

COMPONENTS PRICE GUIDE

AUGUST 2016

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Distributor of Quality Products

Dtrack
by **DOHMO**

eZe[®]Head Box

eZe[®]Flashing

eZe[®]Bottom Bar

DOHMO
RESTRICTING THE ELEMENTS & INCREASING YOUR LIVING AREAS



QWICK CLICK
Lockable Fixed Guide Blind

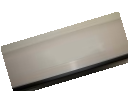


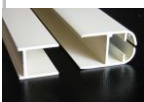







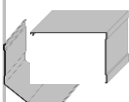



CHANNEL - IT
Side Channel Awning System

CHANNEL X
Side Channel Awning System

Dtrack - SIDE RETAINED BLINDS






ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
 Bottom Rail		DTBB6	Dtrack™ 6.0mt mill finish Bottom Bar	LNG	4
		DTBB6CC	Dtrack™ 6.0mt Classic Cream Bottom Bar	LNG	4
		DTBB6BK	Dtrack™ 6.0mt Satin Black Bottom Bar	LNG	4
		DTBB6PB	Dtrack™ 6.0mt Paperbark Bottom Bar	LNG	4
		DTBB6WH	Dtrack™ 6.0mt White Bottom Bar	LNG	4
 Side Channel  Wall Mount  Track Insert		DTSCBM25	Dtrack™ Side Channel MILL 2.5mt	LNG	10
		DTSCBM6	Dtrack™ Side Channel MILL 6mt	LNG	10
		DTSCBBK3	Dtrack™ Side Channel SATIN BLACK 3mt	LNG	10
		DTSCBCC3	Dtrack™ Side Channel CUSTOM CREAM 3mt	LNG	10
		DTSCBPB3	Dtrack™ Side Channel PAPERBARK 3mt	LNG	10
		DTSCAM25	Dtrack™ SC Wall Mount MILL 2.5mt	LNG	10
		DTSCAM6	Dtrack™ SC Wall Mount MILL 6mt	LNG	10
		DTSCABK3	Dtrack™ SC Wall Mount SATIN BLACK 3mt	LNG	10
		DTSCACC3	Dtrack™ SC Wall Mount CUSTOM CREAM 3mt	LNG	10
		DTSCAPB3	Dtrack™ SC Wall Mount PAPERBARK 3mt	LNG	10
 Components 		DTSCTCAP	Dtrack™ TOP STOP Side Channel Cap (Left & Right) 2 per	PAIR	10
		DTSCTBRS	Dtrack™ Bottom Side Channel CapS - pair	PAIR	10
		DOPDH	Dtrack™ Pull Down Handle	EACH	10
		DOCL	DOHMO™ Bottom Bar Locking Mechanism Kit 2 x latches, 1 x centre mechanism, 2 x levers, 1 x metal shaft	EACH	5
		CISSWIRE	STAINLESS STEEL WIRE 1.2mm FOR CENTRE LOCK	MTR	250
 Weather Strip  Spline  EZE Headbox  EZE End Plates  EZE Flashing		CIWSCX	Bottom Bar WEATHER STRIP ROUND	MTR	200
		CIWSFCX	Bottom Bar WEATHER STRIP FLAT	MTR	100
		VSPSPL3.6H	VSP spline 3.6mm x 500mt HARD	ROLL	1
		VSPSPL3.6S	VSP spline 3.6mm x 500mt SOFT	ROLL	1
		VSPSPL6S	VSP 6.0mm x 250mt SOFT	ROLL	1
		CIHEBOXB4	eZe HEAD BOX FRONT 4.0mt	LNG	5
		CIHEBOXT4	eZe HEADBOX BACK 4.0mt	LNG	5
		CIHEBOXT695	eZe HEAD BOX BACK 6.95mt	LNG	5
		CIHEBOXB695	eZe HEAD BOX FRONT 6.95mt	LNG	5
		CIHBOXEC	* eZe HEAD BOX END PLATES * End Plates have locating dimples for easy mounting	PAIR	10
		CIFLAEZE6	eZe FLASHING 38mm x 120mm x 6mt ALUMINIUM	LNG	5
		CIFLAEZE6170	eZe FLASHING 38mm x 170mm x 6mt ALUMINIUM	LNG	5

Delivery charges subject to our trading terms
Prices subject to change without notice

AWNING HOOD & ENDCAP

ADD 10% GST








Product Illustration	Product	Code	Description	Unit	Pack Size
HOODING O/R 6.6mt 	HDHOODFGR	FED GREEN		LNG	4
	HDHOODPRI	PRIMROSE		LNG	4
	HDHOODWHI	WHITE		LNG	4
	HDHOODWTO	WOODTONE		LNG	4
	HDHOODANV	ANVIL		LNG	4
	HDHOODBLA	BLACK		LNG	4
	HDHOODGAL	GALAXY		LNG	4
	HDHOODMGR	MIST GREEN		LNG	4
	HDHOODROX	RED OXIDE		LNG	4
	HDHOODSBE	STONEY BEIGE		LNG	4
HOODENDS O/R 	HDHEFGR	FED GREEN		PAIR	25
	HDHEPRI	PRIMROSE		PAIR	25
	HDHEWHI	WHITE		PAIR	25
	HDHEWTO	WOODTONE		PAIR	25
	HDHEANV	ANVIL		PAIR	25
	HDHEBLA	BLACK		PAIR	25
	HDHEGAL	GALAXY		PAIR	25
	HDHEMGR	MIST GREEN		PAIR	25
	HDHEROX	RED OXIDE		PAIR	25
	HDHESBE	STONEY BEIGE		PAIR	25
HOODENDS O/R for GEAR BOX 	UNIHEGBCG	CAUFIELD GREEN (FED GREEN)		PAIR	5
	UNIHEGBSMCR	SMOOTH CREAM (PRIMROSE)		PAIR	5
	UNIHEGBTWH	THREDBO WHITE (WHITE)		PAIR	5
	UNIHEGBRB	RANCH BROWN (WOODTONE)		PAIR	5
	UNIHEGBEB	EBONY (BLACK)		PAIR	5
	UNIHEGBMB	MOUNTAIN BLUE (GALAXY)		PAIR	5
	UNIHEMIGR	MIST GREEN		PAIR	5
	UNIHEGBHER	HERITAGE RED (RED OXIDE)		PAIR	5
	UNIHEGBMER	MERINO (STONEY BEIGE)		PAIR	5
	UNIHEGBSG	SLATE GREY		PAIR	5
	UNIHEGBWHE	WHEAT		PAIR	5

All open pack LONG product sold as FULL LENGTHS ONLY - Will cut to size for safe transport (no extra charge)







AWNING SPRING

ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
 	VSP SPRINGS		VSPSPR50SML 50mm SMALL SPRING 300mm -with idlers	EACH	15
			VSPSPR50MED 50mm MEDIUM SPRING 475mm - with idlers	EACH	15
			VSPSPR50STD 50mm STANDARD SPRING 630mm - with idlers	EACH	15
			VSPSPR50DBL 50mm DOUBLE SPRING - with idlers	EACH	5
			VSPSPR63SML 63mm SMALL SPRING 450mm - with idlers	EACH	5
			VSPSPR63STD 63mm STANDARD SPRING 1000mm - with idlers	EACH	5
			VSPSPR63DBL 63mm DOUBLE SPRING - with idlers	EACH	5
			VSPSPR63HEL 63mm HELPER SPRING 1000mm - idler not required	EACH	5
			VSPSPR50300T 50mm SOFT Spring 370mm - with idler SIDE TRACK BLINDS	EACH	5
			VSPSPR50475T 50mm SOFT Spring 495mm - with idler SIDE TRACK BLINDS	EACH	5
 			VSPSPR50630T 50mm SOFT Spring 650mm - with idler SIDE TRACK BLINDS	EACH	5
			VSPSPR65SMLT 63mm SOFT Spring 450mm - with idler SIDE TRACK BLINDS	EACH	5
			VSPSPR63STDT 63mm SOFT Spring 1000mm - with idler SIDE TRACK BLINDS	EACH	5
			VSPSPRAD70 CROWN & ADAPTOR - ALLOWS 63mm SPRING to FIT 70mm	EACH	5
	VSP IDLER	VSPIDE50	50mm IDLER	EACH	10
		VSPIDE63	63mm IDLER	EACH	10
	HD RUA SPRING ASSY (Idlers order separately)	HDSPR60750	60mm RUA SPRING ASSY 750mm	EACH	10
		HDSPR6012	60mm RUA SPRING ASSY 1200mm	EACH	10
		HDSPR6018	60mm RUA SPRING ASSY 1800mm	EACH	10
	HD RUA IDLER	HDIDE60	60mm RUA IDLER	EACH	40








AWNING KEYWAY TUBE

Product Illustration	Product	Code	Description	Unit	Pack Size
 	ALUMINIUM		VSPKEYA63/45 63mm 4.5mt ALUMINIUM EXTRUDED KEY	LNG	5
			VSPKEYA63/66 63mm 6.6mt ALUMINIUM EXTRUDED KEY	LNG	5
			VSPKEYA70/45 70mm 4.5mt ALUMINIUM EXTRUDED KEY	LNG	5
			VSPKEYA70/65 70mm 6.5mt ALUMINIUM EXTRUDED KEY	LNG	5
			VSPKEYA78/45 78mm 4.5mt ALUMINIUM EXTRUDED KEY	LNG	5
			VSPKEYA78/65 78mm 6.6mt ALUMINIUM EXTRUDED KEY	LNG	5
			CIKEYA100 100mm 8.0mt ALUMINIUM uses 70mm components	LNG	2
			VSPKEY50G 50mm 6.5mt LOCKED SEAM GALV KEY	LNG	10
 	GALV STEEL		HDKEY60G 60mm 6.5mt GALV KEYWAY	LNG	10
			VSPKEY63G45 63mm 4.5mt LOCKED SEAM	LNG	5
			VSPKEY63G 63mm 6.6mt LOCKED SEAM	LNG	5
			VSPKEY70G5 70mm 5.0mt LOCKED SEAM	LNG	5
			VSPKEY70G 70mm 6.0mt LOCKED SEAM		
			VSPKEY78G4 78mm 4.0mt LOCKED SEAM	LNG	5
			VSPKEY78G5 78mm 5.0mt LOCKED SEAM	LNG	5
			VSPKEY78G 78mm 6.0mt LOCKED SEAM	LNG	5

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DELUXE KEYWAY, SPRING & COMPONENT

ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	VSP DELUXE SPRING WITH BEARING	VSPSPRDLXS	63mm 910mm	EACH	15
	(Idlers order separately)	VSPSPRDLXL	63mm 1585mm	EACH	15
			Deluxe Spring Mount Guide: For over-roll fabric direction, spring drive end to be mounted on the left For under-roll fabric direction, spring drive end to be mounted on the right		
	VSP DELUXE SPRING IDLER WITH BEARING	VSPSPRID63	63mm IDLER DELUXE TO SUIT 63mm KEYWAY	EACH	5
		VSPSPRID70	70mm IDLER DELUXE TO SUIT 70mm KEYWAY	EACH	5
		VSPSPRID85	85mm IDLER DELUXE TO SUIT 85mm KEYWAY	EACH	5
	VSP DELUXE SPRING CROWN	VSPSPRC70	DELUXE SPRING CROWN TO SUIT 70mm KEYWAY	EACH	5
		VSPSPRC85	DELUXE SPRING CROWN TO SUIT 85mm KEYWAY	EACH	5
	VSP DELUXE SPRING ADAPTOR	VSPSPRA70	DELUXE SPRING ADAPTOR TO SUIT 70mm KEYWAY	EACH	10
		VSPSPRA85	DELUXE SPRING ADAPTOR TO SUIT 85mm KEYWAY	EACH	10
	VSP DELUXE SPRING COLLAR	VSPSPRR70	DELUXE SPRING COLLAR TO SUIT 70mm KEYWAY	EACH	10
		VSPSPRR85	DELUXE SPRING COLLAR TO SUIT 85mm KEYWAY	EACH	10
	ROLLER BRACKET	CIERB	EZE ROLLER BRACKET & CLIP <i>To fit crank brackets, gearbox hood end and headbox endcaps.</i>	EACH	10
	VSP KEYWAY FOR DELUXE SPRING	VSPKEYD63G	63mm 6.0mt Deluxe ALUMINIUM KEYWAY	LNG	5
		VSPKEYA70/65	70mm 6.5mt Deluxe ALUMINIUM KEYWAY	LNG	5
		VSPKEYD85G	85mm 6.0mt Deluxe ALUMINIUM KEYWAY	LNG	5
	VSP DRIVE END FOR DELUXE KEYWAY	VSPATDE63	63mm DRIVE END FOR DELUXE KEYWAY 63mm	EACH	5
		VSPATDE85	85mm DRIVE END FOR DELUXE KEYWAY 85mm	EACH	5
	VSP IDLER WITH HOLE FOR DELUXE KEYWAY	VSPATIWH63	63mm IDLER WITH HOLE FOR DELUXE KEYWAY 63mm	EACH	5
		VSPATIWH85	85mm IDLER WITH HOLE FOR DELUXE KEYWAY 85mm	EACH	5

BIGGER DROPS, WIDER BLINDS SMOOTHER QUIETER RUNNING 63mm, 70mm, 85mm

USING ALUMINIUM KEYWAY IN 63mm & 85mm OR STANDARD 70mm GALV. KEYWAY

AWNING COMPONENT






ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	5 SIDED BOTTOM TUBE	HDBOTU5MGR	MIST GREEN 6.5mt Bottom Tube	LNG	6
		HDBOTU5WHI	WHITE 6.5mt Bottom Tube	LNG	6
		HDBOTU5BLA	BLACK 6.5mt Bottom Tube	LNG	6
		HDBOTU5FGR	FED GREEN 6.5mt Bottom Tube	LNG	6
		HDBOTU5PRI	PRIMROSE 6.5mt Bottom Tube	LNG	6
		HDBOTU5SBE	STONE BEIGE 6.5mt Bottom Tube	LNG	6
		HDBOTU5WTO	WOODTONE 6.5mt Bottom Tube	LNG	6
	ENDCAP	VSPEC5SP	VSP PLASTIC 5-SIDED ENDCAP	EACH	100
		VSPEC5SM	VSP METAL 5-SIDED ENDCAP	EACH	100
		HDENCAP5SP	HD GREY PLASTIC 5-SIDED ENDCAP	EACH	100
		UNIENCAP50P	50mm ENDCAP PLASTIC	EACH	50
	PULLDOWN RING	VSPDR5SM	VSP 5 SIDED METAL PULLDOWN RING	EACH	100
		HDPUDORI5P	HD 5 SIDED PLASTIC PULLDOWN RING	EACH	100
	PULLDOWN STICK HEAD & CAP	HDPUDOEN	HD PULLDOWN STICK CAP PLASTIC	EACH	100
		VSPDSDHM	25mm VSP PULLDOWN STICK HEAD METAL	EACH	25
		HDPUDOHOP	22mm HD PULLDOWN STICK HEAD PLASTIC	EACH	100
	PULLDOWN STICK	HDPUDOTU	HD 5mt PULLDOWN STICK ONLY 22mm BROWN METAL	LNG	30
	PULLDOWN STICK COMPLETE (WITH HEAD)	VSPDST900	VSP 900mm PULLDOWN STICK COMPLETE WHITE METAL	EACH	25
		VSPDST1500	VSP 1.5mt PULLDOWN STICK COMPLETE WHITE METAL	EACH	25
		VSPDST1800	VSP 1.8mt PULLDOWN STICK COMPLETE WHITE METAL	EACH	25
		HDPUDOSTC	HD 1.5mt PULLDOWN STICK COMPLETE	EACH	30
		HDPUDOTU	Pulldown Stick 5.0mt 42.156.852	EACH	30
	ROLLER BRACKET	CIERB	eZe ROLLER BRACKET & CLIP	EACH	10
	UNIVERSAL BRACKET	VSPUNIBRKT	VSP 75MM ZINC UNIVERSAL BRACKET	EACH	50
		VSPUNIBRKTSS	VSP 75MM UNIVERSAL BRACKET STAINLESS STEEL	EACH	10
		HDUNIBKT	HD UNIVERSAL BRACKET GOLD PACIFATE	PAIR	10
		HDUNIBKSS	HD S/STEEL UNIVERSAL BRACKET GOLD PACIFATE	PAIR	10
	L BRACKET	VSPLBKT2H	VSP L BRACKET 2 HOLE	EACH	100
		VSPLBK2HSS	VSP L BRACKET 2 HOLE STAINLESS STEEL	EACH	10
		HDLBKT	HD L BRACKET 2 HOLE GOLD PACIFATE	EACH	20
	U BRACKET	VSPUBRKT	VSP U BRACKET ZINC	EACH	100
		VSPUBRKTSS	VSP U BRACKET STAINLESS STEEL	EACH	10




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AWNING COMPONENT

ADD 10% GST




Product Illustration	Product	Code	Description	Unit	Pack Size
	AWNING SPLINE	VSPSPL3.6H	VSP 3.6mm x 500mt HARD VSP CUT LENGTH 3.6mm HARD (min. 20mt)	ROLL	1
		VSPSPL3.6S	VSP 3.6mm x 500mt SOFT VSP	MTR	-
		VSPSPL3.6H	VSP 3.6mm x 6mt HARD VSP	ROLL	1
		VSPSPL6S	VSP 6.0mm x 250mt SOFT	each	1
		VSPSPL6X6H	VSP SPLINE 6.0mm X 6 mt	ROLL	1
	GUIDE ROD END CAP	VSPGRECP	VSP GUIDE ROD END CAP PLASTIC BLACK	LNG	1
	CORD SPOOL	UNICORDSP50	50mm CORD SPOOL STAINLESS STEEL	EACH	100
	STORM CLIP	VSPSTCL	VSP STORM CLIP	EACH	10
	SCREW EYE	VSPSCREYE	VSP SCREW EYE STAINLESS STEEL	EACH	100

AUTO ARM




Product Illustration	Product	Code	Description	Unit	Pack Size
	VSP BRASS ROLLER AUTO ARM	VSPAA150	150mm - zinc plated with brass rollers	EACH	50
		VSPAA225	225mm - zinc plated with brass rollers	EACH	50
		VSPAA300	300mm - zinc plated with brass rollers	EACH	50
		VSPAA450	450mm - zinc plated with brass rollers	EACH	10
		VSPAA600	600mm - zinc plated with brass rollers	EACH	10
	VSP STAINLESS STEEL ROLLER AUTO ARM	VSPAASS150	150mm	EACH	10
		VSPAASS300	300mm	EACH	10
	HD GOLD Pacifate AUTO ARM	HDAA150	150mm	EACH	20
		HDAA300	300mm	EACH	20
		HDAA450	450mm	EACH	20

AUTO GUIDE

ADD 10% GST




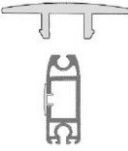
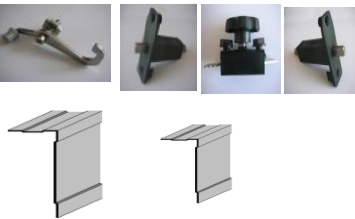

Product Illustration	Product	Code	Description	Unit	Pack Size
	VSP AUTO GUIDE 2 HOLE ZINC	VSPAG900	900mm	EACH	10
		VSPAG1050	1050mm	EACH	10
		VSPAG1200	1200mm	EACH	10
		VSPAG1350	1350mm	EACH	10
		VSPAG1500	1500mm	EACH	10
		VSPAG1650	1650mm	EACH	10
		VSPAG1800	1800mm	EACH	10
		VSPAG1950	1950mm	EACH	10
		VSPAG2100	2100mm	EACH	10
		VSPAG2400	2400mm	EACH	10
	VSP AUTO GUIDE 2 HOLE STAINLESS STEEL	VSPAGSS900	900mm	EACH	10
		VSPAGSS1200	1200mm	EACH	10
		VSPAGSS1500	1500mm	EACH	10
		VSPAGSS1800	1800mm	EACH	10
		VSPAGSS2100	2100mm	EACH	10
		VSPAGSS2400	2400mm	EACH	10
	HD AUTO GUIDE 2 HOLE GOLD PLATED	HDAG900	900mm	EACH	10
		HDAG1200	1200mm	EACH	10
		HDAG1500	1500mm	EACH	10
		HDAG1800	1800mm	EACH	10
		HDAG2100	2100mm	EACH	10
		HDAG2400	2400mm	EACH	10
		HDAG2700	2700mm	EACH	10

FIXED GUIDE

Product Illustration	Product	Code	Description	Unit	Pack Size
	VSP FIXED GUIDE	VSPFG900	900mm	EACH	10
		VSPFG1500	1500mm	EACH	10
		VSPFG1800	1800mm	EACH	10
		VSPFG2100	2100mm	EACH	10
		VSPFG2400	2400mm	EACH	10
		VSPFG2700	2700mm	EACH	10
		VSPFG3000	3000mm	EACH	10
		VSPFGRUN	VSP FIXED GUIDE RUNNER	EACH	50
	VSP FIXED GUIDE L BRACKET	VSPFGLB150	150mm	EACH	10
		VSPFGLB300	300mm	EACH	10
	VSP PULLEY BRACKET	VSPFGPB150	50mm CENTRE PULLEY BRACKET	EACH	5
	BRACKET BRACKET	VSPFGPB300	300mm CENTRE PULLEY BRACKET	EACH	5

CHANNEL-IT & CHANNEL-X

ADD 10% GST










Product Illustration	Product	Code	Description	Unit	Pack Size
	CHANNEL - IT BOTTOM RAIL	CIBOTRA	4.0mt MILL FINISH	LNG	5
		CIBOTRADK	6.0mt MILL FINISH	LNG	5
		CICAPP	CHANNEL-IT™ CAPPING FOR BOTTOM RAIL	LNG	5
	CHANNEL - IT SIDE CHANNEL	CISIDRAL	5mt MILL - 100mm wide X 40mm deep	LNG	8
		CISID6RAL	6mt MILL - 100mm wide x 40mm deep	LNG	8
			FREE CUT TO SIZE SERVICE FOR LOWER FREIGHT		
	CHANNEL - IT COMPONENT	CIEZSTC	CRADLE TO SUPPORT SLIDE TONGUE IN EZE BOTTOM BAR	Pair	20
		CISLTONN	CHANNEL-IT™ SLIDE TONGUE STAINLESS STEEL	EACH	20
		CISLLO	CHANNEL-IT™ CENTRE SLIDE LOCK ASSY	KIT	10
		CISSWIRE	CHANNEL-IT™ S/STEEL WIRE 1.2mm FOR CENTRE LOCK	MTR	250
		CITOSCRSS	CHANNEL-IT™ GRUB SCREW STAINLESS STEEL - BLACK	EACH	20
		CIFELSTW	CHANNEL-IT™ FELT STRIP BLACK	MTR	250
		CIPLAPL...	CHANNEL-IT™ PLASTIC PLUG BLACK, WHITE & CREAM	EACH	100
		CIALSUNDRY	CHANNEL-IT™ ALUMINIUM 40x40x3mm 6.5mt MILL	LNG	5
	eZe Bottom Bar	CIBOTRA4	4.0mt eZe BOTTOM BAR MILL	LNG	5
		CIBOTRA5	5.0mt eZe BOTTOM BAR MILL	LNG	5
		CIBOTRA6	6.0mt eZe BOTTOM BAR MILL	LNG	5
			SUITS BOTH CHANNEL-IT & CHANNEL X SIDE CHANNEL		
	eZe Bottom Bar COMPONENTS	CICML	CENTRE MOUNTED LOCK (3 PARTS)	SET	5
		CICLDL	S/STEEL LOCK DOWN LATCH (USUALLY 2 PER BAR)	EACH	10
		CIBOTRAC	*eZe CAPPING 3mt FOR BOTTOM BAR * Required with bottom bar	LNG	10
		CIPLN	Plain End Cap for eZe Bottom Bar	EACH	10
		CISSWIRE	STAINLESS STEEL WIRE 1.2mm FOR CENTRE LOCK	MTR	250
		CIFLAEZE6	eZe FLASHING 38mm x 120mm x 6mt ALUMINIUM	LNG	5
		CIFLAEZE6170	eZe FLASHING 38mm x 170mm x 6mt ALUMINIUM	LNG	5
	CHANNEL X BOTTOM RAIL	CIBORAX6	6.0mt MILL (Min. Order Qty Require)	LNG	TBA
		CIBRXPB6BK	6.0mt BLACK (Min. Order Qty Require)	LNG	TBA
		CIBRXPB6CC	6.0mt CLASSIC CREAM (Min. Order Qty Require)	LNG	TBA
	CHANNEL X SIDE CHANNEL	CISCX5	5.0mt MILL 80mm wide	LNG	10
		CISXCPC5...	5.0mt BLACK, C/ CREAM (Min. Order Qty Require) 80mm wide	LNG	TBA
		CISCX6	6.0mt MILL 80mm wide	LNG	10
		CISXCPC6...	6.0mt BLACK, C/CREAM (Min. Order Qty Require) 80mm wide	LNG	TBA
		CIBB01	CHANNEL-X™ SIDE CHANNEL BASE PLATE	EACH	20
	CHANNEL X COMPONENT	CIFB	FLUSH BOLT FOR REMOVABLE POST	EACH	10
		CIRPBCX	CHANNEL-X™ REMOVABLE POST BRACKET LH / RH	PAIR	10
		CITOSCRSS	CHANNEL-X™ GRUB SCREW S/STEEL BLACK	EACH	20
		CISLTOCX	CHANNEL-X™ SLIDE TONGUE STAINLESS STEEL	EACH	20
		CIFELSTW	CHANNEL-X™ FELT STRIP BLACK	MTR	250
		CIWSCX	CHANNEL-X™ WEATHER STRIP ROUND	MTR	200
		CIWSFCX	CHANNEL-X™ WEATHER STRIP FLAT	MTR	100

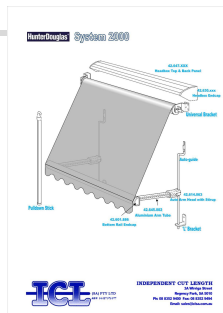
CRANK GEARBOX COMPONENT

ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	CRANK GEARBOX	GAGB31...	GEARBOX 3:1 - WHITE, BLACK, IVORY & GREY	EACH	25
		GAGB71...	GEARBOX 7:1 - WHITE, BLACK, IVORY & GREY	EACH	25
		GAGB111...	GEARBOX 11:1 - WHITE, BLACK, IVORY & GREY	EACH	25
	VSP PIVOT PIN & PLATE	VSPAP	VSP PIVOT PIN & PLATE ZINC	EACH	10
		VSPAPSS	VSP STAINLESS STEEL	EACH	10
	SCREWS & NUTS	screwm6x12	screw for pivot plate & roller bracket M6 x 12mm	each	100
		screwm6x40	screws for gearbox M6 x 40mm	each	100
		nutm6	nuts for screw	each	100
	VSP DRIVE END	VSPDE50	50mm Drive End	EACH	10
		VSPDE63	63mm Drive End	EACH	10
		VSPDE70	70mm Drive End	EACH	10
		VSPDE78	78mm Drive End	EACH	10
	VSP IDLER WITH HOLE	VSPIWH50	50mm Idler with Hole	EACH	10
		VSPIWH63	63mm Idler with Hole	EACH	10
		VSPIWH70	70mm Idler with Hole	EACH	10
		VSPIWH78	78mm Idler with Hole	EACH	10
	VSP CRANK BRACKET	VSPUBK65..	65mm - WHITE, BLACK, PRIMROSE & IVORY	EACH	10
		VSPUBK65Z	65mm ZINC	EACH	10
		VSPUBKT65SS	65mm STAINLESS STEEL	EACH	10
		VSPUBK80...	80mm - WHITE, BLACK & IVORY	EACH	10
		VSPUBK80Z	80mm ZINC	EACH	10
		VSPUBKT80SS	80mm STAINLESS STEEL	EACH	10
	VSP REVEAL BRACKET	VSPUBKR65...	65mm- WHITE, BLACK	EACH	10
		VSPUBKR65Z	65mm ZINC	EACH	10
		VSPUBKR65SS	65mm STAINLESS STEEL	EACH	10
	BRACKET COVER	VSPUBKC....	Black or White plastic cover to suit CRANK or REVEAL Brackets	EACH	10
	VSP CRANK HANDLE	VSPCH090	900mm - WHITE & BLACK	EACH	10
		VSPCH120	1200mm - WHITE & BLACK	EACH	10
		VSPCH150	1500mm - WHITE & BLACK	EACH	10
		VSPCH180	1800mm - WHITE & BLACK	EACH	10
		VSPCH210	2100mm - WHITE	EACH	10
		VSPCH210B	2100mm - BLACK	EACH	10
		VSPCH240	2400mm - WHITE	EACH	10
		GACH3000	3000mm - WHITE & BLACK	EACH	10

SYSTEM 2000 from Hunter Douglas


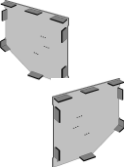
	ENDCAP	HDS2ENCAP	42.601.886 B/Rail Encap	EA	20
	AUTO ARM	HDS2AASTIR	42.613.063 Auto Arm with S/S Stirup	EA	20
	SNAP ON BRACKET	HDS2BRAILBKT	42.613.886 B/Rail Snap-On bracket	EA	20
	ALUMINIUM ARM	HDS2ARMTU	42.645.002 Arm Tube for System 2000 X 6.0mt	LGTH	6
	HEADBOX 2 part	HDS2HB.....	42.647.173 White Headbox T&B 5.41mt 42.647.185 Fed Green Headbox T&B 5.41mt 42.647.202 Woodtone Headbox T&B 5.41mt 42.647.230 RedOxide Headbox T&B 5.41mt 42.647.252 Black Headbox T&B 5.41mt 42.647.286 Mist Green Headbox T&B 5.41mt 42.647.481 Stoney Beige Headbox T&B 5.41mt 42.647.493 Primrose Headbox T&B 5.41mt 42.647.804 Anvil Headbox T&B 5.41mt 42.647.805 Galaxy Headbox T&B 5.41mt	Set Set Set Set Set Set Set Set Set Set Set	2 2 2 2 2 2 2 2 2 2 2
	ENDCAPS pair L&R	HDS2HBEC....	42.630.173 White Headbox endcap L&R S2000 42.630.185 Fed Green Headbox endcap L&R S2000 42.630.202 Woodtone Headbox endcap L&R S2000 42.630.230. Red Oxide Headbox endcap L&R S2000 42.630.252 Black Headbox endcap L&R S2000 42.630.286 Mist Green Headbox endcap L&R S2000 42.630.481 Stoney Beige Headbox endcap L&R S2000 42.630.493 Primrose Headbox endcap L&R S2000 42.630.804 Anvil Headbox endcap L&R S2000 42.630.805 Galaxy Headbox endcap L&R S2000	PR PR PR PR PR PR PR PR PR PR	10 10 10 10 10 10 10 10 10 10
	MOUNTING BRACKET	HDS2WALLBKT	42.607.032 Wall Mounting bkt System 2000	EA	20
	PIVOT ARM	HDS2SPPAH	42.641.000 S2000 Spring Pivot Arm Holder	EA	40
	SPRING SET for ARM	HDS2SPRset	42.642.000 S2000 Spring Set for Arm Tube	EA	40




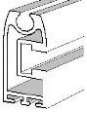

SEE page 23 for detailed drawing

EZE Headbox

ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	EZE HEADBOX 6.95mt	CIHEBOXT695	eZe HEAD BOX BACK 6.95mt Mill	LNG	5
		CIHEBOXB695	eZe HEAD BOX FRONT 6.95mt Mill	LNG	5
		CIHEBOXT6	eZe HEAD BOX BACK 6.0mt Mill	LNG	5
		CIHEBOXB6	eZe HEAD BOX FRONT 6.0mt Mill	LNG	5
		CIHEBOXT4	eZe HEAD BOX BACK 4.0mt Mill	LNG	5
		CIHEBOXB4	eZe HEAD BOX FRONT 4.0mt Mill	LNG	5
	EZE HEADBOX END PLATES	CIHBOXEC	* eZe HEAD BOX END PLATES * End Plates have locating dimples for easy mounting	PAIR	10

WIRE GUIDE

Product Illustration	Product	Code	Description	Unit	Pack Size
	WIRE GUIDE BOTTOM RAIL	GAWGBR4A	4.0mt ANODISED BOTTOM RAIL (TEAR DROP)	LNG	5
		GAWGBR5A	5.0mt ANODISED BOTTOM RAIL (TEAR DROP)	LNG	5
		GAWGBR6A	6.0mt ANODISED BOTTOM RAIL (TEAR DROP)	LNG	5
	CHANNEL X BOTTOM RAIL	CIBORAX6	6.0mt MILL (Min. Order Qty Require)	LNG	TBA
		CIBRXPB6BK	6.0mt BLACK (Min. Order Qty Require)	LNG	TBA
		CIBRXPB6CC	6.0mt CLASSIC CREAM (Min. Order Qty Require)	LNG	TBA
	WIRE GUIDE	CIWGEN	eZe WIRE GUIDE END CAP	PAIR	10
		DTSCWGEC	Dtrack Wire Guide Endcap suit Dtrack bottom bar	EA	10
	COMPONENT	CIXWGEC	CHANNEL-X™ WIRE GUIDE END CAP LH / RH	PAIR	10
		GAWGBREC	WIRE GUIDE END CAP	EACH	20
		GAWGSR	TEAR DROP BOTTOM RAIL STRAP RUNNER	EACH	20
		GAWGBRECM	BOTTOM RAIL END CAP MASTER	EACH	20
		CIWGLSS	eZe WIRE GUIDE LOCK STAINLESS STEEL	EACH	10
		CITWGBTSS	WIRE GUIDE BUSH TOP FIX STAINLESS STEEL	EACH	10
		CITWGBFBSS	WIRE GUIDE BUSH BOTTOM STAINLESS STEEL	EACH	10
		CITWGBSBSS	WIRE GUIDE BOTTOM SWIVEL STAINLESS STEEL	EACH	10
		CITWGBBSS	WIRE GUIDE BRACKET STAINLESS STEEL	EACH	10
		CISSW32	3.2mm STAINLESS STEEL WIRE GUIDE CABLE	MTR	100





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A-OK VSP MOTORISATION

5_{YR} WARRANTY

EXTERNAL BLINDS AND FOLDING ARM AWNINGS
INTERNAL BLINDS AND SHUTTERS
CURTAIN MOTORS - SILENT RUNNING
240V, 12V & 24V MOTORS
SOLAR POWERED
REMOTE CONTROLLED

ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	MOTOR	AOKAM35-10/17EL	35mm 10Nm, 17rpm 240V 433MHz INBUILT RECEIVED & OVER-TORQUE SENSOR	EACH	4
		AOKAM45-10/30EL	45mm 10Nm 30rpm 240V 433MHz INBUILT RECEIVER & OVER-TORQUE SENSOR	EACH	4
		AOKAM45-15/30EL	45mm 15Nm 30rpm 240V 433MHz INBUILT RECEIVER & OVER-TORQUE SENSOR	EACH	4
		AOKAM45-20/17EL	45mm 20Nm 17rpm 240v 433MHz INBUILT RECEIVER & OVER-TORQUE SENSOR	EACH	4
		AOKAM45-30/17EL	45mm 30Nm 17rpm 240V 433MHz INBUILT RECEIVER & OVER-TORQUE SENSOR	EACH	4
	CROWN & ADAPTOR SET	AOK50CRAD	50mm CROWN & ADAPTOR SET TO SUIT 35mm MOTOR	SET	4
		AOK153/213	Set of Brackets & collars to suit 35mm motor	SET	4
		AOKS00213	50mm CROWN & ADAPTOR SET TO SUIT 45mm MOTOR	SET	4
		AOK167/168	63mm CROWN & ADAPTOR SET FOR 45mm MOTOR	SET	4
		AOK165/166	70mm CROWN & ADAPTOR SET FOR 45mm MOTOR	SET	4
	REMOTE CONTROL	AOKAC123-01	1 CHANNEL REMOTE CONTROL TOUCH TYPE	EACH	4
		AOKAC127-01	1 CHANNEL REMOTE CONTROL - SEPERATE BASE	EACH	4
		AOKAC123-02	2 CHANNEL REMOTE CONTROL TOUCH TYPE	EACH	4
		AOKAC127-02	2 CHANNEL REMOTE CONTROL - SEPARATE BASE	EACH	4
		AOKAC123-06	6 CHANNEL REMOTE CONTROL TOUCH TYPE	EACH	2
		AOKAC127-06	6 CHANNEL REMOTE CONTROL - SEPARATE BASE	EACH	2
		AOKAC127-16	16 CHANNEL REMOTE CONTROL - SEPARATE BASE	EACH	2
	OTHER ACCESSORIES	AOK10085	QUICK MOUNTING COUPLING & SPRING CLIP	EACH	4
		AOKMH127	BASE FOR AC127 REMOTE CONTROL	EACH	2

Motors

Please consult with our office prior to ordering A-Ok VSP Motors : The size of your blinds/s will determine the required NM Motor
All motors will need a power supply & it is recommended this is wired by a licenced electrician.

Over - Torque Sensor

The 'over-torque sensor' function in these A-OK VSP Motors allows you to set a bottom limit at the appropriate spot. Lock the blind down, then push the up control on the remote - the Motor automatically shuts off once the fabric is taut & must be released before it can be raised again.

Remote Controls

Motors are not supplied with Remotes - order the required Remote as a seperate item.

* A Single Motor Job or one motor driving multiple blinds requires a single channel remote.

2 blinds or a combination of mulpie combined blinds require a 2 channel remote

Multiple blinds required to operate seperately will require either a 6 channel or 16 channel remote










* A Single Remote will control more than one motor, but there is no individual control - all blinds will operate at the same t.....



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Prices subject to change without notice

PATIO & VERANDAH AWNING COMPONENT






ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	VSP PULLEY	VSPPLS	SINGLE PULLEY POLISHED CAST	EACH	50
		VSPPLD	DOUBLE PULLEY POLISHED CAST	EACH	50
		VSPPLSSS	SINGLE PULLEY STAINLESS STEEL	EACH	10
		VSPPLSSD	DOUBLE PULLEY STAINLESS STEEL	EACH	10
	VSP PULLEY ADAPTOR	VSPPLAD	ADAPTOR PLATE WITH SCREW POLISHED	EACH	50
		VSPPLSSAD	ADAPTOR PLATE WITH SCREW STAINLESS STEEL	EACH	10
	ROPE CLEAT	UNICLEAT90	90mm CAST ROPE CLEAT	EACH	20
		VSPRC110	VSP 114mm POLISHED ROPE CLEAT	EACH	50
		UNICLEAT140	140mm CAST ROPE CLEAT	EACH	20
		VSPRC110SS	VSP 110mm STAINLESS STEEL ROPE CLEAT	EACH	20
	VSP SADDLE	VSPSADMSS	SADDLE MEDIUM STAINLESS STEEL	EACH	20
		VSPSADLSS	SADDLE LARGE STAINLESS STEEL	EACH	20
	VSP GUIDELESS AUTO	VSPGAMPM	MALE GUIDELESS AUTO	EACH	10
		VSPGAPF	FEMALE GUIDELESS AUTO	EACH	10
	END CAP	VSPSAEC38	VSP 38mm STRAP ADAPTOR END CAP ZINC	EACH	20
		VSPSAEC50	VSP 50mm STRAP ADAPTOR END CAP ZINC	EACH	20
		VSPSAEC50PS	VSP 50mm STRAP ADAPTOR END CAP STAINLESS STEEL	EACH	10
		VSPSAEC50P	VSP 50mm STRAP ADAPTOR END CAP PLASTIC	EACH	100
		VSPCAEC50P	VSP 50mm CHAIN ADAPTOR END CAP PLASTIC	EACH	100
		VSPCAEC50PS	VSP 50mm S/STEEL CHAIN ADAPTOR CAP PLASTIC	EACH	10
		VSPEC38	VSP 38mm PLAIN END CAP ZINC	EACH	20
		VSPEC50SS	VSP 50mm PLAIN END CAP STAINLESS STEEL	EACH	10
		VSPEC50P	VSP 50mm PLAIN END CAP PLASTIC	EACH	100
		UNIENCAP50P	END CAP PLASTIC 50mm PLASTIC	EACH	50
	VSP ADAPTOR	VSPSA	STRAP ADAPTOR	EACH	20
		VSPSASS	STRAP ADAPTER STAINLESS STEEL	EACH	20
		VSPCHADAP	CHAIN ADAPTOR	EACH	100
		VSPCHADAPSS	CHAIN ADAPTER STAINLESS STEEL	EACH	100
	VSP AWNING STRAP	VSPST300	300mm AWNING STRAP	EACH	20
		VSPST450	450mm AWNING STRAP	EACH	20
		VSPST600	600mm AWNING STRAP	EACH	10
		VSPST750	750mm AWNING STRAP	EACH	10
		VSPST900	900mm AWNING STRAP	EACH	10
	OTHER COMPONENTS	VSPSCREYE	SCREW EYE ZINC STAINLESS STEEL	EACH	100
		VSPCLSS	CELLAR LIFT STAINLESS STEEL	EACH	10
		VSPBSSS	BREECHING STAPLE STAINLESS STEEL	EACH	100
		VSPDPRSS	DROP PATH RING STAINLESS STEEL	EACH	10
		CIXGPSS	GROUND PLATE STAINLESS STEEL	EACH	10
		WSTPLATE	SAFETY STRAP PLATE STAINLESS STEEL	EACH	10

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PATIO & VERANDAH AWNING COMPONENT

ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	SNAPHOOK	VSPSNAP25	VSP 25mm SNAPHOOK FLAT SWIVEL ZINC	EACH	100
		VSPSNAP25SS	VSP 25mm SNAPHOOK FLAT SWIVEL STAINLESS STEEL	EACH	20
		QICSNAPHOOK25	*25mm SNAPHOOK FLAT SWIVEL BRASS	EACH	100
			* Not a standard stock item. Delivery lead time applies.		
		SNAPHOOKR25SS	25mm ROUND SWIVEL SNAP STAINLESS STEEL	EACH	20
		VSPSSH-SS	* 25mm SCISSOR SNAP SQUARE STAINLESS STEEL	EACH	20
		VSPSNAPDBL	VSP 90mm SNAPHOOK DOUBLE ENDED ZINC	EACH	100
		VSPSNAPDBLSS	VSP 90mm SNAPHOOK DOUBLE ENDED STAINLESS STEEL	EACH	20
		SPRCLISNS	* 25mm SAFETY SPRING SNAP STAINLESS STEEL	EACH	20
			* Not a standard stock item. Delivery lead time applies.		
	BUCKLE	VSPCAMLO	VSP 25mm CAMLOC BUCKLE METAL	EACH	100
		VSPCAMLOBK	VSP 25mm CAMLOC BUCKLE METAL BLACK	EACH	100
		QICBUCKLESS	*25mm DOUBLE BAR BUCKLE STAINLESS STEEL	EACH	20
			* Not a standard stock item. Delivery lead time applies.		
	ROPE TRACK SINGLE	UNISAILTKS	6.5mt MILL	LNG	10
		UNISAILTKS...	6.5mt BLACK, WHITE, PRIMROSE, WOODGREY, ME	LNG	10
	ROP TRACK DOUBLE	UNISAILCAS	CLEAR ANODISED ROPETRACK 6.5mt	LNG	10
		UNISAILTKD	6.5mt MILL	LNG	10
	SASH CORD	QICSASHCORD5	5.0mm x 300mt POLYESTER NATURAL	SPOOL	5
		QICSASHCORD5B	5.0mm x 300mt POLYESTER BLACK	SPOOL	5
		QICSASHCORD5C	5.0mm x 300mt POLYESTER CREAM	SPOOL	5
		QICSASHCORD5C	*5.0mm x 250mt COTTON NATURAL	SPOOL	5
			* Not a standard stock item. Delivery lead time applies.		
		QICSASHCORD6	6.0mm x 300m POLYESTER NATURAL	SPOOL	5
		QICSASHCORD6B	6.0mm x 300m POLYESTER BLACK	SPOOL	5
		QICSASHCORD6C	* 6.0mm x 300m POLYESTER CREAM	SPOOL	5
		QICSASHCORD6C	*SASH CORD COTTON 6.0mm x 250m NATURAL	SPOOL	5
			* Not a standard stock item. Delivery lead time applies.		
		KED4SW	4.0mm - SINGLE FLAP WHITE	MTR	100
		KED75SWH	7.5mm - SINGLE FLAP WHITE	MTR	100
		KED75SBK	7.5mm - SINGLE FLAP BLACK	MTR	100
		KED4DW	4.0mm - DOUBLE FLAP WHITE	MTR	100
		KED4DBL	4.0mm - DOUBLE FLAP BLACK	MTR	100
		KED75DWH	7.5mm - DOUBLE FLAP WHITE	MTR	100
		KED75DBK	7.5mm - DOUBLE FLAP BLACK	MTR	100
		KED75DBE	7.5mm - DOUBLE FLAP BEIGE	MTR	100

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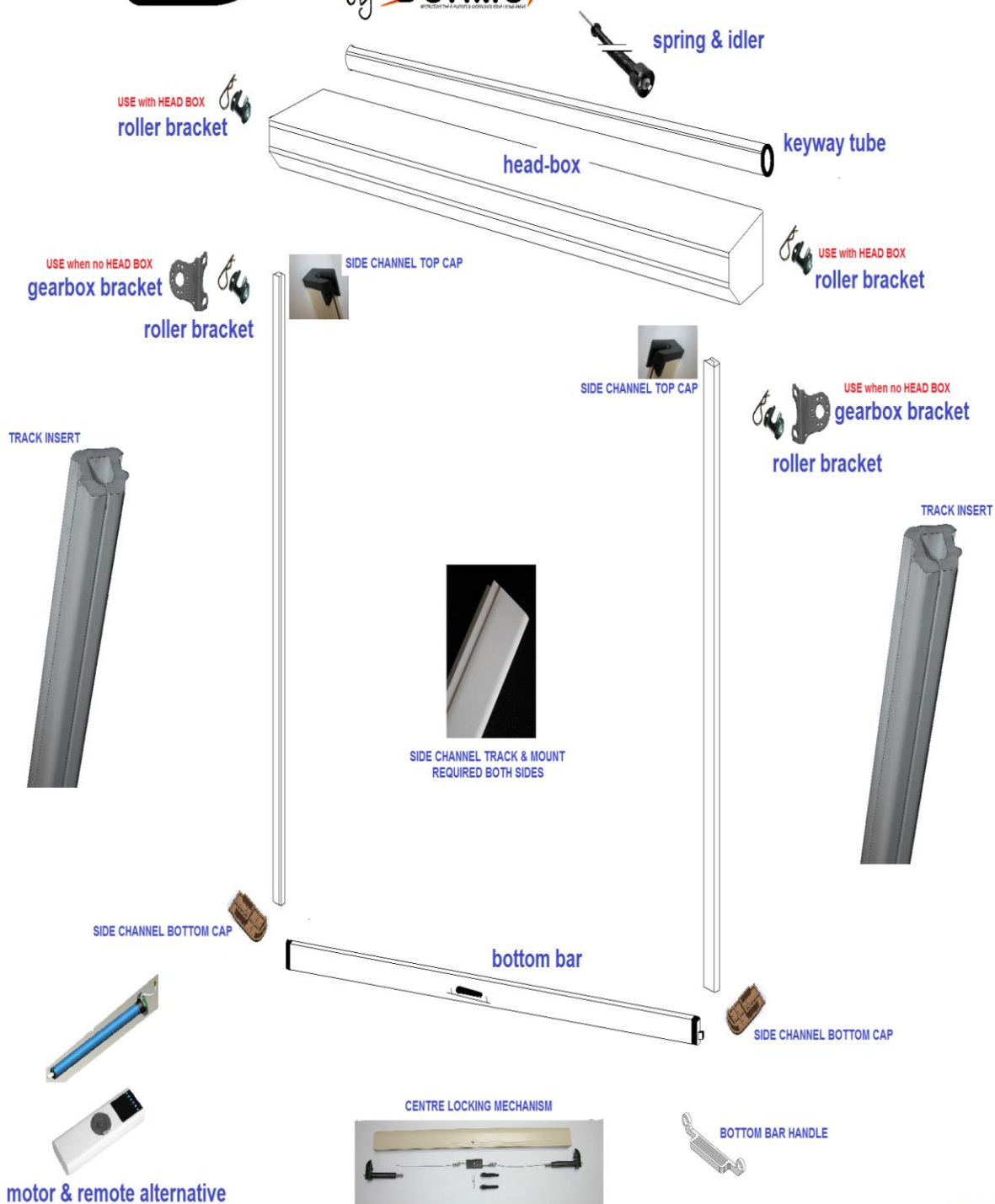
ADD 10% GST

Product Illustration	Product	Code	Description	Unit	Pack Size
	QWICK CLICK COMPONENT	CIQCAG210	QWICK CLICK AUTO GUIDE 2100mm	PAIR	5
		CIQCLOCB	QWICK CLICK CENTRE LOCK	SET	5
		CISSWIRE	STAINLESS STEEL WIRE FOR CENTRE LOCK	MTR	250
		CIDHAND	D HANDLE METAL 34mm x 150mm	EACH	10
		CIDHANP	D HANDLE PLASTIC 45mm x 115mm	EACH	10
	eZe Bottom Bar	CIBOTRA6	6.0mt eZe BOTTOM BAR MILL	LNG	5
		CIBOTRA5	5.0mt eZe BOTTOM BAR MILL	LNG	5
		CIBOTRA4	4.0mt eZe BOTTOM BAR MILL	LNG	5
		CIBOTRAC	*eZe CAPPING 3mt FOR BOTTOM BAR <i>Required with bottom bar</i>	LNG	10
	VSP GALVANISED KEYWAY TUBE	VSPKEY50G	50mm 6.4mt LOCKED SEAM	LNG	10
		VSPKEY63G45	63mm 4.5mt LOCKED SEAM	LNG	5
		VSPKEY63G	63mm 6.6mt LOCKED SEAM		5
	VSP SPRING (Come with Idlers)	VSPSPR50SML	50mm SMALL SPRING 300mm	EACH	15
		VSPSPR50MED	50mm MEDIUM SPRING 475mm		15
		VSPSPR50STD	50mm STANDARD SPRING 630mm		15
		VSPSPR50DBL	50mm DOUBLE SPRING		5
		VSPSPR63SML	63mm SMALL SPRING 450mm	EACH	5
		VSPSPR63STD	63mm STANDARD SPRING 1000mm		5
		VSPSPR63DBL	63mm DOUBLE SPRING		5
		VSPSPR63HEL	63mm HELPER SPRING 1000mm		5
	UNIVERSAL BRACKET	VSPUNIBRKT	VSP 75MM ZINC UNIVERSAL BRACKET	EACH	50
		VSPUNIBRKTSS	VSP 75MM UNIVERSAL BRACKET STAINLESS STEEL		10
		HDUNIBKT	HD UNIVERSAL BRACKET GOLD PLATED	PAIR	10
	L BRACKET	VSPLBKT2H	VSP L BRACKET 2 HOLE	EACH	100
		VSPLBK2HSS	VSP L BRACKET 2 HOLE STAINLESS STEEL		10
		HDLBKT	HD L BRACKET 2 HOLE GOLD PLATED		20

**** SEE PAGE NUMBER 3 FOR HOODING OPTIONS ****

D track

by **DOHMO**



PETER/CANY PICTURES/SDTRACKEXP.DRW.jpg

Illustration: Automatic Roll Up Awning

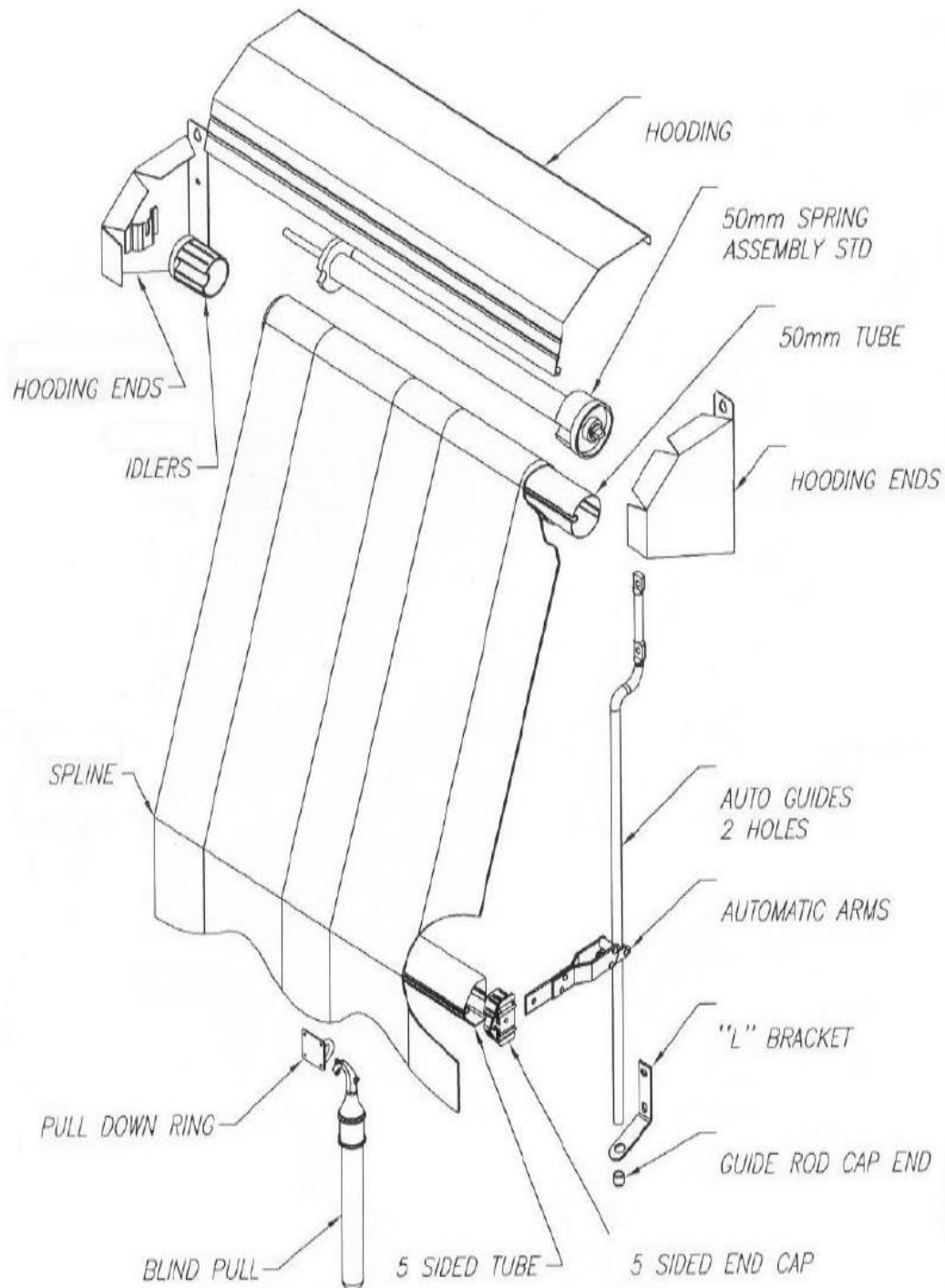


Illustration: Crank Awning

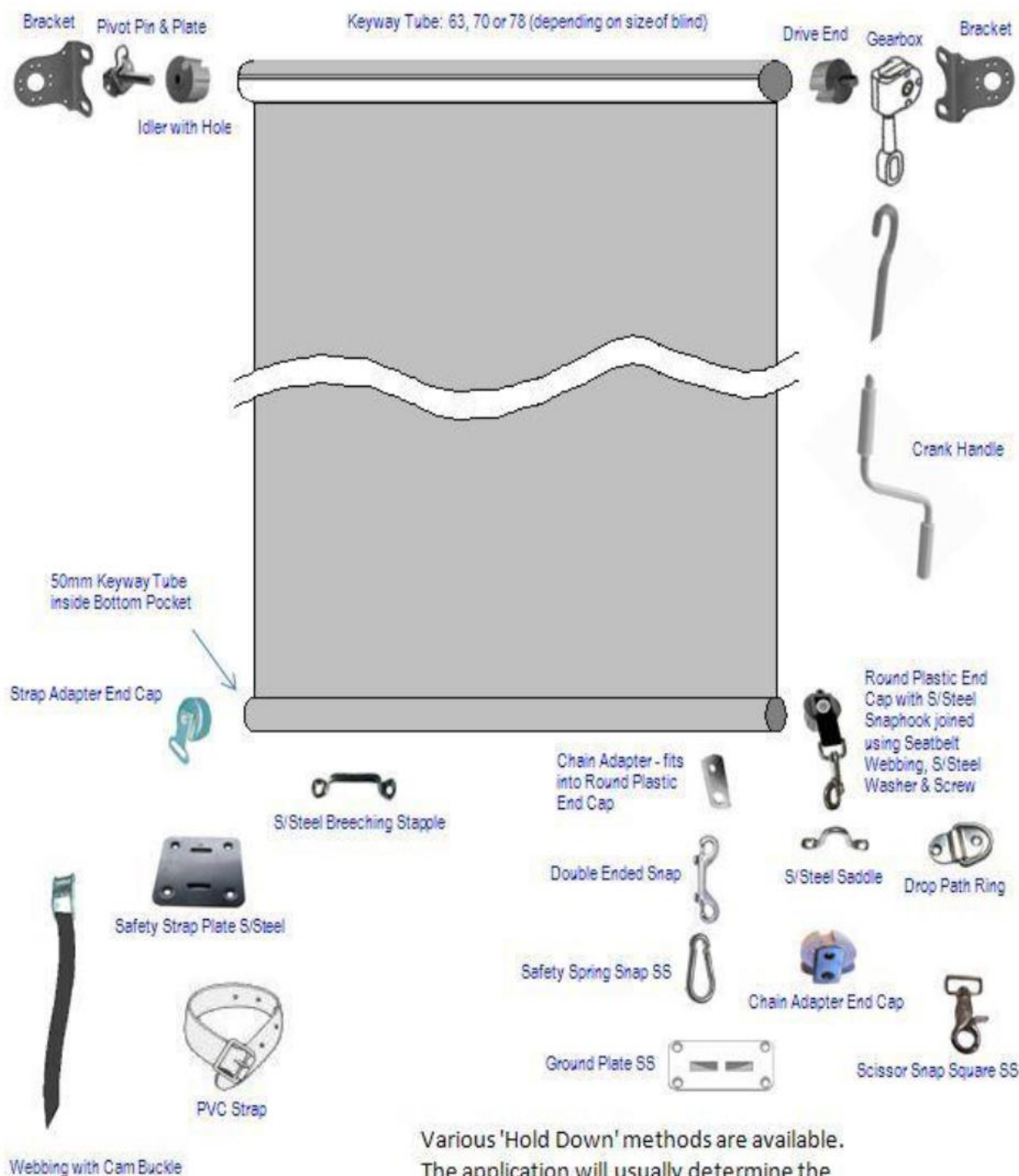


Illustration: Straight Drop Awning

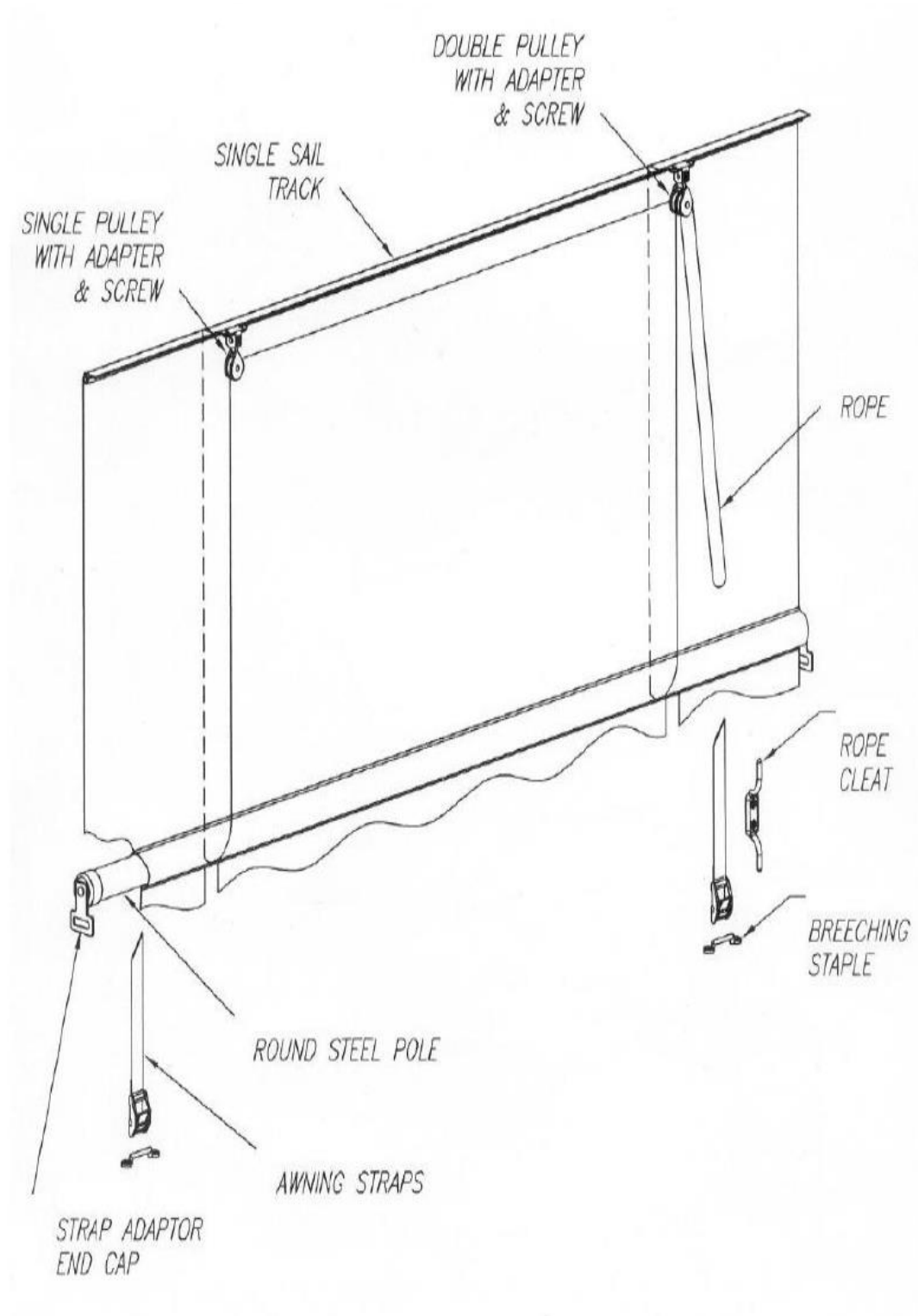


Illustration: Channel-X

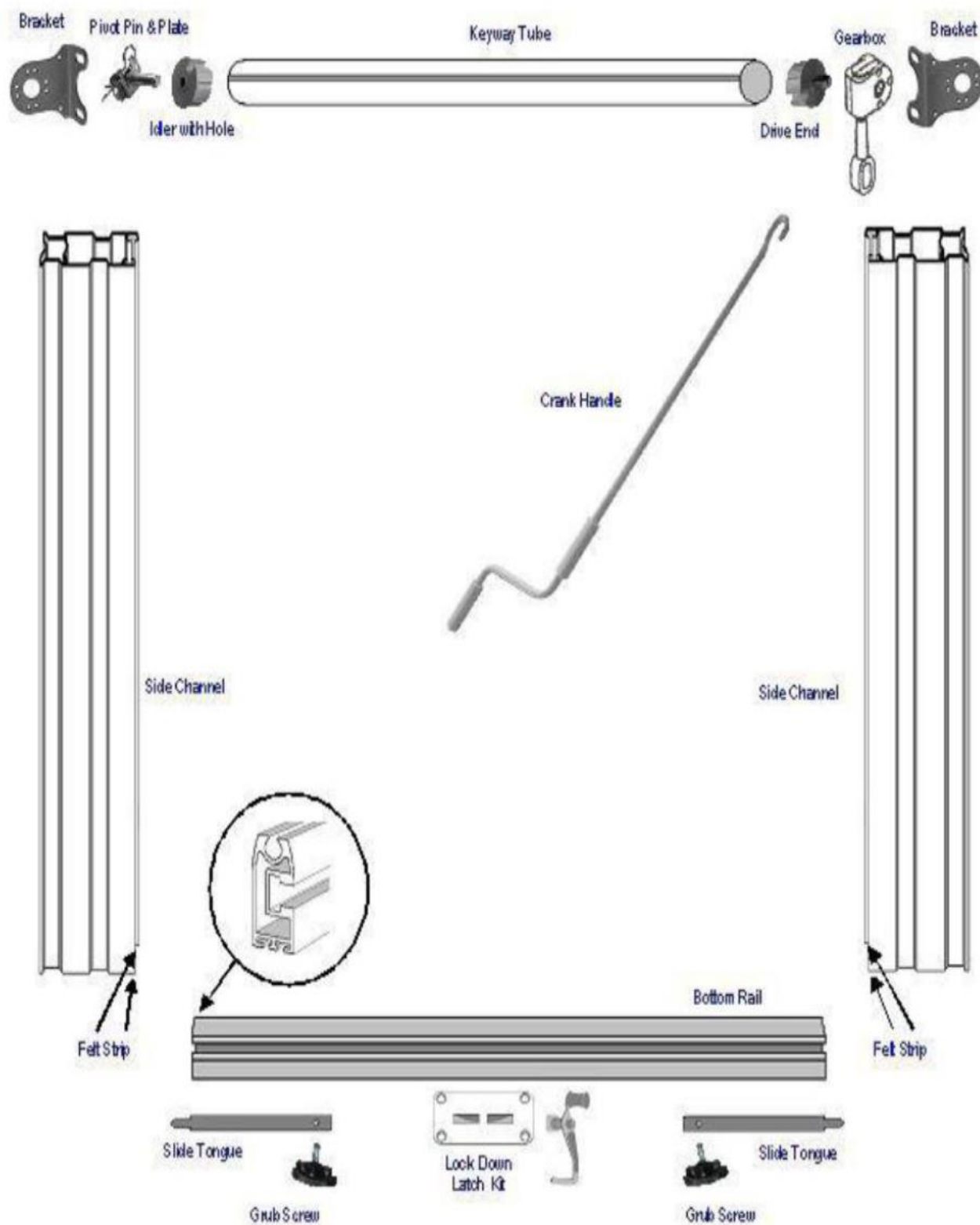
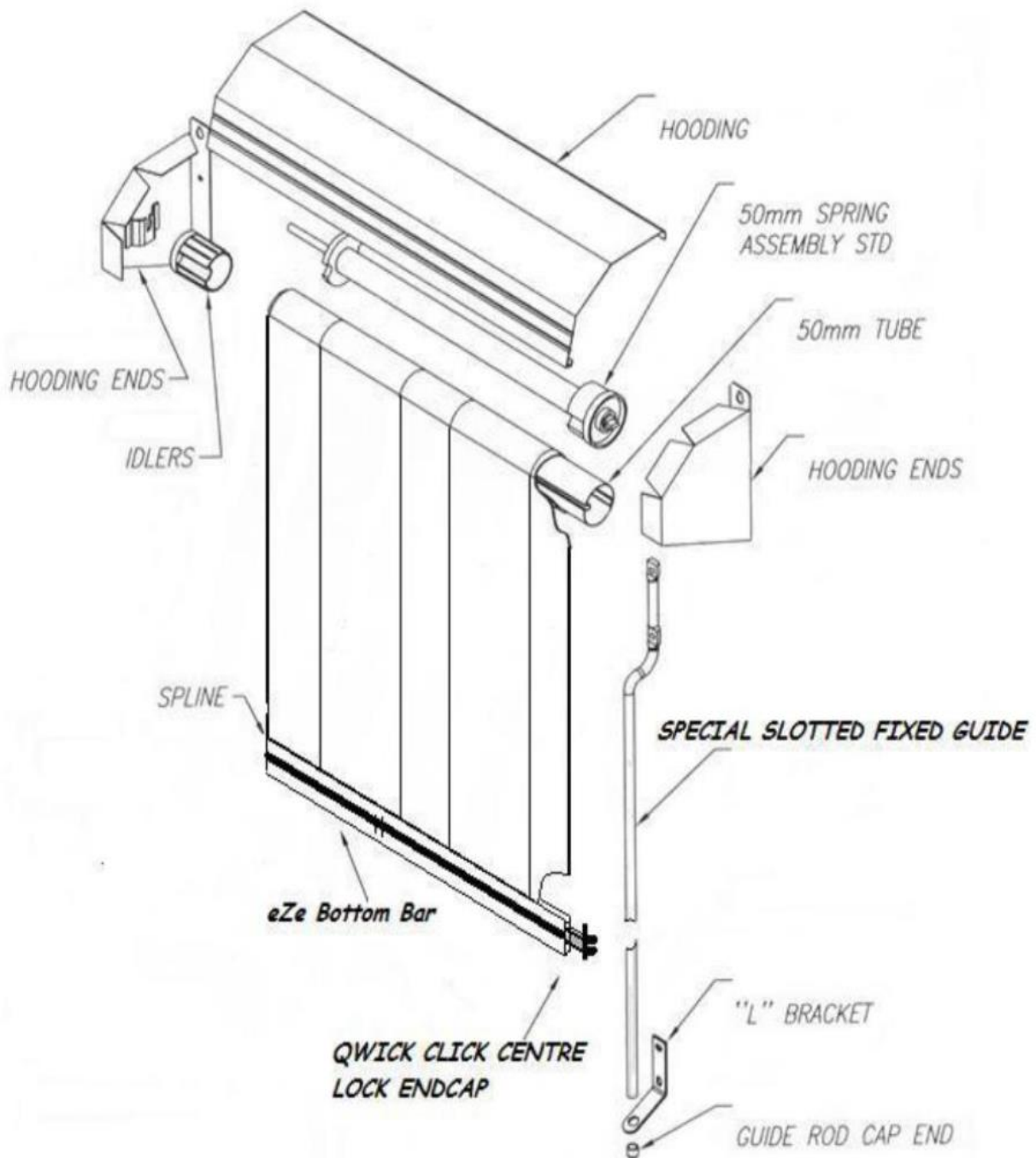
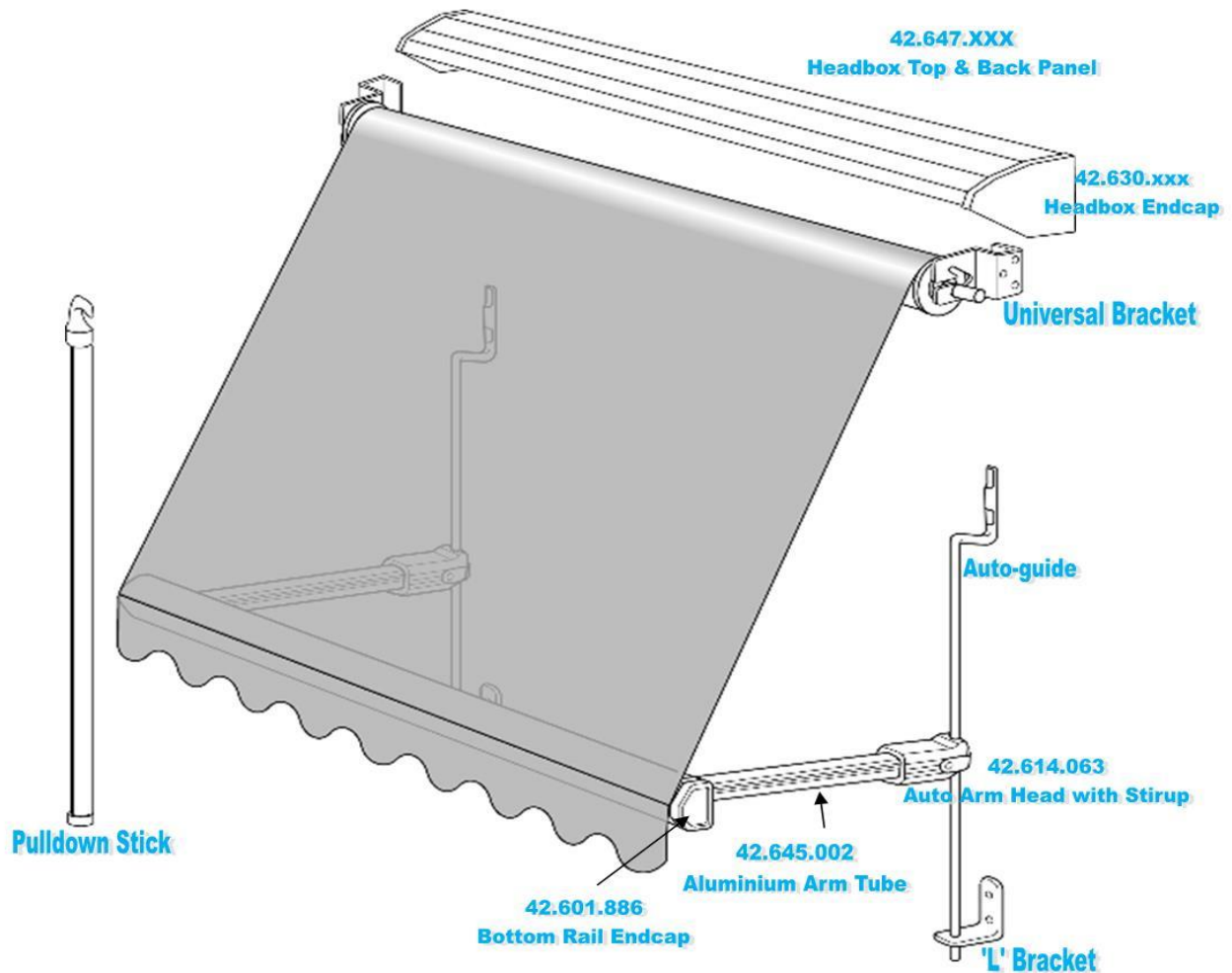


Illustration: Qwick Click

QWICK CLICK WITH HOOD - CAN ALSO BE WITH HEAD BOX



HunterDouglas® System 2000



Information: Preventing Coastal Corrosion (Tea Staining)

WHEN USED PROPERLY, STAINLESS STEEL ENJOYS A STRONG AND ENDURING REPUTATION FOR VISUAL APPEAL AND STRUCTURAL INTEGRITY IN A WIDE RANGE OF APPLICATIONS AND ENVIRONMENTS.

But, like all materials, stainless steel may become stained or discoloured over time, impairing the overall look. This brown discolouration - tea staining - has been identified in coastal applications in Australia and overseas.

Factors affecting tea staining have been researched by ASSDA and the information gathered has been supported by experiences from around the world.

This Bulletin provides information on tea staining and what fabricators, specifiers and end users should do to help avoid it and enjoy the long life and clean appearance of stainless steel (see *Figure 1*).

WHAT IS TEA STAINING?

Tea staining is discolouration of the surface of stainless steel by corrosion (see *Figure 2*). It is a cosmetic issue that does not affect the structural integrity or the lifetime of the material. Tea staining occurs most commonly within about five kilometres of the surf and becomes progressively worse closer to the marine source.

However, wind exposure, pollution levels, local sheltering and higher temperatures can create environments where tea



Figure 2. Severe tea staining of stainless steel in a coastal environment shortly after installation



Figure 1. The floating walkway in Brisbane is an example of successful use of stainless steel in a marine environment

staining might occur 20 kilometres or more from the surf. The effect is much less severe around sheltered bays. These same factors also increase corrosion rates of alternative materials.

Other causes of staining that are not tea staining include carbon steel contamination, uncleaned welds and chemical fumes such as hydrochloric acid or bleach. The ASSDA *Reference Manual* has more details on this.

WHY DOES TEA STAINING OCCUR?

The relationships between the contributing factors are complex, but generally become increasingly critical closer to salty water. Tea staining occurs when local conditions (such as temperature, relative humidity and presence of corrosive substances on the surface) are too aggressive for that stainless steel grade in its installed condition.

IMPORTANT QUALIFICATION

The information in this publication has been prepared from research undertaken by or made available to ASSDA at the date of publication. Adherence to the recommendations in this section may improve the cosmetic appearance of affected surfaces and minimise risk in new applications. However, research into the causes of, and treatment for, tea staining have not to date resulted in definitive processes or recommendations for cure and prevention. ASSDA accepts no responsibility for any opinion or recommendation expressed, for any error or omission occurring herein or for the failure of any recommendation contained in this section to achieve a satisfactory result in any particular application. Before acting on any particular application, qualified advice particular to such application should be obtained.

There are important factors that promote the occurrence of tea staining that should be considered, as shown in the box and explained below.

1. Presence of corrosive substances

The presence of sea salt on the surface of the stainless steel is one of the major factors that causes tea staining. Sea salt has the characteristic of staying wet until a very low relative humidity (RH). The result of this is that the surface stays wet (and is corroding) longer with sea salt compared with sodium chloride. However, presence of industrial pollutants could also make the conditions more aggressive.

2. Atmospheric conditions

A combination of atmospheric conditions with high humidity (eg tropical climates) and a high temperature creates worse conditions for the occurrence of tea staining. The high humidity generates a film of moisture that dissolves the salt deposits and creates a corrosive solution on the surface.

The low humidity and absence of corrosive deposits means that tea staining is rarely a problem indoors.

3. Surface orientation and design

Poor drainage promotes corrosion whether it is because the surface is near horizontal or has a texture that traps contaminants. Conditions are very aggressive in rain sheltered areas such as the underside of sloping roofs, downpipes under eaves or in a building rain shadow. These can cause significant tea staining. Designs with corners or crevices (such as intermittent welds) can trap water and lead to more serious corrosion than tea staining.

4. Surface roughness

Deep grooves or metal folds on a surface are more susceptible to corrosion because they can trap salts (chlorides). When the surface dries the salts become concentrated, making the conditions more aggressive. A deep groove will have more trapped water (and salts) so the bottom of the groove will be exposed to salt concentration above its resistance for longer - which will initiate corrosion. There is a critical surface roughness of approximately $0.5 \mu\text{m} R_a$ for cut or

abraded surfaces. Abraded surfaces smoother than approximately $0.5 \mu\text{m} R_a$ are much less susceptible to corrosion.

5. Surface characteristics

To achieve the best corrosion performance of a stainless steel, the surface should be clean, free of contamination such as carbon steel swarf or manganese sulphide inclusions, and have a continuous passive layer. Acid pickling, acid passivation or electropolishing for sufficient time will remove these contaminants from the surface as well as restore the passive layer, leaving the stainless steel with a clean and corrosion resistant surface. If a stainless steel is welded, the heat input will locally destroy the passive layer (a dark non-protective oxide is formed around the weld). To achieve best corrosion performance and restore passivity of the weld, the heat tint and underlying chromium depleted layer must be removed. How this is done is described later.

6. Appropriate grade

There are several hundred grades of stainless steel with different chemical composition but only about 10 in common use. All owe their corrosion resistance to the thin chromium oxide film on the surface, although other additions such as molybdenum and nitrogen can improve the corrosion resistance, especially in chloride-containing environments. A formula based on the content of these three elements is useful to rank the corrosion resistance of different grades. This Pitting Resistance Equivalent [PRE] number is calculated by $\% \text{Chromium} + 3.3 \% \text{Molybdenum} + 16 \% \text{Nitrogen}$. The PRE ranges from 10.5 for the grades with the lowest corrosion resistance to more than 40. For acceptable corrosion resistance, typically a PRE of approximately 18 is adequate away from marine influences, PRE of approximately 24 is required for marine atmospheres while severe marine atmospheres may require PRE of approximately 34. The higher the PRE, the greater the corrosion resistance.

7. Maintenance

Stainless steel is a low maintenance

material but it is not generally maintenance free. A light and regular wash is best and natural rain washing may be sufficient. If not, then consider washing the stainless steel when you wash an adjacent window. Lower grades will require more regular maintenance and if the environment causes sticky deposits, a solvent and detergent mix may be required. Application of oils or waxes will temporarily restrict chloride access to the stainless steel but they need regular renewal. These temporary protectives also tend to attract debris and dull the surface.

GUIDANCE IN FABRICATION

Design, fabrication and handling

Poor design and fabrication can lead to tea staining or more serious corrosion of stainless steels. Surfaces should be free draining, boldly exposed to rain washing and avoid channelling of run-off. Horizontal surfaces or curves which cause ponding are specific problems. Abraded surfaces should not be rougher than $0.5 \mu\text{m} R_a$ and the grain should be vertical to avoid ponding and collection of contaminants. For abraded surfaces, the best corrosion resistance will be achieved if a nitric acid passivation treatment is carried out as a final step.

Competent stainless steel fabricators will avoid carbon steel contamination (which can cause other corrosion problems), so choose designers and fabricators that are experienced with stainless steel to achieve the best outcome.

Appropriate grade selection

Each stainless steel has a limit to the concentration of salts that it can comfortably resist: the higher the alloying content (Cr, Mo and N), the higher the resistance to corrosion. Exposure of a particular grade of stainless steel to a more aggressive environment than it can resist will cause tea staining.

Grade 316, or a grade with equivalent corrosion resistance, should be selected as a minimum within five kilometres of the surf. For critical applications (eg splash zones, unwashed areas or rough surfaces), higher grades of stainless steel such as duplex or 'super' grades may be required.

The lower alloyed and less expensive grades (such as 304 or 430) will probably become tea stained or even suffer more severe corrosion in a marine environment.

Treatment of welds

Pickling after welding is one method of promoting good performance of stainless steel near the coast. This chemical treatment normally uses a mixture of nitric and hydrofluoric acid in a gel, paste or bath. It removes the welding oxide

CONDITIONS REDUCING THE RISK OF TEA STAINING

1. Absence of corrosives - especially salt.
2. Atmospheric conditions - lower temperatures and low relative humidity (RH) are better.
3. Surface orientation and design - free drainage and avoidance of traps which can concentrate corrosives. This includes open exposure to allow rain washing.
4. Surface roughness - smoother is better.
5. Chemical cleanliness or passivation of the surface improves the corrosion resistance.
6. Appropriate grade for exposure conditions - increasing PRE increases corrosion resistance.
7. Maintenance - or corrosives will accumulate.

TABLE 1: RECOMMENDED CLEANING INTERVALS FOR 304 STAINLESS STEEL *

Building Element	Roof or wall washed by rain		Eave, soffit or under-eave wall not washed by rain	
	No deposits	Deposits accumulate	No deposits	Deposits accumulate
<i>Surface condition</i>				
Cleaning** in rural, suburban and residential areas	1/year	1/year	1-2/year	2-12/year
Cleaning** for seaside***, industrial and severe urban areas	1/year	1/year	3-4/year	4-12/year

Notes:

- * Cleaning frequency may be less for highly alloyed grades but is dependent on surface finish
- ** Cleaning involves washing with potable water, low chloride water or washing with a neutral detergent followed by rinsing with potable water. For details see Nickel Institute publication 12 013
- *** This listing does NOT imply that it is recommended that 304 stainless steel is satisfactory in marine environments.

This table originates from Nickel Institute and Japan Stainless Steel Association publication No 12 013 "Successful use of stainless steel building materials", page 79.