1 joints. For all other joints, i.e Category 2 or 3 joints as per AS1720.1:2010, multiply these capacities by 0.94 or 0.88 respectively.

## INSTALLATION

Position the Joist Strap with all nail holes at least 16 mm from the nearest timber edge. Using 35x3.15 mm galvanised Pryda Timber Connector Nails or equivalent, drive both these nails and the in-built nail fully into both timber members.

## BUILD WITH CONFIDENCE

### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

### USING PASLODE MACHINE DRIVEN NAILS WITH UN-PUNCHED QHS6U AND QHS9U

32x2.3 mm Duo-Fast C SHEG (ie: screw hardened electro galvanized) machine driven nails (code D40810) or equivalent may be used instead of the specified 35x3.15 mm Pryda Timber Connector Nails to fix selected Pryda connectors provided that the following requirements are strictly adhered to:

- Design capacities shall be reduced by 20% using the same number of nails as specified for the connectors and
- Nails shall be driven at nail spacings and edge distances closely following the dimple pattern on un-punched QHS6U and QHS9U.

Extreme care must be taken when using machine driven nails as the prevailing installation practices tend to inhibit compliance with the above requirements.

Screw hardened, electro galvanised Paslode nails that are appropriate include:

- Duo-Fast C SHEG 32 x 2.3 (D40810)
- Paslode 32 x 2.5 mm (B25110)
- Duo-Fast 32 x 2.5 mm (D41060)
- Pas Coil 32 x 2.5 SHEG 2 Pack (B25250)
- Impulse 32 x 2.5 SHEG (B40020)

### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

## MITRE PLATES

### FEATURES AND BENEFITS

**FAST:** Pre-bent to suit common 45 degree angle connections on both the bottom and top cord

**STRONG:** 1.0mm G300 Galvanised Steel

**VERSATILE:** Can also be used with rafters and come with a left and right hand version to pick up the creeper from both sides of the hip

### SPECIFICATIONS

STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails OR Paslode machine driven nails if notes on the last page are followed.

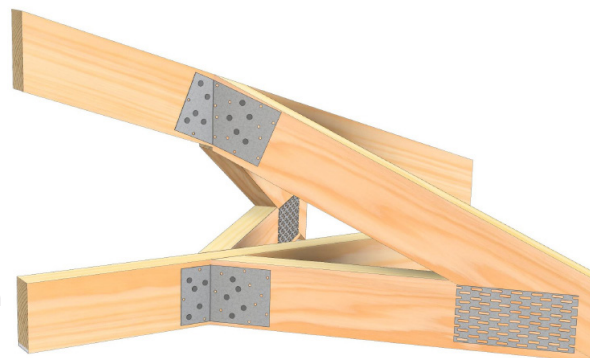
The easy way to connect creeper trusses to hip trusses



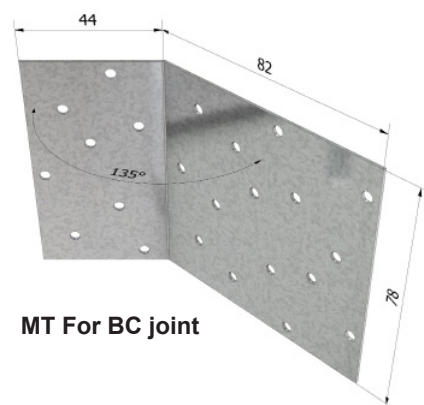
### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel

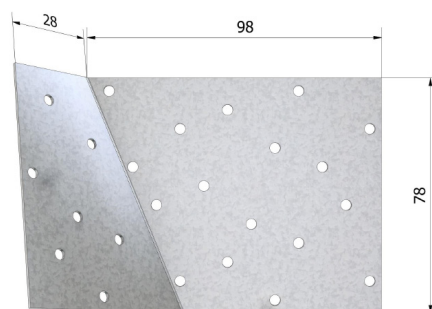
Top Chord



Bottom Chord



MT For BC joint



MT15 For TC joint

## INSTALLATION

1. Refer to AS4440- 2004. Nail the creeper top chord and bottom chord to the hip truss using 65 mm long nails through the full thickness of the creeper truss members.
2. Place the long leg of the Mitre Plate against the creeper truss so that the bend is tight into the joint between the creeper and hip truss. Fix 5 / 35x3.15 Pryda Timber Connector nails to the creeper, and to the hip truss.

## MITRE PLATES

PRODUCT CODE	MATERIAL	SIZE	QUANTITY	CONNECTION TYPE
MT	G300 Z275 Galvanised Steel	78 x 126mm (When flat)	20 (10 left, 10 right)	 Bottom Chord
MT15				 Top Chord

## PRYDA TIMBER CONNECTOR NAILS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNGB	Galvanised Steel	Flat Head	35 x 3.15mm	500g cardboard packs x 10	5kg
OSNG				1kg cardboard packs x 10	10kg
TPOSNG				5kg Trade pack x 1	5kg

## DESIGN CAPACITIES

When used to carry gravity loads or to resist wind uplift from creeper trusses or rafters Pryda Hip Mitre Plates have the following design capacities when fixed with five 35 x 3.15mm Pryda Timber Connector Nails into both members. These values include the capacity of three 2.8 x 65mm nails that are normally installed prior to fixing the Mitre Plate. Refer creeper to hip connections in AS4440-2004.

Note: These capacities assume that the supported creeper trusses or rafters are located on each face of the supporting hip truss.

LOAD TYPE	DESIGN CAPACITIES $\Phi$ NJ (KN)			
	SEASONED TIMBER			
	JD3	JD4	JD5	JD6
1.35G	3.7	2.6	2.2	1.7
1.2G+1.5Qr	5.0	3.5	3.0	2.3
1.2G+Wd or WIND UPLIFT	7.4	5.2	4.4	3.4

### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

## FASTENING MITRE PLATES

### BUILD WITH CONFIDENCE

#### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

### USING PASLODE MACHINE DRIVEN NAILS WITH UN-PUNCHED QHS6U AND QHS9U

32x2.3 mm Duo-Fast C SHEG (ie: screw hardened electro galvanized) machine driven nails (code D40810) or equivalent may be used instead of the specified 35x3.15 mm Pryda Timber Connector Nails to fix selected Pryda connectors provided that the following requirements are strictly adhered to:

- Design capacities shall be reduced by 20% using the same number of nails as specified for the connectors and
- Nails shall be driven at nail spacings and edge distances closely following the dimple pattern on un-punched QHS6U and QHS9U.

Extreme care must be taken when using machine driven nails as the prevailing installation practices tend to inhibit compliance with the above requirements.

Screw hardened, electro galvanised Paslode nails that are appropriate include:

- Duo-Fast C SHEG 32 x 2.3 (D40810)
- Paslode 32 x 2.5 mm (B25110)
- Duo-Fast 32 x 2.5 mm (D41060)
- Pas Coil 32 x 2.5 SHEG 2 Pack (B25250)
- Impulse 32 x 2.5 SHEG (B40020)



#### LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?

SEE OUR CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AVAILABLE AT [PRYDA.COM.AU](https://www.pryda.com.au)

## MULTIGRIPS

### FEATURES AND BENEFITS

**FUNCTIONAL:** Each of the tabs can bent in or out to 90° or other angles to suit the application.

**STRONG:** Suitable for high load applications such as a tie-down connector.

**VERSATILE:** Along with being used as a strong tie-down connection, can also be used in numerous right-angle connection application.

### SPECIFICATIONS

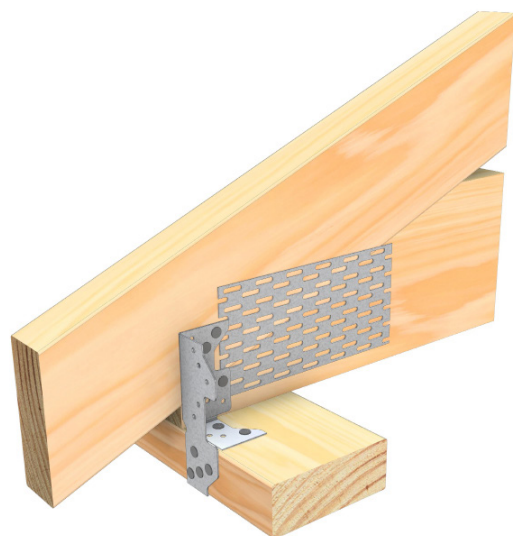
STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275 or S316L Stainless Steel
FASTENERS	<p>Pryda 35 x 3.15mm Timber Connector Nails</p> <p>OR</p> <p>Pryda Painted hex head 12G x 35mm Screws</p> <p>Ensure the corrosion resistance of the fastener matches the product, ie. galvanised nails for a galvanised bracket or stainless nails for a stainless bracket.</p>

Multi-purpose metal connectors for timber construction.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel





## DURABILITY

Z275 to be used in weather protected internal applications. Stainless Steel can be used for external applications.

Note: If Stainless Steel Multigrips are used, they should be used with Stainless Steel nails.

## MULTIGRIPS

PRODUCT CODE	MATERIAL	SIZE	QUANTITY
MPMG	G300 Z275 Galvanised Steel	100 x 37 x 37mm	100
MG/SS	S316L Stainless Steel	100 x 37 x 37mm	20

## PRYDA 12-35 SCREWS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
TCS12-35/1k	Galvanised Steel	Red Hex Head 5/16 or 8mm socket size	12G x 35mm	1 Carton	1000
TCS12-65/1k		Black Hex Head 5/16 or 8mm socket size Zip Drilling Tip	12G x 65mm	1 Carton	1000

## PRYDA TIMBER CONNECTOR NAILS

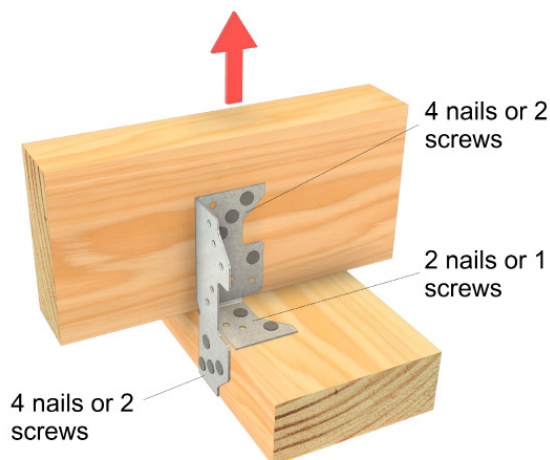
PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNGB	Galvanised Steel	Flat Head	35 x 3.15mm	500g cardboard packs x 10	5kg
OSNG				1kg cardboard packs x 10	10kg
TPOSNG				5kg Trade pack x 1	5kg
OSNBCI/SS	S316L Stainless Steel			500g clamshell pack x 1	500g

### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

## DESIGN CAPACITIES

### LOAD DIRECTION 1

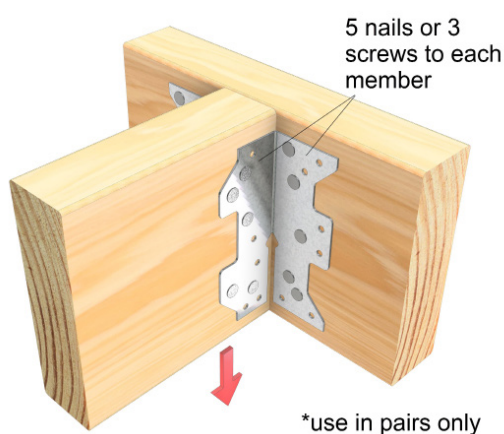


LOAD CASE	DESIGN CAPACITY $\Phi$ NJ (KN) FOR A SINGLE MULTIGRIP FOR TIMBER JOINT GROUP						
	J4	J3	J2	JD5	JD4	JD3	JD2
Wind Uplift	2.6	3.7	4.2	3.2	3.8	4.2	4.2

Notes:

1. The above capacities apply directly to Category 1 connections. For all other connections, ie. Category 2 or 3 multiply these capacities by 0.94 or 0.88 respectively, as per AS1720.1:2010.
2. Refer to Pryda's Connectors & Tie-down Design Guide available at [pryda.com.au](http://pryda.com.au) for description of load cases and joint groups
3. If used as a pair with one Multigrip on each side, capacities may be double.

### LOAD DIRECTION 2 (ALWAYS USE AS PAIRS)

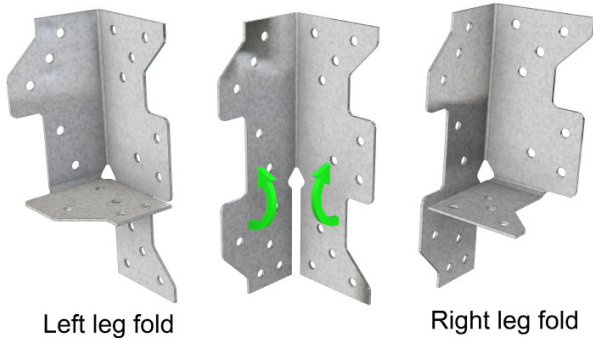


LOAD CASE	DESIGN CAPACITY $\Phi$ NJ (KN) FOR A PAIR OF MULTIGRIPS FOR TIMBER JOINT GROUP						
	J4	J3	J2	JD5	JD4	JD3	JD2
1.35G	2.3	3.2	4.5	2.7	3.2	4.5	5.7
1.2G + 1.5Qr	5	4.3	6.1	3.6	4.3	6.1	7.7
1.2G + Wd or Wind Uplift	4.6	6.4	9	5.4	6.4	9	11.4

## INSTALLATION

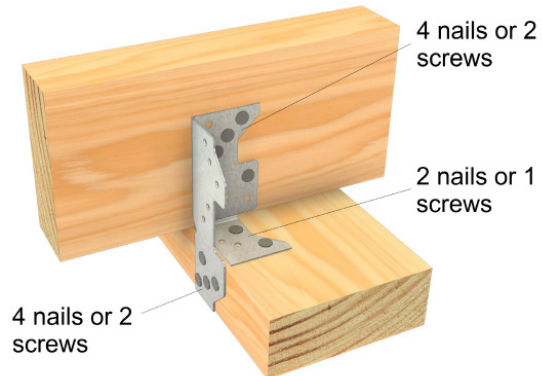
### TRUSS TIE DOWN CONNECTION TO SUPPORT

#### STEP 1



- Determine which leg of the Multigrip are required to be bent and do so at a 90° angle
- Ensure the bends are neat, tight and firm against the timber before fixing into position

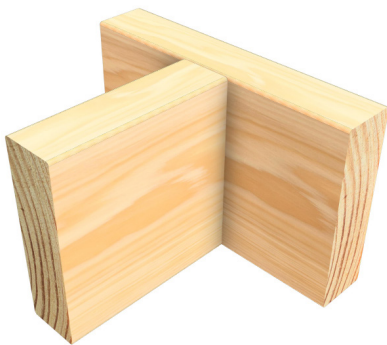
#### STEP 2



- Fix the Multigrrips using Pryda Timber Connector Nails 35 x 3.15mm or Pryda Painted hex head 12G x 35mm Screws.
- Ensure the correct number of nails or screws are used per leg of the Multigrip as per the image above

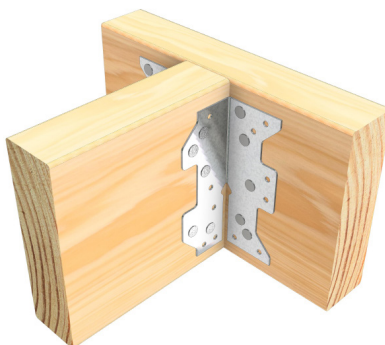
### BEAM TO BEAM OR TRUSS TO TRUSS CONNECTION

#### STEP 1



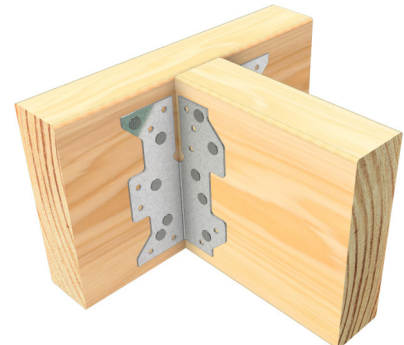
- Position the supported beam to supporting beam, ensuring both beams are vertically plumb, and all edges are aligned.

#### STEP 2



- Position a pair of Multigrrips at right angles on either side of the supported beam. Fix each Multigrip to each timber member with 5x3.15x35 Pryda Connector nails or 3 x No.12x35mm Pryda painted hex head screws.

#### STEP 3



- Repeat same fixing method to adjacent Multigrip. Note orientation of each Multigrip and connection must be installed in PAIRS.

## FASTENING MULTIGRIPS

### BUILD WITH CONFIDENCE

#### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

**MACHINE DRIVEN NAILS ARE NOT RECOMMENDED FOR FIXING LONG MULTIGRIPS, MULTIGRIPS AND MINIGRIPS.**



**LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?**

SEE OUR CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AVAILABLE AT [PRYDA.COM.AU](https://www.pryda.com.au)

## MINIGRIPS

### FEATURES AND BENEFITS

**EASY:** Easy to use for numerous right-angle connections.

**ECONOMICAL:** Suited for lightly loaded joints.

**ADAPTABLE:** Multiple nail holes to make fastening easy.

### SPECIFICATIONS

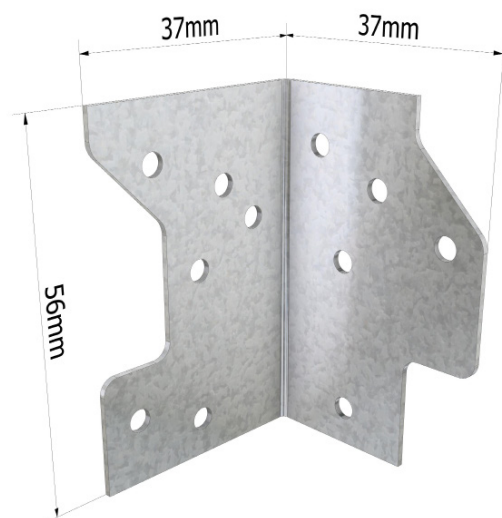
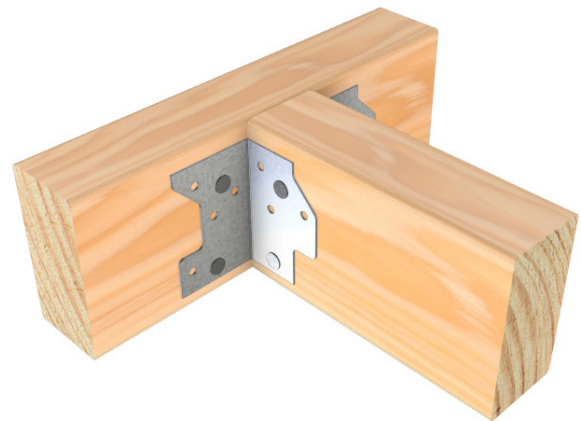
STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275
FASTENERS	<p>Pryda 35 x 3.15mm Timber Connector Nails</p> <p>OR</p> <p>Pryda Painted hex head 12G x 35mm Screws</p> <p>Ensure the corrosion resistance of the fastener matches the product, ie. galvanised nails for a galvanised bracket.</p>

Versatile pre-bent framing anchor.



#### AS1684 COMPLIANT

- Designed and Engineered in accordance with Australian Standards
- Minimum G300 Z275 Galvanised Steel



## DURABILITY

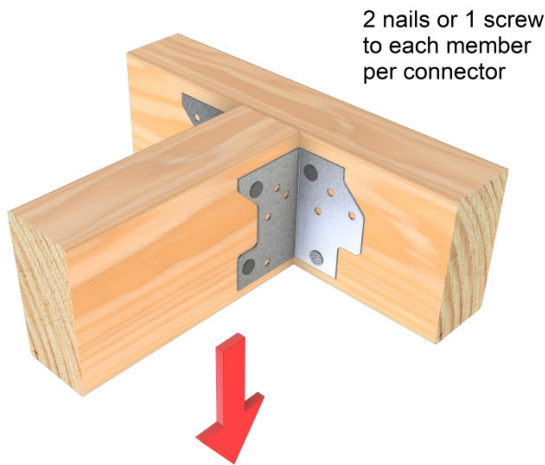
Z275 products are suitable in weather-protected internal applications.

## MINIGRIPS

PRODUCT CODE	MATERIAL	SIZE	QUANTITY
MPMGS	G300 Z275 Galvanised Steel	56 x 36 x 36mm	100

## DESIGN CAPACITIES

### LOAD DIRECTION 1 (ALWAYS USE AS PAIRS)



LOAD CASE	DESIGN CAPACITY $\Phi N_j$ (KN) FOR A PAIR OF MINIGRIPS FOR TIMBER JOINT GROUP						
	J4	J3	J2	JD5	JD4	JD3	JD2
1.35G	1.1	1.6	2.2	1.3	1.6	2.2	2.8
1.2G + 1.5Q <sub>r</sub>	1.5	2.1	3	1.8	2.1	3	3.8
1.2G + W <sub>d</sub> or Wind Uplift	2.3	3.2	4.5	2.7	3.2	4.5	5.7

#### IMPORTANT:

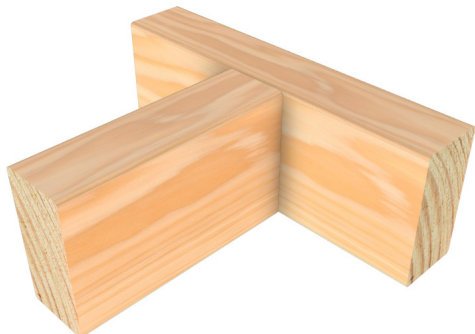
READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.



## INSTALLATION

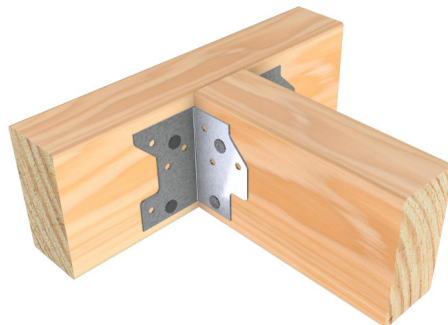
### BEAM TO BEAM

#### STEP 1



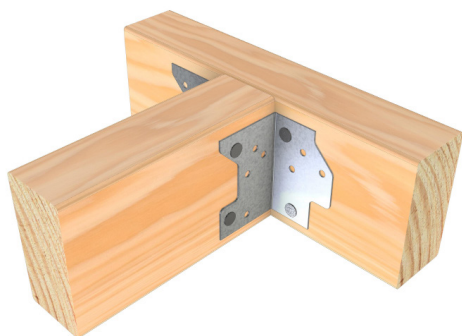
- Position the supported beam to supporting beam, ensuring both beams are vertically plumb, and all edges are aligned.

#### STEP 2



- Position a pair of Minigrips at right angles on either side of the supported beam. Fix each Minigrip to each timber member with 2x3.15x35 Pryda Connector nails or 1 x No.12x35mm Pryda painted hex head screws.

#### STEP 3



- Repeat same fixing method to adjacent Minigrip. Connection must be installed in PAIRS.

## FASTENING MINIGRIPS

### BUILD WITH CONFIDENCE

#### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

**MACHINE DRIVEN NAILS ARE NOT RECOMMENDED FOR FIXING LONG MULTIGRIPS, MULTIGRIPS AND MINIGRIPS.**



**LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?**

SEE OUR CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AVAILABLE AT [PRYDA.COM.AU](https://www.pryda.com.au)

## LONG MULTIGRIP

### FEATURES AND BENEFITS

**FUNCTIONAL:** Each of the tabs can bent in or out to suit the application.

**STRONG:** The longer leg allows both top plates to be engaged, which can optimise top plate design.

**VERSATILE:** Along with being used as strong tie-down connection, can also be used in numerous right-angle connection applications.

### SPECIFICATIONS

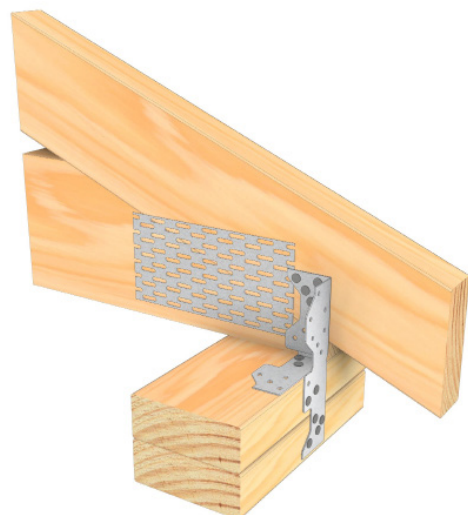
PRODUCT CODE	MPMGL
STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275
HEIGHT	132mm
WIDTH	37mm
QUANTITY	100
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails OR Pryda painted hex head 12G x 35mm screws

Designed for when a ribbon/double top-plate is in use to engage the lower top plate.



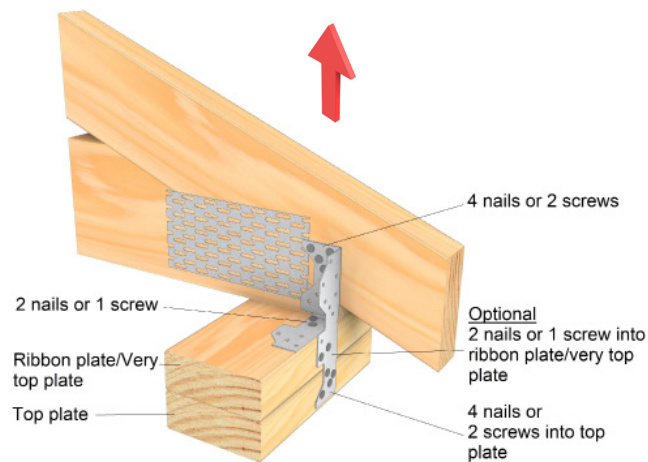
### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel



## DESIGN CAPACITIES

### LOAD DIRECTION 1

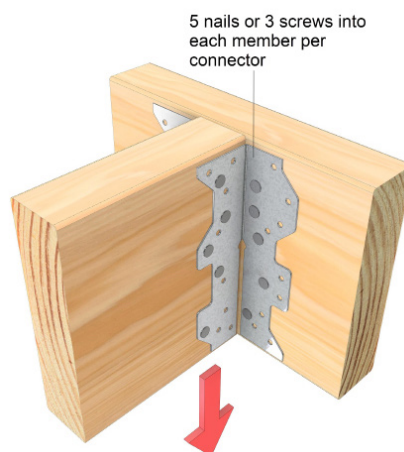


LOAD CASE	DESIGN CAPACITY $\Phi$ NJ (KN) FOR A SINGLE MULTIGRIP FOR TIMBER JOINT GROUP						
	J4	J3	J2	JD5	JD4	JD3	JD2
Wind Uplift	2.6	3.7	4.2	3.2	3.8	4.2	4.2

Notes:

1. The above capacities apply directly to Category 1 connections. For all other connections, ie. Category 2 or 3 multiply these capacities by 0.94 or 0.88 respectively, as per AS1720.1:2010.
2. Refer to Pryda's Connectors & Tie-down Design Guide available at [pryda.com.au](http://pryda.com.au) for description of load cases and joint groups
3. If used as a pair with one Multigrip on each side, capacities may be double.

### LOAD DIRECTION 2 (ALWAYS USE AS PAIRS)

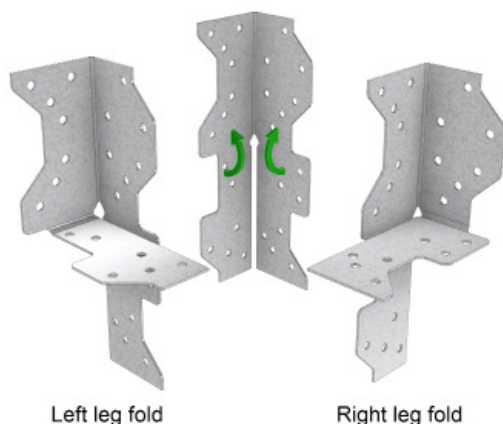


LOAD CASE	DESIGN CAPACITY $\Phi$ NJ (KN) FOR A PAIR OF LONG MULTIGRIPS FOR TIMBER JOINT GROUP						
	J4	J3	J2	JD5	JD4	JD3	JD2
1.35G	2.3	3.2	4.5	2.7	3.2	4.5	5.7
1.2G + 1.5Qr	5	4.3	6.1	3.6	4.3	6.1	7.7
1.2G + Wd or Wind Uplift	4.6	6.4	9	5.4	6.4	9	11.4

## INSTALLATION

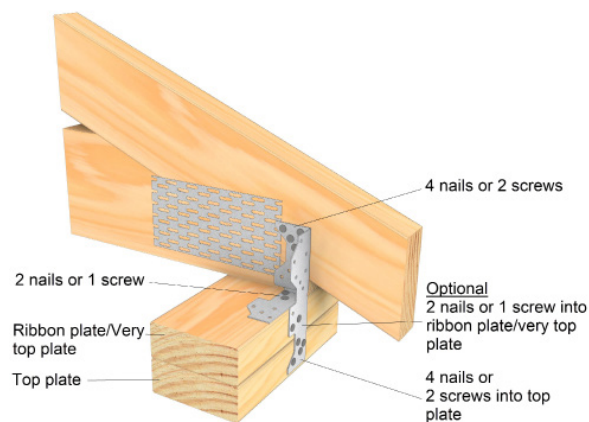
### TRUSS TIE DOWN CONNECTION TO SUPPORT

#### STEP 1



- Determine which leg of the Long Multigrip is required to be bent and do so at a 90° angle
- Ensure the bends are neat, tight, and firm against the timber before fixing into position

#### STEP 2



- Fix the Long Multigrrips using Pryda Timber Connector Nails 35 x 3.15mm or Pryda painted hex head 12G x 35mm screws
- Ensure the correct number of nails/screws are used per leg of the Long Multigrip as per the image above

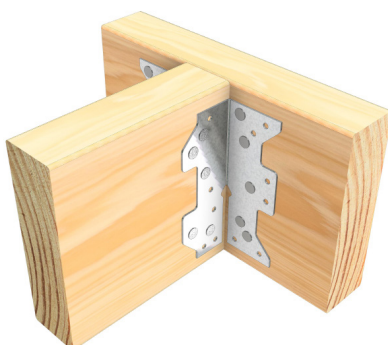
### BEAM TO BEAM OR TRUSS TO TRUSS CONNECTION

#### STEP 1



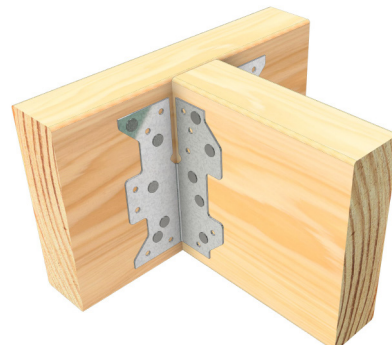
- Position the supported beam to supporting beam, ensuring both beams are vertically plumb, and all edges are aligned.

#### STEP 2



- Position a pair of Multigrrips at right angles on either side of the supported beam. Fix each Multigrip to each timber member with 5x3.15x35 Pryda Connector nails or 3 x No.12x35mm Pryda painted hex head screws.

#### STEP 3



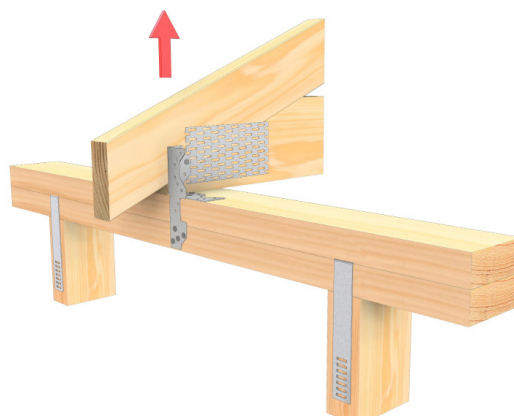
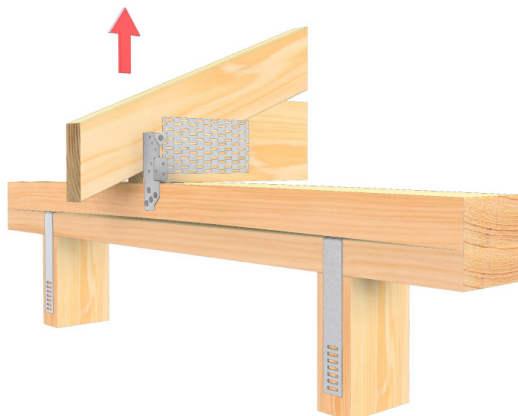
- Repeat same fixing method to adjacent Multigrip. Note orientation of each Multigrip and connection must be installed in PAIRS.

#### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

## INSTALLATION

### RIBBON / DOUBLE TOP PLATE GUIDE



- If the Ribbon plate is not adequately fixed to the lower top plate, it will not be able to contribute to resisting uplift
- Nail lamination of the ribbon plate to the lower top plate is typically insufficient to resist these loads
- In this example, if the ribbon plate is not sufficiently tied down to the lower top plate it can de-laminate resulting in the trusses lifting off the building
- This example illustrates how the longer leg (MPMGL), can engage both top plates

## FASTENING LONG MULTIGRIPS

### BUILD WITH CONFIDENCE

#### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

**MACHINE DRIVEN NAILS ARE NOT RECOMMENDED FOR FIXING LONG MULTIGRIPS, MULTIGRIPS AND MINIGRIPS.**



**LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?**

SEE OUR CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AVAILABLE AT [PRYDA.COM.AU](https://www.pryda.com.au)

## PRYDA HITCH

### FEATURES AND BENEFITS

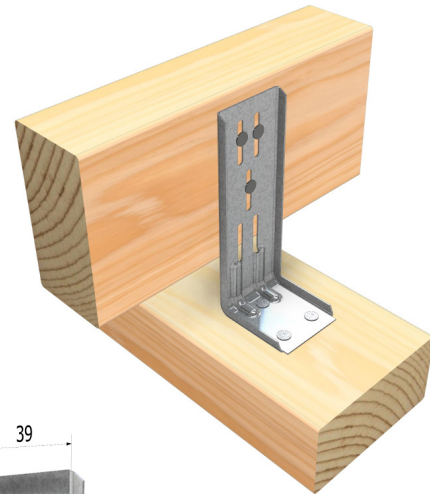
**VERSATILE:** Pryda Hitch has built in slots which allow for vertical movement in the truss over time without transferring load to the wall.

These slots cater for some vertical movement of the wall due to foundation settlement, without inducing forces on the truss.

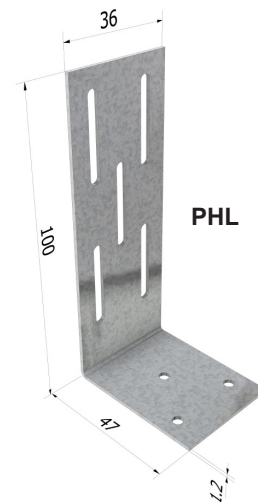
### SPECIFICATIONS

<b>PRODUCT CODE</b>	MPPHH (Coined)* PHL (Plain)
<b>STEEL</b>	G300-Z275
<b>QUANTITY</b>	MPPHH - 200 per carton - Merchant pack - 100 PHL - 100 per carton
<b>THICKNESS</b>	MPPHH - 0.8 mm PHL - 1.2 mm

Bracket which stabilises internal, non-load bearing walls from bottom chords of trusses.



**MPPHH**

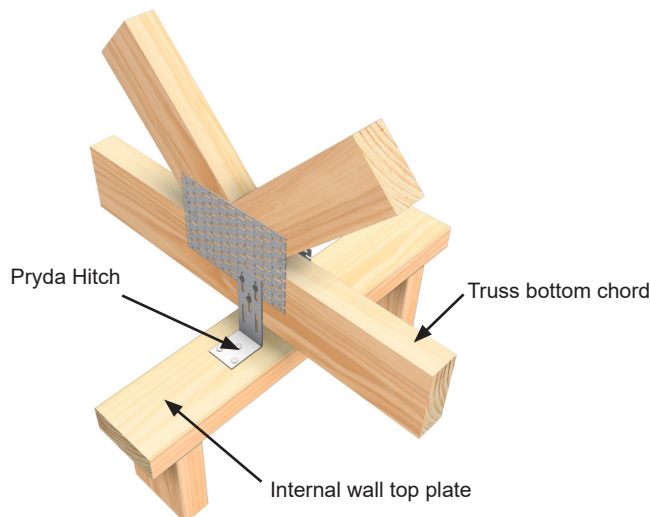


**PHL**

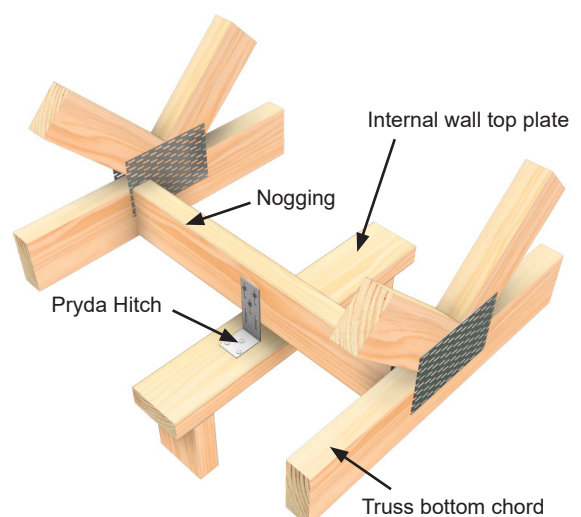


PRODUCT CODE	MATERIAL	TYPE	SIZE	QUANTITY
MPPHH	Galvanised Steel	Flat Head	114 x 46 x 38 x 0.8mm	200
PHL			100 x 44 x 36 x 1.2mm	100

## APPLICATION



Wall at Right Angles to Trusses



Wall Parallel to Trusses

## INSTALLATION

Place the Pryda Hitch alongside the truss bottom chord and fix with 35x3.15 mm galvanised Pryda Timber Connector Nails to the top plate of the wall, then nail through the slots into the truss bottom chord. For truss cambers not exceeding 10mm (for MPPHH) or 15mm (for PHL or PHS), the nail shall be located midway in the slot. This would also cater for vertical movement of walls due to foundation settlement in reactive clays. However, for larger truss cambers, the nail shall be located near the top of the slot. Care must be taken not to drive the nails fully home which would restrict vertical movement of the truss.

Extra slots are provided for additional nailing if required. Fixing as described locates the partition framing yet permits the truss to settle without loading a non-load bearing wall or partition. Fix at every second truss or at 1800 mm intervals.

## NAILING REQUIREMENTS

CODE	NAILING REQUIREMENTS
MPPHH	2@ 35 x 3.15mm Pryda Nails to bottom chord 3@ 35 x 3.15mm Pryda Nails to top plate
PHL	2@35 x 3.15mm Pryda Nails to bottom chord 3@35 x 3.15mm Pryda Nails to top plate

### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

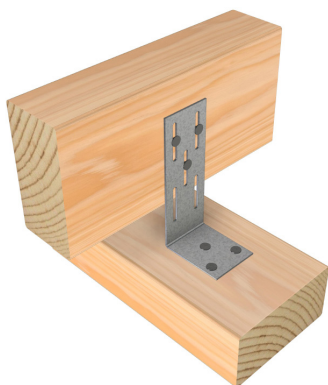
## INSTALLATION

### STEP 1



- Place the Pryda Hitch alongside the truss bottom chord and fix with 35x3.15 mm galvanised Pryda Timber Connector Nails to the top plate of the wall, then nail through the slots into the truss bottom chord. Care must be taken not to drive the nails fully home which would restrict vertical movement of the truss.

### STEP 2



- For truss cambers not exceeding 10mm (for MPPHH) or 15mm (for PHL), the nail shall be located midway in the slot. This caters for some vertical movement of walls due to foundation settlement in reactive clays.

### STEP 3



- For larger truss cambers, the nail shall be located near the top of the slot.
- Note: For girder-to-girder connections where cumulative truss deflection can occur, the brackets may need to be re-nailed after the roof has been loaded. The nail location on the slots should be checked after loading the roof.



**LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?**

SEE OUR CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AVAILABLE AT [PRYDA.COM.AU](https://www.pryda.com.au)

## STUD TIES

### FEATURES AND BENEFITS

**EASY:** A quick and effective connector between studs and wall plates.

**VERSATILE:** Available with built-in nails, holes for hand nails or dimples for machine nails.

**STRONG:** Nails are driven into the side grain to resist wind uplift in lateral shear.

### SPECIFICATIONS

STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275
FASTENERS	<p>Preformed nails are found included for all but the ST3 Stud Ties.</p> <p>For the ST3 Stud Ties use Pryda 35 x 3.15mm Timber Connector Nails</p> <p>OR</p> <p>Pryda Painted hex head 12G x 35mm Screws</p> <p>Ensure the corrosion resistance of the fastener matches the product, i.e. galvanised nails for a galvanized bracket, stainless nails for a stainless bracket.</p>

Stud ties connect top and bottom plates to studs to resist wind uplift.

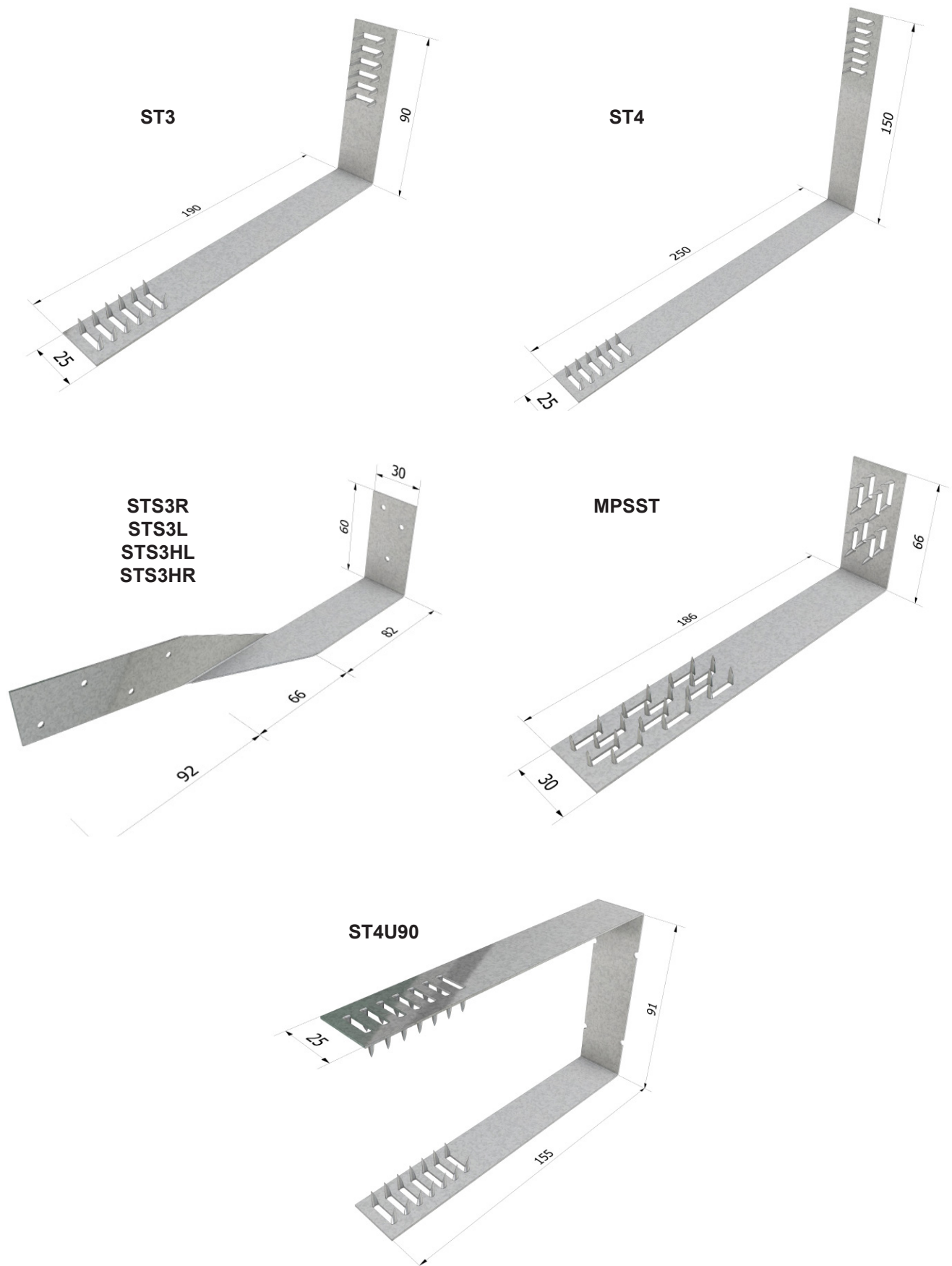
### AS1684 COMPLIANT



- Designed and tested in accordance with Australian standards (AS1649)
- Meets the tie down requirements for AS1684 bracing units
- Minimum G300 Z275 Galvanised Steel



## PRYDA STUD TIE RANGE



## STUD TIES

PRODUCT CODE	MATERIAL	TYPE	FASTENERS	QUANTITY	
ST3	G300 Z275 Galvanised Steel	Double	Pre-punched nails	100	
ST4				80	
ST4U90					
STS3R		Single	Pryda Timber Connector Nails 35 x 3.15mm	50	
STS3L			9/32x2.3 mm galvanised, screw shank nails, machine driven		
STS3HR					
STS3HL					
MPSST			Pre-punched nails		

## FEATURES

Pryda Stud Ties greatly improve the jointing of top and bottom plates to studs compared to the common nail fixing, ie:

- **Greater tie-down strength:** Stud Tie nails are driven into the side grain of the stud to resist wind uplift in lateral shear. This is far stronger than relying on the withdrawal strength of common nails in end grain. For example, two 90x3.05 dia glue-coated machine driven skew nails through 45 mm thick wall plates into the ends of dry pine studs (as required by AS 1684) have a capacity of only 0.40 kN while Stud Ties could provide as much as 6.2 kN. (refer to Design Capacities next page)
- **No splitting of the timber:** With Stud Ties, the careful location of the nails away from timber ends and edges avoids splitting which can occur in common nails only joints, especially in some timbers and particularly with skew nailing. This is not only unsightly, but it reduces the strength of the joint substantially.
- **Convenience:** As ST3, ST4 and the new MPSST Stud Ties have in-built nails, there is no need for other nails. Stud Ties are quick and easy to apply; the in-built nails are readily driven home with a conventional hammer. ST4U90 Stud Ties have two bends for easy installation on 70 mm and 90 mm wall frames respectively.
- **Single sided Stud Ties** are specially designed for factory production. They avoid the need to reach under the frame on the framing table. Note: The STS3 stud ties have either dimples for easy fixing with power driven nails or holes for fixing with 35x3.15 mm galvanised Pryda Timber Connector Nails.
- **Like the STS3, the new Ezi Stud Tie (MPSST)** is also designed for both factory and site installation. But the SST has the added advantage of a greater tie-down capacity.
- **Complies with AS1684 Bracing Units rules:** All types of Stud Ties meet the tie-down requirements of the code when installed as specified.

## PRYDA TIMBER CONNECTOR NAILS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNGB	Galvanised Steel	Flat Head	35 x 3.15mm	500g cardboard packs x 10	5kg
OSNG				1kg cardboard packs x 10	10kg
TPOSNG				5kg Trade pack x 1	5kg

### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

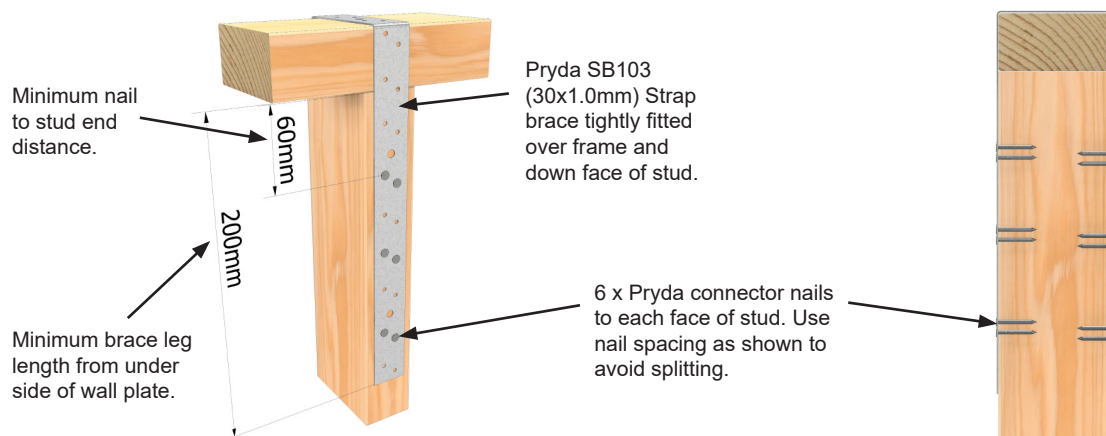
## DESIGN CAPACITIES

STUD TIES	DESIGN CAPACITY $\Phi$ NJ (KN) PER STUD TIE FOR TIMBER JOINT GROUP		
	JD5	JD4	JD3
ST3	5.3	6.3	7
ST4	6.2	6.9	7
MPSST (Note 5)	5.5	5.5	5.5
STS3 (Note 1)	3.4	4.1	5.7
SB103 (Note 4)	8.8	10.5	13.6

### Notes:

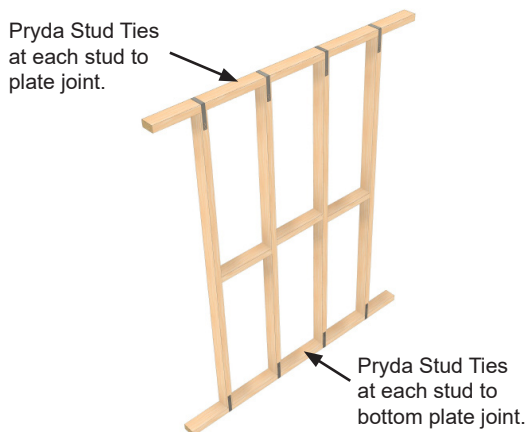
- STS3 Stud Ties may also be used with 5 Pryda Timber Connector nails or 6 machine driven nails to the stud, and 3 or 4 nails to the top plate. In this case increase the design capacities by 25% above the values shown here.
- The above values include the capacity of 2/skew nails.
- Tie-down capacities are based AS1720.1:2010 using  $k_1=1.14$ , for use in conjunction with AS/NZS1170:2002 loading code.
- SB103 capacities are based on the fixings shown below, using SIX Pryda Timber Connector nails per leg.
- The capacity of SST may be increased to 6.0kN if the connector is fixed into the side of the wall plate using a single 3.15 x 35 nail or equivalent, in addition to the in-built nails.

### PRYDA SB103 FIXING SPECIFICATION

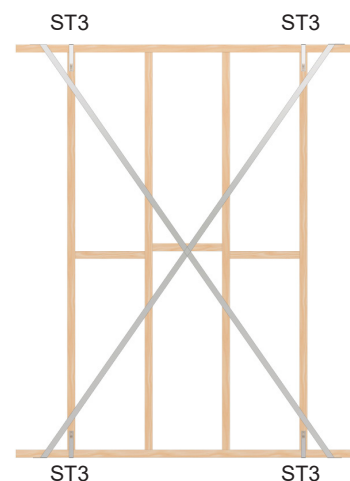


### APPLICATIONS

Pryda Stud Ties are used in wall bracing units (Types A and B) and other areas of walls for fixing of top and bottom wall plates to studs- as shown. Suitable overall, wall plate thicknesses are: ST3 - 50 mm; ST4 - 100 mm, STS3 - 80 mm and MPSST - 90 mm.



General Use of Stud Ties



Wall Bracing Units



## INSTALLATION

### EZI STUD TIE

#### STEP 1



- Locate the Ezi Stud Tie on the external corner of the wall plate.
- Ensure Ezi Stud Tie is centrally located on the stud. While holding the tie in place at corner, systematically hammer in the claw-nail, starting from inner nail cluster to outer. Evenly hammer in all the claw-nails into stud.

#### STEP 2



- Fasten the top of the Ezi Stud Tie into the top plate.
- In a similar manner, while holding the Ezi stud tie firmly against top plate corner, systematically hammer the claw-nails from inner clusters to outer claw-nail clusters. Avoid using excessive force and ensure Ezi stud tie is laying flat on both stud and top plate surfaces.

### DOUBLE SIDED STUD TIE

#### U-SHAPED TIES



- Loop the U-shaped tie (ST4U) over top plate, ensuring the strap is centrally located to stud. While holding the ST4U firmly down on top and corners of top plate. Hammer in the claw-nails systematically and evenly from inner clusters to outer clusters until all claw-nails to both legs are fully embedded.

#### SINGLE BEND TIES (STEP 1)



- For single bend ties ST4 or ST3. Locate stud tie central to stud and hammer fasten short leg to stud while firmly holding tie corner against top plate corner and long leg flat over top plate.

#### SINGLE BEND TIES (STEP 2)



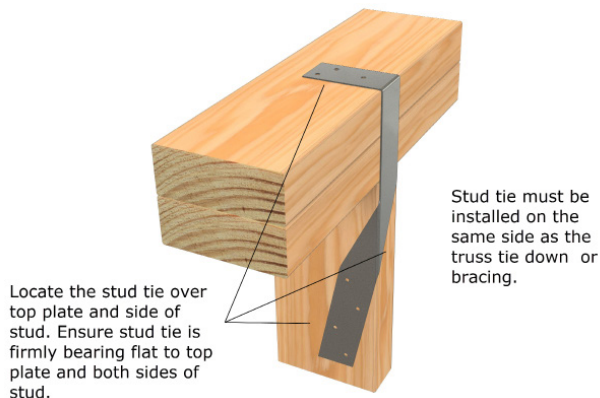
- While holding tie firmly down and flat on top plate, bend the leg over top plate edge. Gently bend the tie over the top plate corner with a hammer. While holding the tie flat over top plate and newly formed corner down, hammer in the claw-nails from inner cluster to outer cluster until all claw-nails are fully embedded.



## INSTALLATION

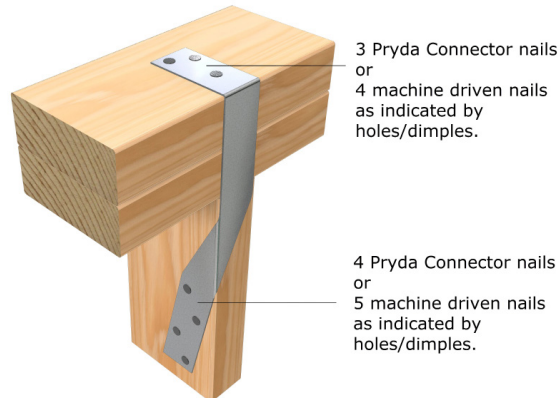
### SINGLE SIDED STUD TIE

#### STEP 1



- Choose either left or right-handed sizes to suit your application.

#### STEP 2



#### STS3 with dimple

- Power drive 9/32x2.3 mm galvanised, screw shank nails fully into the stud and top plate, i.e. 4 nails into top plate and 5 nails into stud, at locations indicated on the Tie.

#### STS3 with holes

- Fix 35x3.15 mm galvanised Pryda Timber Connector Nails, 3 into wall plate and 4 nails into stud

## FASTENING STUD TIES

### BUILD WITH CONFIDENCE

#### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

### USING PASLODE MACHINE DRIVEN NAILS WITH UN-PUNCHED QHS6U AND QHS9U

32x2.3 mm Duo-Fast C SHEG (ie: screw hardened electro galvanized) machine driven nails (code D40810) or equivalent may be used instead of the specified 35x3.15 mm Pryda Timber Connector Nails to fix selected Pryda connectors provided that the following requirements are strictly adhered to:

- Design capacities shall be reduced by 20% using the same number of nails as specified for the connectors and
- Nails shall be driven at nail spacings and edge distances closely following the dimple pattern on un-punched QHS6U and QHS9U.

Extreme care must be taken when using machine driven nails as the prevailing installation practices tend to inhibit compliance with the above requirements.

Screw hardened, electro galvanised Paslode nails that are appropriate include:

- Duo-Fast C SHEG 32 x 2.3 (D40810)
- Paslode 32 x 2.5 mm (B25110)
- Duo-Fast 32 x 2.5 mm (D41060)
- Pas Coil 32 x 2.5 SHEG 2 Pack (B25250)
- Impulse 32 x 2.5 SHEG (B40020)

## TRIPLE GRIPS

### FEATURES AND BENEFITS

**EASY:** Pre-bent for quick installation.

**VERSATILE:** Can be used for several applications including roof truss to wall plate, joist to supporting beam, purlin to truss, hanger to ceiling joist.

**STRONG:** Precision machined folded angles to proven design. Made from G300 galvanised steel..

### SPECIFICATIONS

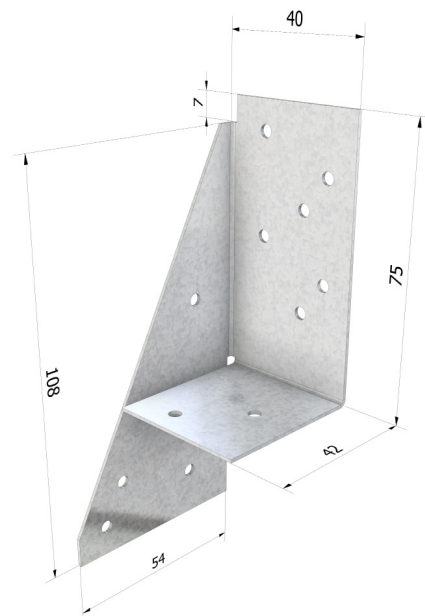
STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails OR Pryda painted hex head 12G x 35mm Screws

Versatile pre-bent framing anchor.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel



## TRIPLEGRIPS

PRODUCT CODE	MATERIAL	SIZE	PROFILE	QUANTITY
MPTGAR	G300 Z275 Galvanised Steel	115 x 60 x 40mm	Right	50
MPTGAL			Left	50

## PRYDA 12-35 SCREWS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
TCS12-35/1k	Galvanised Steel	Red Hex Head 5/16 or 8mm socket size Zip Drilling Tip	12G x 35mm	1 Carton	1000
TCS12-65/1k		Black Hex Head 5/16 or 8mm socket size Zip Drilling Tip	12G x 65mm	1 Carton	1000

## PRYDA TIMBER CONNECTOR NAILS

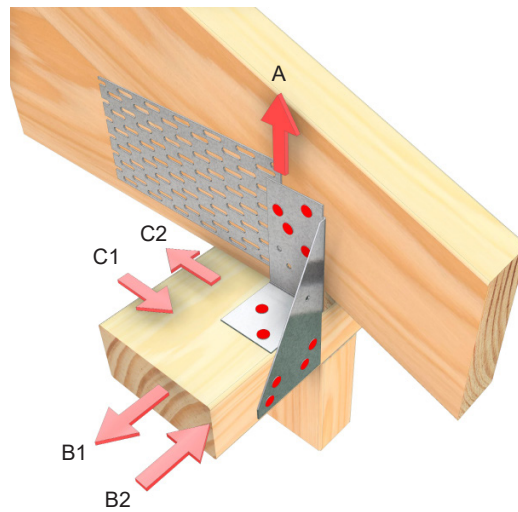
PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNGB	Galvanised Steel	Flat Head	35 x 3.15mm	500g cardboard packs x 10	5kg
OSNG				1kg cardboard packs x 10	10kg
TPOSNG				5kg Trade pack x 1	5kg

### IMPORTANT:

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## DESIGN CAPACITIES

### LOAD DIRECTIONS



LOAD CASE	DESIGN CAPACITY $\Phi N_j$ (KN) FOR A SINGLE MULTIGRIP FOR TIMBER JOINT GROUP						
	LOAD DIRECTION	J3	J2	JD5	JD4	JD3	JD2
1.2G + Wd or Wind Uplift	A	3.8	5.3	3.2	3.8	4.6	5.8
	B1	3	4	2.2	2.7	3.9	5.2
	B2	1.6	1.8	0.6	1	1.6	2.5
	C1	3.3	4.5	2.2	2.9	4.3	4.5
	C2	2.4	2.4	2.4	2.4	2.4	2.4

#### Notes:

1. The above capacities apply directly to all Category 1 joints. For all other joints, ie. Category 2 or 3 joints as per AS1720.1:2010, multiply these capacities by 0.94 or 0.88 respectively.
2. Load Direction – refer illustration
3. Screw fixing – the tabulated capacities can be achieved by using half as many screws as specified for nails. i.e. for a typical truss to wall plate connection, use 2 screws on truss, 2 screws on side of wall plate and 1 screw on top of wall plate.



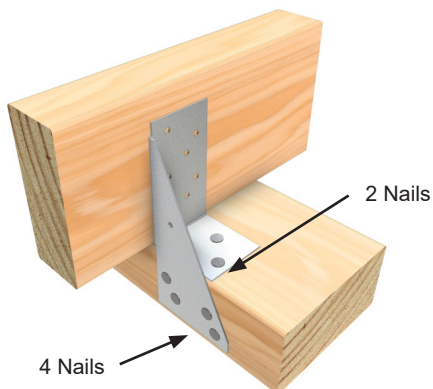
**LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?**

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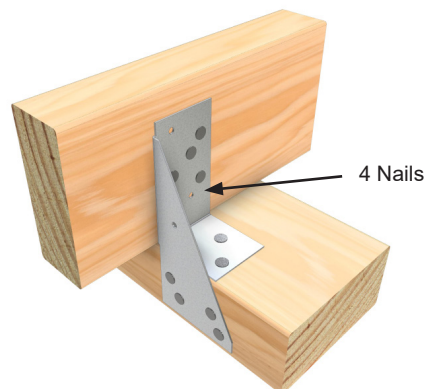
## INSTALLATION

### STEP 1

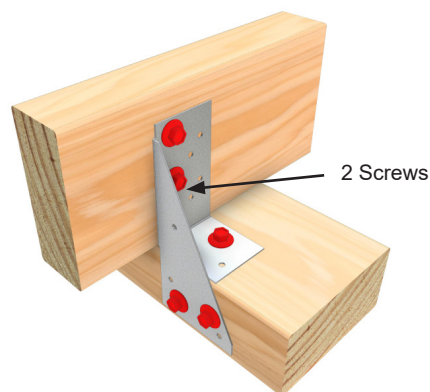
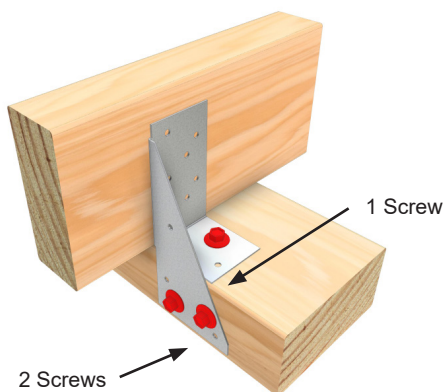
#### NAIL FIX DETAIL



### STEP 2



#### SCREW FIX DETAIL



- Position the Triple Grip against tie down member and support. Fix 4 Pryda 35 x 3.15mm Nails or 2 Pryda TCS12 x 35mm screws into the side face of the supporting member and 2 nails or 1 screw to the top face.

- Ensure the supported crossing member is directly bearing on support and is firmly against Triplegrip, nail fix to face of crossing member with 4 Pryda 35x3.15 nails or 2 Pryda TCS12-35 screws.

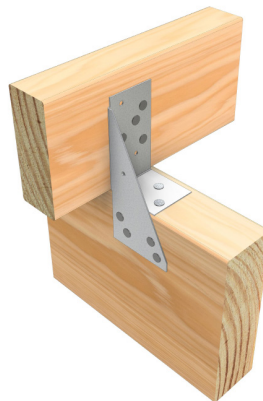
## APPLICATIONS



Roof Truss to Wall Plate



Rafter or Ceiling Joist  
to Wall Plate



Purlin to beam



Wall Stud to Bottom Plate

# HIGH CAPACITY TIE DOWN PLATES

## FEATURES AND BENEFITS

**EASY:** Comes in a kit with washers ready to install onto tie down rods.

**STRONG:** 8.0mm G250 hot dipped galvanised steel.

**VERSATILE:** Curved washer design allows for different roof pitches up to a maximum of 30 degrees.

## SPECIFICATIONS

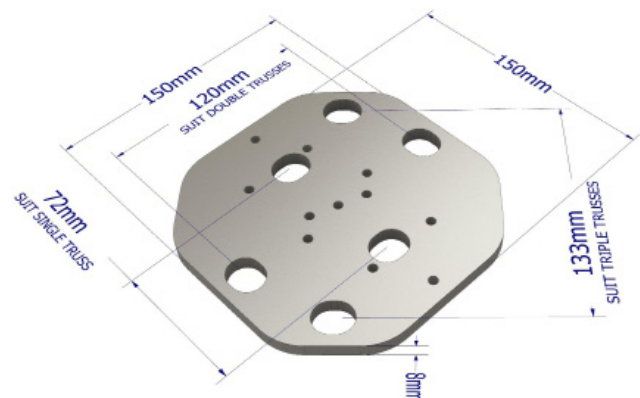
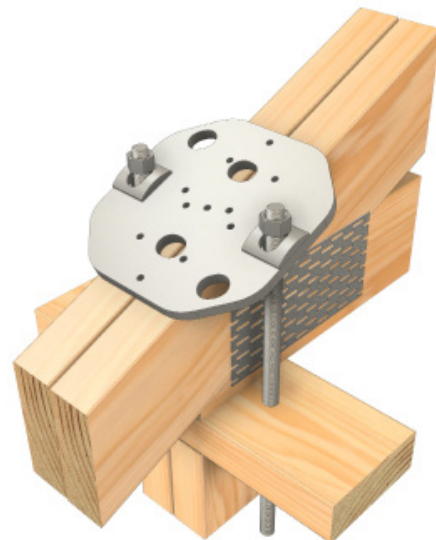
STEEL	G250
THICKNESS	8.0mm
CORROSION RESISTANCE	Hot Dip Galvanised
PRODUCT CODES	HCTD – For standard timber frames
PACKING	HCTD – 10 kits 1 x HCTD plate 2 x HCTD/OW curved (over) washers to suit M12 rods

Extreme tie down capacity, perfect for girder trusses in cyclonic areas.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum Z275 Galvanised Steel





## DESIGN CAPACITIES

### SINGLE PLATE

TIMBER GRADE	TRUSS LAMINATES(2)	DESIGN CAPACITY(5) (KN)	MINIMUM TIE-DOWN ROD/MIN. GRADE
LVL 10/13 MGP 10/12	Single	45.0	2/M12 (4.6s)
	Multiple	54.0	2/M12 (4.6s)
LVL 14, 18 F17, F27	Single	54.0	2/M12 (4.6s)
	Multiple	54.0	2/M12 (4.6s)

Notes:

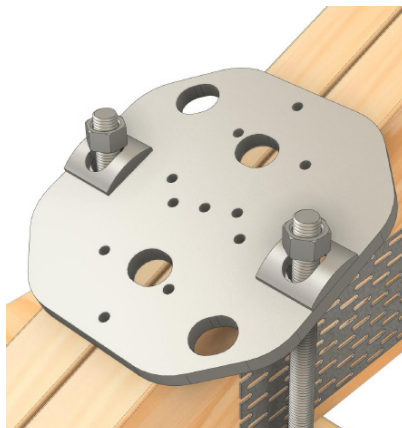
1. This Table values are valid for both internal and external tie-downs.
2. Single refers to 1/35 or 1/45 truss laminate. "Multiple" refers to any multiple laminate (2/35, 2/45 or 3/35).
3. The HCTD plate should be orientated correctly to accommodate single, double, or triple laminated trusses. See illustration.
4. The Design Capacities given here are valid only if the tie-down rods are adequately anchored to the ground.

## INSTALLATION DETAIL USING SINGLE PLATE

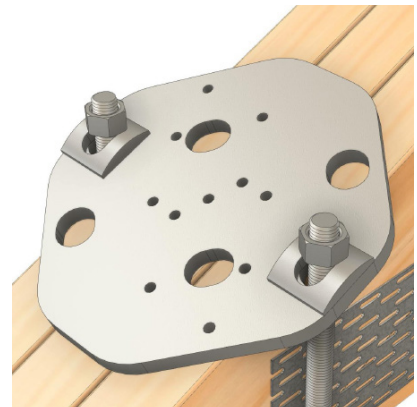
**SINGLE TRUSS**



**DOUBLE TRUSS**



**TRIPLE TRUSS**



#### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.



## DESIGN CAPACITIES

### DOUBLE PLATE

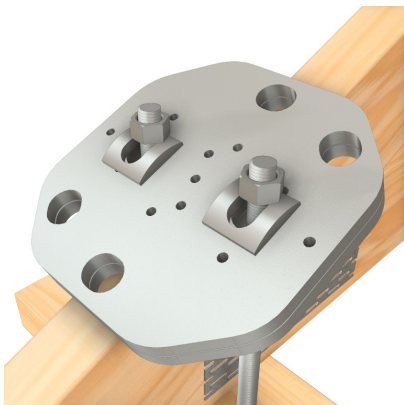
TIMBER GRADE	TRUSS LAMINATES(2)	DESIGN CAPACITY(5) (KN)	MINIMUM TIE-DOWN ROD/MIN. GRADE
LVL 10/13 MGP 10/12	Single	45.0	2/M12 (4.6s)
	Multiple	90.0	2/M12 (8.8s) <sup>4</sup>
LVL 14, 18 F17, F27	Single	75.0	2/M12 (8.8s) <sup>4</sup>
	Multiple	100.0	2/M12 (8.8s) <sup>4</sup>

Notes:

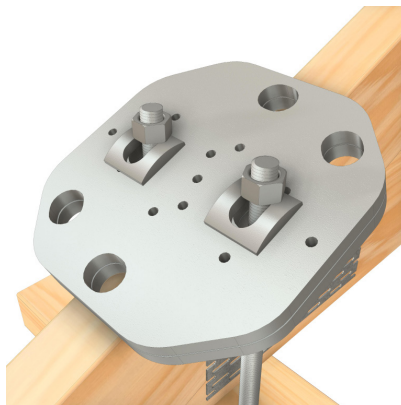
1. This Table values are valid for both internal and external tie-downs.
2. Single refers to 1/35 or 1/45 truss laminate. "Multiple" refers to any multiple laminate (2/35, 2/45 or 3/35).
3. The HCTD plate should be orientated correctly to accommodate single, double, or triple laminated trusses. See illustration.
4. 4Nuts supplied with kits are grade 4.6s. Upgrade nuts used with M12 (8.8s) to grade 8.8s
5. The Design Capacities given here are valid only if the tie-down rods are adequately anchored to the ground.

## INSTALLATION DETAIL USING DOUBLE PLATES

**SINGLE TRUSS**



**DOUBLE TRUSS**



**TRIPLE TRUSS**



**LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?**

SEE OUR CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AVAILABLE AT [PRYDA.COM.AU](https://www.pryda.com.au)

# HOLD DOWN BRACKET

## FEATURES AND BENEFITS

**EASY:** Can be fixed with nails, screws, and bolts

**STRONG:** 2.0mm G300 Z275 Galvanised Steel

**VERSATILE:** Can be used for a variety of applications, such as a tie down for trusses, wall frames and narrow wall bracing units

## SPECIFICATIONS

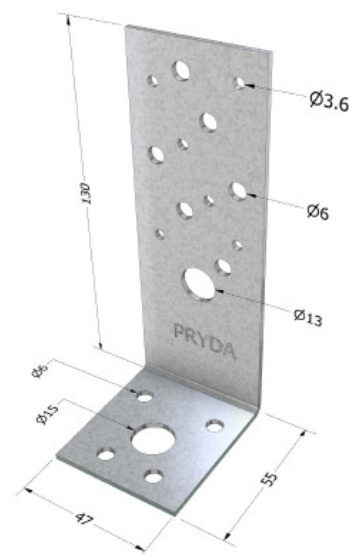
PRODUCT CODE	MPCPAH
STEEL	G300
QUANTITY	75
THICKNESS	2.0mm
CORROSION RESISTANCE	Z275
TIMBER FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails OR Pryda painted hex head screws 12G x 35mm for long leg 12G x 65mm for short leg
ANCHORING FASTENER	M12 Tie-down rod or M12 x 150mm Anka Screw AND 40 x 40 x 5mm square washer
SIZE	47 x 55 x 130mm

Tie down resistance for a variety of applications and with a variety of fasteners.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel

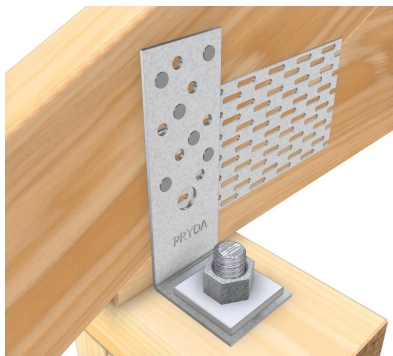


## DESIGN CAPACITIES

The design capacities for an MPCPAH bracket are tabulated below for use with both 35 x 3.15mm Pryda Timber Connector nails and Pryda painted hex head screws 12G x 35mm and fixed with an appropriate tie-down anchor. These capacities are also suitable when MPCPAH is used as a tie-down bracket for wall studs.

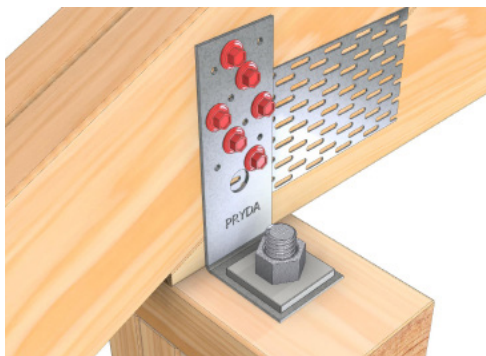
### UPLIFT CAPACITIES FOR A SINGLE BRACKET

6/35 x 3.15mm Pryda Timber Connector nails on supported truss or stud.



JOINT GROUP OF TRUSS CHORD	UPLIFT CAPACITY (KN) (USING 6 NAILS INTO TRUSS/STUD)
JD5	4.7
JD4	5.7
JD3	7.9

6/35 x 3.15mm Pryda Timber Connector nails on supported truss or stud.



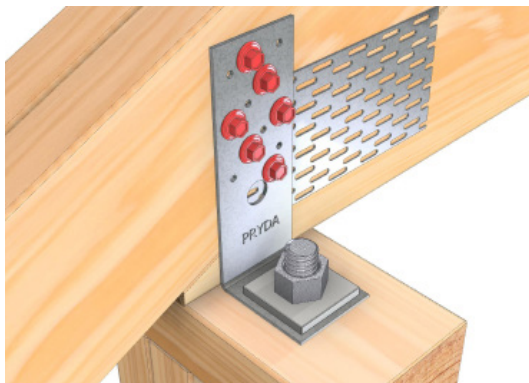
JOINT GROUP OF TRUSS CHORD	UPLIFT CAPACITY (KN) (USING 6 SCREWS INTO TRUSS/STUD)
JD5	10.9
JD4	15.0
JD3	15.0

#### Notes:

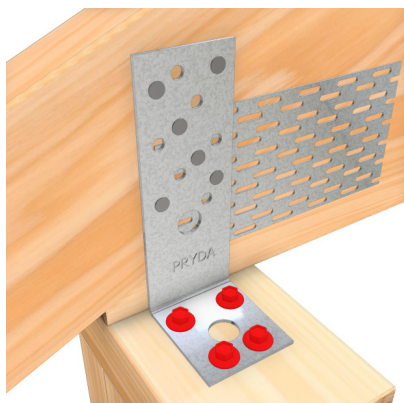
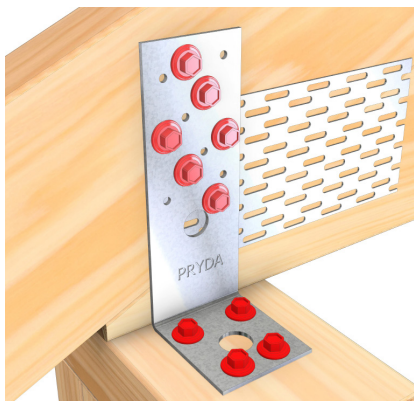
1. The design capacities given here apply directly to all Category 1 joints. For all other joints, i.e Category 2 or 3 joints as per AS1720.1:2010, multiply these capacities by 0.94 or 0.88 respectively.
2. For a pair of MPCPAH brackets, double up the tabulated capacities.
3. The above values (for nails or screws) are only applicable: a) if the anchorage into the supporting member has an equivalent or better capacity, b) All screws are set 25mm in from timber edge, c) All nails are set 15mm in from timber edge.

## APPLICATION EXAMPLES

### TRUSS TIE DOWN

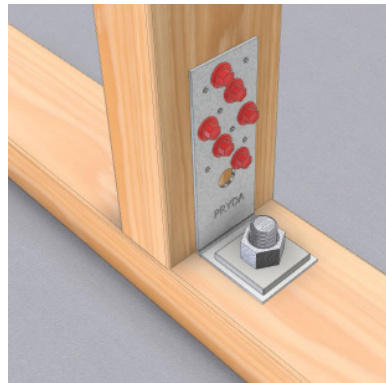


- Use an M12 tie-down rod with 40x40x5.0 washer anchored into concrete using a suitable epoxy set chemical anchor.
- Alternatively, to resist low uplifts, each bracket may be anchored using 4/ Pryda painted hex head 12G x 35mm screws into single wall plates giving capacities of 3.5 kN (JD5), 4.4 kN (JD4) or 6.0 kN (JD3).



- Additional connectors will be required to transfer tie-down forces from wall plate to foundation. Use 65mm screws (TCS12-65) when double wall plates are available and increase anchorage capacities accordingly to 7.0 kN (JD5), 8.5 kN (JD4) or 10.0 kN (JD3).

### STUD TIE DOWN



- When anchored directly to concrete slab/foundation Pryda recommends using M12 Ramset™ Ankascrew™. However, the designer should ensure the design capacity of the slab tie down connection meets or exceeds the capacity of the connector otherwise the lower of the design values between the connector and the tie down should be adopted.
- Typically, an M12x150 Ramset Ankascrew (with a min. 40x40x5 washer) would give an anchorage capacity of 14.0 kN in Grade 20 concrete used in an external 90mm wall frame having 35mm bottom plates.
- Using Ankascrews on internal walls can be subject to the depth of the slab – e.g. for 85-100 mm waffle pods 150mm anchors will be too long for the slab thickness and may limit the capacity of the connector.

## PURLIN CLEAT

### FEATURES AND BENEFITS

**EASY:** Can be fixed with nails or Screws

**STRONG:** 1.85mm G250 Z275 Galvanised Steel

**VERSATILE:** Can also be used to connect wall plates to studs

### SPECIFICATIONS

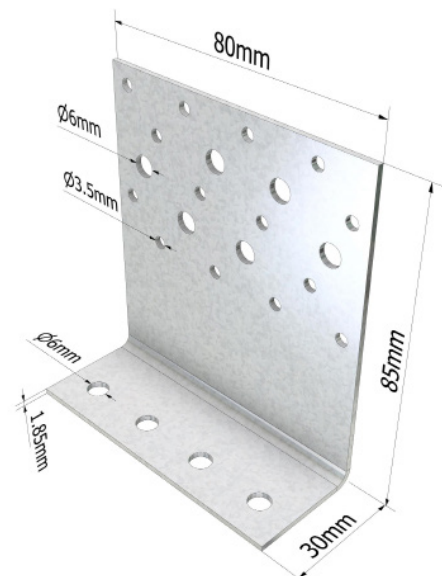
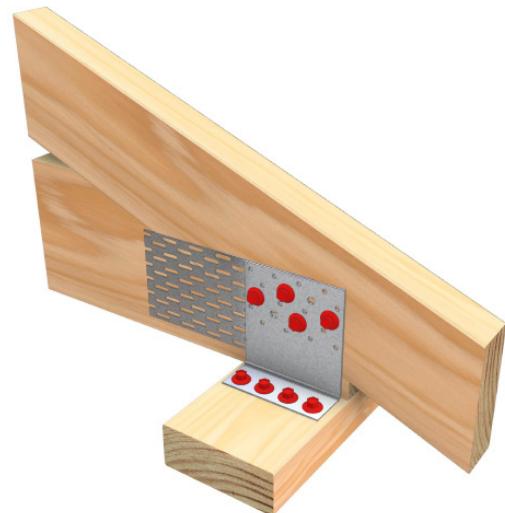
PRODUCT CODE	NPPC8
STEEL	G250
QUANTITY	25
THICKNESS	1.85mm
CORROSION RESISTANCE	Z275
FASTENERS	Pryda 35 x 3.15mm Timber Connector Nails OR Pryda painted hex head screws 12G x 35mm for long side 12G x 65mm for short side
SIZE	80 x 30 x 85mm

Strong and rigid connection frequently used to connect trusses/rafters to beams and wall plates.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G250 Z275 Galvanised Steel





## DESIGN CAPACITIES

For truss tie-down application, it is assumed that the wall plate, and its fixings to studs, are adequate in its own right, to resist design loads given in the table.

### SHORT FLANGE FIXING

Single wall plates - 4/ Pryda red painted hex head 35mm screws, code TCS12-35

Double wall plates - 4/ Pryda black painted hex head 65mm screws, code TCS12-65

### LONG FLANGE – NAIL OPTION

Using 12/35 x 3.15mm Pryda Timber Connector nails

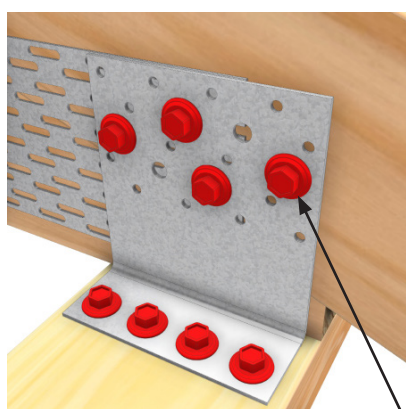
JOINT GROUP OF TRUSS CHORD OR STUD	UPLIFT CAPACITY (KN) FOR A SINGLE CLEAT	
	SINGLE WALL PLATES USING TCS12-35	DOUBLE WALL PLATES USING TCS12-65
JD5	6.7	8.8
JD4	8.3	10.5
JD3	11.0	14.0

### LONG FLANGE – SCREW OPTION

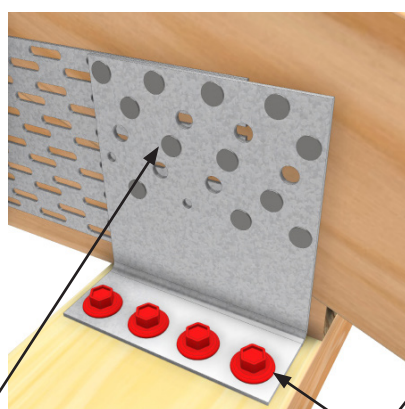
Using 4/ Pryda red painted hex head 35mm screws

JOINT GROUP OF TRUSS CHORD OR STUD	UPLIFT CAPACITY (KN) FOR A SINGLE CLEAT	
	SINGLE WALL PLATES USING TCS12-35	DOUBLE WALL PLATES USING TCS12-65
JD5	6.7	7.0
JD4	8.3	10.0
JD3	11.0	14.0

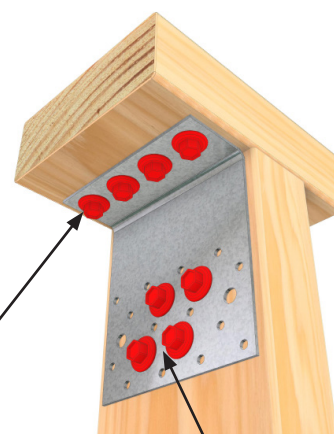
## APPLICATION EXAMPLES



12/35x3.15mm Pryda Timber Connector nails or 4 x Pryda TCS12-35 screws



4 x Pryda TCS12-35mm screws for single wall plate or 4 x TCS12-65mm screws for double wall plates



12/35x3.15mm Pryda Timber Connector nails or 4 x Pryda TCS12-35 screws

## CPB BRACKET

### FEATURES AND BENEFITS

**EASY:** Fixed with screws to the truss and uses a 16mm tie down rod for continuous connection straight down to the slab or reinforced blockwork wall.

**STRONG:** 3.0mm G300 Z275 Steel.

**VERSATILE:** Can be used for a variety of tie down applications, onto blockwork / timber / steel frames.

### SPECIFICATIONS

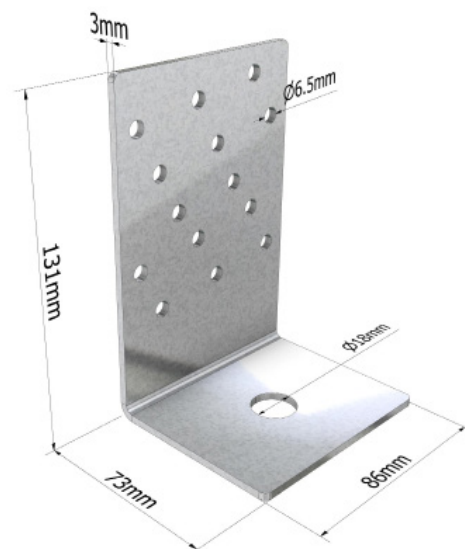
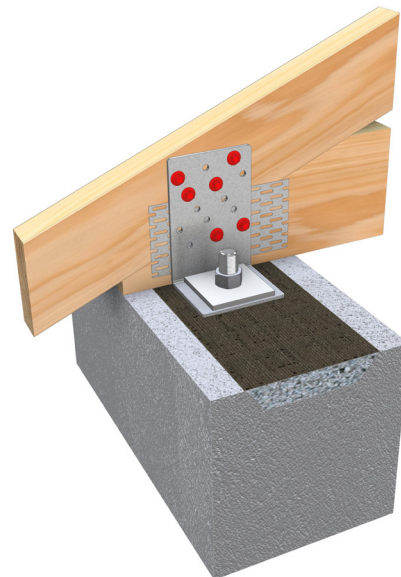
PRODUCT CODE	CPB
STEEL	G300
QUANTITY	20
THICKNESS	3.0mm
CORROSION RESISTANCE	Z275
TRUSS FASTENERS	Pryda painted hex head screws 12G x 35mm (TCS12-35)
ANCHORING FASTENER	M16 Tie-down rod or suitable epoxy set chemical anchor AND 65 x 65 x 5mm square washer/s Note: two washers will be required for high load applications

The strongest L bracket tie down.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel





## DESIGN CAPACITIES

The design capacities for single or double brackets are tabulated below for use with either six or nine Pryda TCS12-35 screws into truss the chord and M16 tie-down rod into blockwork or steel frame. Note: the six-screw option will require a single 65 x 65 x 5 washer and the nine-screw option requires double washers.

### UPLIFT CAPACITIES FOR A SINGLE BRACKET

JOINT GROUP OF TRUSS CHORD	UPLIFT CAPACITY (KN)	
	6 SCREWS/ BRACKET WITH SINGLE WASHER	9 SCREWS/BRACKETWITHDOUBLEWASHERS
JD5	10.0	15.0
JD4	15.0	22.5
JD3	16.0	25.0

### UPLIFT CAPACITIES FOR DOUBLE BRACKETS

JOINT GROUP OF TRUSS CHORD	UPLIFT CAPACITY (KN)	
	6 SCREWS/ BRACKET WITH SINGLE WASHER	9 SCREWS/BRACKETWITHDOUBLEWASHERS
JD5	20.0	30.0
JD4	30.0	45.0
JD3	32.0	50.0

## TIE-DOWN ANCHORS

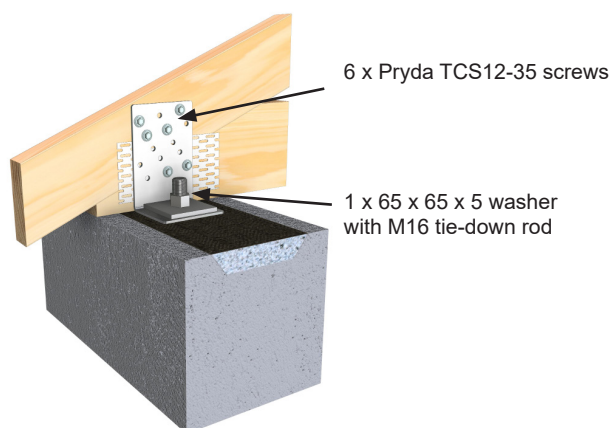
### BLOCKWORK

Use an M16 tie-down anchor with single or double 65x65x5 washers, either embedded into masonry or using a suitable epoxy set chemical anchor to achieve the design capacities tabulated above.

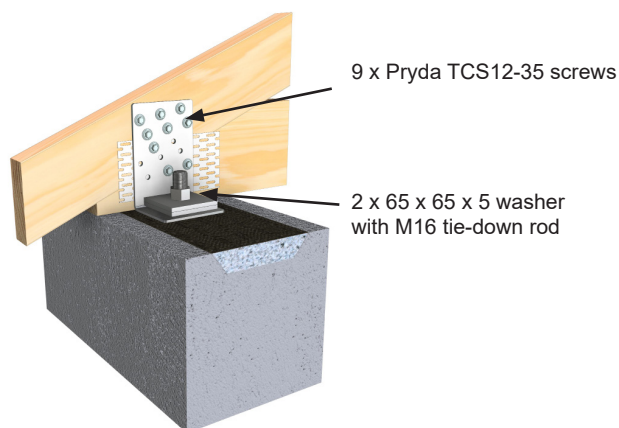
### STEEL OR TIMBER FRAME

Use an M16 tie-down rod with single or double 65x65x5 washers, anchored directly into the foundation. If fixed to the wall plate, it must be ensured that fixing load path is followed through and the wall plate itself is structurally adequate.

#### CBP BRACKET (6 SCREWS, SINGLE WASHER)



#### CBP BRACKET (9 SCREWS, DOUBLE WASHERS)



## TRUSS TIE

### FEATURES AND BENEFITS

**SIMPLE:** Easy and quick to install having pre-formed teeth that allow it to be hammered in without nails.

**DURABLE:** Made from G300, Z275 steel.

**STRONG:** Can be used in pairs to achieve double the capacity.

### SPECIFICATIONS

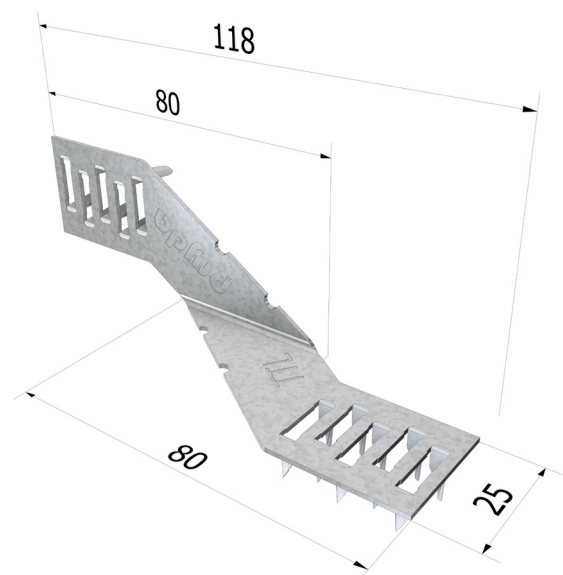
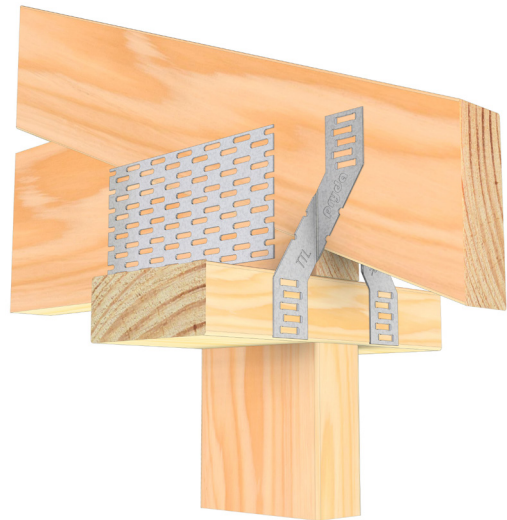
PRODUCT CODE	TT
STEEL	G300
QUANTITY	50
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275
SIZE	118mm Length

Simplifying the tie down of roof trusses to timber top plates for low tie-down requirement.



#### AS1684 COMPLIANT

- Minimum G300 Grade Steel
- Z275 Galvanised Steel



## DESIGN CAPACITIES

FIXING DETAILS	TIE-DOWN DESIGN CAPACITY $\Phi$ NJ (KN) FOR JOINT GROUP						
	GREEN TIMBER			DRY TIMBER			
	J4	J3	J2	JD6	JD5	JD4	JD3
Claw Nails only	1	1.2	1.6	0.8	1	1.2	1.6

Notes:

1. The above capacities apply directly to all Category 1 joints. For all other joints, i.e. Category 2 or 3 joints as per AS1720.1:2010, multiply these capacities by 0.94 or 0.88 respectively.

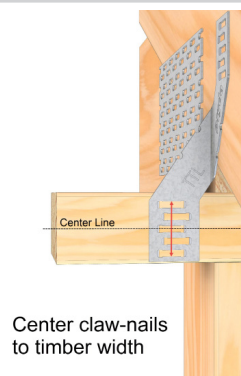
## INSTALLATION

### STEP 1



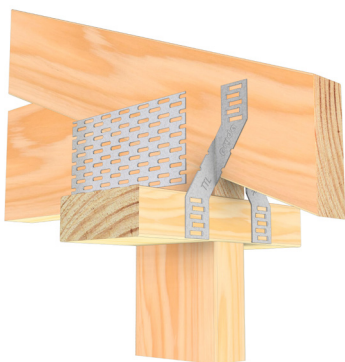
- Prevent the truss/rafter from moving along the top plate by Skew nailing the truss to the top plate.

### STEP 2



- The Truss Tie should be fixed on the outside face of top plate.
- Ensure to center the cluster of claw-nails to top plate edge width.

### STEP 3



- Hammer the Truss Tie into the truss/rafter, then into the top plate.
- The Truss Tie will bend slightly during this second operation, but this is eased by the small bending hole.
- If two Truss Ties are required, the second Truss Tie should be located on the opposite truss/rafter face.

## UNITIES

### FEATURES AND BENEFITS

**SIMPLE:** Easy to use for numerous right-angle connections.

**VERSATILE:** Available in standard 170mm or extended 400mm lengths.

**DURABLE:** Made from G300 Z275 steel.

### SPECIFICATIONS

STEEL	G300
THICKNESS	1.0mm
CORROSION RESISTANCE	Z275
LENGTHS	170mm, 400mm

### FASTENER REQUIRED

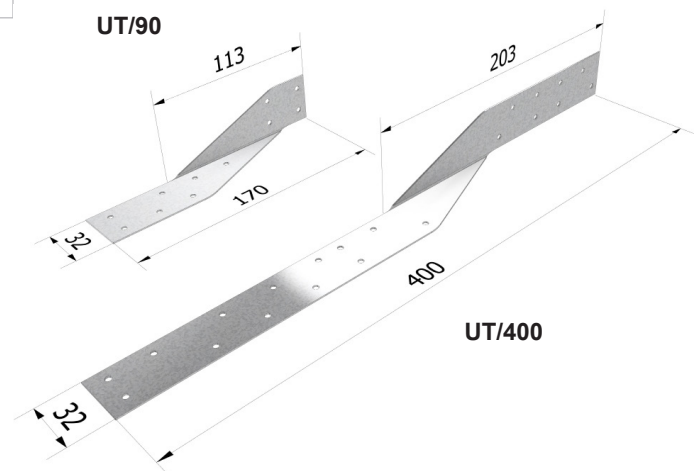
NAILS	Pryda Timber Connector Nails 35 x 3.15mm Product code - OSNG
SCREWS	Pryda Painted hex head 12G x 35mm or 65mm Screws

Universal ties for joining timber at right angles.



### AS1684 COMPLIANT

- Designed and tested in accordance with Australian standards (AS1649)
- Minimum G300 Z275 Galvanised Steel



## UNITIES

PRODUCT CODE	MATERIAL	LENGTH (MM)	QUANTITY
MPUT/90L	G300 Z275 Galvanised Steel	170	100
MPUT/90R		170	100
UT/400L		400	80
UT/400R		400	80
UT90U/L (Unpunched)		170	100
UT90U/R (Unpunched)		170	100

## PRYDA TIMBER CONNECTOR NAILS

PRODUCT CODE	MATERIAL	TYPE	SIZE	PACK CONFIGURATION	QUANTITY
OSNGB	Galvanised Steel	Flat Head	35 x 3.15mm	500g cardboard packs x 10	5kg
OSNG				1kg cardboard packs x 10	10kg
TPOSNG				5kg Trade pack x 1	5kg

## DESIGN CAPACITIES

LOAD CASE	LIMIT STATE DESIGN $\Phi$ NJ (KN) PER UT/90 OR UT/400 FOR JOINT GROUP (SEE NOTES)						
	J4	J3	J2	JD5	JD4	JD3	JD2
1.35G	1.3	1.9	2.6	1.6	1.9	2.6	3.4
1.2G+1.5Qf	1.6	2.3	3.2	1.9	2.3	3.2	4.1
1.2G+1.5Qr	1.8	2.5	3.6	2.1	2.5	3.6	4.5
1.2G+Wdn or Wind Uplift	2.6	3.8	5.3	3.2	3.8	5.3	6.8

### Notes:

- Fixing details are 4 @ 35x3.15 mm galvanised Pryda Timber Connector Nails into each end.
- Refer to Pryda's Connectors & Tie-down Design Guide available at [pryda.com.au](http://pryda.com.au) for description of load cases and joint groups.
- The above capacities apply directly to all Category 1 joints. For all other joints, i.e. Category 2 or 3 joints as per AS1720.1:2010, multiply these capacities by 0.94 or 0.88, respectively.
- Reduce tabulated capacities by 20% if machine driven nails (4 nails on each member) are used to fix UT90U/L or UT90U/R. Alternatively, one extra nail can be used for every 4 specified Pryda product nails.

### IMPORTANT:

READ THIS DATASHEET IN CONJUNCTION WITH PRYDA CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AND REFER TO ESSENTIAL NOTES AND GENERAL NOTES.

# INSTALLATION

## JOIST CROSSING PERPENDICULAR TO BEAM CONNECTION

### STEP 1



- Position the Unitie ensuring it is plumb and fix 4 Pryda 35 x 3.15mm Timber Connector Nails into the lower timber member
- If using the unpunched Unitie with a machine nailer, use 5 nails at even spacings

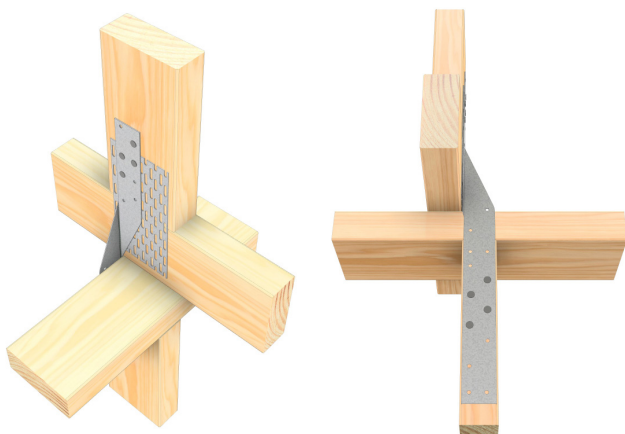
### STEP 2



- Position the upper timber member and fix another 4 Pryda 35 x 3.15mm Timber Connector Nails
- If using the unpunched Unitie with a machine nailer, use 5 nails at even spacings

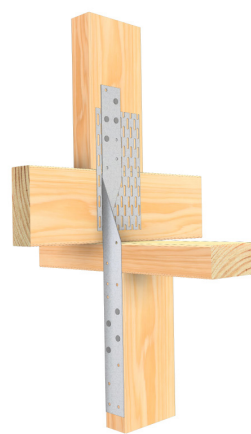
## SECURING TRUSS TO STUD

### STEP 1



- Using a 400mm Unitie, position on the truss so that the short leg of the UT400 is bearing on the truss web, and the long leg is on the face of the stud. Ensure the strap is centrally located to the stud and the tie is vertically plumb.
- Fix 4 Pryda 35 x 3.15mm Timber Connector Nails into the truss. Use the holes away from cut end of the vertical web whenever possible.
- If using a machine nailer, use 5 nails at even spacings and again select the area away from the cut end of the vertical web.

### STEP 2



- Ensure Unitie is taught and then fix a further 4 Pryda 35 x 3.15mm Timber Connector Nails into the stud. Select holes away from stud cut end to avoid timber splitting.
- If using a machine nailer, use 5 nails at even spacings following similar hole pattern, fasten nails through steel and away from stud cut end.

## FASTENING UNITIES

### BUILD WITH CONFIDENCE

#### WHERE POSSIBLE, HAND NAILING WITH PRYDA TIMBER CONNECTOR NAILS IS ALWAYS PREFERRED, WHY?

- Pryda Timber Connector Nails are forged in one piece, unlike clouts that are two pieces soldered together, meaning the head can pop off
- Pryda Nails are the correct diameter, ensuring a tight fit in prepunched holes = a stronger connection
- Design values and testing have all been conducted using Pryda Timber Connector Nails
- Hand hammered nails ensure correct nail positioning and drive depth (not driven too shallow or too deep)

### USING PASLODE MACHINE DRIVEN NAILS WITH UN-PUNCHED QHS6U AND QHS9U

32x2.3 mm Duo-Fast C SHEG (ie: screw hardened electro galvanized) machine driven nails (code D40810) or equivalent may be used instead of the specified 35x3.15 mm Pryda Timber Connector Nails to fix selected Pryda connectors provided that the following requirements are strictly adhered to:

- Design capacities shall be reduced by 20% using the same number of nails as specified for the connectors and
- Nails shall be driven at nail spacings and edge distances closely following the dimple pattern on un-punched QHS6U and QHS9U.

Extreme care must be taken when using machine driven nails as the prevailing installation practices tend to inhibit compliance with the above requirements.

Screw hardened, electro galvanised Paslode nails that are appropriate include:

- Duo-Fast C SHEG 32 x 2.3 (D40810)
- Paslode 32 x 2.5 mm (B25110)
- Duo-Fast 32 x 2.5 mm (D41060)
- Pas Coil 32 x 2.5 SHEG 2 Pack (B25250)
- Impulse 32 x 2.5 SHEG (B40020)



#### LOOKING FOR MORE DETAILS OR OTHER CONNECTORS IN OUR RANGE?

SEE OUR CONNECTORS & TIE-DOWN CONNECTORS DESIGN GUIDE AVAILABLE AT [PRYDA.COM.AU](https://www.pryda.com.au)



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**[www.pryda.com.au](http://www.pryda.com.au) [www.pryda.co.nz](http://www.pryda.co.nz)**

For more information call 1300 657 052 (Australia), 0800 88 22 44 (New Zealand) or email [info@pryda.com.au](mailto:info@pryda.com.au)