

INTERACTIVO ILUSTRADO TECNICO BILINGUE

HERRAMIENTAS, MATERIALES Y ELEMENTOS PARA LA CONSTRUCCIÓN Y AFINE S



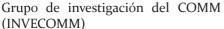












Diccionario interactivo técnico ilustrado bilingüe; materiales, herramientas y elementos para la construcción y afines.

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La elaboración de este diccionario principalmente esta dedicado a Dios quien puso en mi camino a las personas que me acompañaron durante este proceso y se convirtieron en pieza fundamental desarrollando un trabajo ejemplar y profesional. Con ello, me refiero al talentoso aprendiz Cristian David Morales Medina quien deja a ustedes todo su ingenio y creatividad plasmada en cada pagina que usted pueda ojear. Por otro lado, la ingeniera Yalhy Restrepo quien se encargó de diseñar la ruta por donde debíamos trabajar para que todo saliera conforme a lo planeado. Este diccionario muestra y compila la colaboración de instructores colegas expertos de los de Construcción. programas Automatismos, Refrigeración, Motores Carpintería Operación del Centro de Mantenimiento Minero; a ellos infinitas gracias por habernos permitido trabajar de la mano.

Finalmente pero no menos importante, dedico este trabajo a todos los aprendices quienes son la razón de ser de la empresa más querida por todos los Colombianos y en quienes se pensó para mejorar sus conocimientos técnicos en inglés. A estudiar muchachos, que el futuro de este país esta en sus manos. Dios los bendiga y a todos muchas gracias.

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AMMETER: (AMPERIMETRO/ÆM,MI:TƏ)

It is a instrument that measures electric circuit current in amperers.

AIR HANDLER:

(AIRE ACONDICIONADO/)

The indoor part of an air conditioner or heat pump that contains a fan or blower to move cooled or heated air throughout the ductwork of your home. An air handler is usually a furnace or a blower coil.

AFUE:

Annualized Fuel Utilization Efficiency (AFUE) is a measure of your furnace's heating efficiency. Specifically, it is the ratio of annual output energy compared to annual input energy. The higher the AFUE percentage is, the more efficient the furnace. The minimum percentage established by the DOE for furnaces is 78%.

AHRI:

This is a unique numerical representation for a condenser and evaporator combination that has been certified and identified by Air-Conditioning, Heating, and Refrigeration Institute. Many efficiency program administrators will require this number to be submitted with incentive applications.

ACCUMULATOR TANK: (TANQUE ACUMULADOR/)

It is a tank able to hold excess of liquid in deep, assuring refrigerant goes out as a gas way.

ACETAL PLASTIC: (PIÑON DE ACETAL)

Tough, stable engineering thermoplastic with a high modulus of elasticity, high strength, good rigidity, dimensional stability, resistance to moisture, solvents and other chemicals.



Ammeter.



Air handler.



Accumulator







ACCUMULATOR.



ACTUATOR.



ADDITIVE.



AIR MOTOR.



ACCUMULATOR:

(ACUMULADOR/ Ə'KJU:MJO, LEITƏ)

A container in which fluid is stored under pressure as a source of fluid power.

ACCUMULATOR, HYDROPNEUMATIC BLADDER: (ACUMULADOR, VEJIGA HIDRONEUMÁTICA/)

A hydro pneumatic accumulator in which the liquid and gas are separated by an elastic bag or bladder.

ACTIVE DEVICE:

(DISPOSITIVO ACTIVO/)

A device that has an input(s) that controls a power supply to the device.

ACTUATOR:

(SOLENOIDE/)

A device in which power is transferred from one pressurized medium to another without intensification.

ADDITIVE

(ADITIVO/ÆDITIV)

A chemical added to fluid to impart new properties or to enhance those that already exist.

AIR MOTOR:

(MOTOR DE AIRE/)

A device that converts pneumatic fluid power into mechanical torque and motion. It usually provides rotary mechanical motion.

AIR BREATHER: (RESPIRADOR/)

A device permitting air movement between atmosphere and the component in which it is installed



ALTERNATOR:

(GTIEN, GTI:C' \RODANRETJA)

It is an electric machine generator of alternate current, transforming mechanic energy into electric energy used in motor vehicles and others.

AWL: (PUNZÓN/):L)

It is a handtool made of a needle used for making holes or in other cases, piercing holes in leather or even wood.

ADOBE: (ADOBE/ əˈdəʊbɪ)

Earth mixed with straw, used for making bricks to build houses.

AGGREGATE: (ARIDO)

sand or small stones used for making concrete (=material used for building).

ASBESTO:

(ASBESTO/ÆZ'BESTƏS)

Substance that does not burn easily that was used in building materials in the past. It is now known to cause cancer and is no longer used.

ADJUSTABLE WRENCH:

(LLAVE AJUSTABLE/)

It is a metallic hand tool used to pull, jerk, or moving twisting to tighten or loosening an adjustable piece.

AMPLIFICATION, POWER:

(AMPLIFICACIÓN, POTENCIA/)

The ratio between the output power variation and the corresponding input (control) power variation (for analog devices only).

AMPLIFICATION, PRESSURE:

(AMPLIFICACIÓN, PRESIÓN/)

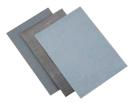
Ratio between the outlet pressure and the inlet (control) pressure.



ALTERNATOR.



ADOBE.



ASBESTO.



ADJUSTABLE WRENCH.

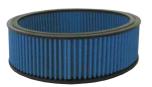


AMPLIFICATION POWER.





AIR PUMP



AIR FILTER



AIR, COMPRESSED (PRESSURE)



AIR-INJECTION.



AIR:

(AIRE/εə)

A gas mixture consisting of nitrogen, oxygen, argon, carbon dioxide, hydrogen and small quantities of neon, helium and other gases.

AIR PUMP:

(BOMBA DE AIRE/)

The device that supplies the fresh air needed by the air-injection system.

AIR FILTER:

(FILTRO DE AIRE/)

A device for removing impurities from the air which enters the combustion chamber.

AIR, COMPRESSED (PRESSURE):

(AIRE, COMPRIMIDO (PRESIÓN/)

Air at any pressure greater than atmosphere.

AIR-INJECTION: (INYECCIÓN DE AIRE/)

A system that injects air into the exhaust ports of a thermal reactor, for additional conversion of carbon monoxide to carbon dioxide and combustion of unburned hydrocarbons in the exhaust gases.

AIR BLEEDER:

(PURGADOR DE AIRE/)

A device for the removal of air.

AIR, DRIED:

(AIRE SECO/)

Air with moisture content lower than the maximum allowed for a given application.

AIR, SATURATED:

(AIRE, SATURADO/)

Air at 100% relative humidity with a dew point equal to temperature.

AIR COOLED:

(AEROENFRIADOR/)

An engine cooled by passage of air around the cylinders, not by passage of a liquid through internal water jackets.

AIR SCOOP: (ENTRADA DE AIRE/)

A forward facing aerodynamic device or opening used to duct cool outside air to some part of the vehicle such as the carburetor intake, the brakes, the radiator, or an oil cooler.



The mass of air supplied to the engine divided by the mass of fuel supplied in the same period of time. The Stoichipmetric, or chemically correct, air-fuel ratio (A/F ratio) is the exact ratio necessary to burn all the carbon and hydrogen in the fuel to carbon dioxide and water with no oxygen remaining. The fuel-air ratio is the reciprocal of the air-fuel ratio.

AUTOMATIC TRANSMISSION: (TRANSMISIÓN AUTOMÁTICA/)

A mechanism in the drive train with gear sets to vary the power and torque delivered to the driven wheels as a function of engine load and speed, usually incorporating a fluid coupling or torque converter to allow changing gears and reversing direction without using a foot operated clutch.

ANTI-FREEZE: (ANTICONGELANTE/)

Any of several substances (commonly liquids and typically ethylene glycol) mixed with water and added to a car's cooling system to prevent freezing of the coolant in winter and inhibit formation of rust and other deposits that would tend to clog the radiator and coolant passages and reduce cooling efficiency.



AIR COOLED.



AIR SCOOP.



AUTOMATIC TRANSMISSION.



ANTI-FREEZE.







AXLE.



ADJUSTABLE SHOCKS.

ARMATURE:

(ARMADURA/ 2: MƏTJÜƏ)

A wire-wrapped iron or steel core forming a movable coil within the starting motor. When it revolves in the magnetic field between the poles, an electric current is induced.

AXLE:

(EJE/ÆKSƏL)

A shaft on which a wheel revolves or which revolves with a wheel. Also, a solid beam that connects the two wheels at one end of the car. In the latter sense an axle is called "live" if it transmits power as in a front-engine rear-drive car. It's called a "beam" or "dead" axle if the axle does nothing but support the wheels as at the rear of a front-wheel-drive car.

ADJUSTABLE SHOCKS: (CHOQUES AJUSTABLES/)

Shock absorbers (dampers) whose jounce and rebound characteristics can be stiffened or softened to compensate for wear or to fine-tune a suspension for a particular application such as rough roads, heavy loads or racing.

A-PILLAR (SOPORTES):

The forward or windshield pillars on a car that supports the windshield and the front portion of the roof.

AIR, FREE:

(AIRE GRATIS/)

Air at ambient temperature, pressure, relative humidity and density.



ABS (ANTI-LOCK BRAKE SYSTEM): (SISTEMA DE ANTI BLOQUEO DE FRENOS/)

A device which senses that one or more of the wheels are locking up during braking. It is controlled by both mechanical and electronic components. When brakes are applied, the ABS will regulate the flow of brake fluid being delivered to the brake calipers. It must be remembered that a wheel cannot be steered unless it is rolling.





BACKBONE FRAME: (CHASIS)

A frame, having the cross-section of a rectangular box, that runs along the center of the car and occupies the space between the seats. This box generally divides at the front, running along each side of the gearbox and engine up to a crossmember to which the front suspension pieces are attached. At the rear a similar triangular frame encloses the final-drive housing and provides attaching points for the rear suspension.

BRAKE CYLINDER: (CILINDRO DE FRENO/)

A cylinder containing a movable piston actuated by hydraulic pressure to push fluid through the lines and wheel cylinders and force the brake lining or pads against a drum or disc.

BRAKE PADS:

(PASTILLAS DE FRENO/)

For disc brakes, the replaceable flat segments consisting of a rigid backing plate plus frictional lining that take the place of the shoe and lining in a drum brake. Brake pads are sometimes referred to as brake pucks.

BRAKE SHOE:

(PASTILLASV DE FRENO/)

The arc-shaped carrier to which the friction lining are mounted and which force the lining against the rotating drum during braking.

BALL JOINT: (RÓTULA/)

A flexible joint using a ball and socket type of construction, used in steering linkage setups, steering knuckle pivot supports, etc. Their flexibility helps to compensate for the changes in the wheel and steering when turning or hitting a bump on the road. There are usually upper and lower ball joints attached to the upper and lower A-arms.



BACKBONE FRAME.



BRAKE CYLINDER.



BRAKE PADS.



BALL JOINT.





BRAKE LINES.



BATTERY TESTER.



BATTERY.



BELL HOUSING.

BRAKE LINES: (LÍNEAS DE FRENO/)

The tubes or hoses connecting the master cylinder to the wheel cylinders in a hydraulic brake system.

BATTERY TESTER: (PROBADOR DE BATERÍA/)

It is a portable electronical device used to measure active electric magnitudes such as currents and potencials.

BATTERY:

(BATERIA/BÆTƏRIVG)

It is a device that accumulates and release electricity through the combination of two or more connected electric cells that provides energy to the starter motor of a combustion engine such as an automovile.

BELL HOUSING: (CARCASA DE CAMPANA)

The covering (named for its shape) that surrounds the flywheel and clutch of a manual-gearbox car or the flywheel and torque converter with automatic transmission.

BEAD: (TALÓN/ BI:D)

At the band of each sidewall nearest the rim, that element which makes contact and seals a tubeless tire with the wheel rim.



BELT:

(CINTURÓN/ BELT)

A reinforcing band normally textile, fiberglass or steel, running around the circumference of a tire and strengthening the tread area.

BELTED PISTON:

(PISTÓN CON CORREA/)

A piston with a continuous steel band cast into the skirt below the rings for controlling skirt expansion.

BENCH SEAT:

(ASIENTO CORRIDO/)

A seat running the width of the car.

BREAKER ARM:

(BRAZO INTERRUPTOR/)

The movable part of a set of contact points in a distributor.

BRAKE HORSEPOWER (BHP): (POTENCIA AL FRENO/)

A measurement of the actual usable power (not calculated power) measured at the output shaft (usually the crankshaft) rather than at the driveshaft or the wheels. Thus none of the auxiliaries (gearbox, generator, alternator, differential, water pump, etc.) are attached. It is called the brake horsepower because the shaft power is usually measured by an absorption dynamometer or "brake." This is not the brake on the vehicle's wheels but a testing device applied to the shaft. This instrument is applied to stop or absorb the rotation of the output shaft and returns a value.



BELT



BELTED PISTON.



BENCH SEAT.







BULBS.



BOLT.



BITUMEN.



BURIN.



BUCKET SEAT.



BTU:

(UNIDAD TÉRMICA BRITÁNICA/)

Btu stands for British thermal unit. which is a unit of heat energy. One Btu is the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

BULBS:

(BOMBILLO/BALB)

It is an incandescent glass, through whih electricity passes, producing light.

BOLT:

(TORNILLO/ BƏUL)

It is a piece of metal made in spiral body used in builing for holding things together normally hardly attached by nut.

BITUMEN:

(BETÚN/ BITJUMIN)

A black sticky substance made from petroleum, used for making roads and covering roofs.

BURIN:

(BURIL)

It is a cutting metallic tool used for tracing or grooving metallic pieces.

BUCKET SEAT:

(ASIENTO DE CUBO/)

An individual seat (usually found in pairs at the front of the car) so named because the curvature of the backrest and cushion resembles a cutout bucket.

BULK MODULUS:

(MÓDULO DE VOLUMEN/)

The measure of resistance to compressibility of a fluid. It is the reciprocal of compressibility.

BOARD:

(TABLON/BD:D)

A long thin flat piece of wood, used especially for makin floors and other parts of buildings.



BOARD.

BOARDING:

(TABLAS/ BD:DIN)

Boards joined together to make something such as a floor or a fence.



BREEZE BLOCK.

BREEZE BLOCK:

(BLOQUE DE HORMIGÒN/ BRI ZBLøK)

A large light brick made from cement and that is used in building.

BRICK:

(LADRILLO /BRIK)

A block used for building walls and other structures.



BRICK.

BROWNSTONE:

(ARENISCA/BRAUN STOUN)

A type of reddish-brown stone, often used for building.



BUNGEE CORD.

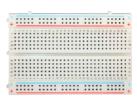
BUNGEE CORD:

(CUERDA ELÁSTICA/)

It is an elasticized cord, typically with a hook at each end used to bind items together securing something.

BREADBOARD: (PLACA DE PRUEBA/ BRED, BD:D)

It is a plastic hand tool used for proving electrical circuits.



BREADBOARD.

BERNOULLI'S LAW: (LEY DE BERNOULLI/)

If no work is done on or by a flowing frictionless liquid, its energy due to pressure and velocity, remains constant at all points along the streamline.





BLOW-OFF VALVE:

(VÁLVULA DE DESCARGA/)

A one-way valve that opens to the atmosphere above a certain set pressure to relieve excessive internal pressure buildup; often used with a turbocharger installation to limit boost pressure to the engine.

BORE:

(PERFORAR/B):)

In a piston engine, the diameter of the cylinder, usually measured in either inches or millimeters.

BOUNCE (VALVE):

(REBOTE/ BAUNS)

It indicates a condition where the valve is not held tightly closed in the seat even though the camshaft has not opened it. Also called "flutter."

BREAKOUT:

(FUGA/BREIKAUT)

Force necessary to inaugurate sliding. Expressed in same terms as friction. An excessive breakout valve indicates the development of adhesion.

BREATHING CAPACITY:

(CAPACIDAD DE RESPIRACIÓN/)

A measure of flow rate through an air breather.

B-POST (B-PILLAR):

(/)

The side or door posts that connect the sills and the roof and provide roof support on a car. On a true "hardtop" design (a term derived from "hardtop convertible") these pillars are missing, leaving uninterrupted glass area along the sides of the car.

BOYLE'S LAW:

(LEY DE BOYLE/)

The absolute pressure of a fixed mass of gas varies inversely as the volume, provided the temperature remains constant.









CAM.



CAM SHAFT.



CARBON FIBER.



CARBURETOR.



CALIPER: (MORDAZA/KÆLIPƏ)

That part of a disc-brake assembly hat straddles the discs and contains the cylinders, pistons and brake pads. When the brakes are applied, brake fluid flows to the cylinders in the caliper and pushes the pistons out, forcing the pads against the disc. Also, an adjustable measuring tool for determining the diameter of a shaft, cylinder bore, etc. by contact and retaining the dimension for measurement or comparison.

CAM: (LEVA/ KÆM)

A rotating or sliding mechanism or a projection on a rotating shaft for imparting or receiving exact movements. A cam on a camshaft is also referred to as a lobe. A rotating or sliding mechanism or a projection on a rotating shaft for imparting or receiving exact movements. A cam on a camshaft is also referred to as a lobe.

CRANK SHAFT: (CIGÜEÑAL/)

The main shaft of an engine, so named because of the U-shaped cranks. It delivers rotary motion taken from the reciprocating pistons and rods.

CARBON FIBER: (FIBRA DE CARBONO/)

Threadlike strands of pure carbon that are strong and flexible. Carbon fiber can be bound in a plastic resin matrix to form a strong composite. It is lightweight and stronger than steel.

CARBURATOR: (CARBURADOR/ KÄRB(Y)Ə,RĀTƏR)

A device through which air is drawn into the engine and mixed with fuel to form a combustible mixture that can be burned in the engine's cylinders. The carburetor changes the ratio of fuel and air according to varying engine operating conditions such as starting, idling, cruising and maximum power.

CASTER: (ANGULO DE AVANCE O GIRO)

The angle between the steering axis and the vertical, as viewed from the side. It is considered positive when the steering axis is inclined rearward at top.



(CAJA DE CIGÜEÑAL/ KRANGK, KĀS)

A box or case that encloses or encases the crankshaft.

CRANK PIN:

(PIN DE MANIVELA/ KRANGK, PIN)

The bearing surface on a crank of the crankshaft to which the connecting rod is attached.

CRANK SHAFT:

(EJE DE CIGÜEÑAL/ KRANGK, SHAFT)

The main shaft of an engine, so named because of the U-shaped cranks. It delivers rotary motion taken from the reciprocating pistons and rods.

COLD AIR INTAKE: (INGESTA DE AIRE FRÍO/)

The induction system forces cold air into the combustion chamber. Because cold air is denser than warm air, it contains more oxygen molecules. With more oxygen, fuel will burn more effectively and thus increase horse-power.

COMBUSTION CHAMBER: (CÁMARA DE COMBUSTIÓN/)

The space at the top of the cylinder, in the head and/or piston top, remaining above the piston when it is at top dead center. Combustion of the fuel-air mixture begins here.

COEFFICIENT OF FRICTION: (COEFICIENTE DE FRICCIÓN/)

The ration of the frictional force between two surfaces to the perpendicular loading at their junction. The coefficient of friction depends primarily on the nature of both surfaces in contact, being relatively large if the surfaces are rough and small if they are smooth.



CRANK CASE.



CRANK PIN.



CRANK SHAFT.



CRANK PIN.



COMBUSTION CHAMBER.



COMPRESSION RING.



CONNECTING ROD.





COOLANT.



COUNTER SHAFT.



COMPRESSION RING: (ANILLO DE COMPRESIÓN/)

A piston ring at the top of the piston, forming a seal with the cylinder wall to prevent compression loss or gas blowby. Compression rings also help transfer heat from the piston into the cylinder walls and thus to the water jacket surrounding the cylinder.

CONNECTING ROD: (BIELA/)

The link between the piston and the crankshaft, by which the reciprocal motion of the piston is changed to rotary motion.

CONSTANT-MESH GEARBOX: (CAJA DE ENGRANAJES DE MALLA CONSTANTE/)

A type of transmission in which all or most of the gears CONSTANT-MESH GEARBOX ate always in mesh with one another as opposed to a sliding-gear transmission, in which engagement is obtained by sliding some of the gears along a shaft into mesh.

COOLANT: (REFRIGERANTE/ KU:LƏNT)

The mixture of water and antifreeze that picks up heat from the engine and transfers it to the air passing through the radiator.

COUNTER SHAFT: (TRANSMISIÓN INTERMEDIA /KAUNTƏ ΣΞ:FT)

That shaft in a manual gearbox that carries power by means of gears from the clutch shaft to the driveshaft, turning opposite to them.

COUNTER BALANCE: (CONTADOR BALANCE/)

Weight added to a rotating shaft or wheel to balance normal loads on the part and offset vibration. Counterweights are used on the crankshaft and are often found on the flywheel and driveshaft.

COUNTER WEIGHT (CONTRAPESO/)

Weight added to a rotating shaft or wheel to balance normal loads on the part and offset vibration. Counterweights are used on the crankshaft and are often found on the flywheel and driveshaft.

CLUTCH: (EMBRAGUE/ KLΛTΣ)

A friction-operated device used to connect a driving to a driven member. In an automotive drive train the clutch, when engaged, connects the engine crankshaft and flywheel to the gearbox and thus the remainder of the drive train. It allows smooth coupling and uncoupling of the engine and drive train by slipping as its driving and driven discs come together.

CLUTCH DISC: (DISCO DE EMBRAGUE/)

The rotating circular metal plate splined to the transmission input shaft: it has friction material on each face. The disc is located between the flywheel and the clutch pressure plate and is clamped tightly between these two members when the clutch is engaged, thus transmitting power from the flywheel through the clutch and into the gearbox.

CRUISE CONTROL: (CONTROL DE CRUCERO/)

A feature that keeps your vehicle moving at a set speed.

CYLINDER BLOCK: (BLOQUE DE CILINDROS/)

The basic framework of the engine to which other engine parts are attached. It is usually a casting and includes the engine cylinders and the upper part of the crankcase.



COUNTER WEIGHT.





CLUTCH DISC.



CRUISE CONTROL.



CYLINDER BLOCK





COMPRESSOR.



CONDENSATE PUMP.



CONTACTOR.



CAPILLARY TUBE:



CIRCULAR SAW.



COMPRESSOR: (COMPRESOR/ KƏM'PRESƏ)

It is a fluids machine made to rise pressure and move some sort of fluids named compresibles, as gasses and vapours.

CONDENSATE PUMP: (BOMBA DE CONDENSADO/)

It is a nowadays most common elements of a air conditioning unit. Its mainly function is rising or pushing condensate water produced by conditioning unit

CONTACTOR: (INTERRUPTOR/)

It is an electromecanic component which mainly object is maintain or interrupt electrical flow, This could be done through the power circuit or control circuit.

CAPILLARY TUBE: (TUBO CAPILAR/)

It is an alement that controls passage of cooling liquid keeping evaporator dry; in other words, it works as a restrictor.

COLD ROOM: (CUARTO FRIO/)

It is a place determined to manipulation of fresh and raw products. Yet this place store merchandise later to be organized in different refrigeration units.

CIRCULAR SAW: (SIERRA CIRCULAR/)

It is a power machine with a tooth disk shape blade used for cutting different material using high revolutions.

CHARLES' LAW: (LEY DE CHARLES/)

The volume of a fixed mass of gas varies directly with absolute temperature, provided the pressure remains constant.

CENTRAL AIR CONDITIONING SYSTEM: (SISTEMA CENTRAL DE AIRE ACONDICIONADO/)

System in which air is cooled at a central location and distributed to and from rooms by one or more fans and CONDITIONING SYSTEM. a series of ducts.

CFM:

(PIES CÚBICOS POR MINUTO)

Cubic Feet per Minute. This measurement indicates how many cubic feet of air pass by a stationary point in one minute. The higher the number, the more air is being moved through the ductwork by the system.



COMPRESSOR:

(COMPRESOR/ KƏM'PRESƏ)

The outdoor portion of an air conditioner or heat pump that compresses and pumps refrigerant to meet household cooling requirements.

CONDENSER COIL.

CONDENSER COIL: (BOBINA DE CONDENSADOR/)

The outdoor portion of an air conditioner or heat pump that either releases or collects heat, depending on the time of the year.

CONDENSATE:

(CONDENSADO/ KƏN'DENSEIT)

The liquid that separates from a gas due to a reduction in temperature or an increase in pressure.

CERTIFIED MATCHED SYSTEM: (SISTEMA COMBINADO CERTIFICADO/)

A heating and cooling system comprised of equipment that has been certified to perform at certified efficiency levels when used together, and used according to design and engineering specifications. The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) puts heating and cooling equipment through rigorous certification processes to ensure systems deliver the efficiency performance at certain test conditions.





COMPUTER.



COMPRESSOR.



CABLE.



CAR BATTERY CHARGER.



CHISEL

CAVITY WALL INSULATION: (AISLAMIENTO DE LA PARED DE LA CAVIDAD)

A substance that is put into a cavity wall to keep heat inside a building.

COMPUTER: (COMPUTADOR/ KƏM'PJU:TƏ)

It is a machine, with capacity of programming, storing, designing, and installing different software programs.

COMPRESSOR: (COMPRESOR/ KƏM'PRESƏ)

It is an electrical machine that can store and supply pressed air flow.

CABLE: (CABLE/ KEIBƏL)

It is an element made of metal wires used to carry electrical power.

CAR BATTERY CHARGER: (CARGADOR DE BATERÍA DE COCHE)

It is a portable device used to keep a car battery fully charged.

CHISEL: (FORMÓN/ τΣτΖΘΙ)

It is a metal tool bar used in construction to crack hard surfaces such walls or floors or giving shape to wood or stones.

COMPRESSIBILITY: (COMPRESIBILIDAD/KƏM PRESI'BILITI)

The change in volume of a unit volume of a fluid when subjected to a unit change in pressure.



CYLINDER:

(CILINDRO/ SILINDƏ)

A device that converts fluid power into linear mechanical force and motion. It usually consists of a movable element such as a piston and a piston rod, plunger or ram, operating within a cylindrical bore.



Cylinder with two or more stages of extensions, achieved by hollow piston rods sliding one within the other (may be single- or double-acting).

CYLINDER, TIE ROD: (CILINDRO, BARRA DE ACOPLAMIENTO/)

A cylinder with head and cap end closures that are secured by tie rods.

CHAIN:

(CADENA/ TXEIN)

It is a strong ring metal attached one to another for hauling up, fastening or supporting.

CLAMP:

(ABRAZADERA/ KLÆMP)

It is a hand tool made of steel with an adjustable handle used for giving support to a local working on object.

CAVITATION: (CAVITACIÓN/)

A localized gaseous condition within a liquid stream that occurs where the pressure is reduced to the vapor pressure.

CAMBER: (INCLINACIÓN DE LAS RUEDAS DELANTERAS/ KÆMBƏ)

Inward or outward tilting of the wheels from vertical as viewed from the front or rear of the car. If the wheels are closer together at the top than at the ground, the chamber is negative; if the wheels are further apart at the top, the chamber is positive.





CYLINDER TELESCOPING.



CYLINDER TIED ROD.





C-CLAMP.





CAULK.



CEMENT.



CINDER BLOCK.



CLAPBOARD.



CONCRETE.



CLADDING:

(REVESTIMIENTO/ KLÆDIN)

A hard substance such as wood, stone, or metal that is put on the outside of a structure, especially a building, to protect it or make it look more attractive.

CAULK:

(SELLADOR/ KD:K)

A substance that you use for caulking something.

CEMENT:

(CEMENTO/ SI'MENT)

A grey powder used in building that becomes very hard when you mix it with sand and water.

CINDER BLOCK:

(BLOQUE/)

A breeze block.

CLAPBOARD:

(TABLILLA/ KLÆP.BJ:D)

Wooden boards used for covering the outside of a building.

CONCRETE:

(CONCRETO/ KDNKRI:T)

A hard substance used in building made by mixing cement, sand, small stones, and water.

COMPRESSION SET:

(CONJUNTO DE COMPRESIÓN/)

The amount by which a rubber specimen fails to return to original shape after release of the compressive load.

CONDUCTOR:

(CONDUCTOR/ KƏN'DAKTƏ)

A component whose primary function is to contain and direct fluid.

CYLINDER BORE:

(DIÁMETRO INTERIOR DEL CILINDRO/)

The internal diameter of the cylinder body.

CYLINDER CAP: (TAPA DEL CILINDRO/)

A cylinder end closure that completely covers the bore area.

CYLINDER, DOUBLE-ACTING: (CILINDRO, DE DOBLE ACCIÓN/)

A cylinder in which fluid force can be applied to the moveable element in either direction.

CYLINDER, DOUBLE ROD (CILINDRO, DOBLE BARRA/)

A cylinder with a single piston and a piston rod extending from each end.

CYLINDER, ROTATING: (CILINDRO, GIRATORIO/)

A cylinder in which the piston and piston rod, plunger or ram, is permitted to rotate with reference to the cylinder housing.

CYLINDER CAPACITY (CAPACIDAD DEL CILINDRO/)

Volume required for one full extension of a cylinder.

COWL: (CAPUCHA/ KAUL)

The portion of a car's body between the engine compartment and the driver which ordinarily houses the instruments and the plenum chamber for the heater-ventilation system.

CONTAINMENT: (CONTAMINANTE/kənˈteɪnmənt)

Any material of substance that is unwanted or adversely affects the fluid power system or components, or both.



CYLINDER BORE.



CYLINDER CAP.



CYLINDER, DOUBLE-ACTING.



CYLINDER, DOUBLE ROD.



CYLINDER, ROTATING.





CYLINDER SINGLE-ACTING.

CYLINDER, SINGLE-ACTING: (CILINDRO, DE ACCIÓN SIMPLE/)

A cylinder in which the fluid force can be applied to the movable element in only one direction.

CYLINDER, TANDEM: (CILINDRO, TANDEM/)

Arrangement of at least two pistons on the same rod moving in separate chambers on the same cylinder body allowing the compounding of force on the piston rod.



A cylinder in which the piston has a greater cross-sectional areas than the piston rod.



A device that provides controlled resistance to motion.

CARBON MONOXIDE (CO): (MONÓXIDO DE CARBONO/)

Often called the silent killer, CO is an invisible, odorless, colorless gas created when fuels (such as gasoline, wood, coal, natural gas, propane and oil) burn with inadequate amounts of oxygen, creating a condition known as incomplete combustion. In the case of home gas appliances, this can be caused by improper installation, poor maintenance, or other appliance misuse or failure. When incomplete combustion occurs in a home's gas appliances, CO is produced, and this can lead to CO poisoning.

CAPITALIZED COST: (COSTO CAPITALIZADO/)

This is the total price of the vehicle, in effect, its purchase price. In theory, the cap cost should equal the amount you would pay for the vehicle if you were purchasing the vehicle. When a lease is made, the dealer sells that vehicle to the leasing company (for the cap cost), which then leases the vehicle to you.



CYLINDER TAMDEM.



CYLINDER, PISTON TYPE.



32 C

CIRCUIT, METERED-IN: (CIRCUITO, MEDIDO/)

A speed control circuit in which the control is achieved by regulating the supply flow to the actuator.

CIRCUIT, METERED-OUT: (CIRCUITO, MEDIDO/)

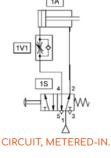
A speed control circuit in which the control is achieved by regulating the exhaust flow from the actuator.

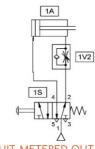
CIRCUIT, SEQUENCE: (CIRCUITO, SECUENCIA/)

A circuit that established the order in which two or more phases of a circuit occur.

CV:

Flow coefficient or pneumatic conductance expresses the flow capability of any fixed orifice pneumatic device for a given fluid.

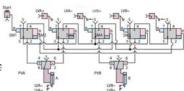




CIRCUIT, METERED-OUT.

CLEARANCE: (ESPACIO LIBRE/)

A given amount of space between two parts such a between piston and cylinder, bearing and journal



C-POST (C-PILLAR):

The rear or back-window pillars that support the rear window and rear portion of a car's roof.

COMPRESSION RATIO: (ÍNDICE DE COMPRESIÓN/)

The extent to which the combustible gases are compressed within the cylinder: the ratio of cylinder and chamber volume with the piston at bottom dead center to the volume of the combustion chamber at the end of the compression stroke.

CIRCUIT, SEQUENCE.







DAMPER:

(AMORTIGUADOR/ DÆMPƏ)

When used in ductwork, the damper is a movable plate that regulates airflow. Dampers are used to direct air to the areas that need it most. Typically used in zoning applications.

DUCTWORK: (DUCTOS/)

The system by which air is channeled from the furnace or the blower coil throughout your home.

DAUB: (BAHAREQUE)

a mixture of wet clay and straw (=dried plant stems), used for making walls, especially in the past.

DUCT TAPE:

(CINTA ADHESIVA/)

strong and very sticky cloth that is often used for covering cracks or holes in pipes.

DIGITAL CLAMP METER:

(MEDIDOR DE ABRAZADERA DIGITAL/)

This tool has many purposes such measuring voltages, volts, resistances and further.

DB:

A decibel is a unit used to measure the relative intensity of sound.

DECKING:

(ENTABLADO/ DEKIN)

wood used for making floor.



DAMPER.



DUCTWORK.



DAUB.



DUCT TAPE.



DIGITAL CLAMP METER.





DIFFERENTIAL.



DISTRIBUITOR.



DRIVETRAIN.



DRIVE SHAFT.



DRIVE LINE.



DIFFERENTIAL:

(DIFERENCIAL/ DIFƏ'RENSƏL)

A gear system that transfers power from the driveshaft (or the transmission in a front-wheel-drive car) to the driving axles. It permits the outer driving wheel to turn faster than the inner when the car goes around a corner, to prevent skidding and tire scuffing.

DISTRIBUTOR:

(DISTRIBUIDOR/ DI'STRIBJUTƏ)

A component of the ignition system containing the breaker points and cam, centrifugal advance and vacuum-advance mechanisms and a shaft usually driven be the camshaft. The high voltage generated by the coil passes into the center terminal of the cap mounted on top of the distributor housing. From there, it passes down the rotor, and as the rotor turns it distributes the current to terminals connected by high-tension wires to the sparkplugs.

DRIVETRAIN: (TREN DE POTENCIA/)

The power transmitting components in a car, including clutch and gearbox (or automatic transmission) driveshaft, universal joints, differential, and axle shafts.

DRIVE SHAFT:

(EJE DE TRANSMISIÓN/)

The long, hollow tube with universal joints at both ends that carries power from the transmission to the differential.

DRIVE LINE:

(LÍNEA MOTRIZ/)

Everything in the Drivetrain except the engine and the transmission.

DRIL:

(TALADRO/ DRIL)

It is a power tool that uses a drill bit for drilling hard surfaces, such wood, concrete or metal.

DESICCANT:

(DESECANTE/ DESIKƏNT)

Material that tends to remove moisture from compressed air.

DIVERTER (VALVE): (VÁLVULA DESVIADORA/)

A device whose power source at one input port is diverted to one of two or more output ports.

DUROMETER 1: (DURÓMETRO/)

An instrument for measuring the hardness of rubber. Measures the resistance to the penetration of an indentor point into the surface of rubber. 2. Numerical scale of rubber hardness.

DROOP:

(INCLINACIÓN/ DRU:P)

The deviation for reducing the moisture content of the working medium.

DETENTED (MAINTAINED): (DETECTADO/)

The design intention of a device to maintain the state of its last actuation after the operator force is removed

DEALER PARTICIPATION:

(PARTICIPACIÓN DEL DISTRIBUIDOR/)

This is the amount contributed by the dealer to reduce the final purchase price in the lease contract. Dealer participation can take the form of a rebate or simply a discount. The dealer participation is reflected in the lease contract as a capitalized cost reduction.



DRILL.



DESICCANT.



DIVERTER (VALVE).



DUROMETER 1.





DOHC (DUAL OVER-HEAD CAM).



DRILL BIT.

DOHC (DUAL OVER-HEAD CAM): (CAMARA DE DOBLE CABEZAL/)

An engine with two camshafts located above the cylinders. One drives the intake valves and the other operates the exhaust valve.

DRILL BIT:

(BROCA/)

High-speed steel (HSS) is a form of tool steel; HSS bits are hard and much more resistant to heat than high-carbon steel. They can be used to drill metal, hardwood, and most other materials at greater cutting speeds than carbon-steel bits, and have largely replaced carbon steels.

DISPLACEMENT:

(DESPLAZAMIENTO/ DIS'PLEISMONT)

The volume vacated by the piston of an engine as it moves downward in its cylinder.

DRAG COEFFICIENT:

(COEFICIENTE DE ARRASTRE/)

A dimensionless number used in calculating the aerodynamic drag acting on a car. The drag coefficient is a function of such factors as the shape of a car and airflow through the car for cooling or ventilation.

DASHBOARD:

(PANEL DE INSTRUMENTOS/ DÆE, BD:D)

A panel just below the windshield and stretching across the front of the car, containing gauges, switches, and instruments for car operation.

DECELERATION:

(DESACELERACIÓN/ DI: SELƏ'REIΣƏN)

Negative acceleration; the rate of change in velocity as a car slows down during braking.









EVAPORATOR COIL.



EXTENSION CORD.



EMERY.



ELECTRONIC AIR CLEANER:

(LIMPIADOR DE AIRE ELECTRÓNICO/)

An electronic device that filters out large particles and bio-aerosols in indoor air.

ELECTRONIC AIR CLEANER. EVAPORATOR COIL:

(BOBINA EVAPORADORA/)

The part of the air conditioner or heat pump that is located inside the air handler or attached to the furnace. Its primary function is to absorb the heat from the air in your house.

EXTENSION CORD:

(CABLE DE EXTENSIÓN/)

It is an electric isolated cord having a standard plug at one side and an electric socked at the other side.

FMFRY:

(ESMERIL/ EMƏRI)

It is a power tool works on high revolution for polishing, sharping and giving shape to solid pieces.

ELECTRO PNEUMATIC BENCH: (BANCO ELECTRO NEUMÁTICO/)

It is developing job area, needed to work for simulating pneumatic and electro pneumatic systems.

ELECTRONIC CONTACTING CLEANER: (LIMPIADOR DE CONTACTO ELECTRÓNICO/)

it is used for degreasing efficiently stain contacting in car engines.

EXHAUST EMISSIONS CONTROL: (CONTROL DE EMISIONES DE ESCAPE/)

Systems or adjustments designed to limit noxious gases in an engine's exhaust. Such controls can be grouped into two broad categories: those designed to reduce or eliminate the formation of harmful pollutants in the engine itself (retarded spark settings are one example) and those designed to destroy or otherwise alter the pollutants after they have been formed.

ELECTRIÇAL TAPE:

(CINTA ELÉCTRICA/)

It is a sticky and flexible element needed in electricity to insulate electrical wires or cables when being working on it.



(MOTOR/ END3IN)

Principally a machine that converts electrical energy into mechanical energy.

EXHAUST SYSTEM: (SISTEMA DE ESCAPE/)

The pipes, resonators and mufflers that carry the exhaust gases from the exhaust manifold out into the atmosphere.



(VÁLVULA DE ESCAPE/)

A camshaft-driven valve in the cylinder head that opens to allow burned gases out of the cylinder and closes to form part of the combustion chamber during the compression and power strokes.

EXHAUST EMISSIONS:

(EMISIONES DE ESCAPE/)

Unburned hydrocarbons, carbon monoxide, oxides of nitrogen and other noxious gases emitted when gasoline is burned in an engine.

ENGINE SPEED:

(VELOCIDAD DEL MOTOR/)

The revolutions per minute (rpm) at which the engine crankshaft turns.

EMERGENCY BRAKE:

(FRENO DE EMERGENCIA/)

A braking system, independent of the main hydraulic system, that can be used to slow or stop the car if the primary brakes fail, or to hold the car stationary though the brake pedal is not depressed.



ELECTRICAL TAPE.



ENGINE.



EXHAUST SYSTEM.



EXHAUST VALVE.



EMERGENCY BRAKE.





EXPANSION PLUG.



EXPANSION TANK.

EXPANSION PLUG:

(ENCHUFE DE EXPANSIÓN/)

A steel plug, slightly dished or cup-shaped. When driven into place it flattens to fit tightly in its seat. In an engine block, expansion plugs (also called freeze plugs or core-hole plugs) are inserted into the holes in the casting through which core was removed when casting was formed. They open into cooling passages and thus provide pressure relief should the engine coolant freeze and expand.

EXPANSION TANK: (TANQUE DE EXPANSIÓN/)

A separate tank, partly filled with coolant, that connects to the radiator cap in a sealed cooling systems. As the coolant in the engine is heated it expands and a portion is sent into the expansion tank. Then when the engine approaches operating temperature, a valve in the radiator cap closes, sealing the cooling system, and the valve opens, allowing coolant in the expansion tank or reservoir to flow back into the radiator. This keeps the cooling system filled at all times.

ELECTRONIC IGNITION: (IGNICIÓN ELECTRÓNICA/)

An ignition system using electronic switching devices to relieve the mechanical breaker points of part of their duties, or replace them.

EF — ENERGY FACTOR: (FACTOR DE ENERGÍA/)

The amount of energy delivered as heated water in a day divided by the total daily energy consumption of a residential water heater. The EF is used to compare the energy efficiency of models.



ENERGY GUIDE LABEL: (ETIQUETA DE LA GUÍA DE ENERGÍA/)

A large yellow tag affixed to major appliances and HVAC equipment such as central air conditioners, heat pumps, furnaces, water heaters and boilers that provides energy efficiency and operating cost information. The label is designed to help consumers compare the operating cost of similar models.

ENERGY INPUT RATING: (CALIFICACIÓN DE ENTRADA DE ENERGÍA/)

The amount of input energy delivered at the burner of furnaces, water heaters and boilers, measured in British thermal units (Btus) per hour.

ENERGY STAR®:

An EPA designation attached to HVAC equipment to identify models that meet EPA guidelines for high-efficiency performance that exceed standard government minimums. Manufacturers and retailers place the ENERGY STAR® label on those models that meet the labeling criteria. The label helps consumers identify those products that will save money and energy.

EPA:

An abbreviation for the U.S. Environmental Protection Agency, the federal agency that develops and enforces federal environmental regulations. The EPA oversees the nationwide ENERGY STAR® program.



FITTING: (UNION/ FITIN)

Pneumatic fittings are connectors or closures for pneumatic lines and passages.

FITTING CROSS: (UNION EN CRUZ/)

Crosses, also known as four-way fittings or cross branch lines, have one inlet and three outlets and often have solvent-welded socket or female-threaded ends. This fitting is located at core or center of four connection points making pipes stress as temperature change, working as a four legged stool.

FITTING CAP: UNION TAPA/)

This fitting is usually employed for liquid or gas tight covering the otherwise open end of a pipe. The exterior of an industrial cap may be round, square, rectangular, U- or I-shaped, or may have a handgrip.

FITTING BARB: (UNION BOQUILLA/)

This element is using to connect flexible hose or tubing to pipes, typically has a male-threaded end which mates with female threads. An adjustable worm drive screw clamp is often added, to keep the hose from slipping off the barbed tube.

FITTING DOUBLE TAPPED BUSHING: (UNION DE BUJE DOBLE/)

This element works as a reducer. It is also similar to a close nipple but it is threaded on both its inner and outer circumferences. This fitting has two threads of different size each; female thread concentric to a larger male thread.

FITTING, COMPRESSION: (UNION DE COMPRESIÓN)

A fitting that seals and grips by manual lines and passages.



FITTING.



FITTING CROSS.



FITTING CAP.



FITTING BARB.



FITTING DOUBLE TAPPED BUSHING.





FITTING FLANGE.





FITTING ELBOW.



FITTING COUPLING.



FITTING, FLANGE: (UNION MONTAJE BRIDA/)

A fitting that utilizes a radially extending collar for sealing and connection.

FITTING, FLARED: (UNION ACAMPANADO/)

A fitting that seals and grips by a pre-formed flare at the end of the tube.

FITTING ELBOW: (UNION CODO)

It is a join made of plastic or metal normally connected to a pipe or tubing which allows changing direction to a 90 or 45 degrees angles.

FITTING COUPLING:

(UNION ACOPLAMIENTO DE MONTAJE/)

The mainly function of this fitting is connecting two pipes. Exist two coupling types, "regular" and "slip".

FITTING UNION: (UNION UNIÓN DE MONTAJE/)

this fitting allows the convenient future disconnection of pipes for maintenance or fixture replacement. It consists of three parts: a nut, a female end and a male end.

FITTING NIPPLE: (UNION BOQUILLA ROSCADA/)

It is a short stub of pipe, usually male-threaded steel, which connects two other fittings.

FITTING REDUCER: (UNION DE REDUCTOR)

It is a metallic joining made of copper or plastic (PVC) which allows change in pipe size. They are also needed to maintain the top or bottom, of pipe level.

FITTING TEE: (UNION T)

It is one of the most common pipe fitting, it is used to combine or divide fluids flow. It has a female thread-

sockets or opposed solvent weld socket and female threaded side outlet. A tee normally is used to change direction of of a pipe run, this also can connect pipes of different diameters.

FIBREBOARD:

(FIBRA DE MADERA/ FAIBƏ, BD:D)

A hard light substance made from wood fibres pressed together, used in building.

FILTER DRYER: (FILTRO SECADOR/)

It Works to filter or stop any type of uncleaness once passed through the system in order to avoid obstructing in capillary tube.

FIRST HOUR RATING (FHR):

A measure of the capacity of a water heater referring to the amount of hot water a tank water heater can supply in an hour starting with a full tank of hot water. The number is stated in gallons and is found on the top left corner of the Energy Guide label.

FLOW RATE: (TASA DE FLUJO/)

The amount of water in gallons flowing past a fixed point over a period of time, typically expressed in gallons per minute.

FLUE:

(TAPA DE TUBO/ FLU:)

The passage ways in heating equipment and vents through which combustion products pass to the outside atmosphere.

FLUE COLLAR: (CUELLO DE TUBO/)

The portion of a gas appliance designed for the attachment of a venting system.

FLOORBOARD: (TARIMA/ FLD: BD:D)

A long wooden board that is part of a wooden floor.



FIBREBOARD.



FILTER DRYER.



FLUE.



FLUE COLLAR.



FLOORBOARD.





FITTING DIVERTER TEE.



FILTER.



FILTER, BY-PASS (RESERVE)



FLUID PNEUMATIC.



FILTER-REGULATOR LUBRICATOR.



FITTING DIVERTER TEE:

The diverter tee is designed to allow flow to continue in the main line. This specialized type of tee fitting is used primarily in pressurized hydronic heating systems.

FILTER:

(FILTRO/ FILTƏ)

1. A device whose primary function is the removal by porous media of insoluble contaminants from a liquid or a gas. 2. Chemically inert, finely divided material added to the elastomer to aid in process and improve physical properties.

FILTER, BY-PASS (RESERVE): (FILTRO, POR PASE/)

A filter that provides an alternative unfiltered flow path around the filter element when a pre-set differential pressure is reached.

FLUID:

(FLUIDO/ 'FLU:1D)

A substance which tends to conform to the outline of its container and is capable of flowing as a liquid or a gas.

FLUID, PNEUMATIC: (FLUIDO, NEUMÁTICO/)

A fluid suitable for use in a pneumatic system, usually air.

FILTER-REGULATOR-LUBRICATOR (FRL): (FILTRO-REGULADOR-LUBRICADOR)

FRLs condition and prepare compressed air for use in fluid power systems. Pneumatic applications with properly conditioned air will operate longer, cost less and improve system efficiency.

FILLER: (RELLENO/)

A substance used for repairing holes in walls and in wood.

FLIP FLOP: (CIRCUITOS FLIP FLOW)

A digital component or circuit with two stable states and sufficient hysteresis so that it has "memory". Its state is changed with a control pulse; a continuous control signal is not necessary for it to remain in a given state.

FLUID, AQUEOUS: (FLUIDO, ACUOSO/)

A fluid that contains water as a major constituent besides the organic material. The fire-resistant properties are derived from the water content.

FLUID POWER: (PODER FLUIDO/)

Energy transmitted and controlled through use of pressurized fluid.

FORCE MOTOR: (MOTOR DE FUERZA/)

A type of electro-mechanical transducer having linear motion used in the input stages of servo valves.

FILTRATION RATIO: (RELACIÓN DE FILTRACIÓN/)

The ration of the number of particles greater than a given size (u) in the influent fluid to the number of particles greater than the same size (u) in the effluent fluid.

FLUID CAPACITY: (CAPACIDAD FLÚIDA/)

The liquid volume coincident with the "high" mark of the level indicator.

FLUID, FRICTION: (FLUIDO, FRICCIÓN/)

Friction due to the viscosity of fluids.



FLIP FLOP.



FLUID, AQUEOUS.



FLUID, POWER.



FORCE MOTOR.





FLOOR SHIFT.



FLYWHEEL.



FUEL FILTER.



FUEL INJECTION.



FLOOR SHIFT: (CAMBIOS DE PISO/)

A type of transmission shift linkage in which the various gears are actuated by a lever attached to the floor rather than by a lever attached to the steering system.

FLYWHEEL: (VOLANTE/ FLAT, WI:L)

A heavy, toothed wheel mounted to the rear of the crankshaft that smooths out the separate power surges imparted to the crankshaft as each cylinder fires by resisting the tendency of the engine to speed up at the start of the power stroke and to slow down toward the end. It also serves as part of the clutch by transmitting power to the gearbox in a car with manual transmission, acts as a vibration damper and balance member for the crankshaft, and engages the teeth of the starter motor when the engine is cranked.

FUEL FILTER: (FILTRO DE COMBUSTIBLE/)

A device installed in the fuel line that prevents impurities in the fuel from reaching and possibly clogging the carburetor.

FUEL INJECTION: (INYECCIÓN DE COMBUSTIBLE/)

A type of fuel system using a pump and injectors instead of a carburetor to meter fuel.

FUEL ECONOMY: (ECONOMÍA DE COMBUSTIBLE/)

The number of miles driven divided by the gallons of fuel consumed.

FUEL SYSTEM: (SISTEMA DE COMBUSTIBLE/)

The system that delivers fuel to the engine. It consists of a fuel tank, fuel filter, fuel pump, and the carburetor or fuel injector.

FUEL LINE: (LÍNEA DE COMBUSTIBLE/)

The pipe or tube through which fuel travels from the tank to the pump and from the pump through the carburetor or injector.



A mechanical or electrical device that draws gasoline from the fuel tank and delivers it to the carburetor or injector pump.

FULL-FLOATING AXLE: (EJE FLOTANTE/)

Drive axle construction where the axle shaft does not carry any car weight; its sole duty is to propel the car.

FULL-FLOW FILTER: (FILTRO DE FLUJO TOTAL/)

The type of oil filter in which all the oil from the oil pump flows through the filter.

FINAL PURCHASE PRICE: (PRECIO FINAL DE COMPRA/)

This price is equivalent to the amount you would pay for the vehicle if you were buying or financing rather than leasing. The final purchase price does not include any 'down' payment by the lessee.

FOUR-ON-THE-FLOOR: (CUATRO EN EL PISO/)

A four-speed manual transmission with floor mounted shift.

FINAL DRIVE RATIO: (RELACIÓN DE TRANSMISIÓN FINAL/)

The ratio between the driveshaft or transmission output shaft rpm and the drive-wheel axle shaft rpm. For example, if the ratio is 4.00:1 the driveshaft rotates four times for each rotation of the rear axle differential gear, the axle shafts and the wheels.



FUEL LINE.



FUEL PUMP.



FULL-FLOATING AXLE.



FULL-FLOW FILTER.





FENDER: (GUARDABARROS/)

A covering over the wheels to prevent mud from splattering.

FIREWALL: (CORTAFUEGOS/)

The partition between the engine compartment and the passenger compartment.

FLATHEAD: (DE CABEZA PLANA/)

An engine with all the valves located within the block on one side of the cylinder so that the head itself is flat.

FLUID LOGIC: (LÓGICA FLUIDA/)

A branch of fluid power associated with digital signal sensing and information processing, using components with or without moving parts.







GAUGE.



GAUGE DAMPER.



GAUSE, PRESSURE.



GAS METER.



GRANITE.



GAUGE:

(CALIBRADOR/ gErD3)

An instrument or device for measuring, indicating, or comparing a physical characteristic.

GAUGE DAMPER (SNUBBED) (MEDIDOR DE PRESION):

A device employing a fixed or variable restrictor inserted in the pipeline to a pressure gauge to prevent damage to the gauge mechanism caused by rapid fluctuations of fluid pressure.

GAUGE, PRESSURE: (PRESIÓN MANOMÉTRICA/)

A gauge that indicates the pressure in the system to which it is connected.

GAS METER: (MEDIDOR DE GAS/)

It is an instrument for measuring and recording the amount of gas produced or consumed at any vehicle.

GRANITE:

(GRANITO/ 'gRÆNIT)

a type of very hard stone, used especially for building.

GALVANIZE:

(GALVANIZAR/ gÆLVƏ NAIZ)

pieces of galvanized tin (=a soft white metal) that are used for making roofs or fences.

GREASE:

(GRASA/ gRI:S)

It has a smooth and viscous texture excelling.

GIRDER:

(VIGA/'g3:Də)

It is a large beam as of steal, concrete or timber used for supporting buildings or structures.

GAUGE, DIAPHRAGM: (CALIBRE, DIAFRAGMA/)

A gauge in which the sensing element is relatively thin and its inner portion is free to deflect with respect to its periphery.

GEARS:

(ENGRANAJE/ GIƏR)

Wheel-like parts with teeth cut into the rim. Meshing of the teeth of two gears enables one to drive the other, thus transmitting power.

GPH (GALLONS PER HOUR): (GALONES POR HORA/)

A measure of water use for water heaters.

GPM (GALLONS PER MINUTE): (GALONES POR MINUTO/)

The amount of water flowing through a plumbing fixture or pipe to your water heater.



GREASE.



GRIDER.



GAUGE, DIAPHRAGM.



GEAR.





GEARBOX.

GEARBOX:

(CAJA DE CAMBIOS/ 'grð, BoKS)

A device in the Drivetrain consisting of an input shaft, a system of gears and an output shaft that multiplies engine torque.

GEAR RATIO:

(RELACIÓN DE TRANSMISIÓN/)

The number of revolutions made by a driving gear compared to the number of revolutions made by the driven gear.







HUMIDISTAT.



HVAC.



HANDSAW.



HARDBOARD.



HOSE.



HUMIDISTAT: (HUMIDISTATO/)

An automatic device used to maintain humidity at a fixed or adjustable set point.

HVAC:

Heating, Ventilation, and Air Conditioning.

HANDSAW:

(SIERRA DE MANO/ 'HÆND,S):)

It is one hand tooth blade tool used for cutting Wood.

HARDBOARD:

(AGLOMERADO/ 'HE:D,BO:D)

thin light board made by pressing very small pieces of wood together

HOSE:

(MANGUERA/ Həʊz)

A flexible line or conductor whose nominal size is the inside diameter.

HARDCORE:

Pieces of broken stone and brick used to make the surface that something is built on

HEAT EXCHANGER: (INTERCAMBIADOR DE CALOR/)

A component of furnaces, the heat exchanger transfers heat to the surrounding air, which is then distributed throughout the home.



When an air handler or furnace is positioned on its side and circulates air in one end and out the other. Ideal for attic or crawl space installations.



It is a high intensity incandescent lamp that contains a small amount of halogen used in headlights and fog lamps.

HACKSAW:

(SIERRA PARA METALES/ 'HÆK,SD:)

It is a hand tool made of a tooth blade attached to a frame, used for cutting different types of material such wood or metal.

HOOK:

(GANCHO/ HԾK)

It is a small metallic element curving head with a screw in tip needed to hung or suspending not heavy objects hardboard.

HSPF:

(FACTOR DE RENDIMIENTO ESTACIONAL DE CALEFACCIÓN/)

The Heating Seasonal Performance Factor is the heating efficiency rating for heat pumps. The higher the rating, the more efficient the heat pump.



HEAT EXCHANGER.



HORIZONTAL FLOW.



HALOGEN LAMP.



HACKSAW.



ноок.





HYDRO PNEUMATICS: (HIDRÁULICA NEUMÁTICA/)

Pertaining to the combination of hydraulic and pneumatic fluid power.







IGNITION COIL.



INLINE ENGINE.



INTAKE MANIFOLD



INBOARD BRAKES.



IGNITION COIL: (BOBINA DE ENCENDIDO/)

It receives a small amount of electrical voltage from the battery and steps up the low "primary" voltage and amplifies it into a big jolt of voltage of about 20,000 volts, and sends it to the spark plugs via the distributor.

INLINE ENGINE: (MOTOR EN LÍNEA/)

An engine in which all the cylinders are arranged in a straight row.

INTAKE MANIFOLD: (COLECTOR DE ADMISIÓN/)

The connecting tubes between the base of the carburetor and the port openings to the intake valve or intake ports. The air-fuel mixture travels from the throttle body into a chamber called the plenum, which feeds individual tubes (called runners) which lead to the individual intake port. Its purpose is to transfer the air-fuel mixture to each cylinder. Also called "inlet pipe."

INBOARD BRAKES: (FRENOS INTERNOS/)

A type of brake design where the discs or drums and associated brake components are not located within the wheels.

INDUCTION SYSTEM: (SISTEMA DE INDUCCIÓN/)

The system that delivers the air-fuel mixture to the cylinders. Includes the carburetor or fuel injection system, intake manifold, intake ports, and intake valves.

INTAKE STROKE: (CARRERA DE ADMISIÓN/)

The first stroke of the four-stroke cycle during which the piston moves downward from top dead center to bottom dead center creating a partial vacuum and sucking the fuel-air mixture into the cylinder.

INDOOR COIL: (BOBINA DE INTERIOR/)

See Evaporator Coil.

ISO 9000:

A family of international standards for quality management and assurance.

INSULATION TAPE: (CINTA AISLANTE/)

It is a sticky tape works for insulating cables by covering it.

INHIBITOR: (INHIBIDOR/ IN'HIBITƏ)

Any substance which, when present in very small proportions, slows, prevents or modifies chemical reactions such as corrosion or oxidation.

INLET WATER TEMPERATURE: (TEMPERATURA DEL AGUA DE ENTRADA/)

The temperature of the cold water coming into a water heating system. When sizing water heaters, it is best to consider the coldest inlet water temperature that occurs in the region where the water heater will be installed.

INSULATION:

(AISLAMIENTO/ INSJU'LEIDƏN)

material used for preventing heat, cold, noise, or electricity from passing through something.

INSULATOR:

(AISLANTE/ 'INSJO, LEITƏ)

a substance that reduces the amount of heat, cold, noise, or electricity that can pass through something

IRON:

(HIERRO/ 'AIƏN)

a hard heavy metal that is a common element. It is used for making steel and is also used in many types of machine and building structures.



INDOOR COIL.



INSULATION TAPE.



INSULATION.



INSULATOR.



IRON.





INTERNAL COMBUSTION ENGINE.

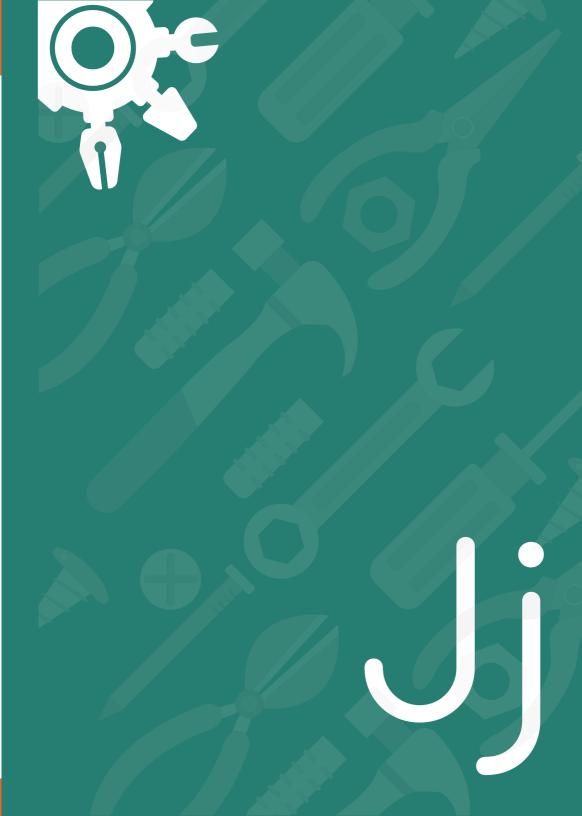
INTERNAL COMBUSTION ENGINE: (MOTOR DE COMBUSTIÓN INTERNA/)

One that burns its fuel within cylinders or some other enclosed space.

I=B=R:

The I=B=R emblem appears on hydronic heating products that have been certified by the Air-Conditioning, Heating and Refrigeration Institute. Hydronic product categories displaying the I=B=R emblem include hot water boilers, indirect-fired water heaters and finned tube baseboard units.







JOINT.



JOINT, ROTARY.

JOINT:

A line positioning connector.

JOINT, ROTARY: (JUNTA, ROTATORIA/)

A joint connecting lines which have relative operational rotation.

JUMP START: (ARRANQUE MOTORIZADO)

Cranking the engine of a car with a discharged or weak battery by attaching cables from the weak battery to a charged or helper battery.





KILOMETRE:

(KILÓMETRO/ KI'LpMITƏ)

A metric measurement equivalent to about 5/8 of a mile. There are 1.609344 kilometers in a mile.

KPH:

(KILÓMETROS POR HORA)

Kilometers per Hour.







LAMINATE.



LATH.



LEVEL.



LIQUID VISOR.



LAMINATE: (LAMINADO O PLASTIFICAFO)

A substance that consists of several thin layers of wood, plastic, glass etc.

LATH: (LISTON DE MADERA)

A long thin piece of wood used in building.

LEADS: (IMPERMIABILIZANTE)

flat pieces of lead used for covering roofs.

LEVEL: (NIVEL)

it is a device normally employed in construction used to determine if a surface is flat or even.

LIQUID VISOR: (VISOR DE SEGURIDAD INDUSTRIAL)

It is an element that allows watching running liquid (gas)in a refrigeration circuit or any other condensable gas.

LIME: (CAL)

A white substance used for making cement and for helping plants to grow.

LINE: (LINEA)

A tube, pipe or hose for conducting fluid.

LUMBER: (MADERA)

timber.

LATHE: (TORLO)

It is a power machine that works on gradual revolutions for giving shape and making different patterns materials.

LADDER: (ESCALERA)

It is an element used in construction made in a metallic or wood material needed as a mean of climbing up or down.

LIMESTONE: (PIEDRA CALIZA)

a type of white or grey stone containing calcium, used for building and making cement.

LINE RETURN: (TUBERIA DE RETORNO)

A pipe (conductor) to return the working fluid to the reservoir.

LINE, WORKING: (LINEA DE CONDUCTO ELECTRICO)

A line that conducts fluid power.

LUBRICATOR: (LUBRICADOR)

A device that adds controlled or metered amounts of lubricants into a fluid power system.



LATHE.



LADDER.



LIMESTONE.





LINE, WORKING.



LUBRICATOR.



LUG NUT.



LOBE.



LINE. WORKING: (LÍNEA, TRABAJANDO/)

A line that conducts fluid power.

LUBRICATOR:

(LUBRICADOR/ 'LU:BRIKEITƏR)

A device that adds controlled or metered amounts of lubricants into a fluid power system.

LUG NUT:

(TUERCA DE LLANTA/)

The nuts used to secure the wheels to the car.

LOBE: (LOBULO ROTATORIO)

An off-center or eccentric enlargement on a shaft which converts rotary motion to reciprocating.

LIMITED-SLIP DIFFERENTIAL: (DIFERENCIAL DE DESLIZAMIENTO LIMITADO/)

One using cone or disc clutches to lock the two independent axle shafts together forcing both wheels to transmit their respective drive torque regardless of the traction available.

LATERAL ACCELERATION: (ACELERACIÓN LATERAL/)

Sideways acceleration created when a car corners. As a result of this lateral acceleration, centrifugal force acts on the car and tried to pull it outward. To counteract this outward force the tires develop an equal and opposite force acting against the road.

LEADING ARM: (BRAZO PRINCIPAL/)

Independent suspension system having the wheel LIMITED-SLIP DIFFERENTIAL attached to the end of an arm that swings in a plane parallel to the longitudinal axis of the car. The wheel is ahead of or leads the fixed pivot point of the arm.



LONG NOSE PLIER: (ALICATES DE PUNTA LARGA/)

is a plier with a long pointed nose. A 7 inch long nose plier is very useful and is a good addition to your tool box. You will find the many uses of a long nose plier; from hard to-reach areas like removing a clip from a fan or holding the copper tube when brazing alone.







MOTOR OIL:

(ACEITE DE MOTOR/)

It is a liquid substance that Works for lubrication of internal combustion engine avoiding or minimizing friction.

MECHANIC JACK: (JACK MECÁNICO/)

It is a portable device used for raising or lifting heavy objects such vehicles from a short distance off ground.

MALLET:

(MAZO/ 'MÆLIT)

It is a hammer like hand tool used for hitting basically. It has a heavy head needed for striking a surface.

MOTORTOOL: (MOTORTOOL/)

It is a high revolution electric tool used manually for drilling plastic or copper plaques.

MUFFLER:

(MOFLE/ 'MAFLƏ)

A device for reducing gas flow noise. Noise is decreased by back pressure control of gas expansion.

MERV RATING: (CALIFICACIÓN MERV/)

The MERV (Minimum Efficiency Reporting Value) rating of a filter describes the size of the holes in the filter that allow air to pass through. The higher the MERV rating, the smaller the holes in the filter, the higher the efficiency.

MICRON: (MICRÓN/ MAIKRON)

A unit of length equal to one millionth of a meter, or one thousandth of a millimeter.



MOTOR OIL.



MECHANIC JACK.



MALLET.



MOTORTOOL







MACHINESCREW.



MARBLE.



MASONRY.



MDF.



MORTAR.



MACHINESCREW: (TORNILLO/)

Threaded fastener, either used with a nut or driven into a tapped hole, usually having a diameter of about ¼ in. (6.4 mm) or less and a slotted head for tightening by a screwdriver.

MARBLE:

(MÁRMOL/ 'M2:BƏL)

A hard smooth stone used for building and making statues. Marble is usually white with dark lines that are not regular in shape

MASONRY:

(ALBAÑILERÍA/'MEISƏNRI)

The bricks or stones that make a building, wall, or other structure

MDF:

(MDF/)

Medium-density fibreboard a building material made of small pieces of woodpressed together to form boards, used for making furniture, doors etc.

MORTAR:

(ARGAMASA/ MD:TƏ)

A substance used in building for joining bricks or stones, made by mixing together sand, water, and lime.

MILLING MACHINE: (FRESADORA/)

It is a power machine works on high revolutions for giving shape and making different patterns materials.

MSRP:

(PRECIO DE VENTA SUGERIDO POR EL FABRICANTE/)
Manufacturers suggested retail price.

MUD: (BARRO / LODO)

Earth used as a building material.

MANIFOLD:

(COLECTOR/ 'MÆNI, FƏÜLD)

Pneumatic manifolds are conductors that provide multiple connection ports.

MASTER CYLINDER:

(CILINDRO MAESTRO/)

A cylinder containing a moveable piston actuated by foot pressure producing hydraulic pressure to push fluid through the lines and wheel cylinders and force the brake linings or pads against the drum or disc.

MOTOR:

(MOTOR/ 'Məutə)

Principally a machine that converts electrical energy into mechanical energy.

MPG (MILES PER GALLON):

(MILLAS POR GALÓN/)

The number of miles driven divided by the gallons of fuel consumed.

MANUFACTURER DISCOUNTS:

(DESCUENTOS DEL FABRICANTE/)

In some leases, particularly subvented leases, the manufacturer reduces the MSRP, which lowers the purchase price of the vehicle, which the lease is based on. This is a form of capitalized cost reduction.



MUD



MANIFOLD.



MASTER CYLINDER.



MOTOR.





NAIL:

(CLAVO/ NEIL)

It is a metallic rod-shaped with a pointed tip and flattened head used to give support or fasten different material especially wood.

NUT:

(TUERCA/ NAT)

It is a hexagon piece of metal used in building for giving support or tightens bolt to a structure.

NEWTON METER (NM): (METRO DE NEWTON/)

A unit of torque. One pounds-force feet (lb.-ft) equals 1.356 Newton meters. One Newton meter equals 0.7375 lb.-ft.

NOR DEVICE:

(DISPOSITIVO NOR/)

A control device which has its output in the logical 1 state if and only if all the control signals assume the logical 0 state.



NAIL.



NUT.



NEWTON METER.





OUTDOOR COIL:

(BOBINA AL AIRE LIBRE/)

See Condenser Coil.

OSCILOSCOPE:

(OSCILOSCOPIO/)

It is an electronic instrument needed to measure and check electrical signals.

OR DEVICE:

(DISPOSITIVO OR/)

A control device which has its output in the logical o state if and only if all the control signals assume the logical o state, also known as a shuttle valve.

ODOMETER:

(CUENTAKILÓMETROS/ p'DpMITƏ)

An instrument, usually located in the same housing as the speedometer, for measuring and registering the miles and tenths of miles driven.

OIL PAN:

(COLECTOR DE ACEITE/)

A removable part of the engine, usually made of pressed steel, that attaches to the bottom of a cylinder and acts as an oil reservoir.

OIL PUMP:

(BOMBA DE ACEITE/)

An engine-driven pump that delivers oil to all the moving engine parts.

ODORS/CHEMICALS:

(OLORES / PRODUCTOS QUÍMICOS/)

Air contaminants in the form of gases.



OUTDOOR COIL.



OSCILOSCOPE.





OIL PAN.



OIL PUMP.



OVER-HEAD VALVE (OHV) (VÁLVULA DE RETENCIÓN/)

Valve-in-head engine in which the valves are directly above the piston.

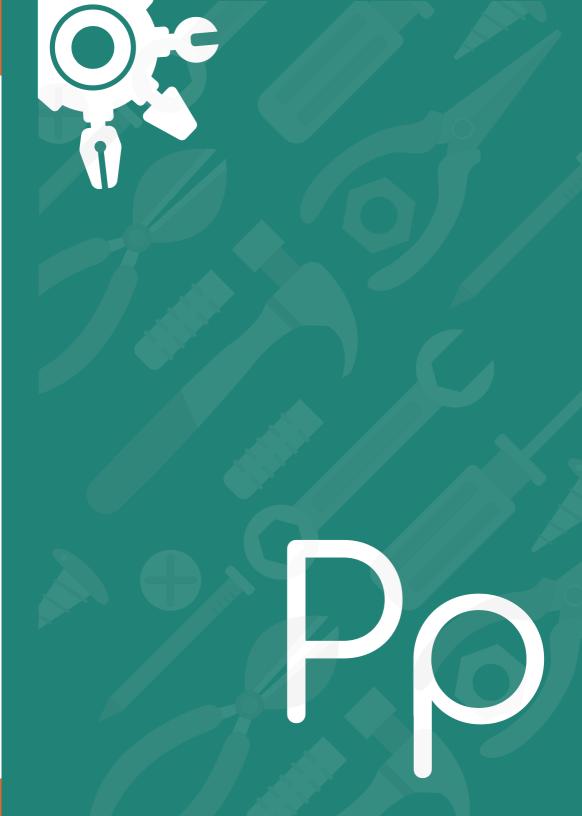
OPERATOR: (OPERADOR/)

A device that attaches to another assembly and applies force to the actuator of that assembly allowing it to act in the intended manner.

OVERHEAD CAM: (CÁMARA DE ARRIBA/)

A camshaft located above the cylinder head or heads instead of in the cylinder block.







PROGRAMMABLE THERMOSTAT.





POWERSANDER.



POST HOLE DIGGER.



PARQUET.





PROGRAMMABLE THERMOSTAT:

(TERMOSTATO PROGRAMABLE/)

A thermostat with the ability to preset different temperature/time settings for your heating and cooling equipment.

PLIERS:

(PINZA/ 'PLAIƏZ)

It is a hand tool with two crossing pieces attached, used for manipulating, bending, holding small objects and other actions.

POWERSANDER:

(LIJADORA ELÉCTRICA/)

It's a power machine that uses sandpaper to polish rough details in material such wood.

POST HOLE DIGGER:

(BUSCADOR DE AGUJEROS/)

It is a hand tool for digging postholes; especially: one operated from the power takeoff on a tractor.

PARQUET:

(PARQUÉ/ 'PE:KEI)

A floor made of blocks of wood that form a pattern.

PAVING:

(PAVIMENTO/ 'PEIVIN)

Bricks, blocks of stone, or concrete used for covering an area of ground.

PILOT:

(PILOTO/ 'PAILƏT)

A small gas flame utilized to ignite gas at a main burner of heating equipment.

PARTICLES:

(PARTICLES/ PT:TIKL)

Any substances measuring less than 100 microns in diameter. The EPA has found that small particles (less than 2.5 microns) are responsible for the health effects of greatest concern.

PLANK:

(TABLA/ PLÆŊK)

A long narrow piece of wood used for making structures such as floors

PLASTER:

(YESO/ 'PLE:STƏ)

A substance that is spread onto walls and ceilings to form a hard smooth surface:

PLASTERBOARD:

(PLACA DE YESO/ 'PLE:STƏ,BD:D)

A plaster that is put between layers of strong paper, and is used for covering walls:

PLYWOOD:

(MADERA CONTRACHAPADA/ 'PLAI, WUD)

A type of board used for building houses, furniture etc, made from thin layers of wood that are fixed together using glue.

PRECAST:

(HORMIGÓN PREFABRICADO/ 'PRI: KE:ST)

Already made into the correct shape to use for building a structure.

PAINT BRUSH:

(PINCEL/)

It is a hand held instrument used in painting made of bristles and handle also used for cleaning or grooming.

PASSIVE DEVICE:

(DISPOSITIVO PASIVO/)

A device that does not have a dedicated supply source and operates solely on the input(s) alone.

PLANKING:

(TABLAJE/ 'PLÆŊKIŊ)

A planks used for making a floor



PLANK.



PLASTER.



PLASTERBOARD.



PLYWOOD.



PRECAST.



PAINT BRUSH.







PAINT ROLLER.



PARTICLE BOARD.



PISTON ROD.



POPPET.



POWER SOURCE:

(FUENTE DE ALIMENTACIÓN/)

It is an electrical device used for providing electricity.

PHILLIP SCREWDRIVER:

(DESTORNILLADOR PHILLIP/)

It is a metallic hand tool with a plastic handle with a cross tip, works for adjusting; tightening or loosening screws.

PAINT ROLLER:

(RODILLO/)

It is an instrument used in painting made of absorbing spongethat is rolled over a flat surface to be painted.

PARTICLE BOARD:

(TABLERO DE PARTÍCULAS/)

It is a tightly compressed board with a small particles of wood used for different purposes in building.

PISTON ROD:

(VÁSTAGO DEL PISTÓN/)

The element transmitting mechanical force and motion from the piston.

POPPET:

(VÁLVULA DE ASIENTO/ 'PpPIT)

A component of a valve that seals or opens an internal passage across its full area to allow or prevent flow.

PORT:

(PUERTO/PD:T)

A terminus of a passage in a component to which conductors can be connected.

POWER SUPPLY:

(FUENTE DE ALIMENTACIÓN/)

The component or group of components which supplies and processes the fluid for operating fluidic systems.

PORT, DIFFERENTIAL PRESSURE: (PUERTO, PRESIÓN DIFERENCIAL/)

A port that provides a passage to the upstream and downstream sides of a component.

PORT, DIFFERENTIAL PRESSURE.



It is an element of the refrigeration equipment related to all circuits that deal with gases, It is also known as pressure interruptor, which mainly function is open or close an electric circuit depending on the reading of the pressure of an electric flow.



PRESSURE SWITCH.

PRESSURE, DIFFERENTIAL (PRESSURE DROP): (CAÍDA DE PRESIÓN/)

The difference in pressure between any two points of a system or a component.



PRESSURE, DIFFERENTIAL.

PLENUM:

(CAMARA/ 'PLI:NƏM)

A chamber, located between the throttle body and the runners of an intake manifold, used to distribute the intake charge evenly and to enhance engine breathing.



POP-OFF VALVE: (VÁLVULA POP OFF/)

A one-way valve that opens to the atmosphere above a certain set pressure to relieve excessive internal pressure buildup; often used with a turbocharger installation to the limit boost pressure to the engine.



POP-OFF VALVE.

POWER STEERING:

(DIRECCIÓN ASISTIDA/)

A steering system generally using hydraulic pressure to multiply the driver's effort as he turns the steering wheel so that steering effort is reduced.



PRESSURE:

(PRESIÓN/ 'PREΣƏ)

Force per unit area, usually expressed in pounds per square inch (bar).



PUSH ROD.



PRESSURE GAUGE

PUSH ROD:

(VARILLA DE EMPUJE/)

A connecting link in an operating mechanism, specifically the rod interposed between the valve lifter and the rocker arm on overhead-valve engines.

PRESSURE GAUGE (MANÓMETRO):

Pressure differential above or below ambient atmospheric pressure.

PRESSURE CONTROL RANGE: (PRESIÓN RANGO DE CONTROL/)

The permissible limits between which system pressure maybe set.

PRESSURE CRACKING:

(PRESIÓN AGRIETAMIENTO/)

The pressure at which a pressure-operated valve begins to pass fluid.

PRESSURE INDUCED:

(PRESIÓN INDUCIDA/)

Pressure generated by an externally applied force.

PRESSURE, INLET:

(PRESIÓN DE ENTRADA/)

The pressure at the apparatus inlet port.

PRESSURE, MAXIMUM INLET:

(PRESIÓN DE ENTRADA MÁXIMA/)

The maximum rated gauge pressure applied to the inlet.

PRESSURE NOMINAL:

(PRESIÓN NOMINAL/)

A pressure value assigned to a component or system for the purpose of convenient designation.



PRESSURE RATED:

(PRESIÓN CLASIFICADA/)

The qualified operating pressure which is recommended for a component or system by the manufacturer.z

PRESSURE STATIC:

(PRESIÓN ESTÁTICA)

The pressure in a fluid at rest.

PRESSURE SURGE: (PRESION DE SOBRECARGA)

The pressure resulting from surge conditions.

PRESSURE BACK:

(PRESIÓN POSTERIOR)

The pressure encounered on the return side of a system

PRESSURE BREAKLOOSE (BREAKOUT):

(PRESIÓN DE RUPTURA/)

The minimum pressure which initiates movement.

PRESSURE BURST:

(PRESIÓN ESTALLIDO/)

The pressure that causes failure of and consequential loss of fluid through the product envelope.

PRESSURE CHARGE:

(PRESIÓN DE CARGA/)

The pressure at which replenishing fluid is forced into a fluid power system.

PRESSURE PROOF: (PRESIÓN DE PRUEBA/)

The non-destructive test pressure, in excess of the maximum rated operating pressure, which causes non-permanent deformation, excessive external leakage, or other resulting malfunction.





QUICK-DISCONNECT FITTING: (ACOPLAMIENTO DE DESCONEXIÓN RÁPIDA/)

A component that can quickly join or separate a fluid line without the use of tools or special devices.

QUICK-DISCONNECT FITTING





REFRIGERANT:

(REFRIGERANTE/ RI'FRID3ƏRƏNT)

A chemical that produces a cooling effect while expanding or vaporizing.

R410A REFRIGERANT: (REFRIGERANTE R410A/)

A chlorine-free refrigerant that meets the EPA's newest, most stringent environmental guidelines.

REFRIGERANT LINES: (LÍNEAS DE REFRIGERANTE/)

Two copper lines that connect the outdoor air conditioner or heat pump to the indoor evaporator coil.

ROUTER:

(FRESADORA/ 'RAUTƏ)

It is a power machine for cutting into or below a main surface or engraving plate.

REGULATOR, AIRLINE PRESSURE: (REGULADOR, PRESIÓN DE LA LÍNEA AÉREA/)

A regulator that transforms a fluctuating air pressure supply to provide a constant lower pressure outlet.

RESERVOIR: (DEPÓSITO/ 'REZƏ, VWI:)

A container for storage of liquid in a fluid power system.

RECOVERY EFFICIENCY: (EFICIENCIA DE RECUPERACIÓN/)

The ratio of energy delivered to heat cold water compared to the energy consumed by the water heater.

RECLAIMING: (RECUPERAR/)

Returning used refrigerant to the manufacturer for disposal or reuse.

RECYCLING:

(RECICLAJE/ RI: 'SAIKLIN)

Removing, cleaning and reusing refrigerant.



REFRIGERANT.



R410A REFRIGERANT.



REFRIGERANT LINES.



ROUTER.







RING.O.



RADIATOR.



RIM.



ROCKER ARM.



ROLL BAR.



RING, O:

(ANILLO, O/)

A ring that has a round cross-section.

RADIATOR:

(RADIADOR/ 'REIDI EITƏ)

A device that cools the liquid in the cooling system by allowing it to circulate through a series of water channels, which are exposed to air ducts.

RIM:

(ARMAZÓN/ RIM)

The metal assembly consisting of a base and either a side ring or a side and lock ring combination, which are removable from one side for tire mounting. The opposite side has a fixed flange to retain the tire.

ROCKER ARM: (BALANCÍN/)

A lever located on a fulcrum or shaft, one end on the valve stem and the other either on the push rod or directly on the camshaft lobes. As the camshaft rotates, the arms rock on their fulcrums causing the valves to open and close.

ROLL BAR: (BARRA ANTIVUELCO/)

A hoop of tubular steel installed behind the driver and extending above his head and across the car. The rollbar helps protect the driver from injury if the car rolls over.

RACK & PINION STEERING: (DIRECCIÓN DE PIÑÓN Y CREMALLERA/)

Steering system having a pinion gear on the end of the steering shaft that mates with a rack. When the steering wheel is turned, the pinion turns, moving the rack to the left or right. This movement is carried through tie rods to the steering arms at the wheels.

ROLL CAGE: (JAULA ANTIVUELCO/)

A tubular steel structure incorporating a rollbar plus additional bars along the doors, windshield header, roof rails, etc., built into some racing cars to help protect the driver if the car rolls over, is impacted by another car or crashes.

ROTARY ENGINE: (MOTOR ROTATIVO/)

An internal combustion engine which is not of a reciprocating (piston) engine design. There is no true crankshaft, although the power-take-off shaft is sometimes called the crankshaft. It is stationary or fixed in that it simply spins in place. The central rotor turns in one direction only and yet produces the required intake, compression, firing and exhaust strokes. Because it uses rotary motion instead of reciprocating motion, the rotary engine has better balance and less vibration than piston engines. Two common rotary engines are the gas turbine and the Wankel.

ROTOR: (ROTOR/ ˈrəʊtə)

A small rotating cap-like unit at the end of the distributor shaft. It is located on the breaker cam inside the cap. It connects between the center electrode and the various outer spark plug terminals as it turns, thus distributing the high voltage from the ignition coil secondary winding to the proper spark plug.

ROAD HOLDING:

The ability of a vehicle to grip the pavement.

REFUNDABLE DEPOSIT: (DEPÓSITO REEMBOLSABLE/)

This is a refundable deposit required at lease inception. In some cases it may be used to satisfy the final monthly payment. It is sometime called a security deposit.



ROLL CAGE.



ROTARY ENGINE.



ROTOR..



RESIDUAL DISCOUNT: (DESCUENTO RESIDUAL/)

If the end-of-lease purchase price (stated residual value) is greater than the expected end-of-lease value (expected residual value), the dollar difference represents the value of the vehicle that you will not pay for during the lease.

RESIDUAL PENALTY: (PENA RESIDUAL/)

If the end-of-lease purchase price (stated residual value) is less than the expected end-of-lease value (expected residual value), the dollar difference represents the additional value of the vehicle you'll pay for during the lease.

RESIDUAL VALUE (EXPECTED): (VALOR RESIDUAL (ESPERADO) /)

This is the projected expected value of the vehicle at the end of the lease. Residual value is a measure of the vehicle's expected depreciation.

RESIDUAL VALUE (STATED): ((VALOR RESIDUAL ()

The stated residual value is usually the same as the end-of-lease purchase price. The higher the stated residual value of the car, the lower your monthly payments. Stated residual values are often higher or lower than the expected residual value for a car, the lessor can raise or lower the monthly payments and the net interest rate for the lease.

Stated residual value also determines whether you should buy the vehicle at the end of the lease. If at the end of a lease, the vehicle's market value is less than the stated residual value, the lessee would be prudent not to purchase the car. On the other hand, if the actual market value were greater than the predetermined residual, then the lessee could buy the car, sell it, and pocket the difference.







SLEDGEHAMMER.



SANDSTONE.



SCROLL COMPRESSOR.



SANDPAPER.



SLEDGEHAMMER:

(MAZO/ 'SLED3, HÆMƏ)

IT a hand tool large heavy hammer used with both hands needed to crack different surfaces such walls, or floor.

SANDSTONE:

(ARENISCA/ 'SÆND STƏUN)

A type of pale yellow stone used for building, made from sand that has become hard over many years.

SCROLL COMPRESSOR:

(COMPRESOR DE DESPLAZAMIENTO/)

A compressor that works in a circular motion, as opposed to up-and-down piston action.

SANDPAPER:

(PAPEL DE LIJA/)

It is an element used in construction consisting of a paper layer of sand used for smoothing or polishing rough surfaces.

SCAFFOLDING:

(ANDAMIOS/ 'SKÆFƏLDIN)

It is a metallic structure used for reaching different high levels in construction.

SEER:

(REGULADOR DE TEMPERATURA DE AGUA)

Heat energy that escapes stored water in a tank-type water heater, requiring that water to be heated even when there is no demand. Manufacturers reduce stand by loss in tank water heaters by insulating the tank.

SHOVEL: (PALA/'\(\sum_r\rightarrow\rightarro

It is a hand tool made of a broad metal blade attached to a handle, used for taking up or throwing dirt or other loose material.

SOLENOID VALVE: (VÁLVULA DE SOLENOIDE/)

This is an electric valve used to control gas inlet (Pneumatic system) or fluids (hydraulic systems).

START CAPACITOR: (INICIAR CAPACITOR/)

These are some devices to store electricity; they are normally used for incrementing monofasic motor start torque.

SINGLE PACKAGE: (PAQUETE INDIVIDUAL/)

A heating and cooling system contained in one outdoor unit.

SPLIT SYSTEM: (SISTEMA DIVIDIDO/)

An HVAC system in which some components are located inside the structure of the house and some are located outside. Split systems should be matched for optimal efficiency.

STARTER MOTOR: (MOTOR DE ARRANQUE/)

It is an electric engine feeded by direct current attached with reduces sized magnets used for facilitating starter in internal combustion engine.



SHOVEL.



SOLENOID VALVE.



START CAPACITOR.



SPLIT SYSTEM.



STARTER MOTOR.





SEAL. DYNAMIC.



SELECTOR (VALVE).



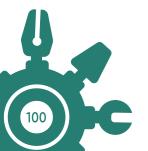
SENSOR.



SEAL, ELASTOMER.



SEAL, ROD(SHAFT).



SEAL, DYNAMIC: (SELLO, DINÁMICO/)

A sealing device used between parts that have relative motion.

SEAL, STATIC (GASKET): (SELLO, ESTÁTICO/)

A sealing device used between parts that have no relative motion.

SELECTOR (VALVE): (SELECTOR / SI'LEKTƏ')

A device that selects from separate power sources at two input ports and directs the selected source to a single output port.

SENSOR: (SENSOR/ 'SENSƏ)

A device that detects and transmits changes in external conditions.

SEAL, ELASTOMER: (SELLO, ELASTÓMERO/)

A material having rubber-like properties; i.e., having the capacity for large deformation and rapid, substantially complete, recovery on release from the deforming force.

SEAL, ROD (SHAFT): (SELLO, EJE DE VARILLA/)

A sealing device that seals the periphery of a piston rod.

SILENCER.

(SILENCIADOR/ 'SAILƏNSƏ)

A device for reducing gas flow noise. Noise is decreased by tuned resonant control of gas expansion.

STANDBY LOSS:

(PÉRDIDA EN ESPERA/)

Heat energy that escapes stored water in a tank-type water heater, requiring that water to be heated even when there is no demand.

SHINGLE:

(GRAVA/ '**ΣiNg∂L**)

one of many small flat pieces of wood that form the outer surfa/ce of a wall or roof.

SLAB:

(LOSA/ SLÆB)

A large flat piece of a hard material such as stone or wood.

SLATE:

(LOSA/ SLEIT)

a single flat piece of slate that is used with others for covering a roof.

STONE:

(PIEDRA/ STƏUN)

the hard substance that rocks are made of, often used for building.

STUCCO:

(ESTUCO/ 'sτλκəʊ)

a substance used for covering walls, usually on the outside of a building, to give them a rough surface

SEAL, CUP:

(SELLO, COPA/)

A sealing device with a radial base integral with an axial cylindrical projection at its outer diameter.

STROKE RATIO:

(RELACIÓN DE GOLPE/)

Each push-button valve selected has a given actuation stroke and force. The thumb and Cam Operators will provide an increased stroke and decreased force in the ratios noted while providing a correct ergonomic or machine interface for various system applications.



SLAB.



SLATE.



STONE.



STUCCO.



SEAL, CUP.





SEMI-ELLIPTIC SPRINGS.



SEMI-FLOATING AXLE.



SLIP JOINT.



SOLENOID.



SLICK.



SEMI-ELLIPTIC SPRINGS: (RESORTES SEMIELÍPTICOS/)

Type of leaf spring that takes its name from the shape which is part of an ellipse.

SEMI-FLOATING AXLE:

(EJE SEMI FLOTANTE/)

Drive axle construction where the axle shaft supports the weight of the car in addition to being the means of propulsion.

SLIP JOINT:

(JUNTA DESLIZANTE/)

A variable length connection that permits the dive shaft or axle shaft to change its length as the shaft moves up and down.

SOLENOID:

(SOLENOIDE/ 'SOULT, NOID)

An electrically operated magnetic device used to operate some unit. A movable iron core is placed inside a coil of wire, which moves because of magnetic attraction when electric current is fed to the coil. When current flows through the coil, the core will attempt to center itself in the coil. In so doing, the core will exert considerable force on anything it is connected to.

SLICK: (RESBALADIZO/)

A treadless tire used for racing on dry surfaces.

SUBVENTED LEASE: (ARRENDAMIENTO SUBVENCIONADO/)

A subvented lease is a lease offered by manufacturers with special incentives to make it more attractive. Special incentives often take the form of a lower base interest rate, higher residual values, and manufacturer discounts. In many cases, a subvented lease will have a lower net interest rate than other leases. Subvented leases are usually only available for a limited time and the terms are not negotiable. Any negotiated change in the terms will result in a different net interest rate.

SPACE FRAME:

(MARCO ESPACIAL/)

Type of frame construction offering high rigidity for minimum weight, used for some racing and low production cars.

SPARK PLUG:

(BUJÍA/)

A device inserted into the combustion chamber of an engine that provides the gap across which the high-tension voltage jumps, creating a spark that ignites the compressed fuel-air mixture.

SPEEDOMETER: (VELOCÍMETRO/)

An instrument for measuring and indicating the speed at which a car is traveling.

SPOILER:

(ESPOILER/ 'SPOILE)

An aerodynamic device attached to a vehicle (usually under the front bumper or on the decklid) to either reduce drag or induce downforce on the vehicle. So called because it spoils the normal flow of air over or under the vehicle.

STRUT:

(PUNTAL/ STRAT)

A single, self-contained pivoting suspension unit that integrates a coil spring with a shock absorber. Struts are used on front wheel drive automobiles.

SKI DPAD: (PISTA CIRCULAR DE RADIO)

A large area of smooth, flat pavement used for various handling tests. Roadholding is measured by defining a large-diameter circle (Car and Driver magazine uses 300 feet) on the skidpad and measuring the fastest speed at which the car can negotiate the circle without sliding off.



SPACE FRAME.



SPARK PLUG.



SPEEDOMETER.



SPOILER.



STRUT.





SUPERCHARGER.



SUSPENSION.



SWAY BAR.

SUPERCHARGER: (SUPERCARGADOR/)

An air compressor designed to force air, under pressure, into the cylinder. Can be mounted between the carburetor and cylinders or between the carburetor and the atmosphere. It boosts the power of the engine.

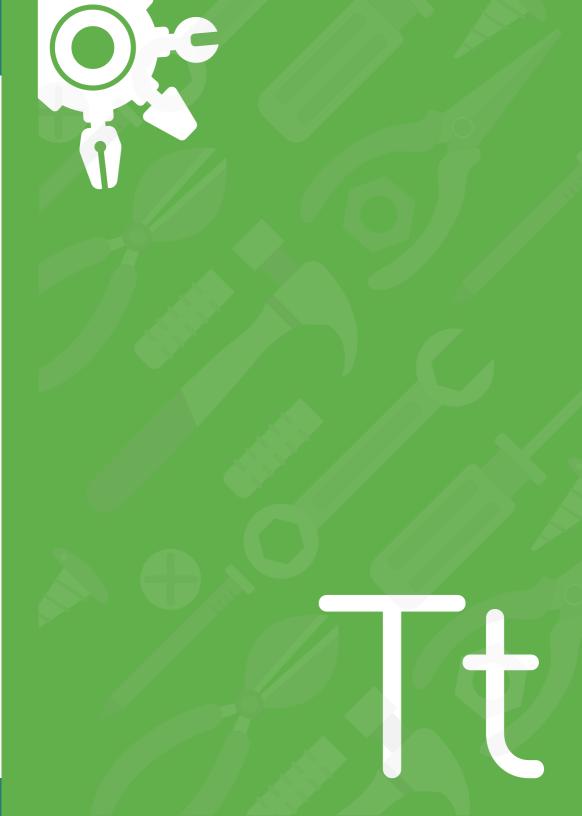
SUSPENSION: (SUSPENSIÓN/SƏ'SPENSƏN)

Refers to the various springs, shock absorbers and linkages used to suspend a car's frame, body, engine and drivetrain above the wheels.

SWAY BAR: (BARRA ESTABILIZADORA/)

Sometimes called the "anti-sway bar," "stabilizer bar," or even "roll-bar." It is usually a round bar, which connects the left wheel suspension assembly with the right side. It may be found at the front and/or rear. Its main function is to keep both wheels rolling at the same rate when meeting bumps; but it also affects handling. A front anti-roll bar increases understeer and a rear bar increases oversteer.







THERMOSTAT.



THERMOSTATIC VALVE.



TEMPERATURE CONTROL.



THERMOSTAT:

(TERMOSTATO/ 'O3:MO STÆT)

It is an element that controls the temperature either hot or cold avoiding damaging of a product in conservation.

THERMOSTATIC VALVE:

(VÁLVULA TERMOSTÁTICA/)

It is key expansion device for refrigeration and air conditioning systems. It has the capacity to make accurate pressure falling between capacitor and evaporator in the system.

TEMPERATURE CONTROL: (CONTROL DE TEMPERATURA/)

It is an instrument used to graduate the temperature. An input is connected from a temperature sensor and output connected to an element such as heat or ventilator.

TEMPERATURE RISE (DELTA T): (AUMENTO DE LA TEMPERATURA/)

The difference between the inlet cold water temperature and the heated water temperature that your water heater delivers.

THERMAL EFFICIENCY: (EFICIENCIA TÉRMICA/)

The ratio of energy delivered as heated water compared to the energy consumed by your water heater.

THERMAL EXPANSION VALVE: (VÁLVULA DE EXPANSIÓN TÉRMICA/)

The metering device or flow control that regulates the amount of liquid refrigerant allowed to enter the evaporator.

TON:

(TONELADA/ TAN)

Unit of cooling capacity. A "ton" of air conditioning refers to capacity in relation to melting one ton of ice in 24 hours. 288,000 Btu are required to melt one ton of ice in 24 hours (or 12,000 Btu/hr). A 2-ton air conditioner has a nominal capacity of about 24,000 Btu/h.



TWO-STAGE OPERATION: (OPERACIÓN EN DOS ETAPAS/)

Provides two levels of heating or cooling output for greater temperature control, energy efficiency and improved indoor air quality.



TWO-STAGE OPERATION.

TROWEL:

(PALAUSTRE/PALUSTRE)

It is a hand tool flat blade with a handle, needed to carry, mixing and depositing different mixtures in construction.



TROWFL

TOGGLED BOLT: (PERNO DE PALANCA)

It is a metallic element also known as butterfly anchor used for hanging things particularly in drywalls. This metallic element has two wings that opens inside a hollow wall bracing against it to hold the fastener securely.



TOGGELD BOLT.

TILE:

(BALDOSA/ TAIL)

A flat piece of baked clay or stone that is used for covering a roof.



TILE.

TIMBER:

(MADERA/ 'TIMB)

A piece of wood used for building.



TIE ROD:

(TIRANTE/)

An axial external cylinder element that traverses the length of the cylinder. It is pre-stressed at assembly to hold the ends of the cylinder against the tubing. Tie rod extensions can be a mounting device.



TIMBER.

TORQUE: (TORQUE/ TO:K)

Rotary force transmitted by the driving shaft of the pump.





TORQUE MOTOR.



TRANSDUCER FLOW.



TRUNNION.



THROTTLE BODY



TORQUE MOTOR:

A type of electro-mechanical transducer having rotary motion used in the input stages of servo valves

TRANSDUCER, FLOW: (TRANSDUCTOR, FLUJO/)

A device that converts fluid flow to an electrical signal.

TRUNNION:

(MUÑÓN/ 'TRANJƏN)

A mounting device consisting of a pair of opposite projecting cylindrical pivots. The cylindrical pivot pins are at right angle or normal to the piston rod centerline to permit the cylinder to swing in a plane.

THROTTLE BODY:

(CUERPO DEL ACELERADOR/)

A housing containing a valve to regulate the airflow through the intake manifold. The throttle-body is usually located between the air cleaner and the intake plenum.

TUBING:

(TUBERÍA/ 'TJU:BIN)

A stiff material in the form of a tube used for conveying gases or liquids.

TORQUE CONVERTER: (CONVERTIDOR DE TORQUE/)

A unit in an automatic transmission, quite similar to the fluid coupling, that transfers engine torque to the transmission input shaft. It also cushions the flow of power. Unlike the fluid coupling, the torque converter can multiply engine torque. This is accomplished by installing one or more stators between the torus members. In the torque converter the driving torus is referred to as the "pump" and the driven torus as the "turbine." The engine drives the impeller, which in turn impels fluid against the vanes of a turbine connected through transmission gears to the driveshaft of the automobile. The stator redirects oil flow from the turbine to boost impeller action and multiply engine torque.

THRUST BEARING: (COJINETE DE EMPUJE/)

A bearing with flanges on its two sides that prevents a shaft such as the crankshaft from moving endwise.



(CADENCIA/ 'TAIMIN)

Refers to the crankshaft angles at which the valves and ignition points open and close.

TIMING CHAIN:

(CADENA DE DISTRIBUCIÓN/)

A chain for driving the camshaft from the crankshaft.

TIMING BELT:

(CORREA DENTADA/)

A belt for driving the camshaft from the crankshaft.

TIMING GEARS:

(CORREA DENTADA/)

A method of driving the camshaft from the crankshaft often used where long life and hard service are expected as in commercial vehicles and race cars.

TONNEAU COVER: (CUBIERTA DE LONA/)

A cover of leather or other soft pliable material used for protecting the interior of a convertible when the softtop is down.

TRANSAXLE:

(TRANSEJE/TRÆNZ'ÆKSƏL)

A drive setup in which the transmission gearbox, clutch, final drive, and differential are combined into a single unit connected directly to the driveshaft. It is used mostly in rear-engine cars.



THRUST BEARING.



TIMING CHAIN.



TIMING GEARS.



TONNEAU COVER...





UNDERSTEER: (SUBVIRAJE/ 'ANDƏ STIƏ)

The tendency for a vehicle, when negotiating a corner, to turn less sharply than the driver intends. The front end wants to run wide in a turn. To correct this problem, the suspension needs to be stiffer in the front or softer in the rear. A front-engine vehicle has a natural tendency to plow straight ahead on turns (i.e., understeer) unless its suspension is adjusted to counteract it.





VACUUM PUMP: (BOMBA ASPIRADORA/)

A device that uses mechanical force and motion to evacuate gas from a connected chamber to create sub-atmospheric pressure.



A device that controls fluid flow direction, pressure or flow rate.

VALVE, ACTUATOR: (VÁLVULA, ACTUADOR/)

The valve part(s) through which force is applied to move or position flow-directing elements.

VALVE, DIRECT-OPERATED: (VÁLVULA, DE FUNCIONAMIENTO DIRECTO/)

A valve in which the controlling forces acting on the element directly influence the movement of the control elements.

VALVE, DIRECTIONAL CONTROL: (VÁLVULA, CONTROL DIRECCIONAL/)

A valve whose primary function is to direct or prevent flow through selected passages.

VALVE, DIRECTIONAL CONTROL, 3-WAY: (VÁLVULA, CONTROL DIRECCIONAL, 3 VÍAS/)

A directional control valve whose primary function is VALVE DIRECT-OPERATED. to pressurize and exhaust a port.

VALVE, AIR: (VÁLVULA, AIRE/)

A valve for controlling air.

Valve, Cartridge. A valve that working parts contained in a cylindrical body. The cylindrical body must be inserted into a housing for use. Ports through the body cooperate with ports in the containing housing.



VACUUM PUMP.



VALVE.



VALVE, ACTUATOR.









VALVE, PROPORTIONAL.



VALVE QUICK EXHAUT.



VALVE, RELAY.



VALVE, SHUTTLE.



VALVE SLIDE.



VALVE, PROPORTIONAL: (VÁLVULA, PROPORCIONAL/)

A valve that relies on the laws of fluid pressure to distribute input forces to one or more output lines. A proportioning valve can increase or decrease forces for each output, depending on the cross-sectional surface areas of those output lines.

VALVE, QUICK EXHAUST: (VÁLVULA, ESCAPE RÁPIDO/)

Valve in which when air pressure falls at the inlet, the outlet is automatically opened to the exhaust.

VALVE, RELAY: (VÁLVULA, ESCAPE RÁPIDO/)

A logic device that receives control signals and changes flow conditions in one or more controlled flow passages.

VALVE, SHUTTLE: (TRANSBORDADOR DE VÁLVULA/)

A connective valve that selects one or two or more circuits because flow or pressure changes between the circuits.

VALVE, SLIDE: VÁLVULA DE PASO/)

A valve in that the flow paths are connected or isolated by means of a flat movable sliding member. The movement may be axial, rotary or both.

VALVE, FLOW CONTROL (FLOW METERING): (VÁLVULA, CONTROL DE FLUJO/)

A valve whose primary function is to control flow rate.

VALVE, GATE: (COMPUERTA DE VÁLVULA/)

A straight-through shut-off valve in which the valve element moves perpendicularly to the axis of the flow to control opening and closing.

VALVE, NEEDLE: (VÁLVULA, AGUJA/)

A flow control valve in which the adjustable control element is a tapered needle. Its usual purpose is the bidirectional control of flow.

VALVE, PILOT-OPERATED (INDIRECT): (VÁLVULA, PILOTO OPERADO/)

A valve in which a relatively small flow through an integral flow path (pilot) controls the movement of the main elements.

VALVE, PILOT: (VÁLVULA, PILOTO/)

A valve applied to operate another valve.

VALVE, PINCH:

A straightforward shut-off valve in which the valve element consists of a flexible sleeve that is distorted to control the flow.



VALVE, FLOW CONTROL



VALVE, NEEDLE.







VARIABLE SPEED MOTOR.



VENTILATOR..



VISE.

VELOCITY SELECTOR: (SELECTOR DE VELOCIDAD/)

It is an element that allows selecting low, mid or high. velocity or revolutions per minute of a motor.

VARIABLE SPEED MOTOR: (MOTOR DE VELOCIDAD VARIABLE/)

A motor that automatically adjusts the flow of warm or cool air for ultimate comfort.

VENTILATOR: (VENTILADOR/ 'VENTILEITƏ)

A system that exchanges stale, re-circulated indoor air with fresh, filtered outside air.

VENTING: (VENTILACIÓN/)

Removal of combustion products and process fumes to the outer air.

VENTING SYSTEM: (SISTEMA DE VENTILACIÓN/)

A continuous open passageway from the flue collar or draft hood of a gas-burning appliance to the outside atmosphere for the purpose of removing products of combustion.

VISE:

(ATORNILLAR/ VAIS)

It is a heavy tool with two jaws adjusted by lever used to hold firmly an object while being done on it.

VISCOSITY:

(VISCOSIDAD/ VIS'KoSITI)

Refers to the ability of a liquid to flow. An oil with high viscosity is very thick and flows slowly; an oil with low viscosity flows easily.



VALVE, DIRECTIONAL CONTROL, 4-WAY: (VÁLVULA, CONTROL DIRECCIONAL, 4 VÍAS/)

A directional control valve whose primary function is to pressurize and exhaust two ports.



A valve in which the flow paths are opened or closed as the valve element (poppet) is lifted or seated.

VALVE, PRESSURE SENSING: (VÁLVULA, DETECCIÓN DE PRESIÓN/)

A device similar to an electrical pressure switch, in which a signal to be sensed enters a control point, and actuates a mechanism that, at the proper pressure level causes one or more flow passages to change condition. Removal of the signal allows the pressure sensing valve to reset.

VALVE, SOLENOID: (VÁLVULA, SOLENOIDE/)

Valve is controlled by an electric current through a solenoid: in the case of a two-port valve the flow is switched on or off; in the case of a three-port valve, the outflow is switched between the two outlet ports.

VALVE, SPOOL: (VÁLVULA, CARRETE/)

A shear action valve design that utilizes a spool that slides throughout the flow path.



VALVE, DIRECTIONAL CONTROL,4-WAY.



VALVE POPPET.



VALVE, PRESSURE SENSING.



VALVE, SOLENOID.





VALVE.CARTRIDGE.



VALVE.STEM



VALVE, TWO-POSITION

VALVE, CARTRIDGE: (VÁLVULA, CARTUCHO/)

A valve that working parts contained in a cylindrical body. The cylindrical body must be inserted into a housing for use. Ports through the body cooperate with ports in the containing housing.

VALVE, STEM: (VÁLVULA, VÁSTAGO/)

A self-contained valve that opens to admit gas to a chamber (such as air to inflate a tire), and is then automatically closed and kept sealed by the pressure in the chamber, or a spring, or both, to prevent the gas from escaping.

VALVE, TWO-POSITION: (VÁLVULA, DOS POSICIONES/)

A directional control valve having two positions to give two selections of flow conditions.

VALVE BOUNCE: (REBOTE DE LA VÁLVULA/)

It indicates a condition where the valve is not held tightly closed in the seat even though the camshaft has not opened it. Also called "flutter."

VALVE LASH: (JUEGO DE VÁLVULAS/)

total clearance in the valve operating train with cam follower on camshaft base circle.







WATTLE AND DAUB.



WEATHERBOARD.



WOODBLOCK.



WATER PUMP.



WINDSHIELD.



WATTLE AND DAUB:

(ZARZO Y EMBADURNAMIENTO/)

a substance used in the past for building walls, consisting of wattle coveredwith clay.

WEATHERBOARD:

(ALFARJÍA/ ' WEĐƏ BJ:D)

one of a set of wooden boards used for protecting the outside of some buildings, arranged so that the base of one board covers the top of the next.

WOODBLOCK:

(PLANCHA DE MADERA/)

a square piece of wood that forms part of a floor.

WATER PUMP:

(BOMBA DE AGUA/)

A pump normally mounted at the front of the engine and driven by a pulley and a belt from a pulley on the front end of the crankshaft. The pump has a number of curved blades that force the coolant to flow through the cooling system.

WINDSHIELD:

(PARABRISAS/ 'WIND, ILD)

The piece of glass through which the driver views the road ahead of the car.

WEAR & TEAR:

(USAR Y RASGAR/)

It's your responsibility to keep the car in good condition. Return the car with a dented fender, bald tires, or a ruined engine because of lack of routine maintenance and you'll be charged for the repairs. Some wear and tear is allowed, of course. But if you aren't inclined to take reasonable care of your car, leasing may not be for you.

WHEELBASE:

(DISTANCIA ENTRE EJES/ 'WI:L,BETS)

The longitudinal distance from the center of the front wheel to the center of the rear wheel on the same side of the car.

WELDING EQUIPMENT:

(EQUIPO DE SOLDADURA/)

It is a process that uses heat produced by a flame, obtained by combustion of acetylene gas mixed with oxygen needed to make base metal melting.



(LLAVE INGLESA/ RENTS)

It is a metallic hand tool used to pull, jerk, or moving twisting to tighten or loosening an adjustable piece.



(CARRETILLA/ 'WI:L, BÆRƏU)

It is a tool used to carrying and moving load material normally pushed by man force.

WASHER:

(ARANDELA/ 'WbΣƏ)

It is a flat metallic ring element used under a bolt or nut to give tightness to a join

WIRE:

(ALAMBRE/ WAI)

It is a long cable normally made of copper used to conduct current.

WOODSCREW:

(TORNILLO PARA MADERA/ 'WOD, SKRU:)

It is a metalic element in construction that has slotted head and a gimlet point handled by a screwdriver.

WATTLE:

(BAJAREQUE/ 'WpTƏL)

a substance used for making walls, consisting of large sticks with small branches between them

WATT LINKAGE:

(CONEXIÓN DEL VATIO/)

A three-bar linkage sometimes used for transverse location of a live axle.



WELDING EQUIPMENT.



WRENCH.



WHEELBARROW.



WASHER.



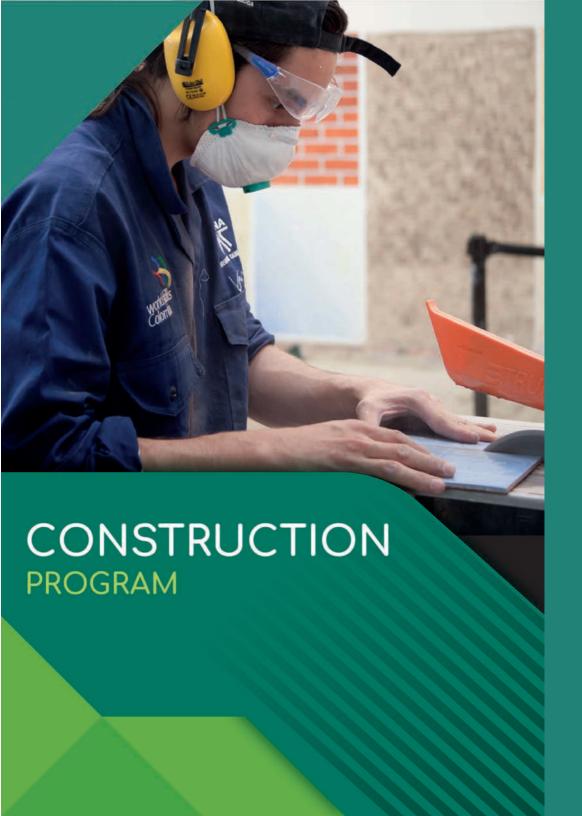
WIRE.



WOODSCREW.









CONSTRUCTION VOCABULAR SECTION

VOCABULARY EXERCISE:

Check the next vocabulary words and match the corresponding one to the box it best belongs to.

SCREWDRIVER MEASURE TAPE SANDPAPER ELECTRIC TAPE
VISE BITUMEN CEMENT GREASE TROWEL SAND AWL
WATER HYDRAULIC JACK AGGREGATE SCAFFOLDING TILE
CALLIPER ALLEN'S WRENCH WHEELBARROW AGGREGATE
NIPLE STUCCO

MATERIAL	ELEMENT	TOOL

Match the description that best suits for the next material, tool, and element.

BREEZE BLOCK	depo	hand tool to mix, carry or siting different mixture in truction.
WRENCH		rd substance made by mixing ent, sand, stones, and water.
TROWEL		ge light brick made from ent and that is used in ling.
EMERYL	lutio	wer tool works on high revo- n for polishing, sharping and g shape to solid pieces.
ELECTRIC DRILL	or m	smaller tube made of plastic etal to connect pipes to rent sizes or shapes.

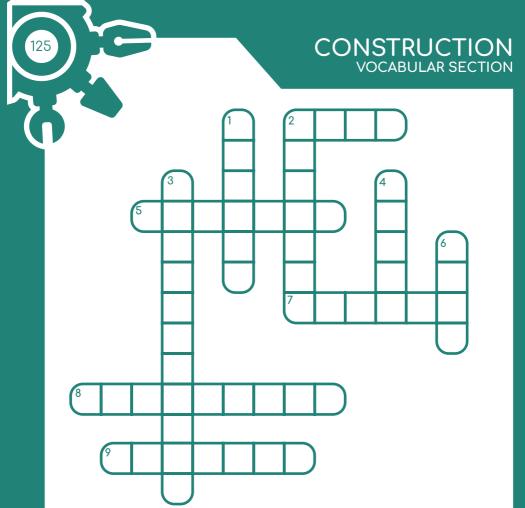
CONSTRUCTION VOCABULAR SECTION

DRAGLINE EXCAVATOR



in agriculture segments made for making holes in the ground.

FITTING	It is a power tool with a cutting edge for making holes in firm materials.
LEVEL	This tool is used to level the ground.
ASBESTOS	Substance does not burn easily used in building materials in the past.
CONCRETE	Hand tool used to pull, jerk, tighten or loosening an adjustable piece.
Check the next vocabulary w	ords and organize them correctly.
RASWHE:	DELDRA:
WERI:	RIRGERD:
SITCKRAY:	LHOVES:
BADOE:	_ PRECRAS:
TADNSENOS:	BLARHEWROW:
LLEVE:	LINAS:
ILTE:	DANS:
SCUSTCO:	ETAP SERAMUE:
GRAGGETA:	PANREPDAS:
MAHREM:	TMENCE:



HORIZONTAL

2.a natural earthy material that is stiff and sticky when wet, used for making bricks, pottery, etc.

5.one of many small flat pieces of wood that form the outer surface of a wall or roof.

7. it is handtool made with two crossing pieces attached used for holding, bending, or cutting small wires or objects.

8.sand or small stones used for making concrete.

9.material used for making or repairing the roofs of buildings.

VERTICAL

1.a metallic hand tool used to pull, jerk, or moving twisting to tighten or loosening an adjustable piece.

2.it is a hand tool made of steel with an adjustable handle used for giving support to a local working on object.

3.tool used to carrying and moving load material normally pushed by man force.

4.earth mixed with straw, used for making bricks to build houses.

6.it is heavy tool with two jaws adjusted by lever used to hold firmly an odject while being done on it.

CONSTRUCTION

READING SECTION

READING SECTION

Read the next information about laying bricks, then read the ideas and set the correct order for bricklaying process.

BASIC STEPS FOR LAYING BRICKS.

MIXING CEMENT:

Mixing cement is an extremely important part of the job. You have make sure you don't make it too wet or too dry to use. You will always work on a ratio basis. I was taught to mix 4 parts sand to 1 part cement but recentive been mixing 3:1. It's vital that once you choose what ratio you are going to mix that you stick with it through to the end of your project otherwise.



lу

you will get the mortar drying in different shades.

hasn't) then you can add your shovel full of cement.

If you have access to a cement mixer then this is the easiest way to mix your mortar. For mixing you will need the next material:

- BUILDING SAND
- CEMENT
- WATER

• FEB (MORTAR ADDITIVE)
Create a hole in the middle of your sand so it looks like a volcano.
Here's a step by step guide on how to mix mortar in a cement mixer:
Leave the water and the feb to spin for about 30 secs. Then add your first shovels of sand (4 if using 4:1)
Add you're water and feb from the bucket and mix it altogether again.
Leave it to mix with the water and feb for a little while.
Make sure you have a spacious wooden board to mix on. You will need it. Fill a bucket with water and add two sachets of feb (i've only ever known is called this) Tip about a quarter of it into the mixer and turn it on.
Tip your 3 sand and 1 cement onto the board and mix together dry with the shovel.
When the sand has formed a consistent mixture (add more water if it

(127) E

CONSTRUCTION

READING SECTION

Let it mix for a little while and repeat the step until your mixer is full adding water as you feel necessary.

__ Repeat these steps until you have as much Mortar as you need.

READING COMPRENHENSION 2

Read the text and answer the questions.

A skyscraper is a very tall building with many floors. The term 'skyscraper' was originally used in the 1880s after the first tall buildings were constructed in the USA. It is a name usually given to a building with more than 40 floors. The first skyscrapers were built in Chicago and New York. Radio and television towers are not considered as skyscrapers because people cannot live or work in them. Some of them are even taller than skyscrapers but these do not have floors like other buildings. These towers have observation decks



and receivers near the top. An American architect, William le Baron Jenney, built the first skyscraper - the Chicago Home Insurance Building - in 1885. We build skyscrapers because of lack of space. A skyscraper uses a small amount of space on the ground but has a lot of floor space inside. The Council on Tall Buildings and Urban Habitat has suggested the following points to decide the tallest building: The height of the structural or architectural top, the height of the highest occupied floor, the height of the top of the roof and the height of the top of antenna. All skyscrapers have the same basic design. The floors and walls are supported by a strong steel or concrete frame. The frame then rests on foundations that bear the weight of the skyscraper in the ground. These foundations help to prevent the skyscraper from sinking in tho the ground. Skyscrapers may be used as offices, residential buildings or for hotels and shopping centres. John Hancock Centre in Chicago has America's highest indoor swimming pool on its 44th floor sky lobby.

QUESTIONS:

Where were the first skyscrapers built ?
A skyscraper is
The name 'skyscraper' named buildings having more than 40
Why do we build skyscrapers?

CONSTRUCTION READING SECTION



How many points have been suggested by the Council on Tall Buildings and Urban Habitat to decide the tallest building? (in letter)
(III letter)
Do all skyscrapers have the same basic design? (yes or no)
The floors and walls are supported by
What do the foundations help to prevent the skyscraper from?
What is the particularity of the John Hancock Centre in Chicago? It has on its 44th floor sky lobby
GRAMMAR SECTION.
Check the next sentences and make corrections using to be verb (am, is ,are)
1.Construction are a high risk job.
2.Those 3 building am in construction by a well-known construction company
3. The nails is on the box
4.I is a construction student from SENA Cesar.
5. The hand tools is used for the construction workers at a work site



Read the answer box and make questions on the left box best suit for each one.

	QUESTION BOX	
1		
2		
		· ?
4		
5		?
6		?

ANSWER BOX

Because the supervisor said they could go to have lunch

That is Ricardo's hammer

They are using sand, aggregate, water and cement for making concrete

They are using sand, aggregate, water and cement for making concrete

That wall is made by laying bricks with cement.

Tomorrow is payment day

The construction site is two blocks away from here.

My boss is the one next to Daniel

Check the next instructions and make sentences based on this explanation using possessives



ANN'S CAMERA (her camera)



MY BROTHER'S CAR (his car)



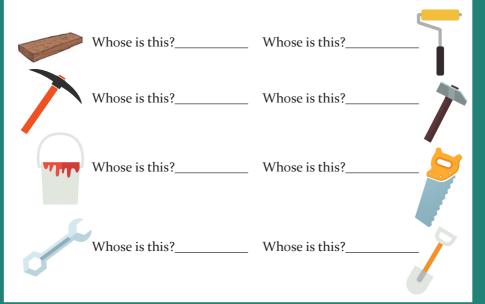
THE MANAGER'S OFFICE (his or her office)



We normally use -'s for people:

- I stayed at my sister's house. (not "the house of my sister)
- Have you met Mr Kelly's wife? (not "the wife of Mr kelly's)
- Are you going to **James's** party?
- Paul is a man's name. Paula is a woman's name.





Check each verb and make 4 sentences totally created by you in present and past simple; Negative in present and past. Use vocabulary words from the dictionary.

diction	ary.	
СОМЕ		PRESENT:
in for	PRESENT: COME (kam)	PAST:
	PAST: CAME (kèim) TRANSLATION: VENIR	NEG+PRES:
250	TRANSLATION. VENIR	NEG+PAST:
FIND		PRESENT:
×29	PRESENT: FIND (faind)	PAST:
	PAST: FOUND(fàund) TRANSLATION: ENCONTRA	NEG+DRES.
3300		NEG+PAST:
HAVE		PRESENT:
~	PRESENT: HAVE (jáav)	PAST:
	PAST: HAD(jáad) TRANSLATION: TENER	NEG+PRES:
2000		NEG+PAST:
GO		PRESENT:
200	PRESENT: GO (gòu)	PAST:
明期	PAST: WENT(went)	NEG+PRES:
80	TRANSLATION: IR	NEG+PAST:



PAY



PRESENT:

PAY (Pèi) PAST: PAID(pèid)

TRANSLATION: PAGAR

PRESENT:

PAST:

NEG+PRES:

NEG+PAST:

LEARN



PRESENT: LEARN (lern)

PAST:

LEARNT(lernt)

TRANSLATION: APRENDER, **ENTERARSE**

PRESENT:______

PAST:

NEG+PRES:

NEG+PAST:

KNOW



PRESENT:

PAST:

KNEW(niú)

TRANSLATION: SABER.

CONOCER

PRESENT:____

KNOW(nóu) PAST:

NEG+PRES:

NEG+PAST:

PRESENT:

BUY



PRESENT:

BUY(bái)

PAST:

BOUGHT(bot)

PAST:

TRANSLATION: COMPRAR NEG+PRES:____

NEG+PAST:



READ	PRESENT:
PRESENT: READ(riiid) PAST: READ(red)	PAST:
PAST: READ(red) TRANSLATION: LEER	NEG+PRES:
	NEG+PAST:
WRITE	PRESENT:
PRESENT: WRITE(ráit)	PAST:
PAST: WROTE(rout) TRANSLATION: ESCRIBIR	NEG+PRES:
	NEG+PAST:
	? Check around you and write sentences use proper names when making sentences.
Ex: (Instructor/explain): The insclass.	structor is explaining the circuit to the
1. (A CLASSMATE/EAT):	

2. (SOMEBODY/SLEEP):_____

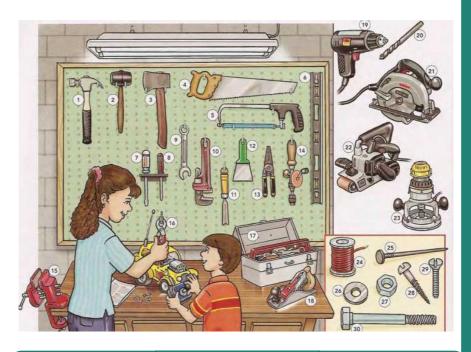
3. (SOMEBODY/WEAR BOOTS):_____



4. (WATCH TELEVISION):
5. (USE CELLPHONE):
6. (IT/RAIN):
7. (PAY ATTENTION):
8. (LISTEN TO MUSIC):
9. (SOMEBODY/LAUGH):
10. (OUT OF THE LEARNING ROOM):



Check the tool bar and make 10 sentences using there is (singular) there are (plural) + quantifiers to different hand or power tools selected by you.



COUNTABLE	UNCOUNTABLE	вотн
many	much	all
a few	a little	enough
a number of	a bit	some
a large number of	a large amount of	any
a majority of	a large quantity of	a lot of
several	a plenty of	

EX: THERE IS A HANDSAW IN THE TOOL BAR (POSITIVE)
THERE ARE NOT MANY POWER TOOLS (NEGATIVE)



•	
•	
•	
•	
·	
0	

Read the next information about a job and complete the blanks with the corresponding preposition of time (At, In, On)

I work for an important warehouse in Athens, a small town nearby Atlanta in the state of Georgia in the USA. I work in the maintenance department, me and my team, are in charge of repairing different damages or improvements directors want to make to the place. I started working ______ that place back ______ November. My schedule is heavy tight. I normally start ______ 7:00 am that means I have to be awakening ______ 5:00 am due to traffic and distance which normally takes an hour by car. I work from Monday to Sunday but I have a day off ______ Tuesdays. I get out for lunch _____ 1:00 pm and a 20 minutes short brake _____ 4:30. I normally finish my work session _____ 8:30 pm which means I normally work about 12 hours a day.

Look at Lisa's diary for next week and complete the sentences.





1. WHAT IS LISA HAVING ON FRIDAY:
2. LISAIS READING BLUEPRINTS(DAY):(TIME)
3. SHE IS NOT DOING ANYTHING SPECIAL:
4. WHAT IS LISA DOING ON TUESDAY?:
5. SHE IS RECEIVING SECURITY EQUIPMENT (DAY):
6. WHEN IS LISA'S REUNION TO WORKMATES? (DAY):
(TIME)
Read the next sentences and write them again in past using was/were.
WE ARE USING WATER, AGGREGATE, SAND AND CEMENT TO MAKE CONCRETE FOR BUILDING THE WALL.



CONSTRUCTION WORKERS ARE FOLLOWING BLUEPRINTS MADE BY THE ARCHITECT TO BETTER COMPLETE WORKS-MANSHIP.
TO REPAIR THAT WALL, IT IS NECESSARY TO SCRAPE, USE FILLER AND PAINT.
WEARING HARD HAD IS MANDATORY FOR EVERY EMPLOYEE ONCE WE GET IN THE CONSTRUCTION SITE.
HAND AND POWER TOOLS ARE KEPT AT THE STORE AND THEY ARE USED ONCE A WORKER NEEDS IT.



AUTOMATIONVOCABULARY SECTION

nding one to the

VOCABULARY EXERCISE:

Check the next vocabulary words and match the corresponding one to the box it best belongs to.

RUBBER FLUID GAUGE MUFFLER ACCETAL PLASTIC

DUROMETER HOSE CYLINDER ACTUATOR

PLIERS OSCILOSCOPE INHIBITOR CONTAMINANT

LUBRICANT PISTON ROD DESICCANT ADDITIVE

MATERIAL	ELEMENT	TOOL

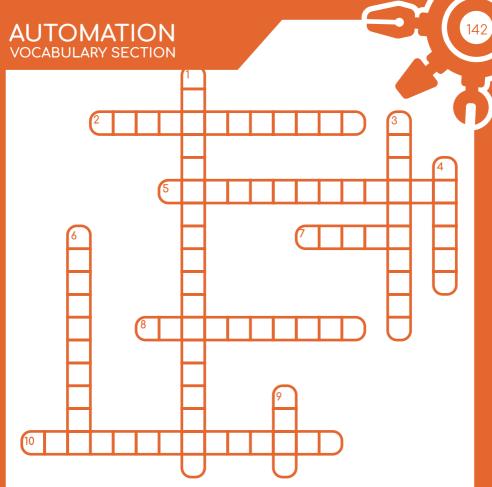
Match the description box best suits for the next material, tool, and element

ment	
COMPRESSOR	connectors or closures for pneumatic lines and passages.
CONDUCTOR	Device that detects and transmits changes in external conditions.
RESERVIOUR	Device that transfers heat through a conducting wall from one fluid to another.
ALLEN'S WRENCH	It converts mechanical force into pneumatic fluid power.
SOLDERING IRON	Metallic hand tool works for fitting, loosening, tightening nuts or bolts with hexagonal socket.



AUTOMATION VOCABULARY SECTION

FITTINGS	Force per unit area, usually expressed in pounds per square inch (bar).
OSCILLOSCOPE	Electronic test instrument that allows observation of varying signal voltages,.
RESERVIOUR	Device that transfers heat through a conducting wall from one fluid to another.
HEAT EXCHANGER	Container for storage of liquid in a fluid power system.
SENSOR	Electric tool made of plastic or metal with sharpie point form, works for melting tin and heating electronic circuits.
PRESSURE	It main function is to contain and direct fluid.
Check the next vocabulary work	ds and organize them correctly.
DAREBDROAB:	_ CHAMIEN GILNMIL:
MEREY:	ROTOMOLOT:
WEIR SIRTPREP:	NILYCERD:
CITURIC:	KATERBOU:
TIDADIVE:	LACUCAROTUM:
TECAAL SALPITCS:	DULIF:
HESO:	EPPI:
SEPRUSRE:	NILESCER:
NOSSER:	LIDONESO:
LEVAV:	TAHEL:



HORIZONTAL

- 2. The componet or group of components which supplies and preocesses the fluid for operanting fluidic systems.
- 5.It is a metallic tool in charge of extracting, removing or cleaning tin from circuits.
- 7.It is a cutting metallic tool used for tracing or grooving metallic pieces.
- **8**.It is a plastic hand tool for proving electrical circuits.
- **10.**It is a metallic hand tool works for fitting, loosening, tightening nuts or bolts whith hexagonal socket.

VERTICAL

- **1.**A speed control circuit in which the control is achieved by regulating the supply flow to the actuator.
- **3.**The element transmitting mechanical force and motion from the piston.
- **4.**It is a power tool that uses a drill bit for drilling hard surface, sunch wood, concrete or metal
- **6**.It is a high revolution electric tool used manually for drilling plastic or copper plaques.
- **9.** A tube, pipe or hose for conducting fluid.



AUTOMATION READING SECTION

READING SECTION

VHAT IS INDUSTRIAL AUTOMATION IN MANUFACTURING?



Industrial automation in manufacturing is the use of "intelligent" machines in factories so that manufacturing processes can be carried out with minimal human intervention. It involves the application of various control systems to enable operating equipment to carry out on their own, with little human intervention, tasks that require speed, endurance and precision. Industrial automation can be achieved by several different means, including mechanical, electrical, electronic, hydraulic, pneuma-

tic, and computers. Usually, two or more of these means are used in combination. Today's state-of-the-art factories, ships, and airplanes combine all of these techniques. The main benefits of manufacturing automation include leaner operation processes that require less energy, less material, and reduced labor waste. These can lead to improvements in quality, accuracy, and precision. The downsides include high costs of R&D and installation of equipment.

1.HOW MANY AND WHICH ARE FIELDS BEST COMPLETE AUTOMATION IN MANUFACTURING PROCESS?

MENTION AT LEAST 3 ADVANTAGES OF AN AUTOMATED MANUFACTURING PROCESS.

AUTOMATION READING SECTION

	144
FECTIVE?	15

WHAT MAKES MANUFACTURING PROCESS SO EFFECTIVE?
ACCORDING TO THE TEXT, WHAT "THE STATES OF THE ART" TERM MEANS?
WHAT IS NEEDD TO MAKE A MANUFACTURING TOTALLY AUTOMATED?
DRAWING CONCLUSIONS: WRITE YOUR OWN OPINION ABOUT NEGATIVE IMPACT AUTOMATION BROUGHT WITH IT TO WORKERS AND COMPANIES.



AUTOMATION READING SECTION

Check the technology clue words at the box and complete blanket spaces with words best suit. Right after, answer to the questions below.

Automation is the use ofreducing the need for	_ and	
reducing the need f	or hu-	
man intervention(wikipedia, 2010).		
In,we can see an increasing	level	
of in, for example, the flip	ght and	
air traffic control operations.		
The dictionary clearly defines	as	
"the use ofa particular		
in order to increase reliability and efficiency, of	often	
through the replacement of employees. both		
ons basically focus on two aspects- the introd	uction	
of "" and implications on		
"humans" in the peformance of a task. indutr	y-wide,	
it has become a by - name and is considered b	usiness	
with the objective of improving and controlling		
management efficiency.		
At the end of the 18th century some success w	as achi-	
eved when it began to experiment with hot air		
lloons which, being lighter than air, managed		
In 1903, the wright brothers made their first fl	ight	
with a heavier than air. The	COC-	
KPIT of old planes were full of traditional but	ttons	
and watches that allowed the		
the the		
were all analog and manual. The		
needed to have physical connections, especial	lly in	
emergency. In the desing of	,	
the traditional buttons and warches are alread	ly	
found.		
Thehave been repl	aced by	
in which the pilot display		
amount of information. year 1927. In pavilion	40 car-	
pentry workshop operators building with nati	ional	
wood fuselage structures and the wing surface of the		
first series of aircraft avro gospord.		
- -		

Control systems

Automation

electronic screens

Aviation

computers to control

automation

instrument panels

process

systems

modem cabins

instrument panels

computers

device

Information technologias

control of the airplanes

AUTOMATION

READING SECTION



According to the text, the two automation concepts explained at the text means:

- Human intervention will be replaced by computers, hardware and software
- Robots can work independent to human supervision.
- Implication of humans and computers can work together in the performance of a task.

One of the major incidence of automation in aviation industry, is related to:

- · Helping humans reducing accidents and incidents
- Making this industry more competitive controlling flight management with efficiency
- Making humans job easier to do.

What the word COCKPIT in the reading means?:

- The type of airplane
- An airplane factory
- The place where the pilot controls the airplane.

The first successful flight with a device heavier than the air, took place in:

- 1927
- 1903
- 18th century

How instrument panels were installed in the past?

- electronic screens and digital panels
- · Analog and manual
- Manual and Digitals.



GRAN	MMAR EXERCISE:
Check the next sentences and make corrections using	ng to be verb (am, is ,are
1. Automation am a high risk job.	
2. Could you please get me those 3 callipers the	at is in the tool box
3. A Pneumatic test bench is am also used for of repaired equipments such as pneumatic valuinstruments.	U
4. I studying Automation and Pneumatic in SE	ENA Cesar.
5. The hand and power tools is used for the automaworkers on the workshop.	ation and pneumatic
6. Workers at workplace is attends to a meeting wit	th the engineer.
7. Automated industries is aren't using less human task.	inervention to run a
8. A software am in is needed to create in order to porder from the computer.	perform an execution
9. There are am not many automated companies is	in my hometown.



10. Working behind a computer not is a dangerous job to do by a worker.

Read the answer box and make the questions best suit for each one.

	QUESTION BOX	
1		?
2		
4		
5		
6		
		•

ANSWER BOX

Because the supervisor said they could go to have lunch

That is Ricardo's Screwdriver

They are using wires, insulation tape and a complete tool box to repair the lathe.

That Pneumatic Circuit is made by using this program.

Tomorrow is payment day

The automated car factory is two blocks away from here.

My boss is the one next to Daniel

Check the next instruction box and realize the corresponding use of these modal verbs (Can/Could) in positive and negative way.

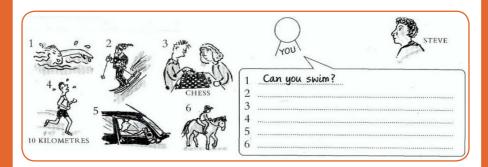




He can play the piano.

can + infinitive (can do / can play / can come etc.):

I/we/you they/he/she it can cannot (can't) see come etc. do play see? come? etc.



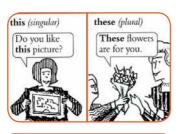
Think about 5 actions you have learnt in automation program at SENA and write those actions previously learnt using modal can , can't could or couldn't.

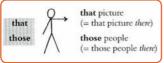


1	
5.	

Check the next instructions about demonstratives and make exercises below.

this/that/these/those



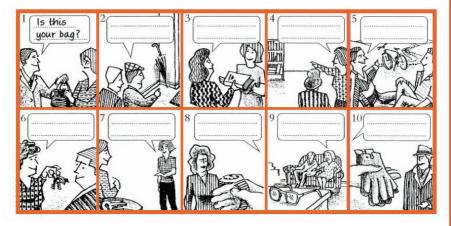








Write question: Is this /that your....? or Are these/those your.....?



Check the next pictures and write sentences using demonstratives with tools vocabulary.











1	
	_
3.	_
	_
4.	_
	 _
5.	 _

Check the next instructions and make sentences based on this explanation using possessives.



ANN'S CAMERA (her camera)



MY BROTHER'S CAR (his car)



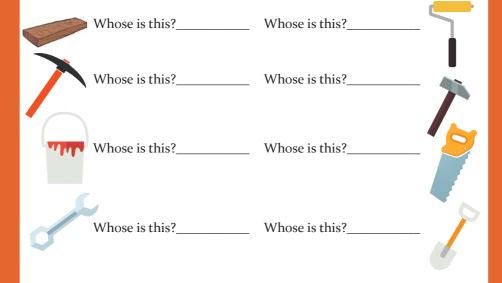
THE MANAGER'S OFFICE (his or her office)



We normally use -'s for people:

- I stayed at my sister's house. (*not* "the house of my sister)
- Have you met Mr Kelly's wife? (not "the wife of Mr kelly's)
- Are you going to James's party?
- Paul is a man's name. Paula is a woman's name.







Check each verb and make 4 sentences totally created by you in present and past simple; Negative in present and past. Use vocabulary words from the dictionary .

COME	PRESENT:
PRESENT: COME (kam)	PAST:
PAST: CAME (kèim)	
TRANSLATION: VENIR	NEG+PRES:
	NEG+PAST:
FIND	PRESENT:
PRESENT: FIND (faind)	PAST:
PAST: FOUND(fàund)	NEG+PRES:
TRANSLATION: ENCONTRAR	
	NEG+PAST:
HAVE	PRESENT:
PRESENT: HAVE (jáav)	PAST:
PAST: HAD (jáad)	
TRANSLATION: TENER	NEG+PRES:
	NEG+PAST:
GO	PRESENT:
PRESENT: GO (gòu)	PAST:
PAST: WENT(went)	
TRANSLATION: IR	NEG+PRES:
	NEG+PAST:



PRESENT: **PAY** PAST: PAY (Pèi) PRESENT: PAST: PAID(pèid) NEG+PRES: TRANSLATION: PAGAR NEG+PAST: PRESENT: **LEARN** PAST:____ PRESENT: LEARN (lern) PAST: LEARNT(lernt) NEG+PRES: TRANSLATION: APRENDER, ENTERARSE NEG+PAST: PRESENT: **KNOW** PRESENT: KNOW(nóu) PAST: PAST: KNEW(niú) NEG+PRES: TRANSLATION: SABER, CONOCER NEG+PAST: PRESENT: **BUY** PAST: PRESENT: BUY(bái) PAST: BOUGHT(bot) TRANSLATION: COMPRAR NEG+PRES:_____

NEG+PAST:

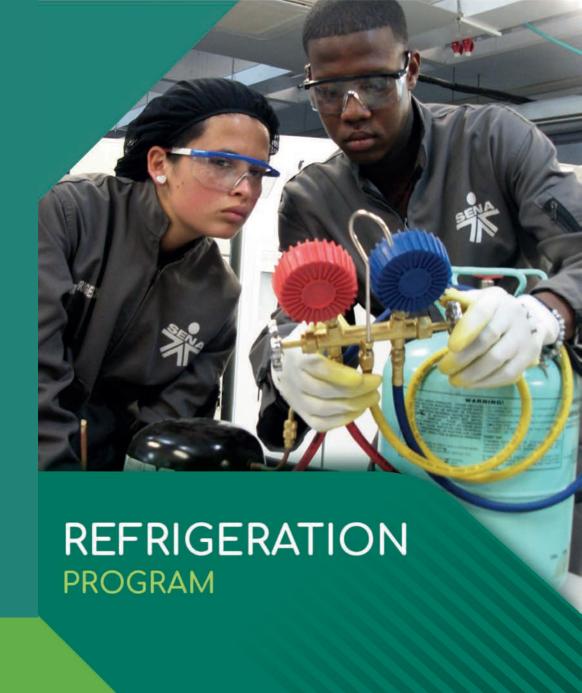


Read the next information about a job and complete the blanks with the corresponding preposition of time (At, In, On).

I work for an important warehouse in Athens, a small town nearby Atlanta in the state of Georgia in the USA. I work in the maintenance department, me and my team, are in charge of repairing different damages or improvements directors want to make to the place. I started working that place back November. My schedule is heavy tight. I normally start 7:00 am that means I have to be awakening 5:00am due to traffic and distance which normally takes an hour by car. I work from Monday to Sunday but I have a day off Tuesdays. I get out for lunch 1:00pm and a 20 minutes short brake 4:30. I normally finish my work session 8:30 pm which means I normally work about 12 hours a day.
Look at Lisa's diary for next week and complete the sentences.
HONDAY Pneumatic Circuit designing FIUESDAY Project simulation at 1000 FIUESDAY FIGURE SATURDAY FIGURE SIMULATION FATURDAY FIGURE SIMULATION FATURDAY FIRE SAUIS competition trip 800 am FILE Ctropneumatic Project management FILE CTROPNEUMATIC PROJECT FILE CTROPNEUMATI
1. SHE HAS ELECTROPNEUMATIC PROJECT:
2. WHEN IS LISA'S CLASS:
3. LISA WILL BE BACK FROM HER TRIP: (DAY):(TIME)
4. WHAT IS LISA HAVING ON THURSDAY :



5.WHEN ISWORLDSKILLCOMPETITION:(DAY):
(TIME)
, , , , , , , , , , , , , , , , , , , ,
6. WHAT IS LISA DOING ON TUESDAY :





MATERIAL

REFRIGERATION VOCABULARY SECTION

TOOL

VOCABULARY EXERCISE:

ACCUMULATOR TANK COMPRESSOR THERMOSTAT

VELOCITY SELECTOR VELOCITY SELECTOR COMBUSTION

THERMAL EXPANSION VALVE CONDENSER COIL

COPPER TUBE BLENDER FLAT FILE GAUGE MANIFOLD

SLIP JOIN PLIER NUT DRIVERS CONDENSATE

ELEMENT

Match the description box best suits for the next material, tool, and element		
SLIP JOINT PLIER	A device that monitors temperature and humidity and adjusts your heating or cooling system to maintain desired levels	
AMMETER	It is a refrigeration tool use in soldering the joints of two copper tubes together.	
THERMAL EXPANSION VALVE	system that exchanges stale, re-circulated indoor air with fresh, filtered outside air.	
FLARING TOOL	It is a tank able to hold excess of liquid in deep assuring refrigerant goes out as a gas way.	
THERMIDISTAT	It is a tool used to lengthening water pipes or removing electrical conduit pipes without deforming them	

REFRIGERATION VOCABULARY SECTION



YOKE VISE	It is a mechanical plier with a slip joint in order to adjust the size.
BRAZING TORCH	It is a tool use to spread the copper end outward until a flare is formed
CAPILLARY TUBE	It is a instrument that measures electric circuit current in amperers.
ACCUMULATOR TANK	Device or flow control that regulates the
VENTILATOR	It is an element that controls passage of cooling liquid, working as a restrictor.

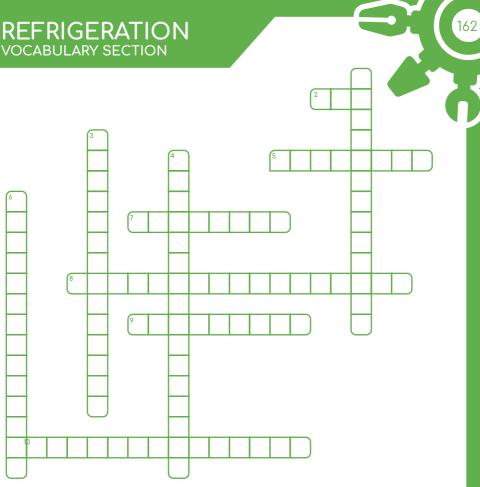
Check the next vocabulary words and match the corresponding one to the box it best belongs to.

i. Pepi nwerch	Brazing Torch
2. Tun virders	——— Accumulator tank
3. Lenla nwerch	Condenser coil
4. zaginrb chort	Ammeter
5. coyitelv roscelet	Clamp meter
6. Ira lenhrad	Ventilator
7. bavleria desep tomor	Run capacitor
8. Tariltoven	——— Pipe Wrench
9. nocersend	—— Air Handler
10. pocper bute debner	—— Allen Wrench
11. naflirg loto	——— Sight Glass



REFRIGERATION VOCABULARY SECTION

12. Mameret	Stepper motor
13. Nur ticaporca	——— Recovery cylinder
14. Uteb turcet	Flaring Tool
15. Thsig salgs	——— Variable Speed Motor
16. Mulatorcuca	Copper Tube Bender
17. Sermrosproc	Tube Cutter
18. Vereryco nicylred	Nut Drivers
19. Petersp tomor	Compressor
20. Plamc retem	Velocity selector



HORIZONTAL

- 3. The ability of a heating or cooling system to heat or cool a given amount of space.
- 5. refrigeration tool presure guages
- It is an element that allows selecting low, mid or high. Velocity or revolutions per minute of a motor.
- 7. small device to store electricit needed to increase starting torque of monophase motors.
- 8. It is a 7 inch long nose plier hard to-reach areas like removing a clip from a fan or holding the copper tube when brazing al
- flat hardened Steel with cutting ridges. Used for filing a newly cut copper tube ends to square it.
- 10. The outdoor portion of an air conditioner or heat pump that either releases or collects heat

VERTICAL

- 1. Hand tool with tooth blade used.
- 2. This stands for British thermal unit, which is a unit of heat energy.
- 4. An 8 inch electrical plier used to remove a live fuse from a fuse box Or arranging the stranded wires.



READING SECTION

READING SECTION

READING COMPRENHENSION

Read the paragraphs and answer the following questions.

The refrigerator, as we know it, was a long time in the making, with a number of people making various contributions to its development. One of the earliest pioneers in refrigeration was Dr. William Cullen, who, in the 1700s, conducted experiments regarding the evaporation of liquids in a vacuum. Further experiments using evaporation of liquids to cool were conducted by Benjamin Franklin and John Hadley in 1758. Their work proved that the rapid evaporation of certain volatile liquids could lower the temperature of an object below the freezing point of water. In the steamy weather of Apalachicola, Florida, Dr. John Gorrie came to believe that tropical diseases like yellow fever could be cured by cooling the rooms of patients. Gorrie suspended ice in a basin from the ceilings in sick rooms, knowing that cooler air is heavier and would therefore flow downward to the patients.

Cullen, Franklin, Hadley and Gorrie each made their contribution to refrigeration, but the first refrigerator itself is generally attributed to the German engineer Carl von Linde. In 1876, von Linde perfected the means of converting large amounts of liquids-specifically, ammonia, sulfur dioxide, and methyl chloride-- into gases, for keeping an environment cool. Linde's vapor-compression refrigeration system became-and is still-the most widely-used method of cooling.

e main point of the passage can best be summarized as h of the following?
A: Refrigeration developed in response to the spread of tropical diseases.
B: The modern-day refrigerator went through many years of development before it was perfected.
C: Ammonia is an essential part of a refrigerator's cooling system.
D: Dr. John Gorrie is more significant than anyone else in the history of refrigeration.

REFRIGERATION READING SECTION



?) According to the passage, what was Carl von Linde's main contribution to refrigeration?	
A: He converted large amounts of liquids into gases	
B: He linked warm temperatures to the spread of disease	
C: He developed the modern, rectangular refrigerator that we still use today	į
D: He suspended ice in basins from the ceilings of rooms	
B) According to the passage, Dr. Gorrie did his work using efrigeration in what city?	
A: Tallahassee, Florida	
B: Apalachicola, Florida	
C: Tampa, Florida	
D: Orlando, Florida	
A) As it is used in the first paragraph, the word pioneer most nearly means:	
A: Settler	
B: Loner	
C: Innovator	

REFRIGERATION READING SECTION

READING SEC
D: Teacher
5) According to the author, which Founding Father made contributions to the history of refrigeration?
A: Thomas Jefferson
B: George Washington
C: Thomas Paine
D: Benjamin Franklin
6) The author maintains that the vapor-compression system perfected by von Linde is:
A: Inefficient and no longer used
B: Convenient but wastes electricity
C: The most widely used refrigeration method
D: Only used in tropical climates
7) According to the passage, von Linde made his discovery in what year?
A: 1862

READING SECTION



B: 1876
C: 1881
D: 1885
8) According to the passage, who worked with Franklin?
A: Gorrie
B: Hadley
C: Von Linde
D: Cullen
9) The main point of the second paragraph can best be summarized as which of the following?
A: John Gorrie's work was important but ultimately proven incorrect.
B: Von Linde's work has proven to be the most valuable.
C: Franklin and Hadley made contributions but had a flawed understanding of how refrigeration works.
D: Ultimately, the most valuable contributions were made by accident.

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REFRIGERATION READING SECTION

Where was Carl von Linde fro
--

A: Scotland

() B: Ireland

C: Austria

D: Germany

READING COMPREHENSION II.

Read the complete text, and answer to the questions

THE HISTORY OF REFRIGETARION AND FREEZERS

Before mechanical refrigeration systems were introduced, people cooled their food with ice and snow, either found locally or brought down from the mountains. The first cellars were holes dug into the ground and lined with wood or straw and packed with snow and ice: this was the only means of refrigeration for most of history.

Refrigeration is the process of removing heat from an enclosed space, or from a substance, to lower its temperature. A refrigerator uses the evaporation of a liquid to absorb heat. The liquid, or refrigerant, used in a refrigerator evaporates at an extremely low temperature, creating freezing temperatures inside the refrigerator. It's all based on the following physics: - a liquid is rapidly vaporized (through compression) - the quickly expanding vapor requires kinetic energy and draws the energy needed from the immediate area - which loses energy and becomes cooler. Cooling caused by the rapid expansion of gases is the primary means of refrigeration today.

The first known artificial refrigeration was demonstrated by William Cullen at the University of Glasgow in 1748. However, he did not use his discovery for any practical purpose. In 1805, an American inventor, Oliver Evans, designed the first refrigeration machine. The first practical refrigerating machine was

READING SECTION



built by Jacob Perkins in 1834; it used ether in a vapor compression cycle. An American physician, John Gorrie, built a refrigerator based on Oliver Evans' design in 1844 to make ice to cool the air for his yellow fever patients. German engineer Carl von Linden, patented not a refrigerator but the process of liquifying gas in 1876 that is part of basic refrigeration technology.

What is needed to make freezing temperatures in a refrigerator?
How is cooling process caused in today's refrigeration?
According to the text, what is a refrigeration process?
How people used to cool their food?
What happened at university of Glasgow in 1748?
Select Right , Wrong or doesn't say for the next statements extracted from the text. (Right stands for True, Wrong, stands for Not true Doesn't say stands for never mentioned at the paragraph).
William Cullon was the first inventor of the refrigeration unit

Right

machine.

Wrong

Doesn't Say.

169

REFRIGERATION GRMMAR SECTION

GRIVINAR SECTION

The first refrigerators were holes dug into the ground and lined with wood or straw and packed with snow and ice.

Right

Wrong

Doesn't Say.

The refrigerator and the process of liquifying gas in 1876 was patented by Carl Von Linden.

Right

Wrong

Doesn't Say.

The first refrigeration assembly line company was started by General Electric Company in the year 1892 by Thomas Alba Edison.

Right

Wrong

Doesn't Say.

Removing heat from an enclosed space, or from a substance, to lower its temperature, is a good definition for a refrigeration process.

Right

Wrong

Doesn't Say.

GRAMMAR SECTION:

Check the next sentences and make corrections using to be verb (am, is ,are)

- 1. Automation am a high risk job
- 2. Could you please get me those 3 callipers that is in the tool box

GRMMAR SECTION



- 3. A Pneumatic test bench is am also used for calibration & testing of repaired equipments such as pneumatic valves or measuring instruments.
- 4. I studying Automation and Pneumatic in SENA Cesar.
- 5. The hand tools is used for the automation and pneumatic workers on the workshop.

Read the answer box and make questions on the left box best suit for each one.

QUESTION BOX	
1	
2	
	?
3	?
4	2
5	
	?
6	?
7	
	?

ANSWER BOX

Because the supervisor said they could go to have lunch

That is Ricardo's Screwdriver

They are using wires, insulation tape and a complete tool box to repair the lathe.

That Pneumatic Circuit is made by using this program.

Tomorrow is payment day

The automated car factory is two blocks away from here.

My boss is the one next to Daniel



REFRIGERATION **GRMMAR SECTION**

Check the next instructions and make sentences based on this explanation using possessives



ANN'S CAMERA (her camera)



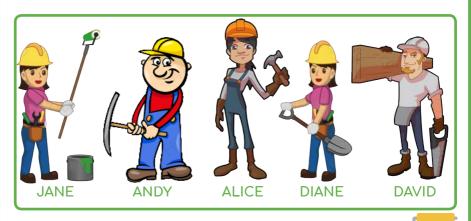
MY BROTHER'S CAR (his car)



THE MANAGER'S OFFICE (his or her office)

We normally use -'s for people:

- I stayed at **my sister's** house. (*not* "the house of my sister)
- Have you met Mr Kelly's wife? (not "the wife of Mr kelly's)
- Are you going to James's party?
- Paul is a man's name. Paula is a woman's name.





Whose is this? Whose is this?



Whose is this?_____ Whose is this?_____





Whose is this? Whose is this?



Whose is this?_____ Whose is this?____

Check each verb and make 4 sentences totally created by you in present and past simple; Negative in present and past. Use vocabulary words from the dictionary.

COME



PRESENT: COME (kam)

CAME (kèim)

TRANSLATION: VENIR

PRESENT:____

PAST:

NEG+PRES:

NEG+PAST:

FIND



PRESENT:

FIND (faind) PAST: FOUND(fàund)

HAVE (iáav)

TRANSLATION: ENCONTRAR

PRESENT:

PAST:

NEG+PRES:

NEG+PAST:

HAVE



PRESENT:

PAST: HAD (jáad)

TRANSLATION: TENER

PRESENT:

PAST:

NEG+PRES:

NEG+PAST:



GRMMAR SECTION

GO



PRESENT:

PAST: WENT(went)

TRANSLATION: IR PRESENT:

PAST:

NEG+PRES:

NEG+PAST:

PAY



PRESENT:

PAY (Pèi) PAID(pèid)

GO (gòu)

TRANSLATION: PAGAR

PRESENT:

PAST:

NEG+PRES:

NEG+PAST:

PRESENT:___

LEARN



PRESENT:

PAST:

LEARN (lern) LEARNT(lernt)

TRANSLATION: APRENDER.

ENTERARSE

PRESENT:

PAST:

NEG+PRES:

NEG+PAST:____

KNOW



PRESENT:

PAST: KNEW(niú)

TRANSLATION: SABER. CONOCER

KNOW(nóu) PAST:

NEG+PRES:

NEG+PAST:___

REFRIGERATION GRMMAR SECTION



BUY			PRESENT:
72003	PRESENT: PAST:		PAST:
	TRANSLATION		NEG+PRES:
			NEG+PAST:
			? Check around you and write sentences use proper names to form your sentences.
Ex: (Instr	uctor/expla	in): The ins	structor is explaining the circuit to the
1. (A CLA	\SSMATE/F	EAT):	
2. (SOM	1EBODY/SI	_EEP):	
3. (SOM	EBODY/W	EAR BOOT	S):
4. (WATC	CH TELEVI	SION):	
		-	
5 /1195	CELLDHON	VIEV.	

	REFRIGERATION GRMMAR SECTION
6. (IT/RAIN):	
7. (PAY ATTENTION):	
8. (LISTEN TO MUSIC):	
9. (SOMEBODY/LAUGH):	
10. (OUT OF THE LEARNING RO	OM):
	t, In, On). house in Athens, a small town nearby Atlan
team, are in charge of repairing different make to the place. I started working dule is heavy tight. I normally start	c in the maintenance department, me and not damages or improvements directors want that place back November. My sch 7:00 am that means I have to be awakening which normally takes an hour by car. I wooff Tuesdays. I get out for lunch
1:00pm and a 20 minutes short brake 8:30 pm which means I normally work about Look at Lisa's diary for next week and	_ 4:30. I normally finish my work session out 12 hours a day.
MIFSDAY	ON Class From 10 to 4 ATURDON Refrigeration manual reading Circuit training process 800 to 5:00pm Technical supposes

GRMMAR SECTION



1. WHEN IS LISA'S MANUAL READING:
2. WHAT IS LISA DOING ON SATURDAY? :
3. WHAT IS LISA HAVING ON MONDAY? :
4. WHEN IS LISA BUSY FROM 8:00 TO 5:00? :
5. WHAT TIME IS LISA'S CLASS? (DAY):
(TIME)
(TIVIL)
6. WHAT DAY AND WHAT IS LISA DOING IN THE AFTERNOON? :



REFRIGERATION GRMMAR SECTION

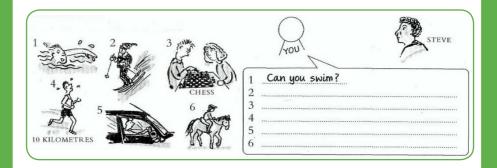
Check the next instruction box and realize the corresponding use of these modal verbs (Can/Could) in positive and negative way.





He can play the piano.

can + infinitive (can do / can play / can come etc.):



Think about 5 actions you have learnt in automation program at SENA and write those actions previously learnt using modal can, can't could or couldn't.

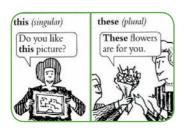
GRMMAR SECTION

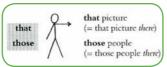


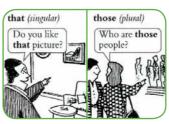
1	_
5.	

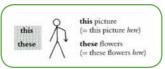
Check the next instructions about demonstratives and make exercises below.

this/that/these/those





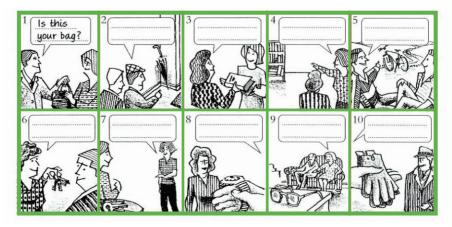






REFRIGERATION GRMMAR SECTION

Write question: Is this /that your.....? or Are these/those your.....?



Check the next pictures and write sentences using demonstratives with tools vocabulary.



REFRIGERATION GRMMAR SECTION



1	
2	
3	
4.	
5.	



AUTOMOTIVE VOCABULARY SECTION

appending one to

VOCABULARY EXERCISE:

 Check the next vocabulary words and match the corresponding one to the box it best belongs to.

VICE GRIPS TORQUE WRENCH BRAKER BAR **BELT** CABLE TIES ALTERNATOR COOLANT AIR FILTER PISTON CRANK CASE AXLE ANTIFREEZE CARBON FIBER REFRIGERANT ROLL CAGE MATERIAL **ELEMENT** TOOL Match the description that best suits for the next material, tool, and element. Long non-ratcheting bar that is CONDENSER very tight fasteners The power transmitting components in a car, including clutch **FUNNEL** and gearbox A panel with gauges, switches, **FUEL FILTER** and instruments needed for car Principally a machine that converts electrical energy into **SPEEDOMETER** Standardized system that **DRIVETRAIN** onboard computers in cars and trucks use for self-diagnostics and



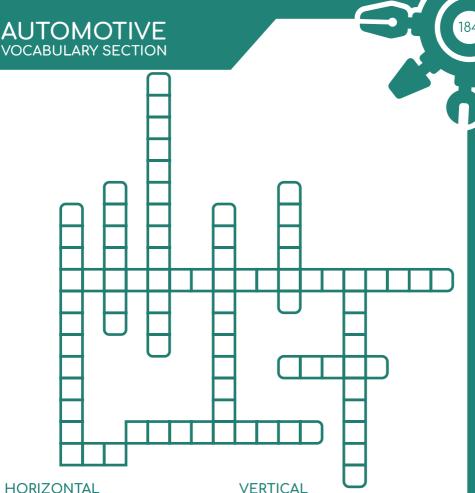
SUSPENSION

MOTOR

AUTOMOTIVE VOCABULARY SECTION

A device in the fuel line that prevents impurities in the fuel avoiding possibly clogging the

BRAKER BAR DASHBOARD OBD2	A device for changing vapor into liquid, as in an air conditioning system. Shock absorbers and linkages used to suspend a car's frame, body, engine and drivetrain above the wheels. Hollow cone with a tube extending from the smaller end to direct a downward flow	
Check the next vocabular	ry words and organize them correctly.	
PRAMS:	RAI MUPP:	
NUFNEL:	RAI LETIRF:	
KRECWING RAB:	BERO:	
ABREK RELEDEB :	CERAMB:	
CLIRPIC LERIP:	TRABECRUOR:	
PYR SARB: LOTANCO:		
OTINGINI KPRAS	RONBAC BIREF:	
SETTRE: PUJM TRASTER:	RONBAC BIREF:	
REBAGIN PATARED:	GENNIE:	
RYNDLECI NIPTOS:	TIFLER:	
	EGUGA:	



bolt.

HORIZONTAL

- 6. It is an element ideal for removing brake fuel, layers of grease, oil and other contaminants quickly.
- 8. A devise to remove suspended impurities or particles of foreign matter from the air intake, fuel, or lubricating system.
- 9. The mechanism that allows the driver to move the.
- transmission gears into various drive positions.
- 10. The speed at which the engine crankshaft turns.

- 1. It is a tool used to apply precisely a specific torque to a fastener such as a nut or
- 2. The mixture of water and antifreeze that picks up heat from the engine and transfers it to the air passing through the radiat.
- 3. Principally a machine that converts electrical energy intmechanical energy.
- 4. This is lightweight and stronger than steel. it can be bound in a plastic resin matrix to form a strong composite.
- 5. It is a plastic strong flexible multi-use product for attaching one thing to another thing.
- 7. Springs shock absorbers and linkages used to suspend a car's frame, body, engine and drive train above

READING COMPREHENSION.

The automotive industry is a wide range of companies and organizations involved in the design, development, manufacturing, marketing, and selling of motor vehicles. The automotive industry is very dynamic and requires extreme flexibility from automotive manufacturers. The growing global competition demands smart production systems, combined with flexible logistics systems. They can be adapted quickly and thus also serve the ever-increasing demand for model diversity. In addition to the installation, a simple operation of the system plays an important role.

1769: The first steam-powered vehicle was created by Nicholas-Joseph Cugnot 9. It was a real tricycle with wooden wheels, iron wheels and weighted 4.5 tons. In 1920's cars had some of the next characteristics; Box type structure, Bulky, Less efficient, Low Power and Torque hence low speed, No consideration of Aerodynamic forces whatsoever. In the 30's Better design, Long bonnets, Better look

The automotive industry began in the 1890s. In the year 1929, there were 32,028,500 automobiles in the world, of which the American automotive industry produced around 90%. The development in the mechanics of the new cars with respect to the previous ones is reflected in the power, in the consumption of fuel and the control of the polluting emissions. In terms of security, Modern cars are safer than the old ones, because they integrate a more resistant structure in the passenger compartment.

What makes possible the designing, development, manufacturing, marketing and selling of cars?

- Automotive industry
- Automation in automotive industry
- Automotive, companies and organizations.

When Automovile industry firstly began?

- 1929
- 1890
- 1769



What makes a big difference between nowadays car vs ancient cars?

- Marketing and selling
- Power, fuel consumption
- Weight and design.

The vehicle created by Nicholas-Joseph was:

- Bulky, less efficient and low speed
- Better look, better design with long bonnets
- Steam powered with wood wheels and tricycle form

What is needed companies have for a growing global competition?

Why constant changing world demands will not be a major challenge for Automobile industries?



READING COMPREHENSION II.

Read descriptions below and write under each car picture its corresponding year.













AUTOMOTIVE VOCABULARY SECTION





Read the different car descriptions and match it to the years it belongs to.

DESCRIPTION OF CARS

•	Better	d	esign
---	--------	---	-------

• Long bonnets The 90's

Better look

· Pony cars

· Cars became compact

• Primary focus on performance The 80's

Affordable

• High performance engines and more effective transmissions

· Noisy and sturdy

• Introduction of Hybrid cars The 60's

• Equip with safety systems

· Convertible roofs

• More shiny and attractive

• Focus on Low emission The 70's

· Aerodynamically better

More power and torque

• Fuel efficient engines The 30's



- Focus on Interior, style an looks

Low ground clearanceBetter in handling and user experience

The 40's

GRA	MMAI	R SECT	TION:

Check the next sentences and make corrections using to be verb (am, is ,are)		
1. Mechanics am a job hands get dirty really easy.		
2. The impact wrench are in the closet.		
3. A speedometer is am for a checking speed instruments.		
5. I studying are Mechanics at SENA		
10. The hand tools is used in Mechanics for repairing cars.		



Read the answer box and make questions on the left box best suit for each one.

	JESTION BOX
1	?
2	?
3	?
4	?
5	?
6	?
7	?

ANSWER BOX

Because the supervisor said they could go to have lunch.

That is Ricardo's Torque Wrench.

They are using wires, cable ties and a complete tool box to repair the electrical problem of the car.

That mechanic Circuit is checked by using this device.

Tomorrow is payment day.

The automated car factory is two blocks away from here.

My boss is the one next to Daniel

Check the next instructions and make sentences based on this explanation using possessives



ANN'S CAMERA (her camera)



MY BROTHER'S CAR (his car)

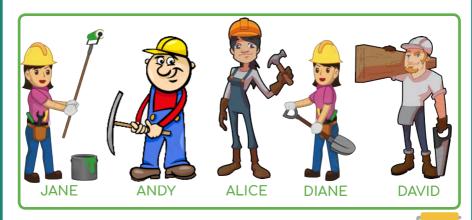


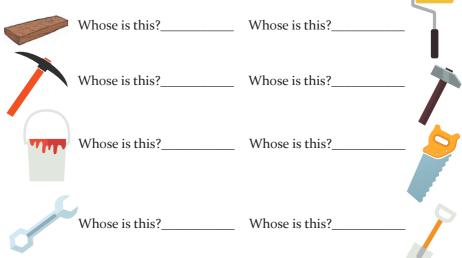
THE MANAGER'S OFFICE (his or her office)



We normally use -'s for people:

- I stayed at my sister's house. (not "the house of my sister)
- Have you met Mr Kelly's wife? (not "the wife of Mr kelly's)
- Are you going to **James's** party?
- Paul is a man's name. Paula is a woman's name.







Check each verb and make 4 sentences totally created by you in present and past simple; Negative in present and past. Use vocabulary words from the dictionary.

СОМЕ			PRESENT:
	PRESENT: CC PAST: CA TRANSLATION:	ME (kèim)	PAST:NEG+PRES:NEG+PAST:
FIND			PAST:
j &	PRESENT: FOPAST: FO	OUND(fàund)	NFG+PRFS:
HAVE			PRESENT:
	PRESENT: PAST: TRANSLATION:	HAD(jáad)	PAST:NEG+PRES:
GO			PRESENT:
300	PRESENT: PAST:	GO (gòu) WENT(went)	PAST:
20	TRANSLATION:	IR	NEG+PRES:

NEG+PAST:_



PAY



PRESENT: PAST:

PAY (Pèi) PAID(pèid)

TRANSLATION: PAGAR

PRESENT:

PAST:

NEG+PRES:

NEG+PAST:

LEARN



PRESENT: LEARN (lern)

PAST: LEARNT(lernt)

TRANSLATION: APRENDER,

PRESENT:

PAST:

NEG+PRES:

ENTERARSE NEG+PAST:_____

KNOW



PRESENT: PAST:

KNOW(nóu) PAST: KNEW(niú)

TRANSLATION: SABER, CONOCER PRESENT:

NEG+PRES:_

NEG+PAST:

BUY



PRESENT:

BUY(bái)

PAST: BOUGHT(bot)

TRANSLATION: COMPRAR NEG+PRES:____

PRESENT:

PAST:

NEG+PAST:



What is happening at the moment? Check around you and write sentences using positive or negative. You may use proper names to form your sentences.

Ex: (Instructor/explain): The instructor is explaining the circuit to the class. 1. (A CLASSMATE/EAT): 2. (SOMEBODY/SLEEP):_____ 3. (SOMEBODY/WEAR BOOTS):_____ 4. (WATCH TELEVISION):_____ 5. (USE CELLPHONE): 6. (IT/RAIN):_____ 7. (PAY ATTENTION):_____ 8. (LISTEN TO MUSIC):_____



9. (SOMEBODY/LAUGH):
10. (OUT OF THE LEARNING ROOM):
• Read the next information about a job and complete the blanks with the corresponding preposition of time (At, In, On)
I work for an important warehouse in Athens, a small town nearby Atlanta in the state of Georgia in the USA. I work in the maintenance department, me and my team, are in charge of repairing different damages or improvements directors want to make to the place. I started working that place back November. My schedule is heavy tight. I normally start 7:00 am that means I have to be awakening 5:00 am due to traffic and distance which normally takes an hour by car. I work from Monday to Sunday but I have a day off Tuesdays. I get out for lunch 1:00 pm and a 20 minutes short brake 4:30. I normally finish my work session 8:30 pm which means I normally work about 12 hours a day.
Look at Lisa's diary for next week and complete the sentences.
MONDAY REPAIRING CAR CLASS From 8 to 12 MAURSON Tool store organization/300pm PROPATOR Repairing Andy's car / 200pm Repoiring Andy's car / 200pm Repoiring Class 9 to 11 On Shift at car workshop Sunday
1. WHAT IS LISA HAVING ON TUESDAY?:



2. WHAT CLASS IS LISA HAVING FROM 9 TO 11 AND WHAT DAY IS IT):
3. LISA IS REPAIRING ANDY'S CAR:
4. THIS DAY LISA HAS SHIFT AT WORKSHOP:
5. LISA IS ORGANIZING TOOL STORE):
6. WHEN IS LISA'S REPAIRING CAR CLASS? (DAY):
(TIME)



Check the next instruction box and realize the corresponding use of these modal verbs (Can/Could) in positive and negative way.

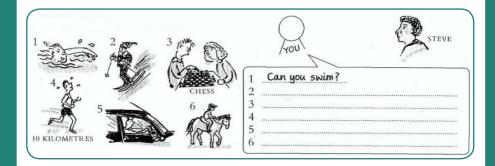




He can play the piano.

can + infinitive (can do / can play / can come etc.):

I/we/you they/he/she it	can cannot (can't)	do play see come etc.	can	they/ne/she/it	do? play? see? come? etc.
-------------------------------	-----------------------	--------------------------------	-----	----------------	---------------------------



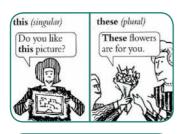
Think about 5 actions you have learnt in automation program at SENA and write those actions previously learnt using modal can , can't could or couldn't.

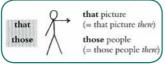


1	
4.	
5.	
	 -

Check the next instructions about demonstratives and make exercises below.

this/that/these/those



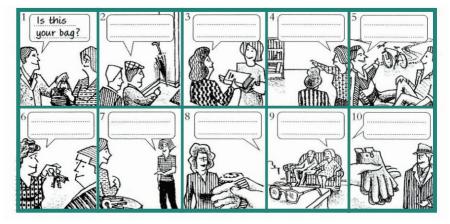








Write question: Is this /that your.....? or Are these/those your.....?



Check the next pictures and write sentences using demonstratives with tools vocabulary.





3.	
4.	
5.	

