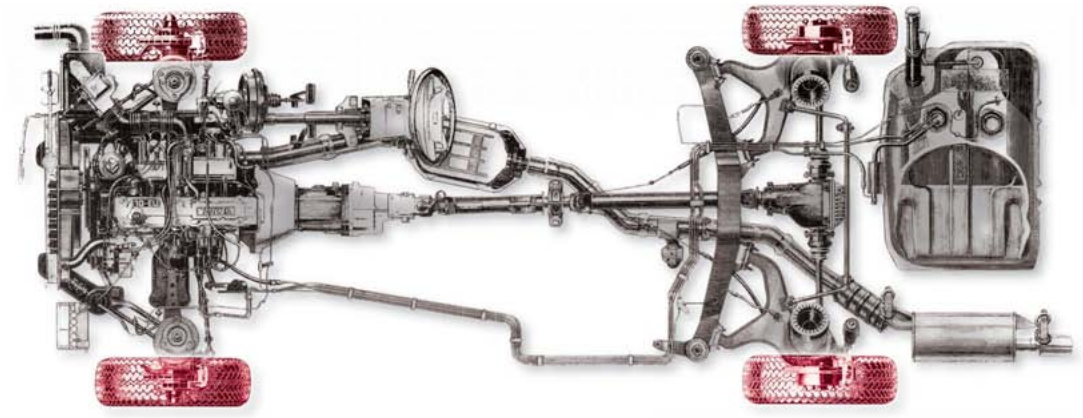
Tire & Wheel Mechanism

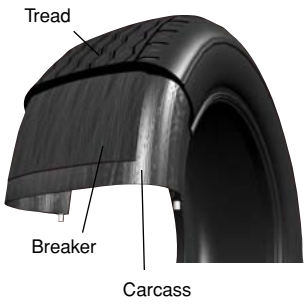


MECHANISM 1

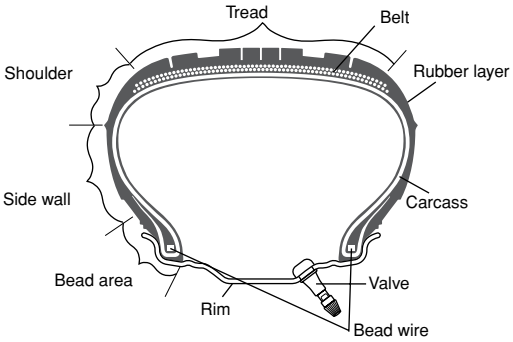
Function and mechanism of tire

The tires support the weight of the vehicle, they not only transfer the drive and braking power, they also protect the vehicle from road shock and play a role in transferring the vehicle's functionality to the road.

The following details the parts of the tire structure: Tread: This is the area that comes into contact with the road. Shoulder: The area that protects the carcass of the tire. Sidewall: The area where the tire size and the manufactures name is displayed. Bead area: This is made up of the rubber layers, belts, carcass, and bead wire materials and is where the tire is fixed to the rim.



Cross section of a bias tire

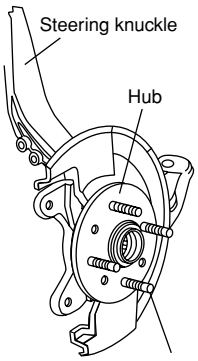


Cross section of a radial tire

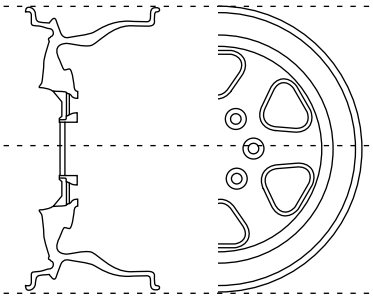
MECHANISM 2

Wheel & hub

A wheel consists of a rim and tire which is attached to the "hub" assembly. In modern cars the hub is a disc which normally contains 4-6 bolts (or studs) and is attached to the axle by way of the axle nut. The average amount of bolts is between 4-6. The heavier the vehicle, the more wheel nuts/bolts will be required.



Hub bolt (Wheel bolt)

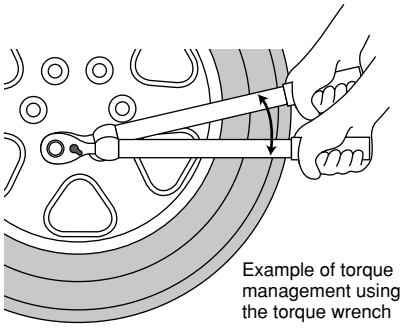


Cross section of wheel

MECHANISM 3

Torque management suggestion

Not only the tires, but faulty attachment or tightening of the hub bolts (wheel nuts) will largely influence safe driving. For example, if tightening of the hub nut (wheel nut) is weak, the tire can fall off because of vibration. If tightening is too strong, the hub bolt can break. In order to prevent these accidents, the tightening torque should be managed with a torque wrench. The common tightening torque for passenger vehicles is 103N-m and this torque is relatively easy to achieve. If the hub-nut (wheel nut) of your vehicle cannot be loosened with the provided tire wrench (providing there is no rusting), the hub nuts have been tightened excessively.



Example of torque management using the torque wrench

TIRE & WHEEL — Wheel attachment and removal

1 Installing Fender Cover

●FENDER COVER

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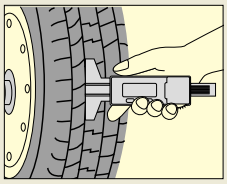
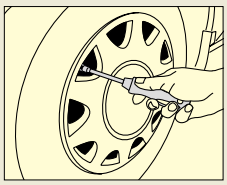
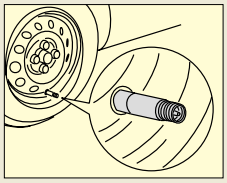
2 Inspecting Tire Grooves

①Checking the tire groove

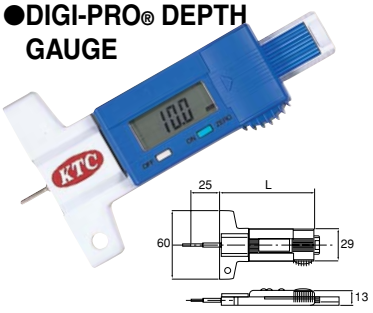


②Inspection and Adjustment of Air Pressure





●DIGI-PRO® DEPTH GAUGE



*DIGIPRO is the registered trademark of KYOTO TOOL CO., LTD.

DIGI-PRO® DEPTH GAUGE

No.	Range	Minimal indication	Precision	Battery life	Battery used	Whole length		
GDT-25	0~25mm	0.1mm	±0.2mm	Approx. 2 years	SR44	83	40	10

Purpose
- For measuring the groove depth if the tires (four-wheel and two-wheel vehicles).

Features
- Compact body enables use in the tire housing.
- Digital display in 0.1mm unit. Easy to read.

Reference: tire wear limit

Unit: mm

Tire types	Passenger vehicle and light trucks	Small type trucks	Trucks and buses	Motorcycle
Groove depth limit	1.6	2.4	3.2	0.8

*The groove depth limit adheres to the Road Transport Vehicle Laws

●TIRE VALVE WRENCH

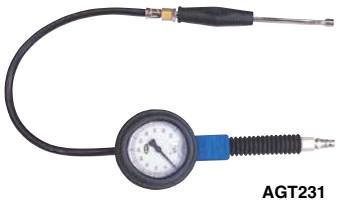
TIRE VALVE WRENCH

No.	D	ℓ	L		
AH2-4	17	165	235	40	1

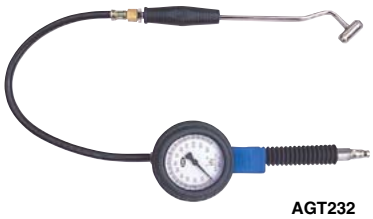
Purpose
- Used to remove/install valve core of tires of mini cars, compact cars, trucks and buses (except for motor cycles, construction vehicles and tire of double tires)

Features
- Long shaft enables operation without hitting tire with the tool and improves work efficiency. (The length is 165mm.)
- Thinner handle to turn.

●TIRE AIR GAUGE



AGT231



AGT232

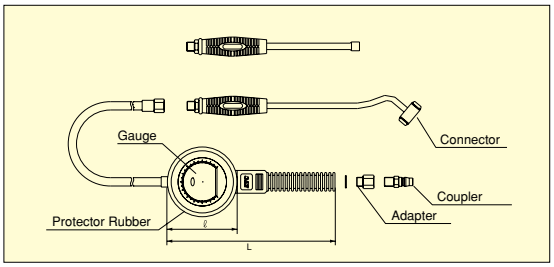
TIRE AIR GAUGE

No.	Range	Minimal indication	Thickness	ℓ	L		
AGT231	0~500kPa (0~5kgf/cm²)	10kPa	95	100	270	800	1
AGT232	0~1200kPa (0~12kgf/cm²)	10kPa	95	100	270	800	1

Purpose
- Measuring, increasing and decreasing air pressure in car tires.

Application
- Tire Air Gauge 500: for passenger cars and commercial cars (vans)
- Tire Air Gauge 1200: for motorcycles, passenger cars, trucks and buses.

Features
- Light touch lever enables smooth fine adjustment.
- Large gauge (ϕ70mm) easy to read measurements. Possible to measure and decrease pressure without connection with the air hose.
- Swivel joint prevents hose twisting.
- Ultra-thin straight connector on the tip (tip: 11mm dia.) facilitates use for most of aluminum wheels (AGT231).
- Double connector usable for outer tire of double tires (AGT232).
- Usable for some of the inner tire depending on the notch shape of the wheel.



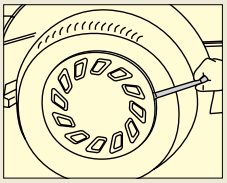
Connectors for replacement:

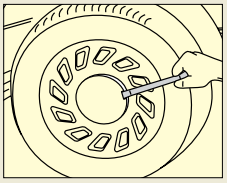
Connectors	No.
Straight connector	AGT23-A1
Double connector	AGT23-A2
Clip Connector	AGT23-A3

*Please check the merchandise inventory for a product that is marked by ! before placing an order.

Removing/Installing Wheel 3

①Removing Wheel Cap





②Removing/Installing Wheel Nuts

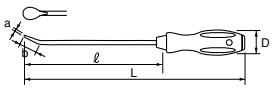
WHEEL CAP WRENCH

No.	a	b	D	ℓ	L		
AH101	1.3	20	40	215	350	200	5

●WHEEL CAP WRENCH

Purpose
- Removing wheel cap from cars.

Features
- Thin tip; easy to put in between wheel rim and wheel cap, with lower possibility of damaging wheel cap and wheel.
- Tip is bent for easy operation.
- Hand fitting plastic handle.



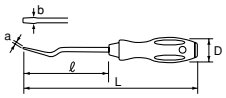
CENTER CAP WRENCH FOR ALUMINUM WHEEL

No.	a	b	D	ℓ	L		
AH102	0.7	7	34	115	235	90	5

●CENTER CAP WRENCH FOR ALUMINUM WHEEL

Purpose
- Removing the center cap of aluminum wheel.

Features
- Thin tip, easy to put into the notch, with lower possibility of damaging the cap and wheel.
- Tip is bent at two points for easy operation.
- Hand fitting plastic handle.



●IMPACT WRENCH

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ALUMINUM SOCKET • SET (3pcs.) FOR POLISHED NUT

No. ATBP403AL	415	1
Aluminum Socket Set For Polished Nut		ABP4-17ALP, 19ALP, 21ALP
Metal Case L165×W70×H40		

- Set of 3 popular sizes (17, 19, & 21).

●1/2"sq. ALUMINUM SOCKET SET FOR POLISHED NUT (3pcs.)

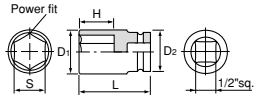
ALUMINUM SOCKET FOR POLISHED NUT

No.	S (Hexagonal)	D1	D2	H	L	▼g	
ABP4-17ALP	17	26	29	21	49	50	1
-19ALP	19	28.5	29	24	52	60	1
-21ALP	21	31	29	27	55	70	1

- For use on aluminum wheel and surface-treated nuts.
- Thin wall type with minimum outer diameter.
- Made of newly developed special aluminum alloy with special heat-treatment for superb durability.

(Caution) Aluminum wheel nut tightening should be conducted according to the set torque defined by each manufacturer.

CAUTION
- USE ONLY ON WHEEL NUTS.
- FASTEN ALUMINUM WHEEL NUTS AT THE SPECIFIED TORQUE.



●1/2"sq. ALUMINUM SOCKET FOR POLISHED NUT

Attached pins and rings
PR-2026

Note : 6pt. Sockets are shown in blue letters. *Please check the merchandise inventory for a product that is marked by ! before placing an order.