



OFF HIGHWAY PRODUCTS

Off Highway
mirrors, arms
& accessories.

2014/15



THE QUEEN'S AWARDS
FOR ENTERPRISE:
INTERNATIONAL TRADE
2012



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Located in Bradford, in the north of England, Ashtree Vision and Safety is one of Europe's largest manufacturers of mirrors and mirror arms but this wasn't always the case.

Established in 1977, Ashtree first operated from a spare room in the home of its founder but after a series of rented premises, Ashtree Works was bought in 1984. Originally only filling a corner of the building, growth of the business means that the company now fills its 5000 square metre (53,000 square feet) premises. Due to a complete refurbishment this smart, modern building is unrecognisable from its days as a dye house used in Bradford's textile industry.

Approved to ISO 9001:2008 Ashtree is now into a fifth decade of trading and in 2012 the company was a recipient of a Queen's Award for Enterprise in the International Trade category. This prestigious award was recognition of Ashtree's consistent increase in export sales.

Investment and new product development is an ongoing process at Ashtree. All new products are designed to improve visibility with the aim of making working environments safer places for everybody.



INTRODUCTION





Main Mirrors: Standard rear view mirrors used on most types of machine.

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Twin Lens Mirror: The Ashtree M926CE is a new type of twin lens mirror that offers better visibility around machinery.

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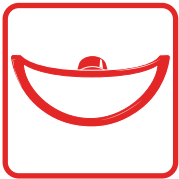
Wide Angle Mirrors: Used on trucks, these mirrors have a deeper radius of curvature and can help with visibility around machinery where direct visibility is not possible.

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Interior Mirrors: The correct interior mirror can aid visibility around machinery.

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Safety Mirrors: Used on machinery when the operators direct visibility is impaired.

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Mirror Arms: Ashtree manufacture several different ranges of mirror arms and are able to manufacture for specific requirements.

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CLASS II & III



Class II & III mirrors are the standard rear view mirrors used on road going vehicles and most off highway machinery. As such, the lens is allowed a spherical radius of either 1200mm or 1800mm.

Ashtree manufactured products are widely used across many industries and prove popular because of their versatility and strength.

All new products are designed to use one of two "Ashtree" branded clamps that will fit either 10-20mm or 16-28mm mirror arms. Moulded in 35% glass filled nylon, chosen for strength and to help reduce vibration, these clamps will mount horizontally, vertically or at any point in between. Wherever possible our mirrors are designed with a minimum of 20 degrees of adjustment on the clamp to help operators get the best viewing position possible.

These clamps are subject to Community Registered Design no 002167759.

M2000CE

e11 III 03*6624

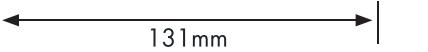
Fitment	Radius
10-20mm	1200mm



M2000FE

e11 III 03*6624

Fitment	Radius
10-20mm	Flat



M5000CE

e11 II 03*6623

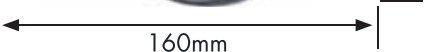
Fitment	Radius
10-20mm	1800mm



M5000FE

e11 II 03*6622

Fitment	Radius
10-20mm	Flat



M440CE

e11 II & III 03*6619

Fitment	Radius
10-20mm	1200mm

M440CEB

e11 II & III 03*6619

Fitment	Radius
16-28mm	1200mm



M528CE

e11 II 03*6126

Fitment	Radius
16-28mm	1800mm

M545CE

e11 II 03*6287

Fitment: 10-20mm
Radius: 1800mm



M545CEB

e11 II 03*6287

Fitment: 16-28mm
Radius: 1800mm



M610CE

e11 II 03*6643

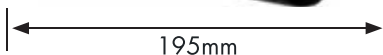
Fitment: 16-28mm
Radius: 1800mm



M6101CE

e11 III 03*6644

Fitment: 16-28mm
Radius: 1200mm



M555CE

e11 II & III 03*6590

Fitment: 10-20mm
Radius: 1200mm

M555CEB

e11 II & III 03*6590

Fitment: 16-28mm
Radius: 1200mm

M626CE

e11 II 03*6125

Fitment: 16-28mm
Radius: 1800mm



M6261CE

e11 III 03*6125

Fitment: 16-28mm
Radius: 1200mm

M701CE

e11 II 03*6625

Fitment 16-22mm
Radius 1800mm



M714CE

e11 II 03*6639

Fitment 16-28mm
Radius 1800mm

M7141CE

e11 III 03*6640

Fitment 16-28mm
Radius 1200mm



M8231CE

e11 II & III 03*6921

Fitment 16-28mm
Radius 1200mm

M725CEB

e11 II & III 03*6589

Fitment 16-28mm
Radius 1200mm



TWIN LENS MIRRORS

Twin lens mirrors are not new but the latest model from Ashtree is a little different to most. Part number M926CE has two lenses, both of which are adjustable. Careful design means that the mirror body is not too deep so forward visibility will not be obstructed when mounted, but, both lenses will adjust independently of each other to offer a better field of visibility.

The field of visibility obtained when this mirror was mounted onto a wheeled loader can be seen on the opposite page. The mirror's universal design will also allow the enhanced visibility, shown in the images, to be replicated on many other types of machine as well.



Main lens - 172mm x 236mm
Wide Angle lens - 174mm x 129mm



M926CE

E11 II, III & IV 048173

Fitment
16-28mm

Radius
1200mm

Main Lens

Radius
300mm

Wide Angle Lens

M926CE - Manually adjustable
M926CEH - Manually adjustable and heated
M925CEH - Electrically adjustable and heated

M926CEH

E11 II, III & IV 048173

Fitment
16-28mm

Radius
1200mm

Main Lens

Radius
300mm

Wide Angle Lens

M925CEH

E11 II, III & IV 048173

Fitment
16-28mm

Radius
1200mm

Main Lens

Radius
300mm

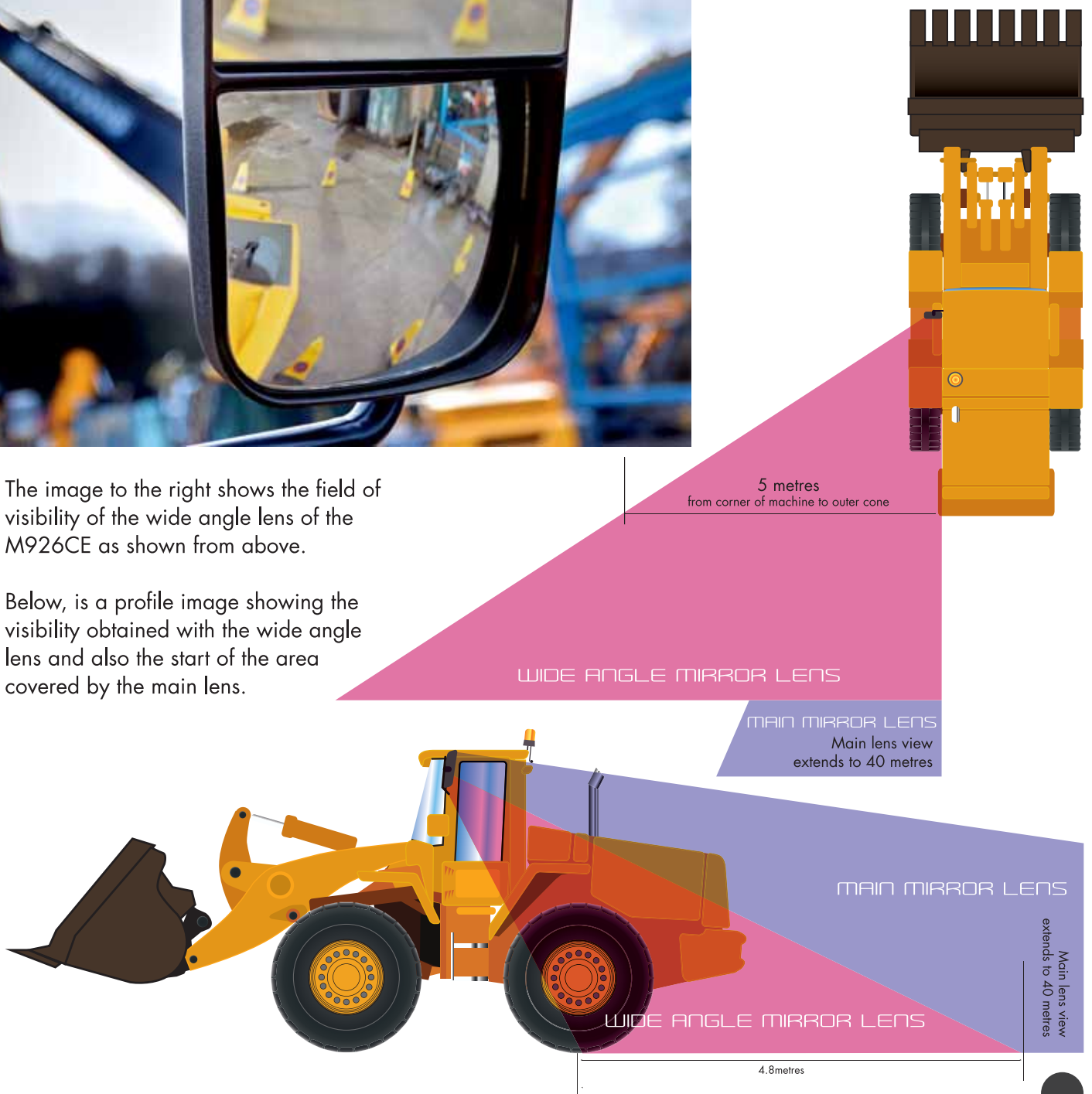
Wide Angle Lens



We mounted the mirror onto a loading shovel and measured the results. The wide angle lens was able to see cones placed by the rear axle but we could also see 4.8 metres backwards to the rear cones, and even further beyond this point. The cone furthest from the side of the machine was a distance of 5 metres away. With a standard rear view mirror this area around the side of the machine would almost certainly be missed.

The image to the right shows the field of visibility of the wide angle lens of the M926CE as shown from above.

Below, is a profile image showing the visibility obtained with the wide angle lens and also the start of the area covered by the main lens.



WIDE ANGLE MIRRORS



Wide angle mirrors give truck drivers greater visibility away from the vehicle in areas not covered by the main, class II & III, mirrors. On off highway machinery they can be used for this application and also as a means of increasing visibility in hazardous blind spots around machinery.

The image above left shows the field of visibility obtained by Ashtree part number M430CE. The white line shows the coverage required by the visibility standard being worked towards and as you can see this has been easily surpassed.

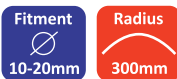
The right hand image shows how the customer has modified a standard Ashtree S900 style mirror arm (see page 15) so that they can mount the mirror in its most effective position. Ashtree now supply the M430CE and a S900 series mirror arm, manufactured to customer specific requirements, for machine production.

CLASS IV & V



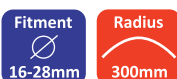
M250CE

e11 IV & V 03*6843



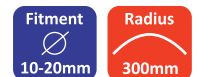
M250CEB

e11 IV & V 03*6843



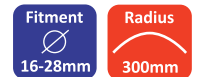
M430CE

e11 IV & V 03*6404



M430CEB

e11 IV & V 03*6404



M4402CE

e11 IV & V 03*8012

Fitment: 10-20mm
Radius: 450mm



M4402CEB

e11 IV & V 03*8012

Fitment: 16-28mm
Radius: 450mm



MX550CE

e11 VI 03*6447

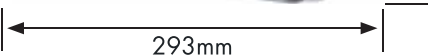
Fitment: 10-20mm
Radius: 250mm



MX550CEB

e11 VI 03*6447

Fitment: 16-28mm
Radius: 250mm



M435CE

e11 IV & V 03*6588

Fitment: 10-20mm
Radius: 300mm



M435CE-Stud

e11 IV & V 03*6588

Fitment: M6 Stud
Radius: 300mm

MX635CE

e11 VI 03*6343

Fitment: 10-20mm
Radius: 225mm



MX6351CE

e11 IV & V 03*6343

Fitment: 10-20mm
Radius: 330mm

"B" versions of both mirrors are available with a clamp that fits 16-28mm diameter mirror arms

INTERIOR MIRRORS



Interior mirrors can play an important part in accident prevention by giving drivers and operators better visibility, especially if the machine has no external mirrors.

Fork lift trucks benefit from having a wide angle mirror like the MX943, see images. This has a very wide angle lens and it gives the operator almost 180 degrees of vision which is especially useful in warehouses where space can be very limited.

More traditional interior mirrors are also manufactured by Ashtree. These can be used to compliment exterior mirrors and provide clear visibility of specific areas.



M235C

Fitment
M6
Stud

Radius
200mm



M2000CEA2

e11 III 03*6624

Radius
1200mm

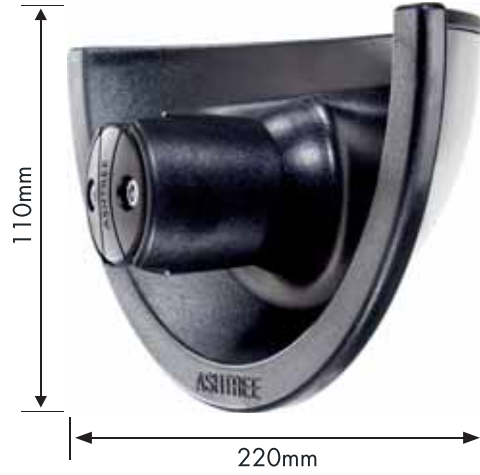
M2000FEA2

e11 III 03*6624

Radius
Flat

MX943

Fitment \varnothing 10-20mm Radius 100mm



M435CEA2

e11 IV & V 03*6588

Radius 300mm



See also the M43CE on page 9

S1230

This mirror arm can be used for mounting mirrors onto a horizontal or vertical surface. Adjust the arm to the correct angle and then tighten the bolt in the bracket to create a stable mounting point for your mirror.



MX943A2

Radius 100mm

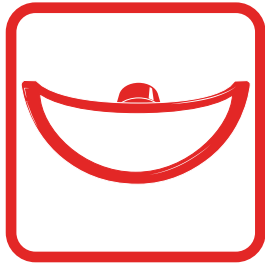


SAFETY MIRRORS



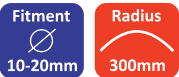
Safety mirrors are now an important feature on many different types of machine.

At one point any mirror was regarded as acceptable but now a more considered approach is taken. Different visibility standards, aimed at reducing accidents and preventing injuries, have been introduced. In anticipation of these standards Ashtree developed a range of products specifically for this purpose and these mirrors are now used on machinery worldwide.



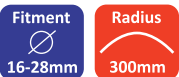
MX250CE

e11 IV & V 03*6843



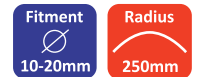
MX250CEB

e11 IV & V 03*6843



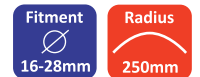
MX550CE

e11 VI 03*6447



MX550CEB

e11 VI 03*6447



M250CE versions with glass lenses are also available, see page 8

MX943

Fitment \varnothing 10-20mm Radius 100mm



MX635CE

e11 VI 03*6343

Fitment \varnothing 10-20mm Radius 225mm



307mm

M6351CE

e11 IV & V 03*6343

Fitment \varnothing 10-20mm Radius 330mm

"B" versions of both mirrors are available with a clamp that fits 16-28mm diameter mirror arms

307mm

MX950-Tunnel

Fitment \varnothing 19mm Stem Radius 125mm-185mm



MX951-Tunnel

Fitment \varnothing 19mm Stem Radius 125mm-185mm

MX950-Tunnel - 250mm
MX951-Tunnel - 275mm

MX948

Fitment \varnothing 10-20mm Radius 150mm

MX948B

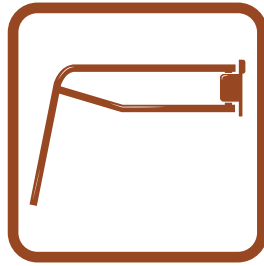
Fitment \varnothing 16-28mm Radius 150mm





The perfect mirror for any vehicle would be devalued if the correct mirror arm wasn't chosen. As we saw on page 9, Ashtree are able to design and develop products that match the requirements of the customer's application.

A good arm will offer a stable platform to mount a mirror and so all Ashtree arms are designed to offer strength and flexibility. Having manufactured mirror arms since 1989 many new ideas have been introduced into the products developed since then and many of those ideas can be found on these pages.

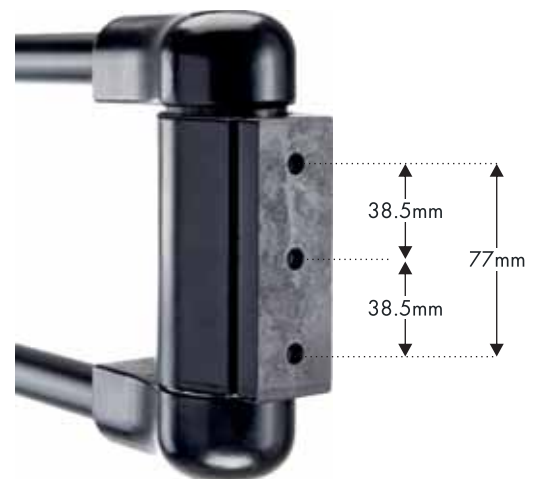


S1700 Mirror Arms



The Ashtree S1701 extending mirror arm is designed to operate in the same way as a trombone. Because of the twin arm design there is no possibility of twisting and so the arm remains stable whether it's extended or not. The main arms are 25mm in diameter and the 18mm diameter extending tubes slide up and down inside. When the correct length is reached simply tighten the hand wheel to lock it into position.

The arm mounts on any of three M8 holes at centres of 77mm to the outer holes or 38.5mm from outer to centre.

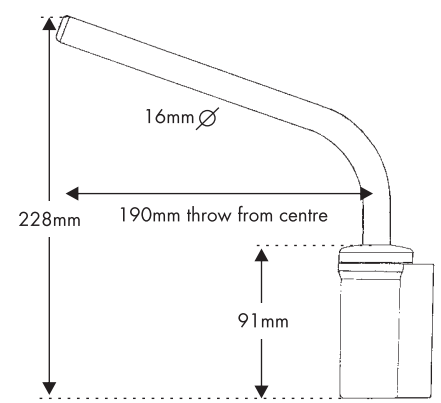
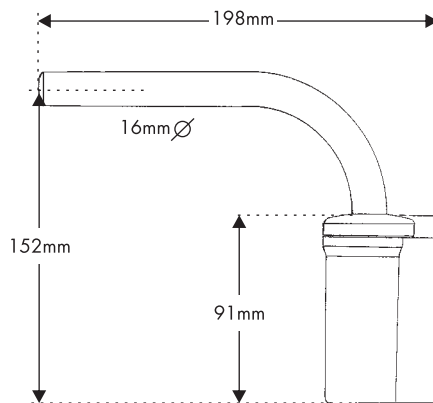
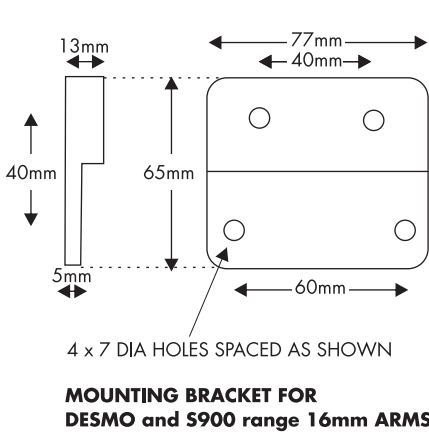
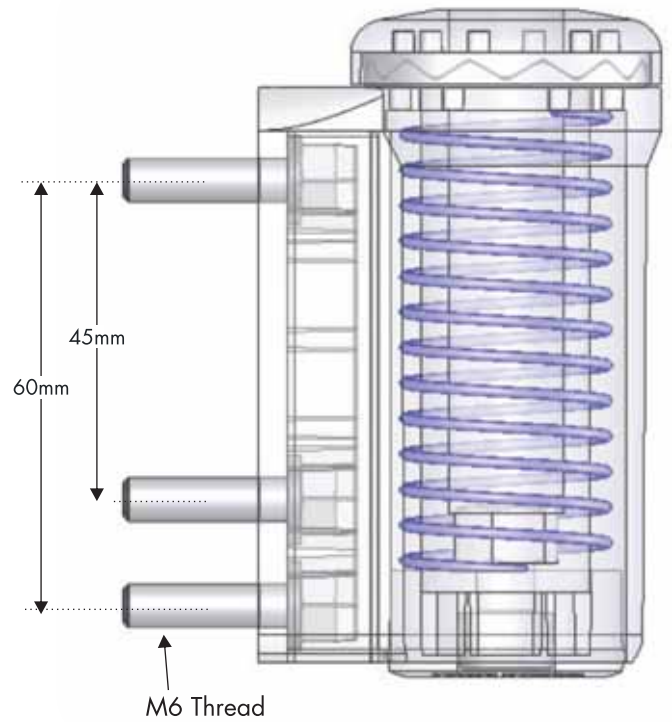


The S900 series arms evolved from a desire to make something lighter and more cost effective, yet retaining the same strength, as the traditional zinc arms that Ashtree already manufactured. To do this a high impact polymer was chosen for the body but zinc was retained as the material for the two opposing indexing parts. This reduced the weight, and cost, but using zinc indexing teeth means that any wear from adjustment is minimised.

When the zinc indexing teeth were designed it was also a design feature that the number of indexing points should be increased. The S900 series arms have 18 points of adjustment at 20 degree increments

These arms mount on the traditional M6 threads at 60mm centres but a third hole was added so they can also mount at 45mm centres.

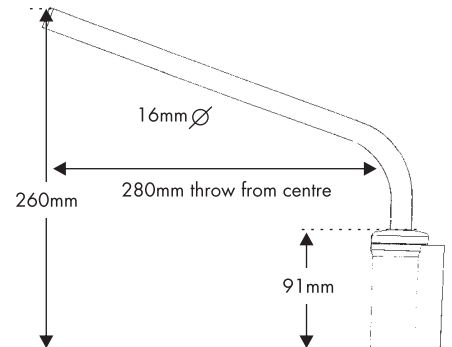
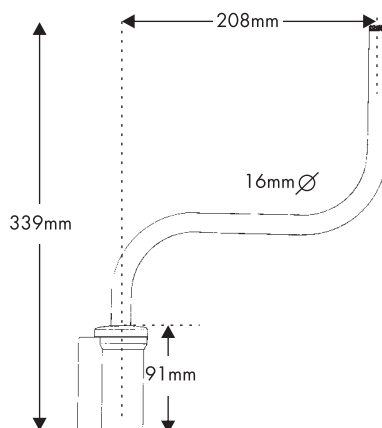
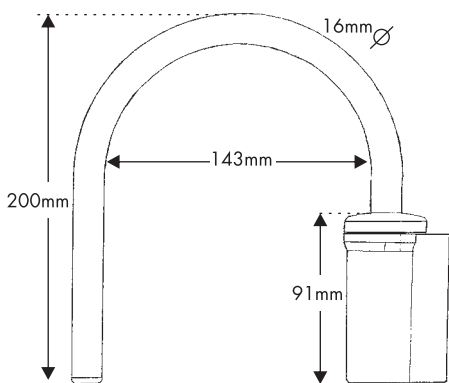
The Ashtree S900 range is subject to UK Patent Application No. 0917899.7



Y2089

S901

S902



S903

S904

S905

The New Ashtree S1600 Range of Mirror Arms

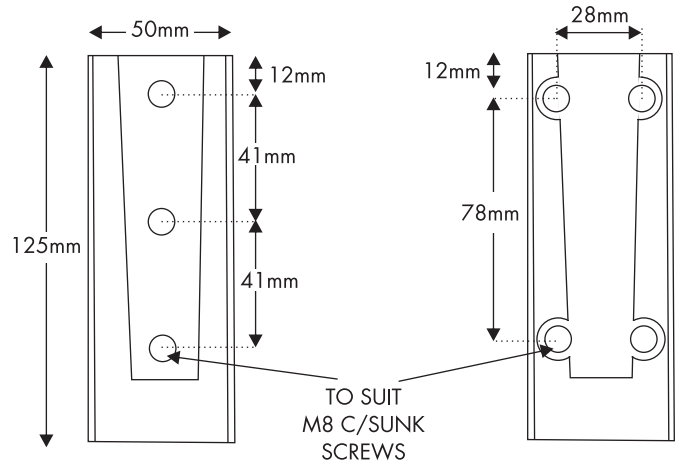


The new S1600 range of mirror arms are designed for larger applications than the S900 series but they work on the same principle and are subject to same UK Patent Application No. 0917899.7

They mount on 2 x M8 threaded holes at 60mm centres. For applications where the arms need to be removed a bolt on wedge, part number Y2242, can be added and then the arm will slide on and off of part numbers Y2670-3 or Y2680-4.



Y2242



Y2670-3

Y2670-4

S1610 Single Arms

These arms are designed for everyday applications where a good visibility can be achieved by a simple, yet strong, design of arm.

- Single arm with 19mm diameter steel tube.
- Reversible design of arm, can be mounted facing up or down.
- 16 points of adjustment at 22.5 degrees.
- Mounts on 2 x M8 holes at 60mm centres.
- They can also be mounted using the Y2242 wedge and either the Y2670-3 or Y2670-4 bracket.



S1630 Twin Independent Arms

The S1630 mirror arms are really two mirror arms in one. They are designed so that visibility is possible rearwards down the side and also across the front of a machine. Both arms have a spring and a set of indexing teeth so they really can operate independently of each other.

- Twin independent arms with 19mm diameter steel tube.
- Reversible design of arm, can be mounted facing up or down.
- 16 points of adjustment at 22.5 degrees.
- Mounts on 2 x M8 holes at 60mm centres.
- They can also be mounted using the Y2242 wedge and either the Y2670-3 or Y2670-4 bracket.



- Twin arms with 19mm diameter steel tube.
- Reversible design of arm, can be mounted facing up or down.
- 16 points of adjustment at 22.5 degrees.
- Mounts on 2 x M8 holes at 60mm centres.
- They can also be mounted using the Y2242 wedge and either the Y2670-3 or Y2670-4 bracket.

S1650 Twin Arms

The S1650 twin arms are designed for applications that need a bit more strength and stability. This is given to the arm by having two steel tubes that attach to the body at separate points to reduce the effects of vibration.





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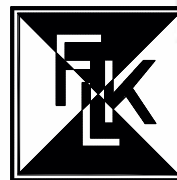


MULAG

YANMAR



DIETEG



EGHOLM



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