

AUTOMOTIVE TECHNICIAN TRAINING

DIGITAL UNIVERSITY PRESS

In association with:

BOSCH



Snap-on®

Planning ahead



The summer 2004 version of ATTT is already under construction! Thanks to very useful feedback received and our ongoing commitment to development, DUP are pleased to announce some of the changes that are currently under construction.

If you have any further feedback to offer we are always pleased to hear it. Here are some of the expected changes in the next major revision:

- Toolbox picture quality improved
- Hundreds of new glossary entries
- Drawing surface for highlighting and adding notes to all screens
- Bookmarks
- Technology updates
- Keyword searches
- Notes options
- More resources in the database
- Skills gap analysis options
- ...and much more!

Special points of interest:

- **Planning ahead**
- **Web site**
- **Bending light**
- **Program tips**
- **Updates**
- **Top tips**

DigitalUP web site

Have you visited our web site yet?

www.digitalup.co.uk

...is a great place to check out. We supply updates and resources that you may find useful in your work.

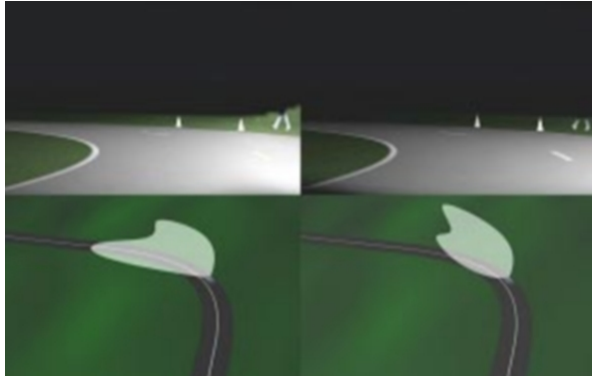
For example there are pages on:

- Automotive news
- Instructor/Lecturer resources
- Newsletter archives
- Download files such as the Lecturer Manual
- ... and much more!

Inside this issue:

| | |
|---------------------|---|
| Bending light—Valeo | 2 |
| AFS—Visteon | 3 |
| Contact details | 4 |
| Top tips... | 4 |

Bending Light—Valeo



Dynamic bending light and normal lighting (Source: Valeo)

“Bending Light is an intelligent headlamp system that optimises the night time illumination of road curves by directional control of vehicle headlamps.”

Valeo is developing a headlight technology it calls ‘Bending Light’.

This technique automatically directs light into road bends to optimise forward visibility at night. The technology makes a significant contribution to comfort and convenience by reducing driver fatigue.

The Bending Light system consists of a bi-xenon projector or reflector headlamp that can rotate up from its normal position. An additional projector or reflector, or a combination of the two, can be used to deliver more light into a road bend.

The actuation of the motorised lighting unit, within each headlamp assembly, is controlled by an electronic control unit, which employs signals from the steering wheel and wheel-speed sensors. A link to a satellite navigation system (GPS) can also be used if

required.

Bending Light is the first of a new generation of adaptive front lighting systems to be launched by Valeo following an extensive R&D program. The range includes three distinct lighting types:

Motorway Lighting – typically above 80 km/h (50 mph), the low-beam function of the headlamp is raised using a signal received from the wheel-speed sensor to actuate a self-levelling system, which increases driver visibility at high speeds

Adverse Weather Lighting - provides, under reduced-visibility conditions in fog, rain and snow, additional illumination to help keep track of road edges, while light is removed from the foreground to reduce reflection from the wet road

Town Lighting – in well-illuminated urban areas, the light beam is lowered and lateral light is increased, improving pedestrian and cyclist identification at crossings as well as reducing dazzle.

Bending Light is an intelligent headlamp system that optimises the night time illumination of road curves by directional control of vehicle headlamps.

To turn an increased quantity of light into road bends automatically, Bending Light systems

adopt several flexible design approaches. Dynamic Bending Light (DBL) uses a Bi-Xenon lamp (projector or reflector type) housed in each headlamp unit together with an electronic actuator and an electronic control unit.

This design facilitates the horizontal rotation of the Bi-Xenon lamp by up to 15 degrees from the normal ‘straight-ahead’ position.

This function is controlled by a microcontroller linked to the vehicle’s data network with real-time inputs from both the steering angle and speed sensors. Fixed Bending Light (FBL) employs an additional projector or reflector type lamp integrated into the headlamp unit at a 45 degree angle.

Advanced Frontlighting—Visteon

Visteon's Advanced Front Lighting Systems (AFS) incorporate innovative electronic controls to adjust headlight output so that the beam pattern is directed for specific driving conditions, such as speed and vehicle direction. The driver automatically experiences the optimized light distribution according to the individual driving situation, thus enhancing visibility and safety for drivers at night.

Advanced Front Lighting Systems include:

Electronic control module

Swivel low beam headlamp

Halogen in low beam

Beam pattern will adjust up at high speeds and down and outward at low speeds

42V compatible

Ability to shift the low beam up when the high beam is activated

Longer and narrower light distribution to increase visibility at greater distances

Shorter and wider light distribution to increase

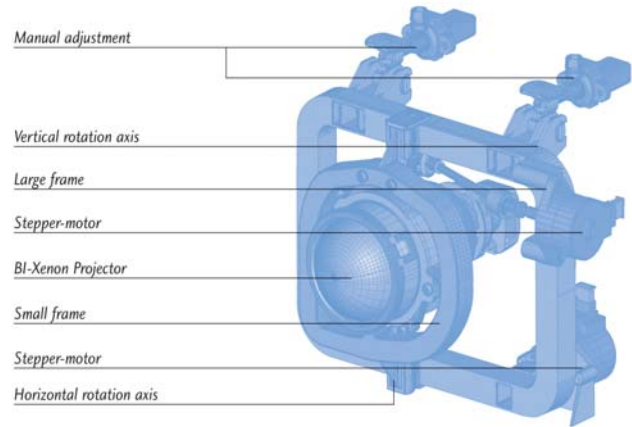
visibility at closer distances

Driver flexibility to activate/deactivate the system.

Each system is equipped with sensors that detect changing conditions, a driver-controlled switch, an electronic control unit, which processes data from the sensors and electronic mechanisms that repositions the headlights.

Each system is controlled by a Visteon proprietary algorithm that controls headlight actuation. A central processor receives data from a steering wheel sensor (to measure steering angle), speed sensor and axle sensors to direct the headlights in real time.

One fundamental differentiator of these systems is Visteon's ability to scale them to manufacturer needs. This system can use cost-effective Halogen bulbs. Visteon's internal surveys revealed that while vehicle buyers know and understand the benefits of Xenon technology, the higher cost of Xenon bulbs could act as a potential deterrent to consumers. Depending



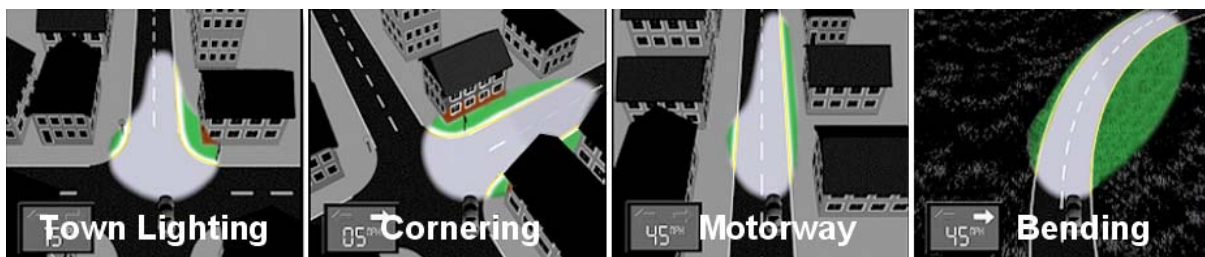
Mechanical design of the AFS (Source: Visteon)

on manufacturer needs, Advanced Front Lighting Systems can be modified to recognize and respond to a variety of road conditions and can also be implemented on vehicles with 14 or 42V electrical systems.

Visteon's Advanced Front Lighting Systems also offer a great degree of design flexibility for vehicle designers.

These systems, well suited to the recent trend towards projector-style headlights, can be easily packaged as an articulated assembly in reflector-style headlamps.

“Visteon's Advanced Front Lighting Systems also offer a great degree of design flexibility for vehicle designers.”



Four functions of AFS (Source: Visteon)

Blended Learning Solutions

Digital University Press
Whitegates Business Centre
Alexander Lane
Shenfield
Essex CM15 8QF UK

Phone: +44 (0)1277 219119
Fax: +44 (0)1277 219120
Email: info@digitalup.co.uk



WE ARE ON THE WEB:
WWW.DIGITALUP.CO.UK

As the leading provider of automotive training blended learning systems in the UK and USA, Digital University Press (DUP) specialise in the creation of electronic training materials for the automotive education sector and automotive industry.

Working with world class automotive companies DUP has a substantial training resource that comprises over 7000 screens of learning coupled with a 1500 page workbook, 10,000 image database, 300 worksheets, and 1,500 randomly generated multiple-choice questions. Having control over this intellectual property allows DUP to be bespoke and re-brand but, most importantly, respond to clients in a timely and cost effective way.

DUP is owned principally by Mark Pitman of Pitman Publishing, Pitman Training and Bath Press. Alan Church is the managing director of DUP with the technical team being led by Tom Denton the UK best selling automotive author.

Top Tips...



Got any useful tips to share?
Email them to the address
above and get a mention in the
next newsletter!

Welcome back to the Top Tips feature!

Here are some more suggestions to help you get the most out of our automotive training program.

Did you know...

1. ...to print any learning screen—all you do is right click the mouse and select 'print'?
2. ...that to auto run screens you press <ctrl> + <alt> +<a>?
3. ...that an area of a picture can be selected in the database full view, and then copied to the clipboard?
4. ...using the 'link' button on the question review screens will take the student right back to the part of the course that they need to study further?

Automotive Technician Training

