



PREFORMED LINE PRODUCTS
The connection you can count on.

Section 2 - Suspension and Support

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ARMOR GRIP® Suspension



The ARMOR-GRIP® Suspension unit is intended for use on all material types and conductor constructions. Designed to reduce the static and dynamic stresses at the suspension point so that the conductor is protected against the effects of conductor motion. It also protects the conductor in the suspension area against impulse and power flash-over arcing.

The ARMOR-GRIP® Suspension is superior to bolted alternative combinations for protecting conductors from bending, compression stress and abrasion.

Line repairs:

Where a conductor has been damaged by a bolted clamp, special design ARMOR-GRIP® Suspension can be used in the repair. Please contact PLP for more information.

Line Angle:

The maximum recommended line angle for a single suspension AGS is 30°. For angles between 30° and 60°, the ARMOR-GRIP® Suspension Double Assembly is recommended.

Safety and Application Considerations

- This product is intended for a single (one-time) use and for the specified application, although it may be re-applied twice for re-tensioning within 90 days from initial installation
- Do not modify this product in any way
- This product is intended for use by qualified linesmen only
- When working in the area of energised line with this product, extra care should be taken to prevent accidental electrical contact
- For proper performance and personal safety, be sure to select the proper size PREFORMED™ products before application
- PREFORMED™ products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully

ARMOR GRIP® Suspension



AGS-51

AAAC, AAC, ACSR (Conductor Ø 13.48mm - 25.99mm)

For use on: ACSR, AAC, AAAC compacted all aluminium and compacted ACSR. Conductors above 13.48 mm in diameter. Right-hand lay standard. Series 51 are single, Series 58 are double.
Contact PLP to specify required bolt size. Available in M16 and M20.

Part Number (Single Unit)	Part Number (Double Unit)	Typical Australian Conductors	Conductor Diameter Range (mm)	Colour Code
AGS-5102	AGS-5802	7/4.50	13.48-13.77	Green
AGS-5103	AGS-5803		13.78-14.09	Brown
AGS-5104	AGS-5804	6/4.75/7/1.60	14.10-14.59	Blue
AGS-5105	AGS-5805	7/4.75	14.60-15.09	Red
AGS-5106	AGS-5806		15.10-15.39	Orange
AGS-5108	AGS-5808	19/3.25	15.80-16.39	Orange
AGS-5109	AGS-5809		16.40-17.09	Black
AGS-5110	AGS-5810	30/7/2.50	17.10-17.59	Blue
AGS-5111	AGS-5811		17.60-18.09	Yellow
AGS-5112	AGS-5812	30/7/2.59	18.10-18.59	Black
AGS-5113	AGS-5813	19/3.75	18.60-19.09	Black
AGS-5114	AGS-5814		19.10-19.59	White
AGS-5115	AGS-5815		19.60-20.19	Orange
	AGS-5816		20.20-20.99	Brown
AGS-5117	AGS-5817	30/7/3.00		
37/3.00	21.00-21.49	Red		
AGS-5118	AGS-5818		21.50-22.09	Blue
AGS-5119	AGS-5819		22.10-22.69	Green
AGS-5120	AGS-5820	30/7/3.25	22.70-23.09	Orange
AGS-5121	AGS-5821		23.10-23.39	Yellow
AGS-5122	AGS-5822	19/4.75	23.40-23.80	Black
AGS-5124	AGS-5824		24.40-25.09	Purple
AGS-5126	AGS-5825		25.55-26.00	Purple

AGS-58



Double AGS® Suspension is used where the turning angle is greater than 30° and up to 60°. A triangular Yoke Plate is used with Double AGS.

ARMOR GRIP® Suspension



AGS-51

For AAAC, AAC, ACSR (Conductor Ø 26.50mm - 48.97mm)

For use on: ACSR, AAC, AAAC compacted all aluminium and compacted ACSR. Conductors above 13.48 mm in diameter. Right-hand lay standard. Series 51 are single, Series 58 are double.

Note: Contact PLP to specify required bolt size. Available in M16 and M20.

Part Number (Single Unit)	Part Number (Double Unit)	Typical Australian Conductors	Conductor Diameter Range (mm)	Colour Code
AGS-5128	AGS-5828	54/7/3.00	26.50-27.29	Red
AGS-5129	AGS-5829		27.30-27.69	Green
AGS-5130	AGS-5830		27.70-28.39	Yellow
AGS-5131	AGS-5831		28.40-28.89	Black
AGS-5132	AGS-5832	54/7/3.25	28.90-29.29	Orange
AGS-5133	AGS-5833	61/3.25	29.30-29.89	Brown
AGS-5134	AGS-5834		29.00-30.69	Orange
AGS-5135	AGS-5835		30.70-31.19	Purple
AGS-5136	AGS-5836	54/7/3.50	31.20-31.99	Purple
AGS-5137	AGS-5837		32.00-32.69	Blue
AGS-5138	AGS-5838		32.70-33.39	Green
AGS-5139	AGS-5839	54/3.75-19/2.25	33.40-34.39	Black
AGS-5140	AGS-5840	61/3.75	34.40-35.39	Black
AGS-5141	AGS-5841		35.40-35.99	White
AGS-5142	AGS-5842		36.00-36.59	Brown
AGS-5144	AGS-5844		37.50-38.49	Purple
AGS-5145	AGS-5845		38.50-39.59	Red
AGS-5146	AGS-5846		39.60-40.19	Blue
AGS-5147	AGS-5847		40.20-40.99	Green
AGS-5148	AGS-5848		41.00-41.89	Yellow
AGS-5149	AGS-5849	54/4.75-19/2.85	41.90-42.89	Blue
AGS-5150	AGS-5850		42.90-43.89	White
AGS-5151	AGS-5851		43.90-44.49	Brown
AGS-5152	AGS-5852		44.50-45.49	Orange
AGS-5153	AGS-5853		45.50-46.40	Purple
AGS-5569			47.83-48.97	

AGS-58



Double AGS® Suspension is used where the turning angle is greater than 30° and up to 60°. A triangular Yoke Plate is used with Double AGS.

ARMOR GRIP® Suspension



AGS-61 & AGS-68

For SC/AC

For use on: SC/AC conductors. Left hand lay standard. 61 series are single. Contact PLP for other conductor sizes. Contact PLP for AGS units to suit right hand lay conductors.

Part Number (Single Unit)	Part Number (Double Unit)	Conductor Stranding	Standard Pack Quantity	Colour Code
AGS-6101-5	AGS-6801	7/2.75	15	White
AGS-6105	AGS-6805	7/3.25	15	Orange
AGS-6109	AGS-6809	7/3.75	15	Black
AGS-6112-16-2		7/4.25		Brown

AGS-71 & AGS-78

For Galvanised Steel SC/GZ

For use on: Galvanised steel conductors. Right hand lay standard. 71 series are single, 78 series are double. Contact PLP for other conductor sizes.



Part Number (Single Unit)	Part Number (Double Unit)	Conductor Stranding	Standard Pack Quantity	Colour Code
AGS-7101	AGS-7801	7/2.75	15	White
AGS-7105	AGS-7805	7/3.25	15	Orange
AGS-7106	AGS-7806	19/2.00	15	Yellow
AGS-7109	AGS-7809	7/3.75	15	Black

ARMOR GRIP® Support

AGS-52

For AAAC, AAC and ACSR



The ARMOR-GRIP® Support is intended for use on aluminium based conductors, and is designed to be used with clamp top horizontal and vertical line post insulators. The ARMOR-GRIP® Support is designed to reduce static and dynamic stress at the support point, so that the conductor is better able to withstand the effect of vibration than with Armour Clamp attachments. ARMOR-GRIP® Support protect against clamping fatigue through bending and compression stress and against flash over arcing.

Part Number	Typical Australian Conductors	Conductor Diameter Range (mm)	Colour Code
AGS-5204	6/4.75/7/1.60	14.10-14.59	Blue
AGS-5205	7/4.75	14.60-15.09	Red
AGS-5206		15.10-15.39	Orange
AGS-5207		15.40-15.79	Purple
AGS-5208	19/3.25	15.80-16.39	Orange
AGS-5209		16.40-17.09	Blue
AGS-5210	30/7/2.50	17.17-17.59	Blue
AGS-5211		17.60-18.09	Yellow
AGS-5212		18.10-18.59	Black
AGS-5213	19/3.75	18.60-19.09	Black
AGS-5214		19.10-19.59	White
AGS-5215		19.60-20.19	Orange
AGS-5216		20.20-20.99	Brown
AGS-5217	30/7/3.00 37/3.00	21.00-21.49	Red
AGS-5218		21.50-22.09	Blue
AGS-5219		22.10-22.69	Green
AGS-5220	30/7/3.25	22.70-23.09	Orange
AGS-5221		23.10-22.69	Yellow
AGS-5222	19/4.75	23.40-23.79	Blue
AGS-5223		23.80-24.39	White
AGS-5224	30/7/3.50	24.40-25.09	Purple
AGS-5226		25.60-25.99	Purple
AGS-5227		26.00-26.49	Purple
AGS-5227	37/3.75	26.50-27.29	Black

Part Number	Typical Australian Conductors	Conductor Diameter Range (mm)	Colour Code
AGS-5228	54/7/3.00	26.50 - 27.29	Red
AGS-5229		27.30 - 26.69	Green
AGS-5230		27.70 - 28.39	Yellow
AGS-5231		28.40 - 28.89	Black
AGS-5232		28.90 - 29.29	Orange
AGS-5233	54/7/3.25	29.30 - 29.89	Brown
AGS-5234	61/3.25	29.90 - 30.69	Orange
AGS-5235		30.70 - 31.19	Purple
AGS-5236	54/7/3.50	31.20 - 31.99	Purple
AGS-5237		31.00 - 32.69	Blue
AGS-5238		32.70 - 33.39	Green
AGS-5239	54/3.75/19/2.25	33.40 - 34.39	Black
AGS-5240	61/3.75	34.40 - 35.39	Black
AGS-5241		35.40 - 35.99	White
AGS-5242		36.00 - 36.59	Brown
AGS-5243		36.60 - 37.49	Orange
AGS-5244		37.50 - 38.49	Purple
AGS-5245		38.50 - 39.59	Red
AGS-5246		39.60 - 40.19	Blue
AGS-5247		40.20 - 40.99	Green
AGS-5248		41.00 - 41.89	Yellow
AGS-5249	54/4.75/19/2.85	41.90 - 42.89	Blue
AGS-5250		42.90 - 43.89	White
AGS-5251		43.90-44.49	Brown
AGS-5252		44.50-45.49	Orange
AGS-5253		45.50-46.40	Purple

Suspension Clamps



D-Y11195 & SCAT

Suspension Trunnion Clamp

PLP recommends the use of Armor Rods with all bolted suspension clamps as minimum protection at a suspension point. For aluminium based conductors. The clamp is made from cast aluminium with hot dip galvanised fasteners.

Part Number (Use with H.L.P Ins.)	Part Number (Suspension)	Conductor Diameter (mm)
	SCAT-1221-A	12.00 - 21.00
D-Y11195		13.00 - 35.00
	SCAT-1628-A	16.00 - 28.00
	SCAT-2838A	28.00 - 38.00
	SCAT-4652-A	46.00 - 52.00



SCIO

Offset Suspension Clamp

Manufactured from cast iron and hot dipped galvanised. For use on copper and SC/GZ.

Part Number	Conductor Diameter (mm)
SCIO-0517	5.00 - 17.00
SCIO-1727	17.00 - 27.00

Add suffix **A** to include Socket Clevis.

CUSHION-GRIP® Suspension and Support



Features:

- Shipped fully assembled with no loose parts. All fasteners are factory installed to eliminate lost hardware in the field
- Installation time is saved due to the simplicity of the product, approximately a quarter of the time to install compared to a typical ARMOUR-GRIP® Suspension unit
- Conductor bending and fatigue is reduced at critical points by the elastomer inserts

CUSHION-GRIP® Suspension:

- Designed for corona free operation in EHV applications
- Ultimate vertical load of 111kN
- Ultimate slip load of between 10–15% of conductor UTS
- Normal operating temperature of 125°C
- Available for high temperature applications, up to 200°C utilising a high temperature insert

CUSHION-GRIP® Support:

- Ultimate vertical load of 22.4kN
- Ultimate slip load of between 10–15% of conductor UTS
- Normal operating temperature of 125°C

Safety and Application Considerations

- The CUSHION-GRIP® Suspension and Support is intended for use on all aluminium based conductors and is designed to reduce the static and dynamic stresses at the support point. The conductor is cushioned by field proven integral elastomer inserts which guard against abrasion, wear and fatigue
- The level of protection provided by the CUSHION-GRIP® range is comparable to a bolted clamp over Armor Rods. This equates to a reduction in bending strain as high as 50% as compared to a bare conductor in a bolted clamp
- The standard CUSHION-GRIP® Suspension and Support is designed for up to 125°C continuous conductor operation. A high temperature version is available in the CUSHION-GRIP® Suspension range which can be used for applications with continuous conductor operating temperatures up to 200°C

CUSHION-GRIP® Suspension



CGS

For Aluminium Based Conductors

PLP recommends the use of Armor Rods with all bolted suspension clamps as minimum protection at a suspension point. For aluminium based conductors. The clamp is made from cast aluminium with hot dip galvanised fasteners.

Part Number	Conductor Range (mm)		Standard Pack Quantity
	Min	Max	
CGS-1095	7.92	15.44	3
CGS-1096	15.5	22.4	3
CGS-1097	22.5	30.4	3
CGS-1098	30.4	39.2	3
CGS-1120	39.2	39.8	3
CGS-1121	39.8	41.6	3
CGS-1122	41.7	43.3	3
CGS-1123	43.4	45	3
CGS-1124	45	46.5	3
CGS-1125	46.6	48	3
CGS-1126	48.1	49.5	3
CGS-1127	49.5	50.8	3
CGS-1128	50.8	52.1	3

CUSHION-GRIP® Support



CGS

For Aluminium Based Conductors

Part Number	Conductor Range (mm)		Standard Pack Quantity
	Min	Max	
CGS-2100	9.5	14.3	3
CGS-2101	14.3	22.4	3
CGS-2102	22.4	30.4	3

THERMOLIGN® Suspension



THERMOLIGN® Suspension is specifically designed for application on aluminium based high temperature conductors. The suspension unit is rated for a continuous conductor operating temperature of up to 250°C. Maximum 30° line angle for single suspension and up to 60° line angle for double suspension with yoke plate.

Features:

- Dual layer Armor Rod design for maximum mechanical and thermal performance.
- Minimal heat transferred to stringing hardware and insulators.
- Cushion inserts surround the conductor for ultimate protection of susceptible conductor wires against dynamic loading.

Safety and Application Considerations

- This product is intended for a single (one-time) use and for the specified application, although it may be re-applied for re-tensioning within 90 days from initial installation
- Do not modify this product in any way
- This product is intended for use by qualified linesmen only
- When working in the area of energised line with this product, extra care should be taken to prevent accidental electrical contact
- For proper performance and personal safety, be sure to select the proper size PREFORMED™ products before application
- PREFORMED™ products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully

THERMOLIGN® Suspension



TLS

For Aluminium Based Conductors

Part Number (Single Unit)	Part Number (Double Unit)	Conductor Diameter Range (mm)	Inner Colour Code	Outer Colour Code
TLS-0096	TLS-0296	18.0 - 18.4	Green	Purple
TLS-0097	TLS-0297	18.5 - 19.3	Pink	Red
TLS-0098	TLS-0298	19.3 - 20.0	White	Blue
TLS-0099	TLS-0299	20.0 - 20.7	Purple	Green
TLS-0100	TLS-0300	20.7 - 21.7	Red	Yellow
TLS-0101	TLS-0301	21.7 - 22.7	Blue	Black
TLS-0102	TLS-0302	22.7 - 23.3	Black	White
TLS-0103	TLS-0303	23.3 - 23.9	Orange	Brown
TLS-0104	TLS-0304	23.9 - 24.8	Green	Orange
TLS-0105	TLS-0305	24.8 - 25.8	Pink	Purple
TLS-0106	TLS-0306	25.8 - 26.8	Purple	Red
TLS-0107	TLS-0307	26.8 - 27.4	White	Blue
TLS-0108	TLS-0308	27.4 - 28.2	White	Green
TLS-0109	TLS-0309	28.2 - 29.2	Yellow	Yellow
TLS-0110	TLS-0310	29.2 - 30.2	Yellow	Black
TLS-0111	TLS-0311	30.2 - 30.7	Yellow	White
TLS-0112	TLS-0312	30.7 - 32.1	Brown	Red
TLS-0113	TLS-0313	32.1 - 33.2	Brown	Blue
TLS-0114	TLS-0314	33.2 - 34.0	Red	Green
TLS-0115	TLS-0315	34.0 - 34.7	Red	Yellow
TLS-0116	TLS-0316	34.7 - 35.7	Blue	Black
TLS-0117	TLS-0317	35.7 - 36.8	Black	White
TLS-0118	TLS-0318	36.8 - 37.9	Orange	Brown
TLS-0119	TLS-0319	37.9 - 38.9	Green	Orange
TLS-0120	TLS-0320	38.9 - 39.9	Pink	Purple

Twin Grip



GTG

For SC/GZ

PREFORMED™ Twin-Grips are designed for SC/GZ earth wire utilising the PLP aluminium sheave. The fitting is used at support positions and is designed to provide superior mechanical strength and resilience during conductor motion.

Features:

- Easy application
- Long life
- Positive grip

Part Number	Conductor Stranding	Conductor Diameter (mm)	Standard Pack Quantity	Colour Code
GTG-043-54	3/2.00	4.25	10	Yellow
GTG-048-54	7/1.60	4.8	10	Green
GTG-060-54	7/2.00	6	25	White
GTG-075-54	7/2.50	7.5	15	Blue
GTG-083-54	7/2.75	8.25	15	White
GTG-100-54	19/2.00 7/3.25	10.00 9.75	12	Yellow Orange
GTG-113-54	7/4.50	13.5	8	Green
GTG-138-54	19/2.75	13.75	10	White

Note: Add part number AS-54-17 or AS-54-22 if sheave is required. Standard part numbers (-54) are designed to suit 54mm sheaves. Contact PLP for other sizes.

AWTG

For ACSR AND SC/AC

PREFORMED™ Twin-Grips are designed to support ACSR and SC/AC utilising the PLP Aluminium Sheave. The fitting is designed to be used where a high level of mechanical strength is required. It provides resilience during conductor motion and unbalanced loads.

Features:

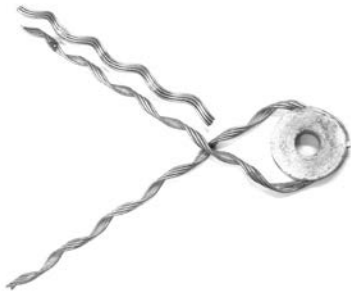
- Easy application
- Long life
- Positive grip
- Filler rods can be supplied to allow a bond clamp to be attached for earthwire applications



Part Number	Conductor Stranding	Conductor Diameter (mm)	Standard Pack Quantity	Colour Code
AWTG-075-54	7/2.50	7.5	10	Blue
AWTG-083-54	7/2.75	8.25	10	White
AWTG-101-54	7/3.35	10.05	10	Orange
AWTG-113-54	7/3.75	11.25	10	Black
AWTG-135-54	7/4.50	13.5	8	Green
AWTG-163-54	19/3.25	16.25	6	Orange

Note: Add part number AS-54-17 or AS-54-22 if sheave is required. Standard part numbers (-54) are designed to suit 54mm sheaves. Contact PLP for other sizes.

PREFORMED™ Tygard



GTU

For Earthwire

The PREFORMED™ Galvanised Steel Tygard is designed for earthwire connections at suspension points utilising the PLP aluminium sheave.

The product provides superior mechanical strength during conductor motion. The fitting can be used with or without filler rods. The filler rods are utilised where an earth-bonding connection is required.

Part Number (Without Filler Rods)	Conductor Stranding	Standard Pack Quantity	Colour Code
GTU-083-54	7/2.75	60	White
GTU-098-54	7/3.25	20	Orange
GTU-113-54	7/3.75	30	Black
GTU-120-54	7/4.00	20	Black
GTU-140-54	19/2.75	20	White
GTU-150-54	7/3.25	20	Orange
GTU-163-54	19/3.25	40	Red

Note: Aluminium Sheave not included.
See page 7-6 for part number details.

