GRIPTESTER

Measure of the longitudinal force coefficient

Device qualified mlpc®

Description

The GripTester measures a longitudinal friction coefficient (CFL) between the surface of the road and a tire with a braked wheel with a constant slip rate of about 15% close to the optimum of the anti-blocking system. This slip rate, which generates the adhesion force, is obtained by mechanical drive between the two carrier wheels and the measuring wheel.

The axis of the measuring wheel is equipped with a system of strain gauges to measure the reaction of the ground on the tire, Vertical Force (FV) and Force Horizontal (FH). The longitudinal friction coefficient measured by the GripTester, called GN, is proportional to the ratio FH on FV. The measurement is carried out on a wet surface. The longitudinal friction coefficient calculated by the GripTester is displayed in real time and stored on a laptop.

It can be used in towed mode (roads and highways) for a continuous evaluation of the adhesion.
The measurement is carried out at a speed dependent on the road surface. For wetting, an internal reservoir can be added to the tractor vehicle in order to increase the measuring range.

Measuring principle

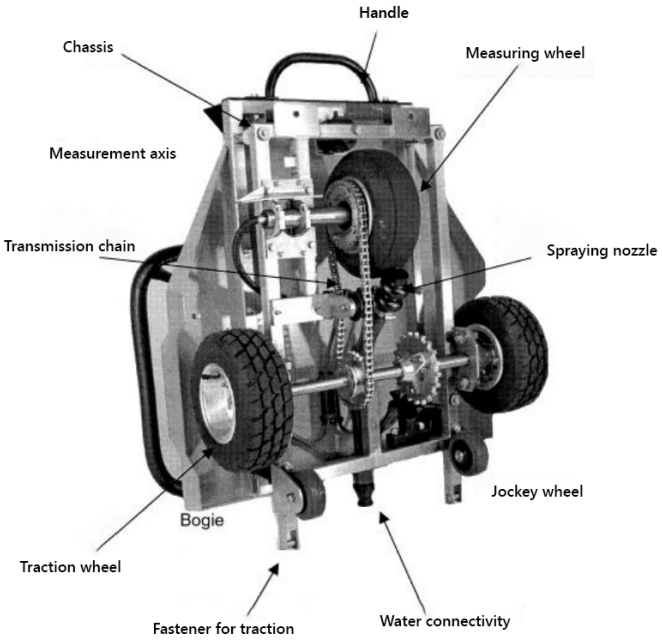
The GripTester is an adhesion measuring device based on the principle of a braked wheel with a constant slip rate of 15%.

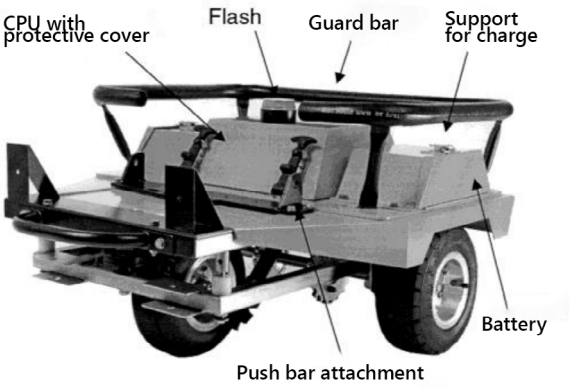
The slip ratio, which generates the adhesion force, is obtained by mechanical drive between two carrier wheels (or traction wheel) and a measuring wheel. This measuring wheel is equipped with a tire with a smooth tread.

A watering system is added to spread a constant water film in front of the measuring wheel. The film is regulated according to the test speed.
The axis of the measuring wheel is equipped with a system of strain gauges to measure the forces exerted on the measuring wheel (vertical and horizontal force). The result of these efforts, after processing by the central unit of the apparatus, gives a coefficient of adhesion called GN (GripNumber), from which is deduced the skid resistance.

Features

Lenght	1010 mm
Width	790 mm
Height	510 mm
Weight	85 kg
Measuring tire	10 diameter slick tread - ASTM specification 1844 - Findlay Irvine
Drive tire	10" diameter patterned tread, tread KT3-W, compound K8-CIK
Chain	MORSE type 0,5" cat n°08B1 Tension between 17 and 22 mm pulse





Terms of use

The optional watering system is composed of:

- A removable, resistant to corrosion water tank of 500 liters, designed to prevent the transfer of loads,
- Connectors for filling the tank and water intake to power the GripTester,
- Associated piping and valves,
- A visual level giving information to the operator of the remaining volume in the case of a rigid tank,
- A connecting cable microcomputer laptop control system,
- A system for regulating the water flow (pump, regulator) as an option.

The system is integrated in the vehicle; the 500l tank allows for a 60 km drive.

Acquisition system:

The acquisition system is decoupled between the central unit of measurement of the GripTester or SPU and the microcomputer embedded in the vehicle.

The whole measurement is managed in real time by the central unit of measurement of the GripTester.
All the information from the central unit is then transmitted via the communications link to the microcomputer (speed, adhesion...).
This information is used by the microcomputer to regulate the watering system in real time.