

## SKYSHIELD DEALERS MANUAL

### INDEX

<b>Section One</b>	-	<b>PRODUCT RANGE AND DESCRIPTION</b>
<b>Section Two</b>	-	<b>DOMESTIC / CONSERVATORY ROOF APPLICATIONS</b>
		i) Sales questions and answers
		ii) How to price
		iii) Estimate wording and conditions
<b>Section Three</b>	-	<b>MEASURING INSTRUCTIONS AND TOLERANCE GUIDE</b>
<b>Section Four</b>	-	<b>MORE DIFFICULT APPLICATIONS AND SHAPES</b>
		i) Shaped blinds
		ii) Triangles, arches and circles
		iii) Cut outs
		iv) Curved fronts
		v) Wider openings
<b>Section Five</b>	-	<b>COMMERCIAL APPLICATIONS - INTERNAL AND EXTERNAL</b>
		i) Sales questions and answers
<b>Section Six</b>	-	<b>MEASURING INSTRUCTIONS &amp; TOLERANCE GUIDE</b>
		i) Shaped blinds
		ii) External blinds
		iii) Wind baffles & masking
<b>Section Seven</b>	-	<b>MOTORISED BLINDS AND AUTOMATIC CONTROL</b>
<b>Section Eight</b>	-	<b>TECHNICAL SPECIFICATION</b>

## Section One - PRODUCT RANGE & DESCRIPTION

Skyshield is the most appropriate blind for rooflights and sharply sloping glazing in particular conservatory roofs. The slatting is supported from aluminium rack arms that prevent sagging which could occur with retractable blinds. It can also be installed vertically and can be cut around obstacles to fit almost any type of window.

For internal blinds it is available with 25mm and 50mm aluminium slat and 50mm timber slat. More robust 80mm and 88mm aluminium louvres are suitable for internal and external use and the 88mm louvre achieves a good degree of dim-out for audio visual applications in lecture halls.

For domestic and conservatory roof blinds there are three main types of Skyshield which apply :-

T50	-	Skyshield 50mm Aluminium Slat
T25	-	Skyshield 25mm Aluminium Slat
T50W	-	Wood slat 50mm

**T50** - This is the standard blind and most cost effective.

**T25** - Normally only used for smaller openings. As the slat overlap is less than on 50mm, closure is not so tight. On a conservatory we suggest that the correct balance is to use 50mm slat on the larger roof area and 25mm venetian on the vertical windows instead of using the same size of slat for all of the glazing.

**T50W** - This is a wood slat option which is only available in 50mm slat width. The racks are mill finish (aluminium colour) as standard but most applications of this type would need to be the powder coated brown option to be more aesthetically pleasing, (extra cost is on the back of the Price list). Wood is a natural product and has maximum tolerances which are lower than aluminium (for example, the max. length of slat which may be used is shorter than that of aluminium).

**See the tolerance chart (page 6) on every occasion for acceptable tolerances.**

For Commercial applications the options are the same and T50 is the standard. (See Section Five). The other options are:-

**T80** - This has a heavy duty rolled edge slat that is designed for external use. It can also be used internally, (being more rigid, it spans further thus fewer racks are required.) It can also be preferred in areas where damage could occur to standard slat

**T88AV** - A very heavy extruded section that interlocks when closed. With side masking it gives a good degree of dim-out for film projection or gallery light level control.

**T80X** and **T88AVX** - To reduce heat gain, external blinds are far more effective. They will normally be electrically operated and treated to withstand the elements.

## **Section Two – DOMESTIC / CONSERVATORY APPLICATIONS**

### **i) Sales questions and answers**

#### **How long has the Skyshield System Been in Use ?**

Non retractable blind systems were originally designed over 30 years ago for use on rooflights in museums and art galleries. The Property Services Agency, the government agency then responsible for these buildings, had tried every possible type of sunscreening and settled on louvre blinds as the most cost effective and maintenance free solution internally. Externally they decided on aerofoil section louvres when a design life of over 50 years was needed or Skyshield type for a life of 15-20 years. Thus, they have, for example, been used extensively on the greenhouses at Kew Gardens and many museums in London and throughout the UK. Skyshield 80's and 88's have also been used on galleries where the substantially higher capital cost of aerofoil louvres could not be justified.

The Skyshield that is used for domestic conservatories is exactly the same and it is the most robust and trouble free system available for rooflights.

#### **How much heat will a Skyshield reject ?**

There are two answers. One is to produce fancy graphs with shading co-efficients and figures for transmission, absorption and reflection, which may confuse your customer. The other is to phrase the question differently as :-

#### **Will Skyshield be as effective as any other blind system of the same colour in rejecting heat ?**

To this the simple answer is **YES**. Certainly for internal blinds in the amount of heat that is actually reflected back out through the glass.

When heat passes through glass it changes wavelength and however reflective the blind material only a proportion will go back through. The rest is trapped between the blind and the glass.

The obvious solution is to have the blind fitted externally. If in an external Skyshield rejected 85-95% heat the same one mounted internally would reject 45-50%. The same variation would occur with an external roller awning blind compared to an internal roller blind. For domestic and many commercial situations external blinds are not ideal for aesthetics, cost and operation.

#### **In a Conservatory, can these Skyshield figures be improved upon ?**

The solution is to remove the heat build up that occurs between the blind and the glass. As hot air rises top opening vents in the glazing should be able to reduce the heat build up to give a comfort level similar to that achieved with an external system.

#### **What can I use if customer wants figures ?**

The BRE publication, "Solar Shading of Buildings", (see page 13), gives figures that are impartial, as they apply to all makes and types of blinds and glazing. There is not a magic internal blind system and 50% heat rejection internally is about the best that can be achieved. Most claims with highly reflective percentages either relate to the material and not to the amount of heat rejected, allow for an air flow or are simply not true.

## **Section Two – DOMESTIC / CONSERVATORY APPLICATIONS**

### **i) Sales questions and answers – continued**

**If it is not possible to create an air flow with vents or extractors, which internal Skyshield is more effective ?**

T50W wood slat is marginally better. Aluminium will heat more quickly and re-radiate into the room.

**Does it have any insulating properties ?**

When closed in winter up to 25% reduction in heat loss can be achieved. T50W wood slat is the most effective insulator.

**How much do they weigh per square metre ?**

T25 standard rack	3 kg
T50 “	3 kg
T80 standard rack	3.5 kg
T88AV	8.5 kg
Motorised	add 1.5 kg per motor

**How much light is lost when the blind is open?**

Aluminium slat is curved to give it strength. This form or thickness of the slat reduces the light by less than 9% for aluminium slats except the heavier T80 at 15%. T50W is less than 8%.

**What is the benefit of perforated slat ?**

On a commercial greenhouse it allows a proportion of natural light through the closed slat which is important for plant growth. On a conservatory it gives an image of the outside in the same way as a net curtain does. In the day you can see out but others cannot see in. However, if you are overlooked by your neighbours, it is probably not a good idea at night. As the light source is on the inside they can see you clearly but you will not be able to see them peeping in! If privacy is not of concern then perforated slat has a lighter less enclosed effect with a pleasantly diffused light.

**How do I clean it ?**

The louvres can be easily unclipped and wiped with a damp cloth and detergent.

**Can the blind be made to retract ?**

No. And it would not be possible to develop one that would be cost effective or to the scale of a domestic conservatory.

**Can I fit to polycarbonate roofs ?**

Generally No. With certain polycarbonate roof materials the warranty of the conservatory is invalidated if blinds are installed. The reason is that the blinds may create a heat sink between the blinds and the polycarbonate causing it to distort. We are also aware of warranty problems with PVC sections. Always include a clause placing responsibility on the customer to check before ordering blinds. The only product that may provide an answer is an insert from Insublind. Don't take a chance, litigation is an expensive hobby!

## **Section Two – DOMESTIC / CONSERVATORY APPLICATIONS**

### **ii) How to price**

The price list is designed to allow for tolerance on the pricing i.e. it is not practical to calculate all bracketry permutations, so an “average” cost has been allowed. Thus, to price from given sizes or drawings, take the price from the list and add the required control that is listed on the back. When giving a guide price, we suggest that you quote for the gear option, as you will not have to worry about calculating maximum square areas. Add your fixing cost, we suggest :- One man hour per sq. M. for T50 and T80, and one and a half man hours per sq. M. for other types.

For shaped blinds take the square area and add the cost of an extra rack, (from the end column on your list) for each slope. This will give an “average” figure.

For triangles and circles up to 1500mm wide, the addition of one rack will be adequate. This should allow for almost all domestic sizes. For larger sizes, as on commercial, allow an extra rack for each slope or arch.

For perforated slat, there is an additional cost per square metre on the back of the price list.

Where additional racks are needed to follow the glazing bar spacing, calculate the number of racks you need (usually glazing bars + 1), deduct the number allowed for the blind size, (the figure is above the width size on the list) and add number of extra racks needed from the end column.

If a cut out is needed in the slatting area to allow an obstruction to go through it, allow for an extra rack at the minimum length. (First price in the end column).

### **(iii) Standard wording & conditions for estimates**

Standard estimate product description.

To supply and install Skyshield non-retractable blinds with aluminium rack arms with nylon fittings and stainless fixings. All aluminium components to be ..... finish.

To be manually operated with lever control

“ “ “ “ “ cord control

“ “ “ “ “ gearbox and cranked rod

“ “ electrically operated each with it's own tubular motor and switch.

### **Suggested estimate conditions.**

Blinds are supplied as standard with mill finish aluminium components and grey or brown nylon fittings. Powder coating or anodising of the aluminium components is available at extra cost.

Motors and control equipment are supplied only for installation by others.

Our price is based on the assumption that suitable access equipment will be provided by others.

We have allowed for the minimum number of support racks required for the size of blind. If rack arms are required to align with glazing bars or at different intervals, there would be additional cost.

For PVC or polycarbonate roofs :- It is assumed that the installation of blinds will not affect any warranties of the building structure or fixing surfaces.

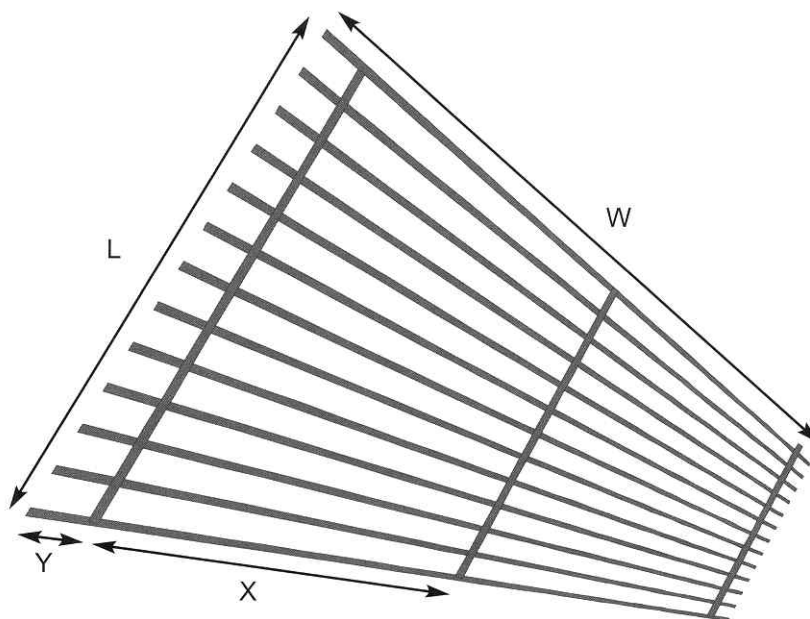


### Section Three - MEASURING INSTRUCTIONS AND TOLERANCE GUIDE

Skyshield is one of the easiest blinds to adjust on site so if you get it wrong it will probably not be a disaster. But getting it right first time is a preferable option.

The following instructions may seem complex, but taken in sequence they are logical and should ensure that you will have all of the answers for a trouble free order.

Use the table and diagram below to ensure that you do not exceed the spacing criteria :-  
e.g. T25 (Aluminium slat 25mm) needs racks which are spaced no further apart than 660mm.  
(Dimension x).



#### TOLERANCE CHART

Design tolerances are different for each slat size, as shown on the dimension table below.

Slat Type	T25	T50	T50W	T80
Max. Slat Overhang (Y)	250	400	300	500
Max. Distance Between Rack Arms (X)	660	900	750	1400
Max. Blind Width (Slat Length – W)	5000	6000	1750	5000
Max. Width 2 Rack Arms	1160	1700	1250	2400
Max. Width 3 Rack Arms	1820	2600	1750	3800
Max. Width 4 Rack Arms	2490	3500	-	5000
Max. Width 5 Rack Arms	3150	4400	-	-
Max. Width 6 Rack Arms	3810	5300	-	-
Max. Width 7 Rack Arms	4470	-	-	-
Max. Distance Between Brackets Along Rack	2500	2500	2500	2500
Max. Square Metre Cord Control	6m <sup>2</sup>	6m <sup>2</sup>	6m <sup>2</sup>	-
Max. Sq. Metre Lever	8m <sup>2</sup>	8m <sup>2</sup>	6m <sup>2</sup>	8m <sup>2</sup>
Max. Sq. metre Gear / Electric	15m <sup>2</sup>	20m <sup>2</sup>	16m <sup>2</sup>	20m <sup>2</sup>

### Section Three - MEASURING INSTRUCTIONS – continued

The racks, should be spaced evenly, running the drop of the blind. The racks have slat clips which, when the aluminium sub frame is complete, will then have slats clipped into them. Once the racks are fixed, the drive shaft is fitted, connecting all the racks and running the width of the blind. The drive shaft tilts the slat clips on each rack arm in unison and when the slats are fixed in, enables the adjustment of the angle of the slats.

#### Measuring Instructions – step by step.

Check that the maximums are not exceeded, according to the Dimension table on page 6 and provide a sketch with the following :-

(All notes referred to are on the following page.)

- 1 Blind width (see note a)
- 2 Blind drop
- 3 State number of racks if more than minimum shown on the Dimension chart . (see note c)
- 4 On sloping glazing show direction of fall and angle of fall (a) from the horizontal. (see Dia.1)
- 5 Control position
- 6 Control type (see note h)
- 7 Height from tilt shaft operating position to floor level
- 8 On drops over 2.5 metres state if cross support angle or centre brackets required (see note i)
- 9 Direction of slat opening standard or reversed (see note f)
- 10 Slat type
- 11 State recess or blind size

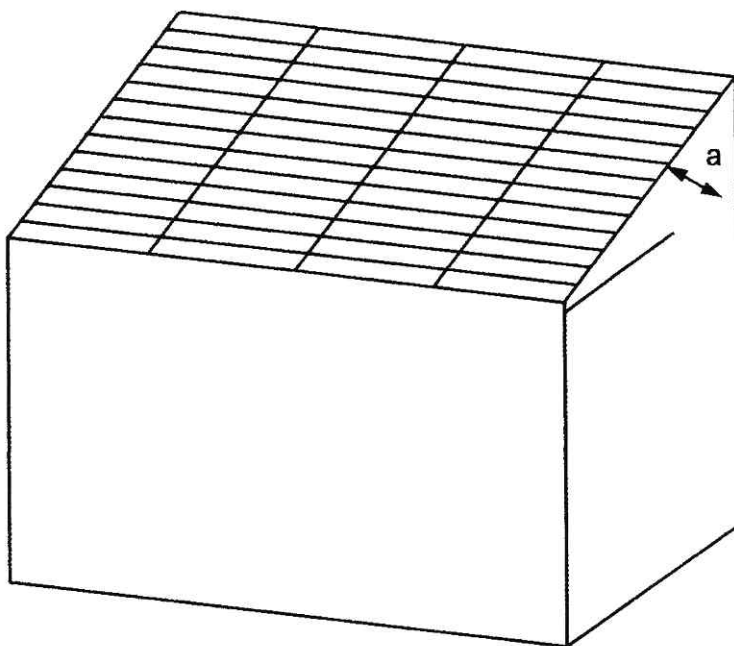


Diagram 1

## Section Three - MEASURING INSTRUCTIONS – continued

### Special Notes.

**a)** The slats run across the width, the drop is the rack length.

**b)** To allow for the rack arm and support structure, the centre line of the slats is a minimum of 140 mm from the fixing point for 80mm (dia.2). 120mm for 50mm. This dimension can be increased by extending the bracket studding but cannot be reduced. Be careful of this when measuring. If in doubt, or on awkward shapes where it can be difficult to visualize. TAKE A PIECE OF RACK TO SITE AND OFFER INTO POSITION.

**c)** Aesthetically, it may be desirable to align the rack arms with the glazing bars, this may increase the number of racks needed.

**d)** Adjacent blinds can have the slatting areas linked to operate as one by coupling the tilt shafts, if the maximum sq. area is not exceeded.

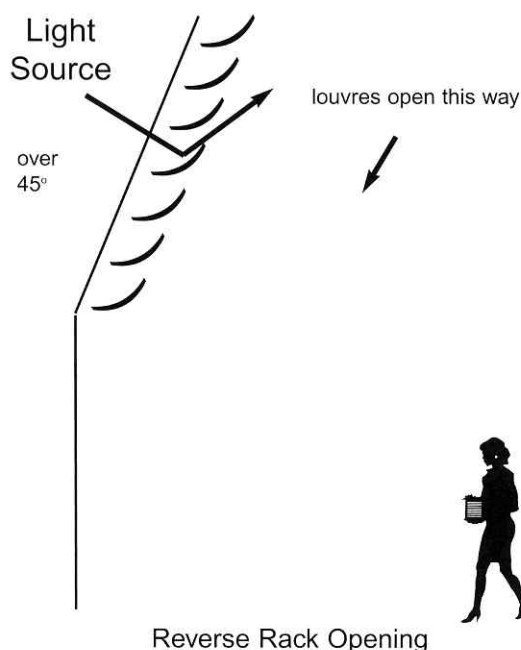
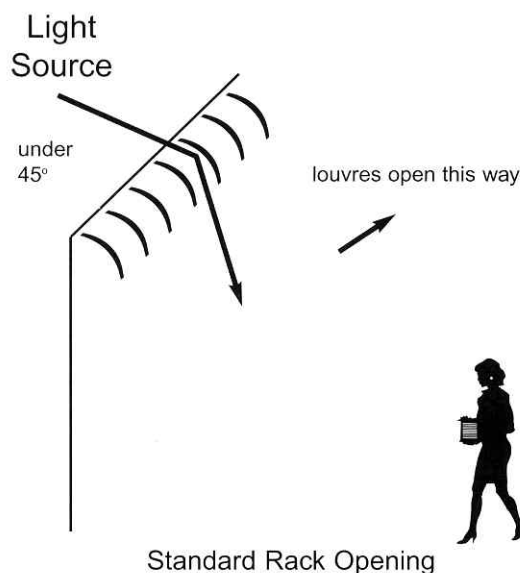
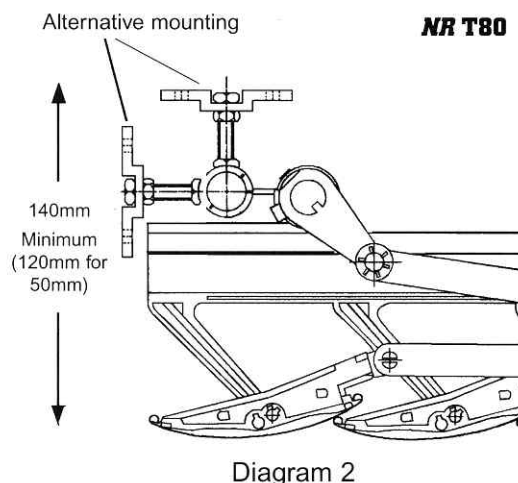
**e)** With woodslat blinds we do not recommend more than three rack arms for each slatting area. Larger openings should be divided into slatting areas, and these coupled at the tilt shaft.

**f)** There are two ways of manufacturing the rack arms – standard or reverse. It affects the direction in which the slats open and needs to be identified at the measure stage as it cannot easily be rectified afterwards. Reversing the rack gives a greater degree of light control with some applications. To determine whether to reverse the rack, take a small piece of rack and holding it in position try it both ways. It depends on the angle and height of the blind to the user. We show examples to explain. Generally with angles up to 45° from horizontal, standard opening is correct and from 45° to vertical, reverse is correct.

**g)** When the blind is horizontal, the rack arm should run North to South.

**h)** A cord tilter or lever control will operate small blinds. Areas over 8 sq. m will need gearbox or electric operation.

**i)** It is not always possible to obtain a suitable fixing point when using standard brackets. This is especially the case with centre brackets where the rack does not align with a glazing bar. In this situation, a cross support angle is fitted across the width at the centre position and fixed direct to the glazing bars. The centre brackets then fix to this angle. It is also advisable to use an angle when fixing to a PVC section. Then it is important to get a fixing into the aluminium centre core. Using the cross support will enable you to maximise your fixing positions.





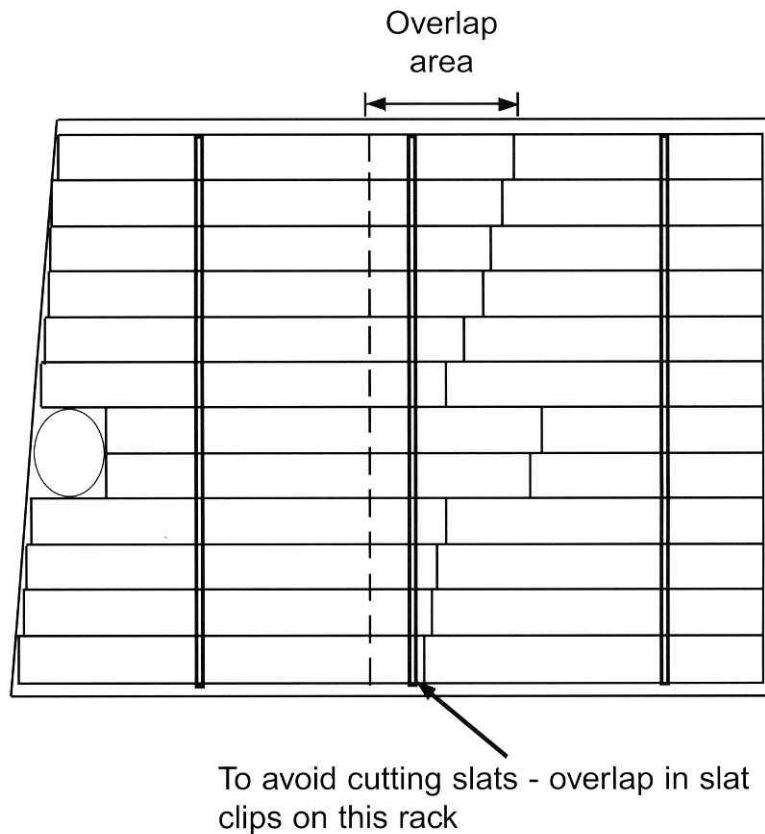
## Section Four – MORE DIFFICULT APPLICATIONS AND SHAPES

### i) Shaped Blinds

Except for 80mm and 88mm slats, it is possible to fit most shapes by trimming the slats on site. When a blind has more than two rack arms, slats may be supplied in two or more lengths per blind width to overlap at one or more rack arms. In this way, outer edges can be adjusted to follow irregular surfaces without trimming. It is quite simple to clip two pieces of slat into one clip.

The diagram below shows how easy it is to adjust the slats to avoid obstacles such as a waste pipe, or a wall that is not square.

See section five for 80mm and 88mm.



## Section Four – MORE DIFFICULT APPLICATIONS AND SHAPES – continued

### ii) Triangles, Arches & Circles

Shapes are treated the same as normal openings, except that additional support is required for the slat overhang. This is provided by slave or dummy racks. (The maximum overhang for each slat type is shown on the Tolerance Charts on Pages 6 & 14.) Where this is exceeded, a slave rack will be required – it does not have an operating strip to link the slat clips nor is it connected to the drive shaft, it is only used to support the slat which is turned by the adjacent rack.

#### Additional Measuring for Individual Shaped Blinds.

- 1 Provide a sketch of the opening with top marked and each side dimensioned.
- 2 For arched and circle blinds show radius.
- 3 State whether there is support for any slave arms or if cross support angles are required. (See note i, Page 8.)

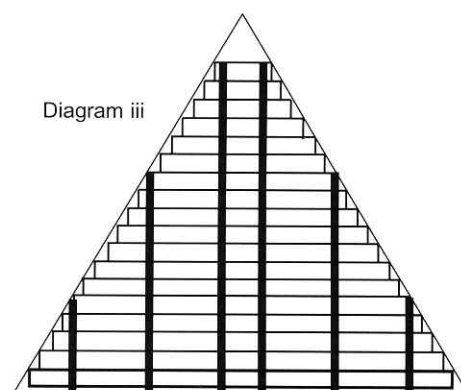
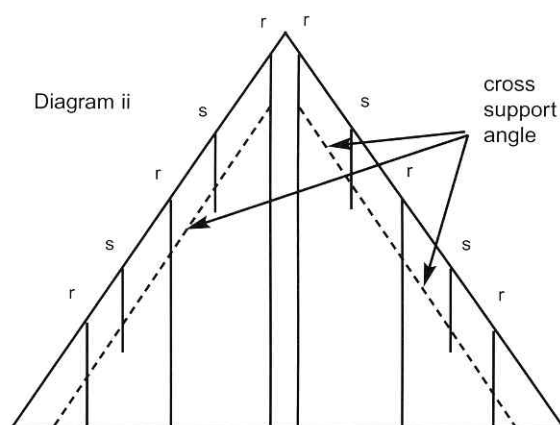
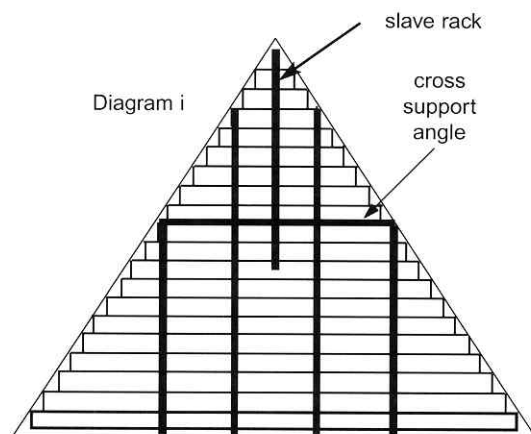
#### Special Notes for Shaped Blinds.

On triangular blinds, rack arms are normally fitted 75mm either side of the centre line from base to apex. A slave arm is run to the apex for the top slats and it will be necessary to glue the slats to the slat clips with a rubber solution. (See Diagram i) The way that slave support arms are used depends on the size of the triangle or shape. As they usually do not align with glazing bars, cross support angles are needed – these are fitted to the adjacent rack or glazing bars.

**Diagram i** On smaller triangles where the only need for a slave arm is to pick up the slats at the apex, a short length of cross support angle is used from the top. The other racks are run to their full length.

**Diagram ii** On larger triangles, cross support angles are run down the slope of the triangle to pick up the ends of the slave racks. ( r = rack and s = slave.)

**Diagram iii** On small triangles if it is not necessary to cover the top of the apex, the centre racks can be closer, although we recommend that they should not be less than 100mm apart. The slave rack is not then required.

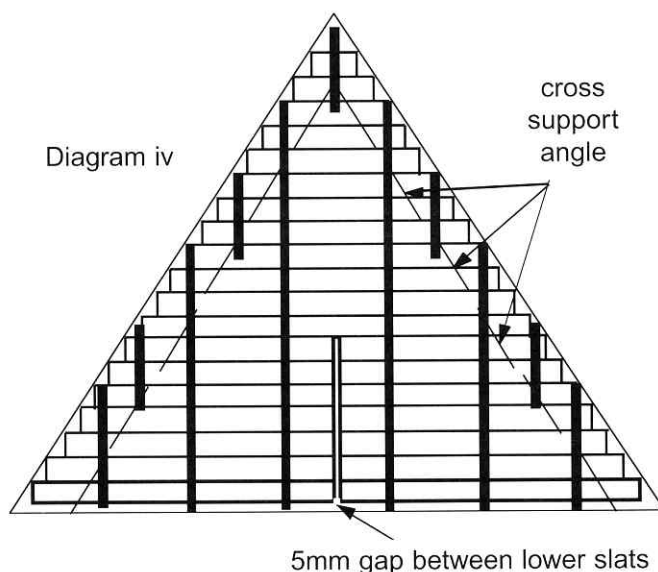


## Section Four – MORE DIFFICULT APPLICATIONS AND SHAPES – continued

### ii) Triangles, Arches & Circles - continued

**Style 4** T50W (Skyshield 50mm Woodslat) triangles where slat length exceeds maximum.

On larger triangles where the width is greater than the maximum slat length, it will look neater if the slatting is arranged as diagram (iv). There is one slatting area to the apex and only the lower area is divided.

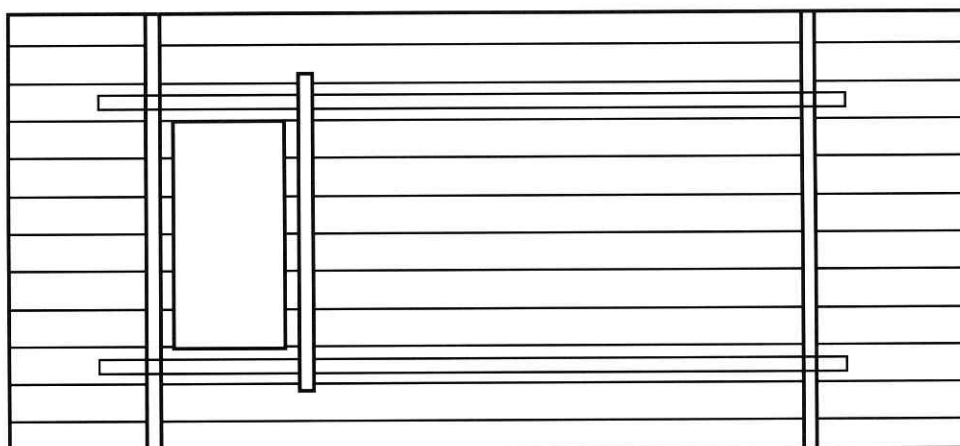


### iii) Cut Outs

Where the cut out creates a slat overhang from the rack arm that is larger than the maximum shown on the Tolerance chart (Page 6), additional rack arms will be needed. This can occur where the blind area is obstructed by window control gear, pipes, cross beams etc.

On long drop blinds where small cut outs are required it will be more cost effective to fit a slave arm to cross support angles that are fitted to the racks either side of the cut out (see diagram v)

Dia. v



### Additional measuring instructions for Cut Outs

1. provide a sketch with position and size of the cut out marked.
2. state whether cross support angles are required for any slave racks.

## Section Four – MORE DIFFICULT APPLICATIONS AND SHAPES – continued

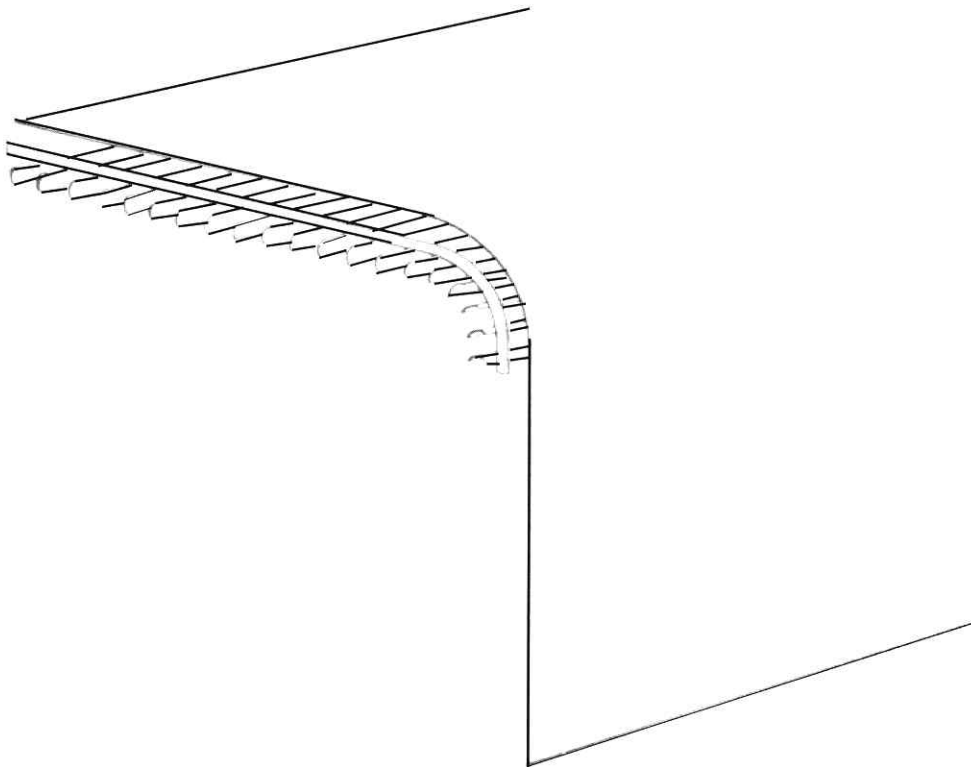
### iv) Curved Fronts

A feature often used on conservatories is for the front part of sloping glazing to be curved to create a more pleasing line. Non-retractable blinds are the only practical method of shading and the effect is achieved by forming the rack arm to the shape of the glazing bars.

To allow the blind to function correctly with the slats tilting uniformly the spacing of the operating bar linkages has to be manufactured to a very fine tolerance. This creates a considerable add on cost.

#### **Additional measuring instructions for curves.**

1. Provide a template of the glazing bar.



### v) Wider openings

Use cross support when you need to span an opening where there is not a suitable centre fixing position and the deflection on a cross support angle would be excessive (more than 1.5m unsupported). Even the heavy duty support will deflect and on wider spans this will be very noticeable. The objective is to ensure that the racks are parallel and at an even height so something has to “give”. This is the intention it is not a structural beam and it is advisable to indicate this to the customer when measuring.

## Section Five – COMMERCIAL APPLICATIONS - INTERNAL AND EXTERNAL

### i) Sales Questions and Answers.

General questions regarding the complete system range are covered in Section Two (i) page 3.

**Which blinds system is the most appropriate for commercial internal application, where areas to be covered tend to be larger and less accessible than domestic ?**

T50 is the most commonly used as the standard most cost effective with the other options being the T80 and T88AV. External application offers the T80X and T88X.

**Why use T80 instead of T50 ?**

Although it is more expensive, as the slat cost per square metre is much greater than for 50mm on larger glazed areas, the proportion of T80 looks better. The rolled edge slat is far more robust than 50mm and has a longer design life. As there are fewer rack arms it is slightly easier to fit.

**What are the benefits of T88AV and T88XAV ?**

This uses extruded section that interlocks when closed to give a good degree of dim out. It is not 100% black out but is suitable for film projection or light level control.

Externally – Apart from the obvious solar control benefits, the robust profile can also be used for weather protection and heat retention as well as the audio visual dim out function.

**How do you stop light penetration around the edges of T88AV ?**

Whilst the louvres close together, there is light penetration at the edges. Across the width aluminium angle are fitted top and bottom so that the louvres can close to them. At the sides aluminium angle are used with a brush masking strip. This is the same material as a draught excluder used on doors.

**Why fit blinds externally ? T88XAV, T80X**

For maximum solar heat rejection, shading devices should be mounted externally. Any heat that is not rejected is absorbed by the louvre or transmitted through and is dissipated in the air gap between the blind and the glass. Then, because hot air rises, it is vented back above the blind. Actual percentage heat rejection depends on orientation, area of glass, ventilation, air change and other factors.

To give a realistic guide to a customer, use The Building Research Establishment Chart. This shows that for a comparable internal venetian blind a figure of 0.57 is achieved. (This roughly equates to 43 % heat rejection.) In the same situation, an external Skyshield would show 0.04 (96% heat rejection).

**Do not lay claim to a specific percentage. It can depend on many factors.** The BRE chart is a guide. However, the benefits of different systems will always be in proportion. i.e. If a glass manufacturer is claiming a heat rejection figure which is better than 0.71 (29% shown in the chart), external Skyshield will always be proportionately better. If they claim much more than 29%, the \* BRE publication chart shows that they may be misinterpreting! Page 15 of that publication is a useful sales aid to show the benefits of blinds instead of film and special glasses.

Golden Rule is – external blinds solve the cause of solar gain by stopping it before it reaches the glass. All other options try to resolve a created problem. It may be that people in glass houses should not throw stones but they should also not be surprised that they get hot!

\* Solar Shading of Buildings by P J Littlefair, available from CRC Ltd, 151 Rosebery Ave. LONDON EC1R 4GB



## Section Five – COMMERCIAL APPLICATIONS - continued

### i) Sales Questions and Answers - continued

#### What level of wind will the system withstand ?

The blind has been wind tunnel tested up to force 6. The best answer is that one of the most extensive uses of non retractable blinds is at Kew Gardens, where it is fitted to several of the large greenhouses. In the hurricane conditions in 1989, no more than 10 louvres were dislodged across the whole complex. These conditions far exceeded the design specifications for the product which performed exceptionally well. In actual fact, wind pressure on the underside of the louvres forces it more tightly into the nylon clip.

#### What if the site is exposed or had a wind tunnel effect from adjacent buildings ?

Gusting can cause abnormal wind pressure and we recommend that you quote for wind baffles, even if it is shown as an extra to your quote. This is an aluminium angle 130mm deep that is fitted all round and can also help as a fixing angle.

#### What finishes are available ?

Externally, powder coated white, RAL 9010 finish, is standard. Natural anodised and any other standard RAL colour are available, but will take longer to manufacture. Internally, mill (unfinished) is standard with natural anodised and powder coated available at extra cost.

## Section Six – MEASURING INSTRUCTIONS AND TOLERANCE CHART

The procedure in section 3 should be followed except for the additional design considerations in this section. The tolerance guide below should not be exceeded.

**Design tolerances are different for each slat size, as shown on the dimension table below.**

Slat Type	T50	T80	T88AV	T80X	T88X
Max. Slat Overhang (Y)	400	500	150	250	150
Max. Distance Between Rack Arms (X)	900	1400	1500	1000	1200
Max. Blind Width (Slat Length – W)	6000	5000	4000	5000	4000
Max. Width 2 Rack Arms	1700	2400	1800	1500	1500
Max. Width 3 Rack Arms	2600	3800	3300	2500	2700
Max. Width 4 Rack Arms	3500	5000	4000	3500	3900
Max. Width 5 Rack Arms	4400	-	-	4500	-
Max. Width 6 Rack Arms	5300	-	-	5000	-
Max. Width 7 Rack Arms	-	-	-	-	-
Max. Distance Between Brackets Along Rack	2500	2500	2000	2000	1500
Max. Square Metre Cord Control	6m <sup>2</sup>	-	-	-	-
Max. Sq. Metre Lever	8m <sup>2</sup>	8m <sup>2</sup>	-	8m <sup>2</sup>	-
Max. Sq. metre Gear / Electric	20m <sup>2</sup>	20m <sup>2</sup>	16m <sup>2</sup>	20m <sup>2</sup>	12m <sup>2</sup>

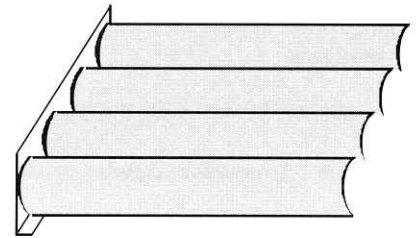
### (i) Shaped Blinds

As it is not possible to overlap 80 and 88mm slats, it is usually safer to cut the louvres to size on site, unless the installation programme allows time to fit the racks first and to fit the slats sometime after the racks are fitted. To calculate louver length at the measuring stage, you will find it easier to take a section of rack as a template. To pick up the slat overhang on any shaped edges, you will need to use slave racks that will be mounted on cross support angles or channel section.

## Section Six – MEASURING INSTRUCTIONS AND TOLERANCE GUIDE - continued

If the blind is not in reveal, it is easier to create a frame from 130mm x 50mm angle to fit around the blind. The blind racks can be pre-assembled in the frame. (Diagram a)

Dia. a



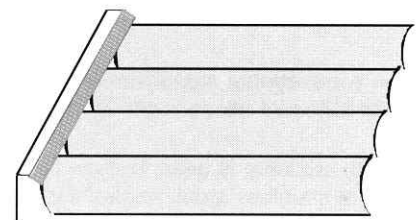
### (ii) External Blinds

If the racks align with the glazing bars, bracketry can be used for installation. If not, cross support angle should be fitted across the glazing bars with the rack brackets fitted to the cross support angle. Even when the glazing bars align with the racks, this can be the preferred method as it allows far more scope for bracket and alignment adjustment.

### (iii) Wind baffles and masking.

We recommend that an aluminium angle section is fitted all round the edges of the installation. (Diagram a. Page 15.) This is fitted on the glazing bars and allows the same flexibility of fixing as the cross support angle. For light exclusion, a brush strip is fitted to the channel. (Diagram b.)

Dia. b



## Section Seven – MOTORISED BLINDS AND AUTOMATIC CONTROL

### MOTORISED BLINDS

A tubular motor is mounted onto a rack arm and drives a gearbox that is connected to the drive shaft. Where several blinds are connected to one switch point, relays must be used.

### AUTOMATIC CONTROL SYSTEMS

There are two basic options from which control variations are then possible. Simply described these are :-

#### 1) Solar control.

This closes the blind when a light level is reached and opens it when the outside light level drops.

#### 2) Light level control.

This is far more complex and is normally only necessary in art galleries where a set light level is needed.

The first closes the blind to protect from heat gain - the second adjusts the louvres to an angle to achieve a light level within a pre-set narrow band width.

The options are described in detail on the “**Automatic Control Leaflet**“. When selling you must find out what the client expects the control to do and what are the control priorities. Follow the questions in the leaflet.

## Section Eight – TECHNICAL SPECIFICATION

### LOUVRE TYPES

**T25** - Slim 25mm flexible slat with a slighter form that gives a hint of colour when open and is most appropriate to give dimension to smaller windows.

**T50** - Flexible slat 50mm wide, the standard for internal blinds, stove enamelled in an extensive range of colours.

**T50W** - Kiln dried American Basswood laths 50mm x 3mm in natural or a range of stained finishes.

**T80 and T80X** - Roll formed aluminium louvres with beaded edges for internal or external applications.

**T88AV and T88XAV** - An extruded aluminium section that is polyester powder coated or natural anodised AA25. It neatly interlocks to provide closure for audio visual applications. The blind is ideal for lecture halls and provides a high level of dim-out for film projection. The blind can be fitted internally or externally and an added bonus is the provision of a trapped layer of air when the blinds are closed, which can reduce overnight heat loss during winter.

**Louvre Carriers (rack arm)** - The rack arm assembly has an aluminium T-Bar section, 35mm x 20mm fitted with pivotable nylon slat clips which are linked to a 12mm x 3mm aluminium operating bar. When used externally, all aluminium components are powder coated or anodised AA25.

**Slat Clips** - A moulded nylon clip secures the slats whilst allowing easy removal for cleaning and maintenance. The design of the clip prevents scratching of the slats whilst allowing complete overlap.

**Drive Shaft** - A hexagonal aluminium extrusion that is sufficiently rigid to reduce torque to a minimum. A nylon coupling moulding is available to link adjacent blinds to the same operating mechanism.

**Fixings** - 6mm studding is used to allow for alignment. This is fitted with angles and plates and bolted to the racks. All studding, nuts and fixings are of stainless steel. Angles and plates are of aluminium finish to match the rack.

**METHODS OF CONTROL** The louvres rotate through 125° from the closed position by various control options that turn the drive shaft, this turns a nylon cam moulding which draws the operating bar that is linked to a pin in the end of the slat clips.

**Cord Control** - With two cords on a nylon cam suitable for small and high windows only.

**Lever** - For smaller blinds where it is possible to reach the tilt shaft, a nylon lever is fitted to the shaft.

**Gear Operated** - A gearbox is fitted to the tilt shaft and is turned by a detachable cranked rod suitable for large and high level blinds.

**Motorised Operation** - A tubular motor drives a gearbox that is connected to the tilt shaft. This is most suited to blinds where access is difficult and group control is required either manually coupling adjacent blinds or coupling electrically with relays to one switch. The motor requires a current of less than one amp from a 220V single phase supply.

**Automatic Control** - A central control utilising solar sensors to open and close the louvres at selected external light levels can link several banks of blinds through relays to ensure uniform operation. A more sophisticated 3 lux level system allows adjustment of the louvre angle to achieve a pre-determined lux range. (See Automatic Control Leaflet.)

**Timed Control** - A central control can utilise a timer to operate the blinds at chosen times, this can also be incorporated with a solar sensor system.

### LOUVRE PROFILES – ACTUAL SIZE

