

For BIS Use Only

BUREAU OF INDIAN STANDARDS

DRAFT FOR COMMENTS ONLY

(Not to be reproduced without the permission of BIS or used as an Indian Standard)

भारतीय मानक मसौदा

बल्क हैंडलिंग उपस्कर हेतु पारिभाषिक शब्दावली
भाग 6 — साइक्लिक लूज बल्क हैंडलिंग उपस्कर
(नॉन — स्टेशनरी)

(आई एस 10463-6 का पहला पुनरीक्षण)

Draft Indian Standard

GLOSSARY OF TERMS FOR BULK HANDLING EQUIPMENT
PART 6 — CYCLIC LOOSE BULK HANDLING EQUIPMENT
(NON — STATIONARY)

(First Revision of IS 10463-6)

ICS 53.040; 53.080

Earth Moving Equipment and Material
Handling Sectional Committee, MED 07

Last date for receipt of comments is
17 December 2022

FOREWORD

(Formal clause to be added later)

This Indian Standard was adopted by the Bureau of Indian Standards in 1983, after the draft finalized by the Earth Moving Equipment and Material Handling Sectional Committee had been approved by the Mechanical Engineering Division Council.

This Standard was first published in 1983. The first revision of this standard incorporates modifications found necessary as a result of the experience gained with the use of the standard and to bring the standard in line with the present good practices being followed in the country and abroad.

This standard (Part 6) is one of the standards from the series of standards on glossary of terms relating to bulk handling equipment. Other series standard is below:

IS 10463 (Part 2) : 1985 Glossary of terms for bulk handling equipment: Part 2 stacking,
loading and reclaiming equipment

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

**GLOSSARY OF TERMS FOR BULK HANDLING EQUIPMENT
PART 6 — CYCLIC LOOSE BULK HANDLING EQUIPMENT
(NON — STATIONARY)**

(*First Revision* of IS 10463-6)

1 SCOPE

This standard covers the definitions of terms used in connection with cyclic loose bulk handling equipment (non-stationary).

2 TERMINOLOGY

2.1 Accumulator — A reservoir of energy for use in the event of emergencies/fluctuations in supply and demand of power supply.

2.2 All Wheel Drive — A wheeled earthmoving equipment, where power is transmitted to all the wheels of the equipment.

2.3 Apron — The front gate of a scraper body.

2.4 Articulated Steering — Steering effected by rotating one unit against the other in multiunit vehicles. This is also referred as steering by articulation.

2.5 Axle Weight Distribution — Distribution of machine weight or total weight at each axle (machine empty and loaded).

2.6 Back Blading — The process of moving a dozer, grader or a similar blade equipped machine, in reverse to achieve a smooth levelling of loose soil already disturbed by excavation.

2.7 Back Hoe — An attachment to the basic equipment such as excavators, tractors and loaders where excavation is achieved by pulling the bucket towards the equipment.

2.8 Ballast — Heavy material such as iron, sand, water, etc, which has no function in the machine except to increase the weight in order to balance and/or stabilize the machine.

2.9 Bank — Specifically, a mass of soil rising above a digging or trucking level. Generally, any mass of soil which is to be dug from its natural position.

2.10 Bank Measure — Volume of soil or rock measured in its original position before loosening or excavation. It is measured in bank metres.

2.11 Bank Cubic Metres — Cubic metres of soil or rock measured in its original position before digging. Also known as 'Bank Metres'.

2.12 Blade — Usually a part of a dozer or grader which can dig and push.

2.13 Bleed — To remove entrapped air or fluid in the system.

2.14 Body — Container which carries the material.

2.14.1 Body, Chute Type — The cargo body tapered longitudinally to allow easy flow of cargo while dumping

2.14.2 Body, Sandwich Type — Planks of wood between sheets of cargo body material to absorb impact loads.

2.14.3 Body, Quarry Type — Special construction body for rocks and boulder.

2.15 Bogie — A unit consisting of multiple axle and wheel assembly.

2.16 Bogie Drive — A multiple axle driving unit.

2.17 Burrow Pit — An excavation place from which material is excavated for taking to a nearby job.

2.18 Bottom Discharge (Bottom Dump) — A material carrying equipment which is capable of unloading itself by opening the floor of the body.

2.19 Bowl — The bucket or body of a scraper used for carrying material or soil.

2.20 Brakes — A device for slowing, stopping and holding the rolling/movement of the wheels/tracks.

2.21 Bucket — A sturdy container, capable of being operated by controlled movement, mechanically, hydraulically or electrically, fitted to various types of earthmoving equipment to dig, collect and convey earth.

2.22 Bulk Coefficient — Ratio of ‘bank measure’ to ‘loose volume of earth, rock, etc’.

2.23 Bulldozer — A blade normally mounted in front of self-propelled machine for scraping and pushing materials through forward motion of machine. It is commonly an optional attachment to a crawler tractor and wheel tractor.

2.24 Bulldozer, Blade Tilt — The vertical movement of end bit from horizontal measured in millimetres that end bit can be raised. If opposite ends vary, specify both.

2.24.1 Bulldozer, Blade Angle — The number of degrees that the blade in midpitch position, can be angled to either side from a straight position.

2.24.2 Bulldozer, Blade Height — The vertical distance in millimetres from the cutting edge resting on ground to the top of the blade (excluding name plate and spill guard) with the blade in the midpitch position.

2.24.3 Bulldozer, Blade Lift Height — The maximum vertical distance in millimetres that the centre of the cutting edge, in the midpitch position, can be raised above ground with no blade tilt or angle.

2.24.4 Bulldozer, Blade Midpitch — Blade positioned forward from the rearmost pitch position an angle equal to one half of the total blade pitch.

2.24.5 Bulldozer, Blade Pitch — The fore and aft movement of the blade around the blade pivot expressed in degrees of total movement, with the cutting edge at ground level when in the rearmost pitch position.

2.24.6 Bulldozer, Blade Width

2.24.6.1 With-out end bits — The maximum distance in millimetres from outside to outside of blades exclusive of end bits.

2.24.6.2 With end bits — The maximum distance in millimetres from outside to outside of blades including the end bits. Specify end bits used.

2.25 Breakout Force (Bucket) — Breakout force in kilograms is the maximum sustained vertical upward force exerted 100 mm behind the tip of the bucket cutting edge and is achieved through the ability to lift and/or roll back the bucket about the specified pivot point under the following conditions:

- a) Tractor on a hard level surface with transmission in neutral;
- b) All brakes released;
- c) Unit at standard operating weight, rear of tractor not tied down;
- d) Bottom of cutting edge parallel to and not more than 25.4 mm above or below the ground line;
- e) When bucket circuit is used, the pivot point must be specified as the bucket hinge point and the unit blocked under the bucket hinge pin pivot in order to minimize linkage movement;
- f) When the lift circuit is used, the pivot point must be specified as the lift arm hinge pin. Wheel loader shall have front axle blocked to eliminate change in position of pivot pins due to tyre deflection;
- g) If both circuits are used simultaneously the dominating pivot point listed in (e) and (f) must be specified;
- h) If the circuits used causes the rear of the vehicle to leave the ground, then the vertical force value required to raise the rear of the vehicle is the breakout force; and
- j) For irregular shaped buckets, the tip of the bucket cutting edge, referred to above shall mean the farthest forward point of the cutting edge.

2.26 Cab (Cabin) — A shell designed to protect the instruments and operator from adverse weather conditions.

2.27 Cab Guard — On a dumper, a heavy metal shield extending up from the front wall of the body and projected over the cab to keep operator safe while it is under loading operations by shovel.

2.28 Cable Control Unit — A high speed tractor winch having one to three drums under separate control, used to operate dozers and towed equipment.

2.29 Canopy — A roof set to block off direct sun, protect partially against rain and snow.

2.30 Capacity Heaped — The capacity or volume measure of a bowl or bucket or body, when the material filling the same is heaped up at its angle of repose.

2.31 Capacity Struck — The capacity or volume measure of a bowl or bucket or body, when the material filling the same is struck level from the edges of its open end.

2.32 Centralized Lubrication — A system by which a single reservoir and/or a pump lubricates various part of the equipment thus avoiding lubrication of individual points.

2.33 Cat Walk — A pathway, usually of metal that gives access to parts of the machine.

2.34 Carry Position — The vertical distance from the ground to the centre line of the bucket hinge pin with angle of approach at 15 degrees.

2.35 Chain-Roller — Generally, any sprocket-driven chain made up of links connected by hinge pins and sleeves. Specifically, a chain whose hinge sleeves are protected by an outer sleeve or roller that is free to turn.

2.36 Chassis — The basic understructure of a machine including the prime mover and the transmission, frame, bumper, springs, deadaxles, wheels, tyres or tracks. The chassis is capable of self-propelling.

2.37 Check Valve — Any device which will allow fluid or air to pass through it in only one direction.

2.38 Cleavage Planes — Any uniform joint, crack, or change in quality of formation along which rock will break easily when dug or blasted.

2.39 Clinometer — A hand instrument for measuring grades by sighting.

2.40 Clutch — A device which connects and disconnects two revolving members, one driving and the other driven.

2.41 Compaction — Reduction in bulk of fill by rolling, tamping or soaking.

2.42 Compensating Drive — In a four wheel drive truck, a free wheeling unit in the front of the propeller shaft that allows the front wheels to go farther than the rear on curves.

2.43 Crawler Chain — One of a pair of roller chains used to support and propels the machine, or any machine mounted on such tracks.

2.44 Creep

- a) Very slow travel of a machine or a part; and
- b) Unwanted turning of a shaft due to drag in a fluid coupling or other disconnecting device.

2.45 Crowd — The process of forcing a bucket into the digging or the mechanism which does the forcing.

2.46 Cycle — A complete set of operations a machine performs before repeating them.

2.47 Cycle Time — The time required or measured to perform a cycle.

2.48 Datum — Any level surface taken as a plane of reference in determining and recording other elevations.

- 2.49 Depth of Cut** — The vertical depth achieved below the digging level during a cutting operation.
- 2.50 Depth of Spread** — The vertical depth above the ground level during a filling operation,
- 2.51 Differential** — A device that drives two axles and allows them to turn at different speeds to adjust to varying resistance.
- 2.52 Double Clutching** — Practice of disengaging and engaging twice during a single gear shift in order to synchronize gear speeds.
- 2.53 Drag Line** — An attachment to basic excavating equipment which digs by pulling the loosely suspended bucket through the material.
- 2.54 Drawbar** — In a tractor, a fixed or hinged bar extending to the rear, used as fastening towed machines or loads.
- 2.55 Draw Bar Pull** — The horizontal force, calculated or measured, available at the draw bar, machine moving forward. For torque converter, hydrostatic or electric drive machines, the drawbar pull is specified by means of pull/ground speed curves. For machines without torque converter or other variable torque drive mechanisms, the drawbar pull is reported for each gear ratio at rated governed engine rpm. It may also be reported at maximum engine torque.
- 2.56 Drawpin** — A removable pin that attaches a load to a drawbar.
- 2.57 Draw Tongue** — A bar hinged to a towed machine, fitted with some device for attaching to a tractor.
- 2.58 Drive Axle** — An axle to which power from the prime-mover is supplied and which enables movement of the equipment.
- 2.59 Driveline** — A shaft and connected components which transmits power.
- 2.60 Dumper** — A self propelled off-the-highway equipment having an open cargo body, designed to haul and dump material. Loading is done by means external of the dumper.
- 2.61 Electric Steering** — Steering of the equipment by electric motors.
- 2.62 Embankment** — A fill whose top is higher than the adjoining surface.
- 2.63 Emergency Brake** — An auxiliary brake for use in the event of failure of service brakes.
- 2.64 Emergency Steering** — A means provided to continue maintaining steering control of the machine, in the event of failure of an engine or a steering power source.
- 2.65 Excavate** — To dig out.
- 2.66 Excavator** — An equipment used for digging out material.

2.67 Exhaust Conditioner — An attachment for converting the poisonous gases of exhaust to relatively safer gases, to obviate exhausts poisoning.

2.68 Exhaust Muffler — A device interposed in the exhaust of the engine which muffles or reduces exhaust noise.

2.69 Face — Any surface exposed by excavation for development or for getting of mineral.

2.70 Fifth-Wheel — The weight-bearing swivel connection between self-propelling vehicles and semi-trailers.

2.71 Full-Floating (Related to Axle) — A full-floating axle is one which receives only the torsional load from the power source and does not support any weight of the equipment.

2.72 Four-by-Four — A vehicle with four wheels or sets of wheels, all engine driven.

2.73 Gooseneck — An arched connection, usually between a tractor and a trailer.

2.74 Grade — Usually the elevation of a real or planned surface or structure. Also means surface slope.

2.75 Gradeability — The ability of a machine to ascend a grade under specified conditions such as surface material, load, speed and gear.

2.76 Grader — A self-propelled machine having an adjustable blade, positioned between front and rear axles to cut, move and spread material usually to grade requirements.

2.77 Gradient — Slope along a specific route, as of a road surface, channel or pipe,

2.78 Ground Clearance, Except for Graders — It is the perpendicular distance from the ground level to the lowest point of the centre portion of the vehicle. The centre portion of the vehicle is defined as 25 percent of the tread or track gauge to either side of the longitudinal centre line,

2.79 Ground Clearance, Graders — Distance between the horizontal ground plane and the lowest point of the front axle at the longitudinal centre line of the machines.

2.80 Ground Contact Area — Area of the tyres or tracks in contact with the ground. Effective area depends on load, penetration, ground material and tyre pressure or track adjustment; hence all pertinent conditions should be specified or carefully described.

2.81 Ground Pressure — The weight of a machine divided by the area of the ground directly supporting it.

2.82 Grouser — A ridge or cleat across a track shoe which improves its grip on the ground.

2.83 Grubbing — Digging out roots.

2.84 Half-Track — A heavy truck with high speed crawler track drive in the rear and driving in front.

2.85 Hardpan — Hard tight soil.

2.86 Hauler — A mobile equipment which hauls.

2.87 Haul Distance — The distance through which material is moved usually from excavation area to the place of fill or dump.

2.88 Haul Road — Usually an unimproved surface used for hauling material from excavation area to the place of fills or dump.

2.89 Heap — The material carried above the sides of a bucket or body. Also, the material is stock-pile.

2.90 High Wall — A face which is being excavated, as distinguished from spoil piles or undisturbed soil or rock bordering a cut.

2.91 Hoist — The mechanism by which a bucket or blade is lifted or the process of lifting it.

2.91.1 Hoist, Double Acting — A mechanism in which power can be supplied to either end so that the movement can be obtained in either direction.

2.91.2 Hoist, Single Acting — A mechanism in which power is supplied to one end so that the movement can be obtained in only one direction.

2.92 Hour Meter — An instrument which reads the hours clocked by the equipment.

2.93 Idlers — These are supporting non-drive rollers.

2.94 Idling — The process of running an engine at no load.

2.95 Impervious — Resistant to movement of water.

2.96 Jack — A mechanical or hydraulic lifting device. Also, a hydraulic ram or a cylinder.

2.97 Jackshaft — A short drive shaft, usually connecting a clutch and transmission.

2.98 Lagging — The surface or contact area of a drum or pulley, especially a detachable surface or one of special composition.

2.98.1 Lagging-Split — Drum lagging made in two pieces to allow changing it without dismantling the drum.

2.99 Lay — The direction of strand or wire helix.

2.99.1 Lay, Langs — A rope in which the lay of the wires in the strand is in the same direction as the lay of the strand in the rope.

2.99.2 Lay, Regular — A rope in which the lay of the wires in the strand is opposite in direction to the lay of the strand in the rope.

2.100 Lay-Shaft — A fixed shaft supporting revolving drum.

2.101 Loaded Weight — Sum of operating weight and the manufacturer's rated pay load (*see 2.115*).

2.102 Loader Dump Time — The time in seconds required to move the bucket from the load carrying position at maximum height to the full dump position while dumping a rated operating load.

2.103 Loader, Front End — A self-propelled machine with front mounted bucket supporting structure and linkage that loads material into the bucket through forward motion of the machine and lifts, transports and discharges material. Tractors with front-end loaders attachment are not included.

2.104 Loader, Lowering Time — The time in seconds required to lower the empty loader bucket from the full height to a level position on the ground.

2.105 Loader, Operating Load — The rated operating load is a nominal value intended to represent normal loading in the following typical conditions:

- a) Lifting ability of the machine in all bucket positions to be no less than the specified operating load;
- b) Bucket attachment of specified size and type;
- c) Maximum travel speed of 6 km/h for crawler mounted and 15 km/h for wheel mounted; and
- d) Operating surface:
 - 1) It shall be hard, moderately smooth and level for wheel loaders; and
 - 2) It shall be softer, less smooth or level with resulting reduced percentage of tipping, load applied.

2.105.1 For crawler loaders, the rated operating load shall be 35 percent of the tipping load or 100 percent of lifting capacity whichever less is.

2.105.2 For wheel loaders, the rated operating load shall be 50 percent of the tipping load or 100 percent of the lifting capacity, whichever is less.

2.106 Loader, Raising Time — The time in seconds required to raise the bucket from the level position on the ground to the full height with a rated load.

2.107 Loader, Rollback — The angle in degrees that the bottom of the bucket cutting edge will rotate above horizontal.

2.107.1 Loader, Rollback Maximum at Ground — Maximum rollback without movement of the lift arm.

2.107.2 Loader, Maximum Rollback Fully Raised — The angle in degrees from the bucket cutting edge level position to the maximum rollback position.

2.107.3 Loader, Maximum Rollback at Carry Position — The angle in degrees from the bucket cutting edge level position to the maximum rollback position.

2.108 Loose Yards — Measurement of soil or rock after it has been loosened by digging or blasting.

2.109 Load Factor — Average load carried by an engine, machine or plant expressed as a percentage of its maximum capacity.

2.110 Lugging Down — The process of an engine getting slowed down due to increase in its load beyond capacity.

2.111 Mold Board — A curved surface of a plough, dozer, or grader blade or other dirt mover, which gives dirt moving over it a rotary, spiral or twisting movement.

2.112 Off-the-Highway — Unimproved surface, outside the purview of road/highway load limitations.

2.113 On-the-Highway — Improved surface for movement of transport which have limitation on load capacities.

2.114 Open Cut — A method of excavation in which the working area is kept open to sky. It is used to distinguish from ‘cut-and-cover’ and ‘underground’ work.

2.115 Operating Weight — Weight of the machine, with the machine equipped as specified, without payload, with full fuel, lubricating and cooling systems and with operator weighing 75 kg. It is also known as unladen weight or net weight.

2.116 Outcropping — A stratum of rock or other material which breaks surface of ground.

2.117 Outrigger — An outward extension of a frame which is supported by a jack or block used to increase the stability.

2.118 Overburden — Soil or rock lying on top of a pay formation.

2.119 Pad (Shoe or Plate) — Ground contact part of a crawler track.

2.120 Parking Brake — Brakes capable of holding stopped wheels stationary with respect to the rest of the machine.

2.121 Pass — A working trip or passage of an excavating or grading machine.

2.122 Payload — The maximum load expressed normally in kilograms which earthmoving equipment can carry as per recommendation of the manufacturer.

2.123 Pivot Steer — Articulated steering where by the front and rear of the machine can steer through different angles and in opposite directions to enable to take sharp turns.

2.124 Planetary Drive — A gear drive consisting of a ring gear, a set of planet gears and a sun gear.

2.125 Plug Magnetic — A drain or inspection plug magnetized for the purpose of attracting and holding iron or steel particles in lubricants or working fluids.

2.126 Power Control Unit — One or more winches mounted on a tractor and used to manipulate parts of bulldozer, scraper or other machines.

2.127 Power Shift — The facility to use power for easy shifting and shifting during run of transmission gear ranges.

2.128 Power Take-off — A mechanism for tapping the power from power train.

2.129 PR (Plyrating) — The plyrating of a pneumatic wheel which is one of the factors for maximum load limitations on the wheel.

2.130 Primemover

- a) A source of power for a self-propelled machine; and
- b) A tractor or other vehicle used to pull other towed type of machine.

2.131 Profile — A charted line indicating grades and distances, and usually depth of cut and height of fill for excavation and grading work. It is commonly taken along the centre line.

2.132 Propeller Shaft — Usually a drive shaft fitted with universal joints.

2.133 Pusher — A tractor that pushes a scraper to help it pick up a load.

2.134 Quil Shaft — A light drive shaft inside of a heavier one, and turning independently of it.

2.135 Ram — A power cylinder.

2.136 Reach, Fully Raised — The horizontal distance in millimetres from the foremost point on the vehicle (including tyres, tracks or loader frames) to the cutting edge to the bucket hinge pin at maximum height and the bucket at 45° dump angle. If dump angle is less than 45°, it shall be specified.

2.137 Reach, At Specified Height — The horizontal distance in millimetres from the foremost point on the vehicle (including tyres, tracks or frames) to the bucket cutting edge at 45° dump angle. Specify if dump angle is less.

2.138 Rearing — Rising of the front of the tractor when pulling a heavy load.

2.139 Relief Holes — Holes drilled closely along a line, which is not loaded, and which serves to weaken the rock so that it breaks on that line.

2.140 Rimpull — Horizontal driving force available between the tyre and the ground. Rimpull is given by calculated or measured pull versus machine speed and is usually shown by curves. It is normally specified for dumpers, tractor scrapers, skidders and wheel tractors but not loaders.

2.141 Rock Bucket — A bucket used for loading and carrying rocks. Usually of a high wear resisting material.

2.142 Rock Ejector Bar — A bar used to eject rocks wedged between tyre duals.

2.143 Roller, Hook — In a revolving shovel, a roller attached by a bracket to the revolving section and contacting the lower face of a circular track on a travel unit.

2.144 Roller Support — In a crawler machine, a roller that supports the slack upper part of the track.

2.145 Roller Swing — In a revolving shovel, one of several tapered wheels that roll on a circular turn table and support the upper works.

2.146 Roller, Track — In a crawler machine, the rollers that rest on the track and carry most of the machine.

2.147 Roll Over Protective Structures (ROPS) — A systems of structural members arranged on a machine in such a way as to accomplish its primary purpose to reduce the possibility of an operator when wearing a seat belt being crushed should machine roll over. Structural members include any sub frame, bracket mounting, socket, bolt or flexible shock absorber used to secure the system to the machine frame but excludes mounting provisions which are integral with the machine frame.

2.148 Root

2.148.1 Root Buttress — A root that is above ground where it joins the trunk.

2.148.2 Root Hook — A very heavy hook designed to catch and tear out big roots when it is dragged along the ground.

2.149 Rooter — A heavy duty ripper.

2.150 Reverse Bend — To bend a line over a drum or a sheave, and then in the opposite direction over another sheave.

2.151 Revolving Shovel — A digging machine in which the superstructure can revolve independently of the supporting unit.

2.152 Scarifier — An accessory on a grader, roller or other machine, used chiefly for shallow loosening of road surfaces.

2.153 Scoop — An act of take up or hollow out the material from stock pile.

2.154 Scraper — A self-propelled machine having a cutting edge positioned between the front and rear axles, which loads, transports, discharges and spreads material.

2.154.1 Scraper-Bottom Dump — A scraper which ejects its load over cutting edge.

2.154.2 Scraper-Depth of Cut — Perpendicular distance between the lowered cutting edge tip and a line tangent to the load radii (LR) of the front and rear tyres.

2.154.3 Scraper, Rear Dump — A scraper that discharges load at the rear.

2.154.4 Scraper, Tractor Towed — A large bowl mounted on pneumatic tyred wheels towed by a crawler or wheeled tractor which is capable of digging, loading, hauling over a considerable distance and spreading.

2.155 Seat Belt — Any strap, webbing or similar device designed to secure a person in a vehicle.

2.156 Semi-Grouser — A crawler track shoe with one or more low cleats.

2.157 Serrated — An edge cut into a line of teeth.

2.158 Shoe — A ground plate forming a link of a track or bolted to a track link.

2.159 Shoring — Temporary bracing to hold the sides of an excavation from caving.

2.160 Shuttle — A back and forth motion of a machine which continues to face in one direction.

2.161 Side-Casting — Piling spoil alongside the excavation from which it is taken.

2.162 Sidehill — A slope that crosses the line of work.

2.163 Sidehill Cut — A long excavation in a slope that has a bank on one side, and is near original grade on the other.

2.164 Smart Aleck — A limit switch that cuts off power if a machine part is moved beyond its safe range.

2.165 Snaking — Towing a load with a long cable.

2.166 Snatch Block —fastened to lines or objects by means of a hook ring or shackle.

2.167 Spoil — Dirt or rock which has been removed from its original location.

2.168 Sprocket — A gear that meshes with a chain or a crawler track.

2.169 Sprocket, Split — A multi-piece sprocket that can be assembled on a shaft without removal of the shaft bearing.

2.170 Strip — Removal of overburden or thin layers of pay materials:

2.171 Stripping — Removal of a surface layer or deposit usually for the purpose of excavating other material under it.

2.172 System Pressure — The rated pressure in a hydraulic circuit.

2.173 Tipping Load — The minimum weight in kilograms at the centre of gravity of the rated load in the bucket which will rotate the machine to a point where, on the crawler units, the front track roller is clear of the track and, on wheel loaders, the rear wheels are clear of the ground under the following conditions:

- a) Vehicle on a hard level surface and stationary;
- b) Maximum bucket roll back;
- c) Centre of gravity of load at the maximum forward position in the raising cycle; and
- d) Vehicle at operating weight and equipment as specified.

NOTE — Articulated steer loader shall be in full turn position (specify angle).

2.174 Three Way Alarm — An audiovisual alarm to warn the operator on the failure of one or all of any three functions of the equipment.

2.175 Topsoil — The topmost layer of soil usually refers to soil containing humus which is capable of supporting a good plant growth.

2.176 Torque Cross Members — The structural members which connect the longitudinal members and act as torque absorbing media.

2.177 Hydroretarder (Torquematic Brake) — Fluid power used in transmission to decelerate the equipment.

2.178 Towing Hitch — A hook provided for towing purposes.

2.179 Track Adjuster — A mechanism incorporated in a crawler machine for the purpose of adjusting track tension.

2.180 Track Crawler — One of a pair of roller chains used to support and propel a machine. It has an upper surface which provides a track to carry the wheel of the machine and a lower-surface providing continuous ground contact.

2.181 Track Frame — In a crawler mounting, a side frame to which the track roller and idler are attached.

2.182 Track Gauge — In a tracked vehicle, the horizontal centre to centre distance between the two tracks.

2.183 Track Width — In a tracked vehicle, the edge to edge width of each track.

2.184 Tractor — A self propelled machine used to exert a push or pull force through a mounted attachment or drawbar to move objects or material. Tractors include both crawler tractors and wheel tractors.

2.184.1 Tractor, Bare — A tractor having only those accessories which are necessary for its own movement.

2.184.2 Tractor, Bulldozer — A tractor fitted with front pusher blade.

2.184.2.1 Tractor, bulldozer straight dozer — A tractor fitted with a blade in front of it either cable operated or hydraulically operated and capable of only tilting but not angling. The blade is moved parallel to itself while remaining perpendicular to the vertical-axial plane of the tractor, its base being parallel to the line of ground rest of the track.

2.184.2.2 Tractor, bulldozer angle dozer — A tractor fitted with a blade in front of it either cable operated or hydraulically operated and capable of both tilting and jangling. It gives a variation in the angle of the vertical-axial plane of the tractor to the vertical plane passing through the base of blade without varying the angle of the base of the blade with the line of ground rest of the tracks.

2.184.2.3 *Tractor, scraper* — A self propelled machine having a cutting edge positioned between front and rear axles, which loads, transports, discharges and spreads materials.

2.185 Walking Dragline — A dragline shovel which drags itself along the ground by means of side mounted shoes.

2.186 Wearbars — Bars welded on inside of a cargo body to break the impact of hard material being loaded and reduce the wear on the cargo body.

2.187 Wheel Base — Distance between vertical planes perpendicular to the machine longitudinal axis and passing through the centres of the front and rear wheels.

2.188 Winch — A drum that can be rotated so as to exert a strong pull while winding in a line.