



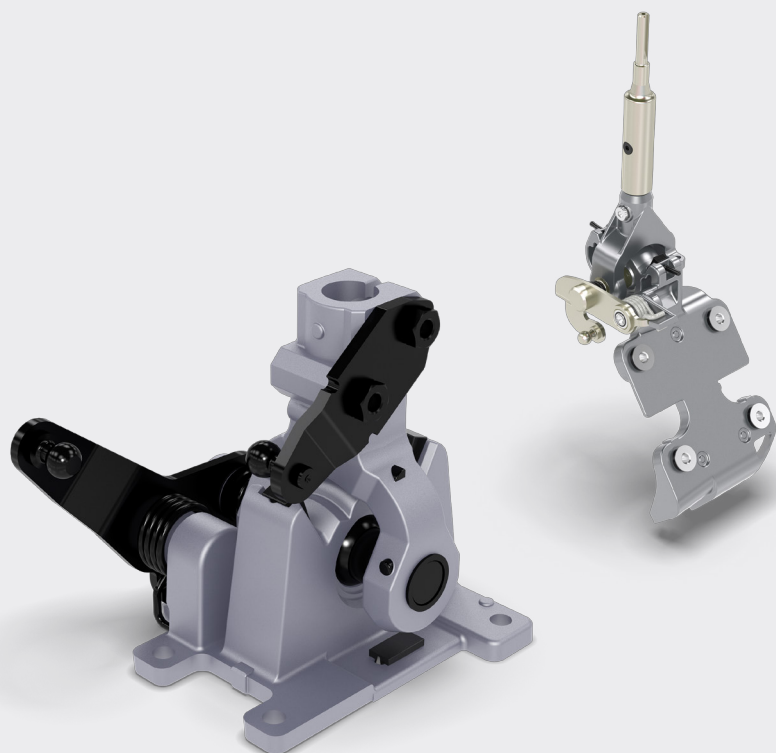
KONSGBERG
AUTOMOTIVE

CHANGING EXPECTATIONS

CS1400 SERIES MANUAL CABLE SHIFTERS

AT A GLANCE

- Innovative central spindle bearing in shift head mechanism provides a uniquely smooth, durable and cost effective system solution:
 - Best-in-class shift feeling
 - Consistent shift performance throughout product life even under the highest loads
- In combination with Silver Line™ transmission cables, CS1400 shifters provide:
 - Maximum efficiency
 - Minimum backlash
- Modular series easily installed in to cabin and adaptable to a range of packaging and positional requirements, with under floor, on-floor or dashboard options
- Fully developed, tooled and tested components meet all current industry legislative and durability requirements.



Product Description

Kongsberg Automotive is one of the world's leading manufacturers of manual and electronic gear shifters, with our systems fitted to over six million vehicles each year across Europe, North America, South America and Asia. Kongsberg Automotive has been designing and developing transmission shift controls for commercial vehicles for more than 40 years. Today we supply products to the world's leading manufacturers of trucks, buses and off-highway vehicles.

The breakthrough design of the new Kongsberg Automotive CS1400 Series features an innovative central spindle bearing that offers

best-in-class shift feeling. When combined with Kongsberg Automotive Silver Line™ transmission cables, it provides minimized backlash for superb efficiency.

The CS1400 Series reduces the need for OEM engineering, testing and tooling by utilizing a set of common validated core components, increasing production efficiency and accelerating time to market.

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CHANGING EXPECTATIONS

CS1400 SERIES MANUAL CABLE SHIFTERS

Standard Product Specifications

CS1400 SERIES

- At the heart of every Kongsberg Automotive CS1400 series gear shifter there is standard base unit with a common set of core components which provide significant benefits to our customers:
 - Proven technology
 - Reduced development and validation costs and time
 - Minimized tooling investment
- Each shifter contains a Kongsberg Automotive designed and developed spindle bearing which, in combination with Silver Line™ transmission cables, allows significantly enhanced shift feeling and quality, high efficiency in a minimized packaging space
- Suitable for double H-shift pattern

CS1410 UNDER FLOOR SHIFTER

- Available with forward or rearward cable routing to suit both truck and bus applications
- Fully sealed housing allowing vehicle cabin to be sealed against fire or water ingress from below with no additional fire protection plate
- Simplified shifter assembly providing best-in-class shift feeling and quality at an optimized cost
- Suitable for double H-shift pattern

CS1420 FLOOR MOUNTED SHIFTER

- Robust design with rigid bearing provides:
 - Excellent shift feeling and quality
 - Reduced free play in shifter and no deflection in system
 - Able to withstand high shift loads
- Adaptable for a range of floor angles
- Suitable for double H-shift pattern

CS1430 DASHBOARD MOUNTED SHIFTER

- Compact design requires minimum packaging space and provides:
 - Maximized select stroke
 - Excellent shift feeling and quality
- Suitable for double H-shift pattern

Features

- Enhanced shift feeling and quality
- Modular fully developed designs
- Tooled and tested for secure product launches with optimized tooling and manufacturing efficiency
- Minimized packaging space with the flexibility of a range of different mounting and positioning options
- Damped end stops
- Neutral spring select

Options

- Shift Detent
- Two part damped gear lever