

	SURFACE VEHICLE RECOMMENDED PRACTICE		J1803 APR2011
		Issued	1997-04
		Revised	2011-04
		Superseding J1803 APR1997	
Seat Belt Restraint System Hardware—Glossary of Terms			

RATIONALE

This standard has been updated to reflect new safety belt technologies.

1. SCOPE

This SAE Recommended Practice provides a Glossary of Terms commonly used to describe Seat Belt Restraint Systems Hardware and their function. These terms are currently defined in various SAE Recommended Practices but are sometimes inconsistent. It is intended for this document to supersede the definitions found in separate SAE Recommended Practices.

2. REFERENCES

There are no referenced publications specified herein.

3. DEFINITIONS

3.1 Adjustable Guide Loop

A Guide Loop which can be positioned by the occupant to enhance the routing of the shoulder belt for improved comfort.

Also known as an Adjustable D-Ring, Adjustable Height Guide Loop, Adjustable Upper Anchorage, or Adjustable Turning Loop.

3.2 Adjustable Hardware

Hardware designed to allow adjustment of a seat belt system to accommodate various size occupants. This may include hardware that may be integral with the buckle, guide loop, or retractor assembly.

3.3 All Belts To Seat (ABTS)

A seat belt system in which all of the seat belt system components are integrated into the seat, and the seat belt loads are generally transmitted through the seat to the vehicle structure.

Also known as Seat Integrated Restraints (SIR), Belt in Seat (BIS), or Integrated Restraints.

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3.4 Anchorages

Those attachment points of the vehicle or seat structure to which seat belt assembly loads are transferred.

3.5 Attachment Hardware

All load-bearing hardware designed for securing the webbing portion of a seat belt assembly to motor vehicle structure or intermediate structural component including but not limited to retractors, end fittings, bolts, studs, nuts, or other attachment means but not including those components permanently fixed to the vehicle.

NOTE: If the seat belt is attached to a seat, the seat is not attachment hardware.

3.6 Attachment Point

The point where the seat belt assembly is attached to the seat system or vehicle.

3.7 Automatic Belt

A belt system that is designed to require little or no action by the vehicle occupant(s) to don or adjust to fit the belt

Also known as a passive belt.

3.8 Automatic Locking Retractor (ALR)

A retractor incorporating a positive self locking mechanism that remains engaged, locked, and capable of withstanding restraint forces once webbing has initially been extracted. This locking mechanism is reset when the webbing is allowed to retract back into the retractor.

3.9 Belt Extender

An add on accessory consisting of a length of seat belt webbing with matching buckle and latch plate intended to enable the seat belt system to accommodate larger persons.

3.10 Belt Tension Sensor (BTS)

A device which may be part of some passenger airbag suppression systems, and is intended to monitor seat belt webbing tension. The data is used by the suppression system to determine whether the right front passenger seating position is in use.

3.11 Buckle

The primary quick release component of a seat belt assembly which accepts and connects to a latch plate, and is intended to facilitate wearing and removal of the seat belt by an occupant.

3.12 Dual Spool Retractor

A retractor that contains two separate spools in order to route and store the seat belt webbing. One spool is for the shoulder belt portion and the other spool is for the lap belt portion.

3.13 Detachable Anchorage (See Quick Connect Anchorage)

A connector between two parts of a seat belt assembly intended to facilitate reconfigurability of the seat or seat belt by the end user of the vehicle. Typically requires a key or key like device in order to release as specified by FMVSS 208 S4.2.7.4 and S4.2.7.5.

3.14 Dual Mode Retractor

An ELR (Emergency Locking Retractor) which can be converted to an ALR (Automatic Locking Retractor) at the option of a user.

Also known as a Convertible Retractor.

3.15 Dual Pretensioner Seat Belt System

A seat belt system that incorporates two pretensioners.

3.16 Dual Tension Retractors

A seat belt retractor incorporating a device that provides two levels of webbing tension. A lower level of belt tension for comfort when worn by the occupant, and a higher belt tension when not worn to allow for webbing stowage.

Also known as Tension Reducer Retractors.

3.17 Dynamic Test

A test of restraint system components or assemblies through application of forces as a function of time. Generally correlates to a crash loading event.

3.18 Electric Retractor

A retractor incorporating a reusable device which acts to reversibly tighten the webbing in response to pre-determined pre-crash criteria such as occupant status and dynamic vehicle steering and handling inputs. May also handle webbing retraction and extraction functions under normal use.

Also known as a Motorized Retractor, Reversible Retractor, Electric Pretensioner

3.19 Emergency Locking Retractor (ELR)

A retractor whose locking mechanism is activated by vehicle acceleration, webbing acceleration, or other crash-sensing means and is capable of withstanding restraint forces.

3.20 Emergency Tensioning Retractor (ETR)

A retractor incorporating a pretensioning device. See Pretensioner.

Also known as a Retractor Pretensioner.

3.21 Energy Management (EM) Webbing Loop, Energy Absorbing (EA) Webbing Loop

A loop of webbing sewn into the lap or shoulder belt intended to affect occupant loads and occupant kinematics by controlled release of the stitching.

3.22 Escutcheon

A trim piece intended to facilitate the transition of the seat belt webbing from behind the interior or seat trim to the vehicle interior.

Also known as a bezel.

3.23 Film Spooling

Webbing payout from a locked retractor under crash loads resulting from tightening of the wraps of webbing upon itself on the spool.

Also known as packdown.

3.24 Guide Loop

A load bearing anchorage device through which the seat belt webbing passes and changes direction. It is typically located on the shoulder portion of the belt system, but may be applicable wherever the webbing changes direction and carries restraint loads.

Also known as a D- Ring, Turning Loop, Pillar Loop, or Sash Guide.

3.25 Hardware

Any metal or plastic components that make up the seat belt system assemblies.

3.26 Highway Vehicle

Self-propelled motor vehicles having four or more wheels, and designed for use on public roads. Included are passenger cars, trucks, buses, and multipurpose passenger vehicles.

3.27 Inflatable belt

A seat belt assembly containing a section of webbing that is capable of being inflated with a gas during a crash. It is intended to tighten the webbing, absorb energy, and increase the load area of the crash forces on the occupant.

3.28 Knee Bolster

A structural energy-absorbing device in the lower portion of the instrument panel that may be loaded by the femurs and is intended to control lower torso kinematics and loading of the occupant during a frontal impact.

3.29 Latch Plate

The component of the seat belt assembly whose function is to connect together with the buckle end of the seat belt assembly.

Also known as a Tongue, tip, or simply as a Latch. Latch Plate variants include free falling/dropping, sliding, cinching/locking, semi-cinching, dual mode, switchable dual mode, sewn-in.

3.30 Latch plate: Dropping, free falling, and sliding types

A latch plate which permits webbing transfer through the latch plate in two directions in response to loading and will fall under its own mass along a vertical piece of webbing.

3.31 Latch plate: Free running types

A latch plate which permits webbing transfer through the latch plate in two directions in response to loading and will stay in place under its own mass along a vertical piece of webbing, but can easily be moved.

3.32 Latch Plate: Locking, or Cinching types

A latch plate which limits transfer of the webbing through the latch plate in at least one direction in response to loading sufficient to meet the child seat requirements of FMVSS 208 S7.1.1.5, and also generally with dynamic crash loading.

3.33 Latch Plate: Semi Cinching type

A latch plate which limits transfer of the webbing through the latch plate in at least one direction in response to loading sufficient to meet the child seat requirements of FMVSS 208 S7.1.1.5, but generally not during dynamic crash loading.

3.34 Latch Plate: Dual Mode type

A latch plate which is designed to perform as a dropping latch plate when the seat belt is not being worn, but functions in a manner similar to a cinching or semi-cinching latch plate while worn.

3.35 Latch Plate: Switchable Dual Mode type

A latch plate which provides the user with a method to select the way in which webbing transfers through the latch plate. Allows the user to select a dropping mode for use by an occupant, or a locking, cinching or semi-cinching mode for installation of child restraints.

3.36 Latch Plate: Sewn-in type

A latch plate that is sewn directly to the separate shoulder and lap portions of the webbing thus prohibiting webbing transfer through the latch plate. Used with dual retractor/dual spool type seat belt system.

3.37 Load Limiter

A seat belt component or feature that maintains the seat belt force at a controlled and pre-defined level and is intended to control the forces that are imparted to the occupants.

Also known as a Force Limiter

3.38 Load Limiting Retractor

A load limiter device integral to the retractor. Variants include digressive, progressive, two stage, and adaptive/intelligent/programmable.

3.39 Load Limiting Retractor – Digressive

A retractor which incorporates a mechanism which provides a controlled decreasing level of load limiting as a crash event progresses.

3.40 Load Limiting Retractor – Progressive

A retractor which incorporates a mechanism which provides a controlled increasing level of load limiting as a crash event progresses.

3.41 Load Limiting Retractor – Two Stage

A retractor which incorporates a device which allows for two distinct switchable levels of load limiting based on pre-determined crash inputs.

3.42 Load Limiting Retractor – Adaptive, programmable, or Intelligent

A retractor which allows for customized levels of load limiting based on vehicle, occupant, and crash inputs.

3.43 MPV

Multipurpose Passenger Vehicle

3.44 Payout

The length of seat belt webbing extracted out of a retractor during loading. May consist of webbing distance to lock, film spooling, webbing stretch, and load limiting motion.

3.45 Pelvic Restraint

A seat belt assembly or portion thereby, intended to restrain and control movement of the lower torso by directing forces to the pelvic girdle.

3.46 Pretensioner

A device or mechanism incorporated into a seat belt system which deploys under predetermined crash criteria and is designed to tighten the webbing. Typical application locations include the retractor, buckle, or outboard lap anchor. Some systems may incorporate multiple pretensioners in any combination at the three locations.

3.47 Quick Connect Anchorage

A connector between two parts of a seat belt assembly intended to be a manufacturing or service aid. Not intended to facilitate usage of the seat belt by an occupant.

3.48 Retractor - Locking

A device which stores the seat belt webbing, locks the webbing in response to crashes, and maintains a comfortable amount of tension on the occupant when worn.

3.49 Retractor - Non-Locking

A retractor from which the webbing is intended to be extended to its full length by the occupant when worn. In this fully extended position the retractor is capable of sustaining restraint forces. It stores the seat belt webbing when not in use.

3.50 Seat Belt Assembly

Any strap, webbing, or similar device when used is intended to restrain a person in a motor vehicle. May include buckles, retractors, guide loops, latch plates, adjusting mechanisms, fasteners, and related hardware.

3.51 Seat Belt Reminder

A visible and audible signal which complies with FMVSS 208 S7.3 and is intended to inform the driver that the seat belt is not fastened whenever both the driver's lap belt is not in use and the vehicle's ignition switch is moved to the on or start position.

Also known as Seat Belt Warning System, and Seat Belt Telltale.

3.52 Enhanced Seat Belt Reminder

A visible and audible signal which goes beyond the requirements of FMVSS 208 S7.3 and is intended to inform both the driver and/or right front passenger that the seat belt is not fastened whenever both the lap belt is not in use and the vehicle's ignition switch is moved to the on or start position.

Also known as a Belt Minder.

3.53 Seat Belt Monitor

A visible and/or audible signal which is intended to inform the driver that a seat belt buckle for a seating position has changed state from buckled to unbuckled.

3.54 Seat Belt Tether

Any strap, belt, or similar device (webbing, wire cable, solid link, etc.) that aids in the transfer of restraint system loads.

3.55 Seat Belt Load Indicator

A means to indicate whether forces greater than or equal to a predetermined level were applied to the belt during a collision to aid in determining whether the belt was loaded and needs to be replaced.

3.56 Seat System

The support and positioning mechanism for the occupant upon which the occupant sits. It may serve as the attachment point for belt hardware. It may include the seat back, seat cushion, seat adjusters, head rest, recliners, arm rest, etc.

3.57 Self Compensating Retractor

A retractor designed for use in seat belt systems where the design mounting angle of the retractor may change with respect to the vehicle during use. For example in ABTS systems where the retractor is mounted in a seat back, the retractor compensates for changes in the retractor angle when the seat back is adjusted.

3.58 Static or Quasi-Static Test

A test of restraint system components or assemblies through application of forces which does not account for the actual rate of loading that occurs in an crash event.

3.59 Strap

A woven or non-woven material used in a seat belt assembly in place of webbing.

3.60 Tether Strap

A strap or webbing used to secure the upper part of a child restraint to restrict its forward rotational motion in a frontal impact.

Also known as a top tether or top strap.

3.61 Type 1 Seat Belt

A lap belt for pelvic restraint as defined in FMVSS 208.