

# PEGASEM MMS

## Modular Mounting System



PEGASEM delivers a new Modular Mounting System for the attachment of test equipment and sensors to the car wheel bolts and nuts. This system offers extreme flexibility and adaptability for fitting of different types of equipment to different vehicles. It offers some unique and useful features nowhere else available at the market.

### Features

- Modular Construction
- Adjustable to different types of vehicles
- Easy to disassemble and transport
- Low Weight
- Robust and corrosion resistant
- Available in a special carrying case

### Applications

- Speed Measurement
- Acceleration Testing
- Tire Slip-Testing
- Traction Measurement
- Distance Measurement
- Long-term Tests
- Crash Tests
- Vehicle Development
- Registration
- Support of GPS-equipment

The system consists of four main components:

- Clamps or Magnetic Holders for fitting wheel bolts
- Wheel Adapter Plate for Sensors
- Modular Harness Protection Sleeve
- Mounting Plate for the fender or car body

### Fitting Wheel Bolts:

Two different bolts are available for this system, Hexagonal Clamps or Magnetic Holders.

Both are suitable for general use, each with special advantages in different applications.



The **Clamps** main property is its high holding force. It allows attachment of heavy equipment securely to the wheel nuts, even on extremely bad roads.



19mm (3/4 inch) Clamp Holder with Sleeve and Quick Fastener

Additional features:

- Special Aluminium alloy for Low Weight
- Anodized surface for corrosion resistant

- Integrated Quick Fastener for Collet

The clamps are designed as a collet. This design uses six "fingers" to firmly grab the head of the hexagon nuts or bolts. A sliding sleeve applies the pressure to the fingers and presses them firmly onto the nut/bolt.

The **Magnetic Holders** is a new proprietary and registered design. They are specifically designed for quick and ease of connect/disconnect of the measuring equipment. The Magnetic Holders are ideal for series tests of tires where frequent and quick changes are required. They offer a clear cost advantage due to their interchangeable Guide Caps and magnetic core element. Various cap sizes allow the use of one magnetic core element for different wrench sizes. (e.g. 15 .. 22 mm, 0,6 ... 0,87 inches).



Magnetic Holder with 17mm Cap

The magnetic holders are attached to the front side of the bolts or nuts. The guide cap with a round or hexagon inner shape securely attaches to the bolts and prevents the assembly from slipping over the bolt edges.

The **Wheel Adapter Plate** with radial slots is attached to the collars of the magnetic holders or the quick fasteners of the clamps. A wheel speed sensor, or a slip ring assembly is mounted in the disk center. The slots allow the use of the disk on rims with different pitch circles and pitch counts.

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Disks of up to 200 mm diameter are available from stock. Larger sizes can be produced quickly on request.



Wheel Speed Sensor Assembly with long Sleeves

For bolts placed deeply inside the rim, the holders can be lengthened with extension pieces in steps of 45 mm. For the clamps, longer sleeves are available.



Clamp and Magnetic Holder lengthened by 45mm

For disk mounting we offer wheel speed sensors with different features e.g.

WSS1/2: Encoder with 128 pulses per revolution

WSS3: Encoder with Analog Speed Output and Pulse Output based on distance travelled

WSS4: Same as WSS3 plus integrated Vibration Sensor

Detailed specifications are available in our Wheel Speed Sensors datasheet. Adaption of slip-ring assemblies or customer specific sensors can be made on request.

The **Harness Protection Sleeve** is a modular design that provides shielding and torsional protection for the sensor wires. It is fabricated of high-grade stainless steel for strength and corrosion resistance. The Harness Protection Sleeve is made up of several plugable elements. The rubber-sealed

clamping sleeves protect the internal connectors against dust, water, and other contaminants, and also provide the necessary strength for the tube. The length of the tube can be customized for small or large vehicles. For convenience of transportation a carrying case is available for all the pieces of this assembly.

This modular construction allows for ease of maintenance. The user with standard tools can easily replace any damaged part.



Carrying Case (Size 534 x 427 x 157 mm) for convenient transportation

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The 4<sup>th</sup> component is the **Modular Holder** for the fender. This holder provides the upper support of the system. It consists of a 100mm suction cup holder or a double arm plate each equipped with 4 suction cups, 4 rubber coated magnets or both.



Suction Cup Holder above Rear Wheel

The 100mm Suction Cup with handle is a cost effective solution and suitable for flat surfaces. They can be mounted above the rear wheel at passenger cars or at trucks.



Holding Plate with Suction Cups and Magnets



Holding Plate with magnets only

The double arm plate is a universal design that is ideal for heavily cambered as well as flat surfaces. Use of magnets and/or suction cups allows this system to be firmly secured to steel, aluminum or plastic bodies.

For front wheel mounting, where the steering angle can interfere with the Harness Protection Sleeve, the slip joint can be lengthened as necessary.



Holding Plate with 4 Suction Cups and lengthened Slip Joint

### Technical Data:

Mechanical Data	Clamp Holder				Magnetic Holder			Extension			Mounting Disk			
	S17	S19	S21		S17/S19	S21/22					D150	D170	D200	
Outer Diameter	26,5	29,4	31,5	mm	28	30	mm		25	mm	150	170	200	mm
Pitch Hole Circle	-	-	-	mm		-	mm		-	mm	92-130	92-150	92-175	mm
Length	45 / 90	45 / 90	45 / 90	mm	45	45	mm		45	mm	6 thick	6 thick	6 thick	mm
Weight including knurled Knob	126 / 158	136 / 172	150 / 190	grams	116	120	grams		28	gr.	265	315	440	grams
Special Aluminium Alloy Corrosion resistant Coating	X	X	X		X	X			X		X	X	X	

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### Ordering information:

Description	Part Number	Remarks
Magnetic Holder	A 12 02 10 00	Core Element. 1 per wheel bolt required up to 5 bolts. Max. acceptable height of thread over top of lug nut: 5 mm (0.2")
Cap S15	A 12 02 30 00	Width A/F 15mm, round shape inside, extra Quick Connect
Cap S17	A 12 02 31 00	Width A/F 17mm, round shape inside, extra Quick Connect
Cap S19 (3/4")	A 12 02 32 00	Width A/F 19mm, round shape inside, extra Quick Connect
Cap S21	A 12 02 33 00	Width A/F 21mm, round shape inside, extra Quick Connect
Cap S17H	A 12 02 41 00	Width A/F 17mm, hexagonal shape inside, Quick Connect, excellent performance over potholes
Cap S19H (3/4")	A 12 02 42 00	Width A/F 19mm, hexagonal shape inside, Quick Connect, excellent performance over potholes
Cap S21H	A 12 02 43 00	Width A/F 21mm, hexagonal shape inside, Quick Connect, excellent performance over potholes
Clamping Unit S17	A 12 01 62 00	Consists of clamp, sleeve (length 45mm), fastening element, knurled knob. 1 per wheel bolt required up to 5 bolts
Clamping Unit S19	A 12 01 63 00	Consists of clamp, sleeve (length 45mm), fastening element, knurled knob. 1 per wheel bolt required up to 5 bolts
Clamping Unit S21	A 12 01 65 00	Consists of clamp, sleeve (length 45mm), fastening element, knurled knob. 1 per wheel bolt required up to 5 bolts
Clamping Unit S17L	A 12 01 72 00	See A 12 01 62 00, but long version. Sleeve length 90mm
Clamping Unit S19L	A 12 01 73 00	See A 12 01 63 00, but long version. Sleeve length 90mm
Clamping Unit S21L	A 12 01 75 00	See A 12 01 75 00, but long version. Sleeve length 90mm
Extension	A 12 02 20 00	For deep hubs or wide fenders. Fits on clamps (A1201..) and magnetic holders (A1202..)
Knurled Knob	A 12 03 40 00	For mounting the slotted Wheel Adapter Plate on holders
Wheel Adapter Plate D150	A 12 03 10 00	Pitch circle 92 - 130 mm. Pitch count 4/5
Wheel Adapter Plate D170	A 12 03 11 00	Pitch circle 92 - 150 mm. Pitch count 3/4/5/6/8/10/12
Wheel Adapter Plate D200	A 12 03 12 00	Pitch circle 92 - 175 mm. Pitch count 3/4/5/6/8/10/12
Wheel Speed Sensor WSS1	A 40 01 00 00	Cost effective solution, fixed output pulse rate per revolution (128PPR), non detachable Harness Protection Sleeve
Wheel Speed Sensor WSS2	A 40 02 00 00	Cost effective solution. Fixed output pulse rate per revolution (128PPR). Non detachable Harness Sleeve
Wheel Speed Sensor WSS3	A 40 03 00 00	Fixed output pulse rate (128PPR). For connection of detachable Harness Protection Sleeve
Wheel Speed Sensor WSS4	A 40 04 00 00	Selectable Output Pulse Rate per distance. For connection of detachable Harness Protection Sleeve. Configuration via Serial Interface from PC. Analog Speed Output
Harness Protection Sleeve, HPSC 240	A 12 06 82 00	See WSS3. Additional Vibration Sensor. Output 10mV/g
Harness Protection Sleeve, HPSC 340	A 12 06 83 00	For extension, length 340mm
Harness Protection Sleeve, HPSC 450	A 12 06 84 00	For extension, length 450mm
Harness Protection Sleeve, HPSE 450	A 12 06 86 00	End piece, length 450mm, with 8-pin cable connector
Harness Protection Sleeve, HPSE 580	A 12 06 87 00	End piece, length 580mm, with 8-pin cable connector
Body Suction Cup Holder 100mm	A 12 07 70 00	For mainly flat surfaces
Body Mounting Plate with Arms VSM	A 12 07 20 01	Version with 2 suction cups and 2 rubber coated magnetic holders
Body Mounting Plate with Arms VSS	A 12 07 20 02	Version with 4 suction cups. For all sleek surfaces.
Body Mounting Plate with Arms VMM	A 12 07 20 03	Version with 4 rubber coated magnetic holders. Works on steel bodies. Good holding force even at very low temperatures
Suction cup, black, dia. 80mm	A 12 07 00 01	Spare part or supplement
Magnetic Holder rubber coated	A 12 07 00 02	Spare part or supplement
Extension D12/70	A 12 06 24 00	Slip Joint Extension for wide fenders
Cable 5m, 4/8, black, Dia =4,5mm	A 49 00 01 00	For WSS1 and WSS2. Front side: 4-pin plug, tail: 8-pin plug, PEGASEM-type connectors
Cable 5m, 8/8, black, Dia =4,5mm	A 49 00 02 00	For WSS3 and WSS4. Front side: 8-pin plug, tail: 8-pin plug, PEGASEM-type connectors
Cable 5m, 4/8, black, Dia =4,5mm	A 49 00 03 00	For WSS1 and WSS2. Front side: 4-pin plug, tail: open wires
Cable 5m, 8/8, black, Dia =4,5mm	A 49 00 04 00	For WSS3 and WSS4. Front side: 8-pin plug, tail: open wires
Cabel 5m	A 49 00 XX 00	Cables with plugs for other brands of data acquisition hardware on request
Display Unit P100	A 21 01 00 01	Extra bright Speed Display, Metric and Standard units, Size 106 x 85 x 32mm (WxDxH), with Power Supply Cable
Display Mounting Unit	A 21 01 00 09	For windshield mounting of P100 Display Unit: Angle, ball joint, telescoping bar, suction cup
PegaCase 100	A 12 00 00 01	Transportation Case for the MMS, Size 534 x 427 x 157mm (WxDxH), equipped with preformed foam inserts

Intelligent Test Solutions



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