

Symbols on Tools

What does it all mean?

IP67
WATERPROOF
RÉSISTANT À L'EAU



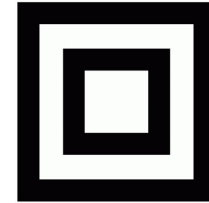
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1) Safety Messages

Safety symbols may be on the tool or in the instruction manual



double insulated
2 wire cord is safe
(others need 3 wire)



read the instruction
manual

The Power Tool Institute



Hazard Alerting Safety Symbol



Mandatory Action Safety Symbol



Prohibition Safety Symbol



Safety alert symbol is a symbol that indicates a hazard.



Wear appropriate eye protection.



Wear appropriate eye protection and hearing protection.



Wear appropriate eye protection and respiratory protection.



Wear appropriate eye protection, hearing protection, and respiratory protection.



Use two hands.



No hands near blade/cutting area.



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to physical injury.



Safety instruction (or equivalent) signs indicate specific safety-related instructions or procedures.

A few more



Risk of electric shock



Read the Operating Instructions/Notes!



Wear a dust mask.



Wear ear protection.



Wear protective goggles.



Wear protective gloves.



Disconnect from the power supply!



Do not throw in the household waste.

Quiz





2) IP (tools with electronics)

INGRESS PROTECTION (IP) RATINGS

FIRST NUMBER	PROTECTION AGAINST SOLIDS	SECOND NUMBER	PROTECTION AGAINST LIQUIDS
0	No protection	0	No protection
1	Objects over 50 mm (hand)	1	Vertically falling drops of water
2	Objects over 12 mm (finger)	2	Direct sprays up to 15° from vertical
3	Objects over 2.5 mm (tools and wires)	3	Direct sprays up to 60° from vertical
4	Objects over 1 mm (small tools and wires)	4	Sprays from all directions, limited ingress
5	Dust-limited ingress (no harmful deposit)	5	Low pressure jets of water from all directions, limited ingress
6	Totally protected against dust	6	Strong jets of water from all directions, limited ingress
		7	Temporary immersion (30 minutes) between 15 centimeters and 1 meter
		8	Long periods of immersion under pressure

3) Conformity Symbols

Underwriters Labs



Canada & US

File number



Canadian Standards Association



Norma Oficial Mexicana



European Union

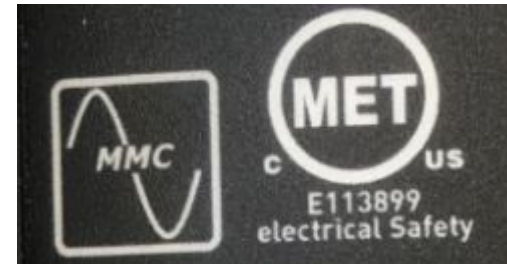


Third Party Approvals

Intertek



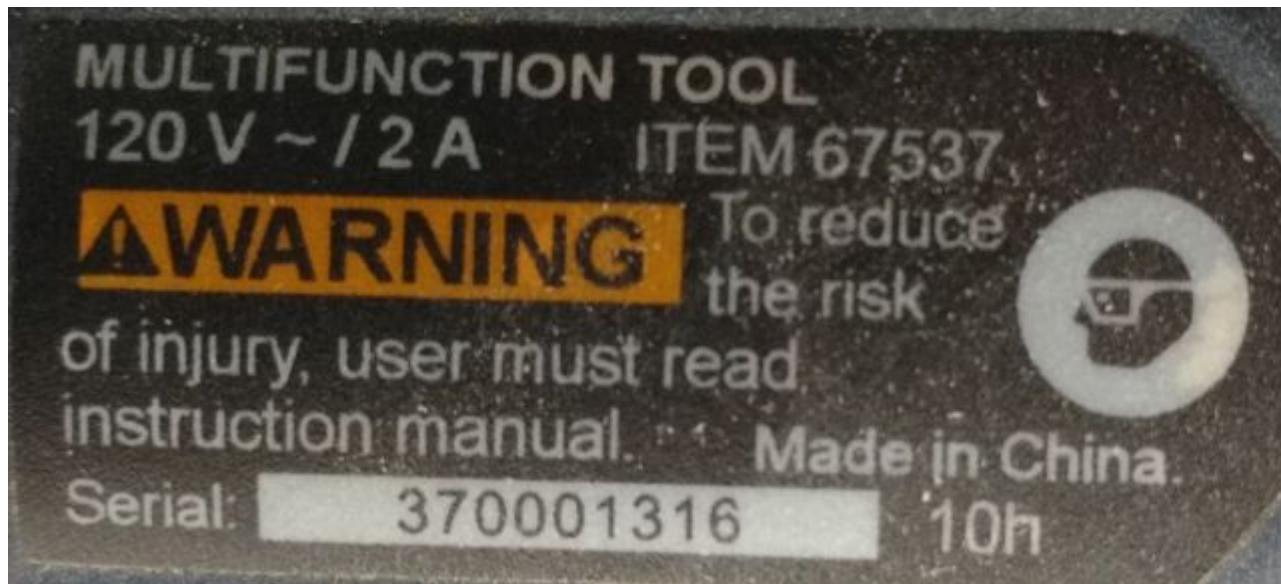
MET Labs



TUV SUD (Germany)



Quiz (what's missing?)



Summary

Symbols can be confusing

Three key things:

- Safety instructions or notices

- Ingress protection

- Approvals

Backup

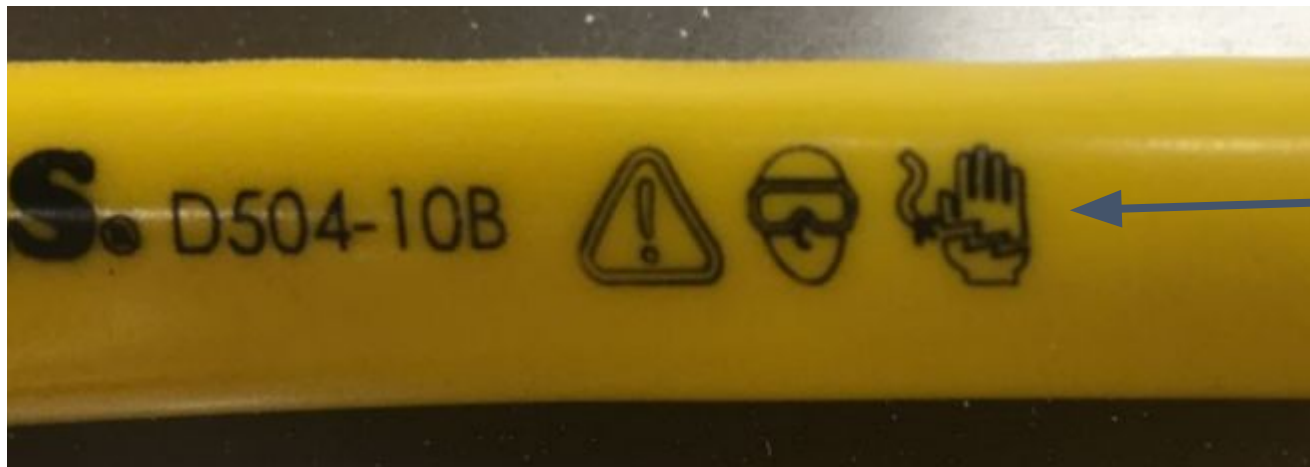
Other 3rd party symbols



Hand Tools

Double
Insulated

VDE approval
Germany



Shock
Risk



**KLEIN
TOOLS**



1000 V

Klein insulated tools meet or exceed the IEC 60900 and ASTM F1505 standards, for insulated tools, and are clearly marked with the official 1000-volt rating symbol

Insulated Cushion-Grip Screwdrivers – Slotted Tip



Meets or exceeds applicable ASME / ANSI specifications

Durable, two layer,
molded insulation



**MADE IN
USA**



Bright orange outer coating
is flame and impact resistant

Precision-machined
tip for exact fit

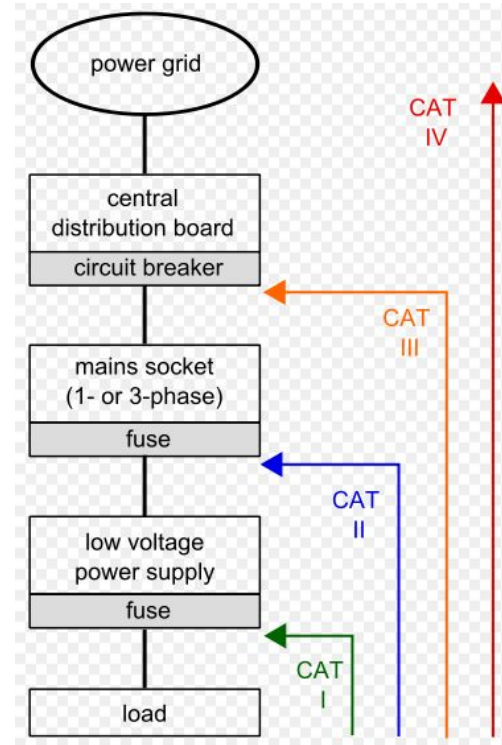
Thick, exceptionally tough, high-dielectric
white inner coating is bonded to the tool



Tip-Ident® quickly
identifies the type of
screwdriver and
tip orientation



Electrical Meters and Test Leads



Measurement categories can be broken down into several categories: CATI, CATII, CATIII, and CAT IV.

Measurement Category I:

This category is for measurements of voltages from specially protected secondary circuits. Such voltage measurements include signal levels, special equipment, limited-energy parts of equipment, circuits powered by regulated low-voltage sources, and electronics.

Measurement Category II:

This category refers to local-level electrical distribution, such as that provided by a standard wall outlet or plug in loads (for example, 115 AC voltage for U.S. or 200 AC voltage for Europe). Examples of Measurement Category II are measurements performed on household appliances, portable tools, and similar modules.

Measurement Category III:

This category refers to measurements on hard-wired equipment in fixed installations, distribution boards, and circuit breakers. Other examples are wiring, including cables, bus bars, junction boxes, switches, socket outlets in the fixed installation, and stationary motors with permanent connections to fixed installations.

Measurement Category IV:

This category refers to origin of installation or utility level measurements on primary over-current protection devices and on ripple control units.

An example



Receptacles



Tamper Resistant

Tamper Resistant
and
Weather Resistant



Cords

Designation Letter	Meaning
S	Indicates a flexible cord designed for general use
W	Indicates the cord is rated for outdoor use
J	Indicates the cord with standard 300 voltage insulation. If there is no J in the designation, the cord has thicker, 600-volt insulation, designed for heavier use.
P	Indicates parallel wire construction, used in air conditioner cords and household extension cords
T	Indicates the cord jacket is made from vinyl thermoplastic
E	Indicates the cord jacket is made from thermoplastic elastomer rubber (TPE)
O	Indicates the cord is oil-resistant

Type SJ – hard usage (most common)

Type SE – extra hard usage

Type SO – extra hard usage

At temp less than 86 deg F

16 ga 13 amps if less than 50 ft long, 10 amps if over 50 ft

14 ga 18 amps if less than 50 ft long, 13 amps if over 50 ft

12 ga 25 amps if less than 50 ft long, 18 amps if over 50 ft

If temp is up to 90 deg F, use a derate of .91

If temp is up to 105 deg F, derate is .82