

Art. 3 The following auto parts, included by the respective legal acts indicated, are excluded from Annex I of Resolution no. 23, of 2019, of the Management Executive Committee of the Foreign Trade Chamber:

NCM	Nº Ex	Legal Act
8414.30.91	6	Gecex Resolution No. 94 of 09.21.2020.
8414.30.91	8	Gecex Resolution No. 94 of 09.21.2020.
8483.30.90	5	Gecex Resolution No. 08 of 30.01.2020.
8483.40.90	2	Gecex Resolution No. 23 of 30.12.2019.
8483.40.90	3	Gecex Resolution No. 23 of 30.12.2019.
8483.40.90	4	Gecex Resolution No. 23 of 30.12.2019.
8505.19.10	14	Gecex Resolution No. 08 of 30.01.2020.
8507.60.00	11	Gecex Resolution No. 23 of 30.12.2019.
8512.40.10	2	Gecex Resolution No. 94 of 09.21.2020.
8536.50.90	65	Gecex Resolution No. 84 of 09.03.2020.
8538.90.90	3	Gecex Resolution No. 08 of 30.01.2020.
8708.29.99	126	Gecex Resolution No. 80 of 25.08.2020.
8708.40.90	14	Gecex Resolution No. 23 of 30.12.2019.
8708.80.00	19	Gecex Resolution No. 58 of 6.22.2020

Art. 4 The Ex-tariffs are included in Annex I of the respective legal act indicated:

NCM	Nº Ex	DESCRIPTION
8483.30.10	3	Switch cast aluminum bearing with sintered bushing diameter 8 mm (+0.015 -0,005mm), has 76 mm (+ 0.5 mm) outside diameter, 14.5 mm thickness and 6 towers lagged 60 degrees (+ / - 0graus 20minutes).
8483.90.00	57	sintered steel inner crown, hardness 140-200 HB10, an outer diameter of 54.4 (+0 -0.3) mm and the outside three teeth every 120 degrees for fixing within the planetary transmission in diameter with height 64.6 (+ -0 0.3) mm and 36 teeth with 1.125 module.
8483.90.00	58	manufactured sun gear sintered steel with a maximum porosity of 13%, hardness greater than 550 HV0, splined hole diameter with 17 or 18 teeth, the external gear with 1.375 to 0.95 module, number of teeth 11 to 13 and Quality 9 according to DIN 3961, it has the function to transmit motion and torque shaft induced into the planetary box.
8483.90.00	59	planetary gears sintered steel HV0 higher hardness than 550, with a maximum porosity of 13%, hole diameter ranging from 6 mm (+ 0.027 to 0.002 mm), 10 mm (0.005 -0.025 mm) and 9 mm (-0.003 -0.023 mm), 0.95 or 1.375 modules, gear teeth 13 or 19 and the number 9-quality according to DIN 3961 and ISO 1328.
8505.19.10	19	Chip ferrite arc-shaped permanent magnet type with magnetic field flux specifications between 0.326 and 0.352 mVs mVs with capability CpK 1.33 (4sigma), used exclusively in magnetic field generator of electric fuel pump for automotive vehicles.
8538.90.90	6	steel magnetic core low carbon cold-extruded with diameters ranging from 45.27 mm (0.07 mm) to 49.2 mm (-0.3 mm), through-hole diameter between 7.6 mm (+ / - 0.03 mm) to 9.7 mm (+/- 0.03 mm), two slots in the radial direction of width 6.0 mm (+0.18 mm) spaced by at least 175graus (+ / -20minutos) and at most 180 degrees, and in a tapered cam surfaces, tapered in diameter at its base equal to 17.9 mm (-0.1 mm) inside the roughness equal to Rz6 hole.
8708.29.99	257	System for opening and closing the rear cover, motor with worm shaft, of up to 16 V and the maximum current voltage 25 A clamping forces up to 1700 N, opening force from 1000 N to 3000 N in both length from 480 mm to 690 mm locked open, with integrated Hall sensor and cable to the system, to be applied to the rear cap of motor vehicles.
8708.40.90	103	Set mechanical transmission system management and clutch automated used in medium and heavy commercial vehicles (from PBT 12 T), comprising: an electro / mechanical actuator for couplings, a whip connection, an inertia brake with friction disc, electromagnetic or mechanical drive and four speed sensors.
8708.80.00	71	Set the rear suspension support, of carbon steel with anti-corrosion paint, or polyurethane, or aluminum used as the main element of fixation of the rear suspension on the body, characterized as part of the suspension of motor vehicles.

Art. 1 The Ex-Tarifarios of auto parts listed in Annex I of Resolution No. 23, of December 30, 2019, of the Executive Committee of Management of the Foreign Trade Chamber are included.

NCM	Nº Ex	DESCRIPTION
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3926.30.00	207	Set internal opening control ports composed of injected plastic parts, coated steel axle, spring steel, rubber stopper and grease mechanism with mechanical drive for internal door opening front and rear of vehicles and dimensions of 140 x 72 mm x 35 mm - (+/- 14mm); weight of 84 g (+/- 14 g) or 180 g (+/- 34 g) and can be naturally finished or finished by means of chemical
3926.30.00	208	Deflector corner (Corner spoiler) used for directing the flow of air and water applied to the front regions of heavy vehicles; manufactured in SMC system - Sheet Molding Component (Component molded sheet) and developed with unsaturated polyester resin reinforced with long glass fibers 25mm with permission of use of up to 10% of recycled polymers modulagem system with pressing at high temperature with components that form the assembly spoiler corner (corner deflector) joined by plastic welding process plasma (plastic bonding polymers).
3926.30.00	209	Handle used in external doors comprises handle, the housing and cover; with or without an inner assembly module; own weight of 155-380 g (+/- 95 g).
3926.90.90	99	approximately 19 mm, thickness approx 7.8 mm and mass around 3g; used in the assembly of the electrical connector harness of the magnetic clutch of the air-conditioning system compressor motor vehicles.
4011.10.00	17	Tire temporary use tubeless built in diagonal ply structure with a width of 128 mm (+ -6mm), inner and outer diameters of 15 inches and 588 mm (+ -8mm) respectively with its section height / sidewall corresponding to 80% of its width, weighing approximately 3,74kg, resistant to damage after receiving lateral forces of the 2nd and 4th order of 131 kgf and 232 respectively, 3381N load condition, classification (T125 / 80D15 95M).
4011.70.90	1	agricultural radial tire with IF technology (Increased Flexion), as 650 / 65R34, for use in agricultural machines.
4011.70.90	2	agricultural radial tire with IF technology (Increased Flexion), as 710 / 75R42, for use in agricultural machines.
4016.99.90	25	Spacer for vulcanized rubber for acoustic insulation of vehicle fuel tank flap opening.
7009.10.00	3	Set internal mirror used in the rear of the vehicle display, provided with self-dimming system wiper timer sensor windscreen (rain) and a light sensor, a maximum weight of 380g and up to 250mm wide, 70mm high and 110mm in length.
7315.12.10	2	Current transmission synchronization system between crankshaft and camshaft, with center distance in the range 127mm to 412,75mm and variation of +0.55 mm, with a minimum in 60 pitches and no more than 170 pitches, made with mass 0,107kg to 0,373kg, for direct coupling of the initial transmission of flex-fuel engines with direct injection passenger cars.
7326.90.90	12	FIFO module (Passive entry / passive start - passive entry / passive starting) has the auto-detection function of vehicle key by low frequency signal from the internal antenna located inside the vehicle, enabling the opening of doors and the starting of the vehicle by a specific switch, comprising electronic circuit, protected by plastic housing together with PA66 GF30 + material measures 30.02 x 100.2 x 101,15mm operating between 19VDC 9 V to 40-pin cable connection with dimensions 60 mm x 15 mm with a total weight of 0,100Kg at 0 180Kg for
8301.20.00	16	Set locking lock mechanism and unlocking motor vehicle doors, consisting of electric motor 12V, endowed with PTC thermistor for electric and MOV protection circuit, with a system that prevents the entire motor drive voltage below 2V, micro -switch with solder layer secured with epoxy resin, mounted with the cable control with a fixed outer sleeve lubricated with grease and carbon steel cable which slides inside the cover having the terminal end, with rubber pad.
8301.20.00	17	Sets lock side doors equipped with electric motor, metal plates, seals, rubber bearings, washers, shafts, pins, levers, circular lock, springs, gears and the total system weight of between 647 and 815 grams.
8301.20.00	18	Set of electromechanical locks for motor vehicles, containing the crumb of the manufactured spark in (PA66-GF30) with a protected surface with zinc, fitted with a contact / internal switch for key insertion identifying the contact, and internal antenna switch transponder identification , the lock core driver manufactured alloy Zamak ZDC1 port contains two keys with rod material manufactured in accordance with standard (JIS H 3110) includes at least one key-type knife with remote locking function of the door.
8301.70.00	4	Motor drives glass collection systems, equipped with electronics integrated into the BCM vehicle, minimum torque of 11Nm and maximum torque of 15,9Nm.
8407.34.90	79	Motor - 1.6T GDI spark ignition gasoline fuel, with 4 cylinders, 16 valves, with 1,598 cm3, turbo with direct injection (T-GDI) Power: 185cv (136 kW) and torque @ 5.500rpm 28 kgf.m (275nm) @ 2,000rpm.

8407.34.90	80	piston motor, 4-cylinder spark ignition line (flex) with 1332 cm ³ of a cylinder with dual variable valve, cross-application and front wheel drive with a direct injection system, fuel intercooler turbo and a power exceeding 160CV the 5.500rpm, torque 270N.ma 1800rpm, shirtless block with plasma deposits on the cylinder walls, applied in passenger cars and light commercial.
8409.91.12	5	Block machined from the molten aluminum alloy by HPDC process, alloy composition 1.5-3.5% copper, 9.6 to 12% silicon, 0.06 to 0.34% magnesium, 3.0% zinc max , 1.3% max iron, nickel max 0.5%, tin 0.3% max, jacketed cylinders carbon composition 2.8-3.4% iron, 1.8-2.5% silicon, 0.5-1.0% manganese, 0.3% max phosphorus, 0.13% maximum sulfur, 0.5% maximum copper, chromium 0.3% max for spark ignition engine with a cylinder 1.598cm ³ with 15.378g weight, height and cylinder block length of 207mm by 378mm.
8409.91.12	6	Block machined from the molten aluminum alloy by HPDC process, alloy composition 1.5-3.5% copper, 9.6 to 12% silicon, 0.06 to 0.34% magnesium, 3.0% zinc max , 1.3% max iron, nickel max 0.5%, tin 0.3% max, jacketed cylinders carbon composition 2.8-3.5% iron, 1.8-2.5% silicon, 0.5-1.0% manganese, 0.4% max phosphorus, 0.12% max sulfur, maximum 0.5% copper, max 0.4% chromium, 0.4-0.8% molybdenum, motor ignition spark to a cylinder of 999 cm ³ , weight 12.004g, cylinder block height and length 207mm by 293mm.
8409.91.90	89	Duct low pressure fuel feed line of at least 4 bar and up to 6,2bar composed of 4 layers being FKM (fluorelatômero), ECO (epichlorohydrin elastomer), AR (aramid) and ACM (acrylate elastomer), with weighing 50 to 200g.
8409.91.90	90	Duct low pressure fuel feed line of at least 4 bar and up to 6,2bar composed of layers 4 and F-TPV (thermoplastic elastomer), ECO (epichlorohydrin elastomer), AR (aramid) and ACM (acrylate elastomer), weighing between 50 and 200 g.
8409.91.90	91	ignition piston engine sensor with operating temperature from -40 degrees Celsius to 155 degrees Celsius and a maximum speed of crankshaft axis of rotation to 9.000rpm applied in passenger cars.
8409.91.90	92	oil inlet pipe in the turbocharger, made of steel with protection from rubber or plastic internal details; responsible for bringing oil to the turbo compressor to ensure lubrication of the bearings; approximate dimensions of 265,34mm x 83,86mm (height x width) with 12 sections and 8 mm in diameter and weighing approximately 0.2kg.
8409.91.90	93	turbocharger oil return pipe, made of steel with protection from rubber or plastic internal details; responsible for purging the excess oil from the turbocharger avoiding oil accumulation with wear debris; approximate dimensions of 182,19mm x 52,41mm (height x width), with sections 19 and 15mm diameter and approximate weight of 0.22 kg.
8409.99.12	9	Engine block made of gray cast iron for high quality alloy (EN-GJL-XCuCr), machined with an internal diameter of 100 mm combustion chamber to 110mm, applied in compression ignition engines of six cylinders in line with power from 110kW to 260kW with the maximum total working volume of 7.2 liters for use in trucks and buses.
8409.99.12	10	volumetric capacity between 15 to 26 liters with the oil storage function applied to diesel engines.
8409.99.12	11	Metal vessel manufactured according to standard M3254 (W3 B1 SH2) called crankcase of the engine, with a minimum volumetric storage capacity of 42 liters of engine oil lubricant.
8409.99.49	2	Connecting rod forged alloy steel, fractured, maximum tensile stress 1500 MPa, compression residual stress of -275 MPa minimum and maximum of -430 MPa, the hole for mounting the crankshaft with up to 80mm and hole for mounting the pin piston 45mm, 4 compression-ignition engines or 6 cylinders, for application to trucks and buses.
8409.99.59	6	Head made of gray cast iron for high quality alloy (EN-GJL-XCuCr) with diameter maximum in the combustion chamber 106mm, maximum compression ratio of 18: 1, with seats and guides alloy steel for 12 valve air inlet 6 and gas exhaust valves, applied to diesel engines with six cylinders in line from 170kW to 240kW power, practical volume of less than 6.3 liters for use in
8409.99.59	7	Head made of gray cast iron for high quality alloy (EN-GJL-XCuCr) with a diameter of the maximum combustion chamber of 106mm, the maximum compression ratio of 18: 1, with seats and guides alloy steel for eight intake valves 4 air and exhaust gas valves, applied to diesel engines with four cylinders in line power 90kW to 160kW, practical volume of less than 4.2 liters for use in trucks and buses.
8409.99.59	8	Head made of gray cast iron alloy of high quality (EN-GJL-XCuCr), maximum diameter of the combustion chamber of 144mm, the maximum compression ratio of 18.5: 1, with seats and guides alloy steel for valve 2 air inlet 2 and exhaust gas valves, applied to diesel engines with six cylinders in line from 175kW to 375kW power with equal or higher functional volume to 8.0 liters for use in trucks and buses.

8409.99.99	50	Modulating butterfly valve inlet to the intake system, with a diameter between 60 and 88mm, electronically actuated by a motor with a rated voltage of 24 V, for use in diesel engines.
8409.99.99	51	As rod steel (DIN EN 10083 C50E), the outer diameter of 9mm x 293mm dimensions and hardness HRC56, responsible for triggering the rocker assembly opening control system of the intake valves and exhaust of diesel engine.
8413.30.20	7	Pump mechanical fuel pressurization of up to 4 kg with electric solenoid valve, driven cam shaft, applied to diesel engines for use in heavy and medium commercial vehicles, installing the engine block, should drive the camshaft axis moves the spring of the fuel pump by contact with the tappet roletado and raises the internal pressure of the pump up to 2850bar, which after electrical signal received at the solenoid valve by the central electronic engine management sends fuel to the electronic nozzle with maximum flow of 754mm ³ per course.
8413.30.30	14	Pump of variable displacement gear oil (VDOP) for heavy commercial vehicles with internal combustion engines in diesel and Otto cycles meets CONAMA emission levels P8, weight 3820 g, made of aluminum housing, two gear steel input shaft with splined type (ISO4156 EXT 31Z * * 0.50m 30Px6e), relief valve, with a working oil flow 128.3 l / min @ 1600rpm and a maximum working pressure of 14bar.
8414.10.00	54	pressure to the brake servo, with a nominal voltage of 13.5 V and an average current less than 10A.
8414.80.19	144	321mm, variable pressure between 10 and 13bar, variable air flow of 300 to 340 liters / min, the noise level of 68 dB energy consumption 5kW weight 30 kg of lubricating oil applied on electric buses.
8415.90.90	36	pre-ignition diesel heater used in diesel automobiles in cold regions, weight 0,415Kg (+ - 0,1Kg) and four monofilaments.
8421.39.20	7	Set gas catalyst pipe installed in the exhaust system with ceramic particulate filter for CO gas conversion, HC and NOx into carbon dioxide, water and nitrogen, manufactured outer material of stainless steel (SUS430 or SUH409L) for application to automotive vehicles.
8421.99.10	11	Body manufactured exhaust catalyst steel (DIN EN ISO 10088-2 - 1.4512) with a maximum thickness of 1.2 mm and 0.96 mm in minimum area of greatest flow of material, weight 350g with 210mm in length, to application in passenger vehicles.
8421.99.10	12	exhaust manifold body, top made of steel (DIN EN ISO 10088-2 - 1.4512) and bottom made of steel (DIN EN ISO 10088-2 - 1.4509) with a maximum thickness of 1.5mm and minimum 1,13mm in area of greatest flow of material, weighing approximately 386g, 170mm long and 60mm diameter for passenger vehicles.
8421.99.10	13	Fiber board manufactured in ceramic silicon oxide and aluminum oxide, with a length of 370mm (+ -2 mm), width of 70mm (+ - 1 mm), thickness of 8.5 mm (+ - 1.5 mm), density 1500 g / m ² and resistance to traction greater than or equal to 100KPa, higher temperature grade or equal to 1000 degrees Celsius with mechanical retention function of the automotive catalyst as well as its thermal insulation, for use in passenger vehicles.
8421.99.99	87	Disposable filter media, for application to diesel fuel filters comprised of synthetic polyamide fibers on three different layers of different permeabilities with 61,5mm outer diameter and 66mm in overall height, applied for filtration of the solid waste contained in diesel fuel, and separation of water absorbed by the same, for use in automotive products.
8424.90.90	67	Nozzle compound of plastic and metal parts, mounted on the trunk lid of the vehicle, used for projecting water or another cleaning fluid on the rear window of the automobile.
8424.90.90	68	hood with the function of projecting water or another cleaning fluid on to the windscreen of vehicle.
8481.20.90	108	maximum flow of 151 l / min, operating temperature from -40 degrees Celsius to 120 degrees Celsius, and nitrile steel body shaft seals, approximate weight of 1.5kg, for use in automotive products.
8481.20.90	109	Spring-loaded check valve with opening pressure of 4.5 bar, size 3/8 inch maximum pressure of 345 bar maximum flow rate of 30 l / min, operating temperature from -40 degrees Celsius to 121 degrees Celsius, steel body and nitrile seals sealing, weighing approximately 0.2kg, for application in automotive products.
8481.20.90	110	Valve with pneumatic 3/2, casting aluminum alloy, nominal pressure 12 bar, working stroke 90 degrees, damping time of 12s, 12mm stroke, variable working temperature of -40 degrees Celsius to 80 degrees Celsius , drive shaft in steel, applied to trucks and buses.

8481.20.90	111	modulating air pressure valve, casting aluminum, iron and plastic parts, maximum weight 3.2 kg combined by two integrated valves with maximum pressure of 13bar, 24V nominal voltage, nominal variable working temperature -40 degrees Celsius to 80 degrees Celsius and resistant to the maximum temperature of 110 degrees Celsius, in the period of 1 hour and 95 degrees Celsius in a period of 2 hours, equipped with electronic control unit (ECU) to the EBS brake system (electronic braking system) is applied in buses and trucks.
8481.40.00	33	Pressure relief valves used in diesel air compressor, air pressure for opening compressed 19bar (+ 3bar) and torque of 90nm, temperature range -40 degrees celsius to +250 degrees Celsius, air flow rate of 10ml / min pressure of 15bar mainly composed of aluminum (EN AW-6082 - T6), design according to the norm (DIN ISO 5456-2).
8481.80.92	42	Solenoid solenoid used to control flow of the engine oil pump for motor vehicles of the type on-off with electromagnetic field sobreinjetada, plastic (PA66 GF30), reinforced by a metal external structure, with a maximum pressure 9bar flow 1.8 l / min at 2 bar, less than 50ms response time and operating temperature of -40 degrees Celsius to 150 degrees Celsius.
8481.80.92	43	Proportional valve management of high-precision oil flow, for the control variable camshaft phase valves of internal combustion engines with working voltage between 10V and 16V, current maximum of 3, working frequency between 200 Hz and 300 Hz working temperature - 40 degrees Celsius and 135 degrees Celsius length between 110 mm and 120 mm, and the main diameter of 17,975mm and 18,000mm mass between 150g and 200g.
8481.80.92	44	Solenoid valve with electric drive, voltage 8 V to 16 V, operating temperature of -40 to 180 degrees Celsius, used to control the flow of air from the turbocharger for internal combustion engines of automotive vehicles.
8481.80.92	45	Solenoid valve 10 V to 16 V with a flow of air between 7 l / min to 87 l / min to control the steam flow of fuel from the canister coal reservoir to burn in the engine, eliminating the evaporative emissions from the fuel tank .
8481.80.92	46	Solenoid valve for compressed air 3/2 inches mounted on the PTO changes or flywheel housing controlled by the engine ECU, made of aluminum, operates in the range of working pressures of 4 to 11bar, temperature range working -40 degrees Celsius to 120 degrees Celsius and operating voltage range of 22V to 32V DC.
8481.80.97	8	Butterfly valve assembly with a diameter between 40mm and 54mm, with the main axis movement controlled by gradual gears via stepper motor main body with aluminum shipbuilding, operating temperature from -40 degrees Celsius to 150 degrees Celsius to 200 degrees Celsius maximum , operating pressure up to 1.5 bars, electronic Hall effect sensor, made of Viton seals, designed to withstand internal sealing bars 5, electrical contact terminals with or without silver of a thickness of 3 microns for use in engines motor vehicles.
8481.80.97	9	intake air control valve for heavy commercial vehicles with internal combustion engines Diesel cycle meet the emission level CONAMA P8 composed of aluminum casting butterfly valve with diameter 80 mm, power electric motor 20W with strain 16 to 32V, and position sensor harness, controlled by software managed by the central electric motor (ECU) that performs the opening or closing of the butterfly which controls the air flow in different motor operating
8481.80.99	107	Fluid dosing unit (Dosing module) consists of an electro-hydraulic valve that controls the flow of urea; the fixed tube decomposition aftertreatment SCR type exhaust system (Selective Catalyst Reduction) for diesel engines; Displays "design" specific nozzle to spray the fluid within the tube decomposition and increase the efficiency of the chemical reaction; approximate weight of 0.12 kg; the main maximum dimensions of 56 x 103.1 mm.
8481.90.90	67	Length of the fuel injector solenoid valve for internal combustion engines of motor vehicles, consisting of stainless steel (430FR ASTM A484), a machining process, with a nominal length of 17.050 mm, a rated maximum outer diameter of 13.100 mm, a wall thickness between 0.350 mm and 1.682 mm, weight 4.6 g.
8481.90.90	68	Guide valve metal alloy steel (JIS G4051) with maximum levels of micro non-metallic inclusion 1.5 to 3 thick and thin series to series manufactured by machining process, outer diameter dimensions of 23.5 mm , length 23 mm, with a mass of 39 g; carbonitrided surface treated with controlled depth of the treated layer; heat treatment of quenching and tempering; grinding the work surface roughness Ra of 0.125; with machined slot for accommodation rubber ring for sealing; used to guide movement of variable flow oil pump pressure relief valve applied
8481.90.90	69	Glove made of alloyed steel (JIS G4053) manufactured by machining process, with the tolerance of the outer diameter of millesimal order; carburizing surface treatment with controlled depth of the treated layer, heat treating tempering; grinding the work surface roughness Ra of 0.125; outside diameter dimensions of 23.5 mm and length 62.7 mm, mass 61g, used to limit the movement of the variable flow oil pump pressure relief valve applied in

8482.50.90	1	Bearing flange guide, closed on one side, cylindrical rollers, 2.8 mm diameter by 6.8 mm, made of steel (100 Cr6), retainer (EN 10139-DC04) and outer ring (15 Cr3) C supports load 5580 N and 4430 N Co, diameter circumscribed about the roller 8, operating temperature from -40 degrees Celsius to 160 degrees Celsius and weighing between 10 g and 12 g; shall operate in half eccentric drive with the main function to transfer movement of the actuator shaft to the pistons of the hydraulic unit to provide its operation, applied to electronic control units stability (ESC) of the vehicle brake system.
8483.10.19	18	Axle steel (C38 + N) for application in 6-cylinder diesel engine with camshaft between 154 mm and overall length of 1010.5 mm.
8483.10.19	19	Crankshaft with size between eccentric shafts between 21 mm and 31 mm, overall length in the 185-317 mm band (+ - 0.3 mm) and weight in the range of 1.8 to 3.5 kg for use in air compressor 1 or 2 cylinders applied to heavy commercial vehicles, forged from steel quenched and tempered alloy with addition of 0.08% to 0.13% of vanadium in the composition and subjected to thermochemical treatment by plasma nitriding, to serve a surface hardness greater than or equal to 600 Vickers HV (DIN EN ISO 6507-1), and hardened layer of 0.004 mm to 0.016 mm, polished and hardened cone to meet roughness Ra of less than 0.4.
8483.10.19	20	Crankshaft made of steel (SVh40C) for use in combustion engines with spark flex fuel cylinders 3, 8.700 kg mass, total length of 347.2 mm and 69.58 mm stroke.
8483.10.19	21	Crankshaft made of steel (SVh40C), for use in combustion engines with spark flex fuel 4 cylinders, weight 9,600 kg total length of 432.2 mm and 83.44 mm stroke.
8483.10.90	33	Shaft finished forged and machined solid steel cylinder (Fe 690-2 DIN EN 10025), M17 x 1,5-6g thread, with external diameter 17.41 mm, length of 152.65 mm, with hexagonal hole dimensions 8.1 mm (-0.06 mm +0.09 mm) in the region lying M17 thread region with a diameter of 7.35 mm and length of 24 mm for crimping collector, step 6 striatal regions 1.55 mm and 35 teeth 110 degrees as UNI-149 A1.55 distributed along the axis with diameters of 17.41 mm (-0.05 mm +0.06 mm) for crimping the core and polar 17.3 mm (+ - 0.1 mm) for crimping polar spinning; tolerance roughness Ra of 0.8 and a diameter of 17 mm (-0.006 mm - 0.014 mm) in the laying region of burrs and lower bearings to 0.1 mm, for the production of
8483.10.90	34	Shaft finished forged and machined, cylindrical, massive steel (S48C) with minimum external diameter of 5.99 mm at the shaft end up to a maximum of 17.3 mm in the central region of accommodation of the polar claws and length 143, 5 to 146 mm, with a fluted region pitch of 0.26 mm and with teeth 90 degrees (+ - 10 degrees), two splined regions in steps of 1 mm and with teeth 90 degrees (+ - 5 degrees) with a maximum roughness (Rz) of 13.8; of dimensions 17 mm (-0.006 mm -0.014 mm) and 15 mm (+0.005 mm +0.013 mm) and maximum roughness of 6.9 on the bearing seat region; presenting the hex tip shaft with thread M14x1,5, yield strength RP 0.2 least 350 MPa, a minimum hardness of 170 HB, the minimum tensile strength of 600 MPa and minimum elongation of 15% to alternators used in motor production
8483.10.90	35	Axle scraping induced magnetic switch made of non-alloy steel (C10C) by forging and turning process with a length of 80.5 mm (+ - 1.5 mm) and diameters of cross sections of 5.9 mm (+ - 0.075 mm) and 4.5 mm (+ - 0.075 mm) with function of providing movement to the contact bridge connecting the terminals of the magnetic switch and move the lever for pushing the pinion engages it with the motor rack combustion.
8483.10.90	36	Shaft manufactured broadcast forged steel quenched and tempered with a hardness of 229 HB to 277 HB, is provided with flange 12 or 15 threaded holes M24x3 on one end and 44 and 49 teeth on the other end, total length of 589 mm or 730 mm, shaft diameter of 84 mm or 91 mm and diameter of 296 mm to 300 mm flange, with induction hardening the shaft body applied to the mobility of the wheel loader wheel system.
8483.10.90	37	Shaft induced electric pumps for automotive, stainless steel with heat treatment, minimum hardness (HV10 630), high-precision machining rate tolerance 0.003 mm, 0.002 mm, circularity roughness Rz less than or equal to 1.5 mm, submersible fuel.
8483.10.90	38	Forged steel shaft (SAE J404 8620) used in mechanical rotary fuel injection pump for diesel transmission torque and rotation between the internal components and the motor drive device with diametric variations between 22,495 mm (+ -0.045 mm) and 47.433 mm (+ -0.0125 mm) nominal length of 154.200 mm, 0.015 mm maximum concentricity, surface hardening heat treatment with a hardness (Hv 750 10 kg) minimum layered from 0.60 to 0.75 mm, and 599 g weight for application in automotive products.

8483.10.90	39	solid shaft of circular cross section, semi-finished steel (S48C), forged, machined, with outer diameter ranging from 17.3 to 19 mm and a total length of 151.3 mm, a maximum rate of 1.5 relative to the ends center axis, has an end hexagonal shape with a diameter of 10 mm and another with 9 mm diameter; minimum hardness of 170 HB, the minimum tensile strength of 600 MPa 0.2 Minimum RP yield stress of 350 MPa and minimum elongation of 15%, for the production of motor vehicle alternators.
8483.10.90	40	Endless steel shaft (44SMn28) single helical thread rolled for engagement mono motor reduction windshield wiper motor vehicles, with concentricity between 0.003 and 0.004 mm, diameter 8 mm (-0.009 mm) length between 125 mm to 140 mm, weight 40 g to 48 g of accommodation contact stops on the ends and axial retention ridges forming a diameter of 8.2
8483.10.90	41	rotor machined shaft used for crimping the pole claws made of steel (C45E, 2C45, or C45) with shear stress equal to 430 N / mm ² and tensile strength of 650 N / mm ² , holes, ridges and recartilho, has total length of 138 mm to 154 mm, g5 17 mm, weight 200 g 230 g thread M16x1.5 6g, surface hardness of 450 HV (0.5 to 3) and its maximum allowable taper is 0.02 % rotors for application in automotive alternators.
8483.30.10	4	Bearing axial abutment high precision (0.005 parallel to 0.01 mm), made of or CW713R CW508L or CW 507L material by means of special printing process "fine blank" and / or machining of oil lubrication channels, diameter or semi maximum outer diameter of 20 to 80 mm, weight 0.01 to 0.150 Kg having the main function of supporting axial loads of the axis of rotation of up to 300,000 rpm feeders turbo air fed by exhaust gases from engine internal
8483.30.90	13	sintered command bearing cover in PM aluminum powder alloy (Al-Cu-Si-Mg, Al-Mg-Si-Cu or Al-Zn-Mg-Cu), which function to locate and fix the camshaft in head to reduce friction between the command and the printhead, in addition to support the cyclic loads of the springs and by action of the valve head, with approximate dimensions of 20 mm high, 13 mm thick and 60
8483.30.90	14	bearing head (gross) for mounting on the aluminum drive shaft command vehicle, in order to perform the closing assembly between the cylinder head, camshaft and bearing; with external dimensions of 59.5 mm wide, 14 mm thick, 22 mm height and mass of 0034 kg, with raw material developed by the supplier for the sintering process of the high-precision aluminum, which meets the dimensional requirements of the product with the bearing bushings incorporated in addition to the mechanical properties of flow limit of 151 MPa rupture limit of
8483.30.90	15	iron alloy sintered bearing, with a structure containing free copper, vacuum impregnated with special self lubricating viscosity between 62 and 74 mm ² / s, high dimensional accuracy, external diameter of 17mm (+ -0.1 mm) inside diameter and 8 mm (+ -0.0045 mm), 0.003 mm circularity, straightness of 0.003, 0.003 and parallelism rate of 0.02 mm to guarantee fit between shaft and bearing 0.0065 mm to 0.0245 mm clearance for operation speed of 6000 RPM spindle, generating low noise (50 decibels, dBA), exclusively used in electric motors for
8483.40.90	215	Throttle valve aluminum alloy (EN AW-5052 H34) having an outside diameter of 64 mm and g6 tolerance, thickness 2 mm, weight 17 g, with a working temperature of -40 degrees Celsius to 125 degrees Celsius and resistant to fuels, oils and coolants, applied to air intake systems of throttle bodies of automotive combustion engines of the Otto type.
8483.50.90	12	Elastic torsional vibration damper for application on commercial vehicles engines, with the moment of inertia of the ring kgm ² 0.066, 0.012 kgm ² central buffer.
8483.50.90	13	coupling floppy torque converter to the crankshaft axis, designed in special alloy steel (LAX550Y620T); outer diameter of 285.75 mm to 290 mm, with 6 mm fixing holes 230, thickness of 2.5 mm (+0.2 mm) and disk-shaped geometry with the presence of welded rack; Smaller sized to tensile and compressive stresses than 289 MPa and axial stiffness than 3905 N / mm approximate weight of 2 kg.
8483.60.90	49	Plate steel SPFH590 transmission (T = 2.0) with a thickness of 2.6 mm and formed with ring gear manufactured SM48C material with hardened teeth with the center tooth hardness between 50 and 60 HRC and above the surface 50, used in automatic transmission vehicles.
8483.90.00	60	the circular hub motor counterbalance hub adapter, made of EM-GJL-250 under DIN EN 1561, utilized in 6-cylinder diesel 12.4 L, O2 with different diameters (177 mm and 120 mm), and equidistant elevations on one of its faces.
8483.90.00	61	Plate made of spring cold-rolled steel as DC01 + C690 external diameter dimensions 370 mm and 4 mm thickness and minimum strength of 690 MPa membrane responsible for the interface between diesel engines and automatic transmission transmits movement and torque to torque converter in automatic transmissions.

8483.90.00	62	internal crown (gear), polyamide with 37 teeth and a module 1.375, diameter of ball 50.053 mm (+0.3 mm + 0.7 mm), external diameter 65.85 mm, (+ -0, 15 mm) with 6 teeth fitting with 58 mm diameter fitting (+ - 0.15 mm) and 0.15 mm concentrically in relation to the center with a metal sintered bushing inner diameter of 12 mm (-0 + 08 mm), used in the planetary starter.
8501.31.10	37	output of up to 4.49 Nm, with electronic drive control integrated assistance for electric car steering systems.
8501.31.10	38	Electronically controlled electrical actuator, with 12 V supply voltage, rods with approximately equal distance between the fixing ends 275 mm retracted with stroke up to 50 mm, velocity of up to 11.9 mm / s, working temperature -30 degrees Celsius to 65 degrees Celsius applied to agricultural machines.
8501.31.10	39	Electro-mechanical actuator with a minimum clamping force required between 13.5 and 16.5 kN, suitable for electronic parking brake (EPB) of motor vehicles, reducing compound with electric motor (geared motor) to output torque between 12 , Nm 2 to 20.0 Nm minimum voltage of 6.5 V or 7.2 V operation, maximum voltage 16 V operation, maximum tripping current of 17.6 a and 18.0 a, supports temperatures work between -40 degrees Celsius and +120 degrees Celsius, degree of protection (IP 6K6K, IP 6K7, 250 mm, 4 h; IP 6K9K, DIN 40050 Part 9), airborne noise dispersion band in the range of 4 dB (a) and structure-borne noise dispersion band in the range of 4 dB (g) weighing 520 g (+ - 13 g), 95 mm maximum dimension (+ -0.2 mm) high, 143 mm (+ -0.2 mm) in length and 86 mm (+ 0.2 mm) wide and
8501.31.10	40	electric motor drive the bank, low speed, with maximum continuous current of 5 amperes work, brushless, with a nominal voltage of 13.5 volts, with a power of 67.5 watts, with an average working temperature 20.5 Degrees Celsius with tolerable average humidity of 60%, average working speed under load of 2,050 rpm, used to adjust seat position in the vertical and horizontal direction by performing the movement by electrical pulses applied to left front car seats and duties , with dimensions of 167.2 mm in length; 82.7 mm depth and 51.3 mm
8501.31.10	41	Electric motor without brushes for low-voltage, with a maximum power of 600 W, maximum output rated torque of 4.8 Nm with integrated electronic drive assistance control and mass 2360 g (+ -170 g), heights, less than or equal lengths and widths 150 mm, applied in electric steering columns of motor vehicles.
8504.40.10	1	wireless central console motor vehicle charger, equipped with communication CAN protocol, microcontroller, internal microventilador, progressive automatic control auto cooling system, 12-pin connector, standard inductance coil system WPC, operating frequency 115 KHz.
8504.40.10	2	System of wireless smartphone charging, using electromagnetic induction technology by means of voltage variation, consisting of 4 coils, contain DC-DC voltage converters and DC-AC, with a power of 15 W and an active area loading 75 mm x 35 mm, weighing approximately 340 g, has strong rubbery surface to prevent slippage Smartphone on its surface.
8504.40.90	212	Converter voltage and current DC / DC and AC / DC to electric vehicle in the dimensions of 394 x 310 x 81mm, maximum voltage 800V input and Maximum voltage 28V output, power output DC / AC 15 kW variable 30 kW, maximum current of 200A with 8,7kg by weight and degree of protection IP6K9K applied in electric vehicles.
8505.19.10	20	Magnet ceramic ferrite, not magnetized in rectangular shape for future use in alternators and magnetization of rotors, having the following dimensions; 5 mm, width of 8.5 mm and length 27 mm, weight 5 g to 10 g, residual flux density of at least 410 MV and magnetic permeability at least 1.05 rotors for application in automotive alternators.
8505.19.10	21	Unmagnetized ferrite magnet, the dimensions 60.32 mm x 27.67 mm x 6.62 mm, average weight 560 grams, at an angle 50 degrees plate, grille 6 with 85% iron oxide (Fe2O3) and 15 % of strontium carbon (SrCO 3), to act on the 12 V current (DC) to 550 V and magnetization (DC) applied on motor vehicles for automotive glass lifters.
8505.19.10	22	ferrite magnet magnetized in non-arc shape with dimensions of 40 mm high, 30 mm wide and 7.3 mm thick and weighing 40 g to 50 g; BR greater than 0,359T, BHC larger than 302 kA / m, IHC greater than 352 kA / m, a minimum strength of 1120 N Magnetic characteristics measured under 20 degrees Celsius, used in starter motors for application in light vehicles.
8505.19.10	23	Sintered Magnet arc segment shape with rectangular projected area whose principal dimensions are: length 43.5 mm (+ - 0.5 mm), width of 23.7 mm (+ - 0.2 mm) height (6.4 mm + - 0.2 mm) internal diameter of 53.5 mm (+ - 1 mm) outside diameter and 66.5 mm (+ - 0.2 mm), for use in automotive product.

8505.19.10	24	Tablet ferrite arc-shaped, permanent-magnet composed of iron oxide and strontium oxide, the dimensions 37-45 mm long, 51 mm wide, 6.95 mm thick, meeting the specifications of flow minimum magnetic field from 0.6235 to 0.787 milli volt second (mVs) and maximum 0.7621 to 0.897 milli volt second (mVs), the counterforce resistance greater magnetic field than 240 kilo ampere per meter (kA / m) exclusively used in engines for use in wiper system for windshields
8505.19.10	25	Tablet ferrite arc-shaped, permanent-magnet composed of iron oxide and strontium oxide in the dimensions of 55 mm long, 34 mm wide, 4.45 mm thick controlled by CPK 1.33 of according to the minimum magnetic field flux specifications 0.621 milli volt second (mVs) and up to 0.684 milli volt second (mVs) and resistance to an opposing force to the larger magnetic field than 250 kilo amperes per meter (kA / m) exclusively used in engines for use in wiper system for windshields of motor vehicles.
8505.19.10	26	Tablet ferrite arc-shaped, permanent-magnet composed of iron oxide and strontium oxide in the dimensions of 55 mm long, 51 mm wide, 6.95 mm thick, having the magnetic field flux specifications min 1,029 milli volt second (mVs) and a maximum of 1,090 milli volt second (mVs) resistance opposing force to the larger magnetic field than 240 kilo amperes per meter (kA / m), exclusively used in motors for use in wiper system windshields of automotive
8505.19.10	27	Tablet ferrite arc-shaped, permanent magnet iron oxide and strontium length of 36.0 mm wide by 64 mm with specifications of magnetic flux R mVs 0.833 (+0.050 mVs), minimum magnetic flux RG 0.783 mVs and tensile strength of the magnetic field opposing HG 230 kA / m, in engines used solely for internal ventilation of automotive vehicles.
8505.19.10	28	Tablet ferrite arc-shaped, permanent magnet iron oxide and strontium, with a length of 30.5 mm per 64 mm width, magnetic flux specifications R mVs 0.704 (+0.042 mVs), minimum magnetic flux RG 0.661 mVs and tensile strength of the magnetic field opposing HG 230 kA / m, used only in the internal ventilation system for automotive vehicle engines.
8505.90.80	6	Magneto electric coil and provided with metal sheets with a minimum magnetic force of 130 Newtons under current of 9.8 amps mounted at a distance of 0.200 millimeters, bakelite encapsulated housing with minimal compression resistance of 259 MPa and a minimum tensile strength of 90 MPa for exclusive use in motor vehicles injection pumps of diesel
8507.60.00	20	Lithium battery with a nominal voltage of 37 V to 51 V at 44 V nominal duty useful power capacity of 350 Wh, rectangular shape with dimensions 310 mm x 175 mm x 89 mm (tolerance on +/- measures 10%) for application in automotive vehicles.
8511.50.10	8	Alternator digital voltage regulator via the LIN protocol moment of inertia of 45 kg / cm ² maximum speed of 14,000 rpm continuous LIN operation with peaks 16,000 rpm, output current 110 and output voltage of 24 V.
8511.90.00	50	mm to 35.01 mm and thickness of 1.51 mm (+ -0.03 mm) dead angle, with or without rubber seals.
8511.90.00	51	plastic ring mounted on vehicular alternators, PA66 manufactured from plastic with an internal diameter of 34.95 mm to 35.00 mm and thickness of 1.45 mm (+ -0.025 mm) without departure angle and the second plastic clip, 19 mm (+ -0.025 mm).
8511.90.00	52	plastic ring mounted on vehicular alternators, made of PA66, internal diameter of 40.0 mm (+ -0.02 mm) and thickness of 1.49 mm (+ -0.025 mm) dead angle, with or without seal rubber.
8511.90.00	53	Polar cylindrical housing, stamped and rolled with a thickness of 1.95 mm steel sheet (+ -0.1 mm), the main dimensions: nominal inside diameter of 70 mm (+ -0.12 mm) and 74.2 mm (+ -0.12 mm) and a length of 98.5 mm (+ -0.1 mm) and 99.5 mm (+ 0.1 mm) with a maximum permissible circularity of 0.15 mm for use in automotive product .
8511.90.00	54	Polar cylindrical housing, stamped and rolled with a thickness range of steel sheet of 1.5 mm (+ 0.11 mm) to 2.0 mm (+ -0.25 mm) main dimensions: nominal inside diameter between 58 mm (+ 0.12 mm) and 66 mm (+ -0.12 mm) and length ranging from 93.4 mm (+ 0.2 mm) and 101,3 mm (+ 0.1 mm) with maximum flatness and perpendicularity of 0.2 mm and maximum 0.15 mm circularity for application in automotive product.

8511.90.00	55	Stator high efficiency, comprising copper conductors and segmented packet painted blades antioxidant forming black epoxy paint layer thickness of between 15 to 30 microns with minimal penetration into the opening of the cavities 50 microns; copper wires welded by TIG welding with protected ends by epoxy resin to avoid short circuits, particularly rectangular to maximize the filling degree above 75% of the cavity of the package blades and the generator efficiency above 70%; maximum leakage current of 10 mA at a voltage of 600 VAC (60Hz) for 1 second; with lamination stack height of 31,74 to 32 mm, consisting of embossed individual plates with a thickness below 0.3 mm each and positioned through 8 special weld beads; stator insulation coated wells special papers with lesser thickness from those used in conventional stators; with outer diameter between 120 and 140 mm and height of blade package winding between 50 and 60 mm, alternators for use in motor vehicles.
8511.90.00	56	Package low carbon steel strip with a manufacturing process along strip embossing over the entire length with formation of cradles for insertion of the winding, has a spiral shape, laminated and welded plasma for attachment of the blades has an external diameter between 117 and 119 mm internal diameter between 91 and 92.5 mm and blade thickness equal to or less than 0.8 mm with centesimal precision used for producing the stator core alternators for
8511.90.00	57	Full door brushes for starter, has electric current transmitting function from the magnetic key to the armature of the electric motor; consists of 2 or 4 carbon brushes, chordae welded brushes on the base plate, must meet pullout strength of at least 100 N, tested dielectric strength of 600 V AC for 2 seconds and chain maximum leakage 1A, voltage drop the maximum chordal the carbon brush 3 mV from 1 to 10 a, with a diameter of 64 mm and height 18.7 mm and
8511.90.00	58	Brush holders mounted with: galvanized steel plate, 1.2 mm thick (+ -0.05 mm) diameter of 61.1 mm (+ - 0.1 mm); Copper flow plate or galvanized steel, thickness 1.2 mm (+ - 0.1 mm) diameter and 43.65 mm (+ - 0.15 mm) or 52.2 mm (+ - 0.1 mm); guides the brushes phenolic resin, thickness 1.5 mm (+ 0.2 mm) and dimension to brush locking 10.225 mm and 14.225 mm (+ - 0.075 mm); six carbon brushes with two layers of different compositions, Rockwell hardness from 40 to 90, useful length of 9.70 mm brushes (+ -0.25 mm), total thickness 4.2 mm (+ - 0.04 mm) and a width of 10 mm or 14 mm (-0.1 mm -0.26 mm); strand external connection braided copper and cross section of 10 mm ² or 12, tinned copper wiring board; sealing parabolic geometry; six compression springs, applied to automotive product.
8511.90.00	59	non-symmetrical grooves, outer diameter of 104 mm (+ - 0.2 mm) with core height of 24 mm (+ 0.1 mm) and inner diameter of the core hole of 17.28 mm (+ - 0.0215 mm), applied to automotive alternators.
8511.90.00	60	Polar coreless wheel 6 coupled with claws 28 mm (+ -1mm) wide with two symmetrical grooves, outer diameter of 103.8 mm (+ 0.2 mm) and 103,9 mm (+ -0, 2 mm) and internal diameter of 93.7 mm (+ 0.6 mm), spaced at 60 degree angle (+ -1 degree) between them and the inner diameter bore of 17.2 mm (+ -0.8 mm) used in automotive alternators.
8511.90.00	61	Voltage regulator support PPS injected plastic (40% glass fiber + 20% mineral oil), subjected to aging treatment at 175 degrees C (+ -5 degrees Celsius) for 180 to 330 minutes, the minimum tensile strength of 120 MPa and a minimum bending strength of 195 MPa, contains sobreinjetados of low carbon steel terminals (C340) with surface treatment of copper and tin, steel nut 8.8 dehydrogenated and tinned terminal to communicate with the harness of the vehicle in the axial part towards 5 and terminals to weld regulator control chip must have no more than maximum leakage current to 0.5 mA when applied AC voltage 800 for 0.2 seconds maximum dimensions of 43.75 x 45.44 x 41 1 mm, applied to alternators for motor vehicles.
8511.90.00	62	Heat exchanger made of aluminum plate 78 has holes with slots 0.14 mm (-0.02 mm +0.01 mm) in height, the tip radius of 0.06 mm (+0.01 mm) evenly spaced along the hole diameter, applied to automotive product.
8511.90.00	63	Fan made of pressed steel, formed by bent fins 10 and asymmetrically spaced with an outer diameter of 98 mm to 103 mm (+ 0.3 mm), with asymmetric bore for mounting the workpiece and diameter of 45.6 mm (+ - 0.1 mm) has welding points 12, applied to automotive product.
8511.90.00	64	Fan made of injected aluminum, comprising 17 to 20 fins spaced symmetrically with an outer diameter of 210 mm (+ -0.25 mm) and internal bore of 30 mm (+ -0.021 mm) in diameter applied in automotive product.

8512.20.11	22	side fog headlight right and left, composed of plastic housing material, regulation system, inner frame, elliptical lens (internal) with integrated optics and a lacquered outer lens with anti-fogging coating material for LED lighting application, has an electronic module comprising LED circuit board and heat sink with screws and gasket; contains special sealing and application of an oil-phobic membrane waterproof and dust with light function curve (cornering) front lighting for a motor vehicle, has a power of 8 W, voltage up to 13.5 V with 79 mm height, 93 mm wide and 72 mm deep and weighing approximately 150 g.
8512.20.19	7	fog headlight with LED (light emitting diode) composed of plastic structure ABS + PC lenses PC frames PC optical module PMMA, electronic circuit board + LED, height adjustment system for installation in front bumper, the left and right motor vehicle, with dimensions of 116 mm x 102 mm x 78.77 mm and weight 0.254 kg.
8512.30.00	6	Set buzzer responsible for the audible alert issued by unlocking and locking the motor vehicle doors, triggered by the presence key and remote control, set up in manufactured resin body (PBT-GFF30) black and cover manufactured resin body (PP) gray, steel provided with terminal (C2680) steel vibrator 680 ohm resistor and electric cables, weighing 0,021 kg, with a length of 54.6 mm, width 34.8 mm and height 42, 3mm.
8512.90.00	30	Set the head of the wiper arm system windshield, cast aluminum alloy (ASTM A380 B85 / B85M) anodizing at least 5 microns, the dimensions of 113.9 mm to 120.1 mm long and 28 mm (+ -0,1mm) wide angular cone diameter of 10.2 mm (+0.15 mm) and angle 18,55graus (-0,30minutos) controlled by perpendicularity 0.05 concentricity 0, 2 and flatness 0.05 compressed with 8 mm diameter precision bushing (+0.06 mm) and adjusted to ensure minimum force of 150 N, corrosion protection from 0.5 to 5 microns and tin alloy pin silicon steel 3 mm in diameter (-0,014mm), hardened and tempered to 750 HV1, applied to
8512.90.00	31	Set the system head arm windscreen wiper, cast aluminum alloy (ASTM A380 B85 / B85M) anodizing at least 5 microns in size from 123.5 to 136.1 mm (+ -0, 5 mm) long and 28.8 mm (+ 0.1 mm) wide angular cone diameter of 10.2 mm (+0.15 mm) and angle 18,55graus (-0,30minutos) controlled by perpendicularity 0.05, flatness and concentricity 0.2 0.05 compressed with 8 mm diameter precision bushing (+0.06 mm) and adjusted to ensure a minimum force of 150 N, 0 corrosion protection 5 to 5 micron tin alloy pin and silicon steel diameter 3 mm (-0.014 mm), hardened and tempered to 750 HV1, applied to automotive
8512.90.00	32	Support windscreen wiper arm aluminum (AS12U1), with spring pin mounted to the support in a hole of 4 mm (-0.04 mm and -0.08 mm) with a maximum position change of 0.3 mm and inner diameter of bushing 5.00 mm to 5.05 mm mounted in a bore of 7 mm (JS7) for fixing the cone of 18.9 degrees drive mechanism shaft (-0.5 degrees) and head width of 21.9 mm (+0.07 mm to -0.23 mm), weight between 40 g and 150 g applied to the automotive vehicle.
8518.10.90	1	Sound pickup microphone applied to browsers and audio automotive passenger vehicle systems, comprising electronic circuit with capacitors, transistors, diodes and resistors, 8-way electrical connector, cap and body ABS plastic material; kind of singular or multiple funding; maximum sound pressure input from 96 dB to 107 dB sense and capture single or maximum of 270 degrees multiangle; standard working voltage of 8 V DC and maximum electrical current of 6.5 mA to 80 mA and unique capture for multiple capture.
8518.10.90	2	single microphone with operating temperature from -40 degrees Celsius to 85 degrees Celsius and 4-way connector, installed on support made of plastic material with dimensions of 28.6 mm x 12.5 mm x 10.7 mm and weight of 0.008 kg .
8518.10.90	3	dual microphone system with operating temperature from -40 degrees Celsius to 85 degrees Celsius and 4-way connector, installed on support made of plastic material, with dimensions of 81.4 mm x 29.2 mm x 13.4 mm and weight 0.011 kg.
8518.21.00	10	sound system speaker for frequencies above 5000 Hz of the audible spectrum, 2-pin connector, weighing approximately 50 g with dimensions of 55 mm X 42.75 mm X 29.55 mm.
8518.21.00	11	single subwoofer sound system with at least one Helmholtz resonator, approximate dimensions of 312.9 mm x 184.1 mm x 242.9 mm and weight of 1.33 kg.
8523.52.10	14	Transponder (TAG) identification vehicle via radio frequency reading (RFID chip), operates in the range of long wavelength (low frequency - LF), with support for recording key identification data, applied inside the own key to communication encrypted with the ignition switch and start enable automotive vehicles.
8525.80.19	14	analog camera / digital types applied in motor vehicles, with lens at most 30 mm in diameter, to capture images of the front and or back and or side of the vehicle to aid in maneuvers, whose reproduction of the captured images to be made to multimedia center.

8525.80.19	15	reverse camera, dimensions 38.15 x 46.9 x 28 mm and weighing approximately 14.5 g, operating voltage of 8 V to 16 V, current consumption of 60 mA to 120 mA at 13.5 V, operating temperature -40 degrees Celsius to +85 degrees Celsius, used for car back display during engagement of reverse butch.
8525.80.19	16	digital or analog camera with plastic support, of the type applied in motor vehicles, with a lens at the most 2 cm in diameter, power from 5 to 9 V S / N ratio of 40 dB min, for image capturing the front or and the rear or side of the vehicle to aid in maneuvering.
8525.80.19	17	digital camera for use in motor vehicle fender to capture the SVM system images (Surround View Monitor), equipped with six lenses and 2 glass and 4 plastic, anti-reflective and hydrophobic technology in lens materials (Al ₂ O ₃ , MgF ₂ , SiO ₂ , TiO ₂) and fluorosilane compound out in 1026 format (H) x 769 (V) with LVDS signal transmission and PoC connection (Power over Coax) to the ECU controller of the SVM system mounted with
8525.80.19	18	digital camera for use in side-view mirror of motor vehicles for the capture of the SVM system images (Surround View Monitor), equipped with six lenses and 2 glass and 4 plastic, anti-reflective technology and hydrophobic on the lens in Al ₂ O ₃ material, MgF ₂ , SiO ₂ , TiO ₂ and composite fluorosilane, output in 1026 format (h) x 769 (v) with digital signal transmission over 8-bit LVDS, and PoC connection (Power over Coax) to the ECU controlling the SVM system, mounted with microcontroller, memory EEPROM and AWG25 cable.
8525.80.19	19	rear maneuvering assistance system in reverse motor vehicle camera with VGA CMOS sensor, 4 lenses and 2 glass and 2 plastic, anti-reflective technology and hydrophobic on the lens material (Al ₂ O ₃), (MgF ₂), (SiO ₂) (TiO ₂) and fluorosilane compound, the video output format 720 (H) x 480 (V), flash memory has terminals and connectors with Ni / Sn, operating at 6.5 V (0.5 V +/-) with support for fixing plastic (PC + ABS).
8525.80.19	20	of The rear camera maneuvering assistance system in reverse for motor vehicles, with VGA CMOS sensor, 5 lenses and 2 glass and 3 plastic, anti-reflective technology and hydrophobic on the lens in Al ₂ O ₃ material, MgF ₂ , SiO ₂ , TiO ₂ and fluorosilane compound the video output format 720 (H) x 480 (V), has a microcontroller transceiver for communication on the CAN network and high and low speed, and flash memory 2 with terminal connectors alloy (Ni / Sn).
8525.80.19	21	Electronic module for capturing images with a convex lens in the anterior part face made of glass, with a horizontal view angle of 26-78 degrees and vertical view angle of 14-42 degrees, has on the rear face of the connector 12 input part metal pins to module power ranging 09-16 V network communication data and output to the heating circuit of the local defroster windshield of the vehicle, and the housing sealed plastic module from moisture with two lateral flaps fixing the inner support of the windscreen and housing the lower face secured by three screws having total weight of between 155 and 195 g, size 80 to 90 mm in width, length between 75 and 85 mm and height between 28 to 34 mm.
8525.80.19	22	Oscillator capture external images of the vehicle, with the multiplex function of the images from the parking cameras, real-time transmission of images in the media of the vehicle central module of feeding ranging from 8 to 16 V, consisting of housing PC-ABS printed circuit board containing electronic components such as resistors, capacitors, integrated circuits, has one input connector / output with external mounting brackets and dimensions of 100 mm 150 mm wide, 50 mm long and 80 mm , height of 25 mm to 50 mm.
8525.80.19	23	Tele subsequent digital camera with plastic backing, applied at the rear of motor vehicles, with lens 20,00 mm or less, with 6.0 V supply voltage and 16.0 V DC electric current of 100 mA to 600 mA, for capturing images to aid in maneuvering and viewing multimedia system.
8526.92.00	3	Remote control for door lock control, trunk opening and alarm motor vehicles, internally provided with radio frequency communication transponder for recognition of the key for the immobilizer device, communication on the frequencies 125 kHz and 433.92 MHz, microcontroller, RF antennas, battery 3V motion sensor and system to mitigate risk cloning the
8526.92.00	4	remote control to lock command of the doors, the trunk opening and alarm motor vehicles, which may or may not contain the panic button, internally provided with radio frequency communication transponder for key recognition by the immobilizer device, communication in the frequency 125 KHz and 433.92 MHz, microcontroller, RF antenna, battery 3 V, plastic base

8527.21.00	15	Media center with external power source, with fabric 10.25 inches of type IPS LCD, AM / FM radio receiver, touch screen, music player's USB type, Bluetooth interface, telephone system (Hands Free Telephone - HFT), communication via CAN protocol high speed (F-CAN) and low speed (B-CAN) between the media center and electronic control unit, reverse camera interface by combining the direction of the position sensor via CAN protocol, with a processing capacity images to resolutions of 1,920 x 720 pixels, clock, equipped with built-in amplifier, smartphones compatibility through the mirror link 1.1 system (via cell through self carplay and android apps), the kind used in motor vehicles.
8527.21.00	16	Media center with external power source, with a 3.8-inch TFT monaural, radio receiver AM / FM stereo player USB type, Bluetooth interface, telephone system Hands Free Telephone (HFT), with capacity of image processing for resolutions of 266 x 104 pixels, clock, equipped with built-in amplifier, the kind used in motor vehicles.
8527.21.00	17	media center designed to motor vehicles, powered by external power source, for receiving broadcasting AM / FM connection with capacitive color touch screen of 6 to 12 inches, Bluetooth interface for streaming and handsfree audio, USB connection, camera interface backwards compatible with Android Auto and Apple CarPlay protocols, CAN bus interface, compatible with specific electro-electronic architectures, including diagnostic messages on the CAN bus and theft protection strategies.
8527.21.00	18	System infotainment - AUS (information and entertainment) for heavy commercial vehicles to transport loads or people, equipped with touch screen 5-7 inch, cover and buttons and rotary controls ABS plastic and polycarbonate, weight between 1547 and 2180 g, 12 V supply voltage, rated current of 15A or 10, it supports audio input various external sources via cable, with or without auxiliary input connector to 3.5 mm, USB 1.5 The capacity and up to 2 ports for SD memory card one of them for navigation support, bluetooth connection for up to two mobile phones simultaneously, supports audio formats MP3, AVI, MP4, MPG and MPEG, AM / FM digital, 4 or more 20 W of power of sound output or more, compatible with MirrorLink and carplay smartphone mirroring with or without input for preparation of TV, with up to 2 analog video inputs with support for PAL, NTSC and CVBS / FBAS contains 12 outputs to V
8529.10.19	13	antenna set of low frequency of passenger cars responsible for the emission frequency of 125 kHz signals to the outside or inside the vehicle, being captured by the car key and used in the locking operation and unlocking the doors; with operating temperature from -40 degrees Celsius to +85 degrees Celsius.
8529.10.19	14	triple automotive antenna (GSM / GPS / Iridium) with three coaxial cables to connect to the telemetry module of the vehicle, enables the transmission and reception of data via radio frequency signals of GSM, satellite Iridium and receiving GPS satellite signals and GLONASS , weighs about 200 g, with degree of protection IP 66 (IEC 60529) for use in agricultural
8529.10.19	15	integrated triple automotive antenna (GSM / 433 MHz / WiFi) with three coaxial cables to connect to telemetry equipment of the vehicle, enables the transmission and reception of data via radio frequency signals of GSM 433 MHz and WiFi, weighs 200 g, with degree of protection IP 66 (IEC 60529) for use in agricultural machines.
8529.10.19	16	Antenna capture of electromagnetic waves at frequency of 125 kHz used in the actuation of the passive entry system of the vehicle via radio, suitable for attachment to the outer side door handle for motor vehicles.
8529.10.19	17	detecting radio frequency antenna (RF) with main function of remote communication with the low frequency customer identification device (car key) with operating temperature from -40 degrees Celsius to +85 degrees Celsius and operating frequency of 125 + - 4% kHz.
8529.10.19	18	GNSS antenna with function of receiving satellite signals from GPS and GLONASS systems and send them to the receiving unit, with an operating voltage ranging from 3 V to 5 V, the current consumption may vary between 10 mA to 30 mA and temperature operation between - 40 degrees Celsius to +85 degrees Celsius.
8529.10.19	19	Antenna to capture electromagnetic waves at frequency of 125 kHz, with communication via radio remote system and drive, mounted in the ignition cylinder to communicate with the key of the motor vehicle.
8529.10.90	1	AM / FM antenna with integrated GNSS operating temperature between -40 degrees Celsius and 90 degrees Celsius, -16 V voltage between 8V, installed on support, has Fakra connector type with approximate dimensions of 118mm x 78,8mm x 78,1mm weight and 0.196 kg.

8529.90.90	11	Digital Mirror for trucks, comprising a vertical image pickup with 2 MP resolution and optical format 1 / 2.8 inch lens opening angle in the vertical formats of 127.2 degrees, 67.6 degrees horizontal and diagonal 170 degrees, 24V nominal voltage, operating temperature of -40 degrees Celsius to +85 degrees Celsius, IP69K degree of protection, coupled to the support body in aluminum alloy and polymer materials (PA, POM, EPDM) and rotational lock
8532.25.90	3	Capacitor dielectric plastic film (PET) for inserting a mounting (THT) of cylindrical type, 7 mm diameter and 19 mm in length or type box, 9 mm tall by 13 mm wide by 4 mm depth; copper terminals or steel coated with copper, tin, capacitance of 0.68 micro farad (+ - 20%) to 100V, with the function to suppress electromagnetic noise in direct current electric motors applied in the automotive ventilating systems.
8532.25.90	4	Capacitor polyester film coated with aluminum layers, with a capacitance of 0.5 microfarad and 2.2, working voltage up to 100 V at 25 degrees Celsius operating temperature exceeding -40 degrees Celsius and below 150 degrees Celsius , maximum dissipation factor of 1% at 1 KHz and 25 ° C (+ -5 degrees Celsius), the minimum insulation resistance of 568 megohms, sealed with polyurethane resin with flame retardant grade 0 and terminal thick copper coating greater than 4 microns and less than 8 microns, manufactured in the shape of parallelepiped with dimensions of 18 mm (+ 0.2 mm) x 12 mm (+0.2 mm -0.4 mm) x 6mm (-0 + 2 mm) and copper terminals in diameter 0.76 mm (+ 0.05 mm - 0.01 mm) and a length of 21.7 mm (+ 0.3
8532.25.90	5	polyethylene terephthalate film capacitor (PET) with encapsulating epoxy resin press, lead-free, responsible for filtering noise, preventing interfering with the reading of the alternator regulator voltage, coated with aluminum layers, with no more capacitance 2 2 microfarad, working voltage of 250 V to 150 degrees Celsius operating temperature between -40 degrees Celsius and 150 degrees Celsius, maximum dissipation factor of 1.5% at 1 KHz and 25 degrees Celsius, the minimum insulation resistance 500 megohms by applying 100 V (± 10 V) in continuous current and maximum dimensions 27x12x7 mm with a maximum diameter of 1.3 mm and terminals maximum length of 23 mm with a minimum coating of copper 20 microns and higher min tin 8 microns applied in motor vehicle alternators.
8533.10.00	2	DC braking Resistore (DC) electric vehicles, dimensions 953 mm x 200 mm x 200 mm maximum weight of 21.4 kg comprises eight fixed carbon resistors, layer, connected in parallel with electric resistance 3.74 Ohm tolerance of +/- 5%, maximum voltage of 580 V, the maximum operating temperature of 82 degrees Celsius, variable operating pressure 4 to 6 bar cooling liquid, flow rate of 3 L / s, maximum energy consumption 90 kW, coolant connection to 38mm and IP6K9K degree of protection.
8534.00.20	2	A flexible printed circuit board, single-sided, with 6 to 18 lanes, gold finish in the contact areas, length up to 230 mm, thickness up to 0.35 mm, weight 0.5 to 1g, used as part of the electrical interconnections key arrows and cleaners of windshields in motor vehicles.
8536.10.00	7	fast acting fuse blade 4 outputs current capacity between 100 and 400 A minimum drive time of 100 ms and a maximum of 1,0s 600% overload, 24V operating voltage, and height between 46,0mm 50.0mm, width between 26,0mm and 30,0mm and length between 88.0 mm to 90,0mm used for protecting electrical circuits in motor vehicles.
8536.50.90	95	Button two positions in polycarbonate (PC) laser engraved, based on PC + ABS, with the printed circuit board, for motor vehicle console with on / off feature to Surround Monitor Viewer function (SVM).
8536.50.90	96	Button for vehicle ignition equipped with start-stop system with laser engraving, operating voltage from 9 V to 16 V, illuminated with LED, internal antenna inductance of 440 uH to 445 uH for reading the smart key transponder for starting in an emergency, polycarbonate button based on PC + ABS and communication with the IBU module of the vehicle.
8536.50.90	97	and locking the wheel mounted magnesium body and provided with screws, springs, electric motor drive and PCB, weight 0,497Kg with 101,6mm length, width 63.5 mm and height of 150,4mm.
8536.50.90	98	Electrical contactor command of start-stop system, comprising material (ABS NH-892L), painted finish, consisting of one 10-pin connector, working voltage of 10V to 16V, consumption maximum 110mA current, used in motor vehicle passengers.
8536.50.90	99	Electric device, characterized by a heating mantle composed of polyester and TNT resistance between 1 and 2ohm, voltage up to 24V, with function of heating the front seat, used in vehicles, usually presented in the dimensions of 554 x 575 x 20 mm weight 15 g.
8536.50.90	100	neutral switch of the electromechanical type which function to indicate the neutral position in light vehicle gearboxes, medium and heavy, consisting of housing and may contain electrical terminals on cold rolled steel, zinc or copper with an operating voltage of between 12V and 24V, 5A and maximum drive current.

8536.50.90	101	reverse switch, electromechanical type with function indicating the position of gear-to-aft in light vehicle gearboxes, medium and heavy, consisting of a metal casing with plastic connector, may contain electrical terminals on cold rolled steel, zinc or copper, with a nominal working voltage between 12 and 24V and minimum of mechanical life cycle of 500,000 drives.
8536.50.90	102	Electric switch of the switch type to 0 bar working pressure at 11 bar, normally open contact and a switching pressure 1.2 bar (+ -0.2 bar) at 20 degrees Celsius operating temperature from -30 degrees celsius to +130 Degrees Celsius, the degree of protection IP6K9K type connector (DIN 72585-A3-2.1), 55.2 mm (+ 0.5 mm) long, external hexagonal profile in support SW 27 and of approximate weight 86, 0g applied as a safety system for vehicle
8536.50.90	103	door control panel for driving and managing electrical functions of glass and locks, 8 V working voltage to 16 V, communication on CAN protocol, 37-pin connector, thermoplastic housing, thermoplastic buttons, maximum operating current 200 mA Operating temperature -30 degrees Celsius to +80 degrees Celsius, applied to passenger cars.
8536.50.90	104	door control panel for driving and locking the electric windows, rated voltage of 12 V, communication with IBU module and the control module glass anti-crushing functions, PC + ASA plastic buttons, lower base PC plastic + ABS, with five LEDs, the drive force of 3.0 N.
8536.50.90	105	Terminal connectors for coaxial connection to one or more paths to 90 degrees or 180 made of polymers, copper alloys, steel and ferromagnetic materials, and 25.0mm length between 15,0mm, 18,0mm and width of 16.0mm and height between 12.0 mm and 24.0 mm for the manufacture of automotive connectors suitable to FAKRA standards for high-speed
8536.90.90	19	Central block of the B-CAN type for electrical connection, equipped with up to 44 fuses 10A to 30A, and up to 2 relays, voltage 12 V, with an operating temperature of -35 degrees Celsius to +75 degrees Celsius, with FR-body 4, shown with the 610g weight 757 g (\pm 1.5%), dimensions: height of 80-47mm length of 273-180mm and width of 186-110mm, suitable for use in motor vehicles passengers.
8536.90.90	20	Central block of the B-CAN type for electrical connection, provided with 46 to fuse 7.5A to 25A, and up to 2 relays, voltage 12 V, with an operating temperature of -35 degrees Celsius to +75 degrees Celsius with body FR-4, presented weighing 643 g to 757 g (\pm 1.5%), dimensions: height of 78-49mm length of 273-184mm and width of 186-108mm, suitable for use in vehicles
8536.90.90	21	Metallic used Connector magnetic switch motor starting to close electrical contact between the winding and the terminal connected to the vehicle ignition composed of parts made by stamping, injection molding and drawing and form of "L" and lengths controlled 22 mm (+ 0.3 mm) and 26 mm (+ 0.2 mm).
8536.90.90	22	Electromagnetic noise suppressor, the electrical inductor type milliohm 3.6, 2.7 microhenry, in 22 the test current comprising a coil of 14 windings of copper wire of 1.4 mm diameter, around one ferrite core of 5 mm diameter by 20 mm long, with two free ends and tinned applied in continuous current electric motors automotive ventilation.
8536.90.90	23	Electromagnetic noise suppressor, the electrical inductor type, with irreversible thermo-fuse system milliohm 3.5, 2.9 microhenry, in 22 the test current comprising a coil 13 of copper wire windings 1, 4 mm diameter, around a ferrite core of 5 mm diameter by 22 mm long and faceted edges, with two free ends and tinned applied in DC electric motors, automotive
8536.90.90	24	Electromagnetic noise suppressor, the electrical inductor type, with irreversible thermo-fuse system, 6.7 milliohm, 4.9 microhenry, in 22 the test current comprising a coil 16 of copper wire windings 1, 12 mm in diameter around a ferrite core of 5.5 mm diameter and 22 mm in length and faceted edges, with two free ends and tinned applied in DC electric motors, automotive
8537.10.90	54	coupled to the handle and connectors to 24 volt electrical system has the function of controlling the movement of the working hopper and traction drive applied in cabin wheel loader operation.
8537.10.90	55	Lever control, with manufactured rod steel and plastic handle, provided with 4 mini electric switches, 2 buttons and connectors for electrical system of 24 volts, has the function of controlling the movement of the work bucket, direction fore and aft and traction drive, applied to paddle wheel loader operating cab.
8537.10.90	56	Lever electromechanical aluminum alloy body, with electric drive driven piston and return by springs provided potentiometer, Hall-type sensor and the connection cables of 24 volts provided hood rubber and plastic protection cover tension, may have locomotion routing function, forward, reverse, left and right, or control of the work implement, applied in operating

8537.10.90	57	distribution boxes, protective and switching presented with fuses and or relays with working voltage between 12 and 60 volts, comprising plastic and metal device housing with dimensions ranging from 30 mm to 350 mm wide, 16 mm to 160 mm long and 15 mm to 410 mm in height and weight of 6 g to 1950g, suitable for the manufacture of automotive wire harnesses of the kind used in heading vehicles 8701-8705.
8537.10.90	58	Central fuses, relays and timers, mounted on printed circuit board 8 layers of reduced size (421mm x 153mm x 27,7mm) interface for specific electrical harness used in cabins of agricultural machinery, high vibration resistance (Technology inserting components by adjusting pressure - Press-fit), temperature and dust.
8537.10.90	59	command combinations switch lever type for powering the lights and arrows provided with direction of travel lever forward, reverse and neutral, 24 volts, with plastic protections and hoods embedded rubber, provided with cables and electric wiring connections , applied to the steering column wheel loader.
8537.10.90	60	Device (socket) digital accessory comprises two USB connections for feeding or charging batteries compatible electronic devices.
8537.10.90	61	Distributor DC power to electric vehicle, casting aluminum alloy, dimensions 518 mm x 390 mm x 150 mm maximum weight of 15.2 kg was 150 kW power, maximum current 200 A, operating temperature of -10 degrees Celsius 75 degrees Celsius, IP6K9K degree of protection, voltage sensors on the input and output meters, electronic board for connection via
8537.10.90	62	DC power distributor, casting aluminum alloy, dimensions 441 mm x 310 mm x 181 mm maximum weight 9 kg, rated voltage of 650 V, the maximum voltage 800 V, current maximum load 105, maximum 130 Discharge current , operating temperature of -30 degrees Celsius to 65 degrees Celsius, IP6K9K degree of protection entry for electric accumulators 2 to 5, applied
8537.10.90	63	Handle with aluminum body bound in plastic wrap and rubber anti-slip details provided with two coupled switches, harness and plug 24 volt electrical system has the directivity function of the mats to manipulate the lever and shift by operating the switches applied in operation cabin self-propelled machines.
8537.10.90	64	Handle with aluminum body bound in plastic wrap and rubber anti-slip details provided with two coupled switches, wiring harness and connecting to the electrical system of 24 volts has the function of controlling the working blade by manipulating the lever and blade pitch by operating the switches applied in operation cabin self-propelled machines.
8537.10.90	65	electromechanical module drive headlights and wipers windshield applied to the steering column for motor vehicles, comprising: control lever of the headlight lamps (high and low) direction (arrows) and / or auxiliary (front lights / rear fog) low current (20mA) and high current (5 to 7a); control lever front glass cleaner and / or rear of high power (5 to 7a); central component for mechanical interface with other parts of the vehicle; electrical connections for sending commands to the electronic central control of the vehicle; Working temperature -30
8537.10.90	66	electronic entertainment module with integrated navigation screen has touchscreen type of commands, 9-32 volts with power greater than or equal to 71 watts, for use in road machinery.
8537.10.90	67	12 Control Panel V with a maximum current of 1 ampere, equipped with liquid crystal display to inform functions, status and system failures, control buttons and adjustment in the lift hydraulic system through communication by CAN protocol harness with connector it operates at temperatures from -10 degrees Celsius to 80 degrees Celsius, approximately 1 kg, specifically for use in agricultural machines.
8537.10.90	68	Unit of electronic control of the exhaust gas treatment system, dimensions of 61 mm x 30 mm x 60 mm, rated voltage of 24 V, variable temperature - 40 degrees Celsius to 80 degrees Celsius, equipped with 9 electrical contact terminals made of copper alloy, grade IP5K3 protection, maximum weight 0.100 kg, applied to trucks and buses.
8537.10.90	69	Electronic control unit of the hydrodynamic retarder size of 135 mm x 200 mm x 33 mm, rated voltage of 27 V and a maximum current of 2 A contains two connectors with electrical contact pins 15, variable working temperature -40 degrees Celsius 70 Degrees Celsius, maximum weight of 0.600 kg, uses communication via CAN bus, applied to trucks and buses.
8537.10.90	70	Electronic control unit of the anti-collision system housing polycarbonate, steel frame, copper terminals, dimensions 130 mm x 86 mm x 36.9 mm, 24 V operating voltage, operating temperature of -40 degrees variable Celsius to +85 degrees Celsius, total weight of 165g, IP30 degree of protection, entrance to two connectors with 18 and 15-pin, applied to truck and bus.
8537.10.90	71	electronic control unit with communication "CAN Bus", low transmission frequency (125 KHz), remote control key ID, key recognition for access to the vehicle and starting the engine.

8538.90.90	7	Switch box produced by mechanical forming by deep fountain with 1.0213 cylindrical steel with surface treatment of galvanized and passivated or ZnNi of a length ranging from 54.1 mm (+ 0.3 mm) at 58.0 mm (+ - 0.3 mm) and outer diameter of 52.5 mm (+ 0.3 mm) at one end and the other end ranging from 30.3 mm (+ 0.2 mm) at 31.8 mm (+ -0.4 mm); include threaded
8538.90.90	8	Switch box key used in magnetic starters, has a cylindrical shape obtained by mechanical conformation, length of 46.4 mm (+ 0.2 mm), external diameter of 47.0 mm (+ -0.3 mm) and 27.1 (+ -0.084 mm) internal diameter stepped into 3 parts, with values of 23.1 mm (+ -0.13 mm), 43 mm (+ -0.1 mm) 45.1 mm (+ -0.1 mm), threaded holes 2 to 3 and the M5 type of surface treatment or galvanized and passivated ZnNi.
8538.90.90	9	Casing produced in engineering plastic injection molding process, the gray or black color, with the total allowable length between 30 mm and 45 mm and a total height of between 15 mm and 30 mm is used in the assembly of the electrical connector magnetic clutch system of the compressor automotive air conditioning for connection to the electric circuit of the vehicle, its mass is allowable 3 to 10 g.
8538.90.90	10	Contact springs made of metallic alloys (CuNiSi) with galvanic contact rivet finishing gold-cobalt (AUCO) applied in printing, thickness 0.3 mm, length 23.5 mm, width of 5.6 mm and 1.7 mm height, weight from 0.7 to 3 g, used in the manufacture of arrow keys for motor vehicles.
8538.90.90	11	with a thickness between 0.2 and 0.3 mm, length of 14 to 26 mm, width of 5 to 26 mm and height of 6 to 18 mm, weight from 0.1 to 1 g, for the manufacture of electrical switches of automotive vehicles.
8538.90.90	12	steel magnetic core low carbon cold-extruded with diameters ranging from 45.27 mm (+ 0.07 mm) at 49.2 mm (+ 0.3 mm), through-hole diameter between 7.6 mm (+ -0.03 mm) to 9.7 mm (+ -0.03 mm), two slots in the radial direction of width 6.0 mm (+ -0.18 mm) spaced by at least 175graus (+ -20minutos) and at most 180 degrees, and in a tapered cam surfaces, tapered in diameter at its base equal to 17.4 mm (+ 0.1 mm) and roughness within the hole equal to Rz6.
8538.90.90	13	Receptacle made of polymer itself to coaxial connectors of one or more routes, connection 90 or 180 degrees, a length between 9 mm and 13 mm, width of 7 mm and 12 mm, height between 9 mm and 33 mm, and may or may not contain seal and lock secondary, for the manufacture of automotive connectors suitable to FAKRA standards for high-speed
8538.90.90	14	Subset ignition switch with contact springs for lifting by means of cam systems (lift spring) 6 operating voltage 14 V, operating current from 0.25 to 48 A, operating angle -5 degrees to 138 degrees, with a length of 75.41 mm (+ -2 mm), a width of 52 mm (+ -2 mm) and height 50.69 mm (+ -2 mm), weight 54 g to 57 g, mainly composed of resin (PA66-GF30), resin (POM / M) resin (PBT-GF30), brass, copper and zamak, applied to automotive vehicles.
8539.21.10	2	color, containing in its interior lamp dichroic A60 12 W, halogen, LED, weighing 14 g and having dimensions of 59.85 x 34.75 x 17.9 (+ -0.2) mm, for voltages lower than or equal to 15 V.
8539.21.90	1	Light signaling, suitable for motor vehicles with a rated voltage of 24 V, transparent glass composite or amber or red metallic base plastic base or glass-based and molybdenum filament or tungsten with a nominal power of 2 W or 3 W or W 5 or W or 13 or 10W 16 W or 21 W or 24 W weighing approximately 0.9 g to 11.0 g, based on 9.5 mm to 27.5 mm and
8539.29.10	3	base, glass, plastic or rubber filament and molybdenum or tungsten, at rated power up to 21 W.
8543.20.00	31	Sensor measuring rotational speed, located on the shift housing, with connector (DIN 72585 TIE-PLUG - A1-2.1 - Ag / K2), operating temperature of -40 degrees Celsius to 140 degrees Celsius, internal resistance 1050 ohms (\pm 100 ohms) and effective voltage 0.8 V.
8543.20.00	32	which supports working temperature range of -40 degrees Celsius to 140 degrees Celsius, has a maximum inductance of 100 mH at 1 kHz sinusoidal, 66.5 ohms resistance (ohms \pm 0.5) at 20 degrees Celsius.
8543.20.00	33	Sensor active spin Hall effect, consisting of integrated circuit, able to differentiate the direction of rotation, with working temperature between -40Graus Celsius and 130 degrees Celsius, often to acquire up to 12 KHz in direct rotation and up to 6 KHz reverse rotation, IP69 and IP67 certification, direct supply voltage between 4.3 V and 24 V, and -18 V reverse, with standby power consumption between 4 mA and 9 mA in operation and between 12 and 17 mA mA, pulse width for direct rotation of 38 μ s to 53 uS, and reverse of 76 μ s to 104 uS, used in

8543.20.00	34	Rotation speed sensor mounted in the gearbox, in order to measure the rotational speed of shafts and gears contained therein, the gear tooth width between 3.6 and 5.3 mm, spacing between teeth 3, 2 and 12.5 mm, a tooth height between 3.5 and 11 mm, gear width of between 2 and 58 mm, with a diameter between 121 and 262 mm and a spacing between the sensor and the measurement object between 1 and 2 mm and supporting working temperature range of -40 degrees Celsius to 140 degrees Celsius and a maximum
8543.20.00	35	Sensor contactless used for continuous measurement output shaft rotational speed gearbox for heavy commercial vehicles for transporting cargo or persons, weighing between 100 and 120g, a length of 126 mm, made of steel, has 4-pin connector with power, ground and two output channels, one for transmission of speed pulses and one for encrypted messages, works at a maximum operating current of 15 mA at a voltage of 6.5 to 9 V under a reading
8543.70.99	250	Key with remote control system powered by lithium battery of coin type 3 volts to lock or unlock the door and vehicle trunk distance without the aid of mechanical key, which turns electromechanical aggregate system to the door, containing infinite combinations code numbers that are captured by a control unit and identifies the code numbers transformed into electrical pulses that drives the motor lock for opening and closing doors having dimensions may vary by 0.5 mm or more to less than 74.1 mm length , 40.4 mm wide and 19.8 mm deep.
8543.70.99	251	voltage of 16 V and current of 150 mA, has a TH12HW connector to interface with the wiring harness, approximate dimensions of 83 mm x 60 mm x 30 mm and weight approximately 90 grams.
8543.70.99	252	Sensor speed tachograph with operating temperature from -30 degrees celsius to +125 degrees Celsius operating voltage from 6 V to 9 V, maximum current consumption of 15 mA, weighing approximately 160 g and protection class IP67 + IP69K.
8543.70.99	253	Electronic transmission frequency sensor proportional to rotational speed and crankshaft position, operating temperature from -40 degrees celsius to +150 degrees celsius and maximum rotation speed of the crankshaft up to 7,500 rpm.
8544.42.00	16	Subset copper flexible cable with plastic connectors applied to the ends, comprising USB universal serial bus cable (Universal Serial Bus) and differential signal cable low LVDS voltage (Low-Voltage Differential Signaling) with external hardware interface function with the multimedia module, used in automotive whip, for a voltage not exceeding 80 V.
8545.20.00	13	composed of copper brush contact (between 19% and 23% by mass); graphite (between 80% and 76% by mass); Maximum impurities 1% of its mass, and length of 17.5 mm (+ - 0.3 mm), a width of 4 mm (+ - 0.15 mm) and height of 6 mm (+ - 0.15 mm) the strand is made of copper and has a length of 51.2 mm (+ - 0.3 mm) and a diameter of 0.95 mm (+ - 0.1 mm) and minimum strength of 35 N extraction (+ - 5 N).
8546.90.00	1	Insulating part, injected plastic (PPS) with 40% glass fiber and 20% mineral minimum tensile strength of 120 MPa, a minimum flexural strength of 195 MPa, with maximum dimensions of approximately 90 x 58 mm, used in isolation electric between the plates of the rectifier bridge and finishing burr holes housing the stator terminals applied to alternators for motor vehicles.
8546.90.00	2	Thermoset insulator, made of phenolic resin reinforced with glass fiber, with an apparent density between 0.80 and 0.96 g / ml, minimum deflection temperature of 182 degrees Celsius with minimum burst pressure of 7 kN, a stabilization process aging at 220 degrees Celsius (+ - 5 degrees Celsius) for 180 to 330 minutes, with the internal bore diameter between 7.0 and 7.7 mm and external diameter between 13.7 and 14.3 mm, and the diameter of the surface top finished without burrs used in the rectifier bridge of alternators for motor vehicles.
8708.10.00	51	Tripartite front fender compound of injected plastic grid centralized air inlet below the front bumper made of plastic PP with thickness of 3.5 mm and clamping positions, front parking niche for sensor grid in parallel horizontal format, applied to light commercial vehicles; width 1941 mm, height 370 mm, depth 870 mm and a total mass of approximately 19 kg.
8708.29.99	258	central armrest of the vehicle console with sliding mechanical system in the Y and rotary axis in the YZ plane, with the driver's armrest function and / or passenger, fixing steel base, structure of polymer and PVC sheath foam , with dimensions of 158 mm x 249 mm x 139 mm.
8708.29.99	259	structural body made of special steel alloy component (22MnB5), manufactured by the stamping process of hot-blank with flexible lamination with variable thickness suitable for supporting the suspension and the rear axle of motor vehicles, with a width between 96 mm and 180 mm depth between 95 mm and 130 mm length between 516 mm and 828 mm and approximate weight of 2.67 kg.
8708.29.99	260	withstand the shock front and the side in front of motor vehicle doors, with a width between 38 mm and 45 mm, depth from 180 mm to 188 mm, length of 960 mm and 1005 mm and weighing 0.743 kg and 1.132 kg.

8708.29.99	261	support the side impact on the front of motor vehicle doors, with a width between 5 mm and 20 mm, depth from 109 mm to 120 mm, length of 933 mm and 978 mm and approximate weight of 1.55 kg.
8708.29.99	262	Set actuator housing ABS plastic of the type MTH-2, with a length up to 850mm and width 450mm, 2 electric drive motors, weighing up to 100 g, used for handling external rearview mirrors for passenger cars.
8708.29.99	263	side air diffuser without closure system (shut off) the compound made by casting or in ABSPC PPM36, PA6 primary fins with varying between 30% and 60% of glass fiber; secondary fins on PA66, PPT40, ABS or POM and with or without handles diffusers in ABSPC used to regulate the direction and flow of air in the passenger compartment of motor vehicles from the air
8708.29.99	264	Diffusers central air or side, made of PC / ABS, with or without space for inserting multimedia module with or without a knob for adjusting the direction of the airflow applied in air conditioning the passenger compartment of motor vehicles systems.
8708.29.99	265	Medallion suitable for use in the reinforcement panel doors and aesthetic finish support arm for automotive vehicles, made of natural fiber (nfpp plate) thermoformed using an adhesive glue p rm10007 / adhesive (K-169-HT2-sk) with vinyl DX9 (ITU) / (PS4) with dimensions of length 780mm, width 110mm, height 215mm and weighing 406 grams.
8708.29.99	266	Part embossing cold rolled steel coated with two layers, one of (Al-Si-Fe) and one with (Al-Si), both layers with a weight of 60 g / m ² each, total thickness 0.4 mm; folded edge by 2.5mm to 5.0mm grafagem applied under the vehicle floor as baffle heat from the exhaust system.
8708.29.99	267	roof racks provided with two support bases, a profile bar covers aluminum frame and acrylonitrile on acrylate and styrene, with each set of weight to 1,700 g.
8708.30.90	81	With cam rod made of high strength steel and plastic, used in the assembly of hand brake valve working temperature between 80 degrees Celsius and -40 degrees Celsius, responsible for parking and braking of commercial vehicles with auxiliary system air brake; It has 29 mm in diameter and 111.5 mm in length and 18 g weight.
8708.30.90	82	power supply with a maximum pressure of 21000 kPa brake applied on tractors for agricultural use.
8708.30.90	83	Set lock the left brake manual control system, comprising body (package) and stop ring, both of low carbon steel and stainless steel spring-return function of the set screw, it has cylindrical shape with some grooves to best fitting abutment ring of the spring, it has three equally spaced slots 120 degrees, a maximum outer diameter of encapsulation of 29.8 mm and weight of 22.0 g (+ -3.0 g); it is used in the manual adjustment system of the brake drum sets
8708.30.90	84	Brake drum 8 to 9 inches simplex type, mountings 4, brake band width ranging between 39 mm and 42 composed of stamped plate metal brake pads and two automatic adjustment applied to motor vehicles.
8708.30.90	85	Brake Pedal steel with pedal EPDM rubber, equipped with two non-contact sensors of the Hall type sensor, applied to heavy commercial vehicles for transporting persons or loads, has two analog outputs with power supply of 5 V and separate ground, degree of protection against intrusion IP6K6, 6-pole connector, weighing 500 to 1800g.
8708.30.90	86	Rear brake caliper piston with a diameter of 43 mm containing a mechanical brake pad wear indicator, the return spring pads and electric motor for electric parking brake function (BPS); composed mainly of iron and steel, electric motor cover plastic "PBT" strengthened and approximate weight of 6.0 kg.
8708.30.90	87	Piston relay rubber compound and nylon weighing approximately 40 g, with no burrs, work pressure up to 10 bar and a maximum diameter of 90 mm and maximum thickness of 22 mm, has a 14.1 mm diameter hole (+ 0.07 and -0.05) by 14 mm deep and has a recess diameter 83h9 (+0 and -0.087 mm), to perform the control function of the air passage in the modulating valves of ABS brake systems for vehicles commercials.
8708.30.90	88	Servo brake for automotive vehicles tandem type with a diameter of 254 mm (+/- 1.0 mm) and a width of 166 mm (+/- 1.5 mm) with master cylinder with a diameter of 28.57 mm and a reservoir for fluid brake, contains a drive shaft located in the center on the back with a length of 157 mm (+/- 1.5 mm) and a diameter of 11 mm (+/- 1.0 mm) and the total weight of the
8708.30.90	89	Servo brake mounted tandem type, with a diameter of 20.3cm (+/- 1.5mm) and displacement to 32,3mm (+/- 1.5 mm) with fluid pressure 70 bar, with a master cylinder , adjuster return spring and brake canvas 30mm x 4.5mm x 110 degrees, weighing 2170 g ± 3%, suitable for use in passenger cars.
8708.30.90	90	29,6mm (+/- 1.5 mm) with fluid pressure 70 bar, with a master cylinder adjuster , return spring and brake linings with 42mm x 4.5mm x 110 degrees, weighing 3090 g ± 3%, suitable for use in passenger cars.

8708.30.90	91	Support plastic injection technique highly complex (PA 6 + 30%) with fibers (PL4510FVF30), type (DOMAMID 6G30) black, resistant to large temperature variations (- 40 to +80 degrees Celsius) and brass bushing used mounting the hand brake valve responsible for parking and braking aid commercial vehicles (security component); has external dimensions of 29mm diameter x 111,5mm length and weight 39g.
8708.30.90	92	Hybrid tube for automotive hydraulic brake formed by vulcanized rubber (MS269-03) and of carbon steel (SPHC-P), provided with metallic clip (SK5) of female type and accessories for connections, which may contain spring steel (SUS304), weighing 150 to 200 g + - 8:55%, dimensions: length 580 mm and width of 17 + - 0.2 mm, suitable for use in passenger cars.
8708.40.90	104	inner gerotor gear type pump with rotors made of sintered steel, with outer rotor outer diameter of 59.15 mm (-0.02 mm) inside diameter of 36.66 mm (+0.035 mm), a width of 19.96 mm (-0.02 mm) and 7 teeth, the inner rotor having an outside diameter of 43.669 mm (-0.035 mm), inner diameter of 29.43 mm (-0.01 mm), a width of 19.965 mm (-0.015 mm) 6 teeth, with a total weight of about 365 g, applied to transmissions for motor vehicles.
8708.40.90	105	Aluminum cast housing (A-380 - aluminum alloy + silicon + copper + zinc) with machined faces for supporting seals, shafts, bearings, rods and sensors mounted on the back of medium and heavy transmissions protecting everywhere synchronization gears and bearings of the planetary system applied in manual and automated transmission medium and heavy trucks, a nominal weight of 5.2 kg with a nominal depth of 98 mm, a nominal height of 399 mm
8708.40.90	106	made in metal housing nitrocarborizado microfundido steel with homogeneous surface hardness of 900 HV1 in the depth between 0.01 mm and 0.02 mm for the gear selector manual transmission automotive vehicles.
8708.40.90	107	Main housing of the transmission gear selector aluminum alloy (AL-5M GMW CD-Cu3-Si9 Fe1-F) injected under high pressure, with dimensions of 115 mm 10 mm 90 mm wide by 10 mm long , 156 mm height and 10 mm net weight 0,6 kg +/- 0,2 kg for mounting the manual transmission, for coupling in motor gasoline and / or ethanol with a maximum torque of 210 Nm for applying work continuous in commercial and light vehicles of terrestrial use, with the function of housing switches, seals, bearings, number of axles, changing system (rods, bolts, pins, pastinhas) sealing the immersed components to the oil withstand engine efforts and isolate the noise generated by the set of gear, applied to commercial vehicles and light cars.
8708.40.90	108	Manual transmission back housing for truck, with casting of aluminum (A-380 - aluminum alloy + silicon + copper + zinc), with machined stages for supporting seals, shafts, bearings, rods and sensors, measuring 152 mm x 238 mm x 203 mm and weight of 4.28 kg.
8708.40.90	109	Manual transmission housing for rear truck being cast piece of aluminum (A-380 - aluminum silicon alloy + + copper + zinc), with machined stages for supporting seals, shafts, bearings, rods and sensors, measuring 254.4 mm x 275 mm x 211.50 mm and weight of 4.88 kg.
8708.40.90	110	Manual transmission back housing for truck, with casting of aluminum (A-380 - aluminum alloy + silicon + copper + zinc), with machined stages for supporting seals, shafts, bearings, rods and sensors, measuring 255 mm x 257 mm x 211.5 mm and weight 4.86 kg.
8708.40.90	111	Set of inertia brake, being hydromechanical device comprises casting cast iron, Friction brake discs, gear and bearings, for braking the countershaft applied in automated gearboxes for semi-heavy vehicles with braking capacity between 372 to 473 Nm and the maximum capacity rotated 180 degrees with 9.98 kg weight and dimensions of 150x145x125 mm.
8708.40.90	112	Set of stamped steel plate blank from the fine process with a thickness of 8 mm (+ -0.5 mm), outer diameter of 314 mm (+ - 0.5 mm), circular protrusions 20 stamped diameter 12 mm (-0.1 mm) and 3 mm (+2 mm) in height, disposed on a diameter of 286 mm with a deviation of 0.12 mm for each shoulder position, with plate welded to a wrought coupling body from the for carburizing steel in the dimensions of outer diameter 192 mm inner diameter 144.5 mm, height 32.1 mm, with external toothings comprising teeth 63, module 3, friction rectified diameter at an angle of 6 degrees 30 minutes (-6minutos) and roughness (Rz) 2 after welding and
8708.40.90	113	planetary output shaft assembly, applied to semi-heavy trucks transmissions, and mechanical device with torque transmission function from the main box to the drive shaft, containing planetary gears, housing and output shaft, increasing the gear ratio of cash 5 to 10 speeds up to 1,100 Nm of torque capacity, weight and dimensions of 24.77 kg base with 165 mm diameter x 64 mm height and 80 mm cylinder diameter x 230 mm height.

8708.40.90	114	Coupling Plate steel blank from the fine process with a thickness of 8 mm (+ 0.12 mm) diameter containing 6 holes ranging from 25.1 mm to 41.16 mm (+0.07 mm) error 0.25 mm position relative to the toothing, has three holes diameter ranging from 28 mm to 40 mm (+0.2 mm and -0.1 mm) with 0.45 mm position error in relation to the toothing, internal toothing blank manufactured in the fine process technique to record specifies teeth 63, module 3, pressure angle 20 degrees approximate weight of 4 kg.
8708.40.90	115	coupling plate steel blank from the fine process with a thickness of 8 mm (-0.15 mm) diameter holes containing 2 41.16 0.25 mm H9 position error in relation to the toothing, has two holes 40 H9 diameter 0.25 mm position error in relation to the toothing, the internal toothing made in fine process with blank data sheet specifies teeth 63, module 3, pressure angle 20 degrees approximate weight of 2.6 kg.
8708.40.90	116	stamped steel plate with superior core strength of 420 MPa obtained from the blank of fine process, a thickness of 7mm (+ -0,15mm), outer diameter of 303mm (-1,0mm) with circular projections 21 stamped diameter 12mm (-0,1mm) and 3.2mm (-4,1mm) in height, arranged in diameter of 286 mm with 0.06 mm positional deviation for each rib and partially induced internal spline teeth 58, 30 degree angle and 3mm pressure module with 0.03 mm perpendicularity with respect to reference face, approximate weight of 2.5 kg.
8708.40.90	117	Bridge mounting bracket of the gear shifting cable (selection and shift) in the cable holder or the manual gear shift lever of the vehicle injected into specific plastic with two pins 6.06 mm by 8.06 mm and the lever two pins of 5 mm by 10.4 mm for the cable support hole diameter 7.9 mm, and screw metallic retainer to handle and lever of the motor vehicle manual gearbox.
8708.50.99	62	Bed clinchado metallic or printing to the suspension cushion attachment, cylindrical shape, with or without hole in one of the walls, with or without apparent fitting without welding, or not lowered at both ends, measuring diameters of 18.5 mm to 80 mm, with a tolerance of +0 and - 0.2 mm length between 25 mm to 100 mm with tolerance of +0.5 mm -0.
8708.50.99	63	Wheel drive assembly for front axle through integrated roller bearings having flanges, hubs and hub assembly, manufactured in high forged carbon-hardened regions, provided with seals in special rubber, with internal steel structure and several lips seal, integrated rolling rolls according to specifications Generation 3 (SAE J1128 and SAE J1344) interface function between the rotating and non-rotating components of the automobile utility vehicle suspension.
8708.50.99	64	Front Cardan shaft with maximum capacity of torque 2500 Nm, used for module performance 4x4, transmitting 50% of the total torque of the engine and transmission to the front portion of the vehicle, with front axle interface type crosshead with Open Bearing Cup 1344 design with plastic injection and the fixing of the crosshead interface sliding joint type transfer case (CV joint) pattern of 2700 with 6 circular holes.
8708.50.99	65	Rear axle driveshaft, with maximum torque capacity 3500Nm used to work in 4x2 or 4x4 modules transmitting 50% or 100% respectively of the total torque of the engine and transmission to the rear portion of the vehicle, presents transfer case interface or transmission type cover slip joint with nickel and interfaces with the rear axle of the crosshead type design (open bearing cup 1355) with plastic injection on attachment of the crosshead; axle with a total weight of not more than 9 kg and approximate dimensions of 1400mm long and 92mm
8708.50.99	66	Structure for vertical load in steel after the industrialization process houses the whole transmission system and supports vertical loads up to 13 tons; dimensions: length 1495,0mm the 1660,0mm; height in the central region: 185.0 mm to 265.0 mm; width in the central region: the 100,0mm 160,0mm, weight 19 kg to 55 kg.
8708.50.99	67	Flange rear axle of the rear suspension, stamped steel (EN 10149-2 - S355C), at least 13mm thick, minimum internal diameter of 95,0mm, the maximum width 170mm, length 170mm and maximum for motor vehicles.
8708.50.99	68	Driveshaft housing cover for bus and truck, steel compound; dimensions: outer diameter: 336,0mm 496,0mm to; depth: 105,5mm 167,5mm to; Thickness: 7.3mm to 11,3mm; It contains threaded bore, weight 7 kg to 24 kg.
8708.80.00	72	Independent suspension with transverse beam 17 mm to support the load of the vehicle up to 1900 kg, a length telescopic dampers 301 mm and maximum of 400 mm, hydraulic disc brakes double piston and hydraulic steering box course 180mm (RATE 47.37 mm / girox), pressure 100 bar rack and pinion.
8708.92.00	38	Tube set differential pressure of the exhaust commercial vehicle, comprising pressure sensor, stainless steel pipes, hose rubber and carbon steel substrates.

8708.92.00	39	acoustic exhaust valve with minimum torque of 0.36 Nm and maximum of 0.5 Nm, with spring made of stainless steel (NAS530); sleeve and hood fabricated stainless steel spring (SUS436MT), weighing 140 g, 80 mm long and 90 mm wide, for use in automotive exhaust passenger vehicles, which function to attenuate the acoustic frequency and pressure of the exhaust system when operated at maximum gas flow conditions arising from the combustion
8708.94.90	15	Sobreinjetado absorber metallic zinc UNS Z35533 device mounted on the vehicle frame with the wheel acceleration 1.414g (peak to peak), flame resistant as FMVSS No. 302, and has serial traceability dimensions: 154,7x65,4x30,2mm , weight: 279 g.
8708.94.90	16	horn actuating button mounted on the air bag module main function to transmit the force exerted by the driver on top of the air bag to the trigger horn track and guide the plastic spring (PA6-GF40), mount spring steel cold drawn EN10270-01-SH and contact bridge stainless steel EN10088, with dimensions of 014,2x34,7 mm, weight: 6 g for motor vehicles.
8708.94.90	17	Set shafts, upper and middle, assembled by listing coupling shaft-round hole splined trapezoidal manufactured by a pair of joint machining process, longitudinally sliding with clearance controlled meshing with a total length greater than or equal to 280 mm (when retracted) and less than or equal to 352 mm (when expanded), stepped outer diameter between 10 mm and 35 mm, mass 800 g (+ -100 g), applied in the major axis direction of
8708.94.90	18	Set fork rack pinion meshing with the support of mass of 80 g (+ - 8 g), compound alloy Zamak ejected with a diameter of 31 mm (+ - 0.2 mm) and a height of 28mm (+ - 1 mm) and seal of nitrile rubber 80 and razor low friction self-lubricating three layers (PTFE + bronze sinter + base metal) used in steering box, with the function of supporting the rack with the pinion without backlash gear with low friction, grease outlet seal, impurities entering and noise
8708.94.90	19	Hydraulic rack mounted, with mass 2030 g (+ -100 g), consisting of rack steel (DIN 40), thermally treated, rectified, 30 teeth, with an outer diameter of 24.012 mm (+ - 0.011 mm), and full length of 624.90 mm (+ - 0.35 mm), maximum runout of 0.2 mm and internally machined ends with M14 x 1.5 thread has a hydraulic aggregate length of 18.35 mm (+ - 0, 45 mm) mounted under pressure, in its intermediate region, formed by a hydraulic piston steel with o-ring and retaining ring applied in hydraulic steering gears for automotive vehicles.
8708.94.90	20	Input shaft contour with dimensions of 255 mm x 33 mm (+ - 0.5 mm), constructed of steel according to EN 10305-2, weighing 580 g (+ - 58 g) was applied to the column direction for electrical transfer rotational movement of the steering wheel, consisting of an internal toothed profile (gear) of high precision according to ISO 4156 of 133 mm length and pitch diameter 19 mm with a maximum variation along the toothed profile length 0.012 mm, containing in the ends an external profile suitable for coupling the steering wheel of the vehicle, a minimum resistance to torque 250 Nm, consisting of an outer diameter of 30 mm (-0.003 + 0.017 mm)
8708.94.90	21	Axle pre-finished, machined steel (SCM440) with a length between 235 mm and 265 mm and an external stepped profile of diameter greater than or equal to 13.1 mm and less than or equal to 24 mm, the presence of serrated straight teeth accuracy with blind channel and for machining transverse screw on its end, with a mass of 530 g (+ -53 g), used for manufacturing mechanical pinions of automotive steering gears.
8708.94.90	22	Axle semifinished steel (JIS S43C), with approximate density 7700 kg / m ³ , machined, staggered with outer diameter less than or equal to 20.95 mm and greater than or equal to 8 mm, and runout of 0.05 mm Maximum with mass less than or equal to 140 g used in the manufacture of endless axes of electrically assisted steering columns.
8708.94.90	23	Semifinished shaft, steel (S43C) heat treated, length 155 mm (+ 0.1 mm), staggered with outer diameters of 14.12 mm and 22.41 mm, with through longitudinal inner bore and outer set of four major channels and four smaller symmetrically spaced channels machined longitudinally with external keyway at its end and mass 226 g (+ -22 g), used to manufacture
8708.94.90	24	thickness between 1.5 mm and 3.3 mm, with wheel lock mechanism, inner serrated, knurled thread and external grooving and the long piece with mass 410 g (+ -60 g) was used as the upper steering column shaft motor vehicles.
8708.94.90	25	Axis cast, forged, machined steel (JIS S43C) thermally treated by induction staggered with outer diameter greater than or equal to 12 mm and less than or equal to 26 mm and internal stepped profile with a variation in diameter between 8.5 and 11 mm mm, with external knurled, and a double faceted part of the shaft and with external serrations on one of its ends, with a mass of 120 g (+ -30 g) was used as the input shaft of the electric steering column (C-EPS) of

8708.94.90	26	hollow shaft, machined steel (JIS S43C), staggered, or with external diameter equal to 13 mm and less than or equal to 35 mm and internal profile of between 8.5 mm and 17.6 mm, and rounded channel with knurled screw for external connection at one end, such as hole profile at its other end for connection with a double faceted shaft with mass 230 g (+ -70 g) used as a lower shaft of electrically assisted steering columns.
8708.94.90	27	Gear outer diameter 97.628 to 102.047 mm (+ - 0.071 mm) and a thickness of 17 mm (+ - 0.1 mm) weighing 200 g (+ - 20 g) with helical teeth 10 precision class according to DIN 3962 shares 1 and 2, and DIN 3963, shaped and composed of two different plastic materials, teeth on injected Nylon materials (MSamid3) on a core or soul material (Grivory GV-5H) thermoplastic reinforced with glass fiber that is also about injected on a steel hub according to DIN EN 10277 and PT4-strength 580-680 MPa resistant to operating torque of 72 Nm and a
8708.94.90	28	Rack Bearing injected and machined aluminum (ADC12 and A383 SAE) with a length of 27.0 mm and 28.5 mm, outer diameter of 27.5 mm and 33.5 mm, external machining two channels O-rings on its body, fitted with self-lubricating multilayer slide material applied in automobile steering gears for mancalização standard racks 22 mm, 24 mm and 26 mm, mass 40 g (+ -10
8708.94.90	29	direction ferrule mounted for application in automotive steering gear, with free movement of torque at room temperature greater than or equal to 0.3 nm and less than or equal to 3.5 Nm, minimum bending working angle of + -26 degrees, with a mass of 607 g (+ -60 g) and length between the center of the sphere and the end of the housing approximately 209 mm, composed of steel housing (DIN 30MnVS6) with zinc-nickel coating, threaded steel rod (DIN 41CrS4) is treated with heat machined sphere plastic bushing (POM), external dust cover of rubber, steel hood and lower pair of clamping rings.
8708.94.90	30	Axial spherical mounted for automotive steering gear, with equal or greater length than 220 mm and less than or equal to 360 mm, comprising a threaded metal rod steel with a surface coating (zinc-nickel or KTL), outer channel machining, including a ball machined at its end with an outer diameter between 22 mm and 26 mm, on which is mounted a plastic cover of low friction, grease and a steel housing, which has a further thread on its end, the total mass
8708.94.90	31	Axial spherical mounted for application in automotive steering gear, with a length greater than or equal to 220 mm and less than or equal to 240 mm, comprising a threaded metal rod (M14 x1.5) steel (DIN 30MnVS6 mod), coated zinc-nickel, and external recesses hexagonal channel machining, and a ball machined at its end on which is mounted a low friction plastic layer (POM), grease and a steel housing (DIN C15 mod), which It has another thread (M14 x 1.5) on its end, the total mass of the approximately 650 g (+ - 65 g).
8708.94.90	32	Cover fork assembly regulator gap with support mass (40 g + - 4 g) tall 14 mm (+ - 1 mm) diameter of 30.1 mm (+ - 0.3) composed of alloy body zinc ejected with M33 thread seal ring of nitrile rubber 70 used in steering box, with the function to regulate and maintain the clearance gear, rack and pinion responsible for maintaining a stable steering mechanism
8708.94.90	33	45 mm (+ -0.05 mm) and a thickness of 2.3 mm (+ -0.115 mm) transverse profile, with a mass of 485 g (+ -48 g) was applied as the upper tube in electrical steering columns of motor vehicles.
8708.99.90	159	driving mode selector lever for heavy commercial vehicles to transport people or cargo equipped with automatic or automated change box, weighing between 265 and 335g, with or without control function for auxiliary brakes of hydraulic type and / or motor, manufactured plastic (PA-1GF-B) with 5V operating voltage, and 12 or more connector pins with power, ground and digital and analog output signals.
8708.99.90	160	electrical alternator 14 Volts with a nominal current of 200 amperes or higher with external fan for cooling high efficiency and narrow geometry to reduce suction suspended waste with maximum speed up to 12,000 rpm, operating temperature from -40 degrees celsius to 110 Celsius degrees and IP54, weighing less than 8 kg particular for use on agricultural machines.
8708.99.90	161	double joint or shaft manufactured cardan forged steel with high transmission of torque, consists of two constant velocity joints, the type carved male and notched female with retaining ring, with integrated lubrication system, specific seals for underwater work among abrasive and sliding joints at connections between pipes, welded by friction; maximum length of 2,455 mm and approximate weight of 11.15 kg.
8708.99.90	162	drive cables door lock security system, comprising cabling steel, low density foam, the external securing clip handle, and guide pin total weight between 52 and 71 grams.
8708.99.90	163	Set dynamic cushion applied to the passenger motor vehicle tailgate, consisting of metal structure fixation, massive material (SS400) or equivalent, vulcanized rubber between the metal components, able to withstand vibration durability test for 1,000,000 cycles 10 Hz with a maximum displacement of 8 mm without displaying breakage or separation of the rubber.

8708.99.90	164	Set the handle for manual or automatic transmission, contains polyamide PA 6 and ABS / PC + TPU, identifying 4-6 positions + reverse gear and weight 184g (+/- 50 g).
8708.99.90	165	composed of polycarbonate plate with laser printed recording, light guide polycarbonate, electronic board with LEDs, control circuit and housing in plastic ; operating voltage of 12 VDC.
8708.99.90	166	potentiometric throttle pedal provided with drive position identification with operating voltage range of 0 to 5 V with signal redundancy, consists of plastic housing, springs, position sensors, fixatives elements and protective dust, for a motor vehicle .
8708.99.90	167	Accelerator pedal provided with non-contact sensors, sending continuous redundant analog signals its angular position for engine control heavy commercial vehicles for transportation of people or cargo, weighing between 590 and 650 g, with an opening angle of up to 25, 2 degrees with tool "kickdown", provided with six-pin connector or more, contains two signals output channels, power of 5 V and earth with the housing and the pedal consisting in PA66-GF30 plastic, spring steel, bearing loads normal up to 1200 C, side loads up to 400 N, and reverse load up to 1200 N, with degree of protection IP69 intrusion.
8708.99.90	168	between 900 and 1100 kg in a single block with rounded edges, with or without support for the front drawbar, with pins on the sides for lifting and upper support also pins for coupling a third point on the tractor.
8708.99.90	169	aferrecimento system water tank made of PP with a capacity of 1.7 L and 0.33 kg weight (+ - 10%) when empty; applied exclusively for at least 8 motor vehicle passengers and / or vehicles for transporting light loads.
8708.99.90	170	Support wheel fixing parts responsible for fixing the wheel assembly / tire steppe several different sizes (16, 17, 18, 19, 20 and 21 inches), the bottom of the body, steel wire composite molded and welded 8 or 10 mm diameter, fixed with steel hook shaped and adjustment screw with matt black painted.
8708.99.90	171	Full supply pipe urea comprising sealing cap of plastic material polieacetal with pressure release function and gases present in the urea tank, and sending pipes with linear length of 487 mm and return straight length of 410 mm, manufactured thermoplastic, responsible for sending and urea in return supply act, set on the right side of the vehicle next to the passenger door; weighing approximately 0.420 kg.
8708.99.90	172	System recovery pipe refueling vapor board manufactured from at least three layers of polymer; with or without plug, clamp and seal; with operating pressure 10.7 kPa to 20.7 kPa, working temperature of -40 degrees Celsius to +80 degrees Celsius, weighing 0.070 kg to 0.200 kg; applied to passenger cars.
8708.99.90	173	Pipe for urea transport of plastics material, linear length between 1756 mm to 1782 mm, has a heater at one of its ends with a linear output of 12 volts, fixed to the urea tank on the right side of the vehicle near the exhaust system weight approximately 0.170 kg.
9025.19.90	8	Temperature sensor 24 V operating voltage, body steel has a plastic three-way connector with three metal terminals for electrical contact; electrical operation by means of two thermistors for temperature measurement; working temperature of -40 degrees Celsius to 130 degrees Celsius; length of 61 mm and tapered thread in one end.
9026.10.19	4	Sensor diaphragm air flow, weighing 50 to 55 g, positioned in an electronic module with a printed circuit for electronic management equipped with temperature gauges and pressure, working temperature of -40 degrees Celsius to 120 degrees Celsius voltage nominal 14 V, capable of measuring mass air flow nominal 640 kg / h towards the inner combustion engines.
9026.10.29	2	Sensor for measuring the oil level and temperature located in the box for heavy vehicles changes personnel handling and loading by ultrasonic pulses, sending output signals via PWM, made of engineering plastic with operating voltage between 11900 and 12100 mV , operating temperature of -40 degrees Celsius and 150 degrees Celsius.
9026.20.90	30	fuel engine with a maximum operating pressure of 35 MPa with 5 V operating voltage may vary plus or minus 0.25 V , with operating temperature from -30 degrees celsius to +130 degrees Celsius.
9026.20.90	31	Pressure sensor for engine brake system control loop installed in the exhaust manifold, pressure measuring range between 0 bar (g) to 8 bar (g) and 0.3V working voltage of 4.7 V.
9026.20.90	32	electronic monitoring of the fuel pressure sensor / engine cooling fluid with working pressure from 0 to 15 bar Operating temperature -40 degrees Celsius to 125 degrees Celsius, for applications in diesel engines.
9026.20.90	33	Electronic sensor for measuring the oil level and temperature of the crankcase of diesel engines, operating temperature of -40 degrees Celsius to 150 degrees Celsius and level measurement range from 70 mm length of the stem.

9026.20.90	34	Celsius, lower than 1 ms response time, working pressure of 0 to 100 kPa and a length of 75 mm.
9027.10.00	194	resistive sensor electronic particulate matter, 12 volts of working voltage, steel body, has a four-way connector with four metal terminals for electrical contact; Operating through a power station; length of 276.3 mm and a thread at one end.
9027.80.99	535	Sensor for fuel composition measurement (ethanol ratio) in vehicles equipped with FLEX internal combustion engines, it has electrodes to measure electrical conductivity, temperature and dielectric constant of the fuel, output resolution of 0.1% by volume of ethanol (0.1 Hz), absolute uncertainty + - 5% and capacity to operate from -40 degrees Celsius to 140 degrees Celsius and averages between 95 mm x 71.2 mm x 28.5 mm.
9029.90.10	19	Pointer of the speedometer and tachometer, with its own inner cavity for the passage of the light beam provided with brackets and fasteners, made of thermoplastic materials BS, PMMA, PC or PP, with dimensions ranging from 13.6 to 20 mm wide, 21 mm to 24.5 mm long, 50 mm to 70 mm in height and weight from 2.7 g to 4.5 g, suitable for use in motor vehicle instrument
9030.89.90	61	electronic management unit of the electric accumulator, parts of galvanized steel, aluminum and plastic alloys, dimensions 625 mm x 444 mm x 167 mm, weight 18.5 kg, high-voltage section 800 V low voltage variable section 16 V to 32 V, current 150 a, voltage low current 0.2A to 44A, variable operating temperature from -30 degrees Celsius to 65 degrees Celsius, IP6K9K degree of protection communication with the CAN network card, applied to bus
9031.80.99	102	electromechanical module comprises mechanical central structure and combination of sensors applied to the steering column of motor vehicles, with function to provide accurate turning position of the steering wheel to the central electronic control (ECU) of the vehicle, transmit information to the system steering wheel and airbag to retransmit the horn drive signal with a nominal voltage of 12 V work, rated current of 20 mA and operating temperature from -30 degrees Celsius to +85 degrees Celsius.
9031.80.99	103	assembly air turbochargers with rotations of up to 300,000 rpm, by changes in magnetic reluctance applied at ambient temperatures of -40 to 250 degrees Celsius, weight 0.02 to 0.1 kg.
9031.80.99	104	Electronic Sensor frequency proportional reading speed rotation position of the camshaft, the axes of use commands inlet and outlet, with working voltage from 4.75 to 5.25 V, rated current of 10 mA and temperature work between -40 degrees Celsius and 135 degrees Celsius.
9032.89.11	9	electronic voltage regulator compound of capacitors, chip and injected plastic parts and the terminal B + position 63.2 mm (+ - 0.3 mm) and 25 mm (+ - 0.3 mm) relative to the reference point A and point fixing B positioned at 79 mm (+ - 0.1 mm) and 4.4 mm (+ - 0.1 mm) relative to the reference point a and the fixing layer positioned 8.2 mm (+ - 0, 1 mm) and 11.7 mm (+ - 0.1 mm) bolt and M5 should be positioned 60.9 mm (+ - 0.5 mm) and 11.4 mm (+ - 0.5 mm) with voltage 14.6 V regulator (+ - 0.6 V) and temperature compensation (Tk) of -10 mV / K (+ -
9032.89.11	10	electronic voltage regulator compound of capacitors, chip and injected plastic parts and the terminal B + position 63.2 mm (+ - 0.3 mm) and 25 mm (+ - 0.3 mm) relative to the reference point A and point fixing B positioned at 79 mm (+ - 0.1 mm) and 4.4 mm (+ - 0.1 mm) relative to the reference point a and the fixing layer positioned 8.2 mm (+ - 0, 1 mm) and 11.7 mm (+ - 0.1 mm) with 3 connector pins with the center of the connector is 52.9 mm (+ - 0.1 mm) from the reference point a, voltage regulation V 14.6 (+ - 0.6 V) and temperature compensation (Tk)
9032.89.23	24	Electronic control unit - GSC, for use in heavy commercial vehicles to CNG gas or LNG to transport loads or people with 24 V supply voltage, with 2 or more connectors of 75 pins or more, weighing between 660 and 710 g, steel housing made with engineering plastic cover, equipped with functions of self-diagnosis and connected to the CAN network with control of actuators and reading the signs of the fuel supply control system sensors including valves of high systems low pressure and fuel tank level sensor and collision safety control valve, and
9032.89.29	178	electrical signal amplifier deriving the components of the automatic air conditioning system of the vehicle, composed of module 2 connectors, one TH40HGY 40 routes and other TH40HB also 40 routes operating voltage of 8 V to 12 V, operating temperature -40 degrees Celsius to 85 degrees Celsius and a maximum current of 3.0 a, approximate dimensions 135 mm x 109 mm x 32 mm and weighing approximately 308 grams.
9032.89.29	179	data link connector (DLC) for multi-pin diagnosis connection to scan tool interface with motor vehicle control modules in access onboard diagnostics and online data streams, allows the exchange of messages between modules of a CAN network to another enables communication between modules, with two standard hardware interfaces to SAE J1962 protocol, IP side connector 24 with pins 16 OBDII side with channels and voltage of 13.5 volts.

9032.89.29	180	200 mA, variable working temperature of -40 degrees Celsius to 80 degrees Celsius maximum weight 0.300 kg and IP6K7 degree of protection, communication via CAN network, applied to truck and bus.
9032.89.29	181	Automatic Module front video camera, fixed to the upper part of the windshield inside the vehicle, of dimensions 59.3 x 87.3 x 30.25 mm and weight of about 88 g, the operation voltage of 9 V 16 V, current consumption of 190 mA to 355 mA at 13.5 V, operating temperature of -40 degrees Celsius to +85 degrees Celsius, has the main function to detect the tracks of the roads, objects and obstacles that lie its around and allow the module to perform the lane change assist functions (Lane Departure Warning and Lane Keep assist), automatic switching of lights (Auto High Beam), speed boards detection (Traffic Sign Recognition), driver fatigue detection (Drowsy Driver Detection) and together with the front radar, emergency autonomous braking functions (autonomous emergency braking) and adaptive autopilot (adaptive Cruise
9032.89.29	182	Electronic module to distribute the electrical signal according to the functions of the lashes, composed of plastic housing (PA6 GB GF 20 10), circuit board and connectors 26, 22, 12, 8, 6 and 4 pins, each connector being responsible for an adjustment function and / or regulation in the automotive seat, weighing 180 g and having dimensions of 112 mm x 181 mm x 27 mm.
9032.89.29	183	electronic manager module adaptive cruise control system and autonomous braking, fitted with radar radio waves at a frequency of 77 GHz FMCW modulation to detect objects ahead, with emission antennas and receiving signal, operates at 12 V, with integrated communication with the front camera, via cAN communication, able to identify vehicles to 160 m away.
9032.89.29	184	electronic module for managing the SVM system (Surround View Monitor), with integrated communication to the media center and the instrument panel, communication via CAN-Low and CAN-High, 3 coaxial connectors for receiving signals from 4 cameras (front, rear, left and right), rated power 12 V, with printed circuit board 8 layers.
9032.89.29	185	Electronic Control Unit (ECU) of the joint control system (ACS) to 24-V supply voltage, provided with three connection ports with 12 to 21 pins for power and communication via CAN (Controller Area Network) with the sensors, and joint system valves for heavy commercial vehicles passenger (articulated buses).
9032.89.29	186	Electronic Control Unit (ECU) of the joint control system (ACS) to 24-V supply voltage, provided with six connection ports with 6 to 21 pins for power and communication via CAN (Controller Area Network) with the sensors, and joint system valves for heavy commercial vehicles passenger (articulated buses).
9032.89.29	187	Electronic control unit for the automatic gearbox, responsible for shifting also includes engine management functions with ignition and injection, exclusively for 2.0 engines, with circuit board with laminated covers track in Clad, approximate dimensions of 282 x 200 mm.
9032.89.29	188	EVP management unit (electronic vacuum pump), with a weight equal to or less than 0.5 kg, comprising a printed circuit board, electrical connector terminals 20 to 40, memory dedicated software, equipped with an electronic unit data and electronic components, operating from 10 V to 16 V, -40 degrees Celsius to +80 degrees Celsius and a maximum of 200 mA used in
9032.89.29	189	Air conditioning system management unit, encapsulation compound feedstock PBT-GF30, printed circuit board, the first electrical connector 24 pins, first electrical connector 20 pin, dedicated software, in operation from 10 V to 16 V, working temperature -30 degrees Celsius to +80 degrees Celsius and a maximum of 200 mA, B-CAN and LIN communication, weighing 0.12 kg to 0.15 kg, used in passenger cars.
9032.89.82	26	Sensor electronic type, connected to the fuel pump of the thermostatic valve with the function of controlling temperature with 5 V operating range of rated voltage, overall height 58 mm, maximum diameter of 25.4 mm, the plastic base polyamide and brass connectors with total mass of 0.014 kg and insulation resistance greater than 100 milliohms per 100 V.
9032.89.90	9	Controller battery management system (BMS - Battery Management System) manages the charging and discharging of the battery power connectors limits the power, current sensing and monitors the battery temperature.
9032.89.90	10	management electronics module of agricultural machine systems, with functionality "bridge" and hub of information from the CAN bus communication network with bootloader developed for proprietary electronic architecture, composed of aluminum housing, 154 pins (6-pin power and 148 data) and IP69K protection level, operating temperature between 30 degrees Celsius
9032.89.90	11	electronic management unit with CAN interface, applied to harvesters of sugar cane, for control of the entire collection system and lighting machine with digital and analog outputs, current control for the lighting system and solenoids, supply voltage 12 V, supports range from -40 degrees Celsius to room temperature to +105 degrees Celsius with two molex connector 52 input / output terminals, one molex connector 48 input / output terminals, and a connector

9032.89.90	12	electronic control unit with CAN interface, applied to the steering system and propulsion self-propelled agricultural machines, equipped with digital inputs with signals and frequency reading capability issued by sensors, digital outputs and power control for solenoids , supply voltage 12 V, operating temperature of -40 degrees Celsius to 75 degrees Celsius, with two molex connector 32 input / output terminals, and a molex connector 48 input / output
9032.90.99	24	diesel exhaust gases, for application in automotive products, operating range: 6.25 -3.75 KPAD KPAD.
9032.90.99	25	Rotation Sensor with reading frequency to 12 kHz, recognition of direction of rotation, total length of 70.6 mm (+ 0.5 mm), weight of 29.3 g to 30.6 g, working temperature -40 degrees Celsius to 150 degrees Celsius, the maximum current consumption of 20 mA, pulse width tw (FWD) 38 micro seconds, minimum 52 microseconds and maximum tw (REV) minimum 76 microseconds and 104 microseconds maximum, developed for use in automated transmissions for commercial vehicles with 12 or 16 gears.
9032.90.99	26	Photosensitive sensor for detecting weather conditions and brightness, operating with nominal voltage of 13.5 V and current of 10 to 50 mA.
9401.90.90	88	vertical position adjuster for automobile seats, with complex internal mechanism formed by gears and components manufactured in injection processes and stamping, has dimensional diameter 50mm, depth 54mm and an average of 54mm height, having internal engagement to drive lever used in automotive front seats.
9401.90.90	89	of 508 mm height and 268 mm width, and weight 0.8954375 Kg, comprising a mechanical assembly and electrical circuit 12.5 Volts and has the function comfort to the lumbar of the occupant.
9401.90.90	90	pivotable hinge with lock, comprising internal special system of mechanical locking developed by springs and pins for positioning with resistance to unlocking of 4053 N, with 4 angle adjustment and positioning developed pressed steel alloy, ribbed and riveted has a pivotable arm length of 450 mm, and a base riveted to the arm of approximately 87 mm, applied in
9401.90.90	91	pivotable hinge with lock, consisting of internal system of mechanical locking developed by springs and pins for positioning with resistance to unlocking of 4,053 kN with 4 angle adjustment and positioning, made of stamped steel alloy, ribbed and riveted, with an arm pivotable length of 450 mm and a riveted to the arm base about 87 mm, applied to seat
9401.90.90	92	Structured metallic rising angle adjuster 60 mm, distance adjuster to 260 mm and up to 6 degree inclination adjuster with 2.8 degrees and 3.2 degrees down onto the front seat 653 having dimensional mm long, 498 mm wide and 200 mm high, with integrated electric actuators 13 volts maximum current up to 5 amps and rotating between 10 and 14.7 rpm.
9401.90.90	93	Auxiliary guide rod headrest developed polymeric resin with polypropylene load and dimensional features 65,3mm length, outer diameter 14mm, weight 0,016Kg processed through polymer injection, this is mounted on car seats .
9401.90.90	94	Guide to main head support rod developed polymeric resin with polypropylene load and dimensional features to 65.3 mm long, 14 mm outside diameter, added starter mechanism of medium carbon steel plate processed through on injection , used for vertical movement of the head restraint automotive banks.
9401.90.90	95	locking rod of the rear seat backrest, with part processed by stamping alloy steel, wire processed by bending alloy steel, orbital particularly rivet to extraction resistance of 8000 Newtons finished surface treated zinc black to ensure the prompted efforts with dimensional basis 79.0 mm wide and 98.0 mm and 33.0 mm dimensional stem width and 101.0 mm in height, weight 0.211 Kg, column C mounted on the automotive vehicle.
9401.90.90	96	circular tube rod bent and notched through the stamping process, made of special alloy steel tube with a mechanical tensile strength minimum at 650 MPa finished chromium (Cr) or zinc white (zinc) has dimension 207 , 0 mm in height, and 140.0 mm in length constant wall thickness 2.0 mm along the tube and the grooves 1.3 mm, weighing 0,366 kg, used as main structure of the head restraint applied to automotive banks.

Art. 2 The Ex-Tarifarios of auto parts written as Capital Goods - BK or Computer and Telecommunications Goods - BIT, listed in Annex II of Resolution No. 23, 2019, of the Management Executive Committee of the Foreign Trade Chamber, are included.

NCM	Nº Ex	DESCRIPTION
8408.90.90	82	internal combustion piston engine and diesel cycle used in self-propelled machines, 4-stroke, 4, 6 or 8 cylinder water cooled, compression ignition direct injection with electronic injection fuel system PLD or Common Rail, endowed and electronic control of turbocharger, with emission level Tier 3 / StagellIA or above, with power ranging from 104 kW to 400 kW at nominal speed ranging from 1800 to 2400 rpm.

8408.90.90	83	Compression-ignition engines, diesel engines, 4-stroke, water-cooled direct injection, 4 cylinders, displacement 3.26 liters power ranging from 68 kW to 73 kW, 2200 rpm nominal speed, with electronic injection system common rail, provided with silent turbocharger, starter, alternator, cooling fan, fuel filter and oil filter, with Tier 3 emission level of pollutants, for use in
8412.21.10	3	Hydraulic cylinder, comprising a double rod cylinder connecting the other part with two inner springs, has a maximum actuation speed of 4.5 m / min and a maximum pressure of 210 bar work, self-lubricating with end labeled at both ends together rods and the body made of high strength steel and polymer seals, specifically for use in agricultural machines.
8412.21.90	77	Hydraulic motor axis inclined with variable displacement, bi-directional rotation closed hydraulic circuit water displacement 250 cc / rev, maximum pressure 450 bar, 287 kW input power, spline teeth 15 and pitch 8/16 applied to bulldozers.
8412.21.90	78	Axial piston type hydraulic motor axis inclined to variable flow hydrostatic drive in closed circuit with volumetric displacement of 150 cc / rev, maximum torque 450 Nm and 1089 bar maximal pressure of 500 bar for use in self-propelled harvesters.
8412.21.90	79	Axial piston type hydraulic motor axis inclined to variable flow hydrostatic drive in closed circuit with volumetric displacement of 170 cc / rev, maximum torque 450 Nm and 1230 bar maximal pressure of 500 bar for use in self-propelled harvesters.
8412.21.90	80	Hydraulic axial piston motors tilting plate angle of 9 degrees and 20 degrees 15 minutes and 54 minutes, variable volumetric displacement of from 55 to 95.4 cm ³ / rev maximum pressure of 480 kgf / cm ² , maximum flow of 162 l / min, maximum speed comprised between 1647 and 2857 rpm, coupled to a planetary gearbox with gear ratio 57, maximum torque of 31,63 kNm, to self-propelled machines locomotion system.
8412.29.00	27	orbital motion hydraulic motor with bidirectional rotation water displacement 312 cc / rev continuous flow of 40 GPM and intermittent flow of 225 GPM, torque continuous 930 Nm and intermittent torque 1355 Nm, the nominal operating pressure 225 bar applied in the system hydraulic lifters rolls of sugar cane harvesters.
8412.29.00	28	axial piston hydraulic motor with variable volume displacement volume between 80 and 110 cc / rev, intermittent maximum pressure of 7000 psi, and maximum torque 780 Nm flow 0,00442m ³ / sec, applied to the hydraulic drive system of cane harvesters sugar.
8413.50.10	65	Alternatively volumetric hydraulic pump, axial piston, variable flow to hydrostatically driven closed loop maximum pressure of 450 bar, the volumetric displacement of 110 cc / rev, maximum power 430 bar 249 kW, maximum torque at 430 bar 756 Nm and Beta preload filter 20 most equal to 100 for self-propelled harvesters cereals.
8413.50.10	66	Alternatively volumetric hydraulic pump, axial piston, variable flow to hydrostatically driven closed loop maximum nominal pressure of 450 bar, the volumetric displacement of 125 cc / rev, maximum power 400 bar 237 kW, maximum torque 400 bar 795 Nm and preload filter 20 Beta most equal to 100 for self-propelled harvesters cereals.
8413.50.10	67	Alternatively volumetric hydraulic pump, axial piston, variable flow hydrostatic drive for open loop or closed with working pressure exceeding 170 bar comprised between 85 and water displacement 145cm ³ / revolution and maximum power between 90 and 402 kW.
8413.50.10	68	Alternatively volumetric pump, axial piston, variable displacement hydrostatic drive for open loop clockwise 145cc volumetric displacement / rotation, maximum power input of 165 kW, maximum pressure 270 bar (3 bar +/-), speed 2250 rpm Flow at least 316.1 L / min, spline teeth 17 and step 12-24 and maximum torque of 1460 Nm input, applied to the hydraulic drive
8413.50.10	69	loop clockwise with water displacement of 75 cc / see, maximum pressure 440 bar, 192 kW input power, spline teeth 23 to step 16/32 applied in the oil-hydraulic transmission system bulldozers.
8413.50.10	70	loop clockwise displacement volume 100 cc / rev, maximum pressure 440 bar, maximum power input of 235 kW, spline teeth 23 to step 16/32 applied the oil-hydraulic transmission system of bulldozers.
8413.50.10	71	loop clockwise water displacement 130 cc / rev, maximum pressure 420 bar, maximum power input of 287 kW, spline teeth 13 with pitch 8/16 applied in the oil-hydraulic transmission system bulldozers.
8413.50.10	72	Alternatively volumetric pump, axial piston, variable flow to hydrostatically driven closed loop clockwise water displacement 74 cc / rev output flow 133 L / min, valve pressure 276 bar, rotation 1800 rpm, splined shaft 14 teeth and step 12/24 applied in the oil-hydraulic transmission system of bulldozers.
8413.60.19	18	nominal pressure of 2600 psi, water displacement of 60 cc / rev, maximum flow of 160 l / min and a maximum output power of 45kW for application in the system hydraulic drive cylinder of harvesters sugarcane.

8413.60.19	19	rotary volumetric pump, axial piston, variable flow to hydrostatically driven closed loop, a nominal pressure of 400 bar, the volumetric displacement of 45cc / rev, maximum speed 2900 RPM input and maximum power 66,440 W output for use in harvesters sugar cane.
8424.90.90	69	transfer case and final reduction, for exclusive use in wheeled self-propelled sprayers with gear system with 2-stage planetary gear and straight teeth, total reduction ratio of 26.3: 1, maximum output torque 10062 Nm to 31 3 rpm or 2012 rpm 145.5 Nm, with a total approximate weight of 90 kg to 120 kg.
8424.90.90	70	Door drive with nozzles with pneumatic actuator, maximum pressure 10 bar operation, maximum flow of 7.6 liters / minute at a 5 psi pressure used in self-propelled sprays.
8424.90.90	71	Door nozzles with electric actuator 12 VDC power and current consumption of 150 mA with feedback and LIN bus network, maximum operating pressure of 10 bar maximum flow rate to 7.6 liters / minute at a pressure of 5 PSI, used in self-propelled sprays.
8424.90.90	72	Hydraulic Gear wheel with dynamic brake with input rotation between 820-3830 rpm, with cylinder 60 to 12cc / rev, ratio 1: 26.3, maximum pressure 448 bar Oil output torque between 10060-2015 Nm and output speed between 31-146 rpm, mounted on cast iron housing with approximate total weight of 100 kg, for use in agricultural sprays.
8433.90.90	39	Sheath to combine components with the following approximate dimensions: length 4275 mm, outer diameter of 323.9 mm and a thickness of 5.3 mm, raw materials P235TRI EN10217-1.
8479.89.99	865	Hydraulic Accumulators steel, cylindrical in shape, maximum pressure 100 bar, volume 0.5 L, weight 2.4 kg, diameter 60 mm and length 302 mm, applied hydraulics wheel loader.
8481.20.90	112	controlled flow of 0.5 l / min for each of the actuators, with a directional control valve of the "on-off" solenoid controlled with voltage of 12 V and Deutsch connector type used in agricultural machinery.
8481.20.90	113	Block valves for hydraulic transmission, cartridge type, maximum pressure 210 bar and a maximum flow equal to or less than 60 l / min, with controls for valve "on-off" and proportionate, controlled by solenoids with voltage of 12 V and type connectors Deutsch, own to direct the flow of oil to the actuators of the agricultural machine systems.
8481.20.90	114	Valve assembly used in the oil-hydraulic transmission system for control of the functions of the ground excavator machine with body having 6 to 10 main spools, hydraulic oil permissible temperature of -20 degrees Celsius to + 95 degrees Celsius at maximum flow equal to or greater than 110 liters per minute but less than or equal to 526 liters per minute, with a main relief pressure exceeding 32.4 MPa but less than or equal to 36.3 MPa and in the same relief pressure overload or greater than 34.8 MPa but less than or equal to 37.8 MPa.
8481.20.90	115	Brake pedal equipped with a master cylinder and built-in angle sensor for informing pedal position and speed of braking to the machine software, sensor maximum voltage of 5 V and 20 mA with a maximum pressure oil inlet input 172.4 bar, a maximum output pressure adjusted to 44.8 bar and a work line to release excess oil tank to the vehicle.
8481.20.90	116	pressure equal to 25,000 kPa maximum flow equal to 114 L / min, with application in road machinery.
8481.20.90	117	kg, length 160 mm, height 83 mm, width 65 mm, applied in line with the guidance system of wheel loader.
8481.80.95	34	and feedback used as sprays self propelled, comprising a pipe section for passage of fluid and a housing for the ball valve and electrical actuator housing pressure maximum operation 150 psi.
8481.80.99	108	Hydraulic valves with molten aluminum body and spring-driven piston, bypass type, coupled with stroke sensor maximum pressure of 0,41MPa, flow 400L / min., applied to the return line of the hydraulic tank of the hydraulic excavator.
8483.40.10	323	gearbox speed reducer provided and coupled clutch, down [i] = 1.22 and power of 181 kW, suitable for application in the transmission of mechanical energy from the prime mover to the drum asphalt milling machines milling.
8483.40.10	324	varying the transmission ratio between the pulley and the drum milling of asphalt milling machines.
8483.40.10	325	rotation up to 1374 rpm input specifying coupling crown type 1-3 / 4inches teeth 20 with input and output power 100 kW at perpendicular axes ratio 1.53: 1, specific to agricultural harvesters.
8483.40.10	326	Spindle drive with differential, containing cast iron brake housing and coupled internally in the input maximum speed 3600 rpm, maximum torque of 2900 Nm and reduction ratio of 21.53: 1, applied to paddle wheel loaders.

8483.90.00	63	mechanical transmission housing components, weight 13.5 kg width of 357 mm, 325.5 mm in height, 137 mm depth, applied to the assembly of the transmission of the wheel loader system transfer case.
8483.90.00	64	Command end of the hydraulic excavator, made of cast iron, provided with a hydraulic axial piston motor and volumetric displacement range 70-140 cm ³ per revolution, provided with planetary reduction gear and with diameters ranging from 380 mm to 610 mm.
8483.90.00	65	Set of rotating the upper frame with application excavator machines without hydraulic motor coupled, cast iron, speed equal to or less than 13.5 rpm, turning torque equal to or less than 145 kNm, modulus equal to or less than 16 and number of teeth equal to or less than 14, outer diameter less than or equal to 592 mm.
8483.90.00	66	final drive the group with body cast steel, provided with planetary reduction gear, for application to road machines, with a total length between 531 mm and 403 mm, outer diameter equal to or less than 533 mm and smaller than or equal to 278 kg .
8483.90.00	67	sprocket, made of alloyed steel, to drive the chain conveyor, with outer diameter equal to or less than 812 mm, length of between 57 and 80 mm, with 21 or 23 teeth and application to hydraulic excavators.
8517.62.94	18	electronic module for telemetry agricultural machines, programmable, to collect vehicle data and communication with telemetry data server, with IP66 degree of protection, having two inputs and two protected digital outputs against short-circuit and over-voltage, GPS high sensitivity, six CAN SAE / ISO interfaces, a serial interface RS232, Wi-Fi communication and GSM 4G LTE in the band 28 with SIM Card with optional SIM Card of ESim type, communication 433 MHz and satellite (Iridium), Ethernet BASE-T and IEEE802.3 additional digital output module housing may be of aluminum or plastic, power is 9 V to 18 V with
8531.20.00	35	Panel with polychromatic screen 7-inch liquid crystal display (TFT LCD) and carcass finish composite polymer with a specific design, own to demonstrate real-time machine operating parameters, equipped with embedded operating system, continuous operation triggered by key contact DC working voltage 10V (+/- 0.5 V), use temperature of -30 degrees Celsius to 60 degrees Celsius with red LED alarm to alert the pilot and ventilation air outlet of the integrated
8536.50.90	106	Levers made of steel rod command, plastic protectors, plastic hood, provided with plastic handle with electrical switch for electrical system of 24 volts to drive the horn, has the function of controlling the work equipment and spear equipment working through the manipulation of the lever applied to self-propelled machines.
8536.50.90	107	Joystick type switch for actuating the hydraulic drives, electric switch maximum voltage of 150 V with frequency up to 550 Hz, for use in road vehicles.
8708.29.19	6	Panel of up to 16 keys type "push button", microprocessor with lighting LED drive state for driving the lighting functions of the agricultural machine, with proprietary CAN-Bus interface, it has an interface connector with the vehicle, nominal supply 12 V.
9015.80.90	73	weather station with sensors that collect weather information sites via proprietary protocol, consisting of a mast containing ultrasonic sensor speed and wind direction, barometer, humidity sensor, GPS and cable with RS232 interface, for use in agricultural machines.
9031.80.40	1	board computers with 7-inch LCD screen, protected by plastic covers and rear cast aluminum alloy cover provided with integrated control buttons, may contain 4 to 5 connection ports with 58 or 68 pins inputs and data output, and memory electronics components, 2.8kg weight up to 12 volt power supply, displays the data up to 15 languages, to indicate the engine temperature, hydraulic oil temperature, operating mode, consumption fuel, travel speed, environmental indicator, error indicator, operating temperature of -30 degrees Celsius to 70 degrees Celsius applied in operation cabin self-propelled machines.
9031.80.99	105	Set of self-propelled agricultural machines steering system sensors, provided with four PWM sensors and analog sensors 2 with a centering spring and supply voltage of 5 V.
9031.80.99	106	Automotive angle sensor, a hall effect non-contact output with a current of 10 V operating voltage 30 V DC, operating temperature of -40 degrees Celsius to 85 degrees Celsius, protection against transients and degree of protection (IP67), for use in agricultural machines.
9032.89.29	190	power station with microprocessor supply voltage of 9-16V, proprietary software and CAN bus communication and Lin-Bus that nourishes and protects the electrical circuits of the agricultural machine, with protection for overload (resistance to 26V surges for 5 min) and short circuit IP6K6 degree of protection, arranged centrally a base with approximate dimensions of 221 x 190 mm with 8 connectors for interfacing with the vehicle 1 and the

9032.89.29	191	Electronic control units for controlling and monitoring multiple functions of wheel loader machines provided with electronic components, secured by casting molten aluminum sheet steel cover, containing first connection port with 40 pins for data inputs and outputs, controlled by specific software, weight 1,58kg, controls and monitors the speed and reversing the direction of rotation of the hydraulic system of the cooling fan motor displacement speed control system, traction force, the parking brake and electronic suspension system with CAN
9032.89.83	9	moisture measuring apparatus provided with blade-type sensor to capture information through a microwave resonance, with an accuracy of +/- 2% and 1Hz repetition for automatic process control, weighing approximately 7 kg, with internal memory with ability to store up to 5 different calibration curves for use in agricultural machines.
9032.89.89	65	electronic controllers (control units) for monitors used on excavators operating machinery booths, automatic, with anti-rust treatment, with 24V voltage, with armored body, used to make the reading and interpretation of data obtained through various electronic controllers, allowing the demonstration in real time information such as engine temperature, hydraulic oil temperature, engine rotation speed, fuel consumption, among others.
9032.89.89	66	electronic control unit to control and manage data collected from sensors and actuators with dedicated software, has digital and analog outputs and PWM (Pulse Width Modulation - Modulation Pulse Width), Canbus 2.0 communication networks, processing unit, volatile and non-volatile memory, power circuits, standard power 8V to 32V with resistance to surge, short circuit protection, polarity reversal, used in control systems and the rear hydraulic lift of the agricultural machinery power outlet.