

reliable ^ professional ^ achievable



6 Load Restraint

2014 edition

www.lifting.com.au



Load Restraint



Our range of Beaver and RUD load restraint equipment has been developed with the professional driver in mind.

From load binders and transport chain kits, to winches, ratchet tie downs, transport chain and fittings, there is sure to be a product within the range to suit your vehicle and fleet requirements.

All products comply with relevant Australian Standards.



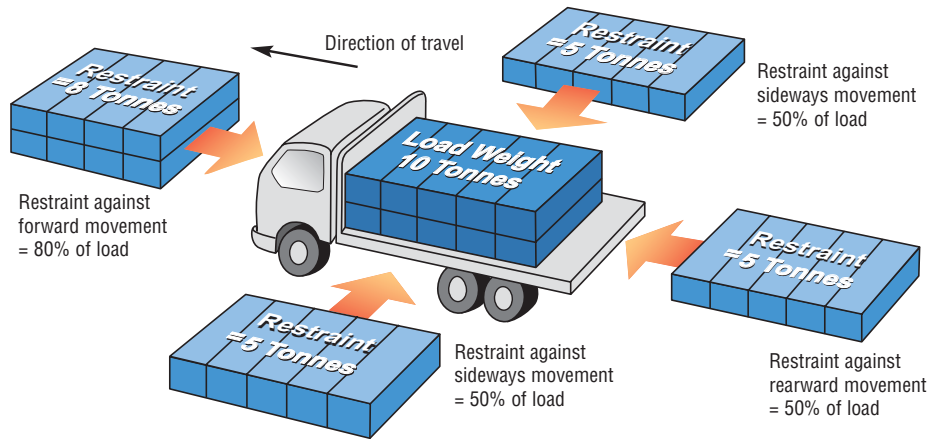
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Transport Restraint

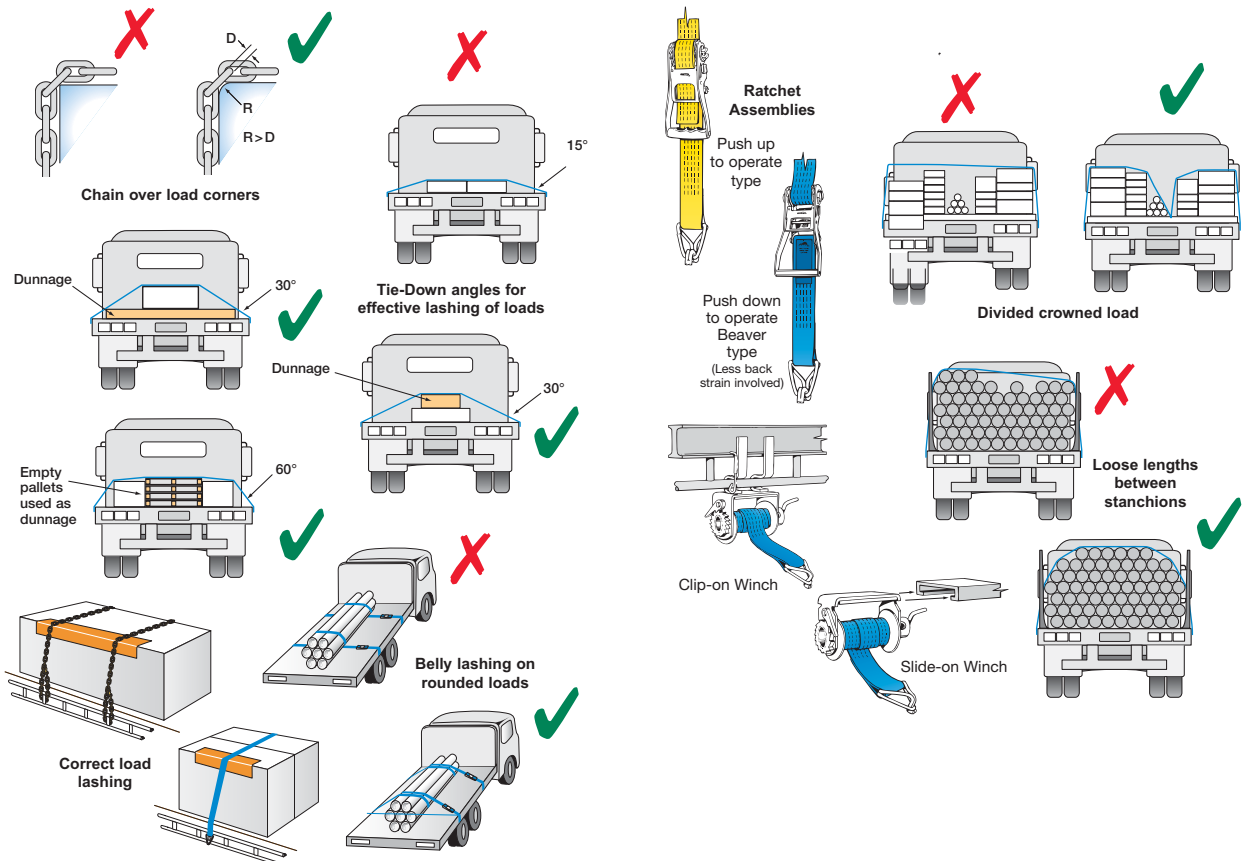
Australian Standards state that lashings must be replaced if they are weakened by 10% or more of their original strength. Therefore all restraint equipment must be inspected regularly and if the components are cracked, broken or worn they must not be used for restraining loads.

Transport Restraint Product Information

Safe Load Restraint Guide



Minimum Horizontal Restraint



Transport Restraint

Truck winches



Truck Winch Guidelines

- › Keep winch tight - not loose
- › Make sure cog teeth are in good working order
- › Ensure appropriate winch is used
- › If you are using a Clip-on Winch – ensure the arms are straight not bent
- › When in use, ensure that at least two loops of webbing remain on winch drum



Mark VI Clip-on Truck Winches

Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
342109	Clip-on winch (Bare)	n/a	n/a	n/a	2500	5.65	Each
342109-9	Clip-on winch c/w 9m strap	Hook & Keeper	50	9	2500	7.45	Each
342109-12	Clip-on winch c/w 12m strap	Hook & Keeper	50	12	2500	7.85	Each

Compatible with Beaver's Reversible Ratchet Winch Bar (342420)



Mark VI Slide-on Truck Winches

Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
342009	Slide-on winch (Bare)	n/a	n/a	n/a	2500	8.45	Each
342009-9	Slide-on winch c/w 9m strap	Hook & Keeper	50	9	2500	10.25	Each
342009-12	Slide-on winch c/w 12m strap	Hook & Keeper	50	12	2500	10.65	Each

Compatible with Beaver's Reversible Ratchet Winch Bar (342420)



Transport Restraint

Reversible Ratchet Winch Bar

To suit Mark VI Truck Winches ONLY

Product Code	Description	Weight (kg)	UOM
342420	Reversible Ratchet Winch Bar	2.1	Each



Double Ended Slide-on Truck Winches

Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
342201B	D/E Slide-on winch (Bare)	n/a	n/a	n/a	2500	5.6	Each
342201	D/E Slide-on winch c/w 9m strap	Hook & Keeper	50	9	2500	7.7	Each



Half Clip-on Truck Winches

Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
342100H	Half Clip-on winch c/w 6m strap	Hook & Keeper	50	6	2000	1.2	Each



WARNING

- Winches shall not be loaded in excess of lashing capacity.
- A minimum of two layers of polyester webbing must be wound around the winch drum when tensioning.

CARGO WINCHES ARE NOT APPROVED FOR OVERHEAD LIFTING

Ratchet Assemblies

Ratchet Assembly Guidelines

- › Ratchet with hook and keeper must be fitted correctly, refer to the markings showing the lashing capacity.
- › The ratchet has a double claw and locking action safety system that prevents it accidentally slipping off the load.
- › All webbing is treated with polyurethane, to resist grit penetration.
- › All ratchet assemblies are provided with two protective sleeves.
- › Reinforced eyes are provided with the hook and keeper to add life to the unit.
- › Safety and ID labels are sewn into the webbing for traceability with lashing capacity and date of manufacture shown to aid the driver in adhering to his or her OH&S responsibilities.



Not all Ratchet Tie-down (RTD) Assemblies are the Same!

Our Ratchet Tie-down (RTD) Assemblies, ranging from 25mm to 100mm, have been developed with the following principles:

Safety

All Ratchet assemblies comply to Australian and New Zealand Cargo Restraint System Standards AS/NZS 4380.

Quality

RTD Straps are 100% polyester which is heat set, stretched and polyurethane (p.u.) impregnated. This results in low strain, long life, wear resistance, and the durability demanded in flatbed tie-down situations.

Traceability

All RTD straps come complete with blue polyester safety labels, identifying the manufacturer/supplier, the material the straps are made from, the standard, the date of manufacture and the length. The serial number together with the date of manufacture is both on the safety label and stitched into webbing, in the event the label is dislodged.

Testing

All RTD Assemblies are subject to testing criteria in order to verify their lashing capacities after manufacture/assembly.

User friendly visual features

The lashing capacity is stencilled on to the webbing and the two protective sleeves for easy identification. In addition the Maximum Breaking Strain (M.B.S.) (i.e. 4 stripes indicating an M.B.S. of 4,000 Kgs., 5 stripes indicating an M.B.S. of 5,000 Kgs., 10 Stripes indicating an M.B.S. of 10,000 Kgs.) is woven into the webbing.

Flexibility

All RTD straps come complete with standard hook and keepers, clearly marked with lashing capacity and I.D. marks. Different widths and lengths of webbing, together with an abundance of various end fittings are available on request.

Transport Restraint

Ratchet Assemblies

25mm Cam Buckle Assembly

c/w Black vinyl "S" Hooks at each end. Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
MBT020	25mm x 2m Motor Bike Tie Down (1 pair)	S	25	2	250	0.8	Each



25mm Multi Purpose Ratchet Tie Down Assembly

Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
RTD025SD04E	25mm x 4m endless S/Duty	n/a endless	25	4	900	0.6	Each
349025RB	25mm x 5m NEW rubber grip handle c/w hook & keeper	Hook & Keeper	25	5	500	0.8	Each
349025RSB	25mm x 4m NEW rubber grip handle c/w black vinyl "S" hooks	S	25	4	450	0.75	Each



35mm Multi Purpose Ratchet Tie Down Assembly

Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
RTD035SD06T	35mm x 6m Boat tie down assy. S/Duty	J & S	35	6	500	1.5	Each
RTD035HD06H	35mm x 6m c/w hook & keeper	Hook & Keeper	35	6	1250	1.5	Each
349035RB	35mm x 6m NEW rubber grip handle c/w hook & keeper	Hook & Keeper	35	6	1000	1.6	Each
349035RSB	35mm x 6m NEW rubber grip handle c/w black vinyl "S" hooks	S	35	6	600	1.5	Each



WARNING

- Winches shall not be loaded in excess of lashing capacity.
- A minimum of two layers of polyester webbing must be wound around the winch drum when tensioning.

CARGO WINCHES ARE NOT APPROVED FOR OVERHEAD LIFTING

Transport Restraint

50mm Multi Purpose Ratchet Tie Down Assembly

Complies to AS/NZS4380



Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
RTD050LD06S	50mm x 6m c/w "S" hooks L/Duty	S	50	6	500	1.5	Each
RTD050LD06H	50mm x 6m c/w hook & keeper L/Duty	Hook & Keeper	50	6	1000	1.6	Each
RTD055PL	50mm x 9m c/w hook & keeper	Hook & Keeper	50	9	2500	3.1	Each
RTD055PL-12	50mm x 12m c/w hook & keeper	Hook & Keeper	50	12	2500	3.4	Each



50mm Heavy Duty Ratchet Tie Down Assembly

Rubber Grip Handle Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
349053	50mm x 9m c/w hook & keeper	Hook & Keeper	50	9	3000	3.5	Each
349053-12	50mm x 12m c/w hook & keeper	Hook & Keeper	50	12	3000	4.2	Each



75mm Heavy Duty Ratchet Tie Down Assembly

Complies to AS/NZS4380

Product Code	Description	Hook Type	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
349075	75mm x 9m c/w hook & keeper H/Duty	Hook & Keeper	75	9	5000	7.5	Each
349075-12	75mm x 12m c/w hook & keeper H/Duty	Hook & Keeper	75	12	5000	8.2	Each



WARNING

- Winches shall not be loaded in excess of lashing capacity.
- A minimum of two layers of polyester webbing must be wound around the winch drum when tensioning.

CARGO WINCHES ARE NOT APPROVED FOR OVERHEAD LIFTING



Polyester Replacement Straps

Cargo Winch Polyester Replacement Straps

c/w 2 x wear sleeves and Hook and keeper (unless otherwise stated) Complies to AS/NZS 4380



Product Code	Description	LC (kg)	Hook Type	Width (mm)	Length (m)	Weight (kg)	UOM
342305WF	50mm x 5m Gate Winch Replacement Strap c/w Double "J" Hook	2000kg	J	50	5	0.76	Each
342313	50mm x 9m Winch Replacement Strap	3000kg	Hook & Keeper	50	9	2	Each
342313-12	50mm x 12m Winch Replacement Strap	3000kg	Hook & Keeper	50	12	2.5	Each
CWS075SD09H	75mm x 9m Strap c/w hook & Keeper S/Duty	3500kg	Hook & Keeper	75	9	3	Each



Ratchet Tie-down (RTD) Polyester Replacement Straps

c/w 2 x wear sleeves and Hook and keeper (unless otherwise stated)
Complies to AS/NZS 4380

Product Code	Description	LC (kg)	Hook Type	Width (mm)	Length (m)	Weight (kg)	UOM
349303R	50mm x 9m RTD Replacement Strap	3000kg	Hook & Keeper	50	9	2	Each
349303R -12	50mm x 12m RTD Replacement Strap	3000kg	Hook & Keeper	50	12	2.5	Each
349305R	75mm x 9m RTD Replacement Strap	5000kg	Hook & Keeper	75	9	3	Each
349305R-12	75mm x 12m RTD Replacement Strap	5000kg	Hook & Keeper	75	12	3.5	Each



Grade 70 Lashing Chain and Fittings

Grade 70 Lashing Chain and Fittings



Transport chain and fittings are manufactured from heat treated carbon steel, in accordance with AS/NZS 4344.

- › Transport Chain is primarily used in lashing applications to tie down loads on transport equipment.
- › Our G70 Chain is high quality and has undergone stringent testing and quality control.
- › All G70 Chain and Fittings are clearly marked Grade 70 with lashing capacity "LC" and size of chain.
- › G70 Chain is supplied in convenient resealable poly buckets or tool boxes for immediate use and easy storage.
- › The yellow chromate (gold) plating makes it easily recognisable even from a distance.



Transport Chain Fittings Guidelines

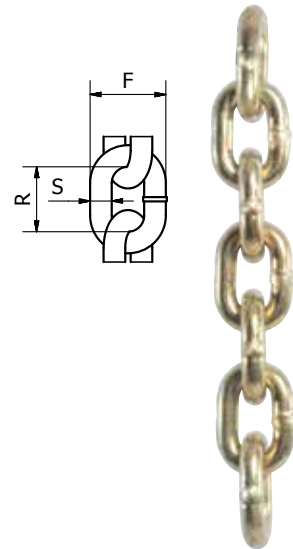
- › Transport G70 Chain is NOT to be used for any lifting purpose
- › Ensure your G70 Chain is marked showing capacity and Australian Standard for easy viewing and confirmation of load size.

Grade 70 Transport Chain

"Gold" High Tensile – to AS/NZS4344

Product Code	LC (t)	Size (mm)	S (mm)	R (mm)	F (mm)	Weight per (m)	Finish	UOM	Metres per 100 (kg)
145006	2.3	6	6	18.5	20	0.8	Zinc Di-chromate	Metre	125
145007	3.0	7	7	22	24	1.1	Zinc Di-chromate	Metre	92
145008	3.8	8	8	24	28	1.43	Zinc Di-chromate	Metre	70
145010	6.0	10	10	30	35	2.23	Zinc Di-chromate	Metre	45
145013	9.0	13	13	39	45.5	3.75	Zinc Di-chromate	Metre	26.8

Not to be used for lifting



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING



Grade 70 Lashing Chain and Fittings

Grade 70 Load Chain Kit with Winged Grab Hooks*

Zinc Di-chromate (Gold Finish) Complies to AS/NZS 4344



Product Code	Chain Size (mm)	Chain Length (m)	Chain Part Number	Grab Hook Part Number	LC (kg)	Weight (kg)	UOM
400603	6	6	145006	354006	2300	5.28	Each
401003	8	6	145008	354008	3800	9.34	Each
406003	10	6	145010	354010	6000	14.32	Each
400903	6	9	145006	354006	2300	7.68	Each
145128	8	9	145008	354008	3800	13.63	Each
408003	10	9	145010	354010	6000	20.98	Each



Note: Some chain lengths are supplied in a resealable bucket.

Grade 70 Transport Chain with Claw Hooks

Zinc Di-chromate (Gold Finish) Complies to AS/NZS 4344

Product Code	Chain Size (mm)	Chain Length (m)	Chain Part Number	Claw Hook Part Number	LC (kg)	Weight (kg)	UOM
401002	8	6	145008	352008	3800kg	9.68	Each
405002	8	9	145008	352008	3800kg	13.97	Each
406002	10	6	145010	352010	6000kg	14.5	Each
408002	10	9	145010	352010	6000kg	21.16	Each



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* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING



Grade 70 Lashing Chain and Fittings



"Gold" Drag Chain Kit

Grade 70 Hi Tensile 5m Combo Kit c/w Lug Link, Slip Hook & Grab Hooks* & 5m of G70 chain.
Zinc Di-chromate (Gold Finish)

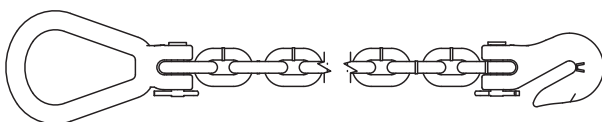
Product Code	Chain Size (mm)	Chain Length (m)	Chain Part Number	Grab Hook Part Number	Lug Link Part Number	Slip Hook Part Number	LC (kg)	Weight (kg)	UOM
412007	7.1	5	145007	354008	353008	356008	3000kg	6.69	Each
412008	8	5	145008	354008	353008	356008	3800kg	8.39	Each
412010	10	5	145010	354010	353010	356010	6000kg	12.8	Each
412013	13	5	145013	354013	353013	356013	9000kg	20.17	Each



"Gold" Drag Chain Kit

5m of Grade 70 Hi Tensile chain c/w Lug Link & Grab Hook*
Zinc Di-chromate (Gold Finish)

Product Code	Chain Size (mm)	Chain Length (m)	Chain Part Number	Grab Hook Part Number	Lug Link Part Number	LC (kg)	Weight (kg)	UOM
410007	7.1	5	145007	354008	353008	3000kg	6.33	Each
410008	8	5	145008	354008	353008	3800kg	8.03	Each
410010	10	5	145010	354010	353010	6000kg	12.2	Each
410013	13	5	145013	354013	353013	9000kg	20.78	Each



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING



Grade 70 Lashing Chain and Fittings

"Gold" Drag Chain Kit

5m of Grade 70 Hi Tensile chain c/w Lug Link & Slip Hook, Zinc Di-chromate (Gold Finish)

Product Code	Chain Size (mm)	Chain Length (m)	Chain Part Number	Slip Hook Part Number	Lug Link Part Number	LC (kg)	Weight (kg)	UOM
411007	7.1	5	145007	356008	353008	3000kg	6.31	Each
411008	8	5	145008	356008	353008	3800kg	8.01	Each
411010	10	5	145010	356010	353010	6000kg	12.3	Each
411013	13	5	145013	356013	353013	9000kg	21.26	Each

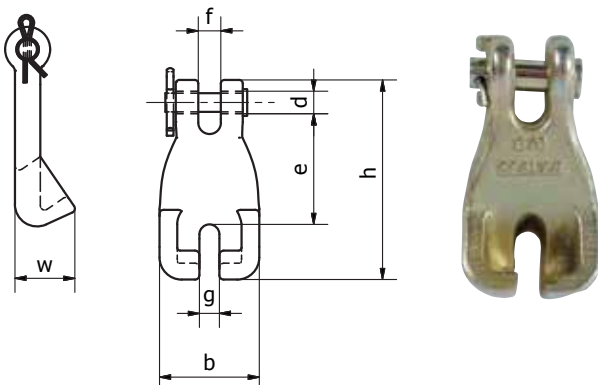


Clevis Claw Hooks

Complies to AS/NZS 4344



Product Code	Chain Size (mm)	f (mm)	d (mm)	e (mm)	h (mm)	g (mm)	b (mm)	w (mm)	LC (kg)	Weight (kg)	UOM
352008	7-8	12.5	10.2	40	88	9.5	47	32	3800kg	0.55	Each
352010	10	12.5	12.5	46	103	11.5	55	37.5	6000kg	0.59	Each



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING

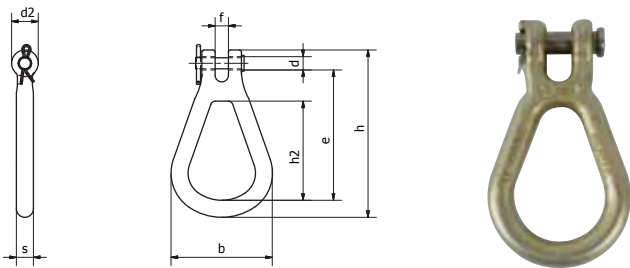
Grade 70 Lashing Chain and Fittings

Clevis Lug Links

Complies to AS/NZS 4344



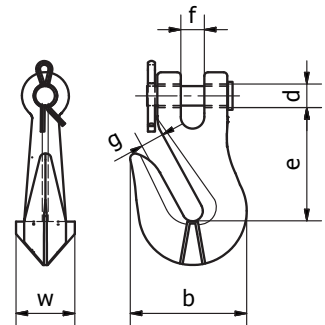
Product Code	Chain Size (mm)	f (mm)	d (mm)	e (mm)	h (mm)	h2 (mm)	b (mm)	s (mm)	d2 (mm)	LC (kg)	Weight (kg)	UOM
353008	7-8	12.5	10	108.5	141.7	78	86.5	16.25	24	3800kg	0.5	Each
353010	10	12.5	12.5	107.25	141.7	78	86.5	16.25	24	6000kg	0.6	Each
353013	13	16.6	16	127.2	169	95.5	100.4	18.6	33	9000kg	1.5	Each



Clevis Grab Hooks* w/- Wings

Complies to AS/NZS 4344

Product Code	Chain Size (mm)	f (mm)	d (mm)	e (mm)	b (mm)	g (mm)	w (mm)	LC (kg)	Weight (kg)	UOM
354006	6	9.2	8.5	46.4	49	9.2	22	2300kg	0.24	Each
354008	7-8	10.4	10.5	49	57	10.5	28	3800kg	0.38	Each
354010	10	12.4	12.5	60.5	66.5	13.5	39	6000kg	0.5	Each
354013	13	19.5	16.5	84	88	18	39	9000kg	0.63	Each



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING



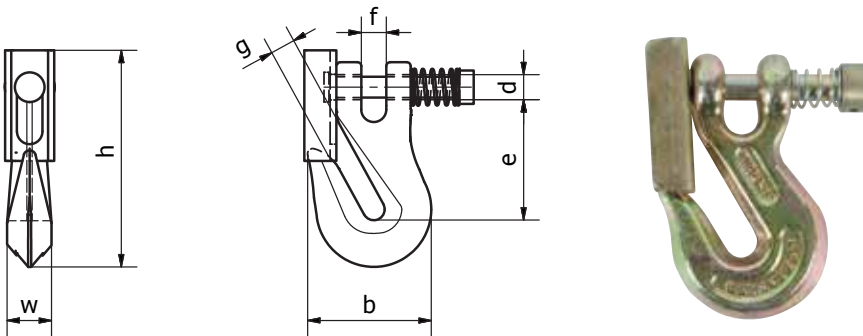
Grade 70 Lashing Chain and Fittings

Clevis Safety Grab Hooks*

Complies to AS/NZS 4344



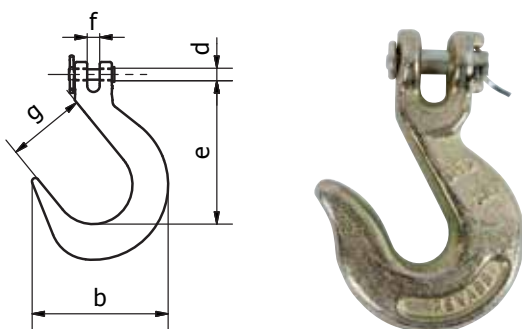
Product Code	Chain Size (mm)	f (mm)	d (mm)	e (mm)	b (mm)	g (mm)	w (mm)	h (mm)	LC (kg)	Weight (kg)	UOM
354008SS	7-8	10	11	57.4	60	11	15	100	3800kg	0.43	Each



Clevis Slip Hooks

Complies to AS/NZS 4344

Product Code	Chain Size (mm)	f (mm)	d (mm)	e (mm)	b (mm)	g (mm)	LC (kg)	Weight (kg)	UOM
356006	6	9	7.8	63	69	19	2300kg	0.22	Each
356008	7-8	11	9.5	69	80	26	3800kg	0.36	Each
356010	10	12	12	79.5	90	33	6000kg	0.6	Each
356013	13	19	16.3	102	121.5	43	9000kg	1.19	Each



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING

Grade 70 Load Equipment

Grade 70 Loadbinders



Precautions

- › Avoid injury – operate only by hand and always from a standing position.
- › Use only the appropriate size and grade of chain with the loadbinder.
- › Lever type loadbinders generally store energy which is often rapidly released, causing the handle to rotate with substantial force.
- › Do not use handle extension devices, as they may overload the loadbinder and effectively weaken the lashing system.
- › Always inspect loadbinders before use. Look for signs of wear, bending, cracks or gouges, and replace any damaged units.
- › Make sure loadbinders are tight before moving. Stop and recheck tightness frequently.
- › Never discard warning instructions. Keep them and share them with others using the loadbinder.



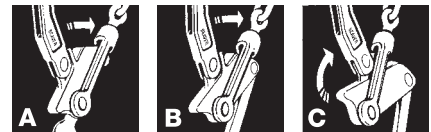
Grade 70 Safety Release Lever

The Safety Release Handle makes this Loadbinder safer than other lever style loadbinders on the market today.

The loadbinder design allows the user to release the loadbinder tension without any of the recoil typical of a standard lever type loadbinder.

The centre of the loadbinder rotates independently of the handle, allowing tension to be released smoothly and safely.

Unique Cam Movement



A
The handle of the BX600 moves freely to the beginning of the release point.

B
The body cam centre begins to rotate independently of the handle at this stage.

C
As the chain tension is released, the handle will remain almost in the same position.



Grade 70 Load Equipment

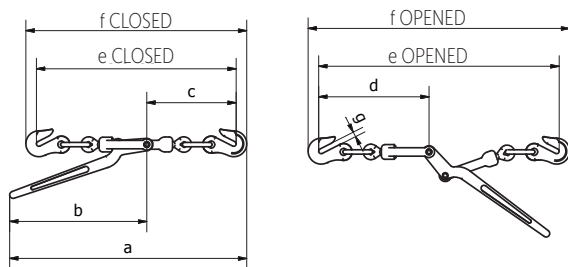


Grade 70 Loadbinders

Grade 70 Double Swivel (over centre loadbinder)

Lever Loadbinders with Grab Hooks (Forged) AS/NZS 4344

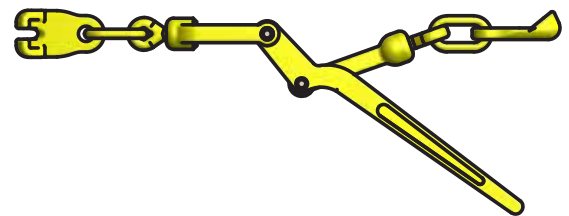
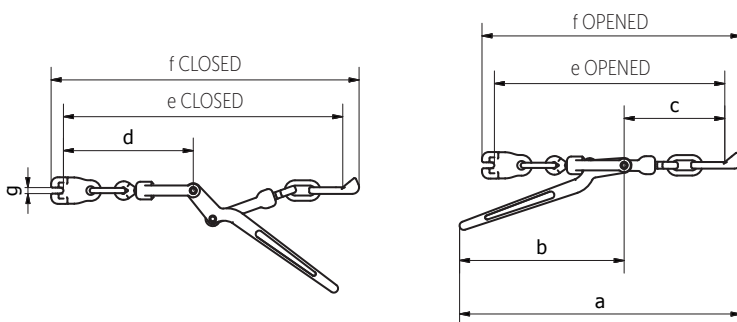
Product Code	Chain Size and Description	f Closed (mm)	e Closed (mm)	d (mm)	b (mm)	a (mm)	f Opened (mm)	e Opened (mm)	c (mm)	LC (kg)	Weight (kg)	UOM
345006A	6mm c/w winged eye grab hooks*	409	365	215	293	470	484	440	164	2300	1.68	Each
348000	7-8mm c/w winged eye grab hooks*	558	503	287	383	600	662	607	217	3800	3.7	Each
348010	10mm c/w winged eye grab hooks*	638	570	325	420	760	758	690	250	6000	5.7	Each
348013	13mm c/w winged eye grab hooks*	747	661	375	490	819	876	790	285	9000	10.5	Each



Grade 70 Double Swivel (over centre loadbinder)

Claw Lever Loadbinders with Claw Hooks (Forged) AS/NZS 4344

Product Code	Chain Size and Description	f Closed (mm)	e Closed (mm)	d (mm)	b (mm)	a (mm)	f Opened (mm)	e Opened (mm)	c (mm)	LC (kg)	Weight (kg)	UOM
348000EC	7-8mm c/w eye claw hooks	529	489	280	400	601	633	593	208	3800	3.9	Each



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING



Grade 70 Load Equipment

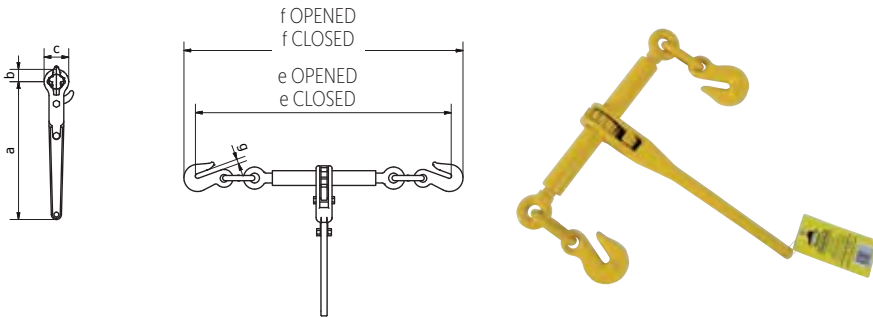
Grade 70 Ratchet Type Loadbinders

Yellow Painted Finish – to AS/NZS 4344

With Grab Hooks



Product Code	Chain Size and Description	f Closed (mm)	e Closed (mm)	g (mm)	b (mm)	a (mm)	f Opened mm	e Opened (mm)	c (mm)	LC (kg)	Weight (kg)	UOM
344006	6mm c/w winged eye grab hooks*	459	415	10	21	205	572	528	42	2300	1.69	Each
344008	7-8mm c/w winged eye grab hooks*	638	583	12.7	32.5	350	799	744	65	3800	4.7	Each
344010	10mm c/w winged eye grab hooks*	671	603	16.5	32.5	350	836	768	65	6000	5.1	Each
344013	13mm c/w winged eye grab hooks*	776	690	18.5	32.5	350	946	860	65	9000	7.18	Each

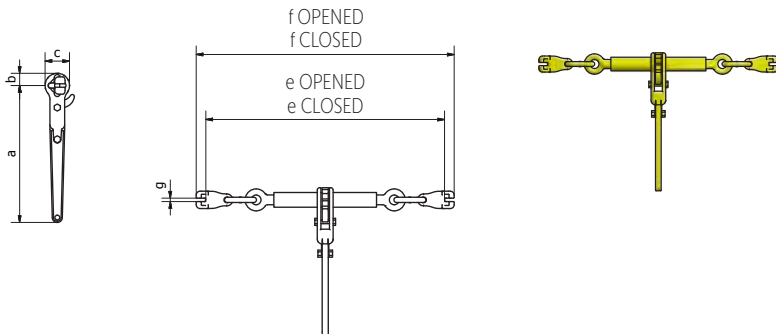


Grade 70 Ratchet Type Loadbinders

Yellow Painted Finish – to AS/NZS 4344

With Claw Hooks

Product Code	Chain Size and Description	f Closed (mm)	e Closed (mm)	d (mm)	b (mm)	a (mm)	f Open (mm)	e Open (mm)	c (mm)	LC (kg)	Weight (kg)	UOM
344108	7-8mm c/w eye claw hooks	667	609	9.5	32.5	355	831	773	65	3800	4.9	Each
344110	10mm c/w eye claw hooks	712	644	11.5	32.5	355	877	809	65	6000	5.3	Each



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING

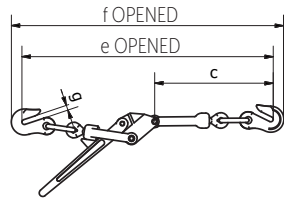
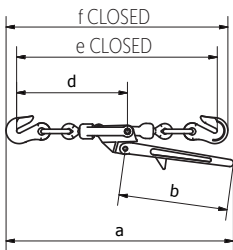
Grade 70 Load Equipment

Grade 70 Safety Release Lever BX600 Type

Recoilless Loadbinders AS/NZS 4344



Product Code	Chain Size and Description	f Closed (mm)	e Closed (mm)	d (mm)	b (mm)	a (mm)	f Opened (mm)	e Opened (mm)	c (mm)	LC (kg)	Weight (kg)	UOM
344208	7-8mm c/w winged eye grab hooks*	555	500	280	320	603	665	610	280	3800	4.4	Each
344210	10mm c/w winged eye grab hooks*	663	595	335	390	703	773	705	335	6000	6.6	Each



Grade 70 Web Dog

Complies to AS/NZS 4344 and AS/NZS 4380

Product Code	Chain Size and Description	Width (mm)	Length (m)	LC (kg)	Weight (kg)	UOM
348000WF	50mm Ratchet assembly fitted with 8mm grab hooks* & 1m of 50mm heavy duty webbing	50	1	3800	3.8	Each



GRADE 70 LASHINGS & FITTINGS ARE NOT TO BE USED FOR LIFTING PURPOSES

* NOTE: The use of some grab hooks or systems incorporating grab hooks cause bending to occur on the link of lashing chain to which the grab hook is engaged. The bending and shearing effect of the hook reduces the strength of the chain by 25 percent and as such, the lashing capacity (LC) of this type of system must be reduced by 25 percent as prescribed in Australian Standard AS/NZS4344:2001

Claw hooks and winged grab hooks supplied on our assemblies, maintain 100% of the rated strength.

NOT APPROVED FOR OVERHEAD LIFTING

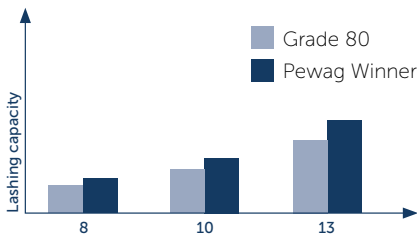
Grade 100 Lashing Accessories

Features and benefits of PEWAG lashing chains in Grade 100 quality

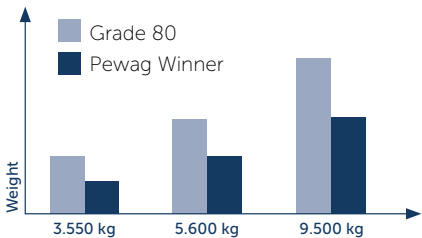


User friendliness and meeting all legal requirements for lashing is based on clear and measurable parameters, which are already considered and defined in the planning and production process.

- › 25% higher load capacity than Grade 80



- › With the same chain dimension it is possible to secure more and heavier loads than Grade 80.



Lashing capacity LC (kN)	Previous chain weight	Pewag Winner Pro chain weight	% Reduction
50	14,5	9,7	33%
80	37,7	14,5	44%

- › Large product range with 5 chain dimensions.
- › In most cases when direct lashing you can downsize to a smaller chain dimension thus reducing weight and costs. Example of direct lashing: 7 mm G 100 (LC=38 kN) replaces 8mm G 80 (LC=40 kN).

Lashing capacity LC (kN)	Previous chain ø	Pewag Winner Pro chain ø
50	10	8
80	13	10
134	16	13

- › When friction lashing at the same securing capacity (STF) you can downsize to a smaller chain dimension thus also reducing weight and costs.
- › The considerably lower weight when using Pewag Winner lashing chains results in easier handling.
- › Clear identification tags according to EN12195-3 with G 100 values ensure safety.

Pewag Winner Data

- › Chain quality: Pewag Winner meets the EN818-2 standard with modifications (higher mechanical values and reduced application temperature)
- › Lashing force: 500 N/mm²
- › Fatigue test: 20.000 cycles at 375 N/mm² nominal stress
- › Test stress: 625 N/mm²
- › Breaking stress: 1.000 N/mm²
- › Breaking elongation: min. 20%
- › Bending: 0,8 x d
- › Stress corrosion: The characteristics in regards to stresscrack corrosion is equal to Grade 80.

- › Admissible operating temperature: -40°C – 200°C (please note WLL reduction at high temperatures)
- › Quality grade stamping on the Pewag Winner chain – 100 at a distance of 300 mm and 10 on the back of each link Pewag Winner Pro components – 10
- › Manufacturer's name or symbol for easy identification.
- › Surface: Chain – transparent lacquer finish
Components – orange powdercoated – RAL 2004
- › Lashing tag: all the required data is shown on the lashing tag.
- › Compatibility: pewag winner chains and components can be used in combination with class G 80 products that fulfill the EN818 and EN1677 standards. Furthermore, they may be combined with G 100 chains and components from competitors, as long as these products meet the EN818 and EN1677 standards. **Do not combine Pewag chains and components with other products that are not in compliance with EN818 and EN1677!**

For spare parts (for example bolts, safety catches, trigger sets) for the entire Pewag product line, use only genuine Pewag spare parts. The working load limit of the entire unit is determined by the weakest component in the system.

Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

Grade 100 Lashing Accessories

Identification, Documentation

Lashing chains meet the EN 12195-3 standard and are supplied with:

- > Identification tags
- > Manufacturer Certificate
- > User Information
- > Test certificate

Pewag Winner lashing example of order text

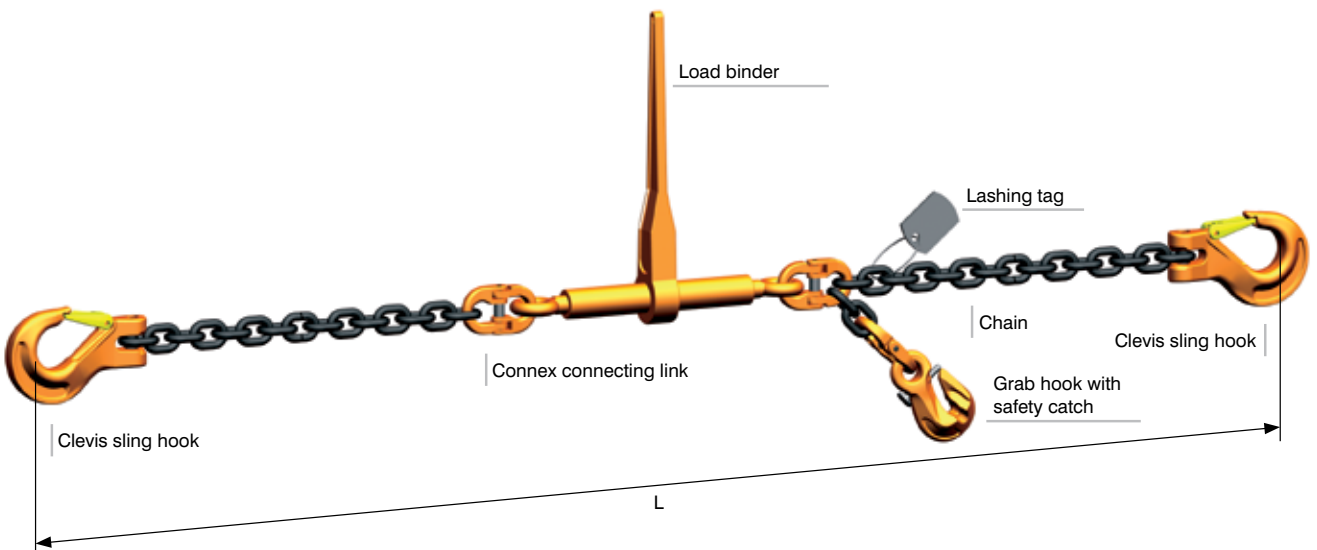
Below you will find a detailed example of a finished and commercially available Pewag lashing chain.

Pewag Winner 8 mm – single lashing chain with shortening hooks and Hook mounted with Connex connecting links, length: 3.500 mm



ZRSW 8 200 I – KHSW – KHSW 3500

Nominal diameter	1-part	Clevis sling hook	Clevis sling hook	Length (mm)



Grade 100 Lashing Accessories

PEWAG WINNER Grade 100 Lashing Chain

Meets EN 12195-3 standard with higher working load limit. The premium chain in Grade 100 quality. Round link chain for use in friction lashing applications. Approx. 25% higher lashing capacity than Grade 80 chains.

Maximum permissible operating temperature 200 C. Please read user manual before use.



Product Code	Nominal diameter d (mm)	Standard delivery length (m)	Pitch t (mm)	Inside width b1 min. (mm)	Outside width b2 max. (mm)	LC (kN)	Breaking force (kN)	Weight (kg/m)
WIN 8 200	8	50	24	11	29	50	101	1,57
WIN 10 200	10	50	30	14	36	80	157	2,46
WIN 13 200	13	50	39	18	47	134	265	4,18
WIN 16 200	16	25	48	22	58	200	402	6,28

PEWAG WINNER Grade 100 Load Binder

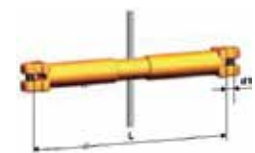
Meets EN 12195-3 with higher working load limit. 25% higher lashing capacity than Grade 80 ratchet.



Product Code	Marking	LC (kN)	STF Standard tension force (daN)	Length RSW closed L (mm)	Length RSW opened L (mm)	Tension distance (mm)	Lever length l (mm)	D (mm)	d (mm)	Weight (kg)
RSW 7/8	Type A	50	1.900	355	500	145	237	20	16	3,20
RSW 10	Type B	80	3.000	365	510	145	355	26	18	3,80
RSW 13	Type C	134	2.500	576	866	290	359	31	22	9,90

PEWAG WINNER Grade 100 Clevis Turnbuckle for Lashing Chain

Meets EN 12195-3 with higher lashing capacity. For lashing and load security of heavy loads on trucks and rail. 25% higher lashing capacity than Grade 80 Clevis turnbuckles.



Product Code	LC (kN)	STF Standard tension force (daN)	Length KSSW closed (mm)	Length KSSW opened (mm)	Tension distance (mm)	d (mm)	Weight (kg)
KSSW 16	200	-	530	780	250	20	10,00

Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

Grade 100 Lashing Accessories

Grade 100 Connectors, Hooks & Links



PEWAG WINNER Grade 100 Connecting Link

According to EN 1677-1 with increased load capacity.

For Pewag Connex and welded system.

Load pin and bush CBH are also available separately.

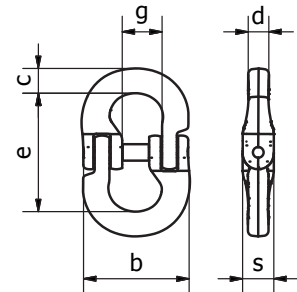
Connecting link for:

Load binder - chain

Master link - chain

Chain - chain

Hook - chain



Product Code	LC (kN)	e (mm)	c (mm)	s (mm)	d (mm)	b (mm)	g (mm)	Weight (kg)
CW 7	38	51	10	13	9	47	17	0,12
CW 8	50	62	12	14	10	55	18	0,23
CW 10	80	72	15	18	13	64	24	0,42
CW 13	134	88	20	22	17	79	28	0,84
CW 16	200	103	21	29	21	106	33	1,40

PEWAG WINNER Grade 100 Clevis Sling Hook

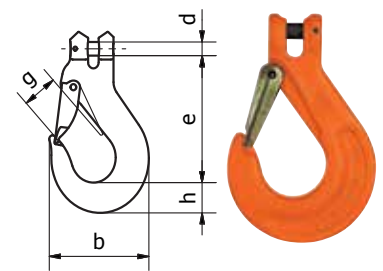
According to EN 818-4 with increased load capacity.

For Pewag Clevis System.

Can be mounted directly into chain - no connecting link is needed.

With forged safety catch. Safety catch and bolts are also available as spare parts.

Product Code	LC (kN)	e (mm)	h (mm)	a (mm)	d (mm)	g1 (mm)	b (mm)	Weight (kg)
KHSW 7	38	95	28	19	9	26	90	0,60
KHSW 8	50	95	28	19	10	26	90	0,60
KHSW 10	80	109	35	25	12,50	31	108	1,10
KHSW 13	134	136	41	34	16	39	131	2,00
KHSW 16	200	155	49	37	20	45	153	3,48



PEWAG WINNER Grade 100 Eye Sling hook

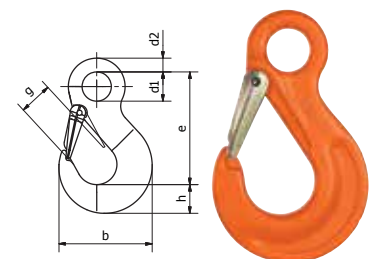
According to EN 1677-1 with increase load capacity.

For Pewag Connex and Welded System.

To be connected to the chain with Connex Connecting Link CW.

All hooks with forged safety catch. Safety catch set also available as spare part.

Product Code	LC (kN)	e (mm)	h (mm)	a (mm)	d1 (mm)	d2 (mm)	g1 (mm)	b (mm)	Weight (kg)
HSW 7/8	50	106	27	19	25	11	26	88	0,50
HSW 10	80	131	33	26	34	16	31	109	1,10
HSW 13	134	164	44	33	43	19	39	134	2,20
HSW 16	200	183	50	40	50	25	45	155	3,50



Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

Grade 100 Lashing Accessories

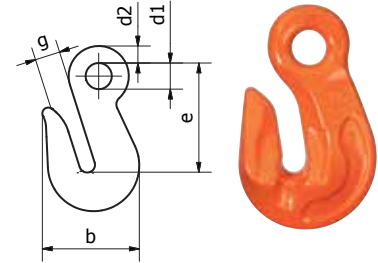
PEWAG WINNER Grade 100 Eye Shortening Grab Hook



Product Code	Chain Size (mm)	LC (kN)	e (mm)	b (mm)	d1 (mm)	d2 (mm)	g (mm)	Approx Weight (kg)	UOM	Pack Qty
PW8	7-8	50	71	58	20	12	11	0.4	Each	80
PW10	10	80	88	76	22	15	13	0.9	Each	30
PW13	13	134	113	101	26	18	17	1.8	Each	15
PW16	16	200	129	118	32	23	19	3.6	Each	8

Used for the shortening of chain sling legs. It's the first grab hook in grade 100 on the market. Due to its unique design there is no deration in the load capacity. This is due to the four fold feature of the hooks supporting cradle design.

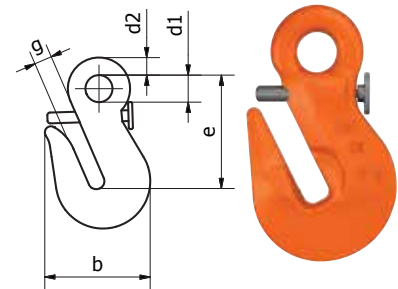
No Deration



PEWAG WINNER Grade 100 Eye Grab Hook

According to EN 1677-1 with increased load capacity. For pewag Connex and welded system. Shortening hook, protects against accidental release of the chain.

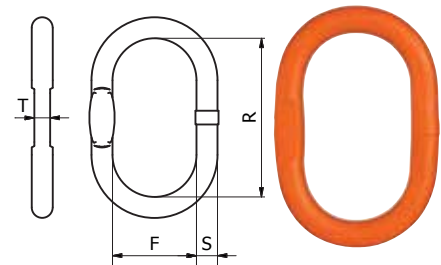
Product Code	LC (kN)	e (mm)	B (mm)	d1 (mm)	d2 (mm)	g (mm)	Weight (kg)
PWB 8	50	71	58	20	12	11	0.4
PWB 10	80	88	76	22	15	13	0.9
PWB 13	134	113	101	26	18	17	1.8
PWB 16	200	129	118	32	23	19	3.6



PEWAG WINNER Grade 100 Master Link

According to EN 1677-4 with increase load capacity. For Pewag Connex and Welded System.

Product Code	For chain-ø	LC (kN)	d (mm)	t (mm)	w (mm)	s (mm)	Weight (kg)
AW 13	7	46	13	110	60	10	0,34
AW 16	8	70	16	110	60	14	0,53
AW 18	10	100	19	135	75	14	0,92
AW 22	13	152	23	160	90	17	1,60
AW 26	16	200	27	180	100	20	2,46



Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

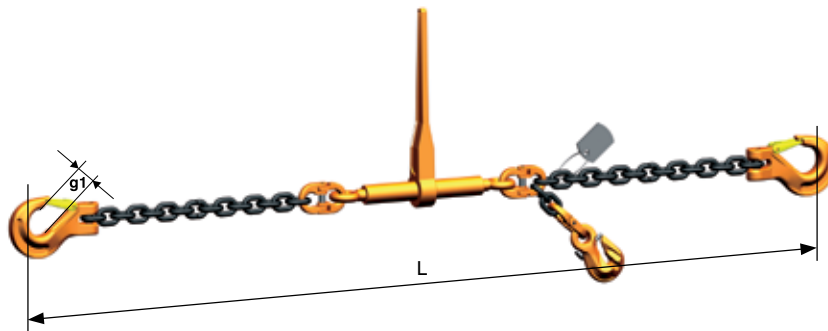
Grade 100 Lashing Accessories

PEWAG WINNER Grade 100 Lashing Chain



Exceeds EN 12195-3. For load security with a 25% higher lashing capacity compared to standard Grade 80 systems. Component system. Standard length 3.500mm. Other lengths available upon request.

Product Code	LC (kN)	Length RSW closed (mm)	Length RSW open (mm)	Tension range (mm)	STF Standard tension force (mm)	Opening g1 (mm)	Weight (kg)
ZRSW 8 200 KHSW-KHSW 3500	50	355	500	145	1.900	26	9,70
ZRSW 10 200 KHSW-KHSW 3500	80	365	510	145	3.000	31	14,50
ZRSW 13 200 KHSW-KHSW 3500	134	576	866	290	2.500	39	26,10
ZKSW 16 200 KHSW-KHSW 3500	200	530	780	250	-	45	37,70



PEWAG WINNER Grade 100 Lashing Chain

Exceeds EN 12195-3. Can be used with Grade 100 ratchet and shortening device. Benefit: The ratchet can be positioned in any location. Standard length: 3.500mm. Other lengths available upon request. The system will be supplied with an EN 12195-3 ID Tag with Grade 100 values.

Product Code	LC (kg)	L (mm)	g1 (mm)	Weight (kg)
ZKW 8 200 KHSW-KHSW 3500	50	3.500	26	6,40
ZKW 10 200 KHSW-KHSW 3500	80	3.500	31	10,27
ZKW 13 200 KHSW-KHSW 3500	134	3.500	39	17,49



Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

Grade 120 Lashing Accessories

PEWAG WINNER PRO Lashing System Overview



The higher Working Load Limits (WLL) of the Pewag Winner Pro Grade 120 program (50% more compared to Grade 80) allows significant weight reduction. Reducing the weight of the lashing chain assembly makes it much easier to use and handle. Additionally, the profile of the chain improves the bending resistance of the chain. This is significant when loading the chain over a corner.

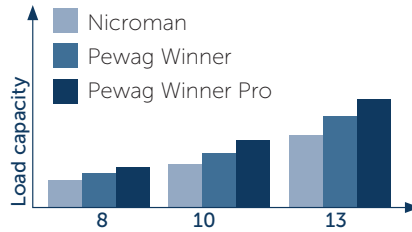
› Intelligent profile – because of the intelligent use of material, the major characteristics of the chain (i.e. fatigue resistance and bending resistance) have been improved in a remarkable way, when you compare the same cross section of the profile chain with the round steel chain. In order to reach the best mechanical performance, the material use was optimized on effective areas (blue area) and reduced on less relevant areas (red area).



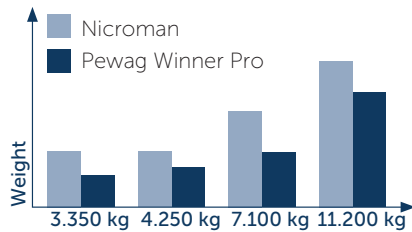
› Optimized bending resistance: The section modulus which is important for preventing undesirable bending deformation, is up to 16% higher on the profile chain compared to round steel chain. Therefore the max. stress in the chain is reduced (no red areas).



› 50 % higher lashing capacity securing capacity compared to Grade 80.



› With the same chain dimension it is possible to secure more and heavier loads. An additional 50% compared to Grade 80 and 20% compared to Grade 100 (direct lashing).



Lashing capacity LC (kN)	Previous chain weight	Pewag Winner Pro chain weight	% Reduction
60	14,5	10,3	29%
100	26,1	15,6	40%
160	37,7	30,7	18%

› A 7 mm chain is also provided in the Pewag Winner Pro program.

› Patent-registered material with optimised strength and toughness properties at both high and low temperatures.

› In most cases when direct lashing you can downsize to a smaller chain dimension thus obviously reducing weight and costs. Example of direct lashing: 8 mm (LC = 60kN) replaces 10 mm Grade 80 (LC = 63kN)

› When friction lashing at the same securing capacity (STF) you can always downsize to a smaller chain dimension thus also reducing weight and costs.

Lashing capacity LC (kN)	Previous chain-ø	Pewag Winner Pro chain-ø
60	10	8
100	13	10
160	16	13

› Considerably lower weight when using Winner Pro for lashing results in easier handling.

› Maximum safety due to special lashing tag made from stainless steel with separate area for periodic inspections.

Pewag Winner Pro Lashing Tag Identification

Lashing tags made from stainless steel material and complete with warning marks guarantee a longer life than standard lashing tags, thereby increasing the safety of the lashing system.

Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

Grade 120 Lashing Accessories

Pewag Winner Pro Data

- › Chain quality: Pewag Winner Pro meets the PAS 1061 standard with modifications (higher mechanical and impact strength values, reduced application temperature)
- › Stress at lashing capacity: 600 N/mm²
- › Fatigue test: 20.000 cycles at 450 N/mm² nominal stress
- › Test stress: 750 N/mm²
- › Breaking stress: 1.200 N/mm²
- › Breaking elongation: min. 20% regardless of surface
- › Bending: 0,8 x d
- › Stress corrosion: Harmless against stress crack corrosion acc. to PAS 1061
- › Impact strength toughness: 42J at -60°C
- › Admissible operation temperature: -60°C – 300°C (please note WLL reduction at high temperatures)
- › Quality grade stamping on the Pewag Winner Pro chain – 120 at a distance of 300 mm and 12 on the back of each link Pewag Winner Pro components – 12
- › Manufacturer's name or symbol: D16 and/or Pewag
- › Surface: Chain – light blue powdercoated – RAL 5012 or black coropro (PCP) coated – similar to RAL 9005 Components – light blue powdercoated – RAL 5012
- › Lashing tag: All the required data are shown on the tag.
- › Compatibility: Pewag Winner Pro chains and components have only limited compatibility with chains and components from other suppliers. Combinations should be checked in advance with Robertsons.

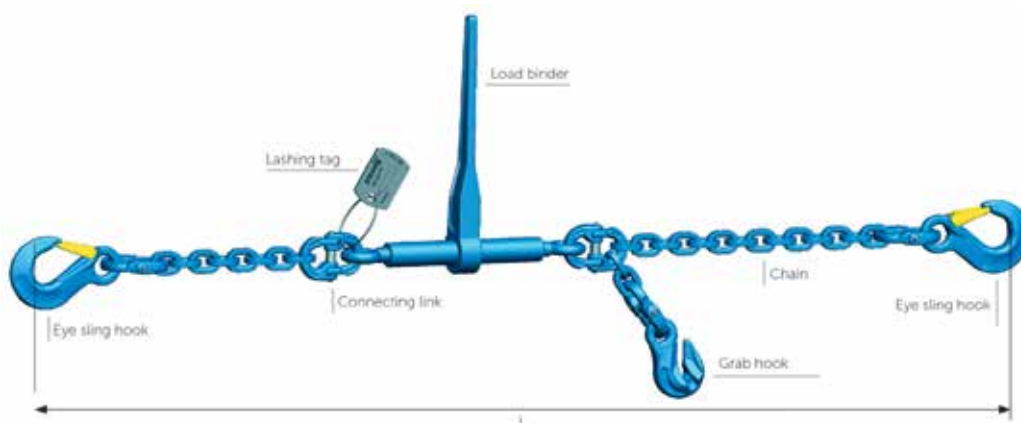
Pewag Winner Pro Lashing Example of Order of Text

Below you will find an example of a finished Pewag lashing chain that can be commercially ordered.

Pewag Winner Pro 8 mm – one-piece lashing chain with shortener and eye sling hook, assembled with Connex-connecting links Length: 3.500 mm

ZRSWP 8 | HSWP – HSWP – PSWP 3500 Connex

Nominal diameter	1-part	Eye sling hook	Eye sling hook	Grab hook	Length (mm)	Connex mounted
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Grade 120 Lashing Accessories

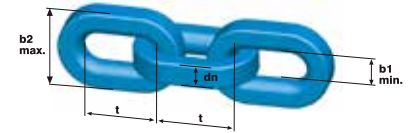
PEWAG Grade 120 Lashing Accessories



PEWAG WINNER PRO Grade 120 Chain

Corresponds to PAS 1061 with modifications.
High duty, specially rugged profile chain in Grade 120.
Perfect for lashing.

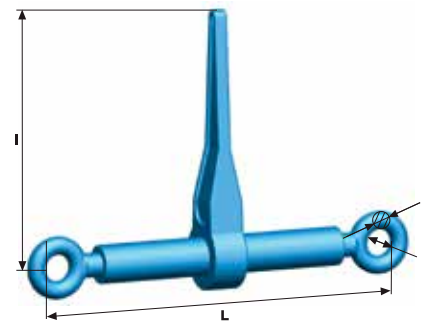
WINPRO chain PCP



Product Code	Material thickness dn (mm)	Standard delivery length (m)	Pitch t (mm)	Inside width b1 min. (mm)	Outside width b2 max. (mm)	LC (kN)	Breaking force (kN)	Weight (kg)
WINPRO 8	8	50	25	11	29	60	118,00	1,64
WINPRO 10	10	50	33	14	37	100	196,00	2,66
WINPRO 13	13	50	41	19	50	160	314,00	5,59

PEWAG WINNER PRO Grade 120 Loadbinder

Corresponds to EN 12195-3 with lashing force according to Grade 120.
For Pewag Winner Pro Connex System. Load binder with optimized lever length.



Product Code	Marking	LC (kN)	Standard tension force STF (daN)	Length closed L (mm)	Length closed L (mm)	Tension range (mm)	Lever length l (mm)	D (mm)	d (mm)	Weight (kg)
RSWP 7/8	Type A	60	1.900	355	500	145	237	20	16	3,20
RSWP 10	Type B	100	3.000	365	510	145	355	26	18	3,80
RSWP 13	Type C	160	2.500	576	866	290	359	31	22	9,90

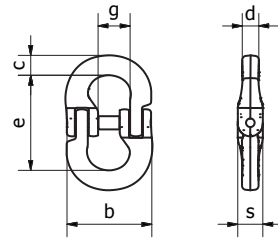


Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

Grade 120 Lashing Accessories

PEWAG WINNER PRO Grade 120 Connex Connecting Link

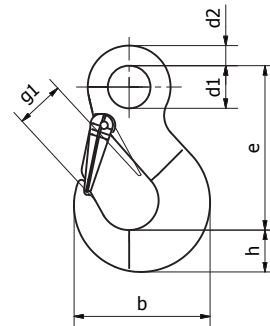
Corresponds to EN 1677-1 with lashing force according to Grade 120.
For Pewag Winner Pro Connex System.
Connex connecting link for easy assembly of chains and components.



Product Code	LC (kN)	e (mm)	c (mm)	s (mm)	d (mm)	b (mm)	g (mm)	Weight (kg)
CWP 8	60	62	14	15	10	58	21	0,29
CWP 10	100	70	16	20	13	66	22	0,33
CWP 13	160	95	21	24	17	84	26	0,70

PEWAG WINNER PRO Grade 120 Eye Sling Hook

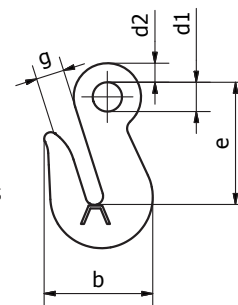
Corresponds to EN 1677-2 with lashing force according to Grade 120.
For the Pewag Winner Pro Connex System.
All hooks with forged and galvanised safety latch.



Product Code	LC (kN)	e (mm)	h (mm)	a (mm)	d1 (mm)	d2 (mm)	g1 (mm)	b (mm)	Weight (kg)
HSWP 7/8	60	106	27	19	25	11	26	88	0,50
HSWP 10	100	131	33	26	34	16	31	109	1,10
HSWP 13	160	164	44	33	43	19	39	132	2,20

PEWAG WINNER PRO Grade 120 Eye Grab Hook

Corresponds to EN 1677-1 with lashing force according to Grade 120.
For Pewag Winner Pro Connex System. Hook for shortening which prevents the accidental release of the chain. Special design of the chain contact area for optimal interaction between chain and hook



Product Code	LC (kN)	e (mm)	d2 (mm)	b (mm)	g (mm)	Weight (kg)
PWP 7/8	60	68	11	63	10	0.48
PWP 10	100	88	14	81	13	1.03
PWP 13	160	113	18	103	17	2.10

Note: 10kN is equivalent to approximately 1 tonne or 1000kg.

Selection of Lashing Chain

Selection of the lashing chain.

1.1 The lashing capacity of the restraint system will be as dependent on the application and environment as the type of equipment selected.

i.e. The Size, Shape and Weight of the load must all be considered to determine the correct selection. See 'Safe Load Restraint Guide' on page 223.

Calculate the number of lashing chains according EN 12195-3 and VDI 270-2.

1.2 Due to varying reactions under load, different components, such as: lashing chains; synthetic lashing systems and; wire ropes are not commonly used together to secure the same load in the same lashing direction, unless they have been specifically designed for the purpose. Products such as the 'Web-Dog' for example, are specifically designed to work with Grade 70 chain.

1.3 Of particular importance when using chain is to ensure that all the chains used are of the same grade, (e.g. Grade 70 or Grade 100), and that any fittings or attachments are of equal or greater strength.

Use

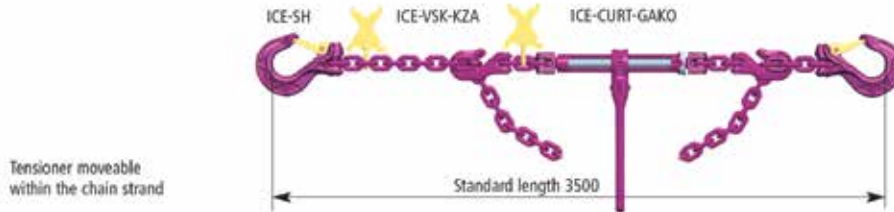
- 2.1 Inspect all equipment prior to use. If any sign of nicks, cuts, excessive wear or stretched links are found the equipment should not be used. Australian Standards state that lashings must be replaced.
- 2.2 Before tightening, ensure that the lashing is not twisted or knotted.
- 2.3 Protect lashing equipment from sharp edges with the use of sleeves or corner protectors.



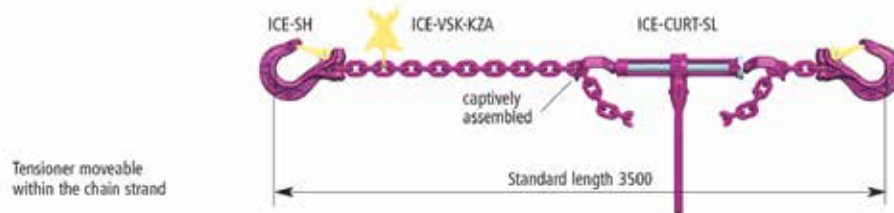
RUD Grade 120 Lashing Chains



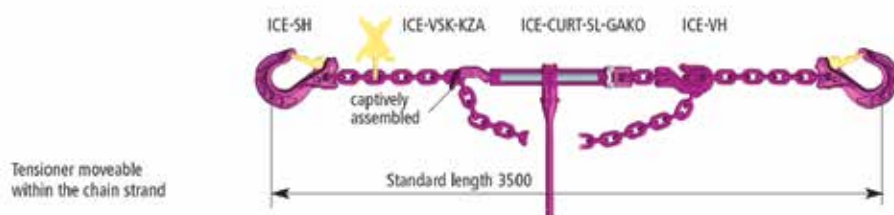
ICE-VSK-CURT lashing chains – Grade-120



Chain Ø (mm)	Type	Lashing cap. LC (daN)	Type	Tensioner		L min (mm)	Weight (kg)	Ref. no.
				Pre-tension STF (daN)	Adjustm. (mm)			
6	ICE-VSK-6-CURT-IVH	3600	ICE-CURT-6-GAKO	in preparation – available soon				
8	ICE-VSK-8-CURT-IVH	6000	ICE-CURT-8-GAKO	2800	170	1040	13.2	7901129
10	ICE-VSK-10-CURT-IVH	10000	ICE-CURT-10-GAKO	2800	170	1210	20.1	7901130
13	ICE-VSK-13-CURT-IVH	16000	ICE-CURT-13-GAKO	in preparation – available soon				
16	ICE-VSK-16-CURT-IVH	25000	ICE-CURT-16-GAKO	in preparation – available soon				



Chain Ø (mm)	Type	Lashing cap. LC (daN)	Type	Tensioner		L min (mm)	Weight (kg)	Ref. no.
				Pre-tension STF (daN)	Adjustm. (mm)			
6	ICE-VSK-6-CURT-SL	3600	ICE-CURT-6-SL	in preparation – available soon				
8	ICE-VSK-8-CURT-SL	6000	ICE-CURT-8-SL	2800	170	817	12.6	7900026
10	ICE-VSK-10-CURT-SL	10000	ICE-CURT-10-SL	2800	170	935	18.1	7900027



Chain Ø (mm)	Type	Lashing cap. LC (daN)	Type	Tensioner		L min (mm)	Weight (kg)	Ref. no.
				Pre-tension STF (daN)	Adjustm. (mm)			
6	ICE-VSK-6-CURT-SL-IVH	3600	ICE-CURT-6-SL-GAKO	in preparation – available soon				
8	ICE-VSK-8-CURT-SL-IVH	6000	ICE-CURT-8-SL-GAKO	2800	170	956	12.9	7901131
10	ICE-VSK-10-CURT-SL-IVH	10000	ICE-CURT-10-SL-GAKO	2800	170	1105	19.1	7901132

Note: 1000 daN is equivalent to approximately 1 tonne or 1000kg.

RUD Grade 120 Lashing Chains

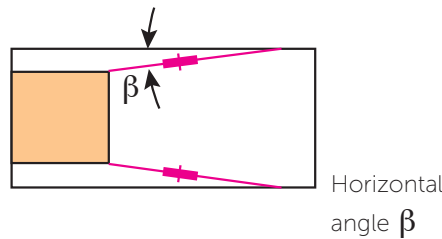
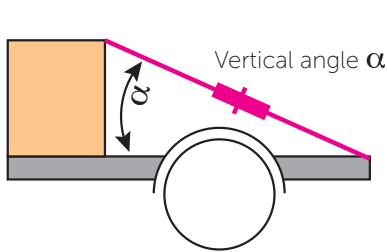


Which lashing chain for which load?

Up to 60% more lashing capacity than Grade 80

Diagonal Lashing

Lashing Chain	LC (daN)	Max. load weight [t] (horizontal angle β : 20°-45°; 2 lashing chains per direction)											
		Vertical angle α : 0°-30°						Vertical angle α : 30°-60°					
		$\mu=0.1$	$\mu=0.2$	$\mu=0.3$	$\mu=0.4$	$\mu=0.5$	$\mu=0.6$	$\mu=0.1$	$\mu=0.2$	$\mu=0.3$	$\mu=0.4$	$\mu=0.5$	$\mu=0.6$
ICE-VSK 6	3600	6.2	8.4	10.4	13.0	17.4	26.2	4.5	6.3	9.0	12.8	19.2	32.0
VIP-VSK 6	3000	5.2	7.0	8.7	10.9	14.5	21.9	3.8	5.3	7.5	10.7	16.0	26.7
ICE-VSK 8	6000	10.5	14.0	17.4	21.8	29.1	43.9	7.6	10.7	15.0	21.4	32.0	53.4
ICE-VSK 10	10000	17.5	23.4	29.0	36.4	48.6	73.1	12.8	17.9	25.0	35.6	53.4	89.0
ICE-VSK 13	16000	28.0	37.5	46.4	58.2	77.8	117.0	20.5	28.6	40.0	57.1	85.5	142.4
VIP-VSK 16	20000	35.0	46.9	58.1	72.8	97.3	146.3	25.6	35.8	50.0	71.3	106.9	178.0



Frictional Lashing

RUD Lashing Chain	STF (daN)	= required number of VIP + ICE lashing chains (number of lashing chains = factor from Table x load weight (t))											
		Vertical angle α : 60°-90°						Vertical angle α : 30°-60°					
		$\mu=0.1$	$\mu=0.2$	$\mu=0.3$	$\mu=0.4$	$\mu=0.5$	$\mu=0.6$	$\mu=0.1$	$\mu=0.2$	$\mu=0.3$	$\mu=0.4$	$\mu=0.5$	$\mu=0.6$
VIP-VSK 6	1500	3.6 x	1.6 x	0.9 x	0.6 x	0.4 x	0.2 x	6.3 x	2.7 x	1.5 x	0.9 x	0.6 x	0.3 x
VIP-VSK 8	2500	2.2 x	1.0 x	0.6 x	0.4 x	0.2 x	0.2 x	3.8 x	1.6 x	0.9 x	0.6 x	0.4 x	0.2 x
VIP-VSK 10	2800	2.0 x	0.9 x	0.5 x	0.3 x	0.2 x	0.1 x	3.4 x	1.5 x	0.8 x	0.5 x	0.3 x	0.2 x
ICE-VSK 8/10/13	2800	2.0 x	0.9 x	0.5 x	0.3 x	0.2 x	0.1 x	3.4 x	1.5 x	0.8 x	0.5 x	0.3 x	0.2 x
VIP-VSK 13/16	3600	1.5 x	0.7 x	0.4 x	0.3 x	0.2 x	0.1 x	2.6 x	1.2 x	0.7 x	0.4 x	0.3 x	0.2

Values of both tables refer to: stable load, road transport, no combination with other lashing or securing methods!

Slide-coefficient of friction μ to VDI 2700-2			
Materials	dry	wet	greasy
Wood/wood	0.20-0.50	0.20-0.25	0.05-0.15
Metal/wood	0.20-0.50	0.20-0.25	0.02-0.10
Metal/metal	0.10-0.25	0.10-0.20	0.01-0.10

If there is a clear deviation from the indicated lashing angles, it is necessary to add some safety measures (e.g. larger chain diameter, and/ or chocks – friction increasing elements).

Heavy construction machinery should be positioned bucket first, tight against the step frame of the low loader.

Handbrake must be engaged and the vehicle left in gear.

Note: 1000 daN is equivalent to approximately 1 tonne or 1000kg.

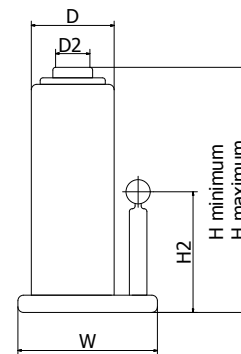
Jacks

Royal Black Jax Series Bottle Jacks

Complies to AS/NZS 2693



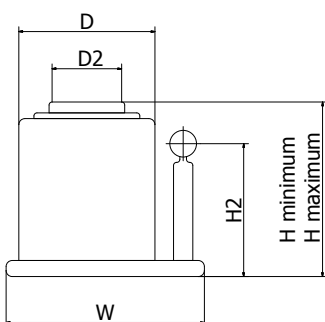
Product Code	Description	Capacity (t)	D (mm)	D2 (mm)	H2 (mm)	W (mm)	Screw Adjusting Height (mm)	Lift Height (mm)	Minimum Height H minimum (mm)	Maximum Height H maximum (mm)	Weight (kg)	UOM
Jax00186	Bottle Jack	1.86	60	30	76	109	60	125	200	385	3.8	Each
Jax004	Bottle Jack	4	70	32	79	109	80	125	200	405	4.8	Each
Jax006	Bottle Jack	6	70	29	81	109	70	127	216	413	4.6	Each
Jax008	Bottle Jack	8	85	40	83	135	80	160	240	480	7.3	Each
Jax010	Bottle Jack	10	95	43	84	148	80	160	245	485	9.3	Each
Jax015	Bottle Jack	15	102	45	85	158	85	170	245	500	12.6	Each
Jax020	Bottle Jack	20	114	54	86	165	90	192	278	560	16.4	Each



Royal Squat Jax Series Bottle Jacks

Complies to AS/NZS 2693 – Designed for use where 12 – 20 tonne lift is required, but ground clearance does not exceed 195mm

Product Code	Description	Capacity (t)	D (mm)	D2 (mm)	H2 (mm)	W (mm)	Screw Adjusting Height (mm)	Lift Height (mm)	Minimum Height H minimum (mm)	Maximum Height H maximum (mm)	Weight (kg)	UOM
BJS012	Squat Bottle Jack	12	95	43	84	136	65	105	191	361	7.6	Each
BJS016	Squat Duty Bottle Jack	16	110	45	85	150	65	110	191	356	9.4	Each
BJS020	Squat Duty Bottle Jack	20	114	45	92	166	72	113	191	376	11.3	Each



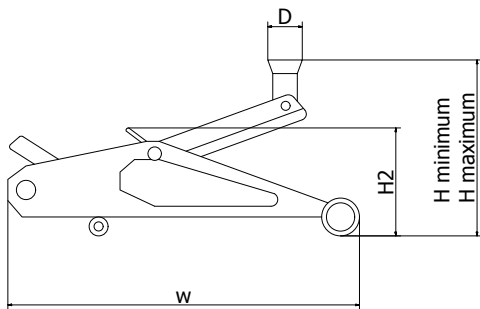
Jacks

Royal Trolley Jack Suitable for D.I.Y. Home Mechanic

Complies to AS/NZS 2615



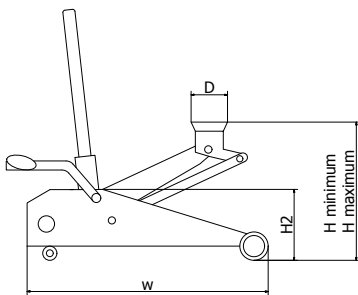
Product Code	Description	Capacity (t)	D (mm)	H2 (mm)	W (mm)	Wheelbase Length (mm)	Minimum Height H minimum (mm)	Maximum Height H maximum (mm)	Nett Weight (kg)	UOM
TJK014	Trolley Jack	1.4	50	132	492	410	130	350	11	Each



Royal Trolley Jack Garage With Quick Lift Pedal

Complies to AS/NZS 2615

Product Code	Description	Capacity (t)	D (mm)	H2 (mm)	W (mm)	Wheelbase Length (mm)	Minimum Height H minimum (mm)	Maximum Height H maximum (mm)	Nett Weight (kg)	UOM
GJK022	Trolley Jack c/w quick lift pedal	2.25	120	155	685	520	145	490	39.5	Each



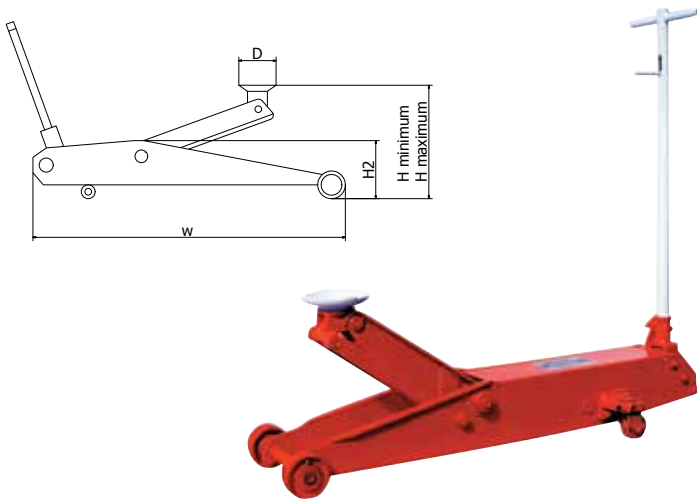
Jacks



Royal Heavy Duty Professional Floor Jack

Complies to AS/NZS 2615

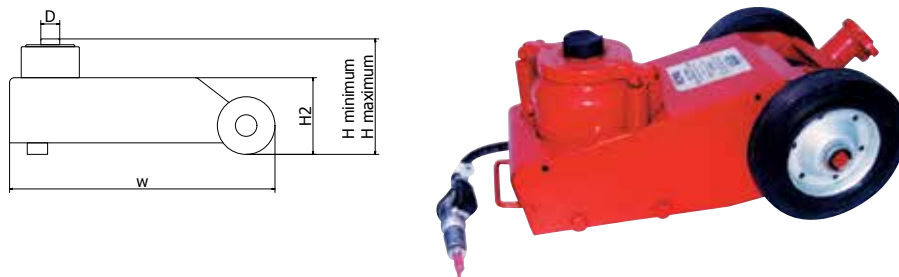
Product Code	Description	Capacity (t)	D (mm)	H2 (mm)	W (mm)	Minimum Height H minimum (mm)	Maximum Height H maximum (mm)	Nett Weight (kg)	UOM
GJK045	Heavy Duty Professional	4.5	210	380	1510	150	560	92	Each



Royal Air / Hydraulic Trolley Jack

Complies to AS/NZS 2615

Product Code	Description	Capacity (t)	D (mm)	H2 (mm)	W (mm)	Minimum Height H minimum (mm)	Maximum Height H maximum (mm)	Nett Weight (kg)	UOM
GJK200	TQ22001 Air/Hydraulic Trolley Jack	20	280	360	660	265	510	46	Each



General Transport Accessories

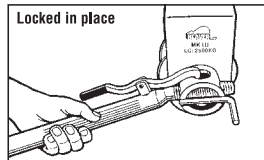
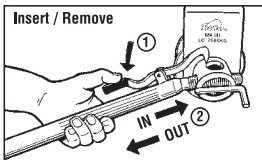


Winch Bar

Truckers Winch Bar

Winch bar comes complete with safety trigger and knurled non-slip handle for easy grip (all steel construction and chrome plated) for use with all Mark IV winches

Product Code	Description	Weight (kg)	UOM
343400S	Winch bar, chrome plated with safety retaining device	2.5	Each



WARNING

- Never release the winch bar Safety Retaining Device without checking that the ratchet pawl is fully engaged between the ratchet gear teeth.
- Releasing a winch bar without the ratchet pawl being fully engaged can cause serious injury to the user or bystanders.

Safety and Operating Instructions

- "Cheater Bars"(extenders) should not be used with winch bars.
- To prevent the winch bar from slipping out and overloading the tip and / or end cap, the tip of the winch bar shall be inserted through both opposing slotted holes on the winch drum end cap of the Beaver Mark III Truck Winches.

Transport General

Corner Protector

Product Code	Description	Pack Qty	Weight (kg)	UOM
340000	Corner Protector 140 x 140 x 1040mm	1	2	Each
340010	Corner Protector 85 x 85 x 300mm	10	0.022	Each



EPM Rubber Tie Downs for tarps

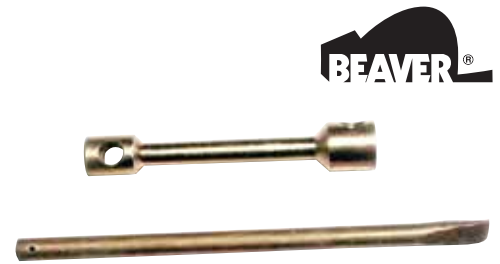
Product Code	Strap Length (mm)	Max. Safe Stretch (mm)	Qty Per Bag	Weight Each (kg)	UOM	Bags Per Carton
340721	533	812	10	0.12	Each	10
340731	787	1168	5	0.16	Each	20



General Transport Accessories

Royal Truck Wheel Wrenches

Product Code	Description	Weight Each (kg)	UOM
TWB032	32mm x 17mm x 300mm	2.375	Each
TWB035	35mm x 17mm x 300mm	2.375	Each
TWB038	38mm x 21mm x 395mm	3.667	Each
TWB041	41mm x 21mm x 395mm	4.000	Each
TWB041A	41mm x 19mm x 395mm	3.833	Each
TWB114A	32mm x 27mm x 395mm	3.500	Each
TWB118	28mm x 33mm x 395mm	3.500	Each
TWB516	33mm x 21mm x 395mm	3.500	Each
TWB516A	33mm x 32mm x 395mm	3.500	Each
BARTWW040	400mm Wrench Bar Only	0.920	Each
BARTWW050	500mm Wrench Bar Only	1.917	Each



Friction Mats

Product Code	Description	Thickness (mm)	Length (mm)	Width (mm)	Weight (kg)	UOM
350000	Friction Mat 1000 x 1000 x 8mm	8	1000	1000	5	Each



reliable ^ professional ^ achievable



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