

LOAD RESTRAINT

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CHOOSING THE RIGHT LOAD RESTRAINT

When securing loads in your day-to-day business you need a solution that makes your work safe & simple.

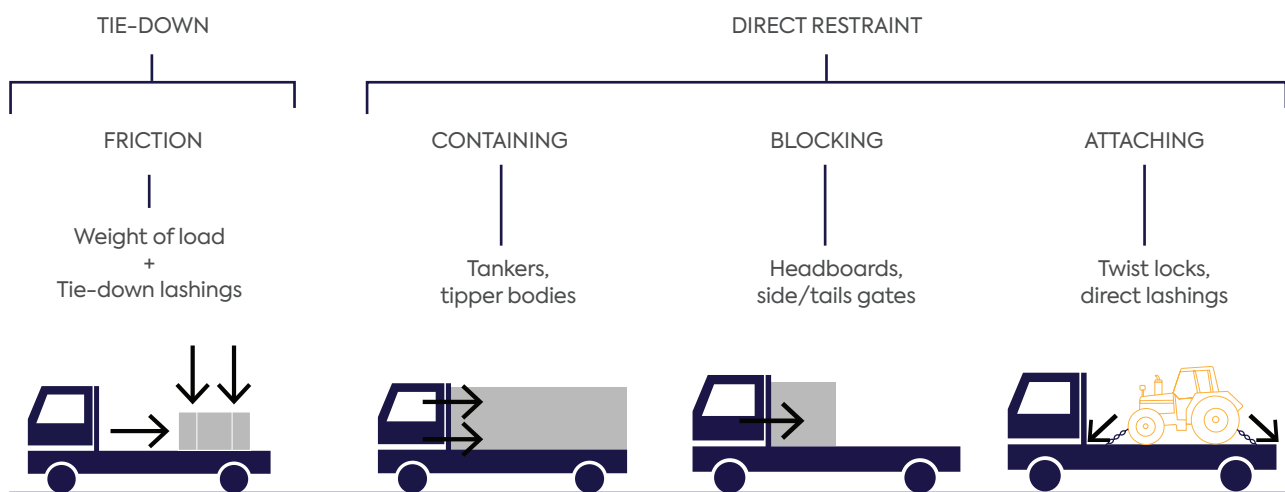
The Bullivants range of Load Restraint products include webbing assemblies, chains and accessories to ensure all of your application requirements are covered.

To ensure reliability, durability and compliance, all webbing material and components are tested and marked with all requirements as specified by Australian Standards.

Loads can be restrained by two basic methods: Tie-Down or Direct Restraints.

These methods cover the controlling load movement of friction, containing, blocking and attaching.

RESTRAINT METHODS



FIBRE IDENTIFICATION COLOUR CODING CHART

Type of Rope Fibre	Colour of Identifying Yarn
Polyester (PES)	Blue
Polyethylene (PE) staple	Orange
Polypropylene (PP)	Brown

DIRECT RESTRAINT

Direct Restraint methods are used generally for **Containing**, **Blocking** and **Attaching** loads on machinery like excavators, bobcats, graders, dozers and mining vehicles. This method can be used for most loads and is particularly useful for loads that are difficult to tie-down.

Attaching

A load can be directly restrained without relying on friction and is ideal for slippery loads and loads on wheels.

LASHING CAPACITY FOR TRANSPORT KITS		
Chain Type*	With Claw Hooks or 'Winged' Grab Hooks	*With 'Non-Winged' Grab Hooks or Edge Contact
6mm Grade 70	2.3t	1.7t
8mm Grade 70	3.8t	3.0t
10mm Grade 70	6.0t	4.5t
13mm Grade 70	9.0t	6.7t

LASHING CAPACITY FOR WEBBING STRAPS	
Lashing	Lashing Capacity (LC)
25mm Webbing	0.25t
35mm Webbing	1.0t
50mm Webbing	2.5t
75mm Webbing	5.0t

*Different hooks have different lashing capacities. Chains that pass over sharp edges such as coaming rails have reduced lashing capacity.

Blocking

The Blocking method is used to block the load from moving forwards, backwards or sideways by using a headboard and side/tail gate, provided they are designed to withstand the load force.

Containing

A contained load is where the load is restrained against horizontal movement by the vehicle structure or by other parts of the load. For heavy loads, contained means the load is simultaneously fully blocked forwards, rearwards and sideways.

When selecting the right Load Restraint you should check the following to ensure you're using the correct product for your application:

- What is the weight of your load?
- Is the load blocked or unblocked?
- What is the amount of friction between the surfaces of your load and the vehicle deck?
- Required lashing capacity for the mode of use and the load to be secured
- Restraints are strong enough to suit your load
- Ensure you are using enough lashings of sufficient capacity if using the tie down restraint method
- Fitted tags provide information to ensure the product is suitable for the load being secured


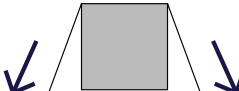



A minimum amount of force of a restraint system must be able to withstand in each direction to ensure stability of the load and vehicle under expected driving conditions.

LOAD RESTRAINT

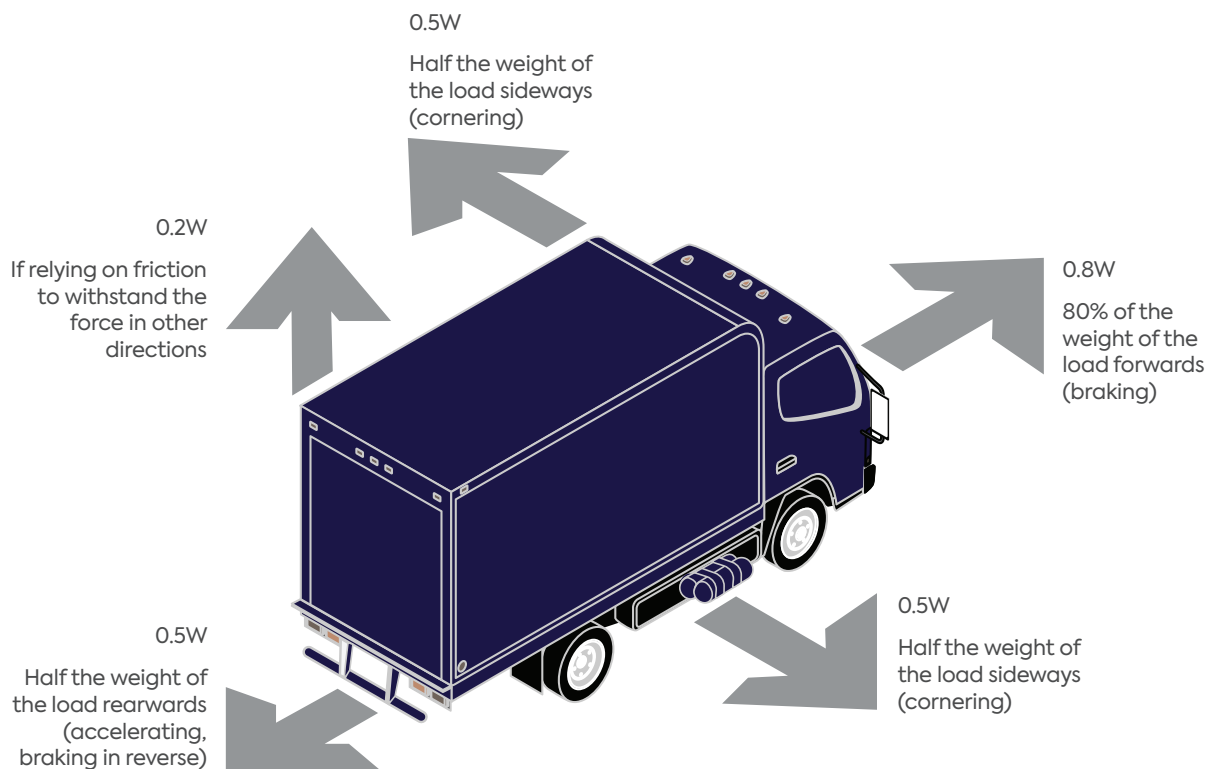
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TIE-DOWN RESTRAINTS

Tie-Down Restraints use friction to hold a load, which stops the load from moving forwards, sideways or backwards. To maintain the friction force during transportation the load must be tensioned correctly and always remain in contact with the vehicle. The tension applied to the load is impacted by the angle at which the lashing is applied. When the tie-down lashings are at an angle, the force applied down on the load is reduced. The clamping force is very small when the lashing is near horizontal and more lashings may be required. For example, a single strap at 90 degrees is equivalent to four straps at 15 degrees. The type of surface the load sits on may also impact the tension. A slippery surface provides less friction, however rubber or other friction surfaces can reduce required lashings by up to 50%.

TIE-DOWN ANGLE EFFECT			
	Approx. Angle	Tie-Down Angle Effect	Tie-Down Effectiveness
	90°	1.00	100%
	60°	0.85	85%
	45°	0.70	70%
	30°	0.50	50%
	15°	0.25	25%

HEAVY VEHICLE MINIMUM FORCE:



(W = Weight of the load)

RESTRAINT TYPES

Bullivants distributes a range of load restraint products that are compliant with Australian Standards and comprises the following categories:

Polyester Webbing Assemblies

Webbing, end fittings and tensioners. These products include ratchet assemblies and slide on or clip on truck winches.

Chains

These are typically fitted with grab hooks on each end and are tensioned with various types of ratchet or lever operated load binders. Not recommended for loads that can settle or crush during transportation.

Wire Rope

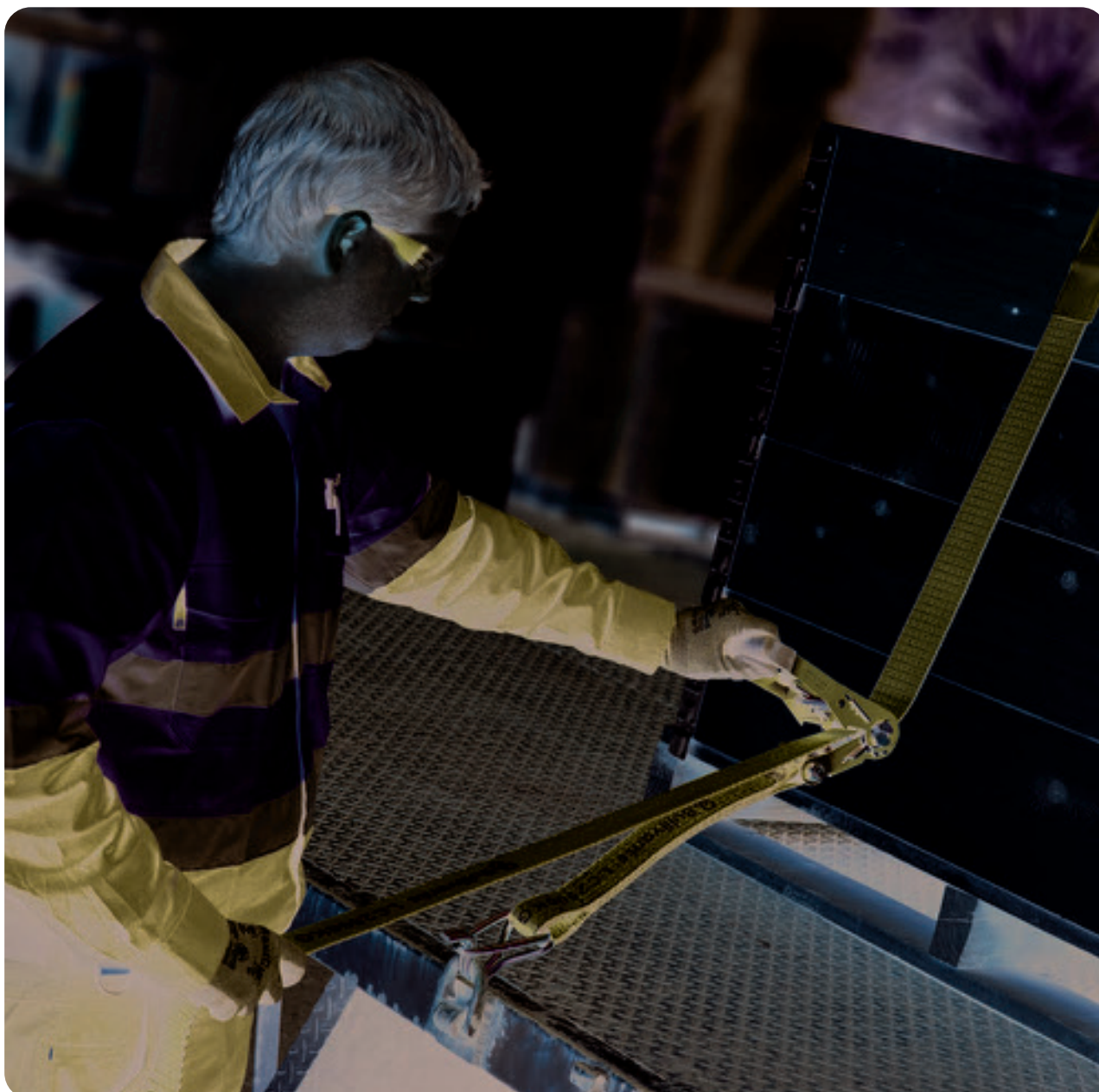
Can be used to tie down loads with rope tensioned by winches or turnbuckles.

WHY INSPECTION IS IMPORTANT

AS/NZS 4380 mandates that lashings must be replaced if they are weakened by 10% or more of their original strength. All restraint equipment must be inspected regularly and if the components are cracked, broken or worn they must not be used for restraining loads and must be discarded.

CARE & USE

- Never overload the lashing and always ensure the lashing is evenly loaded
- Ensure lashing is not twisted or knotted when in use
- Always inspect your lashing equipment prior to use for wear and damage
- Protect the lashing from sharp edges and use protective sleeves (for webbing) and corner protection when required
- Refer to safe use guide/instructions as supplied with all Bullivants load restraint rigging



CARGO RESTRAINTS

Ratchet Tie-Down

- Versatile load restraints for diverse applications
- Suitable for use in the transport industry
- Complies with AS/NZS 4380



Cam buckle S-Hook



S-Hook



J-Hook



Double J-Hook



Endless Type



Hook & Keeper – 2,500kg



Hook & Keeper – 5,000kg

Description	Lashing Capacity kg	Length m	Webbing Width mm	Part Number
Cam buckle with S-Hooks each end	250	3	25	WCA-025-0250-030-SH
S-Hooks each end	250	4	25	WRA-025-0250-040-SH
S-Hooks each end	400	4	25	WRA-025-0400-040-SH
S-Hooks each end	500	6	50	WRA-050-0500-060-SH
S-Hooks each end	600	1.6	36	WRA-036-0600-016-SH
S-Hooks each end	600	6	36	WRA-036-0600-060-SH
J-Hooks each end	250	4	25	WRA-025-0250-040-JH
J-Hooks each end	2500	9	50	WRA-050-2500-090-JH
Double J-Hooks each end	1000	6	35	WRA-035-1000-060-DJH
Double J-Hooks each end	2000	9	50	WRA-050-2000-090-JH
Endless type	500	1.8	25	WRA-025-0500-018-EL
Endless type	500	4	25	WRA-025-0500-040-EL
Endless type	700	4	25	WRA-025-0700-040-EL
Endless type	400	5	25	WRA-025-0400-050-EL
Endless type	2000	2.2	36	WRA-036-2000-022-EL
Hook & keeper each end	1000	6	36	WRA-036-1000-060-HK
Hook & keeper each end	2000	4	50	WRA-050-2000-040-HK
Hook & keeper each end	2500	6	50	WRA-050-2500-060-HK
Hook & keeper each end	2500	9	50	WRA-050-2500-090-HK
Hook & keeper each end	5000	9	75	WRA-075-5000-090-HK
Reverse ratchet with hook & keeper	2500	9	50	WRA-050-2500-090-RHK

Replacement Load Strap

- Replacement webbing strap
- Hook and keeper
- Complies with AS/NZS 4380



WRLS-050-2500-090-HK

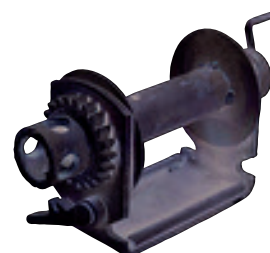
Description	Lashing Capacity kg	Length m	Webbing Width mm	Part Number
Replacement load strap – Hook & keeper	2500	9	50	WRLS-050-2500-090-HK
Replacement load strap – Hook & keeper	5000	9	75	WRLS-075-5000-090-HK

Truck Winch

- Versatile load restraints for diverse applications
- Suitable for use in the transport industry
- Complies with AS/NZ 4380



Clip-on With Strap



Slide-on With No Strap

Description	Lashing Capacity kg	Length m	Webbing Width mm	Part Number
Clip-on with strap – Hook & keeper	2500	9	50	WTW-C-2500-90-HK
Slide-on with strap – Hook & keeper	2500	9	50	WTW-RS-2500-90-HK
Clip-on with no strap	2500	–	–	WTW-C-2500-NOST
Slide-on with no strap	2500	–	–	WTW-S-2500-NOST
Replacement strap – Keeper one end and stitched turnback other end	2500	9	50	WRLS-050-2500-090-HS

CHAIN ASSEMBLIES

Load Binder Kits

- Manufactured from Grade 70 gold passivated chain
- Complete with winged grab hook end fittings
- Suitable for use in the transport industry
- Complies with AS/NZS 4344
- Not suitable for lifting applications

Bullivants



Chain Size mm	Length m	Lashing Capacity kg	Part Number
8	6	3800	WCTP-080D-006-GRAB
8	9	3800	WCTP-080D-009-GRAB
10	6	6000	WCTP-100D-006-GRAB
10	9	6000	WCTP-100D-009-GRAB

Transport Chain – Grade 70

Bullivants

- Specifically designed and tested for strength and durability, to suit the rigorous requirements of the transport industry
- Proof tested and marked with the relevant identification, and shows appropriate lashing capacities to enable selection of size and number of chains required to suit load
- Suitable for truck winches
- Not suitable for lifting applications
- Complies with AS/NZS 4344



Chain Size mm	Lashing Capacity kg	Part Number
6	2300	WCTP-060D
8	3800	WCTP-080D
10	6000	WCTP-100D
13	9000	WCTP-130D

Grab Hooks – Grade 70

Bullivants

- To be used with Grade 70 chain only
- Winged type grab hook
- Suitable for use in transport industry, for load binder chains, drag chains and general tie-down applications
- Not suitable for lifting applications
- Complies with AS/NZS 4344



Chain Size mm	Lashing Capacity kg	Part Number
6	2300	WHCG-060-W
8	3800	WHCG-080-W
10	6000	WHCG-100-W
13	9000	WHCG-130-W

LOAD BINDERS

Load Binders – Ratchet – Grade 70

- Grab hook end fitting
- Easy to use with reduced recoil and risk of injury during tensioning
- To be used with Grade 70 transport chain
- Suitable for use in transport industry, for load binder chains and general tie-down applications
- Not suitable for industrial lifting purposes
- Complies with AS/NZS 4344

Bullivants



Chain Size mm	Lashing Capacity kg	Part Number
6	2300	WLDB-060-R-GH-AS
8	3800	WLDB-080-R-GH-AS
10	6000	WLDB-100-R-GH-AS
13	9000	WLDB-130-R-GH-AS

Maxibinder Ausbinder

- Ergonomically designed
- Safer, quicker and easier to use
- High pre-tensioning force
- Suitable for use in the transport industry
- Complies with AS/NZS 4344

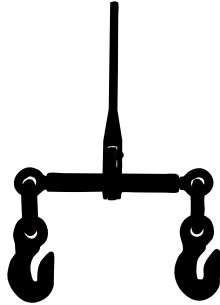


Chain Size mm	Lashing Capacity kg	Part Number
6	2300	WLDB-060-L-GH-G70-M
8	3800	WAUSB-080-L-SH-AS
10	6000	WAUSB-100-L-GH-AS

Load Binders – Ratchet – Grade 100

- Grab hook end fitting
- Easy to use with reduced recoil and risk of injury during tensioning
- For use with Grade 100 chain
- Finish: White powder coat
- Ideal for tensioning and general tie-down applications
- Complies with EN 12195.3

Bullivants



Chain Size mm	Lashing Capacity kg	Part Number
10	8000	WLDB-100-R-GH-G100
13	13400	WLDB-130-R-GH-G100

Load Binders – Lever – Grade 70

- Grab hook end fitting
- To be used with Grade 70 transport chain
- Suitable for use in transport industry, for load binder chains and general tie-down applications
- Not suitable for industrial lifting purposes
- Complies with AS/NZS 4344

Bullivants



Chain Size mm	Lashing Capacity kg	Part Number
6	2300	WLDB-060-L-GH-AS-W
8	3800	WLDB-080-L-GH-AS
10	6000	WLDB-100-L-GH-AS
13	9000	WLDB-130-L-GH-AS

SAFETY TIP

LOAD BINDER – DOS & DON'TS

DOS

- Secure the tensioned load binder handle by wrapping the loose end of the chain around the handle and tensioned chain
- Ensure Load binders are tight before moving and re-check frequently as loads will settle and may decrease tension
- Always apply load binders in a straight line without bending, so that the handle goes down when securing the load. Avoid kinks and tangles in chain
- Release handle with caution – KEEP CLEAR – Load binders can snap back. Use open palm under the handle and push upwards
- If load binder has defects, remove equipment immediately from service, clearly marking to indicate rejection

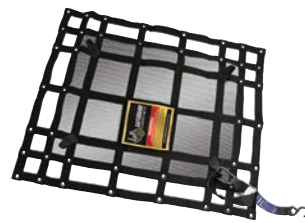
DON'TS

- Do not operate the lever binder while you or someone else is standing on the load
- Do not exceed the lashing capacity nominated on the handle for the appropriate size. Use only with chain complying with AS/NZS 4344 (Grade 70) and EN12195-3 (Grade 100)
- Do not use any handle extension (cheater bar or pipe) to tension or release – Hand tighten only
- Do not discard supplied instructions. Keep and share with others who may be using this load binder
- Chain and components used to form a restraint system should be of the same size and capacity. The rating of the system should be the lowest component lashing capacity. Chain or components should not be used in a manner that will exceed the lashing capacity recommendation.

CARGO NETS

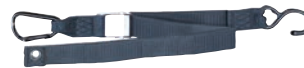
Cargo Net – Load Rated

- UV stabilised polyester webbing and mesh
- Anti tangle design
- Multiple anchor points
- Nets load rated up to 1000kg
- Perfect for utes, trucks, trailers and more



Description	Min. Tray Size m	Mesh Dimensions m	Dimensions m	Eyelets	Straps	Tabs	Capacity SWL kg	Part Number
Cargo Net Small	1.0 x 0.6	1.6 x 1.2	1.8 x 1.4	72	6	10	1000	WCN-SE-010-SSN200
Cargo Net Medium	1.6 x 1.2	2.4 x 1.8	2.6 x 2.0	96	6	18	1000	WCN-SE-010-MSN200
Cargo Net Dualcab	1.2 x 1.2	2.2 x 2.2	2.4 x 2.4	104	6	12	1000	WCN-SE-010-DSN200
Cargo Net Large	1.6 x 1.2	2.8 x 2.4	3.0 x 2.6	112	6	28	1000	WCN-SE-010-LSN200
Cargo Net XL	2.4 x 1.0	3.4 x 2.8	3.6 x 3.0	144	8	40	1000	WCN-SE-010-XSN200
Cargo Net XXL	3.2 x 2.0	4.2 x 3.0	4.4 x 3.2	160	10	36	1000	WCN-SE-010-XXSN200
Cargo Net XXXL	4.0 x 1.6	5.4 x 3.0	5.6 x 3.2	184	10	48	1000	WCN-SE-010-XXXSN200
Tarp Dualcab	1.2 x 1.2	2.2 x 2.2	2.4 x 2.4	104	6	12	1000	WCN-SE-010-SDT600
Tarp Large 1.0T	1.6 x 1.2	2.8 x 2.4	3.0 x 2.6	112	6	28	1000	WCN-SE-010-SLT600

Cargo Straps



Cargo Strap S Hook



Cargo Strap Hook & Keeper



Description	Dimensions m	Capacity SWL kg	Part Number
Cargo Strap S Hook Pk2	0.38 x 1.0	600	WCN-S-004-SSH100
Cargo Strap S Hook Pk2	0.38 x 0.7	600	WCN-S-004-SSH70
Cargo Strap Hook & Keeper Pk2	0.38 x 1.0	600	WCN-S-004-SHK100

LASHING POINTS

Weld-on Load Rings – Grade 100

- Multi-directional loading
- Forged from fully tested and certified steel
- Ideal for lifting and lashing
- Welding must always be carried out by a qualified welder under AS/NZS 1554.1
- Complies with AS 3776



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WLL t	ØA mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Lashing Capacity kg	Part Number
2.5	40	82	34	68	28	14	14	92	5000	WRL-0250-NS-T-BUL
4.0	53	104	46	90	33	18	18	116	8000	WRL-0400-NS-T-BUL
6.7	68	138	60	116	45	23	23	155	13400	WRL-0670-NS-T-BUL

Larger sizes available upon request

PRODUCT INSIGHT

BULLIVANTS WELD-ON LOAD RINGS – GRADE 100

- Manufactured in Australia using Australian steel
- White powder coat for high visibility
- Supplied with full welding instructions
- Weld-on lifting points must be positioned to avoid side loading
- Material to which the weld-on lifting point will be attached to must be of adequate strength

