

Product Name	Question	Answer
X-Brake Defender	What models of defender will this fit?	It will fit any 90: 110: 127 or 130 fitted with an LT230 Transfer box including the newest Tdci/Puma models. Models with 300Tdi: Td5 & Tdci/Puma engines will need to change the handbrake cable as well. A suitable cable is listed in the spares / accessories for this product. It is compatible with vehicles fitted with Over / Under drives. The only exception to the above we have found are 130 Tippers where Land Rover have used a cross member which is too close to the back of the transfer box to fit an X-Brake. The X-Brake will fit Left and Right Hand Drive Vehicles using the same cables as RHD
	What caliper is used and where can I get the pads?	The caliper we have used is the same as on a JCB 3CX as well as a few other models. Pads are available from us as well as many agricultural and plant dealers. The actual caliper is a Hayes Brake M90
	Does the x-brake provide more ground clearance?	The X-Brake disk is 225mm in diameter which is about 25mm smaller than your existing drum. Even though the brake includes a skid-plate underneath, it still improves clearance by 15mm or so.
	My X-Brake has started to rattle - what should I do?	The pads in your X-Brake Caliper are glued in place with Silicone Sealant. Sometimes, the environmental conditions cause them to un-stick and begin to rattle. It is easy to fix though. Remove the caliper. You only need to undo the caliper bolts, you do not need to remove the prop shaft of disk. One or both pads will probably be loose. Obtain some clear Silicone (kitchen / bathroom) sealant. We have found the cheaper brands are the best. Expensive ones have coloured powder added which looks nice, but makes it less sticky. Roughen the back of both pads and the mating surfaces on the caliper with sand paper then glue the pads back in. Re-fit to the vehicle immediately and leave the handbrake applied while the Silicone is setting. Re-adjust the cable (six clicks on the lever with the cable attached to the middle hole on the caliper is best). The fitting instructions include this info (with photos).
	Can the X-Brake be fitted to a Borg Warner Transfer Box?	It can be fitted to a Defender, but not a Disco / Range Rover as there is bodywork in the way. However we found that the bolt holes on the back of BW boxes are not all in the same positions. We have identified so many different combinations of hole positions that if we made a back plate to accommodate all of them - all the holes join up into a slot! The solution is to fit a standard Defender kit, but be prepared to re-drill the holes in the back plate. The simple way to do this is to photocopy the back plate, cut out the big hole in the middle for the prop shaft and press the photocopy on to the back of the transfer box. Use the position of the skid plate at the bottom of the photocopy for alignment, making sure the bottom of the skid plate is horizontal. Press your thumb into each of the holes in the transfer box then

		lay this back on the new back plate. Centre punch the middle of the indents in the paper and drill the holes.
	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
	Which vehicles need a Cable to fit an X-Brake?	1993, 200 Tdi or older DO NOT need to change the cable. 1994, 300 Tdi or newer do need to fit the X-Brake Cable Td5/300tdi. This includes newer Tdci/Puma Defenders. If you have swapped your engine / transfer box, look at your existing drum brake. If the flexible handbrake cable goes straight in to the drum, you will need to change the cable. If it connects to the drum via a bell crank and solid push-rod - then you can use the existing cable.
X-Brake Caliper	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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X-Brake Disk	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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X-Brake Pads	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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X-Brake Disco	Does the x-brake provide more ground clearance?	The X-Brake disk is 225mm in diameter which is about 25mm smaller than your existing drum. Even though the brake includes a skid-plate underneath, it still improves clearance by 15mm or so.
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	If I buy the X-Brake Disco Kit, do I need the Disco Upgrade as well?	No. The Disco Upgrade kit is for customers who have previously bought a Defender kit and wish to fit it to a Disco (as the two kits have many parts in common). If you have bought the Disco kit - it already contains what you need to fit to a Discovery.

My X-Brake has started to rattle - what should I do?

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The solution is to fit a standard Defender kit, but be prepared to re-drill the holes in the back plate. The simple way to do this is to photocopy the back plate, cut out the big hole in the middle for the prop shaft and press the photocopy on to the back of the transfer box. Use the position of the skid plate at the bottom of the photocopy for alignment, making sure the bottom of the skid plate is horizontal. Press your thumb into each of the holes in the transfer box then lay this back on the new back plate. Centre punch the middle of the indents in the paper and drill the holes.

X-Brake Caliper Disco      How long does it take to fit an X-Brake?

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Which vehicles need a Cable to fit an X-Brake?

1993, 200 Tdi or older DO NOT need to change the cable. 1994, 300 Tdi or newer do need to fit the X-Brake Cable Td5/300tdi. This includes newer Tdci/Puma Defenders. If you have swapped your engine / transfer box, look at your existing drum brake. If the flexible handbrake cable goes straight in to the drum, you will need to change the cable. If it connects to the drum via a bell crank and solid push-rod - then you can use the existing cable.

X-Brake Disco Upgrade	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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	If I buy the X-Brake Disco Kit, do I need the Disco Upgrade as well?	No. The Disco Upgrade kit is for customers who have previously bought a Defender kit and wish to fit it to a Disco (as the two kits have many parts in common). If you have bought the Disco kit - it already contains what you need to fit to a Discovery.
X-Brake Series (Kit)	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
X-Brake Series Caliper	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
X-Brake Series Disk	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
X-Brake Series Pads	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.

X-Brake Caliper Service Kit	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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X-Brake Suzuki (Kit)	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
X-Brake Suzuki Caliper	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
X-Brake Suzuki Disk	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
X-Brake Suzuki Pads	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.

X-Brake Suzuki Cable	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
X-Brake Series Backplate	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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X-Brake Def Backplate	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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X-Brake Disco Backplate	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.

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	If I buy the X-Brake Disco Kit, do I need the Disco Upgrade as well?	No. The Disco Upgrade kit is for customers who have previously bought a Defender kit and wish to fit it to a Disco (as the two kits have many parts in common). If you have bought the Disco kit - it already contains what you need to fit to a Discovery.
X-Brake Cable Td5/300tdi	How long does it take to fit an X-Brake?	We suggest a fitting time of an Hour so long as you follow the fitting instructions. However, this does assume that all the nuts & bolts come undone easily which, as we all know is not certain on a 40 year old vehicle. The record for fitting one was set by Diesel Dave from D&P Motors in Sussex who managed it in 20 mins - but us mere mortals seem to take an hour on average.
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X-Spring (Pair)	Which kit will fit my Range Rover / Discovery / 90? Can I fit X-Springs to the Front?	There are two X-Spring kits. One to fit 110's (which have larger diameter rear springs) and another to fit everything else including Classic Range Rover, Discovery and Defender 90. Yes. The X-Spring adapters have a hole in the middle through which your shock can pass. The hole is about 60mm diameter, so as long as the body of the shock is less than that, it will fit through. If not, we sell twin shock adapters which mount an extra shock outside the spring. If you use these and just fit a single shock on the outside - it doesn't have to pass through the spring or adapter. These are a good idea as they make servicing / replacing the front shocks as easy as on the back - you don't need to remove the spring or even jack up the vehicle.
X-Spring 110 (Pair)	Which kit will fit my Range Rover / Discovery / 90?	There are two X-Spring kits. One to fit 110's (which have larger diameter rear springs) and another to fit everything else including Classic Range Rover, Discovery and Defender 90.

	Can I fit X-Springs to the Front?	Yes. The X-Spring adapters have a hole in the middle through which your shock can pass. The hole is about 60mm diameter, so as long as the body of the shock is less than that, it will fit through. If not, we sell twin shock adapters which mount an extra shock outside the spring. If you use these and just fit a single shock on the outside - it doesn't have to pass through the spring or adapter. These are a good idea as they make servicing / replacing the front shocks as easy as on the back - you don't need to remove the spring or even jack up the vehicle.
X-Spring (single spare)	Which kit will fit my Range Rover / Discovery / 90? Can I fit X-Springs to the Front?	There are two X-Spring kits. One to fit 110's (which have larger diameter rear springs) and another to fit everything else including Classic Range Rover, Discovery and Defender 90. Yes. The X-Spring adapters have a hole in the middle through which your shock can pass. The hole is about 60mm diameter, so as long as the body of the shock is less than that, it will fit through. If not, we sell twin shock adapters which mount an extra shock outside the spring. If you use these and just fit a single shock on the outside - it doesn't have to pass through the spring or adapter. These are a good idea as they make servicing / replacing the front shocks as easy as on the back - you don't need to remove the spring or even jack up the vehicle.
X-Cap Radiator Cap RED	Where will the X-Cap fit?	It is designed to fit in the top of the radiator on PRE Td5 engines. The Td5 has a plastic bleed plug in one of the hoses which is a different size. It will also fit the Axle Filler plug on Discovery 2 and in to the thermostat housing on 300Tdi engines.
X-Cap Radiator Cap BLUE	Where will the X-Cap fit?	It is designed to fit in the top of the radiator on PRE Td5 engines. The Td5 has a plastic bleed plug in one of the hoses which is a different size. It will also fit the Axle Filler plug on Discovery 2 and in to the thermostat housing on 300Tdi engines.
X-Lite 46mm Black Spot	Can I get LED bulbs or can you recommend higher wattage bulbs?	We have tried many LED 12v MR16 bulbs and the best so far are from <a href="http://www.simplyled.co.uk">http://www.simplyled.co.uk</a> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <a href="http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v">http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v</a> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.

Are your X-Lites Waterproof?

No. No matter how good the waterproofing is initially on lights, over the course of time the proofing degrades and they suffer from water ingress / condensation. The proofing then serves to keep the water inside as well as out. Instead we make the casings well drained so that if water gets in, it can drain out easily which in the long term leads to less corrosion. In addition, the electrical contacts are Silver Plated which is highly resistant to corrosion. The bulbs do sometimes suffer from condensation in the reflector envelope - but this soon evaporates while the light is illuminated as the body is vented. Because the reflector is built in to the bulb, even if this is damaged, a replacement bulb is only £2 - which gives you the same light output & quality as a new X-Lite. That said, we recommend mounting the lights high on the vehicle rather than underneath (like fog lights) as the drain holes tend to become blocked with mud etc.

Are X-Lites suitable as Fog Lights?

No. Fog lights have a specific beam pattern which illuminates a clearly defined rectangle on the road in front of the vehicle. The beam on our lights is not sufficiently tightly defined. The edges of the beam are scattered by the fog and will not give you as clear visibility as a light designed for use in fog. We therefore do not recommend them for use as Fog Lights.

X-Lite 51mm Black Spot

Can I get LED bulbs or can you recommend higher wattage bulbs?

We have tried many LED 12v MR16 bulbs and the best so far are from <http://www.simplyled.co.uk> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.

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X-Lite Spare Bulb - Spot

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X-Lite Spare Bulb - Flood	Can I get LED bulbs or can you recommend higher wattage bulbs?	<p>We have tried many LED 12v MR16 bulbs and the best so far are from <a href="http://www.simplyled.co.uk">http://www.simplyled.co.uk</a> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <a href="http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v">http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v</a> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.</p>
X-Lite 46mm Black Flood	Can I get LED bulbs or can you recommend higher wattage bulbs?	<p>We have tried many LED 12v MR16 bulbs and the best so far are from <a href="http://www.simplyled.co.uk">http://www.simplyled.co.uk</a> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <a href="http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v">http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v</a> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.</p>
	Are your X-Lites Waterproof?	<p>No. No matter how good the waterproofing is initially on lights, over the course of time the proofing degrades and they suffer from water ingress / condensation. The proofing then serves to keep the water inside as well as out. Instead we make the casings well drained so that if water gets in, it can drain out easily which in the long term leads to less corrosion. In addition, the electrical contacts are Silver Plated which is highly resistant to corrosion. The bulbs do sometimes suffer from condensation in the reflector envelope - but this soon evaporates while the light is illuminated as the body is vented. Because the reflector is built in to the bulb, even if this is damaged, a replacement bulb is only £2 - which gives you the same light output &amp; quality as a new X-Lite. That said, we recommend mounting the lights high on the vehicle rather than underneath (like fog lights) as the drain holes tend to become blocked with mud etc.</p>

Are X-Lites suitable as Fog Lights?

No. Fog lights have a specific beam pattern which illuminates a clearly defined rectangle on the road in front of the vehicle. The beam on our lights is not sufficiently tightly defined. The edges of the beam are scattered by the fog and will not give you as clear visibility as a light designed for use in fog. We therefore do not recommend them for use as Fog Lights.

X-Lite 51mm Black Flood

Can I get LED bulbs or can you recommend higher wattage bulbs?

We have tried many LED 12v MR16 bulbs and the best so far are from <http://www.simplyled.co.uk> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.

Are your X-Lites Waterproof?

No. No matter how good the waterproofing is initially on lights, over the course of time the proofing degrades and they suffer from water ingress / condensation. The proofing then serves to keep the water inside as well as out. Instead we make the casings well drained so that if water gets in, it can drain out easily which in the long term leads to less corrosion. In addition, the electrical contacts are Silver Plated which is highly resistant to corrosion. The bulbs do sometimes suffer from condensation in the reflector envelope - but this soon evaporates while the light is illuminated as the body is vented. Because the reflector is built in to the bulb, even if this is damaged, a replacement bulb is only £2 - which gives you the same light output & quality as a new X-Lite. That said, we recommend mounting the lights high on the vehicle rather than underneath (like fog lights) as the drain holes tend to become blocked with mud etc.

Are X-Lites suitable as Fog Lights?

No. Fog lights have a specific beam pattern which illuminates a clearly defined rectangle on the road in front of the vehicle. The beam on our lights is not sufficiently tightly defined. The edges of the beam are scattered by the fog and will not give you as clear visibility as a light designed for use in fog. We therefore do not recommend them for use as Fog Lights.

X-Lite Azimuth Flood	Can I get LED bulbs or can you recommend higher wattage bulbs?	<p>We have tried many LED 12v MR16 bulbs and the best so far are from <a href="http://www.simplyled.co.uk">http://www.simplyled.co.uk</a> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <a href="http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v">http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v</a> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.</p>
	Are your X-Lites Waterproof?	<p>No. No matter how good the waterproofing is initially on lights, over the course of time the proofing degrades and they suffer from water ingress / condensation. The proofing then serves to keep the water inside as well as out. Instead we make the casings well drained so that if water gets in, it can drain out easily which in the long term leads to less corrosion. In addition, the electrical contacts are Silver Plated which is highly resistant to corrosion. The bulbs do sometimes suffer from condensation in the reflector envelope - but this soon evaporates while the light is illuminated as the body is vented. Because the reflector is built in to the bulb, even if this is damaged, a replacement bulb is only £2 - which gives you the same light output &amp; quality as a new X-Lite. That said, we recommend mounting the lights high on the vehicle rather than underneath (like fog lights) as the drain holes tend to become blocked with mud etc.</p>
	Are X-Lites suitable as Fog Lights?	<p>No. Fog lights have a specific beam pattern which illuminates a clearly defined rectangle on the road in front of the vehicle. The beam on our lights is not sufficiently tightly defined. The edges of the beam are scattered by the fog and will not give you as clear visibility as a light designed for use in fog. We therefore do not recommend them for use as Fog Lights.</p>

X-Lite Azimuth Spot	Can I get LED bulbs or can you recommend higher wattage bulbs?	<p>We have tried many LED 12v MR16 bulbs and the best so far are from <a href="http://www.simplyled.co.uk">http://www.simplyled.co.uk</a> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <a href="http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v">http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v</a> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.</p>
	Are your X-Lites Waterproof?	<p>No. No matter how good the waterproofing is initially on lights, over the course of time the proofing degrades and they suffer from water ingress / condensation. The proofing then serves to keep the water inside as well as out. Instead we make the casings well drained so that if water gets in, it can drain out easily which in the long term leads to less corrosion. In addition, the electrical contacts are Silver Plated which is highly resistant to corrosion. The bulbs do sometimes suffer from condensation in the reflector envelope - but this soon evaporates while the light is illuminated as the body is vented. Because the reflector is built in to the bulb, even if this is damaged, a replacement bulb is only £2 - which gives you the same light output &amp; quality as a new X-Lite. That said, we recommend mounting the lights high on the vehicle rather than underneath (like fog lights) as the drain holes tend to become blocked with mud etc.</p>
	Are X-Lites suitable as Fog Lights?	<p>No. Fog lights have a specific beam pattern which illuminates a clearly defined rectangle on the road in front of the vehicle. The beam on our lights is not sufficiently tightly defined. The edges of the beam are scattered by the fog and will not give you as clear visibility as a light designed for use in fog. We therefore do not recommend them for use as Fog Lights.</p>

X-Lite AZ Spare Bulb - Flood	Can I get LED bulbs or can you recommend higher wattage bulbs?	<p>We have tried many LED 12v MR16 bulbs and the best so far are from <a href="http://www.simplyled.co.uk">http://www.simplyled.co.uk</a> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <a href="http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v">http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v</a> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.</p>
	Are your X-Lites Waterproof?	<p>No. No matter how good the waterproofing is initially on lights, over the course of time the proofing degrades and they suffer from water ingress / condensation. The proofing then serves to keep the water inside as well as out. Instead we make the casings well drained so that if water gets in, it can drain out easily which in the long term leads to less corrosion. In addition, the electrical contacts are Silver Plated which is highly resistant to corrosion. The bulbs do sometimes suffer from condensation in the reflector envelope - but this soon evaporates while the light is illuminated as the body is vented. Because the reflector is built in to the bulb, even if this is damaged, a replacement bulb is only £2 - which gives you the same light output &amp; quality as a new X-Lite. That said, we recommend mounting the lights high on the vehicle rather than underneath (like fog lights) as the drain holes tend to become blocked with mud etc.</p>
	Are X-Lites suitable as Fog Lights?	<p>No. Fog lights have a specific beam pattern which illuminates a clearly defined rectangle on the road in front of the vehicle. The beam on our lights is not sufficiently tightly defined. The edges of the beam are scattered by the fog and will not give you as clear visibility as a light designed for use in fog. We therefore do not recommend them for use as Fog Lights.</p>

X-Lite AZ Spare Bulb - Spot	Can I get LED bulbs or can you recommend higher wattage bulbs?	We have tried many LED 12v MR16 bulbs and the best so far are from <a href="http://www.simplyled.co.uk">http://www.simplyled.co.uk</a> MR16-RCSPOT - but they cost £11.99 each and, to be honest, they do not work as well as the original bulbs. If the beam was a bit tighter, they would probably be as bright. But because the beam is so wide they do not look as bright overall. They would be ideal for low power applications however. You can buy much brighter bulbs from <a href="http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v">http://www.enviro-lights.co.uk/halogen/photo-optic-disco-bulbs/projection-mr16-bulbs-100w-12v</a> These are intended for Data Projectors and have a tightly focused beam. Tighter than our spot beams which make them ideal for long range road use. They cost £10.99 each - so still not cheap but maybe worthwhile if you need the distance. Two of these plus two LED lights might make a good combination? Overall, in terms of bang for your buck - the original bulbs we supply are hard to beat.
	Are your X-Lites Waterproof?	No. No matter how good the waterproofing is initially on lights, over the course of time the proofing degrades and they suffer from water ingress / condensation. The proofing then serves to keep the water inside as well as out. Instead we make the casings well drained so that if water gets in, it can drain out easily which in the long term leads to less corrosion. In addition, the electrical contacts are Silver Plated which is highly resistant to corrosion. The bulbs do sometimes suffer from condensation in the reflector envelope - but this soon evaporates while the light is illuminated as the body is vented. Because the reflector is built in to the bulb, even if this is damaged, a replacement bulb is only £2 - which gives you the same light output & quality as a new X-Lite. That said, we recommend mounting the lights high on the vehicle rather than underneath (like fog lights) as the drain holes tend to become blocked with mud etc.
	Are X-Lites suitable as Fog Lights?	No. Fog lights have a specific beam pattern which illuminates a clearly defined rectangle on the road in front of the vehicle. The beam on our lights is not sufficiently tightly defined. The edges of the beam are scattered by the fog and will not give you as clear visibility as a light designed for use in fog. We therefore do not recommend them for use as Fog Lights.
X-Fan 38mm kit RED	The kit says its a dual fan controler - I only have one fan?	The sensor we supply has two sets of contacts inside. One is switched on at a lower and the other at a higher temperature. If you only have a single fan, connect it to the lower temperature switch contacts and ignore the higher temperature ones. If you find the engine over-cools or the fan is on too often, swap the terminal over to the high temperature connection.
	Whats the difference between the red and blue fan kits?	One is red and the other is Blue - thats all. If you cannot decide, I would buy the one that matches your teeth or hair colour.

What other temperature ranges are available?

X-Eng ONLY SUPPLY ONE TYPE OF SWITCH - the 50091. This data is provided in case you want a different temperature range. If you want one of these switches, you will have to order it through your local motor factor who will be able to supply Intermotor or an equivalent. Below we have listed most of the thermostatic switches available from Intermotor (available through most motor factors) which are compatible with our adaptor. Most only have contacts for switching a single fan. The ones showing two temperature ranges E.g. `88-83/92-87` have two sets of contacts for dual fans. The one we supply (an Intermotor 50091) we feel is most generally suited to Land Rover temperatures - but you may get more appropriate cooling performance if you choose one of the others below.

Intermotor	Temperature Range °C	Part No	50091	88-83 / 92-87
X-Eng Supply	50100	82-68	50101	84-79/88-83
50250	86-76	50012	86-77	50090
86-81	50120	88-79	50296	88-79/110-102
50271	88-83	50217	88-83/92-87	50240
90-80	50113	92-82/95-80	50170	92-87
50215	92-87/97-92	50011	93-88	50102
93-88/97-92	50035	95-85/102-92	50130	95-86
50030	95-90	50092	95-90/100-95	50104
97-92	50103	97-92/101-96	50214	97-92/102-97
50190	100-95	50198	100-95/110-105	50000
103-98	50191	120-115		

X-Fan 38mm kit BLUE

The kit says its a dual fan controler - I only have one fan?

The sensor we supply has two sets of contacts inside. One is switched on at a lower and the other at a higher temperature. If you only have a single fan, connect it to the lower temperature switch contacts and ignore the higher temperature ones. If you find the engine over-cools or the fan is on too often, swap the terminal over to the high temperature connection.

Whats the difference between the red and blue fan kits?

One is red and the other is Blue - thats all. If you cannot decide, I would buy the one that matches your teeth or hair colour.

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Intermotor	Temperature Range °C	Part No	50091	88-83 / 92-87
X-Eng Supply	50100	82-68	50101	84-79/88-83
50250	86-76	50012	86-77	50090
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50271	88-83	50217	88-83/92-87	50240
90-80	50113	92-82/95-80	50170	92-87
50215	92-87/97-92	50011	93-88	50102
93-88/97-92	50035	95-85/102-92	50130	95-86
50030	95-90	50092	95-90/100-95	50104
97-92	50103	97-92/101-96	50214	97-92/102-97
50190	100-95	50198	100-95/110-105	50000
103-98	50191	120-115		

X-Fan 34mm kit BLUE

The kit says its a dual fan controler - I only have one fan?

The sensor we supply has two sets of contacts inside. One is switched on at a lower and the other at a higher temperature. If you only have a single fan, connect it to the lower temperature switch contacts and ignore the higher temperature ones. If you find the engine over-cools or the fan is on too often, swap the terminal over to the high temperature connection.

Whats the difference between the red and blue fan kits?

One is red and the other is Blue - thats all. If you cannot decide, I would buy the one that matches your teeth or hair colour.

What other temperature ranges are available?

X-Eng ONLY SUPPLY ONE TYPE OF SWITCH - the 50091. This data is provided in case you want a different temperature range. If you want one of these switches, you will have to order it through your local motor factor who will be able to supply Intermotor or an equivalent. Below we have listed most of the thermostatic switches available from Intermotor (available through most motor factors) which are compatible with our adaptor. Most only have contacts for switching a single fan. The ones showing two temperature ranges E.g. `88-83/92-87` have two sets of contacts for dual fans. The one we supply (an Intermotor 50091) we feel is most generally suited to Land Rover temperatures - but you may get more appropriate cooling performance if you choose one of the others below.

Intermotor	Temperature Range °C	Part No	50091	88-83 / 92-87
X-Eng Supply	50100	82-68	50101	84-79/88-83
50250	86-76	50012	86-77	50090
86-81	50120	88-79	50296	88-79/110-102
50271	88-83	50217	88-83/92-87	50240
90-80	50113	92-82/95-80	50170	92-87
50215	92-87/97-92	50011	93-88	50102
93-88/97-92	50035	95-85/102-92	50130	95-86
50030	95-90	50092	95-90/100-95	50104
97-92	50103	97-92/101-96	50214	97-92/102-97
50190	100-95	50198	100-95/110-105	50000
103-98	50191	120-115		

X-Fan 34mm kit RED

The kit says its a dual fan controler - I only have one fan?

The sensor we supply has two sets of contacts inside. One is switched on at a lower and the other at a higher temperature. If you only have a single fan, connect it to the lower temperature switch contacts and ignore the higher temperature ones. If you find the engine over-cools or the fan is on too often, swap the terminal over to the high temperature connection.

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Intermotor	Temperature Range °C	Part No	50091	88-83 / 92-87
X-Eng Supply	50100	82-68	50101	84-79/88-83
50250	86-76	50012	86-77	50090
86-81	50120	88-79	50296	88-79/110-102
50271	88-83	50217	88-83/92-87	50240
90-80	50113	92-82/95-80	50170	92-87
50215	92-87/97-92	50011	93-88	50102
93-88/97-92	50035	95-85/102-92	50130	95-86
50030	95-90	50092	95-90/100-95	50104
97-92	50103	97-92/101-96	50214	97-92/102-97
50190	100-95	50198	100-95/110-105	50000
103-98	50191	120-115		

X-Fan 25mm kit BLUE

The kit says its a dual fan controler - I only have one fan?

The sensor we supply has two sets of contacts inside. One is switched on at a lower and the other at a higher temperature. If you only have a single fan, connect it to the lower temperature switch contacts and ignore the higher temperature ones. If you find the engine over-cools or the fan is on too often, swap the terminal over to the high temperature connection.

Whats the difference between the red and blue fan kits?

One is red and the other is Blue - thats all. If you cannot decide, I would buy the one that matches your teeth or hair colour.

What other temperature ranges are available?

X-Eng ONLY SUPPLY ONE TYPE OF SWITCH - the 50091. This data is provided in case you want a different temperature range. If you want one of these switches, you will have to order it through your local motor factor who will be able to supply Intermotor or an equivalent. Below we have listed most of the thermostatic switches available from Intermotor (available through most motor factors) which are compatible with our adaptor. Most only have contacts for switching a single fan. The ones showing two temperature ranges E.g. `88-83/92-87` have two sets of contacts for dual fans. The one we supply (an Intermotor 50091) we feel is most generally suited to Land Rover temperatures - but you may get more appropriate cooling performance if you choose one of the others below.

Intermotor	Temperature Range °C	Part No
50091	88-83 / 92-87	This is the one X-Eng Supply
50100	82-68	50101
50101	84-79/88-83	50250
50102	86-76	50012
50012	86-77	50090
50090	86-81	50120
50120	88-79	50296
50296	88-79/110-102	50271
50271	88-83	50217
50217	88-83/92-87	50240
50240	90-80	50113
50113	92-82/95-80	50170
50170	92-87	50215
50215	92-87/97-92	50011
50011	93-88	50102
50102	93-88/97-92	50035
50035	95-85/102-92	50130
50130	95-86	50030
50030	95-90	50092
50092	95-90/100-95	50104
50104	97-92	50103
50103	97-92/101-96	50214
50214	97-92/102-97	50190
50190	100-95	50198
50198	100-95/110-105	50000
50000	103-98	50191
50191	120-115	

X-Fan 25mm kit RED

The kit says its a dual fan controler - I only have one fan?

The sensor we supply has two sets of contacts inside. One is switched on at a lower and the other at a higher temperature. If you only have a single fan, connect it to the lower temperature switch contacts and ignore the higher temperature ones. If you find the engine over-cools or the fan is on too often, swap the terminal over to the high temperature connection.

Whats the difference between the red and blue fan kits?

One is red and the other is Blue - thats all. If you cannot decide, I would buy the one that matches your teeth or hair colour.

What other temperature ranges are available?

X-Eng ONLY SUPPLY ONE TYPE OF SWITCH - the 50091. This data is provided in case you want a different temperature range. If you want one of these switches, you will have to order it through your local motor factor who will be able to supply Intermotor or an equivalent. Below we have listed most of the thermostatic switches available from Intermotor (available through most motor factors) which are compatible with our adaptor. Most only have contacts for switching a single fan. The ones showing two temperature ranges E.g. `88-83/92-87` have two sets of contacts for dual fans. The one we supply (an Intermotor 50091) we feel is most generally suited to Land Rover temperatures - but you may get more appropriate cooling performance if you choose one of the others below.

Intermotor	Temperature Range °C	Part No	50091	88-83 / 92-87
This is the one X-Eng Supply	50100	82-68	50101	84-79/88-83
50250	86-76	50012	86-77	50090
86-81	50120	88-79	50296	88-79/110-102
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90-80	50113	92-82/95-80	50170	92-87
50215	92-87/97-92	50011	93-88	50102
93-88/97-92	50035	95-85/102-92	50130	95-86
50030	95-90	50092	95-90/100-95	50104
97-92	50103	97-92/101-96	50214	97-92/102-97
50190	100-95	50198	100-95/110-105	50000
103-98	50191	120-115		

X-Plug 3/4 BSP Steel

Will the X-Plug fit my engine/gearbox/nose?

The X-Plug will ONLY fit in the axle drain plug. We may in future make sizes appropriate to fit in other places but not at the moment. It will fit any Land Rover Beam Axles - so not L322, RRS, Disco 3 & 4 or Freelander.

X-Deflex

Which X-Deflex kit will fit my vehicle?

X-Deflex kits will ONLY fit Land Rovers - if you have something else it will not fit and unfortunately we dont have an alternative that will. The kit will fit all 110`s + Discovery Series 1 and 90`s Pre Td5 (pre 1999). For some of the above you will need to add an adaptor / spacer. If you have a Pre-Td5 90, you will need the 90 Adaptor. If you have a Discovery, you will need to use a 30 or 60mm spacer/adaptor. To decide which spacer / adaptor you need, refer to the drawing shown on the product listing. It shows you where to measure to determine how far your fuel tank / tank guard hangs down. A spacer may be necessary to clear this. The kit DOES NOT fit any Td5/Puma/Tdci 90. Though a kit is under development.

Can the X-Deflex kit be fitted on the front on a vehicle?

No - it will only fit on the rear.

	Can the X-Deflex kit be supplied with two straight arms?	Some people have asked this because they have moved their exhaust and do not need the curved arm to clear the original exhaust. Unfortunately, the torsion bar fittings on either end are totally different and the arms are not interchangeable. You cannot fit two straight or two curved - but you can reverse the arms if your exhaust is on the right hand side.
X-Defend Pedal Lock	The Pedal Lock interferes with my bonnet release pull?	On some Land Rovers, particularly 200Tdi, the location of the bonnet release is a bit random and can vary by up to 100mm left to right. We moved the edge of the pedal lock as far to the right as we could without compromising its strength - but on the odd occasion it still interferes. The easiest solution is to drill out the spot welds which hold the bonnet release in place and bolt it back in place a couple of cm to the left. If you want to find out if it will fit in advance, measure from the right edge of the bonnet release to the right hand wall of the footwell. If the distance is 46cm or more, it will not interfere.
	When are you going to produce a Pedal Lock for Puma / Tdci vehicles?	We produced a number of prototypes for this, however, our focus group rejected all of them because it was necessary to drill holes in the body of the vehicle in order to fit. We felt that the resistance to drilling holes from Puma owners would make the device unsalable. Instead we are concentrating on devices which can be fitted using only exposed fixings and existing holes - one of which looks quite promising. Unfortunately, we do not think a pedal lock which works in the same way as for other Defenders is a viable product.
X-Defend Gear Lock LT77	I have after market gear knobs - will it fit?	Some & some. If the replacement knob is made to the same dimensions as the original, it will fit. If not, it may not. We have found some, such as Croytech Aluminium knobs are over-size and too big to fit inside the transfer lever tube. Others seem to be fine. If you have Aluminium knobs, it might be best to assume the Gear Lock will not fit. If you know of a brand that does, let us know and we will list them here.
	When are you going to produce a Gear Lock for Puma / Tdci vehicles?	We produced what we hoped was going to be an ideal solution for Puma vehicles. Unfortunately someone pointed out that the gear levers on a puma are only clipped in place. Give a lever a sharp tug and it will completely detach. Remove the lock mechanism then click the levers back into place - and drive away. Sadly this makes a small & convenient gear lock a near impossibility.
X-Defend Gear Lock R380	I have after market gear knobs - will it fit?	Some & some. If the replacement knob is made to the same dimensions as the original, it will fit. If not, it may not. We have found some, such as Croytech Aluminium knobs are over-size and too big to fit inside the transfer lever tube. Others seem to be fine. If you have Aluminium knobs, it might be best to assume the Gear Lock will not fit. If you know of a brand that does, let us know and we will list them here.

When are you going to produce a Gear Lock for Puma / Tdci vehicles? We produced what we hoped was going to be an ideal solution for Puma vehicles. Unfortunately someone pointed out that the gear levers on a puma are only clipped in place. Give a lever a sharp tug and it will completely detach. Remove the lock mechanism then click the levers back into place - and drive away. Sadly this makes a small & convenient gear lock a near impossibility.

X-Defend Fuel Lock

Why is this product no longer on the website?

Unfortunately, this product has been discontinued due to issues with fitment.

X-Defend Column Lock

What models of defender will your Column Lock fit?

It will fit any 90 110 127 or 130 Left or Right Hand Drive. One exception is that some Ex Military vehicles do not have a steering lock. While the column Lock will fit - it serves no purpose as there is nothing for it to protect. The fitting procedure for Puma / TDCi vehicles is slightly different from the Instructions (though easy to figure out). There is a good write up here: <http://www.defender2.net/forum/tonic17090.html>