

KOMATSU TECHNICAL VOCABULARY

1981

 **KOMATSU**

FOREWORD

This booklet comprises about 2000 technical terms which are used for KOMATSU service materials. The words are arranged in alphabetical order. By using this booklet, we can standardize technical terms and understand the meaning of them more easily.

Words marked x are not standard.

Words followed by → are standard.

For example:

starter x

⋮

(not standard)

→ starting motor

⋮

(standard)

Note: Words marked x are not necessarily wrong.
They are not Komatsu standard words.

abrasive	a substance used for abrading, smoothing, or polishing.
abrasive paper	—
accelerator	a device for increasing the speed of an engine.
accelerator pedal	—
accessory	an object or device not essential in itself but adding to the beauty, convenience or effectiveness of something else.
accessory drive	to drive an engine accessory such as a radiator fan.
accessory table	—
accumulator	a container which stores pressurized fluid for use in an energy source.
acid	—
activating disc ^x	→ driving disc
actuator	a device to activate a pressure control valve by fluid energy.
adapter	(1) an induction tube or a connection tube which connects tubes or a tube and another device differing in bore and direction. (2) an adjusting device to fit a bearing into place.
adhesive compound	a substance for adhering such as glue or cement.
adiabatic plate ^x	→ heat insulating plate
adjustable wrench	a wrench with adjustable width across flats.

adjuster	—
adjusting bolt ^x	→ adjustment bolt
adjusting nut ^x	→ adjustment nut
adjusting screw ^x	→ adjustment screw
adjustment bolt	—
adjustment nut	—
adjustment screw	—
aeration	introducing air into a liquid, causing air to bubble through.
after-cooler	a device to cool compressed air after it is fully compressed.
agricultural tractor ^x	→ farm tractor
air actuator	an actuator powered by compressed air. see "actuator".
air bleed	removing air from an oil or fuel line, etc. see "bleed".
air booster	an auxiliary device to increase the air pressure.
(air) breather	a small vent in an otherwise airtight enclosure.
air cleaner	a filtering device to extract dust and grit from the air entering any device.
air cock ^x	→ air valve
air conditioner	a device to clean the air and control its humidity and temperature in buildings, cars, etc.

air duct	a tube, channel, etc. through which air moves.
air filter	a device to separate solid particles and other impurities from the air by passing it through a porous substance.
air governor	a device to regulate the pressure in the air circuit within a specified range.
air inlet	—
air intake system	—
air intake valve ^x	→ intake valve
air reservoir	air tank.
air supply valve ^x	→ intake valve
air system	—
air tank ^x	→ air reservoir
air valve	—
air vent ^x	→ breather
airtight	—
air vent valve	air bleeding valve, exhaust valve.
alarm	—
alignment	—
Allen head screw ^x	→ hexagon socket head screw
Allen wrench ^x	→ hexagon wrench

allowance specified difference between the upper limit of a shaft's diameter and the lower limit of a hole's bore in order to provide a certain class of fit. for example; in order to determine the class of fit between a hole and its shaft, the allowance between the hole and the shaft is indicated as below with the same basic dimension given to both. see "tolerance".

Hole: $60^{+0.046}_0$ Shaft: $60^{+0.030}_{-0.076}$

alternator a device to convert mechanical energy into electrical energy in the form of alternating current. see "generator" and "dynamo".

ammeter —

ampere a unit of electrical current or rate of flow of electrons. code: A abbreviation: amp.

amphibious bulldozer a bulldozer which can be operated both on land and in water.

anchor pin a fixing pin.

aneroid control a system which controls the introduction of fuel into a supercharged engine by air pressure. see "turbocharger".

angle —

angle blade a blade whose angle to the direction of travel can be changed.

angle bulldozer ^x → **angledozer**

angle of inclination —

angledozer a bulldozer with a blade which can be angled to either side so as to cast its load to the side when digging or pushing.

annealing	to heat and then cool, usually for softening and making less brittle.
antenna	—
antifreeze compound	—
antifreeze solution	water solution of a salt to prevent freezing.
antifriction compound	see "molybdenum disulphide, MoS_2 ".
apron	the front gate of a scraper bowl. the gate is raised or opened to let soil in or spread soil. to carry soil, the gate is closed.
apron arm	arm supporting the apron.
arch	—
arm	—
arm rest	—
armature	the moving element in an electromechanical device such as the rotating part of a generator or motor, etc.
armature coil	—
arrangement	—
articulated frame	an articulated type frame. the frame is divided into front and rear sections which are joined with vertical pins.
articulation	steering or turning by a frame bent to the left or the right at the midpoint.
asbestos	—
assembly, ass'y	a complete operating unit made up of subassemblies and various parts.

A

assembly drawing	—	annealing
atmosphere	—	antenna
attachment	equipment installed to the tractor proper. usually denotes the work equipment.	antifreeze solution
automatic	—	antiflection compound
axial	—	apron
axial load	—	
axial play	—	
axle	—	
axle shaft	—	apron arm

B

back buzzer ^x

→ **backup alarm**

backfire

in a gasoline engine, the backward explosion or burning of a flame into the carburetor when starting up the engine in cold weather, etc.

backhoe

an excavator fitted with a bucket which is drawn toward the machine when digging, scooping and loading.

back horn ^x

→ **backup alarm**

back lamp ^x

→ **backup lamp** (white lamp used when reversing.)

→ **rear lamp** (red lamp used at night.)

back light ^x

→ **backup lamp**

→ **rear lamp**

back mirror ^x

→ **rearview mirror**

back pressure

—

back rest

(1) the back of the operator's seat.

(2) a load support frame of forklift truck.

backup alarm

a buzzer which indicates the machine is going to rearward.

backup lamp

a white lamp which indicates the machine is traveling in reverse.

backup ring

a ring backing up or supporting a U-packing.

backbone type

a type of power line serving as the frame in an integrated unit.

backlash

the slight clearance between teeth of gears in mesh with each other, see "play".

backlash in the axial direction ^x

→ **axial play**

baffle an obstructing device like a wall or screen which turns aside the flow of liquids or gases.

baffle plate

—

balance weight ^x

→ **counterweight**

balancer

balancer to make various weight adjustments.

balancer gears

gears driving balancer shafts.

balancer shaft

two shafts canceling the secondary vibration caused by the rotation of the crankshaft.

ball

ball bearing

a bearing using balls. see "roller bearing".

ball end

spherical end.

ball joint

a pipe joint having a globular internal sliding surface and capable of angular displacement.

ball stud

a stud bolt with one spherical end. this type of bolt is used at the end of a tie-rod, drag like, etc.

ballast meter

a meter which measures the weight of any loaded material.

band

—

bar

a bar used as a support, barrier, lever, fastening, etc. see "rod".

barrel

used for plunger pump, etc.

base	—
basic size ^x	→ standard size
battery	—
beam	—
bearing	rolling bearing or sliding bearing, a part of a machine in or on which another part revolves or slides. ←metal.
bearing cage	(1) a retainer used to install a bearing. (2) the part of a bearing which holds the balls in place.
bearing cap	a cap for a split bearing brace.
bearing case	a case in which to set bearings, same as a bearing housing.
bearing holder	—
bearing insert	an insert to set a bearing in place.
bearing metal	a cylindrical plain bearing fitted in a sliding bearing bore.
bearing race	the inner and outer rings which hold ball and roller bearings in place.
bearing remover	a tool to remove a bearing.
bearing retainer ^x	→ bearing cage
bearing sleeve	a ball sleeve used to install a bearing.
bell crank	a part shaped like a cross support used to hold a bell, a crank which moves a bucket like a bell.
bellows	a part shaped like a bellows, as the folding part of a camera, etc.

B

belt	—
bend	a pipe joint used for changing the direction of piping. the curve is not sharp but gradual. see "elbow".
bent tube	—
bevel gear	a gear with slanting sides meshed with another gear so that power is transmitted at right angles.
bevel pinion	the smaller of the two gears comprising a bevel gear system.
blade	(1) the part of a bulldozer or a grader which digs and pushes earth. (2) an arm of a pump or turbine. (3) fan blade.
blade control	the adjustment of the blade in FLOAT, LOWER, HOLD or RAISE position by operating a control lever. the blade may also be tilted to the right or left depending on its work equipment.
blade lift arm	an arm to lift the blade.
blade lift cylinder	a hydraulic cylinder which raises and lowers the blade.
blade tilt cylinder	a hydraulic cylinder which tilts the blade.
bleed	see "air bleed".
block	a large, solid piece of wood, stone, or metal, etc. used as a support or stopper.
blow-by	escape of burning gases past pistons and valve stems.

blower	a device to produce a current of air or to blow air into an engine, furnace, etc.
blower fan ^x	→ pusher type fan.
blower housing	—
blower impeller	—
body	chassis. in case of dump truck, the container holding the load is called "dump body". see "chassis".
bolt	as a rule, a screw to be used with a nut. see "screw".
bonnet ^x	→ hood
boom	a heavy beam which is hinged at one end and carries a device like a bucket at the other. in case of dozer shovel, this is called a "lift arm".
boom control lever	—
boom cylinder	a hydraulic cylinder which raises and lowers the boom.
booster	a device to change the input pressure to high output pressure.
boost pressure	intake pressure in engine.
boot	a protective seal or cover made of rubber, etc.
bore and stroke	diameter of cylinder and travel of piston in cylinder.
boss	the enlarged part of a shaft. an enlarged portion (hub) where a shaft is fitted may sometimes be called the boss.

B

bottom dead center (BDC)	the lowest point of the piston movement in a cylinder. see "top dead center".
bowl	the body of a scraper which holds earth. earth can be cut and scooped up with the cutting edge of the bowl lowered to the ground.
box	—
box spanner ^x	→ socket wrench
box wrench ^x	→ socket wrench
brace	a device to set up or maintain tension. a device, such as a beam, used to strengthen by supporting weight, resisting strain, or adding pressure.
bracket	a support projecting from a wall, etc. brackets are available in a great variety of shapes.
brake	both drum and disc brakes are available. the drum brakes may be either external band type or internal expanding type.
brake actuator	a device transmitting the braking force. see "actuator".
brake band	a band to tighten a brake drum externally for braking effect.
brake band end	ends of a brake band.
brake booster	a device to increase the braking force.
brake disc	a brake activated by calipers which utilizes friction between fixed and rotating discs.

brake drum	a rotating cylinder with a machined inner or outer surface upon which a brake band presses.
brake fluid	—
brake horsepower	—
brake lining	the material lining a brake band.
brake linkage	a link mechanism which transmits the braking force.
brake pedal	—
brake pedal stroke	distance brake pedal must be depressed to take effect.
brake plate	—
brake shoe	a combination of brake band and lining.
brake valve	the control valve of a brake.
brass	—
brazing	to solder with a nonferrous alloy that melts at a lower temperature than that of the metals being joined.
breaker	(1) breaker for an electric circuit (has same function as fuse.) (2) tool for breaking rocks, etc.
breaking in	initial running of an engine or mechanism at moderate speeds and loads, in order to produce satisfactory bearing surfaces. ← run in
breather	a breathing pipe or vent hole.
brittleness	—

B

brush	a piece of conductive material which rides on the commutator of a motor and forms an electrical connection between itself and the power source.
brush cutter	—
brush holder	—
bubbles	—
bucket	the part of an excavator which digs, lifts, and carries earth.
bucket control	control of a bucket by placing the control lever in FLOAT, LOWER, HOLD, RAISE, DUMP or ROLL BACK position.
bucket control lever	—
bucket cylinder	a hydraulic cylinder which operates the bucket.
bucket indicator	a bar indicating the horizontal level of the bucket.
bucket link	a connecting rod which moves the bucket.
bucket operation	—
bucket position	—
bucket positioner	a mechanism which brings the bucket to the proper digging angle when resting on the ground.
bucket spill guard	a plate attached to the top edge of the bucket to prevent earth from spilling from the bucket.
bucket tooth	—

- buckle** a clamp or catch for fastening the ends of a strap, belt, etc.
- bulb** electric bulb.
- bulldozer** a tractor equipped with a blade to dig, push, bank, or compact earth, or to fell or uproot trees.
- bumper** a shock absorber or protector.
- bush** ^x → **bushing**
- bushing** a cylindrical metal sleeve inserted into a part for reducing effect of friction on moving parts or for decreasing the diameter of a hole. see "sleeve".
- buzzer** —
- bypass filter** a filter to remove fine particles from the engine lube oil led through a bypass. see "full-flow filter".
- bypass valve** a valve which controls the termination of fuel discharge in an injection pump.

C-frame	C-shaped frame supporting the blade of an angledozer.
cab	steel structure surrounding and covering operator's compartment to protect operator.
cab guard	structure in front of operator's compartment to protect operator from falling trees.
cabin ^x	→ cab
cabin guard ^x	→ cab guard
cable	a thick, heavy, metallic rope; a bundle of insulated electric wires.
cable line speed	the speed for taking up the cable.
cable winding speed ^x	→ cable line speed
cage	a box or an enclosed structure which holds a part or parts, e.g. a bearing cage.
calipers	(1) an instrument with a pair of movable curved legs fastened together at one end to measure the thickness or diameter of circular work. (2) a holder with a pair of movable legs for fastening brake discs together.
calk	to beat the edges of joining parts to prevent movement. see "expand", "peen", "punch", "rivet" and "swage".
cam	a sort of wheel which is available in various shapes. it is connected to a driving wheel and imparts periodic rotary or reciprocating motion to a driven wheel.

cam follower	a driven wheel to which a motion is given by a cam.
camshaft	a shaft to which the cam is attached.
canopy	a high rooflike covering over the operator's compartment.
canvas	—
cap	—
capacity	—
capacity chart	—
capscrew	a slotted round-head machine screw used without a nut.
carbon	—
carbon brush	—
carburetor	a device in a gasoline engine in which air is mixed with fuel spray to make an explosive mixture. spelling standardized as "carburetor".
carrier	wheels or deck on which something is carried.
carrier roller	an upper roller which supports and carries the track. see "track roller".
cartridge	a cylindrical case containing replaceable filter element, etc.
case	a container or box, e.g. a clutch case. see "housing".
casing ^x	→ case
casting	—
cast iron	—

C

cast steel	—
caster angle	front or rear inclination of king pin from vertical.
castle nut ^x	→ slotted nut
catalyzer	substance bringing about the catalysis of a chemical reaction.
caution lamp ^x	→ warning lamp
caution plate	—
cell motor ^x	→ starting motor
center-pin support	support for a center pin.
chain	—
chain sprocket	a gear wheel which carries a chain.
chamber	—
chamfer	to bevel or slope an edge or corner. also, a beveled edge or corner.
change lever ^x	→ gear shift lever
channel	—
charger	—
chart	—
chassis	the frame supporting the body of a vehicle. see "body".
chattering	rattling or vibrating of a machine out of order or a gearing out of adjustment.
check valve	a directional control valve which allows fluid or air to pass through in only one direction.

check visually ^x	→ visual check
chisel	—
choke	a device which cuts off the air supply to enrich the fuel mixture and facilitate combustion.
choke knob	a knob which cuts off the air supply to facilitate combustion.
cigar lighter ^x	→ cigarette lighter
cigarette lighter	—
circle drawbar	in a grader, a device for rotating the blade.
circuit	—
circuit breaker	—
clamp	—
clamping bolt	a bolt for tightening a clamp.
clamshell bucket	a shovel bucket with two jaws which clamp together to pick up and hold mud.
claw	—
cleaner	—
clearance	the clear space or distance between moving objects or mechanical parts. this term is frequently used for spaces between holes and shafts, between teeth, etc. see "backlash" and "play".
clearance limit	the range of clearance allowable when servicing a machine, etc.
clevis pin	U-shaped pin.

C

clinch pin	a pin whose point is bent or flattened to prevent a part from coming out.
clip	—
clockwise	—
clog	to block, obstruct.
clutch	a device for transmitting power from one shaft to another by connecting them.
clutch adjusting	—
clutch booster	a device to make it easier to operate the clutch.
clutch disc lining ^x	→ clutch lining
clutch facing ^x	→ clutch lining
clutch housing	—
clutch hub	—
clutch lever	a lever to engage and disengage the main clutch.
clutch lining	a clutch friction plate for interconnecting two shafts by friction.
clutch pedal	a pedal to engage and disengage the main clutch.
clutch plate	a plate driven by the clutch.
clutch spring	—
clutch yoke	—
coal dozer	a bulldozer for carrying coal.
cock	—

coil	a number of turns of wire wound around an iron core or onto a form made of inducting material.
coil spring	a spiral of thick elastic steel, found in varying sizes throughout motor vehicles, especially, as a support and shock absorber for the frame.
cold weather operation	—
collar	a ring or flange, found on rods, shafts, or pipes, which prevents sideward motion, connects parts, etc.
combination lamp	an indicator lamp having two or more functions.
combustion	—
combustion chamber	—
commutator	the part of the armature to which the coils of a motor are connected. the motor brushes ride on the outer edges of the commutator bars and thereby connect the armature coils to the power source.
component	any one of the parts that make up an ass'y. in other companies, a "component" frequently means a sub-ass'y.
compressed air	—
compression release	—
compression release lever	a lever which makes it easier for the starting motor to rotate the crankshaft by releasing the air pressure from a cylinder when starting up an engine.
compression release valve	a valve which release air pressure from a cylinder

compression ring	—	top ring and second ring in the piston.
compression stroke	—	
compressor	—	
condenser	—	also called capacitor, a device consisting of two conductors, A and B, each having an extended surface exposed to the surface of the other but separated by a layer of insulating material called the dielectric, the dielectric is so arranged that the electric charge on conductor A is equal in value but opposite in polarity to the charge on B.
conical spring	—	
conical valve	—	
connecting rod	—	a rod connecting a piston to the crankshaft in an engine.
connecting rod bearing	—	
connector	—	a coupling device which provides a mechanical junction between two pipes or between a pipe and a chassis or enclosure.
constant mesh type	—	
construction equipment	—	
contact area	—	
contact breaker	—	a device for opening and closing the primary circuit in an electric ignition system.
contact face	—	
contactor	—	a device for opening and closing a current path.

control lever	any of the various control levers used for operating a machine.
control valve	—
controller	a device for controlling an electric motor of electric lift trucks.
converter	spelling standardized as "converter".
convex rule ^x	→ tape measure
coolant	—
cooler	—
cooling fan	—
cooling fin	the fin provided on a part to prevent overheating by cooling with air.
cooling system	a system which cools an engine with water and lets the heat escape from a radiator, thereby preventing the engine from overheating.
cooling water	—
copper	—
copper sleeve	a tube or tubelike part made of copper which fits over or around another part.
core	the central or innermost part of anything. example: parts not replaced when rebuilding (housing, case, shaft, etc.); radiator core; core of electric coil; casting mold, etc.
corrosion	—
corrosion resistor	an anti-corrosive device. that is, a device which prevents internal corrosion by removing impurities from the cooling water through a filter.

C

cotter	—	
cotter pin	—	
counterbalancer	an eccentric shaft for reducing engine vibration.	
counterbore	a larger hole concentric with another smaller hole to receive the head of a bolt. 	
counter gear ^x	→ driven gear	
counterrotation	a spin turn which can be made by driving the L.H. and R.H. tracks simultaneously in opposite directions. see "gradual turn" and "pivot turn".	
counterclockwise	anti-clockwise	
countershaft	an intermediate shaft in a transmission that transmits power from the main shaft of a machine to a working part.	
countersunk	a hole whose top part is enlarged so that the head of a bolt, screw, etc. fits flush with or below the surface. 	
counterweight	a balance weight equal to a load on the work equipment.	
coupling	a screwed type or an insert-welding type pipe joint for joining pipes together in a straight line. see "connector", "union" and "joint".	
coupler	a thing that couples.	
cover	—	
crack pressure ^x	→ cracking pressure	

cracking pressure	in a check valve, relief valve, etc.; an increased pressure at which a fixed flow rate is observed.
crank	—
crank pulley ^x	→ crankshaft pulley
crankcase	—
crankpin	the pin or movable journal which unites the connecting rod of an engine or pump with the crank.
crankshaft	a shaft for converting reciprocating motion to rotary driving motion.
crankshaft bearing	a bearing which carries a crankshaft.
crankshaft gear	—
crankshaft pulley	—
crawler tractor	a tractor mounted on a pair of roller chain tracks.
criteria	standards on which judgements or decisions may be based.
cross (drive) loading	a method of using a dozer shovel.
crosshead	a part for pushing two intake and two exhaust valves simultaneously in a 4-valve engine.
cross member	a transverse beam
cubic centimeter	cm ³
cubic meter	m ³
cup	—
cushion	—

C

cushion seat	a seat with cushion.
cushion tire	type of tire used on forklift trucks.
cutaway model	—
cutout relay	an electromechanical device which automatically breaks and closes a circuit between a generator and battery.
cutting edge	a cutting edge attached to the blade, etc.
cylinder	in engine, pumps etc., the hollow tubes where pistons make their reciprocating motion.
cylinder block	a block of cylinder consisting of pistons, connecting rods, crankshaft, camshaft, etc.
cylinder bore	the inner diameter of cylinder.
cylinder bottom	—
cylinder head	a block of cylinder head including intake and exhaust valves, fuel injection nozzle, etc.
cylinder head cover	—
cylinder liner	a friction substance in a cylinder which is replaceable when worn out.
cylinder packing	a seal, like a ring installed in a cylinder.
cylinder support yoke	frame for supporting a cylinder.
cylindrical roller bearing ^x	→ roller bearing

D

damp soil	—
damper	a device for absorbing abruptly changing loads, or for absorbing the vibration of an engine crankshaft.
dashboard ^x	→ instrument panel
dashboard lamp ^x	→ instrument panel lamp
dead center	upper and lower limits of the piston movement. see "top dead center" and "bottom dead center".
decelerator pedal	a pedal used for reducing engine revolutions. for example, when earth is let fall, this pedal should be operated instantly.
decompression ^x	→ compression release
decomp. lever ^x	→ compression release lever
decompression lever ^x	→ compression release lever
defroster	a device for melting ice and frost or preventing their formation on a motor vehicle windshield.
delivery valve	a fuel discharge on delivery valve.
demand valve	a valve mechanism for dividing the flow of hydraulic oil between the circuits for the work equipment and the steering system depending on the flow rate of oil (engine speed).
depth	—
depth gauge	—
detent	an impression or groove cut across the surface of a shaft or rail to hold shifted gears in the desired position, by means of a ball or pawl.

D

diagonal brace	bracing placed at an angle across a rectangular frame to prevent alteration in the shape of the frame.
diagram	—
dial gauge	a sensitive measuring instrument indicating minor displacement on the scale by enlarging the displacement through gears.
dial indicator	a dial gauge or its pointer.
diameter	—
diaphragm-type pump	a pump performing suction and delivery of fluid by raising and lowering the pump diaphragm.
diesel engine	an internal combustion engine, in which a high temperature is obtained by high compression of the air.
diesel fuel	light oil or heavy oil used as fuel in a diesel engine.
diesel oil ^x	→ diesel fuel
differential (gears)	a device that transmits equal driving power to two axles and allows them to turn at different speeds to adjust to varying resistance.
differential case	the case holding differential gears.
differential lock	a device that allows the L.H. and R.H. driving wheels to turn at the same speed by locking the differential gears.
dimension(s)	the singular "dimension" denotes a length. usually, the plural form, "dimensions" is used to indicate size, width, quantity, etc.

dimmer switch	a switch for varying the intensity or angle of illumination of a head lamp.
diode	semiconductor rectifier. abbreviation: SR
dipstick	—
directional control check valve ^x	→ check valve
directional control valve	forward-reverse directional control valve.
direct drive transmission	this type of transmission gives all travel speeds through varying gear combinations. see "TORQFLOW transmission".
direct injection	in a diesel engine, combustion is effected by injecting fuel directly into the main fuel chamber. see "precombustion chamber".
direction lever ^x	→ forward-reverse lever
disassembly	—
disc	—
disc brake	two discs, one stationary and the other freely rotating, are mounted on a shaft. when the two discs are brought together, the friction between them brings the rotating disc to a stop. see "drum brake".
disc distortion	—
discharge	(1) the liquid ejected from a pump or from the vanes of a turbine. (2) in a storage battery, the conversion of chemical energy into electric energy.

D

discontinuity	—
disc plate ^x	→ disc
displacement ^x	→ piston displacement
distilled water	—
distortion	—
distortion of disc ^x	→ disc distortion
distributor	(1) an apparatus for directing current from generator to spark plugs. (2) an agency or designated service shop.
ditching	—
dog clutch	mating flanges or collars that have projecting lugs or fingers which interlock when they are engaged.
double open ended wrench	combination wrench
double flanged roller	—
double reduction (gears)	—
dowel	a peg or pin which is fit into corresponding holes in two adjoining parts to fit them together.
dowel pin ^x	→ dowel
downward stroke	—
dozer shovel	a tractor equipped with a front-mounted bucket that can be used for digging, pushing, truck loading, etc.
dozing	dozer operation consisting of digging and pushing with bulldozer, dozer shovels, etc.

drag link	a linkage for transmitting the steering power from a pitman arm to wheels.
drain	to draw oil, water, fuel and sediments from tanks gradually.
drain cock ^x	→ drain valve
drain pipe	—
drain plug	—
drawbar	—
drawbar horsepower	—
drawbar output	—
drawbar pull	—
drill	—
drip proof	—
drive	—
drive axle	—
drive case	—
drive gear	—
driven gear	—
drive housing ^x	→ drive case
drive pinion	—
drive plate	a drive plate of a clutch.
driven plate ^x	→ disc
drive pulley	—
driven pulley	—

D

drive shaft	—
driving disc	—
driven disc	—
driving force	—
driver's seat ^x	→ operator's seat
drum	—
dry type clutch	a friction clutch which is designed to operate without the application of any lubricant to its facings.
dry weight	—
dump	to throw down a load by tilting a bucket, dump body, etc.
dump body	a truck bed or portion of a dump truck where contents are loaded. ← vessel
dump cylinder	a hydraulic cylinder for discharging load from a bucket or for unloading materials from a fork.
dump truck	a truck for hauling earth, etc.
dumping angle	the angle at which a dump body is tilted.
dumping clearance	distance from the uppermost point of a dump truck to the bottom of a loader bucket.
dumping reach	distance from bottom front part of bucket to front part of machine or tire.
dust boot	a kind of dustproof cover.
dust cap	dustproof cap.

dust indicator	a device for indicating the amount of dust or foreign material in an air cleaner. it is installed on the instrument panel.
dust proof	—
dust seal	—
dynamo	D.C. generator as opposed to an alternator which generates A.C.
dynamometer	an instrument for measuring the power output of a rotating machine by determining the friction absorbed by a hand brake opposing the rotation.

earth cable ^x	→ ground connection
edge	—
ejector	(1) a device for ejecting a fluid while drawing in and draining another fluid by making use of its ejection force. (2) in a scraper, an ejector is used to push the load out of the bowl.
ejector cylinder	a hydraulic cylinder for operating a scraper ejector.
ejector plate	a blade attached to the front of the ejector.
elbow	a pipe joint bent at a specified angle, shaped like an elbow. see "bend".
electric	pertaining to, consisting of, containing, producing, derived from, produced, or operated by, electricity.
electrical	pertaining to "connected with the science or use of electricity".
electric cable	—
electric circuit	—
electric current	—
electrical diagram ^x	→ wiring diagram
electrical component	—
electrical system	—
electrical system and component	—
electrode	a conductor used to establish electrical contact with a nonmetallic part of a circuit.

electrolyte	—
electrolyte specific gravity	—
electromagnet	—
element	(1) a substance made up of atoms with the same atomic number. (2) a material for filters. (3) corrosion inhibitor of the cooling water.
Elliot type	—
enclosure	housing, something that encloses or something enclosed.
end	an end (surface), terminal.
end bit	cutting edge attached to each bottom corner of the blade.
end clearance	—
end play ^x	→ axial play
endless belt	—
engaging switch ^x	→ engagement switch
engagement switch	a combination switch for activating a starting motor so as to first run slowly and then at full speed only after completing the gear engagement.
engine	—
engine front support	—
engine idling	running of an engine under no-load condition.
engine oil	engine lube oil. also used as the hydraulic oil. see "grease".

E

engine oil filter ^x	→ oil filter
engine oil pan	engine lube oil reservoir; see "oil pan".
engine output	—
engine serial number	see "serial number".
engine side cover	engine room side plate.
engine speed	—
engine torque	—
engine valve clearance	—
equalizer bar	a cross-bar for equalizing the pitching movements of the L.H. and R.H. tracks.
equalizer spring	a spring for reducing the load difference between axles.
equipment	—
excavation	—
excavator	—
exhaust	opposed to "intake".
exhaust gas	—
exhaust gas color	—
exhaust manifold	a manifold for collecting exhaust from cylinders and expelling it from engine.
exhaust pipe	—
exhaust sound	—
exhaust valve	—

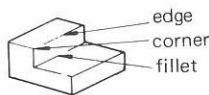
- expand** to stake. one end of a part inserted in a hole is expanded from inside out to prevent the end from getting out of place. see "calk".
- expansion clutch** a clutch with internally expanding clutch shoes. used for the winch of pipelayer, etc.
- expansion plug** a steel plug that is slightly rounded. when driven into place, it flattens out, and this expansion forces it to fit tightly in its seat.
- extension** elongation, extension, addition.
- extension fork ^x → **fork extension sleeve**
- external gear** a gear consisting of a cylinder or cone with teeth machined on the periphery.
- extremely sharp turn ^x → **counterrotation**
- eye bolt** a bolt provided with a hole at one end, instead of the usual head.

F

F

facility	—
fairlead	a device for lining up cable so that it will wind smoothly onto a drum.
fan	—
fan belt	—
fan blade	—
fan pulley	a pulley driving a fan.
farm tractor	—
farming tractor ^x	→ farm tractor
fastener	—
feather key	a flat key, which is partly sunk in a shaft and partly in a hub, permitting the hub to slide lengthwise on the shaft. see "key".
feed pipe	pipe for feeding fuel oil.
feed pump	a pump for feeding fuel oil.
feeler gauge	a gauge having various thicknesses, of accurately finished blades for measuring clearance between parts.
fender	mudguard.
fender support	—
ferrule	a short unthreaded tube or bushing shrunk or soldered onto a tube or line.
field coil	—
filler	conduit, oil filler

filler cap	oil filler cap.
fillet	a concave junction formed where two surfaces meet.
fillet radius	radius of a fillet.
filter	a device through which fluid is passed to separate out dirt.
filter element	—
fin	a thin extrusion of metal to extend an area of a part for cooling of or radiation from the part.
final drive	a set of reduction gearing to transmit power to sprockets after reducing the bevel gear shaft rotations, or to wheels after reducing the axle rotations.
final drive case	—
final drive gear	drive gear for transmitting power to sprocket or wheel.
final drive No. 1 pinion ×	→ final drive 1st pinion
final drive No. 2 pinion ×	→ final drive 2nd pinion
final drive 1st pinion	first pinion in the final drive.
final drive 1st driven gear	a gear meshed with the 1st pinion in the final drive.
final drive 2nd pinion	the 2nd pinion on the same shaft with 1st driven gear in the final drive.
finger bar	a bar to suspend the fork.
firing order	—



F

fitting	(1) usually, pipe joint, but in Komatsu refers to "grease fitting" only. (2) the degree of tightness or looseness between two mating parts.
fixture	a special device for holding parts in a machine.
flange	—
flash	—
flasher (lamp) ^x	→ turn signal lamp
flat shoe	a flat shoe without projections.
flat washer ^x	→ plain washer
flexible	—
flexible coupling	a joint made of flexible material like leather, rubber, etc.
flexible tube	—
float	(1) a hollow ball that floats at the end of a lever in a tank and regulates or measures the liquid level. (2) FLOAT position: the situation in which work equipment moves in accordance with external force.
float tank	in a Cummins engine, most of the fuel flows back to the tank. consequently, a float tank is provided to prevent fuel from flowing back when the engine stops.
float valve	a valve which is closed by the float buoyancy of a float.
floating seal	a seal for a bearing in idler, track roller, or carrier roller in the undercarriage.

floor	—
floor board X	→ floor plate
floor plate	—
flow control valve	—
flow meter	—
fluid	gases and liquids, not solids.
fluid coupling	a device that transmits a rotary drive through the medium of oil or another liquid. see "torque converter".
flywheel	a heavy wheel used in engines and machinery where reciprocal motion is converted into rotary motion. the flywheel, by absorbing some of the energy, maintains uniformity of motion by alternately absorbing and giving out work.
flywheel horsepower	the rated horsepower is expressed by the term "flywheel horsepower" in specifications.
flywheel housing	—
fog lamp	an auxiliary lamp for use when it is foggy.
fold	→ pleat
follower	an object which is driven by another wheel.
foot	1 foot = 12 inches $\approx$ 30.5 cm abbreviation: ft.
foot brake	—
foot pedal	—
foot rest	—

F

force fit ^x	→ press fit
forcing screw	—
forced lubrication	delivering lube oil from a pump to bearings.
fork	Fork for loading or unloading materials on a forklift truck.
fork extension sleeve	an auxiliary fork for extending the length of fork by inserting it into the fork.
forklift truck	—
forward	—
forward-reverse lever	a control lever having the three positions FORWARD, REVERSE and NEUTRAL. see "gear shift lever".
frame	—
free length	length of a coil spring when no load is imposed.
free lift	amount of height that a fork can lift without the inner mast rising above the outer mast.
free lift mast	mast which prevents the top of the inner mast from going above the fork height.
free wheel	a mechanical device which engages the driving member to impart motion to a driven member in one direction only.
friction clutch	this type of clutch has no positive connection and depends for its operation on the frictional resistance of two or more surfaces, which are held in contact by pressure, turning independently.

friction loss	—
friction plate	—
frictional surface	—
front idler ^x	→ idler
front lamp ^x	→ head lamp
front light ^x	→ head lamp
front support	like an engine front foot.
frozen earth	—
ft-lb	foot-pound. a unit of torque. for example; if force of 3 pounds acts on an arm 2 feet long, the turning force is "2 ft x 3 lb=6 ft-lb". see "kgm".
fuel	—
fuel consumption ratio	—
fuel control lever	a lever which controls the fuel injection. may be adjusted to ENGINE STOP, IDLING or RUN position.
fuel (feed) pump ^x	→ feed pump
fuel filter	—
fuel gauge	a gauge on the instrument panel which indicates the quantity of fuel remaining in the tank.
fuel injection pump	—
fuel injector	a device through which fuel is injected into the combustion chamber of an engine in the form of an atomized mist. see "injector".
fuel level	—

F

fuel pressure	—	friction loss
fuel pressure gauge	—	friction plate
fuel strainer	—	frictional surface
fuel system	—	fuel filter
fuel tank	—	fuel injection pump
full load	—	fuel injector
full throttle	—	fuel level
full-flow filter	a filter for separating solid particles, impurities, etc. from the oil lubricating various parts of an engine.	
function	—	fuel consumption ratio
funnel	—	fuel control lever
fuse	—	fuel filter
		fuel gauge
		fuel injection pump
		fuel injector
		fuel level

- gap** a hole or opening, an interruption of continuity, etc. different from "clearance".
- gasket** a thin piece of rubber, metal or other material placed between surfaces to make a tight joint. different from "packing". see "seal".
- gasket kit** —
- gasket sealant** a sort of liquid gasket applied to gasketed areas. LG-1. see "metal sealant".
- gauge** (1) oil level gauge, etc. (2) oil pressure gauge, oil temperature gauge, etc. (3) track gauge, tire gauge, etc.
- gear** —
- gear case** —
- gear pump** a pump in which 2 meshing gear wheels contrarotate so that liquid is delivered.
- gear ratio** —
- gear shift lever** used for transmission.
- generator** generator, A.C. or D.C. see "alternator" and "dynamo".
- giant ripper** a large-size single-shank ripper. its penetrating angle and depth can be controlled hydraulically.
- glass bowl** ^x → **sight-feed dome**
- glow plug** in cold weather starting, the intake air in the precombustion chamber is electrically preheated by plugs (which are red-hot) to aid the fuel in firing.

glow plug indicator ×

→ **heater signal**

glow signal ×

→ **heater signal**

governor

a device, mechanical, hydraulic, or electrical, used to control and regulate engine speed in correspondence to the increase or decrease in load.

governor control lever ×

→ **fuel control lever**

governor weight

weight of governor. engine speed is regulated by the centrifugal force of the rotating weight.

gradeability

—

grade resistance

—

gradual turn

a turn made with only one steering clutch disengaged. see "pivot turn" and "counterrotation."

gravel

—

grease

a solid or semi-solid mixture of oil with soap or other fillers. anticorrosive thick oil. see "engine oil" and "lubricant".

grease fitting

a fitting for supplying grease to a greasing point.

grease nipple ×

→ **grease fitting**

grease pump

a pump for delivering grease under pressure.

greasing

—

green area ×

→ **green range**

green range

the green range on the dial of a measuring instrument.

grommet	a rubber ring inserted in a hole in an iron plate.
groove	—
ground cable ^x	→ ground connection
ground clearance	the vertical distance from the ground line to the lowest point of a machine.
ground connection	a connection used in establishing a ground (also called "earth" or "earth connection" in British English.)
ground contact area	—
ground strap	a wire or strip connected between a battery and a ground.
grounding	—
grounding cable ^x	→ ground connection
grouser	a ridge or cleat across a track shoe, which improves its grip on the ground.
guard	a protective device, e.g. a track roller guard, radiator guard, etc.
guide	a part that directs or controls the motion of other parts of a machine, e.g. a spring guide, guide rail, etc.
guide plate	a lower plate used as an idler guide.

H

H

half clutch ^x	→ partially applied clutch
hammer	—
hand brake ^x	→ parking brake
hard facing	deposition of a surface layer or harder metal on a softer base metal. building up worn surfaces to restore the original qualities or improve resistance to wear or deterioration.
hardness	—
harness ^x	→ wiring harness
hauling capacity	carrying capacity of a vehicle.
head	—
head cover	—
head guard ^x	→ overhead guard
head lamp	opposed to "rear lamp".
head light ^x	→ head lamp
heat insulating plate	—
heat treatment	a succession of heating and cooling cycles applied to a metal or alloy in order to obtain the desired properties. quenching, tempering, annealing, etc. are included in the heat treatment processes.
heater	includes operator's compartment heater, glow plug, etc.
heater indicator ^x	→ heater signal
heater plug ^x	→ glow plug

heater signal	a signal on the instrument panel indicating that glow plugs are red-hot.
heater switch	heater switch. switch for glow plugs is called the "preheater switch".
heavy duty	—
heavy load	—
height	—
helical gear	toothed gear in which the teeth are meshed at some angle besides a right angle. (on a helix)
hexagon head bolt	—
hexagon nut	—
hexagon socket head screw	the screw which has a head with a hexagonal hole. Allen head screw.
hexagon wrench	hexagon shaped wrench specially designed for hexagon socket head screws only. Allen wrench.
high lift upright X	→ high mast
high-low lever	the high and low 2-speed range selector lever for a forklift truck.
high mast	—
high speed gear	—
hinge	a connection which allows swinging motion in one plane with a pin used around the center shaft.
hinge pin	a pin used at a hinge connection.
hinged fork	a fork tiltable up and down with a hinge.

H

hitch arm	a catching or fastening arm.
hoist	a mechanism by which a bucket or blade is lifted or the process of lifting it.
hoist cylinder	a hydraulic cylinder to raise a dump body of a dump truck.
HOLD	a stationary position. when the work equipment control lever is placed in HOLD position, the work equipment will stay in that position.
holder	—
hole	—
honin	process for correcting small irregularities into the bore of a cylinder with an abrasive tool.
hood	bonnet. the protective roof of the engine room.
hook	—
horn	—
horn button	—
horn button switch ^x	→ horn button
horsepower (HP)	—
hose	—
hose coupling	mode of joining together the ends of hose pipes.
housing	a box-type container in which machine parts or devices are held or supported, etc. it is available in various shapes.

HP	horsepower
hub	the strengthened inner part or mounting of a wheel or gear. see "boss".
hub bearing	usually used as a wheel hub bearing.
hub bolt	—
hub nut	—
hydraulic booster	a device for hydraulically raising the pressure.
hydraulic control	—
hydraulic cylinder	a cylinder actuated by oil for lifting or lowering blades, etc.
hydraulic filter	—
hydraulic oil	—
hydraulic oil filter ^x	→ hydraulic filter
hydraulic oil pressure ^x	→ oil pressure
hydraulic oil tank ^x	→ hydraulic tank
hydraulic pump	a pump for work equipment.
hydraulic reservoir ^x	→ hydraulic tank
hydraulic ripper	—
hydraulic tank	—
HYDROSHIFT transmission	a transmission in which various speeds are obtained by hydraulically engaging or disengaging multiple-disc clutches set in combination with planetary gears. a damper is provided between engine and the transmission. see "direct transmission" and "TORQFLOW transmission".

IC box

control box containing an integrated circuit.

idle gear [×]

→ **idler gear**

idler

—

idler gear

a gear on an intermediate shaft in transmission or engine.

idling

running of an engine under no-load condition.

ignition

—

ignition cable

—

ignition coil

a coil to produce an ignition spark for an ignition plug.

impact wrench

a wrench for installing or removing bolts, nuts, etc. by compressed air.

impeller

a rotating wheel with vanes to drive and circulate a liquid in a pump, etc.

inch

1 inch $\approx$ 2.54 cm

inching control

—

inching lever

a lever for fine control.

inching pedal

inching control pedal. inching forward-reverse lever as used in a forklift truck.

indicator

—

induction

—

inertia brake

the shaft continues coasting by inertia after the main clutch is disengaged. the inertia brake serves to stop such a coasting shaft.

injection injection of fuel into a cylinder in the form of atomized mist.

injection nozzle —

injection pipe —

injection pressure —

injection pump a pump injecting fuel into a cylinder.

injection timing —

injection valve —

injector in a diesel engine, the unit that sprays fuel into the combustion chamber. see "fuel injector".

injector cup a cup at the injector tip.

injector plunger a rod piston for an injector.

injector sleeve sleeve for installing an injector in place.

inlet (1) inlet port, an inlet port of a fluid container, etc. as opposed to "outlet".
(2) air inlet, air intake, etc. as opposed to "exhaust".

inlet manifold X → **intake manifold**

inlet pipe —

inner element an inner cylindrical filtering element for an air cleaner. see "outer element".

inner mast inner mast of a 2-stage extension mast.

inner race a rolling inner ring of a bearing which holds balls or rollers in the bearing cage. see "outer race".

inner rail	rail comprising the inner mast. see "inner mast".
input	—
insert	various types of plates and cylindrical pieces to be inserted. see "valve insert".
installed length	length of a spring when installed. see "free length".
installed load	mainly used for the load of a spring when installed. see "preload".
inspection cover	a small window cover provided for easy inspection.
instrument	—
instrument panel	—
instrument panel lamp	—
insulating material	—
insulator	—
intake	intake air, inlet air, etc. as opposed to "exhaust". differs from "suction".
intake air system ^x	→ air intake system
intake manifold	the device which draws air into a cylinder. see "exhaust manifold".
intake valve	air intake valve. differs from "suction valve".
interlock	a mechanism that locks the gear shift lever when the main clutch lever is in ON position.
intermediate gear ^x	→ idler gear

intermediate shaft

intermediate shaft in the transmission.
see "main shaft" and "countershaft".

internal gear

a gear having teeth on the inside of the rim or hub. an external gear in mesh with an internal gear may sometimes be regarded as an internal gear.
see "external gear".

internal snap ring

a snap ring installed from inside.

inverter

a device that changes D.C. to A.C.

J

jack	a mechanical or hydraulic lifting device.
jam nut	a thin head nut.
jaw clutch	a clutch consisting of two toothed jaws, one of which slides along its shaft to engage or disengage from the other.
jet	injection, jet nozzle.
jet nozzle	a nozzle injecting jets of fuel.
jib crane	a crane provided with a jib or compression beam, as distinguished from an overhead crane.
jig	—
joint	shaft coupling and pipe joint. in movable pipe joint, rotary, swivel, and ball joints are available.
journal	that part of a rotating shaft or axle which turns in a load-supporting bearing.

K

kerosene	a thin oil distilled from petroleum or coal used mainly for cleaning. see "light oil".
key	(1) feather key. a small piece of metal sunk partly into both shaft and hub to prevent rotation. (2) starting key.
key switch ^x	→ starting switch
keyway	a slot in a hub or portion surrounding a shaft to receive a key.
kg	kilogram
kg/cm²	a unit of pressure. If a pressure of 5 kg is applied to an area of 2 cm ² , $5 \text{ kg} \div 2 \text{ cm}^2 = 2.5 \text{ kg/cm}^2$
kgm	kilogram-metre. the unit of torque or the turning force. if a force of 5 kg acts on an arm 0.3 m long, the torque is $5 \text{ kg} \times 0.3 \text{ m} = 1.5 \text{ kgm}$.
kick-out	(1) a device that causes the bucket to HOLD automatically at a predetermined height. (2) a device that keeps the lifting height and digging depth of a ripper constant.
kick-out lever	a control lever for kick-out. see "kick-out".
king pin	a pin joining the steering axle and knuckle together. wheels change their direction, centering at this pin.
kit	a set of parts for an ass'y.
knob	—
knock pin ^x	→ dowel

K

knocking	a pounding or rattling noise caused by an explosion in cylinders due to use of improper fuel.
knuckle arm	arm of knuckle connected to a tie-rod.
knuckle joint	a shaft coupling which is free to bend like a knuckle.
knurling	impressing a pattern of dents in a turned surface with a knurling tool to produce a better hand grip.

label	a card.
ladder	—
lamp	—
lang lay	a wire rope construction in which the wires of each strand are twisted in the same direction as the strands of the rope.
latch	any of various devices in which mating mechanical parts engage to fasten.
leaf spring	a spring made of superposed strips or plates.
leak	an accidental hole or crack that lets something in or out.
leakage	a leaking in or out.
leaning	to incline, deviate, or bend from a vertical position.
leaning control	the control of the leaning of the front wheels of a motor grader.
left hand (L.H.)	—
length of track on ground	the distance between the centers of the idler and sprocket on a crawler type tractor.
level gauge ^x	→ oil level gauge
leveling the ground	making the ground flat.
lever	—
license plate	registered number plate like automobile.

L

lift	raise.
lift arm	a lift arm of the bucket. (frequently called the boom for hydraulic excavator.)
lift control lever	control lever for raising the fork.
lift cylinder	hydraulic cylinder for raising and lowering the blade, bucket, fork, etc.
lift truck ^x	→ forklift truck
lifting cylinder ^x	→ lift cylinder
lifting speed	speed of raising the blade, bucket, fork, etc.
light ^x	→ lamp
light oil ^x	→ diesel fuel
limit switch	—
liner	lining, in particular for cylinders.
lining	lining, particularly a friction plate, attached to a friction surface for prevention of excessive wear and overheating of a body. (brake lining, etc.)
link	any of the series of rings or loops making up a chain; a movable piece joining two other parts.
linkage	a series of system of links, especially, a series of connecting rods for transmitting power or motion.
lip	a dustproof lip of packing, oil seal.
lip type oil seal	—
liquid gasket ^x	→ gasket sealant

litre (ℓ)	international spelling. ^x liter
load	whatever is put in a ship or vehicle, external resistance overcome by a machine. used for dump trucks, etc.
load capacity	—
load center	position of center of load on forks, etc.
load diagram	—
load indicator	—
loader	a machine for loading. wheel loader, etc.
loading	—
lock	anything that fastens something else and prevents it from opening, turning, etc.
lock nut	a thin nut screwed down on an ordinary nut to prevent it from working loose. lock nut for piping.
lock plate	a plate under a nut for preventing it from loosening.
lock-ring	—
lock tight ^x	→ thread tightener
lock tite ^x	→ thread tightener
lock washer	a washer for fixing a nut or a bolt. also known as spring washer.
lock wire	wire attached to a bolt head used to prevent loosening.
logger	a machine for loading logs on flat cars.

L

logging arm	an attachment at the rear of a bulldozer for hoisting logs with a winch and carrying them.
logging guard	a device for preventing logs from hitting the towing winch.
long fork	a fork of a forklift truck longer than the standard one.
lubricant	lubricating oils and greases; engine oil, gear oil, etc.
lubrication chart	chart showing lubrication points.
lubrication method	—
lubrication point	a place for lubrication.
lubrication system	—
lug	plate to be added for reconditioning a worn grouser.
low mast	a mast of a forklift truck lower than standard.
LOWER	LOWER for the work equipment as opposed to RAISE. see "HOLD".

M

machine number ^x	→ serial number
magnet	—
magnetic plug	a drain plug with a magnet to attract iron particles.
magnetic switch	a part of starting motor.
main bearing	used for crankshaft bearing.
main clutch	a clutch that transmits or interrupts the flow of power between engine and transmission.
main frame	—
main metal ^x	→ main bearing
main shaft	a transmission shaft receiving power from the engine. see "counter shaft" and "intermediate shaft".
main switch	—
maintenance	—
maintenance standard	—
make-up valve ^x	→ suction valve
manifold	a pipe with one inlet and several outlets or with one outlet and several inlets for connecting with other pipes or for conducting exhausts from each cylinder into a single exhaust pipe.
manipulator	a forklift truck attachment for grasping and rotating a forging.
manual	—
mark	—

M

mast	a post for supporting a rising or lowering fork.
mast rail	a rail for the mast to move on.
master cylinder	the main hydraulic cylinder for a brake. see "wheel cylinder".
master pin	the final pin inserted to connect a track.
match marks	marks indicating relative positions of parts for installation.
material	—
material handling	—
maximum drawbar pull	—
maximum drop below ground	—
maximum lift above ground	—
maximum load capacity	—
maximum load table	—
maximum speed at no load (rpm)	—
maximum torque	—
mechanic	a worker skilled in making and repairing machines.
mechanical	—
mechanical governor	a device for controlling engine speed mechanically.
mesh wire	—

metal ^x	→ bearing
metal sealant	a sort of liquid gasket used for coating metallic surfaces. LG-4. see "gasket sealant".
metre (m)	100 cm (meter = measuring instrument)
micrometer	a precision instrument for measuring very small distances.
micro-switch	small switch
middle mast	the intermediate mast of a triple-stage mast.
minimum speed at no load (rpm)	—
mirror	—
misfire	—
model	machine model, engine model, etc.
modification	"improvement" should be used in preference to modification.
modulating valve	a valve for preventing an abrupt or sharp change in pressure. it is used for engaging TORQFLOW transmission, etc.
monkey wrench ^x	→ adjustable wrench
monocoque frame	a type of construction of frame in which the outer part carries all or a major part of the stresses.
MoS₂	molybdenum disulphide; grease type, liquid type, paste type. an antifriction compound for use where bearings, pin, keys, etc. are forced into place to prevent their biting or seizure, before the machine is broken in.

M

motor	electric motor, hydraulic motor.
motor grader	a machine with wheels and a blade used mainly for shaping and finishing rather than digging or transporting. surfaces can be broken or snow can be removed by adding such attachments as a scarifier, bulldozer blade, snow-plow, etc. to the machine.
mounting bolt	—
mounting bracket	—
mounting face	—
mudguard	—
muffler	exhaust silencer.
multiple shank	shank for multi-rippers as opposed to a giant ripper. see "shank".
multi-purpose bucket	—
MVS governor	Cummins engine term; mechanical variable speed governor. a governor that changes engine speed according load.

N

- needle bearing** a bearing using needle rollers.
- needle roller** —
- needle valve** a needle-like valve for flow control.
- NEUTRAL** the NEUTRAL position of the gear shift lever, etc.
- nitrogen** —
- no-load** —
- notch** a V-shaped cut in an edge or across the surface.
- nozzle** —
- nozzle holder** used for engine.
- nut** a fastener with a threaded (internal threads) hole for screwing onto a bolt, etc.
- nylon nut** a sort of self-locking nut with nylon ring set in its threaded head.

O-ring	a ring with a circular section for preventing leakage.
off-highway truck	a truck capable of hauling on rough terrain.
offset	centers are not in line.
oil cleaner	a device for cleaning oil.
oil clutch ^x	→ wet type clutch
oil cooler	a device for cooling the lubricating or hydraulic oil by water or air.
oil filler	—
oil filter	—
oil filter element	—
oil gauge rod ^x	→ dipstick
oil groove	—
oil level gauge	a gauge usually provided on the side of a tank to check visually the oil level in the tank.
oil pan	oil reservoir under engine.
oil pressure	—
oil pressure gauge	engine lubricating oil pressure gauge, etc.
oil pump	pump to supply lubricating oil, etc.
oil ring	ring set on the lower portion of a piston to remove the excessive oil film.
oil seal	a seal for insuring a radial tightness with a lip; for keeping rotating and reciprocating parts lubricated and for keeping dirt out.

oil temperature gauge	oil temperature gauge for torque converter, etc.
oilier	—
oiling port ^x	→ oil filler
operating cost	expense of using equipment.
operating power ^x	→ flywheel horsepower
operating weight	weight for condition of operation, not including operator's weight.
operation	—
operator	—
operator's compartment	area around operator's seat; inside of operator's cab.
operator's seat	—
option	special specifications.
optional parts	parts which can be selected as desired by customers.
order of ignition ^x	→ firing order
orifice	an opening, mouth or outlet of a tube, a very small hole or opening.
outrigger	an outward extension of a frame which is supported by a jack or block. used to increase stability.
outer components	—
outer element	an outer cylindrical filtering element for an air cleaner. see "inner element".
outer race	an outer ring with a groove in which bearing balls or rollers are rolling.

outer rail	— rail for the outer mast.
outlet	(1) an outlet of a container of fluid, as opposed to "inlet". (2) exhaust as opposed to "intake".
output	power generated by a machine, as opposed to "input".
overall height	—
overall length	—
overall width	—
over-cooling	abnormally low temperature, as opposed to "over-heating".
overdrive	transmission output shaft rotates faster than input shaft.
overflow pipe	a liquid waste pipe, spill pipe.
overhaul	disassembly and rebuilding.
overhaul kit ^x	→ service kit
overhead guard	a protective roofing above an operator's compartment.
overheating	abnormally high temperature as opposed to "over-cooling".
overload	—
overload relief valve ^x	→ safety valve
overrun	exceeding maximum engine speed.
oversize (OS)	larger size than standard size. see "undersize".
oxygen	—

packing	material used around moving parts to prevent vibration, noise, leakage of liquid or gases, or entrance of foreign substances. seals are roughly classified into "gasket" and "packing".
pad	wear pad, a protection against friction and shocks.
pallet	—
parallel	—
parallelogram ripper	a four-point linkage type variable ripper. see "ripper".
parking brake	—
partially applied clutch	a clutch placed in a slipping position.
PCU (power control unit)	a cable control unit for towing a scraper.
pedal	—
pedestal	a base, support, such as a bearing stand.
peen	to crush an iron head by peening it repeatedly. see "calk".
performance	—
performance curve	performance of a machine, equipment, etc. as indicated by curves on diagrams.
periodic maintenance	—
periodical maintenance ^x	→ periodic maintenance
permissible limit ^x	→ repair limit

pilot lamp

an indicator lamp indicating that a unit is energized or actuated. for use as a working lamp, turn signal lamp, etc.

pin

a small bar for holding a part in place. see "cotter pin".

pinion

a small gear. the smaller of two meshed gears.

pipe

a hollow part for letting liquid, gases, etc. flow through. a metallic pipe forms a part of a structure. see "tube".

pipe wrench

a tool which fulfils the same purposes as pipe tongs, but has a single handle only, and holds the work by a hinged lever which tightens with increase of pressure.

pipelayer

—

piston

a solid or hollow disc-like plunger moving lineally in a closely-fitting bored receptacle termed the cylinder. engines and pumps are furnished with pistons against which steam, air, gas, or water pressure is brought to bear.

piston displacement

quantity of exhaust per stroke of piston.

piston head

—

piston pin

a pin for holding a piston at the connecting rod end.

piston ring

a split metal ring placed around a piston to make it fit the cylinder closely.

- piston rod** a rod which moves or is moved by the piston to which it is attached to transmit the piston movement outward.
- piston skirt** a lower portion of a piston.
- piston valve** a valve provided in a piston of the blade lift cylinder to prevent the piston from strongly striking the cylinder end when moving the blade.
- pitch** the distance between the centers of gear teeth or of bolts, rivets, or similar parts arranged equidistantly.
- pitman arm** arm for transmitting the steering effort from the gear to a drag link.
- pitting** the corrosion of gear and cylinder liners, etc. due to inferior quality, or to the action of acids, or to electrochemical action, or to a combination of these.
- pivot** a point, shaft, pin, etc. on which a part turns.
- pivot turn** a spot turn made with one track braked completely and the other driven. see "counterrotation" and "gradual turn".
- plain washer** —
- planet carrier** a carrier or bracket in a planetary system which contains the shafts upon which the pinion or planet gears turn. power received from the sun gear at the axle shaft tip is transmitted to the wheels.
- planet gear** a gear between sun gear and internal ring gear in planetary gears.

planetary gears

a gearing system used in automatic transmissions, resembling, in function, the solar system. a sun gear is surrounded by two or more planet pinions located between the sun gear and a large internal ring gears. this system is efficient in transmitting power.

plastic hammer

—

plate

—

play

slackness. freedom of movement of bearing or working parts, but confined within certain definite limits. the purpose of giving this freedom is to prevent the jamming of parts by heating, by oscillation, or other causes.

pleat

element pleats. ← fold.

plow

an attachment for agricultural purposes.

plug

pipe plug, threaded plugs for closing pipe ends or holes.

plunger

the piston or ram of a plunger pump. being solid, it draws water or fuel by producing a vacuum, and delivers it by forcing or displacing action.

ply rating

indicates strength of tire.

pneumatic

moved or worked by air pressure.

pneumatic-hydraulic actuated

air pressure is converted into oil pressure.

pointer^x

→ **indicator**

poppet valve

a valve shaped like a mushroom, resting on a circular seat, and operated by raising the stem.

port opening, gate, hole, outlet and inlet for oil, etc.

positioner a device for positioning the work equipment in a certain place for easy operation.

pound (lb) $1 \text{ lb} \approx 0.4536 \text{ kg}$

power control unit (PCU) the cable control device for towing a scraper or operating a cable-type blade.

power line ^X → **power train**

power steering a steering system using hydraulic pressure to make steering operation easier.

power take-off (PTO) a device for taking power from engine and operating the work equipment mainly through a hydraulic pump.

power train system of transmitting power from the engine to the drive wheels or sprocket.

precleaner precleaner is provided at air intake to separate rough dust particles and grit from the intake air. KOMACLONE is a precleaner made by Komatsu.

precombustion chamber the air is preheated in a small chamber attached to the combustion chamber in a diesel engine.

predelivery service service before delivery.

preheater ^X → **glow plug**

preheater switch a switch for preheating a glow plug. see "heater switch".

preload	preload for installing a bearing to increase the bearing rigidity or to eliminate clearance. load to be imposed preliminarily on a rolling body. see "installed load".
preparatory step ^x	→ preparatory work
preparatory work	—
press fit	forcing into place, using a threaded jack.
pressure	—
pressure gauge	a gauge measuring pressure of engine oil, etc.
pressure plate	the part of a friction clutch which exerts pressure against the driven plate due to pressure from several small coil springs or one spring of the diaphragm type.
priming pump	a pump delivering fuel into the fuel pipe in cold weather starting.
propeller shaft ^x	→ drive shaft
protector	—
protrusion	amount of protrusion. liner protrusion, etc.
PSI	pound per square inch.
PT pump	a fuel pressure time pump for Cummins engine. see "feed pump".
PTO	power take-off
PTO shaft	shaft of power take-off.
PTO universal joint	universal joint for power take-off.

puller	a tool for removing a bearing.
pulley	a wheel which carries driving belts for pumps, compressors, etc.
pulsation damper ^x	→ damper
pump	e.g. a reciprocating pump, centrifugal pump, axial-flow pump, gear pump, etc.
punch	calking. see "calk".
push-puller	a tool used for forcing a part into place or taking it out of place.
push rod	a rod for pushing a part.
pusher	a dozer for pushing a scraper from the rear.
pusher plate	protective plate for a bulldozer blade when pushing a scraper from the rear.
pusher type fan	fan which pushes air out. see "suction type fan".

Q

quenching	to heat and then cool for hardening steel.
quick drop valve	a valve which allows the blade to be lowered quickly.
quick return valve	a valve for assisting a modulating valve to perform transmission pressure.

radiator	a device for dissipating the heat from the engine cooling water.
radiator core	the core of a radiator which contains the cooling water.
radiator grille	a front protector for radiator.
radiator guard	a side guard for radiator.
radiator mask	a cover for closing the front of the radiator in cold weather operation.
radiator shutter	a door capable of being opened or closed and located in front of the radiator for thermal control.
rail	(1) rail for the masts on forklift trucks. (2) rail for the blade guides on graders, etc.
rain trap	a device for preventing rain water from entering an exhaust pipe.
RAISE	raising of the work equipment as opposed to LOWER. see "HOLD".
rakedozer	an exclusive dozer for digging out roots.
ram	(1) piston for hydraulic cylinder and accumulator, etc. (2) bar for raising load with a forklift truck.
range transmission	an auxiliary high-low transmission for use together with TORQFLOW transmission.
ratchet	a wheel provided with teeth into which a pawl fits. the pawl moves or turns the ratchet wheel when moving in one direction but holds it when moving in the other direction.

rated horsepower ^x	→ flywheel horsepower
rated rpm	—
rated speed ^x	→ rated rpm
reach truck	a reach forklift truck. its forks can be moved forward and backward.
reamer	a tool for finishing a drilled hole to its correct dimensions.
reamer bolt	a bolt tightened in a drilled and reamed hole.
rear axle	opposed to "front axle".
rear frame	opposed to "front frame".
rear lamp	opposed to "head lamp".
rear light ^x	→ rear lamp
rear mounted PCU (RPCU)	PCU mounted on the rear portion of the chassis. see "PCU".
rearview mirror	—
rear wheel	—
rebuild	—
rebuild limit ^x	→ repair limit
recoil spring	a spring tensing a track by pushing an idler forward.
red range	—
reducing valve	a pressure reducing valve or pressure control valve for reducing the oil pressure to the preset level.
reduction	—

R

reduction gear	—
reduction ratio	the ratio of input shaft rotation to output shaft rotation.
reference mark ^x	→ match marks
regulator	a device to regulate voltage and current and to prevent reverse current. it is located between the starting motor and the battery.
regulator valve	pressure reducing valve for regulating the pressure on the output side to a preset pressure lower than that on the input side. also called a pressure regulator. see "relief valve" and "safety valve".
relay	an electromechanical device in which contacts are opened and/or closed by variations in the conditions of one electric circuit and thereby affect the operation of other devices in the same or other electric circuits.
relay switch	—
release	to loosen, release, reduce pressure, etc.
reliability	—
relief valve	an escape valve for maintaining the pressure at a specified level by permitting the pressurized fluid exceeding the specified level to relieve itself through an exhaust opening. it also prevents negative pressure. different from a "safety valve".
remarks	—
remote control	—

remover	—
repair criteria ^x	→ maintenance standard
repair kit ^x	→ service kit
repair limit	a repairable limit is indicated by a numerical value. a part exceeding this limit should be discarded. "service limit" or "permissible limit" should not be used.
repair shop ^x	→ workshop
replace	—
reservoir	container or tank for containing fluid. used such as "air reservoir". see "tank".
resistor	—
rest	arm rest, back rest, etc.
retainer	receiver, holder, supporter, etc.
retaining ring	—
retarder	generally, a retarder signifies any braking device other than a service brake or parking brake. used for dump truck.
return pipe	—
return spring	—
reverse	opposed to "forward".
reverse gear	opposed to "forward gear".
reversible fan	a fan whose blade direction can be turned, thereby changing the direction of wind.

R

revolution	revolution of engine.
revolutions per minute (rpm, RPM)	—
riding clutch $\times$	→ partially applied clutch
right	—
right hand (R.H.)	—
rigid	firmly fixed; not articulated.
rim	the outer portion of a circular object, as a wheel, a sheave, or a pulley.
ring	—
ring gear	a ring type gear used with flywheel, in planetary system.
ring nut	a round nut provided with a groove or a hole on the external surface for a wrench.
ripper	a towed machine equipped with teeth, used primarily for loosening hard soil and soft rock, digging, up-rooting, etc.
ripper cylinder	a hydraulic cylinder for operating a ripper.
ripper point	the tip of a ripper shank.
ripper shank	a shank provided with a ripper point.
ripping	—
rivet	to rivet or stake. to crush a rivet head. see "calk".
rock bucket	used for rocky material.

rock shoe	a track shoe for use on rocky terrain.
rocker arm	an engine part, a lever for opening and closing a valve.
rocker housing	a housing holding rocker arms.
rod	usually, a metallic round bar, small in diameter. see "bar".
rod bearing ^x	→ roller bearing
rod end	small special joint between rod and lever.
roll pin	a pin made by rolling up an iron sheet.
roller	—
roller bearing	a bearing in which roller rotate and make friction smaller.
roller chain	—
roller extension fork	an extension fork with rollers. (the loading area of a fork is built up with rollers.)
roller frame ^x	→ track frame
room lamp	—
ROPS (roll-over protective structure)	a structure for protecting an operator in case a construction machine should accidentally roll over on a slope.
rotary pump	a pump for delivering liquid by rotating one or two or more rotors. see "gear pump" and "vane pump".

R

rotating fork a fork capable of turning a load.

rotation —

rotor a rotating part of motor, generator, rotary pump, turbine, etc.

rotor shaft —

rough ground —

rubber —

run-in ^X → **breaking in**

running in ^X → **breaking in**

safety lever

a locking device of the gear shift lever, brake lever, work equipment control lever, etc.

safety lock pin ^x

→ **safety pin**

safety pin

a pin for locking a lift arm by inserting a safety pin.

safety relay

a safety relay connected between the starting switch and starting motor.

safety relief valve ^x

→ **safety valve**

safety valve

a valve for limiting the surging pressure to prevent damage to a device or piping. this safety valve should be distinguished from a "relief valve".

sand and gravel layer

a kind of soil.

sandblast

to remove burrs, rust, etc. from castings, steel bars, etc., by blowing sand against their surfaces.

sandpaper ^x

→ **abrasive paper**

sandy loam

a kind of soil.

scarifier

attachment for motor grader consisting of a set of teeth used for breaking up surfaces too hard to be readily penetrated by the blade.

scarifier teeth

points on a scarifier like a ripper point.

scavenging pump

a pump for scavenging standing oil in torque converter case, and engine oil pan.

scraper

a digging, hauling, and grading machine having a cutting edge, a carrying bowl, a movable front wall (apron) and a dumping or ejecting mechanism.

screen	a mesh or bar surface used for separating pieces or particles of different sizes. see "strainer".
screw	a threaded screw or external screw thread without a nut.
screwdriver	—
scuffing	scratching a sliding surface, liner scuffing etc.
seal	sealing device for preventing leakage of fluid and infiltration of foreign substances from outside. seals are generally classified into gaskets (static seals) and packings (dynamic seals).
seal ring	—
sealant	liquid sealant. gasket sealant, metal sealant, etc.
sealed beam	air-tight (electric bulb).
seat belt	—
section	—
section A-A	—
sectional drawing	—
sediment	any matter that settles to the bottom of a liquid.
segment teeth	the arch shaped piece of several teeth, used for sprocket.
self locking	—
semi-double grouser shoe	a shoe with a high grouser and a low grouser.

serial number	machine serial number, except "engine serial number".
series	—
service clearance ^x	→ clearance limit
service kit	a complete set of overhaul parts.
service limit ^x	→ repair limit
service manual ^x	→ shop manual
service meter	a meter indicating operating hours of a machine.
service meter reading (SMR)	—
set screw	a machine screw passing through one part and against or into another to prevent movement.
setting pressure	a given pressure to be set.
shaft	round bar revolving around a center line.
shaft coupling	a joint connecting two shafts for transmitting power, as opposed to "pipe coupling", "pipe joint", etc.
shank	a vertical bar which is held by a beam and has a point on it for cutting rock. e.g. ripper shank.
sharp turn ^x	→ pivot turn
shear pin	a safety pin. if overload is imposed on a motor grader blade, this pin is broken off to protect the blade and its related parts.
sheave	a grooved wheel used to support a cable or change its direction of travel.

sheave pin	pin for sheave wheel.
shield	a guard or cover for excluding wind, sun, rain, dust, etc. to protect parts of machines.
shift lever ^x	→ gear shift lever
shifter fork ^x	→ shifting fork
shifter yoke ^x	→ shifting yoke
shifting fork	—
shifting yoke	a yoke used for shifting belts or gears.
shim	a thin metal strip used to increase the clearance between bearings and journals or as spacers between two parts.
shock absorber	a device for absorbing mechanical shocks by springs, rubber, air pressure, oil pressure, gas, etc. see "damper".
shoe	(1) track shoe (a plate forming a link of a track, or bolted to a track link). (2) brake shoe (two curved plate-like metal pieces with abrasive coverings which are forced by pistons against the drum in braking a vehicle).
shoe bolt	a reinforced bolt for setting a shoe.
shoe grouser	a ridge or cleat across a track shoe, which improves its grip on the ground.
shoe nut	a reinforced nut for setting a shoe on a link.
shop manual	—

short circuit	also called a "short": an abnormal connection of relatively low resistance between two points of a circuit. the result is a flow of excess (often damping) current between these points.
shovel loader ^x	→ wheel loader
shroud	a plate that covers, protects, etc.
shut-off valve	a valve to shut off the flow of current. used for Cummins engine.
side clearance lamp	a lamp mounted on the permanent structure of a vehicle as near as practicable to the upper left or right extreme edge to indicate the overall width of the vehicle.
side cover	—
side dump bucket	a bucket for loading and dumping earth on a vehicle parked beside the material to be excavated.
side edge	used for blade of motor grader.
side forklift truck	a forklift truck equipped with a fork and mast (allowing the fork to move up and down) on one side of the truck.
sight-feed dome	glass container for a fuel feed pump.
signal	—
silencer ^x	→ muffler
silicone	—
single-ended wrench	a wrench of a single-head open end type.
single flange	—

single grouser shoe	a track shoe having one grouser.
single reduction	—
skeleton bucket	a bucket with skeleton framework for handling rocks.
skid loader	an attachment of loaders for carrying logs.
skirt	piston skirt, bottom part of piston.
slack adjuster	—
sleeve	a hollow cylindrical lining or tubing. see "bushing".
sliding selective type	used for transmission
slit	a cut or tear, especially one that is long and straight.  a narrow opening. see "slot" and "groove".
sling	a rope or chain, or clip passed around a load to lift and hold in position. used such as sling mark.
slinger	an oil slinger.
slot	an oblong hole, which may be either round or square at the ends. see "groove" and "slit". 
slotted head screw	—
slotted nut	a nut with a slotted head for locking with a cotter pin.
slow turn ^x	→ gradual turn
sludge	—
snap ring	—

snow plow	—
snow shoe	—
socket	(1) an opening that supports and connects to devices or components when they are inserted into it. (2) a pipe joint which has internal threads at each end or one of an inserted and welded type.
socket wrench	a socket type wrench for use on bolts, nuts, etc. sunk in recesses.
solenoid	an insulated coil of wire wound in the form of a helix, carrying a current of electricity.
solenoid valve	an electromagnetic valve.
solid tire	"solid" distinguished from liquid, gaseous; as opposed to "cushion tire".
solution	—
spacer	a part used for making spaces between parts arranged in line.
spanner ^x	→ wrench
spare parts	—
spark plug	—
special tool	—
special tool required	—
specifications	a statement of size, quality, performance, terms, etc.
speed change lever ^x	→ gear shift lever
speed control lever ^x	→ gear shift lever

speedometer	—
spherical roller bearing	a roller bearing supporting a circular journal.
spider	a cross-shaft on which is mounted a differential gear and universal joint.
spill pipe	overflow pipe.
spin turn ^x	→ counterrotation.
spindle	—
spiral bevel gear	a ring-and-pinion gear ass'y in which the mating teeth are formed in a curve, and the gears met at an angle.
splash lubrication	—
spline shaft ^x	→ splined shaft
splined shaft	a shaft having several lengthwise grooves cut for fitting into hubs.
spool	a tandem valve in contact with the inner cylindrical sliding surface which makes an axial movement for closing or opening the fluid path.
spring	—
spring washer	—
sprocket	a gear that meshes with a chain or a crawler track. see "idler".
sprocket rim	the outer portion of a sprocket. special service parts.
sprocket segment	sprocket teeth are grouped as segments, which are bolted to the sprocket rim to form complete sprockets.

sprocket shaft	—
sprocket teeth	—
spur gear	a gear wheel with radial teeth parallel to its axis.
stabilizer	a device for keeping a load on the fork.
stall speed	the rpm on the input (pump) side when rpm on the output (turbine) side of a torque converter is zero.
stall torque ratio	ratio between torques on the input and output sides when a torque converter is at stall.
standard	—
standard clearance	clearance between new parts to be installed. the min. and max. values are indicated for each clearance.
standard for maintenance ^x	→ maintenance standard
standard height	—
standard link pitch	designed link pitch.
standard size	dimensions for use in determining dimensional tolerances.
starter ^x	→ starting motor
starting condition	—
starting key	—
starting method	—
starting motor	an electric motor for converting the electrical energy of the battery to the mechanical energy required to crank and start the engine.

starting switch	—
starting system	—
stator	a stationary part in a machine in or about which a rotor revolves. Used for motor, generator or torque converter etc.
steel cab	—
steering	—
steering and brake pedal	a pedal is installed on each side of a tractor. when first pressed, the steering clutch is disengaged. when further pressed, the brake is applied.
steering booster	a device for raising the hydraulic pressure necessary for steering control.
steering brake	a brake which slows or stops one side of a tractor. see "wheel brake".
steering case	the case of steering clutches and brakes.
steering clutch	—
steering clutch case ^x	→ steering case
steering clutch lever ^x	→ steering control lever
steering clutch outer drum	a drum surrounding the steering clutch. in a steering brake, the drum which receives the braking force.
steering column	—
steering control lever	this lever is provided on each side of a tractor. if pulled backward, the steering clutch is disengaged. there are some models where the steering brake is applied if pulled further.

steering lever ^x	→ steering control lever
steering wheel	—
stockpile	soil in a pile, bank.
stopper	—
stopper bolt	—
straight bulldozer ^x	→ straightdozer
straightdozer	a bulldozer for cutting or digging hard soil, loosening rocks, etc.
strain	deformation of a material body under action of applied forces, or the ratio of the deformation to the original dimension.
strainer	a device for preventing relatively large foreign particles from flowing into oil or for removing solid particles from fluid installed on suction side. see "filter" and "screen".
stress	when materials and structures are subjected to straining forces, those forces are resisted by internal molecular actions called stresses.
strip	long narrow piece, band plate.
stroke	(1) distance traversed by the piston of an engine or pump. (2) distance moved by a lever or pedal is called the "travel".
structure	—
strut bolt	—
stud	a bolt having one end firmly anchored.
sub-assembly	component ass'y of an ass'y. see "components".

S

suction	the act or process of exerting a force upon a solid, liquid, or gaseous body by reason of reduced air pressure over part of its surface.
suction pipe	—
suction type fan	air goes through radiator to fan. see "pusher type fan".
suction valve	a vacuum relief valve, distinguished from "intake valve".
sulphur	—
sulphuric acid	—
sump	—
sun gear	the central gear in a planetary gears around which the planet gears revolve.
supercharger ^x	→ turbocharger
supplement	supplementary edition including additions, deletions, corrections, etc.
support	—
surge tank	a tank for controlling the rate of supplying fluid.
suspension	a device for supporting the chassis.
swage	to stake. to swage the end of a pipe to prevent an internal part from getting out of the pipe. see "calk".
swamp	—
swamp shoe	—
swamp bulldozer	—

- swing circle** to swing all the way around.
- swing drawbar** a drawbar capable of changing direction to left or right. mainly used for farm tractors.
- switch** —
- switch a lamp on (off)** —
- swivel** a device joining two parts so that one or both can pivot freely. e.g. swivel bearing, swivel joint, etc.
- synchronmesh type** (1) a device applied to the gears of a transmission to facilitate meshing of two gears by using small contacting drums to make the speed of both gears coincide.
(2) a silent-shift transmission construction in which hub speeds are synchronized before engagement by contact of leather cones.

tachometer	a device to measure engine speed.
tail lamp	—
tail light ^x	→ tail lamp
tamping	compacting soils with weight of a heavy machine such as a bulldozer.
tandem	in line.
tandem drive	drive system used in motor graders.
tandem drive case	a gear case to distribute power to two shafts, one in front and the other in rear. used for the rear axle of motor grader.
tank	used such as hydraulic tank, fuel tank, float tank, surge tank, etc. see "reservoir".
tape measure	—
tapered roller bearing	a roller bearing in which diameter of face is smaller than that of back. used especially for thrust loads.
tappet	a rod used for transferring the cam movement to the intake and exhaust valves in engine.
tappet guide	—
teflon	polytetrafluorethylene (TFE).
temperature gauge	—
tempering	to soften and increase toughness of hardened steel or cast iron by reheating at a low temperature.
tension	—

tension pulley	a pulley to stretch a belt. used for engine cooling fan.
terminal	a pole to which electric connections can be made.
test stand	a device for testing, inspection.
tester	a device measuring performance or facility of machine or the component.
thermistor	a device measuring temperature which converts heat to electric current.
Thermostart	a starting aid to warm intake air in cold weather. name of a product.
thermostat	a device which automatically controls the temperature by opening and closing an electric circuit etc. by means of thermal expansion of metal or gas.
thickness gauge ^x	→ feeler gauge
thread	—
thread tightener	—
three-point hitch linkage	for farm tractors.
three-way valve	valve inlets and outlets are provided in three directions.
throttle	to regulate or impede flow of steam or liquid. the origin is throat.
throttle lever ^x	→ fuel control lever
throttle valve	—
thrust	the external force acting in an axial direction of the rotating shaft or rotating member.

T

thrust bearing	a bearing on which the load acts in an axial direction.
thrust metal ^x	→ thrust bearing
thrust washer	a washer that holds axial load.
thyristor	a semiconductor having 4 layer PNPN structure, the abbreviation is SCR.
tie rod	a rod connecting right and left knuckle joints. it steers right and left wheels simultaneously.
tie rod arm	an arm to move the tie rod.
tie rod end	the end of the tie rod.
tie rod joint	a joint which couples tie rods.
tie rod socket	a socket for tie rods.
tightening torque	see "torque", "kgm", "ft-lb".
tilt back	(1) a motion to return bucket to its original position after dumping. (2) a motion to return a forklift mast after inclining forward.
tilt cylinder	(1) a cylinder to incline the forklift mast forward and backward. (2) for bulldozer blade, it is called a "blade tilt cylinder".
tiltdozer	a bulldozer that the right or left side of the blade can be inclined up and down.
tilting angle	the angle that the right or left side of the blade is inclined.
tilt control lever	a lever to operate forklift mast Forward-Hold-Backward.
tilt lever	a lever by which the bucket of dozer shovel is made to dump.

time lag	delay
time switch	—
timer	a device to advance injection timing. a device to adjust injection timing by changing relative angles. used for engine.
timing	—
timing gear	a gear to adjust timing of air intake and exhaust. used for engine.
timing gear case	—
timing light	a lamp to check engine ignition timing.
tire	—
tire chain	a chain to wind on wheels for use in snow.
tire gauge	the distance between the centers of right and left wheels. see "track gauge".
tire remover	a device to remove tires.
tire rim	a part which holds tires.
tire tube	a tube to contain the air of tires.
toe-in	the degree that toes of front wheels lean toward inside.
toe-in adjustment	—
toe-out	the degree that toes of front wheels lean toward outside.
toggle	a metal piece to stop materials; a hook. used for brake.

T

tolerance	the permissible deviation of parts from their specifications. it shows the range of deviation from the standard dimension. example: $120_{-0.126}^{-0.072}$ the tolerance is the difference between upper limit and lower limit. see "allowance".
tool	—
tool box	—
tooth	—
tooth height	—
top dead center (TDC)	the location of piston at its highest position in the cylinder. see "bottom dead center". used for engine.
top ring	a piston ring at highest position of piston grooves. used for engine.
top soil	surface soil of overburden.
torque	a rotating force. a moment acting around the rotating center of rotating object. see "ft-lb" and "kgm".
torque capacity	—
torque converter	a hydraulic coupling to transfer power by rotating one vane wheel with the oil movement resulting from the rotation of another vane wheel driven by the engine.
torque wrench	a wrench to tighten bolts or nuts at a fixed torque value.
TORQFLOW drive	a transmission device combining a transmission with a multi-disc clutch with a torque converter. finger control is available. "TORQFLOW" is printed in capital letters.

TORQFLOW transmission a transmission to shift speed by engaging and disengaging the clutches hydraulically. composed of planetary gears and multi-disc clutches. "TORQFLOW" is printed in capital letters.

torsion —

torsion bar torsion rod, torsion spring.

towing winch a work equipment for towing heavy materials or logs.

track track assembly or its attached links. see "undercarriage".

track frame frame of undercarriage.

track gauge the distance between the centers of right and left sprockets. see "tire gauge".

track group ^x → **undercarriage**

track link ^x → **link**

track roller a roller to support tractor weight and to protect snaking of shoe assembly. see "carrier roller".

track roller frame ^x → **track frame**

track roller guard a protective member of track roller. also called skirt.

track shoe ^x → **shoe**

traction —

trailer —

training practice.

transfer case transfer gear case.

transfer drive	an intermittent drive mechanism provided between drive shafts.
transfer gear	a gear mechanism provided between drive shafts.
transistor	the abbreviation is TRS.
transmission	a device to shift speeds for forward and reverse or 1st, 2nd and so on. there are direct drive, TORQFLOW drive and HYDROSHIFT drive types.
transmission control lever ^x	→ gear shift lever
travel	(1) distance vehicle moves (for vehicles). (2) stroke (for levers or pedals).
travel speed	—
traveling resistance	—
tread	(1) the surface of tires touching the ground. — (2) the distance between right and left wheel centers.
trimmig dozer	a dozer to handle bulk cargoes such as rocks, cement, etc. in ship hatches.
triple grouser shoe	a shoe having three protruding parts.
triple stage mast	a forklift mast which can be extended upward in three stages.
troubleshooting	diagnosing failures and acting to rectify them by finding out their causes.
trunnion	a pair of pivots protruding on both sides like an ear.
tube	a metallic pipe in which liquid flows. see "pipe".

turbine	a prime mover to obtain rotating power by accepting fluid on the vanes.
turbocharger	a supercharger, a device which feeds intake air at atmospheric pressure or more by rotating a turbine with exhaust gas.
turn-over	—
turn signal lamp	a lamp indicating right or left turn.
turnbuckle	a screw for stretching, by rotating it, the supporting rod or supporting rope will be stretched or loosened, also for stroke adjustment.
turning	—
turning direction	turning direction of vehicles.
turning limit	used for link, pin of undercarriage.
turning radius	used for steering specification.
two-way valve	—

U

U

U-bolt	'U' shaped bolt used for fixing tube.
U-packing	'U' shaped packing used for hydraulic cylinder.
under guard	a plate to protect the bottom of engine or transmission.
undersize (US)	smaller than standard size. see "over-size".
undercarriage	general term for undercarriage of bulldozers. see "track".
union	a nut type pipe joint to connect pipings from two sides.
unit	(1) a component of equipment. (2) a determinate quantity adopted as a standard of measurement.
universal joint	a shaft coupling capable of transmitting rotation from one shaft to another not collinear with it.
unloader valve	a valve which actuates at a certain circuit pressure and returns at lower pressure than that pressure. a valve to control compressor operating condition to loaded or unloaded state.
using the engine as a brake	while going downslope, to give brake torque by driving the engine with wheels which induces engine cylinder pumping loss, friction loss, etc.

V

V

V-belt	—
V-groove	—
V-packing	—
V-shape loading	a method of using dozer shovel.
vacuum	vacuum or a condition of extreme drop in pressure.
vacuum check valve ^x	→ suction valve
vacuum gauge	a pressure gauge to measure the degree of vacuum below atmospheric pressure.
vacuum valve	—
valve	a device to control or restrict the flow direction, pressure, or flow rate in fluid system.
valve body	—
valve clearance	—
valve guide	—
valve insert	if the valve seat is made of a separate part, it is called a valve insert.
valve seat	—
valve spring	a spring used for closing valve.
valve stem	the rod part of an engine valve.
valve tester	—
valve timing	the timing for valve opening and closing for intake, exhaust valves.

V

vane pump	a vane type pump which pushes the fluid from suction side to delivery side with vanes provided on a rotating body. see "gear pump" and "rotary pump".
vane wheel	a part of vane pump.
vehicle	—
vent hole	—
ventilator	—
venturi	—
verification ^x	→ criteria
vessel ^x	→ dump body
vibration	—
vibration roller	—
view "Z"	—
vinyl tube	—
viscosity	—
visibility	the quality or state of being visible.
visual check	—
voltmeter	—
voltage regulator	—

W

warm-up ^x	→ warm-up run
warm-up operation ^x	→ warm-up run
warm-up run	to run an engine in order to raise oil temperature to a specified value, before machine operation.
warehouse	—
warming up ^x	→ warm-up run
warning lamp	a lamp to show existence of any abnormalities.
warning plate	—
warranty	—
washer	—
water jacket	the part of the engine surrounding the cylinder where water circulates.
water manifold	—
water proof	—
water pump	—
water temperature gauge	for engine cooling water.
wave spring	—
wear gauge	—
wear guard	—
wear limit ^x	→ repair limit
wear plate	—
wedge	—

W

weight	—
welding	—
wet type clutch	a clutch whose clutch case contains lubricating oil.
wheel	wheel, and devices which function similar to wheels in machine.
wheel brake	a method of applying brakes on wheels. see "steering brake".
wheel cylinder	for wheel brake. see "master cylinder".
wheel loader	a loader equipped with a bucket for digging and loading soil, etc. see "dozer shovel".
wheelbase	the distance between front and rear wheel centers.  
white range	for gauges.
wide shoe	—
width	—
winch	a device to lift heavy materials by winding ropes on the drum.
window	—
window glass	—
windshield glass	—
windshield wiper	—
wing nut	—
winker ^x	→ turn signal lamp
wiper	a device to wipe windows.

wiper blade	the part of the wiper which contacts the glass to wipe.
wire	wire rod, electric wire, cable.
wire brush	—
wire harness ^x	→ wiring harness
wire rope	—
wireless control	—
wiring	—
wiring circuit ^x	→ electric circuit
wiring diagram	—
wiring harness	a wiring part containing wires with terminals and other parts in integration.
woodruff key	—
work attachment ^x	→ work equipment
work attachment pump ^x	→ hydraulic pump
work dress ^x	→ working clothes
work equipment	—
workshop	—
working clothes	—
working lamp	a lamp for night operation.
worm	a spiral screw gear. usually meshes with worm gear squarely.
worm gear	a screw gear which meshes with the worm. in general terms, gear mechanism with a worm and worm gear.

Y

worm shaft the shaft of worm gear.

worn part —

wrench a tool to turn bolt heads or nuts.

Y

yoke originally this was a bar to connect necks of a pair of cows.

yoke joint —